THE MEASUREMENT AND VALUATION OF HEALTH

Final Report on the Modelling of Valuation Tariffs

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JANUARY 1995

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EXECUTIVE SUMMARY

to be read in conjunction with the chart

" Structure of the Analytical Work"

I. This Report is about estimating a complete tariff for all EuroQol health states from observed values for 42 of them. (The state "unconscious" has been directly valued by all respondents and is not part of the modelling task).

II. The principal data used are from 2997 respondents in the Main Survey for whom we have complete data. They are representative of the general population of England, Scotland and Wales [First Report on the Main Survey, May 1994]. This survey generated valuation data by both a Visual Analogue Scale (henceforth VAS) and by the Time-Trade-Off method (henceforth TTO).

III. Alternative modelling methods were tested both within the MVH Group and by other members of the EuroQol Group [Interim Report on Modelling, October 1994]. External statistical consultants (Abdalla and Russell) were also employed so as to bring a variety of skills to bear [Annexe B].

IV. These exploratory studies led us to conclude that one particular model (which came to be known as "Dolan-N3") was, on balance, the best of those tried. Essentially it predicts the value of a health state from its components by attaching a value to each separate deviation from good health. In the EuroQol system there are 10 such "decrements" in health, made up of a moderate and a severe level of dysfunction for each of the five dimensions (mobility, self-care, usual activities, pain/discomfort, anxiety/depression). The model contains two other terms, one of which "N3" is active whenever any dimension of health is "severe" (ie at level 3), and the other is simply a constant term (which might be interpreted as the loss of value involved with being in any kind of dysfunctional state whatever). The method for calculating the value of a particular health state from these coefficients is explained in Section 1.3.

V. Potential users are likely to want either a tariff of mean values for the EuroQol states, or a tariff of median values, so we have to cater for both. Mean values are best calculated

directly from the individual respondents' valuations of the observed states. Median values are best calculated from the median values of the observed states [Section 1.2].

VI. Working first on the TTO data (Section 2), two General Population tariffs are estimated, one for Means [Table 2C, repeated in Annexe A as Tariff A1] and one for Medians [Table 2E, repeated in Annexe A as Tariff A2]. Since age and sex were the only background variables to have a significant impact on TTO valuations [Section 3], separate subgroup tariffs have been estimated for the over- and under-60s, distinguishing men and women within each age-group. [Tariffs A5 to A12]

VII. The First Report on the Main Survey had identified an apparent problem with the TTO data from the over-60s, which indicated that they regarded many health states (especially the more severe ones) as being much worse that the rest of the population did. We were able to investigate the possible reasons for this by conducting a small number of reinterviews with respondents resident in the NE of England [Annexe C]. This indicated that, although some of this difference might be accounted for by the fact that older people were less likely to believe that they would regain full health after any prolonged period in states which they regarded as worse than being dead, a good part of this difference in valuations was genuine. We were able to estimate the maximum effect that might be artefactual, and to modify the key TTO tariffs accordingly [sections 3.3 and 3.4, and Tariffs A19 to A24].

VIII. Turning next to the VAS data [section 4], the basic tariffs are again those using the General Population data from the Main Survey, the resulting Tariff of Means being in Table 4C and the Tariff of Medians in Table 4E (reproduced as Tariffs A3 and A4 respectively in Annexe A). In the case of the VAS data the only background characteristic that was significant in influencing valuations was educational level [Section 5], so 3 subgroup tariffs have been estimated accordingly which are set out in full as Tariffs A13 to A18.

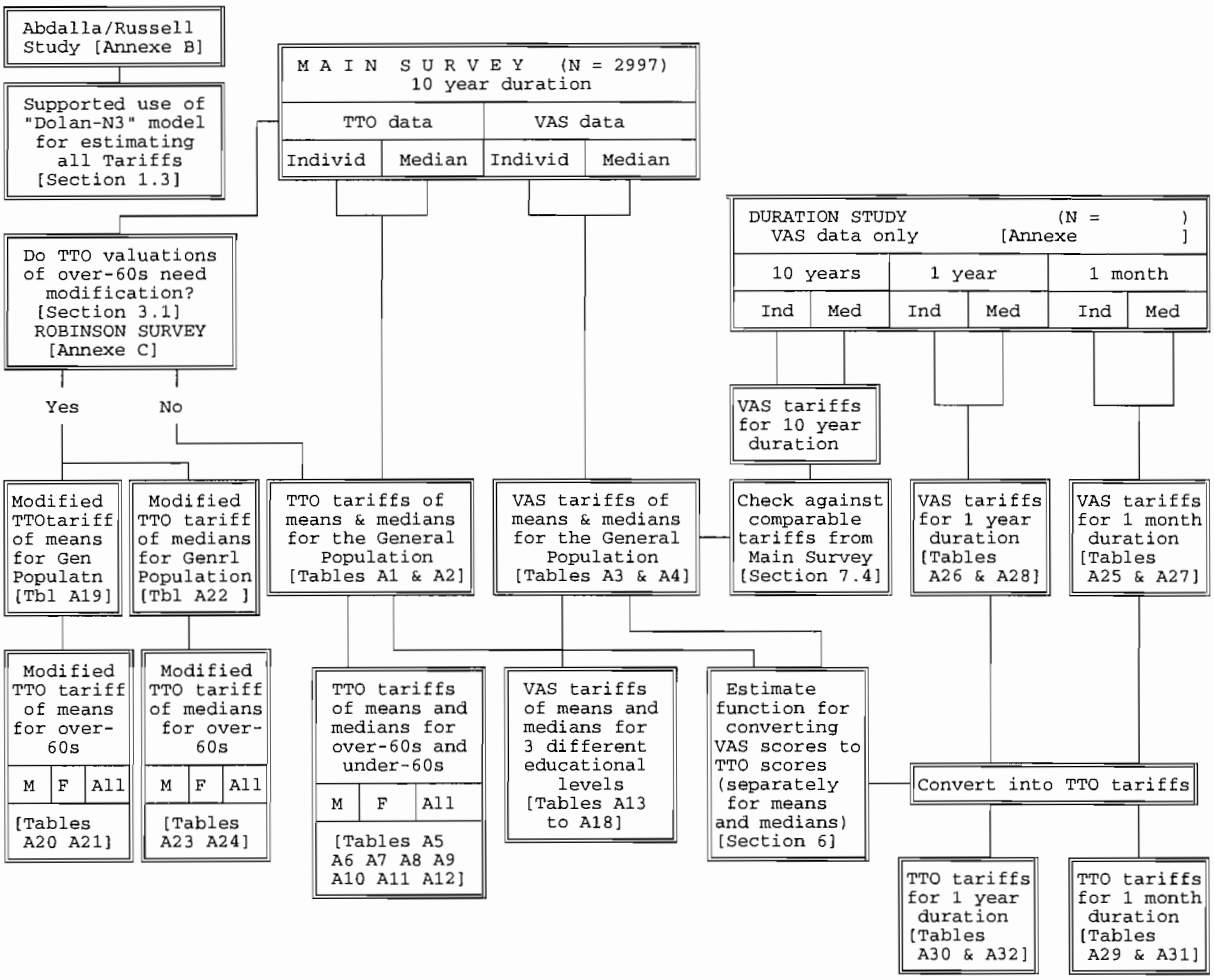
IX. Since VAS data is generally easier to collect than TTO data, it would be advantageous to be able to "convert" VAS valuations into TTO valuations (Section 6). Using our within-subject valuations for the same states using both methods, we have an excellent opportunity to do this. The results are shown in Section 6, and especially Figures 6A and 6B.

X. All the above estimates relate to health states which are assumed to last for 10 years. We reinterviewed 236 of our original respondents and got them to replicate the VAS part of the interview only, but with a smaller number of states, each of which was varied in assumed duration [Section 7]. The three durations used were 10 years, 1 year, and 1 month. As expected, states were rated worse the longer they lasted, especially the more severe ones [Tables 7C & 7D]. The VAS tariffs for 1 month and 1 year are shown as Tariffs A25 to A28.

XI. To complete the circle, the conversion function estimated in Section 6 was used on the VAS tariffs for the shorter-duration states to generate TTO tariffs for the shorter duration states [Tables A29 and A32].

XII. The Final Section 8 offers a selection path for potential users so that they can find the tariff that best meets their requirements.

STRUCTURE OF THE ANALYTICAL WORK



1. INTRODUCTION

1.1 The Story So Far .....

The earlier Report on the Main Survey presented a preliminary account of the data and their immediate implications. Those data included valuations for 43 health states, described in terms of the EuroQoL classification, and generated by two different scaling methods - rating on a visual analogue scale (VAS), and time trade-off (TTO). These states were chosen so as to permit the estimation of the remaining health states defined by the EuroQoL classification (which number 243 in all, plus unconscious and dead). The processes by which tariffs for the full set of EuroQoL states have been generated are the subject of this report.

As described in our interim report ("Generating a UK EuroQol Tariff", October 1994), several different approaches to the modelling task had been proposed by researchers within the wider EuroQoL Group. The results of their independent work formed the central part of that Report. It was found that no single method fully conformed to the desiderata set out there, namely that it would be advantageous if a model

(a) were based on individual level data
(b) were additive
(c) generated separate coefficients for each dimension
(d) generated separate coefficients for each level
(e) did not require interaction terms

It was also recognised that a balance had to be struck between technical sophistication on the one hand and transparency for potential users on the other.

Following the EuroQol Group Meeting, Abdalla and Russell finalised their Report ("Tariffs for the EuroQol Health States based on Modelling the Individual VAS and TTO data of the York Survey") which is appended as Annexe B. After discussion between the MVH Group, Ian Russell and Mona Abdalla, a model reported by Paul Dolan was acknowledged as coming closest to these desiderata, and providing the best basis for further work. These discussions also laid the groundwork for further collaborative development of the models which form the basis of this present report.

1.2 Modelling: general considerations

The construction of any model is essentially an attempt to form a simplified representation of more complex phenomena. Model building may assist in improving our understanding of the relationship between the component parts of a structure, for example (with regard to the MVH study) in identifying the influence of different dimensions on the valuations of health states. The extent to which a given set of such relationships adequately represents actual behaviours or conditions may be tested by comparing observation with predictions based on the model's output. It may be that more than one model is capable of fitting such observations, so that the selection of a single model for this purpose may ultimately rest on assessment of multiple criteria. Once a satisfactory model has been constructed, and has demonstrable capacity to represent observed data, it can then be utilised to derive estimates of data points which have not been the subject of direct observation. It is this predictive power which is the object of this phase of the MVH Project.

Although any modelling process is essentially concerned with deriving a means of adequately representing observed data, there are issues intrinsic to that process which reflect different subjective points of view. So far as the present modelling study is concerned, decisions regarding these issues will be influenced by the type of application envisaged for the resulting valuations tariff, and by the manner in which social preferences are judged to be most appropriately derived from individual preferences.

The data produced by the two scaling methods used in the Main Survey, can be represented and analysed in different ways. Firstly, a model may be constructed using the values generated by individual respondents, or it may be based on some aggregate measure (commonly the mean or median score). Using individual respondents' data has the merit of utilising the maximum available information, and treats each respondent's values on an equal basis. Hence individuals whose scores lie at the extremes ranges of distributions for any state, have equal status with those whose values lie towards the centre of such distributions. Whilst the product of individual-level modelling has the virtue of efficiency, it is likely to display a goodness-of-fit which is substantially lower than that produced by modelling based on aggregate data. This stems directly from the large differences in the volume of data being modelled. Whereas a model based on the median observed values for each state involves

some 43 data points, the individual-level modelling involves over 40,000 data points.

In general, regression methods using unmodified experimental data at individual level produce estimates which approximate to mean values. Of course when such data are normally distributed, there are no compelling statistical grounds for selecting any other measure of central tendency, since the mean, median and mode will have similar values. However, where the distribution of data is non-normal, then the choice of central tendency may be influenced by either statistical or ethical considerations. The mean may still be regarded as the preferred measure, in which case a model that resulted in estimated values for health states which approximated to the mean, would be entirely acceptable. However, if the influence of extreme values in the (skewed) distribution of the experimental data is to be minimised, then the median may be selected as the appropriate measure of central tendency. In these circumstances, the standard form of regression model may not be suitable and some other mechanism will be needed to produce model estimates which approximate to the median of the observed values. Since different users of the resulting tariffs of health state values may have different views on the desirability of using the mean or median as the measure of central tendency, model estimates of both have been derived.

The strategy adopted in the modelling of the survey data reported here, is to base the models which yield estimates of the mean value of a health state on the data derived from individuals, whereas models which yield estimates of the median value of a health state are based upon the median value of the observed health states. This strategy is represented schematically as follows:

DESIRED MEASURE OF CENTRAL TENDENCY	DATA USED TO GENERATE IT	
	Individual	Median
Mean	yes	no
Median	no	yes

1.3 The structure of the chosen model

There exist a number of different approaches that can be used to model the EuroQol data. For consistency, however, it is important that we base our recommendations around one of these approaches. A number of criteria were used to help us choose the 'best' model:

1) Goodness-of-fit i.e. how well the model explains the differences in the valuations given to those states on which there is direct data.
2) Parsimony i.e. the simplicity of the model.
3) Consistency i.e. states that are logically worse must have lower predicted values.

Modelling of the data was undertaken by the MVH Group, its statistical consultants (Mona Abdalla and Ian Russell) as well as by researchers within the EuroQol Group. The results of all these different analyses were presented at the Plenary Meeting of the EuroQol Group, held in London in October. At this meeting, it was decided that the model presented by Paul Dolan (henceforth referred to as "Dolan-N3") satisfied the above criteria most fully. Before discussing this model in more detail, it is encouraging to note that the results presented by Abdalla and Russell using a different technique corresponded closely to the Dolan model (see our earlier Interim Report, October 1994, and the Report by Abdalla and Russell appended as Annexe B).

The "Dolan-N3" Model is based on least-squares regression techniques which takes the health state scores as the dependent variable. Scores are explained by 12 independent variables; an intercept associated with any move away from full health, two dummy variables for each dimension (one to represent the move from level 1 to level 2 and one to represent the move from level 2 to level 3) and a term referred to as 'N3' which picks up whether any dimension is at level 3.[1] The full set of dummy variables used in the modelling is set out

[1]A number of different models were tested which allowed for interactions between different dimensions. None of these improved the model significantly and many introduced inconsistencies into the estimated values. However, this 'N3' interaction improved model fit and reduced the problems caused by heteroskedastic disturbance.

below.

EuroQoL dimension	Level 1	Level 2	Level 3
Mobility	MO = 0 M2 = 0	MO = 1 M2 = 0	MO = 2 M2 = 1
Self-care	SC = 0 S2 = 0	SC = 1 S2 = 0	SC = 2 S2 = 1
Usual activity	UA = 0 U2 = 0	UA = 1 U2 = 0	UA = 2 U2 = 1
Pain / discomfort	PD = 0 P2 = 0	PD = 1 P2 = 0	PD = 2 P2 = 1
Anxiety / depression	AD = 0 A2 = 0	AD = 1 A2 = 0	AD = 2 A2 = 1

Models were estimated both on median and on individual scores The estimation of median values was performed using ordinary least-squares regression. Analysis at the individual level is complicated by the fact that each respondent valued 12 states and thus it is reasonable to assume that these 12 scores are related to one another. To address this issue a random effects specification was used. This estimation technique, which is a form of generalised least-squares (GLS), takes account of the fact that the variance of the error term is partly determined by the individuals who value the health states (for a more detailed discussion of this model, see Dolan's paper in the Interim Report).

All independent variables have been included in every model presented in this report, even those that might be considered "insignificant". This is to avoid the possibility that "insignificant" variables may become "significant" with repeated sampling and because, given that the regressors in this model are related to one another, the significance of a particular variable will depend on the other variables in the equation.

In comparing the models based on median and individual values, it should be borne in mind that the goodness-of-fit associated with the former will almost certainly be much higher since it is based on analysis of a much smaller number of observations where much of the variance

is already removed.[2]

The models based on medians were tested for misspecification in two ways: a RESET test and a test for heteroskedasticity (see Dolan's paper in the interim report for details). Given the large number of observations, only the latter diagnostic test was performed on the individual level data. All median models failed the RESET test and most (median and individual) suffered from heteroskedasticity. However, given the nature of the data and specifically the binary nature of the independent variables, it is impossible to control for such problems. In any case, these are very stringent tests, failure of which in no way affects the robustness of the estimates.

The coefficients from the 'Dolan-N3' model require some slight reworking in order to place them in a more user-friendly format. This format differs somewhat from that recommended in the October 1994 Report, but the algorithm for computing tariffs from the model output is nevertheless quite straightforward, as will be seen from the example given below.

[2]The adjusted r-squareds for the median data are around 0.98 which are good by any standards and are around 0.46 for the individual data which, given the large number of observations, the variance associated with health state valuations, and the parsimony of the model, are themselves remarkable.

Illustrative table of model coefficients

Dimension	Coefficient
Constant	0.081
Mobility	
level 2	0.069
level 3	0.314
Self-care	
level 2	0.104
level 3	0.214
Usual activity	
level 2	0.036
level 3	0.094
Pain/discomfort	
level 2	0.123
level 3	0.386
Anxiety/depression	
level 2	0.071
level 3	0.236
N3	0.269

The arithmetic needed to recover the estimated value for any health state from this table of decrements is given by the following example:

Taking health state 1 1 2 2 3

Full health = 1.0		
Constant term (for any dysfunctional state)		(subtract 0.081)
Mobility	.. level 1	(subtract 0)
Self-care	.. level 1	(subtract 0)
Usual activity	.. level 2	(subtract 0.036)
Pain / discomfort	.. level 2	(subtract 0.123)
Anxiety / depression	.. level 3	(subtract 0.236)
Level 3 occurs within at least 1 dimension		(subtract 0.269)

Hence **the estimated value for state 1 1 2 2 3 =**

1.0 - 0.081 - 0.036 - 0.123 - 0.236 - 0.269 = **.255**

The coefficients emerging from each model will be reported as in the illustrative table above. They will then be used to generate a tariff where appropriate, following the procedure indicated above, though this procedure will henceforth be taken for granted.

2. TTO-BASED TARIFFS: WHOLE POPULATION

2.1 The TTO data

The TTO procedure identifies the number of years of full health, x, that an individual regards as equivalent to a fixed number of years, t, (in this case 10 years) spent in some dysfunctional health state. For states which are regarded as better than dead, the number of years identified by each respondent can be readily interpreted. By implicitly assigning a score of 1.0 to full health and 0.0 to death, the scores for intermediate states are given directly by the ratio x / t.

However, for states worse than death, the number of years identified by a respondent requires transformation as follows

$$x' = - x / (10 - x)$$

where x is the number of years spent in full health. As a consequence of this transformation, x' may take a value between -0.026 and -39.0 (corresponding to time periods of 3 months and 9 years 9 months respectively).

These transformed scores do not have the same linear properties as displayed by scores for states better than dead. An explanation for this asymmetry has been given by Eyman (1967)[3], who demonstrated that values generated by techniques designated as variants of the constant sum method[4], led to biases in observer's judgements. Poulton (1989)[5] describes how such biased judgements can be corrected. The implications of his work, applied to values for states worse than death, is that these values should be treated as having interval scale

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[3] Eyman RK (1967) The effect of sophistication on ratio- and discriminative scales. *American Journal of Psychology* 80: 520-540

[4] Constant sum methods involve the division into two parts of a given scale with fixed endpoints, so as to indicate the strength of preference for one object over another. These preferences have erroneously been interpreted as ratios, as experiments have demonstrated that respondents use these as interval scales.

[5] Poulton EC (1989) *Bias in quantifying judgements*. Lawrence Erlbaum Associates, Hove.

properties only. Hence these valuations have been further transformed as follows

$$x' = (x / 10) - 1.0$$

This transformation is used elsewhere in the literature (Patrick et al, 1994)[6]. Scores for states worse than death are now bounded by -1, just as states which are better than death are limited by a value of 1.0 for full health.

The analysis which follows is based on the scores produced by the 2997 respondents for whom there was complete data for both the VAS and the TTO methods (see Section 3 of the "First Report on the Main Survey", May 1994, for the detailed characteristics of this "Combined Data Set").

2.2 Tariff of mean values based on individual responses

The coefficients for this model are given in Table 2A. The largest decrement for a move from level 1 to level 2 is associated with pain, some 4 times greater than that for the corresponding move on the usual activity dimension. Pain continues to dominate the weighting for level 3, although mobility level 3 is given a somewhat similar decrement.

The actual and estimated values for the 42 EuroQoL health states are given in Table 2B. As expected, the mean absolute difference between the mean observed score and the corresponding estimated values is lower than that for the median. For only 3 states (21312 / 23313 / 13332) does the difference between the mean and estimated value exceed 0.1.

[6] Patrick DL et al (1994) Measuring preferences for states worse than death. *Medical Decision Making* 14:9-18

Table 2A: Coefficients for TTO Tariffs of Means and Medians: whole population (10 year duration)

DIMENSION	USING INDIVIDUAL DATA	USING MEDIANS
Constant	0.081	-0.038
Mobility		
level 2	0.069	0.054
level 3	0.314	0.458
Self-care		
level 2	0.104	0.129
level 3	0.214	0.254
Usual activity		
level 2	0.036	0.044
level 3	0.094	0.159
Pain/discomfort		
level 2	0.123	0.114
level 3	0.386	0.522
Anxiety/depression		
level 2	0.071	0.100
level 3	0.236	0.323
N3	0.269	0.163
adjusted r^2	0.46	0.97

Table 2B: Comparison of estimated with actual values: individual TTO data
(10 year duration)

State	Actual median	Actual mean	Estimated(E)	Median-E	Mean-E
2 1 1 1 1	0.950	0.878	0.850	0.100	0.028
1 1 2 1 1	0.950	0.869	0.883	0.067	-0.014
1 2 1 1 1	0.925	0.834	0.815	0.110	0.019
1 1 1 2 1	0.925	0.850	0.796	0.129	0.054
1 1 1 1 2	0.925	0.829	0.848	0.077	-0.019
1 2 2 1 1	0.900	0.767	0.779	0.121	-0.012
1 2 1 2 1	0.850	0.742	0.692	0.158	0.050
1 1 1 2 2	0.825	0.722	0.725	0.100	-0.003
2 2 1 2 1	0.775	0.645	0.623	0.152	0.022
2 2 1 1 2	0.750	0.662	0.675	0.075	-0.013
1 1 3 1 2	0.675	0.552	0.485	0.190	0.067
2 2 1 2 2	0.650	0.540	0.552	0.098	-0.012
2 1 3 1 2	0.650	0.536	0.416	0.234	0.120
2 1 2 2 2	0.650	0.553	0.620	0.030	-0.067
1 2 2 2 2	0.650	0.551	0.585	0.065	-0.034
2 2 2 2 2	0.625	0.500	0.516	0.109	-0.016
1 3 2 1 2	0.500	0.389	0.329	0.171	0.060
1 3 3 1 1	0.500	0.346	0.342	0.158	0.004
1 1 1 1 3	0.500	0.392	0.414	0.086	-0.022
1 1 1 3 1	0.375	0.200	0.264	0.111	-0.064
1 2 2 2 3	0.375	0.216	0.151	0.224	0.065
2 1 3 2 3	0.325	0.160	0.128	0.197	0.032
2 3 3 2 1	0.300	0.147	0.150	0.150	-0.003
3 2 2 1 1	0.275	0.152	0.196	0.079	-0.044
2 1 2 3 2	0.138	0.064	0.088	0.050	-0.024
2 2 3 2 3	0.025	0.042	0.024	0.001	0.018
1 1 1 3 3	0.000	-0.049	0.028	-0.028	-0.077
2 2 3 3 1	0.000	-0.011	-0.003	0.003	-0.008
2 3 3 1 3	0.000	-0.070	0.037	-0.037	-0.107
3 3 2 1 2	0.000	-0.022	0.015	-0.015	-0.037
2 3 2 3 2	-0.025	-0.084	-0.126	0.101	0.042
2 1 1 3 3	-0.025	-0.063	-0.041	0.016	-0.022
3 3 3 2 1	-0.175	-0.120	-0.095	-0.080	-0.025
3 2 3 1 3	-0.225	-0.152	-0.098	-0.127	-0.054
2 2 2 3 3	-0.225	-0.142	-0.181	-0.044	0.039
3 2 2 2 3	-0.275	-0.174	-0.163	-0.112	-0.011
3 2 2 3 2	-0.375	-0.223	-0.261	-0.114	0.038
1 3 3 3 2	-0.375	-0.228	-0.115	-0.260	-0.113
3 2 3 3 1	-0.375	-0.276	-0.248	-0.127	-0.028
3 3 2 3 2	-0.425	-0.332	-0.371	-0.054	0.039
3 3 3 2 3	-0.475	-0.386	-0.331	-0.144	-0.055
3 3 3 3 3	-0.625	-0.543	-0.594	-0.031	0.051
Mean absolute difference				0.103	0.039

Table 2C: TTO Tariff of Means: whole population
(10 year duration)

1	1	1	1	1	1.000	1	2	3	1	1	0.452	2	1	2	1	1	0.814
1	1	1	1	2	0.848	1	2	3	1	2	0.381	2	1	2	1	2	0.743
1	1	1	1	3	0.414	1	2	3	1	3	0.216	2	1	2	1	3	0.309
1	1	1	2	1	0.796	1	2	3	2	1	0.329	2	1	2	2	1	0.691
1	1	1	2	2	0.725	1	2	3	2	2	0.258	2	1	2	2	2	0.620
1	1	1	2	3	0.291	1	2	3	2	3	0.093	2	1	2	2	3	0.186
1	1	1	3	1	0.264	1	2	3	3	1	0.066	2	1	2	3	1	0.159
1	1	1	3	2	0.193	1	2	3	3	2	-0.005	2	1	2	3	2	0.088
1	1	1	3	3	0.028	1	2	3	3	3	-0.170	2	1	2	3	3	-0.077
1	1	2	1	1	0.883	1	3	1	1	1	0.436	2	1	3	1	1	0.487
1	1	2	1	2	0.812	1	3	1	1	2	0.365	2	1	3	1	2	0.416
1	1	2	1	3	0.378	1	3	1	1	3	0.200	2	1	3	1	3	0.251
1	1	2	2	1	0.760	1	3	1	2	1	0.313	2	1	3	2	1	0.364
1	1	2	2	2	0.689	1	3	1	2	2	0.242	2	1	3	2	2	0.293
1	1	2	2	3	0.255	1	3	1	2	3	0.077	2	1	3	2	3	0.128
1	1	2	3	1	0.228	1	3	1	3	1	0.050	2	1	3	3	1	0.101
1	1	2	3	2	0.157	1	3	1	3	2	-0.021	2	1	3	3	2	0.030
1	1	2	3	3	-0.008	1	3	1	3	3	-0.186	2	1	3	3	3	-0.135
1	1	3	1	1	0.556	1	3	2	1	1	0.400	2	2	1	1	1	0.746
1	1	3	1	2	0.485	1	3	2	1	2	0.329	2	2	1	1	2	0.675
1	1	3	1	3	0.320	1	3	2	1	3	0.164	2	2	1	1	3	0.241
1	1	3	2	1	0.433	1	3	2	2	1	0.277	2	2	1	2	1	0.623
1	1	3	2	2	0.362	1	3	2	2	2	0.206	2	2	1	2	2	0.552
1	1	3	2	3	0.197	1	3	2	2	3	0.041	2	2	1	2	3	0.118
1	1	3	3	1	0.170	1	3	2	3	1	0.014	2	2	1	3	1	0.091
1	1	3	3	2	0.099	1	3	2	3	2	-0.057	2	2	1	3	2	0.020
1	1	3	3	3	-0.066	1	3	2	3	3	-0.222	2	2	1	3	3	-0.145
1	2	1	1	1	0.815	1	3	3	1	1	0.342	2	2	2	1	1	0.710
1	2	1	1	2	0.744	1	3	3	1	2	0.271	2	2	2	1	2	0.639
1	2	1	1	3	0.310	1	3	3	1	3	0.106	2	2	2	1	3	0.205
1	2	1	2	1	0.692	1	3	3	2	1	0.219	2	2	2	2	1	0.587
1	2	1	2	2	0.621	1	3	3	2	2	0.148	2	2	2	2	2	0.516
1	2	1	2	3	0.187	1	3	3	2	3	-0.017	2	2	2	2	3	0.082
1	2	1	3	1	0.160	1	3	3	3	1	-0.044	2	2	2	3	1	0.055
1	2	1	3	2	0.089	1	3	3	3	2	-0.115	2	2	2	3	2	-0.016
1	2	1	3	3	-0.076	1	3	3	3	3	-0.280	2	2	2	3	3	-0.181
1	2	2	1	1	0.779	2	1	1	1	1	0.850	2	2	3	1	1	0.383
1	2	2	1	2	0.708	2	1	1	1	2	0.779	2	2	3	1	2	0.312
1	2	2	1	3	0.274	2	1	1	1	3	0.345	2	2	3	1	3	0.147
1	2	2	2	1	0.656	2	1	1	2	1	0.727	2	2	3	2	1	0.260
1	2	2	2	2	0.585	2	1	1	2	2	0.656	2	2	3	2	2	0.189
1	2	2	2	3	0.151	2	1	1	2	3	0.222	2	2	3	2	3	0.024
1	2	2	3	1	0.124	2	1	1	3	1	0.195	2	2	3	3	1	-0.003
1	2	2	3	2	0.053	2	1	1	3	2	0.124	2	2	3	3	2	-0.074
1	2	2	3	3	-0.112	2	1	1	3	3	-0.041	2	2	3	3	3	-0.239

2	3	1	1	1	0.367	3	1	3	2	1	0.119	3	3	2	3	1	-0.300
2	3	1	1	2	0.296	3	1	3	2	2	0.048	3	3	2	3	2	-0.371
2	3	1	1	3	0.131	3	1	3	2	3	-0.117	3	3	2	3	3	-0.536
2	3	1	2	1	0.244	3	1	3	3	1	-0.144	3	3	3	1	1	0.028
2	3	1	2	2	0.173	3	1	3	3	2	-0.215	3	3	3	1	2	-0.043
2	3	1	2	3	0.008	3	1	3	3	3	-0.380	3	3	3	1	3	-0.208
2	3	1	3	1	-0.019	3	2	1	1	1	0.232	3	3	3	2	1	-0.095
2	3	1	3	2	-0.090	3	2	1	1	2	0.161	3	3	3	2	2	-0.166
2	3	1	3	3	-0.255	3	2	1	1	3	-0.004	3	3	3	2	3	-0.331
2	3	2	1	1	0.331	3	2	1	2	1	0.109	3	3	3	3	1	-0.358
2	3	2	1	2	0.260	3	2	1	2	2	0.038	3	3	3	3	2	-0.429
2	3	2	1	3	0.095	3	2	1	2	3	-0.127	3	3	3	3	3	-0.594
2	3	2	2	1	0.208	3	2	1	3	1	-0.154						
2	3	2	2	2	0.137	3	2	1	3	2	-0.225	Unconscious					[-0.402]
2	3	2	2	3	-0.028	3	2	1	3	3	-0.390						
2	3	2	3	1	-0.055	3	2	2	1	1	0.196						
2	3	2	3	2	-0.126	3	2	2	1	2	0.125						
2	3	2	3	3	-0.291	3	2	2	1	3	-0.040						
2	3	3	1	1	0.273	3	2	2	2	1	0.073						
2	3	3	1	2	0.202	3	2	2	2	2	0.002						
2	3	3	1	3	0.037	3	2	2	2	3	-0.163						
2	3	3	2	1	0.150	3	2	2	3	1	-0.190						
2	3	3	2	2	0.079	3	2	2	3	2	-0.261						
2	3	3	2	3	-0.086	3	2	2	3	3	-0.426						
2	3	3	3	1	-0.113	3	2	3	1	1	0.138						
2	3	3	3	2	-0.184	3	2	3	1	2	0.067						
2	3	3	3	3	-0.349	3	2	3	1	3	-0.098						
3	1	1	1	1	0.336	3	2	3	2	1	0.015						
3	1	1	1	2	0.265	3	2	3	2	2	-0.056						
3	1	1	1	3	0.100	3	2	3	2	3	-0.221						
3	1	1	2	1	0.213	3	2	3	3	1	-0.248						
3	1	1	2	2	0.142	3	2	3	3	2	-0.319						
3	1	1	2	3	-0.023	3	2	3	3	3	-0.484						
3	1	1	3	1	-0.050	3	3	1	1	1	0.122						
3	1	1	3	2	-0.121	3	3	1	1	2	0.051						
3	1	1	3	3	-0.286	3	3	1	1	3	-0.114						
3	1	2	1	1	0.300	3	3	1	2	1	-0.001						
3	1	2	1	2	0.229	3	3	1	2	2	-0.072						
3	1	2	1	3	0.064	3	3	1	2	3	-0.237						
3	1	2	2	1	0.177	3	3	1	3	1	-0.264						
3	1	2	2	2	0.106	3	3	1	3	2	-0.335						
3	1	2	2	3	-0.059	3	3	1	3	3	-0.500						
3	1	2	3	1	-0.086	3	3	2	1	1	0.086						
3	1	2	3	2	-0.157	3	3	2	1	2	0.015						
3	1	2	3	3	-0.322	3	3	2	1	3	-0.150						
3	1	3	1	1	0.242	3	3	2	2	1	-0.037						
3	1	3	1	2	0.171	3	3	2	2	2	-0.108						
3	1	3	1	3	0.006	3	3	2	2	3	-0.273						

The full tariff of estimated values based on this model is set out in Table 2C. 82 of the 243 states have negative values, and are thus rated worse than death. The value of -0.402 given to the state unconscious is the mean of the observed values given to this state[7].

2.3 Tariff of medians based on median scores

So as to derive a model which could be used to estimate median values, the median scores for the 42 EuroQoL states were fitted, using the same model parameters that had been applied in the individual level model described in section 2.2 above. The coefficients for this model are also given in Table 2A. The effect of a move from level 1 to level 2 on the mobility and usual activity dimensions is broadly similar. The largest decrement for this change in level is associated with self-care. Pain dominates the weighting of moves to level 3. The negative constant is not significantly different from zero.

The mean and median values based on the observed data, together with the estimated values for the standard set of 42 EuroQoL health states are compared in Table 2D. The average difference between the median observed score and the estimated score is 0.047, although there are particularly large differences for 2 states - 13332 , 33333. As expected, the difference between the mean observed score and the estimated score is greater. Once again the state 33333 has a particularly high residual.

Table 2E gives the estimated values for all the EuroQoL states based on this model.

[7] Throughout this Report, tariff scores given for unconscious are based on observed values.

Table 2D: Comparison of estimated with actual values: median TTO values (10 year duration)

State	Actual median	Actual mean	Estimated(E)	Median-E	Mean-E
2 1 1 1 1	0.950	0.878	0.984	-0.034	-0.106
1 1 2 1 1	0.950	0.869	0.994	-0.044	-0.125
1 2 1 1 1	0.925	0.834	0.909	0.016	-0.075
1 1 1 2 1	0.925	0.850	0.924	0.001	-0.074
1 1 1 1 2	0.925	0.829	0.938	-0.013	-0.109
1 2 2 1 1	0.900	0.767	0.865	0.035	-0.098
1 2 1 2 1	0.850	0.742	0.795	0.055	-0.053
1 1 1 2 2	0.825	0.722	0.824	0.001	-0.102
2 2 1 2 1	0.775	0.645	0.741	0.034	-0.096
2 2 1 1 2	0.750	0.662	0.756	-0.006	-0.094
1 1 3 1 2	0.675	0.552	0.616	0.059	-0.064
2 2 1 2 2	0.650	0.540	0.642	0.008	-0.102
2 1 3 1 2	0.650	0.536	0.563	0.087	-0.027
2 1 2 2 2	0.650	0.553	0.727	-0.077	-0.174
1 2 2 2 2	0.650	0.551	0.652	-0.002	-0.101
2 2 2 2 2	0.625	0.500	0.598	0.027	-0.098
1 3 2 1 2	0.500	0.389	0.478	0.022	-0.089
1 3 3 1 1	0.500	0.346	0.462	0.038	-0.116
1 1 1 1 3	0.500	0.392	0.552	-0.052	-0.160
1 1 1 3 1	0.375	0.200	0.353	0.022	-0.153
1 2 2 2 3	0.375	0.216	0.266	0.109	-0.050
2 1 3 2 3	0.325	0.160	0.225	0.100	-0.065
2 3 3 2 1	0.300	0.147	0.295	0.005	-0.148
3 2 2 1 1	0.275	0.152	0.245	0.030	-0.093
2 1 2 3 2	0.138	0.064	0.156	-0.018	-0.092
2 2 3 2 3	0.025	0.042	0.096	-0.071	-0.054
1 1 1 3 3	0.000	-0.049	0.030	-0.030	-0.079
2 2 3 3 1	0.000	-0.011	0.012	-0.012	-0.023
2 3 3 1 3	0.000	-0.070	0.085	-0.085	-0.155
3 3 2 1 2	0.000	-0.022	0.020	-0.020	-0.042
2 3 2 3 2	-0.025	-0.084	-0.097	0.072	0.013
2 1 1 3 3	-0.025	-0.063	-0.024	-0.001	-0.039
3 3 3 2 1	-0.175	-0.120	-0.110	-0.065	-0.010
3 2 3 1 3	-0.225	-0.152	-0.194	-0.031	0.042
2 2 2 3 3	-0.225	-0.142	-0.196	-0.029	0.054
3 2 2 2 3	-0.275	-0.174	-0.192	-0.083	0.018
3 2 2 3 2	-0.375	-0.223	-0.377	0.002	0.154
1 3 3 3 2	-0.375	-0.228	-0.159	-0.216	-0.069
3 2 3 3 1	-0.375	-0.276	-0.393	0.018	0.117
3 3 2 3 2	-0.425	-0.332	-0.501	0.076	0.169
3 3 3 2 3	-0.475	-0.386	-0.433	-0.042	0.047
3 3 3 3 3	-0.625	-0.543	-0.841	0.216	0.298
		Mean absolute difference		0.047	0.092

Table 2E: TTO Tariff of Medians: whole population - 10 year duration

1	1	1	1	1	1.000	1	2	3	1	2	0.488	2	1	2	1	3	0.455
1	1	1	1	2	0.938	1	2	3	1	3	0.264	2	1	2	2	1	0.826
1	1	1	1	3	0.552	1	2	3	2	1	0.473	2	1	2	2	2	0.727
1	1	1	2	1	0.924	1	2	3	2	2	0.374	2	1	2	2	3	0.341
1	1	1	2	2	0.824	1	2	3	2	3	0.150	2	1	2	3	1	0.256
1	1	1	2	3	0.438	1	2	3	3	1	0.065	2	1	2	3	2	0.156
1	1	1	3	1	0.353	1	2	3	3	2	-0.034	2	1	2	3	3	-0.067
1	1	1	3	2	0.254	1	2	3	3	3	-0.258	2	1	3	1	1	0.662
1	1	1	3	3	0.030	1	3	1	1	1	0.622	2	1	3	1	2	0.563
1	1	2	1	1	0.994	1	3	1	1	2	0.522	2	1	3	1	3	0.339
1	1	2	1	2	0.895	1	3	1	1	3	0.298	2	1	3	2	1	0.548
1	1	2	1	3	0.508	1	3	1	2	1	0.508	2	1	3	2	2	0.449
1	1	2	2	1	0.880	1	3	1	2	2	0.408	2	1	3	2	3	0.225
1	1	2	2	2	0.781	1	3	1	2	3	0.184	2	1	3	3	1	0.140
1	1	2	2	3	0.394	1	3	1	3	1	0.100	2	1	3	3	2	0.041
1	1	2	3	1	0.310	1	3	1	3	2	0.000	2	1	3	3	3	-0.183
1	1	2	3	2	0.210	1	3	1	3	3	-0.224	2	2	1	1	1	0.855
1	1	2	3	3	-0.014	1	3	2	1	1	0.578	2	2	1	1	2	0.756
1	1	3	1	1	0.716	1	3	2	1	2	0.478	2	2	1	1	3	0.369
1	1	3	1	2	0.616	1	3	2	1	3	0.255	2	2	1	2	1	0.741
1	1	3	1	3	0.393	1	3	2	2	1	0.464	2	2	1	2	2	0.642
1	1	3	2	1	0.602	1	3	2	2	2	0.364	2	2	1	2	3	0.255
1	1	3	2	2	0.502	1	3	2	2	3	0.141	2	2	1	3	1	0.171
1	1	3	2	3	0.279	1	3	2	3	1	0.056	2	2	1	3	2	0.071
1	1	3	3	1	0.194	1	3	2	3	2	-0.044	2	2	1	3	3	-0.152
1	1	3	3	2	0.094	1	3	2	3	3	-0.267	2	2	2	1	1	0.812
1	1	3	3	3	-0.129	1	3	3	1	1	0.462	2	2	2	1	2	0.712
1	2	1	1	1	0.909	1	3	3	1	2	0.363	2	2	2	1	3	0.326
1	2	1	1	2	0.809	1	3	3	1	3	0.139	2	2	2	2	1	0.698
1	2	1	1	3	0.423	1	3	3	2	1	0.348	2	2	2	2	2	0.598
1	2	1	2	1	0.795	1	3	3	2	2	0.249	2	2	2	2	3	0.212
1	2	1	2	2	0.695	1	3	3	2	3	0.025	2	2	2	3	1	0.127
1	2	1	2	3	0.309	1	3	3	3	1	-0.060	2	2	2	3	2	0.028
1	2	1	3	1	0.224	1	3	3	3	2	-0.159	2	2	2	3	3	-0.196
1	2	1	3	2	0.125	1	3	3	3	3	-0.383	2	2	3	1	1	0.533
1	2	1	3	3	-0.099	2	1	1	1	1	0.984	2	2	3	1	2	0.434
1	2	2	1	1	0.865	2	1	1	1	2	0.884	2	2	3	1	3	0.210
1	2	2	1	2	0.766	2	1	1	1	3	0.498	2	2	3	2	1	0.419
1	2	2	1	3	0.380	2	1	1	2	1	0.870	2	2	3	2	2	0.320
1	2	2	2	1	0.751	2	1	1	2	2	0.770	2	2	3	2	3	0.096
1	2	2	2	2	0.652	2	1	1	2	3	0.384	2	2	3	3	1	0.012
1	2	2	2	3	0.266	2	1	1	3	1	0.299	2	2	3	3	2	-0.088
1	2	2	3	1	0.181	2	1	1	3	2	0.200	2	2	3	3	3	-0.312
1	2	2	3	2	0.081	2	1	1	3	3	-0.024	2	3	1	1	1	0.568
1	2	2	3	3	-0.142	2	1	2	1	1	0.940	2	3	1	1	2	0.468
1	2	3	1	1	0.587	2	1	2	1	2	0.841	2	3	1	1	3	0.245

2 3 1 2 1	0.454
2 3 1 2 2	0.354
2 3 1 2 3	0.131
2 3 1 3 1	0.046
2 3 1 3 2	-0.054
2 3 1 3 3	-0.277
2 3 2 1 1	0.524
2 3 2 1 2	0.425
2 3 2 1 3	0.201
2 3 2 2 1	0.410
2 3 2 2 2	0.311
2 3 2 2 3	0.087
2 3 2 3 1	0.002
2 3 2 3 2	-0.097
2 3 2 3 3	-0.321
2 3 3 1 1	0.409
2 3 3 1 2	0.309
2 3 3 1 3	0.085
2 3 3 2 1	0.295
2 3 3 2 2	0.195
2 3 3 2 3	-0.029
2 3 3 3 1	-0.113
2 3 3 3 2	-0.213
2 3 3 3 3	-0.436
3 1 1 1 1	0.417
3 1 1 1 2	0.318
3 1 1 1 3	0.094
3 1 1 2 1	0.303
3 1 1 2 2	0.204
3 1 1 2 3	-0.020
3 1 1 3 1	-0.105
3 1 1 3 2	-0.204
3 1 1 3 3	-0.428
3 1 2 1 1	0.374
3 1 2 1 2	0.274
3 1 2 1 3	0.050
3 1 2 2 1	0.260
3 1 2 2 2	0.160
3 1 2 2 3	-0.064
3 1 2 3 1	-0.148
3 1 2 3 2	-0.248
3 1 2 3 3	-0.472
3 1 3 1 1	0.258
3 1 3 1 2	0.158
3 1 3 1 3	-0.065
3 1 3 2 1	0.144
3 1 3 2 2	0.044
3 1 3 2 3	-0.179
3 1 3 3 1	-0.264
3 1 3 3 2	-0.364
3 1 3 3 3	-0.587
3 2 1 1 1	0.288
3 2 1 1 2	0.189
3 2 1 1 3	-0.035
3 2 1 2 1	0.174
3 2 1 2 2	0.075
3 2 1 2 3	-0.149
3 2 1 3 1	-0.233
3 2 1 3 2	-0.333
3 2 1 3 3	-0.557
3 2 2 1 1	0.245
3 2 2 1 2	0.145
3 2 2 1 3	-0.078
3 2 2 2 1	0.131
3 2 2 2 2	0.031
3 2 2 2 3	-0.192
3 2 2 3 1	-0.277
3 2 2 3 2	-0.377
3 2 2 3 3	-0.600
3 2 3 1 1	0.129
3 2 3 1 2	0.030
3 2 3 1 3	-0.194
3 2 3 2 1	0.015
3 2 3 2 2	-0.084
3 2 3 2 3	-0.308
3 2 3 3 1	-0.393
3 2 3 3 2	-0.492
3 2 3 3 3	-0.716
3 3 1 1 1	0.164
3 3 1 1 2	0.064
3 3 1 1 3	-0.160
3 3 1 2 1	0.050
3 3 1 2 2	-0.050
3 3 1 2 3	-0.274
3 3 1 3 1	-0.358
3 3 1 3 2	-0.458
3 3 1 3 3	-0.681
3 3 2 1 1	0.120
3 3 2 1 2	0.020
3 3 2 1 3	-0.203
3 3 2 2 1	0.006
3 3 2 2 2	-0.094
3 3 2 2 3	-0.317
3 3 2 3 1	-0.402
3 3 2 3 2	-0.501
3 3 2 3 3	-0.725
3 3 3 1 1	0.004
3 3 3 1 2	-0.095
3 3 3 1 3	-0.319
3 3 3 2 1	-0.110
3 3 3 2 2	-0.209
3 3 3 2 3	-0.433
3 3 3 3 1	-0.517
3 3 3 3 2	-0.617
3 3 3 3 3	-0.841
Unconscious	[-0.375]

2.4 Comparing the tariff of means and the tariff of medians

In general the median values of states are higher than the mean values, due to the particular pattern of skewness in the individual responses. Extreme values are more likely for the more severe states, and the skewness is usually downwards. The difference in estimated value for a given EuroQoL state varies from -0.21 to +0.25, with 50% of values derived from the medians being at least 0.06 greater than the corresponding value based on the individual-level data. The tariff based on median values contains approximately 10% fewer states with negative scores, that is states worse than death, compared to the tariff based on the individual-level data. Despite these differences the two sets of values are extremely well correlated ($r=0.987$, $p<0.001$).

3. TTO-BASED TARIFFS: SUBGROUPS BY AGE AND SEX

3.1 The effects of age and sex upon TTO valuations

Analyses reported in the First Report of the Main Survey indicated that age has a more powerful effect on variations in TTO valuations than any other single background characteristic for which data was available. When the median values for 3 broad age groups (18 - 39, 40 - 59, over 60) were compared, respondents aged over 60 were found to have significantly lower values than were recorded by other respondents, and this was particularly so for the more severe states. In addition, for some states, respondents in the 40 - 59 age group had higher values than those aged 18 - 39. This seemed to suggest a pattern in which TTO valuations increased, albeit slowly, with age, and then subsequently went into sharp decline in later years. This general pattern was confirmed even when the age bands were reduced in size.

Whilst the influence of age on TTO valuations had been observed in the Main Survey, there was some uncertainty about its precise causes. Speculation at the time included the possibility that it might be associated with variation in respondent's life expectancy - that as this shortens, there is less reason to tolerate suffering in the remaining years of life. Alternatively, it was considered possible that the variation resulted from the nature of the TTO task itself. Respondents were asked to imagine that each state would last for 10 years, without any change, after which they would die. If they did not believe that they actually had 10 years life expectancy, they might willingly give up those 'excess' life years, and in doing so record lower values to the more severe states.[8]

It was with these uncertainties in mind, that Angela Robinson (Research Fellow, Department of Economics, Newcastle University) undertook some further investigations for us (See Annexe C for her full Report). This involved contacting 83 respondents who had taken part in the Main Study, and although had been willing to be re-interviewed, had not participated in the re-interviews. As far as possible her interviews followed the protocol originally used in the Main Study, but since the nature of her study was qualitative, rather

[8]It should be noted that this strong relationship between age and health state valuations was not evident in the VAS data.

than quantitative, respondents were asked to value only 7 states (as opposed to 15 in the Main Study). Respondents were asked to 'think aloud' as they completed the interview, and to explain why they made certain decisions during the TTO exercise. The findings with respect to the TTO valuations from the elderly can be summarised as follows:

(a) no evidence was found to support the view that variation in values was primarily an artefact of the TTO method

(b) evidence was found of a 'threshold of tolerability', below which states would have to fall before some respondents were prepared to give up even a few days, let alone months or years of life, to get out of them

(c) no convincing evidence was found that the elderly are more concerned than younger respondents about becoming a burden to their families

(d) older respondents appear genuinely more likely than younger respondents to consider severe states as worse than death

(e) no compelling explanation was forthcoming as to why female respondents assign lower TTO valuations to the more severe health states than do male respondents

3.2 Modelling of individual level data for 2 age groups

Analysis of the original survey data revealed that respondents over the age of 60 gave significantly lower values to the more severe states, than did the rest of the study population. In addition, there were some significant differences in the valuations given by men and women. As a consequence, parameter values have been estimated separately for male and female respondents, and for 2 age groups (under 60, 60 and over). The coefficients for each of these four subgroups is given in Table 3A.

For both younger men and younger women the decrement in valuation for a move from level 1 to level 2 is highest on the pain dimension. Whilst the corresponding decrements for older men and women are higher still, it is the self-care dimension which yields the highest decrement for the older respondents. However, for all 4 subgroups, the level 3 decrement is greatest for pain.

The usual activity dimension plays a consistently small part in accounting for changes

Table 3A: Coefficients for TTO Tariffs of Means: 4 age/sex subgroups
(10 year duration)

DIMENSION	Males < 60	Females < 60	Males 60 +	Females 60 +
Constant	0.081	0.071	0.077	0.102
Mobility				
level 2	0.071	0.062	0.073	0.076
level 3	0.320	0.287	0.374	0.316
Self-care				
level 2	0.075	0.090	0.126	0.174
level 3	0.195	0.203	0.236	0.259
Usual activity				
level 2	0.022	0.039	0.054	0.043
level 3	0.106	0.102	0.060	0.077
Pain/discomfort				
level 2	0.099	0.135	0.123	0.139
level 3	0.356	0.426	0.374	0.342
Anxiety/depression				
level 2	0.076	0.068	0.044	0.088
level 3	0.238	0.254	0.186	0.230
n3	0.219	0.253	0.328	0.364
adjusted r^2	0.47	0.48	0.45	0.46

in score, particularly for the change from level 1 to level 2.

Females aged 60 and over, have greater decrements (when N3 is also taken into account) for all changes in level across all 5 EuroQoL dimensions than females aged under 60, resulting in lower estimated values for health states. This pattern is partly reproduced amongst male respondents. However, level 2 decrements for the mobility and anxiety/depression dimensions is greater for the under 60s subgroup.

Tariffs based on each of the 4 subgroup models are given in Annexe A (see Tables A5 to A12).

3.3 Modelling of medians for 2 age groups

Model coefficients were estimated separately for each of the previously defined age/sex subgroups, and these are given in Table 3B. As noted above, for both younger men and women, it is the pain dimension which dominates the valuation shift for a move from level 1 to level 2. For older men and women it is the self-care dimension which has the greatest decrement for this level change. Younger men give roughly equal weight to a level 3 mobility and level 3 pain, whereas younger women continue to give greatest weight to pain. Whilst older women give the greatest weight to level 3 on the pain dimension, older men give greatest weight to level 3 on the mobility dimension. Usual activity continues to play a marginal role.

3.4 Modifying observed TTO valuations

Working on the assumption that values elicited from older respondents for the more severe states might be largely attributable to a strong artefactual effect, the observed values recorded by respondents aged 60 and over, for states rated as worse than death were modified as follows:

(a) the distribution of values for each state was established

(b) the corresponding distribution of values for that state recorded by younger respondents was also established

(c) values for states rated as worse than death by an older respondent were substituted by

Table 3B: Coefficients for TTO Tariffs of Medians: 4 age/sex subgroups
(10 year duration)

DIMENSION	Males < 60	Females < 60	Males 60 +	Females 60 +
Constant	0.017	-0.055	-0.081	-0.090
Mobility				
level 2	0.066	0.062	0.082	0.126
level 3	0.435	0.389	0.577	0.490
Self-care				
level 2	0.071	0.126	0.159	0.161
level 3	0.229	0.267	0.363	0.330
Usual activity				
level 2	0.029	0.060	0.053	0.079
level 3	0.138	0.134	0.100	0.158
Pain/discomfort				
level 2	0.088	0.137	0.081	0.133
level 3	0.433	0.559	0.493	0.535
Anxiety/depression				
level 2	0.065	0.104	0.093	0.109
level 3	0.286	0.348	0.310	0.424
N3	0.121	0.154	0.207	0.294
adjusted r^2	0.97	0.97	0.96	0.95

a value drawn from the equivalent position in the distribution of values recorded by younger respondents.

This process was achieved by converting the values for states worse than death into standardised z-scores

$$z_{i\,old} = \frac{x_{i\,old} - x_{i\,mean\ old}}{x_{i\,\sigma\ old}}$$

where $z_{i\,old}$ is the z-score for state i
$x_{i\,old}$ is the recorded value for state i
$x_{i\,mean\ old}$ is the mean value for state i for older respondents
$x_{i\,\sigma}$ is the standard deviation of values recorded for state i

a corresponding transformation can be applied to the scores recorded by younger respondents

$$z_{i\,young} = \frac{x_{i\,young} - x_{i\,mean\ young}}{x_{i\,\sigma\ young}}$$

the modified value ($[x]_{i\,old}$) for any state rated as worse than death by each older respondent can be recovered thus

$$[x]_{i\,old} = x_{i\,\sigma\ young} * z_{i\,old} + x_{i\,mean\ young}$$

This modification process was applied to individual respondent's data, where observed valuation indicated that a state had been rated as worse than death (i.e. had received a negative score). Only respondents aged 60 or over were treated in this way.

3.5 A "Modified" Tariff for the Over-60s

Table 3C give the coefficients for models which estimate mean values from the 'modified' dataset. Differences in the level 2 decrement for men and women are small for the first 3 dimensions, but are greater for pain/discomfort and anxiety/depression. Pain is the dominant dimension for changes in levels 2 and 3, for both groups of older respondent.

TTO tariffs of 'modified' means are given in Tables A20 and A21 of Annexe A.

Table 3D gives the corresponding coefficients for the model of 'modified' median

Table 3C: Coefficients for TTO Tariffs of modified means for older respondents population (10 year duration)

DIMENSION	Males 60 +	Females 60 +
Constant	0.099	0.082
Mobility		
level 2	0.057	0.060
level 3	0.338	0.287
Self-care		
level 2	0.095	0.102
level 3	0.195	0.206
Usual activity		
level 2	0.038	0.041
level 3	0.082	0.101
Pain/discomfort		
level 2	0.097	0.133
level 3	0.365	0.413
Anxiety/depression		
level 2	0.040	0.073
level 3	0.203	0.312
n3	0.256	0.254
adjusted r^2	0.49	0.48

Table 3D: Coefficients for TTO Tariffs of modified medians for older respondents population (10 year duration)

DIMENSION	Males 60 +	Females 60 +
Constant	-0.034	-0.055
Mobility		
level 2	0.082	0.095
level 3	0.474	0.385
Self-care		
level 2	0.128	0.133
level 3	0.300	0.275
Usual activity		
level 2	0.034	0.090
level 3	0.114	0.153
Pain/discomfort		
level 2	0.077	0.138
level 3	0.438	0.484
Anxiety/depression		
level 2	0.053	0.084
level 3	0.276	0.362
N3	0.202	0.272
adjusted r^2	0.96	0.96

values. Self-care attracts the greatest decrement for a level 2 change amongst the older men, whereas pain and self-care are given parity by older women. So far as level 3 decrements are concerned, pain again dominates the shifts in valuation.

TTO tariffs of 'modified' medians are given in Tables A23 and A24 of Annexe A.

3.6 A "Modified" General Population tariff

The result of 'modifying' older respondet's valuations for states worse than death has been described above. 'Modified' valuations from the 2 older subgroups was merged with the unmodified valuations recorded for younger respondents, so that the influence of this process could be examined in the full study population.

Table 3E gives the coefficients for models based on individual data and on median values. Once again the dominant influence of pain/discomfort can be seen in the individual-level model.

The TTO tariffs of means and medians, based on these 'modified' datasets, are given in Tables A19 and A22 of Annexe A.

3.7 Comparison of 'modified' and unmodified tariffs

Table 3F shows the mean observed TTO value and the mean of the 'modified' values, for both the study population and for male and female respondents aged 60 and over. Mean values in the 'modified' data set are consistently higher than corresponding values in the original data. The mean difference in values for the whole population is -0.025, a figure which is lower than the corresponding differences of -0.073 and -0.095 respectively, for males and females aged 60 and over. This lower mean difference is accounted for by the larger number of respondents in the study population, with the contribution of younger respondents effectively 'diluting' the impact of the modification process. However, 19 of the 43 states record differences which exceed 0.025, these states predominantly being the more severe states. Within the older respondent subgroups, there are some large differences in valuation. Mean valuations for states 33323 and 33212 amongst older women differ by more than 0.200 when 'modified' and observed scores are compared. In the older male subgroup, 'modified'

Table 3E: Coefficients for TTO Tariffs based on modified values for older respondents - whole population (10 year duration)

DIMENSION	USING INDIVIDUAL DATA	USING MEDIANS
Constant	0.084	-0.026
Mobility		
level 2	0.063	0.060
level 3	0.304	0.422
Self-care		
level 2	0.092	0.116
level 3	0.201	0.258
Usual activity		
level 2	0.035	0.037
level 3	0.101	0.153
Pain/discomfort		
level 2	0.118	0.110
level 3	0.390	0.493
Anxiety/depression		
level 2	0.070	0.095
level 3	0.242	0.318
N3	0.243	0.162
adjusted r^2	0.47	0.98

Table 3F: Comparison of mean observed and modified TTO values

	Observed			Modified			Differences		
State	all respondents	males aged 60+	females aged 60+	all respondents	males aged 60 +	females aged 60+	all respondents	males aged 60 +	females aged 60 +
21111	0.878	0.858	0.861	0.879	0.866	0.861	-0.001	-0.008	0.000
11211	0.869	0.861	0.825	0.872	0.863	0.838	-0.003	-0.002	-0.013
11121	0.850	0.833	0.818	0.852	0.842	0.822	-0.002	-0.009	-0.004
12111	0.834	0.8	0.758	0.840	0.803	0.793	-0.006	-0.003	-0.035
11112	0.829	0.853	0.766	0.831	0.858	0.779	-0.002	-0.005	-0.013
12211	0.767	0.747	0.652	0.775	0.754	0.697	-0.008	-0.007	-0.045
12121	0.742	0.733	0.697	0.749	0.760	0.716	-0.007	-0.027	-0.019
11122	0.722	0.713	0.662	0.727	0.749	0.670	-0.005	-0.036	-0.008
22112	0.665	0.679	0.541	0.675	0.698	0.591	-0.010	-0.019	-0.050
22121	0.642	0.604	0.588	0.656	0.646	0.641	-0.014	-0.042	-0.053
21222	0.553	0.55	0.48	0.566	0.589	0.531	-0.013	-0.039	-0.051
11312	0.552	0.532	0.485	0.563	0.563	0.524	-0.011	-0.031	-0.039
12222	0.551	0.597	0.405	0.566	0.623	0.481	-0.015	-0.026	-0.076
22122	0.540	0.492	0.417	0.560	0.549	0.488	-0.020	-0.057	-0.071

State	all	male	female	all	male	female	all	male	female
21312	0.536	0.585	0.461	0.550	0.603	0.514	-0.014	-0.018	-0.053
22222	0.500	0.418	0.365	0.521	0.500	0.440	-0.021	-0.082	-0.075
11113	0.392	0.394	0.235	0.410	0.429	0.312	-0.018	-0.035	-0.077
13212	0.389	0.36	0.289	0.409	0.398	0.392	-0.020	-0.038	-0.103
13311	0.346	0.236	0.183	0.380	0.316	0.318	-0.034	-0.080	-0.135
12223	0.216	0.171	0.068	0.242	0.272	0.152	-0.026	-0.101	-0.084
11131	0.200	0.25	0.187	0.203	0.269	0.187	-0.003	-0.019	0.000
21323	0.160	0.216	0.026	0.180	0.234	0.138	-0.020	-0.018	-0.112
32211	0.152	-0.026	-0.071	0.202	0.133	0.117	-0.050	-0.159	-0.188
23321	0.147	0.127	-0.033	0.200	0.308	0.161	-0.053	-0.181	-0.194
21232	0.064	0.084	-0.077	0.084	0.152	-0.005	-0.020	-0.068	-0.072
22323	0.042	-0.02	-0.153	0.074	0.089	-0.015	-0.032	-0.109	-0.138
22331	-0.011	1.47e-39	-0.131	0.010	0.071	-0.053	-0.021	-0.071	-0.078
33212	-0.022	-0.168	-0.251	0.035	0.005	-0.044	-0.057	-0.173	-0.207
11133	-0.049	-0.043	-0.173	-0.023	0.039	-0.069	-0.026	-0.082	-0.104
21133	-0.063	-0.05	-0.217	-0.033	-0.039	-0.059	-0.030	-0.011	-0.158
23313	-0.070	-0.071	-0.225	-0.034	0.021	-0.084	-0.036	-0.092	-0.141
23232	-0.084	-0.187	-0.276	-0.039	-0.042	-0.126	-0.045	-0.145	-0.150

State	all	male	female	all	male	female	all	male	female
33321	-0.120	-0.155	-0.27	-0.091	-0.118	-0.127	-0.029	-0.037	-0.143
22233	-0.142	-0.174	-0.297	-0.115	-0.071	-0.207	-0.027	-0.103	-0.090
32313	-0.152	-0.184	-0.342	-0.106	-0.113	-0.148	-0.046	-0.071	-0.194
32223	-0.174	-0.308	-0.342	-0.131	-0.130	-0.215	-0.043	-0.178	-0.127
32232	-0.223	-0.402	-0.34	-0.179	-0.248	-0.192	-0.044	-0.154	-0.148
13332	-0.228	-0.284	-0.416	-0.184	-0.145	-0.268	-0.044	-0.139	-0.148
32331	-0.276	-0.367	-0.473	-0.231	-0.239	-0.300	-0.045	-0.128	-0.173
33232	-0.332	-0.443	-0.446	-0.293	-0.266	-0.335	-0.039	-0.177	-0.111
33323	-0.386	-0.435	-0.592	-0.336	-0.306	-0.387	-0.050	-0.129	-0.205
UNCONS	-0.402	-0.475	-0.573	-0.355	-0.306	-0.417	-0.047	-0.169	-0.156
33333	-0.543	-0.57	-0.614	-0.524	-0.491	-0.555	-0.019	-0.079	-0.059
				Mean difference			-0.025	-0.073	-0.095

mean values for 14 of the 43 states differ by more than 0.1 from the mean value recorded in the observed data. For females aged 60 and over, there are 20 such states.

4. VAS-BASED TARIFFS: WHOLE POPULATION

4.1 The VAS data

Each respondent rated 15 health states on a 20cm visual analogue scale with endpoints of 100 (indicating 'best imaginable health state') and 0 (indicating 'worst imaginable health state'). For each respondent, these data were transformed so as to render them comparable with the TTO scoring convention in which the state 11111 (full health) has a value of 1, and death has a value of 0. The following transformation was applied to the recorded score assigned to each health state

$$V_x' = \frac{S_x - S_{death}}{S_{11111} - S_{death}}$$

where V_x' = transformed score for health state x
S_{11111} = recorded score for state 11111
S_x = recorded score for health state x
S_{death} = recorded score for state 'death'

4.2 Tariff of mean values based on individual responses

The coefficients given in Table 4A show that the largest decrement for a change from level 1 to level 2 is associated with the self-care dimension, although the difference in decrement for the mobility, self-care and pain dimensions is broadly similar. The mobility and pain dimensions account for the largest decrements in scores for a change from level 2 to level 3.

Estimated values for the 42 EuroQoL health states based on this model can be compared with the actual values, as shown in Table 4B. The mean absolute difference between the estimated values and the mean/median observed scores is similar but slightly lower for observed medians. The greatest difference recorded between the observed mean and estimated value is 0.086 (for states 21222 and 11133).

The tariff of mean values for all 243 health states is given in Table 4C. The vast majority of states receive positive scores, with only 4 states - 32333 / 33233 / 33332 and

33333 - being rated as worse than death.

Table 4A: Coefficients for VAS Tariffs of Means and Medians: whole population
(10 year duration)

DIMENSION	USING INDIVIDUAL DATA	USING MEDIANS
Constant	0.155	0.117
Mobility		
level 2	0.071	0.073
level 3	0.182	0.179
Self-care		
level 2	0.093	0.100
level 3	0.145	0.146
Usual activity		
level 2	0.031	0.032
level 3	0.081	0.072
Pain/discomfort		
level 2	0.084	0.087
level 3	0.171	0.176
Anxiety/depression		
level 2	0.063	0.067
level 3	0.124	0.124
n3	0.215	0.225
adjusted r^2	0.47	0.97

Table 4B: Comparison of estimated with actual values: individual VAS data (10 year duration)

State	Actual median	Actual mean	Estimated(E)	Mean-E	Median-E
1 1 1 1 2	0.87	0.81	0.782	0.028	0.088
1 1 1 2 1	0.86	0.81	0.762	0.048	0.098
1 1 2 1 1	0.85	0.81	0.814	-0.004	0.036
2 1 1 1 1	0.85	0.79	0.774	0.016	0.076
1 2 1 1 1	0.84	0.79	0.752	0.038	0.088
1 2 2 1 1	0.73	0.68	0.721	-0.041	0.009
1 1 1 2 2	0.72	0.66	0.698	-0.038	0.022
1 2 1 2 1	0.71	0.66	0.668	-0.008	0.042
2 2 1 2 1	0.64	0.57	0.597	-0.027	0.043
2 2 1 1 2	0.63	0.59	0.618	-0.028	0.012
2 1 2 2 2	0.56	0.51	0.596	-0.086	-0.036
1 2 2 2 2	0.55	0.52	0.575	-0.055	-0.025
2 2 1 2 2	0.53	0.50	0.534	-0.034	-0.004
1 1 3 1 2	0.53	0.50	0.487	0.013	0.043
1 1 1 1 3	0.51	0.47	0.507	-0.037	0.003
2 1 3 1 2	0.50	0.43	0.416	0.014	0.084
2 2 2 2 2	0.50	0.45	0.503	-0.053	-0.003
1 1 1 3 1	0.45	0.39	0.460	-0.070	-0.010
1 3 2 1 2	0.45	0.40	0.392	0.008	0.058
1 3 3 1 1	0.40	0.34	0.405	-0.065	-0.005
1 2 2 2 3	0.37	0.32	0.299	0.021	0.071
2 1 2 3 2	0.33	0.31	0.294	0.016	0.036
3 2 2 1 1	0.30	0.28	0.324	-0.044	-0.024
1 1 1 3 3	0.30	0.25	0.336	-0.086	-0.036
2 1 3 2 3	0.30	0.21	0.271	-0.061	0.029
2 3 3 2 1	0.26	0.24	0.250	-0.010	0.010
2 1 1 3 3	0.25	0.19	0.264	-0.074	-0.014
2 2 3 3 1	0.25	0.16	0.214	-0.054	0.036
2 2 3 2 3	0.25	0.13	0.178	-0.048	0.072
3 3 2 1 2	0.22	0.14	0.209	-0.069	0.011
2 3 2 3 2	0.21	0.18	0.149	0.031	0.061
2 3 3 1 3	0.20	0.13	0.209	-0.079	-0.009
3 2 2 3 2	0.17	0.06	0.090	-0.030	0.080
2 2 2 3 3	0.17	0.12	0.140	-0.020	0.030
3 2 3 1 3	0.16	0.11	0.151	-0.041	0.009
1 3 3 3 2	0.16	0.11	0.171	-0.061	-0.011
3 3 3 2 1	0.15	0.08	0.139	-0.059	0.011
3 2 2 2 3	0.15	0.10	0.117	-0.017	0.033
3 2 3 3 1	0.13	0.03	0.104	-0.074	0.026
3 3 2 3 2	0.10	0.01	0.038	-0.028	0.062
3 3 3 2 3	0.07	-0.03	0.015	-0.045	0.055
3 3 3 3 3	0.0	-0.13	-0.072	-0.058	0.072
Mean absolute difference				0.041	0.038

Table 4C: VAS Tariff of Means: whole population
(10 year duration)

1	1	1	1	1	1.000	1	2	3	1	1	0.457	2	1	2	1	1	0.743
1	1	1	1	2	0.782	1	2	3	1	2	0.394	2	1	2	1	2	0.680
1	1	1	1	3	0.507	1	2	3	1	3	0.333	2	1	2	1	3	0.405
1	1	1	2	1	0.762	1	2	3	2	1	0.373	2	1	2	2	1	0.659
1	1	1	2	2	0.698	1	2	3	2	2	0.310	2	1	2	2	2	0.596
1	1	1	2	3	0.423	1	2	3	2	3	0.249	2	1	2	2	3	0.321
1	1	1	3	1	0.460	1	2	3	3	1	0.286	2	1	2	3	1	0.357
1	1	1	3	2	0.397	1	2	3	3	2	0.223	2	1	2	3	2	0.294
1	1	1	3	3	0.336	1	2	3	3	3	0.162	2	1	2	3	3	0.234
1	1	2	1	1	0.814	1	3	1	1	1	0.485	2	1	3	1	1	0.479
1	1	2	1	2	0.751	1	3	1	1	2	0.422	2	1	3	1	2	0.416
1	1	2	1	3	0.476	1	3	1	1	3	0.361	2	1	3	1	3	0.355
1	1	2	2	1	0.731	1	3	1	2	1	0.402	2	1	3	2	1	0.395
1	1	2	2	2	0.668	1	3	1	2	2	0.339	2	1	3	2	2	0.332
1	1	2	2	3	0.392	1	3	1	2	3	0.278	2	1	3	2	3	0.271
1	1	2	3	1	0.429	1	3	1	3	1	0.314	2	1	3	3	1	0.308
1	1	2	3	2	0.366	1	3	1	3	2	0.251	2	1	3	3	2	0.245
1	1	2	3	3	0.305	1	3	1	3	3	0.190	2	1	3	3	3	0.184
1	1	3	1	1	0.550	1	3	2	1	1	0.455	2	2	1	1	1	0.681
1	1	3	1	2	0.487	1	3	2	1	2	0.392	2	2	1	1	2	0.618
1	1	3	1	3	0.426	1	3	2	1	3	0.331	2	2	1	1	3	0.342
1	1	3	2	1	0.466	1	3	2	2	1	0.371	2	2	1	2	1	0.597
1	1	3	2	2	0.403	1	3	2	2	2	0.308	2	2	1	2	2	0.534
1	1	3	2	3	0.342	1	3	2	2	3	0.247	2	2	1	2	3	0.259
1	1	3	3	1	0.379	1	3	2	3	1	0.284	2	2	1	3	1	0.295
1	1	3	3	2	0.316	1	3	2	3	2	0.221	2	2	1	3	2	0.232
1	1	3	3	3	0.255	1	3	2	3	3	0.160	2	2	1	3	3	0.171
1	2	1	1	1	0.752	1	3	3	1	1	0.405	2	2	2	1	1	0.650
1	2	1	1	2	0.689	1	3	3	1	2	0.342	2	2	2	1	2	0.587
1	2	1	1	3	0.414	1	3	3	1	3	0.281	2	2	2	1	3	0.311
1	2	1	2	1	0.668	1	3	3	2	1	0.321	2	2	2	2	1	0.566
1	2	1	2	2	0.605	1	3	3	2	2	0.258	2	2	2	2	2	0.503
1	2	1	2	3	0.330	1	3	3	2	3	0.197	2	2	2	2	3	0.228
1	2	1	3	1	0.366	1	3	3	3	1	0.234	2	2	2	3	1	0.264
1	2	1	3	2	0.303	1	3	3	3	2	0.171	2	2	2	3	2	0.201
1	2	1	3	3	0.243	1	3	3	3	3	0.110	2	2	2	3	3	0.140
1	2	2	1	1	0.721	2	1	1	1	1	0.774	2	2	3	1	1	0.385
1	2	2	1	2	0.658	2	1	1	1	2	0.711	2	2	3	1	2	0.322
1	2	2	1	3	0.383	2	1	1	1	3	0.435	2	2	3	1	3	0.262
1	2	2	2	1	0.638	2	1	1	2	1	0.690	2	2	3	2	1	0.302
1	2	2	2	2	0.575	2	1	1	2	2	0.627	2	2	3	2	2	0.239
1	2	2	2	3	0.299	2	1	1	2	3	0.352	2	2	3	2	3	0.178
1	2	2	3	1	0.336	2	1	1	3	1	0.388	2	2	3	3	1	0.214
1	2	2	3	2	0.273	2	1	1	3	2	0.325	2	2	3	3	2	0.151
1	2	2	3	3	0.212	2	1	1	3	3	0.264	2	2	3	3	3	0.091

2	3	1	1	1	0.414	3	1	3	2	1	0.284	3	3	2	3	1	0.101
2	3	1	1	2	0.351	3	1	3	2	2	0.221	3	3	2	3	2	0.038
2	3	1	1	3	0.290	3	1	3	2	3	0.160	3	3	2	3	3	-0.023
2	3	1	2	1	0.330	3	1	3	3	1	0.197	3	3	3	1	1	0.222
2	3	1	2	2	0.267	3	1	3	3	2	0.134	3	3	3	1	2	0.159
2	3	1	2	3	0.206	3	1	3	3	3	0.073	3	3	3	1	3	0.099
2	3	1	3	1	0.243	3	2	1	1	1	0.355	3	3	3	2	1	0.139
2	3	1	3	2	0.180	3	2	1	1	2	0.292	3	3	3	2	2	0.076
2	3	1	3	3	0.119	3	2	1	1	3	0.231	3	3	3	2	3	0.015
2	3	2	1	1	0.383	3	2	1	2	1	0.272	3	3	3	3	1	0.051
2	3	2	1	2	0.320	3	2	1	2	2	0.209	3	3	3	3	2	-0.012
2	3	2	1	3	0.259	3	2	1	2	3	0.148	3	3	3	3	3	-0.072
2	3	2	2	1	0.299	3	2	1	3	1	0.184						
2	3	2	2	2	0.236	3	2	1	3	2	0.121	Unconscious					[-0.042]
2	3	2	2	3	0.176	3	2	1	3	3	0.060						
2	3	2	3	1	0.212	3	2	2	1	1	0.324						
2	3	2	3	2	0.149	3	2	2	1	2	0.262						
2	3	2	3	3	0.088	3	2	2	1	3	0.201						
2	3	3	1	1	0.333	3	2	2	2	1	0.241						
2	3	3	1	2	0.270	3	2	2	2	2	0.178						
2	3	3	1	3	0.209	3	2	2	2	3	0.117						
2	3	3	2	1	0.250	3	2	2	3	1	0.153						
2	3	3	2	2	0.187	3	2	2	3	2	0.090						
2	3	3	2	3	0.126	3	2	2	3	3	0.030						
2	3	3	3	1	0.162	3	2	3	1	1	0.275						
2	3	3	3	2	0.099	3	2	3	1	2	0.212						
2	3	3	3	3	0.038	3	2	3	1	3	0.151						
3	1	1	1	1	0.448	3	2	3	2	1	0.191						
3	1	1	1	2	0.385	3	2	3	2	2	0.128						
3	1	1	1	3	0.324	3	2	3	2	3	0.067						
3	1	1	2	1	0.365	3	2	3	3	1	0.104						
3	1	1	2	2	0.302	3	2	3	3	2	0.041						
3	1	1	2	3	0.241	3	2	3	3	3	-0.020						
3	1	1	3	1	0.277	3	3	1	1	1	0.303						
3	1	1	3	2	0.214	3	3	1	1	2	0.240						
3	1	1	3	3	0.153	3	3	1	1	3	0.179						
3	1	2	1	1	0.418	3	3	1	2	1	0.219						
3	1	2	1	2	0.355	3	3	1	2	2	0.156						
3	1	2	1	3	0.294	3	3	1	2	3	0.096						
3	1	2	2	1	0.334	3	3	1	3	1	0.132						
3	1	2	2	2	0.271	3	3	1	3	2	0.069						
3	1	2	2	3	0.210	3	3	1	3	3	0.008						
3	1	2	3	1	0.247	3	3	2	1	1	0.272						
3	1	2	3	2	0.184	3	3	2	1	2	0.209						
3	1	2	3	3	0.123	3	3	2	1	3	0.148						
3	1	3	1	1	0.368	3	3	2	2	1	0.189						
3	1	3	1	2	0.305	3	3	2	2	2	0.126						
3	1	3	1	3	0.244	3	3	2	2	3	0.065						

4.3 Tariff of medians based on median scores

The coefficients for the model based on median VAS scores are given in Table 4A. The highest decrement for level 2 is seen in the self-care dimension, whilst for level 3 the highest decrement is associated with the mobility dimension. In comparison to the other dimensions, usual activity plays a relatively minor role in affecting changes in scores.

Estimated values for the 42 EuroQoL health states based on this model are compared with the actual values in Table 4D. The mean absolute difference between estimated and median observed values is somewhat smaller than that for the mean. The largest differences, in excess of 0.06, are seen for states 11121 / 21222 and 32232.

The VAS tariff of medians is given in Table 4E. Only 1 state - 33333 - has a negative score, indicating a state worse than death.

4.4 Comparing the tariff of means and the tariff of medians

The tariffs of mean and median VAS scores are remarkably similar, with 50% of states differing by less than 0.025, and 75% of states differing by less than 0.03. However, medians are systematically higher than corresponding mean values for the same state. The greatest differences are seen in the values for states 31311 / 33311 / 31313 and 33313, which combine extreme levels on mobility and usual activity, with no problems on some other dimensions.

Table 4D: Comparison of estimated with actual values: median VAS values (10 year duration)

State	Actual median	Actual mean	Estimated(E)	Mean-E	Median-E
1 1 1 1 2	0.87	0.81	0.816	-0.006	0.054
1 1 1 2 1	0.86	0.81	0.796	0.014	0.064
1 1 2 1 1	0.85	0.81	0.851	-0.041	-0.001
2 1 1 1 1	0.85	0.79	0.810	-0.020	0.040
1 2 1 1 1	0.84	0.79	0.784	0.006	0.056
1 2 2 1 1	0.73	0.68	0.751	-0.071	-0.021
1 1 1 2 2	0.72	0.66	0.729	-0.069	-0.009
1 2 1 2 1	0.71	0.66	0.697	-0.037	0.013
2 2 1 2 1	0.64	0.57	0.623	-0.053	0.017
2 2 1 1 2	0.63	0.59	0.643	-0.053	-0.013
2 1 2 2 2	0.56	0.51	0.624	-0.114	-0.064
1 2 2 2 2	0.55	0.52	0.598	-0.078	-0.048
2 2 1 2 2	0.53	0.50	0.556	-0.056	-0.026
1 1 3 1 2	0.53	0.50	0.520	-0.020	0.010
1 1 1 1 3	0.51	0.47	0.534	-0.064	-0.024
2 1 3 1 2	0.50	0.43	0.447	-0.017	0.053
2 2 2 2 2	0.50	0.45	0.524	-0.074	-0.024
1 1 1 3 1	0.45	0.39	0.483	-0.093	-0.033
1 3 2 1 2	0.45	0.40	0.414	-0.014	0.036
1 3 3 1 1	0.40	0.34	0.441	-0.101	-0.041
1 2 2 2 3	0.37	0.32	0.315	0.005	0.055
2 1 2 3 2	0.33	0.31	0.311	-0.001	0.019
3 2 2 1 1	0.30	0.28	0.347	-0.067	-0.047
1 1 1 3 3	0.30	0.25	0.359	-0.109	-0.059
2 1 3 2 3	0.30	0.21	0.302	-0.092	-0.002
2 3 3 2 1	0.26	0.24	0.280	-0.040	-0.020
2 1 1 3 3	0.25	0.19	0.285	-0.095	-0.035
2 2 3 3 1	0.25	0.16	0.238	-0.078	0.012
2 2 3 2 3	0.25	0.13	0.202	-0.072	0.048
3 3 2 1 2	0.22	0.14	0.234	-0.094	-0.014
2 3 2 3 2	0.21	0.18	0.165	0.015	0.045
2 3 3 1 3	0.20	0.13	0.243	-0.113	-0.043
3 2 2 3 2	0.17	0.06	0.105	-0.045	0.065
2 2 2 3 3	0.17	0.12	0.153	-0.033	0.017
3 2 3 1 3	0.16	0.11	0.183	-0.073	-0.023
1 3 3 3 2	0.16	0.11	0.199	-0.089	-0.039
3 3 3 2 1	0.15	0.08	0.174	-0.094	-0.024
3 2 2 2 3	0.15	0.10	0.136	-0.036	0.014
3 2 3 3 1	0.13	0.03	0.132	-0.102	-0.002
3 3 2 3 2	0.10	0.01	0.059	-0.049	0.041
3 3 3 2 3	0.07	-0.03	0.050	-0.080	0.020
3 3 3 3 3	0.00	-0.13	-0.039	-0.091	0.039
Mean absolute difference				0.059	0.032

Table 4E: VAS Tariff of Medians: whole population
(10 year duration)

1	1	1	1	1	1.000	1	2	3	1	1	0.487	2	1	2	1	1	0.778
1	1	1	1	2	0.816	1	2	3	1	2	0.421	2	1	2	1	2	0.711
1	1	1	1	3	0.534	1	2	3	1	3	0.363	2	1	2	1	3	0.429
1	1	1	2	1	0.796	1	2	3	2	1	0.400	2	1	2	2	1	0.691
1	1	1	2	2	0.729	1	2	3	2	2	0.334	2	1	2	2	2	0.624
1	1	1	2	3	0.447	1	2	3	2	3	0.276	2	1	2	2	3	0.342
1	1	1	3	1	0.483	1	2	3	3	1	0.312	2	1	2	3	1	0.377
1	1	1	3	2	0.416	1	2	3	3	2	0.245	2	1	2	3	2	0.311
1	1	1	3	3	0.359	1	2	3	3	3	0.187	2	1	2	3	3	0.253
1	1	2	1	1	0.851	1	3	1	1	1	0.513	2	1	3	1	1	0.514
1	1	2	1	2	0.784	1	3	1	1	2	0.446	2	1	3	1	2	0.447
1	1	2	1	3	0.502	1	3	1	1	3	0.388	2	1	3	1	3	0.389
1	1	2	2	1	0.764	1	3	1	2	1	0.426	2	1	3	2	1	0.427
1	1	2	2	2	0.697	1	3	1	2	2	0.359	2	1	3	2	2	0.360
1	1	2	2	3	0.415	1	3	1	2	3	0.301	2	1	3	2	3	0.302
1	1	2	3	1	0.451	1	3	1	3	1	0.337	2	1	3	3	1	0.338
1	1	2	3	2	0.384	1	3	1	3	2	0.270	2	1	3	3	2	0.271
1	1	2	3	3	0.326	1	3	1	3	3	0.213	2	1	3	3	3	0.213
1	1	3	1	1	0.587	1	3	2	1	1	0.480	2	2	1	1	1	0.710
1	1	3	1	2	0.520	1	3	2	1	2	0.414	2	2	1	1	2	0.643
1	1	3	1	3	0.463	1	3	2	1	3	0.356	2	2	1	1	3	0.361
1	1	3	2	1	0.500	1	3	2	2	1	0.393	2	2	1	2	1	0.623
1	1	3	2	2	0.433	1	3	2	2	2	0.327	2	2	1	2	2	0.556
1	1	3	2	3	0.376	1	3	2	2	3	0.269	2	2	1	2	3	0.274
1	1	3	3	1	0.411	1	3	2	3	1	0.305	2	2	1	3	1	0.310
1	1	3	3	2	0.345	1	3	2	3	2	0.238	2	2	1	3	2	0.243
1	1	3	3	3	0.287	1	3	2	3	3	0.180	2	2	1	3	3	0.185
1	2	1	1	1	0.784	1	3	3	1	1	0.441	2	2	2	1	1	0.678
1	2	1	1	2	0.717	1	3	3	1	2	0.374	2	2	2	1	2	0.611
1	2	1	1	3	0.435	1	3	3	1	3	0.317	2	2	2	1	3	0.329
1	2	1	2	1	0.697	1	3	3	2	1	0.354	2	2	2	2	1	0.591
1	2	1	2	2	0.630	1	3	3	2	2	0.287	2	2	2	2	2	0.524
1	2	1	2	3	0.348	1	3	3	2	3	0.229	2	2	2	2	3	0.242
1	2	1	3	1	0.383	1	3	3	3	1	0.265	2	2	2	3	1	0.278
1	2	1	3	2	0.317	1	3	3	3	2	0.199	2	2	2	3	2	0.211
1	2	1	3	3	0.259	1	3	3	3	3	0.141	2	2	2	3	3	0.153
1	2	2	1	1	0.751	2	1	1	1	1	0.810	2	2	3	1	1	0.414
1	2	2	1	2	0.685	2	1	1	1	2	0.743	2	2	3	1	2	0.347
1	2	2	1	3	0.402	2	1	1	1	3	0.461	2	2	3	1	3	0.289
1	2	2	2	1	0.664	2	1	1	2	1	0.723	2	2	3	2	1	0.327
1	2	2	2	2	0.598	2	1	1	2	2	0.656	2	2	3	2	2	0.260
1	2	2	2	3	0.315	2	1	1	2	3	0.374	2	2	3	2	3	0.202
1	2	2	3	1	0.351	2	1	1	3	1	0.410	2	2	3	3	1	0.238
1	2	2	3	2	0.285	2	1	1	3	2	0.343	2	2	3	3	2	0.172
1	2	2	3	3	0.227	2	1	1	3	3	0.285	2	2	3	3	3	0.114

2	3	1	1	1	0.439	3	1	3	2	1	0.321	3	3	2	3	1	0.125
2	3	1	1	2	0.372	3	1	3	2	2	0.254	3	3	2	3	2	0.059
2	3	1	1	3	0.315	3	1	3	2	3	0.196	3	3	2	3	3	0.001
2	3	1	2	1	0.352	3	1	3	3	1	0.232	3	3	3	1	1	0.261
2	3	1	2	2	0.285	3	1	3	3	2	0.165	3	3	3	1	2	0.195
2	3	1	2	3	0.228	3	1	3	3	3	0.107	3	3	3	1	3	0.137
2	3	1	3	1	0.264	3	2	1	1	1	0.380	3	3	3	2	1	0.174
2	3	1	3	2	0.197	3	2	1	1	2	0.313	3	3	3	2	2	0.108
2	3	1	3	3	0.139	3	2	1	1	3	0.255	3	3	3	2	3	0.050
2	3	2	1	1	0.407	3	2	1	2	1	0.293	3	3	3	3	1	0.086
2	3	2	1	2	0.340	3	2	1	2	2	0.226	3	3	3	3	2	0.019
2	3	2	1	3	0.283	3	2	1	2	3	0.168	3	3	3	3	3	-0.039
2	3	2	2	1	0.320	3	2	1	3	1	0.204						
2	3	2	2	2	0.253	3	2	1	3	2	0.137	Unconscious					[0.010]
2	3	2	2	3	0.195	3	2	1	3	3	0.079						
2	3	2	3	1	0.231	3	2	2	1	1	0.347						
2	3	2	3	2	0.165	3	2	2	1	2	0.281						
2	3	2	3	3	0.107	3	2	2	1	3	0.223						
2	3	3	1	1	0.368	3	2	2	2	1	0.260						
2	3	3	1	2	0.301	3	2	2	2	2	0.194						
2	3	3	1	3	0.243	3	2	2	2	3	0.136						
2	3	3	2	1	0.280	3	2	2	3	1	0.172						
2	3	3	2	2	0.214	3	2	2	3	2	0.105						
2	3	3	2	3	0.156	3	2	2	3	3	0.047						
2	3	3	3	1	0.192	3	2	3	1	1	0.308						
2	3	3	3	2	0.125	3	2	3	1	2	0.241						
2	3	3	3	3	0.067	3	2	3	1	3	0.183						
3	1	1	1	1	0.479	3	2	3	2	1	0.221						
3	1	1	1	2	0.412	3	2	3	2	2	0.154						
3	1	1	1	3	0.355	3	2	3	2	3	0.096						
3	1	1	2	1	0.392	3	2	3	3	1	0.132						
3	1	1	2	2	0.325	3	2	3	3	2	0.066						
3	1	1	2	3	0.268	3	2	3	3	3	0.008						
3	1	1	3	1	0.304	3	3	1	1	1	0.333						
3	1	1	3	2	0.237	3	3	1	1	2	0.266						
3	1	1	3	3	0.179	3	3	1	1	3	0.209						
3	1	2	1	1	0.447	3	3	1	2	1	0.246						
3	1	2	1	2	0.380	3	3	1	2	2	0.179						
3	1	2	1	3	0.323	3	3	1	2	3	0.122						
3	1	2	2	1	0.360	3	3	1	3	1	0.158						
3	1	2	2	2	0.293	3	3	1	3	2	0.091						
3	1	2	2	3	0.236	3	3	1	3	3	0.033						
3	1	2	3	1	0.271	3	3	2	1	1	0.301						
3	1	2	3	2	0.205	3	3	2	1	2	0.234						
3	1	2	3	3	0.147	3	3	2	1	3	0.176						
3	1	3	1	1	0.408	3	3	2	2	1	0.214						
3	1	3	1	2	0.341	3	3	2	2	2	0.147						
3	1	3	1	3	0.283	3	3	2	2	3	0.090						

5. VAS-BASED TARIFFS: SUBGROUPS BY EDUCATIONAL LEVEL

5.1 Education and Social Class

Analysis of the main survey data had previously revealed a strong effect of social class and education in differentiating respondents' values for health states. Median values for social classes I and II tended to be lower than those for social classes III-V. Similarly, median values for respondents with degree qualifications were lower than those for respondents with intermediate or basic education only. Given the strong association between social class and attained education, and the greater ease of coding the latter, level of education here stands as a proxy for social class. Hence, the principal subgroup analysis of the VAS focuses on these 3 groups of respondents.

5.2 Tariffs of means for different education levels

The coefficients for 3 educational subgroups are shown in Table 5A. Within subgroup, level 2 decrements are greatest for the self-care dimension, except for respondents with intermediate education where the decrements for self-care and pain/discomfort dimensions are roughly equal. For all 3 subgroups, the highest decrements for level 3 are associated with the mobility dimension. It is noteworthy that the value for N3 reduces with decreasing level of education. Respondents with degree level education appear to be less tolerant of extreme levels of problem than those with minimum education.

The VAS tariffs of means for these 3 educational subgroups are shown in Tables A13 to A15 in Annexe A.

5.3 Tariffs of medians for different education levels

The coefficients for models based on median VAS scores for 3 educational subgroups are given in Table 5B. As seen above, the highest level 2 decrement is associated with the self-care dimension. Pain/discomfort accounts for the highest level 3 decrement for the degree level and intermediate groups, with mobility and pain having virtually identical decrements for the minimum education group.

The VAS tariffs of medians for these 3 educational levels are given in Tables A16 to A18 of Annexe A.

Table 5A: Coefficients for VAS Tariffs of Means: 3 educational subgroups (10 year duration)

DIMENSION	Degree level	Intermediate	Minimum
Constant	0.158	0.158	0.158
Mobility			
level 2	0.074	0.070	0.071
level 3	0.174	0.186	0.182
Self-care			
level 2	0.096	0.089	0.096
level 3	0.126	0.142	0.158
Usual activity			
level 2	0.029	0.035	0.027
level 3	0.076	0.086	0.078
Pain/discomfort			
level 2	0.094	0.090	0.069
level 3	0.171	0.173	0.160
Anxiety/depression			
level 2	0.082	0.058	0.059
level 3	0.142	0.111	0.130
N3	0.251	0.220	0.186
adjusted r^2	0.49	0.49	0.49

Table 5B: Coefficients for VAS Tariffs of Medians: 3 educational subgroups (10 year duration)

DIMENSION	Degree level	Intermediate	Minimum
Constant	0.120	0.115	0.110
Mobility			
level 2	0.075	0.073	0.072
level 3	0.156	0.170	0.173
Self-care			
level 2	0.109	0.113	0.114
level 3	0.150	0.157	0.166
Usual activity			
level 2	0.029	0.032	0.028
level 3	0.059	0.072	0.062
Pain/discomfort			
level 2	0.086	0.078	0.075
level 3	0.184	0.176	0.167
Anxiety/depression			
level 2	0.080	0.065	0.059
level 3	0.126	0.110	0.118
N3	0.260	0.230	0.213
adjusted r^2	0.97	0.97	0.96

6. THE RELATIONSHIP BETWEEN TTO AND VAS SCORES

6.1 Why is this of any practical importance?

Scaling methods which are utility-based tend to be resource-intensive in that they are often interviewer-based, and may require special aids to present descriptions of health states, and to enable respondents to record their valuations of them. Such methods, however, are favoured by many researchers who consider them to be well-grounded in theory, or who demand that expressions of preference must involve an element of choice. Trade-off techniques such as standard gamble and TTO have been widely employed in the measurement of health state valuations over the past 2 decades, and it is likely that they will continue to play a dominant role. The current MVH study is itself likely to contribute to that process.

Despite the arguable methodological supremacy of choice-based methods, there remains uncertainty about the 'correct' method for use in determining valuations for health states. Simpler, less demanding methods have been utilised, and foremost amongst these has been category rating, of which the visual analogue scale is a graphical form. This technique has been adopted by the EuroQoL Group as the standard form by which valuations are obtained in postal surveys, and was included as a candidate in the earlier MVH study which compared the performance of different scaling methods.

Given that different scaling methods applied to the same health states tend to yield different valuations, a question arises as to the form of any relationship between these values. Quite apart from this methodological interest, there is a strong practical reason for considering this question. If the results obtained using a 'simple', technically accessible method could be systematically related to those obtained using a more 'complex' method, then the former could be deployed when resources precluded the use of relatively expensive interviewer-based methods.

6.2 Deriving a functional relationship between TTO and VAS data

For the purposes of this study it was considered appropriate to investigate only the form of any relationship that linked the estimated values for any health state. Hence two general sets of data exist - estimated scores for 243 health states produced using the standard

models applied to the individual and aggregate [median] TTO data (see Tables 2C and 2E), and an equivalent set of scores based on the VAS models (see Tables 4C and 4E). The general problem to be investigated amounted to seeking an arithmetic process by which TTO values (based on models of either individual responses or median values) for all health states, could be estimated, given knowledge of the corresponding VAS rating.

Various functional forms were used to examine the nature of the relationship between the VAS and TTO valuations. A general equation of the following form resulted from this study

$$TTO_i = a_0 + a_1 . VAS_i + a_2 . VAS_i^2$$

where
VAS_i is the 'observed' VAS score for health state i
TTO_i is the predicted TTO value for health state i
a_0 a_1 a_2 are coefficients with different values assigned when individual-level or median VAS data are modelled

The values of coefficients for the two forms of equation is as follows

	Estimated values based on means	Estimated values based on medians
a_0	-0.445	-0.704
a_1	2.112	3.313
a_2	-0.580	-1.604
r^2	0.99	0.98

Table 6A presents the mean observed TTO values for 42 EuroQol health states, together with estimated values derived using the function form specified above. The arithmetic differences between observed and estimated mean values ranges from over -.2 for 11133 and 11131, to less than 0.005 for 11211 and 12211. The mean absolute difference in observed and estimated values is 0.065.

Table 6B presents similar data for estimated median values. The range of residuals is comparable to that seen for estimated mean values, although the mean absolute difference is somewhat higher at 0.094.

Table 6A: Comparison of estimated and observed TTO mean values

State	Observed mean	Estimated Mean	Difference
2 1 1 1 1	0.878	0.880	-0.002
1 1 2 1 1	0.869	0.860	0.009
1 1 1 2 1	0.850	0.825	0.025
1 2 1 1 1	0.834	0.847	-0.013
1 1 1 1 2	0.829	0.884	-0.055
1 2 2 1 1	0.767	0.763	0.004
1 2 1 2 1	0.742	0.727	0.015
1 1 1 2 2	0.722	0.766	-0.044
2 2 1 1 2	0.662	0.724	-0.062
2 2 1 2 1	0.645	0.658	-0.013
2 1 2 2 2	0.553	0.608	-0.055
1 1 3 1 2	0.552	0.477	0.075
1 2 2 2 2	0.551	0.567	-0.016
2 2 1 2 2	0.540	0.592	-0.052
2 1 3 1 2	0.536	0.399	0.137
2 2 2 2 2	0.500	0.493	0.007
1 1 1 1 3	0.392	0.496	-0.104
1 3 2 1 2	0.389	0.264	0.125
1 3 3 1 1	0.346	0.304	0.042
1 2 2 2 3	0.216	0.101	0.115
1 1 1 3 1	0.200	0.426	-0.226
2 1 3 2 3	0.160	0.108	0.052
3 2 2 1 1	0.152	0.208	-0.056
2 3 3 2 1	0.147	0.050	0.097
2 1 2 3 2	0.064	0.152	-0.088
2 2 3 2 3	0.042	-0.035	0.077
2 2 3 3 1	-0.011	0.058	-0.069
3 3 2 1 2	-0.022	-0.018	-0.004
1 1 1 3 3	-0.049	0.221	-0.270
2 1 1 3 3	-0.063	0.135	-0.198
2 3 3 1 3	-0.070	-0.003	-0.067
2 3 2 3 2	-0.084	-0.135	0.051
3 3 3 2 1	-0.120	-0.153	0.033
2 2 2 3 3	-0.142	-0.134	-0.008
3 2 3 1 3	-0.152	-0.059	-0.093
3 2 2 2 3	-0.174	-0.198	0.024
3 2 2 3 2	-0.223	-0.194	-0.029
1 3 3 3 2	-0.228	-0.084	-0.144
3 2 3 3 1	-0.276	-0.147	-0.129
3 3 2 3 2	-0.332	-0.353	0.021
3 3 3 2 3	-0.386	-0.405	0.019
3 3 3 3 3	-0.543	-0.565	0.022
Mean absolute difference			0.065

Table 6B: Comparison of estimated and observed TTO median values

State	Observed median	Estimated Median	Difference
2 1 1 1 1	0.950	0.947	0.003
1 1 2 1 1	0.950	0.924	0.026
1 2 1 1 1	0.925	0.941	-0.016
1 1 1 2 1	0.925	0.920	0.005
1 1 1 1 2	0.925	0.951	-0.026
1 2 2 1 1	0.900	0.873	0.027
1 2 1 2 1	0.850	0.868	-0.018
1 1 1 2 2	0.825	0.883	-0.058
2 2 1 2 1	0.775	0.817	-0.042
2 2 1 1 2	0.750	0.864	-0.114
1 1 3 1 2	0.675	0.568	0.107
2 2 1 2 2	0.650	0.764	-0.114
2 1 3 1 2	0.650	0.479	0.171
2 1 2 2 2	0.650	0.731	-0.081
1 2 2 2 2	0.650	0.719	-0.069
2 2 2 2 2	0.625	0.645	-0.020
1 3 2 1 2	0.500	0.360	0.140
1 3 3 1 1	0.500	0.406	0.094
1 1 1 1 3	0.500	0.609	-0.109
1 1 1 3 1	0.375	0.553	-0.178
1 2 2 2 3	0.375	0.141	0.234
2 1 3 2 3	0.325	0.110	0.215
2 3 3 2 1	0.300	0.095	0.205
3 2 2 1 1	0.275	0.281	-0.006
2 1 2 3 2	0.138	0.162	-0.024
2 2 3 2 3	0.025	-0.042	0.067
1 1 1 3 3	0.000	0.281	-0.281
2 2 3 3 1	0.000	0.071	-0.071
2 3 3 1 3	0.000	0.001	-0.001
3 3 2 1 2	0.000	0.004	-0.004
2 3 2 3 2	-0.025	-0.179	0.154
2 1 1 3 3	-0.025	0.167	-0.192
3 3 3 2 1	-0.175	-0.176	0.001
3 2 3 1 3	-0.225	-0.082	-0.143
2 2 2 3 3	-0.225	-0.209	-0.016
3 2 2 2 3	-0.275	-0.269	-0.006
3 2 2 3 2	-0.375	-0.272	-0.103
1 3 3 3 2	-0.375	-0.103	-0.272
3 2 3 3 1	-0.375	-0.207	-0.168
3 3 2 3 2	-0.425	-0.489	0.064
3 3 3 2 3	-0.475	-0.558	0.083
3 3 3 3 3	-0.625	-0.836	0.211
Mean absolute difference			0.094

7. The effect of duration on the valuation of health states

7.1 The nature of the problem

Both the VAS and TTO valuations from our Main Study were based on an assumed 10 year duration for each health state. However, previous research has shown that the valuations which result from each of the methods may be affected by the duration of the state.

7.2 The structure of the supplementary investigation

In order to explore this possibility further, we conducted a study which elicited, from each of the 312 subjects reinterviewed from the Main Study, VAS valuations for states lasting 10 years (to maintain comparability with the main study), 1 year, and 1 month. In each case respondents were told that what would follow was not known and should not be taken into account. No TTO valuations were elicited because we had been unable to find any practical way of doing this.

A response rate of 76% was achieved, with all but 2 of the 236 responses yielding useable data. The sample was broadly representative of the general population in terms of age, sex and educational attainment. The mean age was 47.8 (SD = 17.03). Only about 1% of the VAS data was missing.

7.3 The valuations

Our hypothesis was that dysfunctional health states will become increasingly intolerable the longer they last, and especially the more severe ones where adaptation is difficult. For 38 of the 43 states valued, the value attached to it when it lasts one month is significantly higher than when it lasts for 10 years. Although still present, this effect is much less marked between one month and one year (only significant for 18 states in this case), and between one year and ten years (15 states significantly different). This interpretation is supported by statements made by respondents themselves. Almost half said that they thought that these states got worse the longer they lasted.

7.4 Modelling the shorter duration states

Again the Dolan-N3 model has been used to estimate a VAS tariff for each of the three durations. The coefficients are set out in Table 7A for the Tariffs of Means, and in

Table 7B for the Tariffs of Medians. Within each set of models, it will be noted that the largest and most systematic shifts across durations occur in the constant term and in the N3 term, with little or no systematic shifts apparent for most dimensions, except for perhaps level 3 self-care. This suggests that the effect of duration is not dimension-specific, but it is stronger with the more severe states.

The full VAS tariffs for the 1 year and 1 month durations are given in Annexe A (Tables A25 to A28). No tariff is given for the 10 year duration since the one derived from the Main Survey has a much larger data base, and it would be better to use this.

Eliciting VAS valuations for the 10 year duration in exactly the same way as in the Main Survey allows us to compare the two sets of valuations, and hence to make some judgements about whether the 1 month and 1 year valuations elicited in the Duration Study would be likely to be those that would have been obtained had our sample been larger.

A stringent test involves comparing the 243 estimated values in the 10 year Duration Study Tariffs with those in the comparable VAS tariffs derived from the Main Survey (see section 4 above). OLS regression analysis was used to compare the estimates of median values and the estimates of mean values. The results are as follows:

$$Y_{median} = \underset{(3.87)}{0.01} + \underset{(88.82)}{0.99X_{median}} \qquad R^2 = 0.98$$

$$Y_{mean} = \underset{(6.75)}{0.02} + \underset{(118.60)}{0.98X_{mean}} \qquad R^2 = 0.98$$

where Y is the 10-year VAS valuation from the Duration Study, and X is the 10-year VAS valuation from the Main Study. Since the intercept term is very close to zero and the slope term is very close to 1 we can conclude that the corresponding valuations are very close to each other.

Table 7A: Coefficients for VAS Tariffs of Means: states with differing durations

DIMENSION	1 month	1 year	10 years
Constant	0.107	0.113	0.144
Mobility			
level 2	0.055	0.052	0.050
level 3	0.155	0.151	0.159
Self-care			
level 2	0.064	0.073	0.078
level 3	0.122	0.138	0.157
Usual activity			
level 2	0.041	0.045	0.067
level 3	0.102	0.095	0.090
Pain/discomfort			
level 2	0.079	0.096	0.096
level 3	0.194	0.187	0.171
Anxiety/depression			
level 2	0.056	0.063	0.047
level 3	0.115	0.140	0.125
N3	0.147	0.183	0.211
adjusted r^2	0.63	0.62	0.55

Table 7B: Coefficients for VAS Tariffs of Medians: states with differing durations

DIMENSION	1 month	1 year	10 years
Constant	0.069	0.086	0.109
Mobility			
level 2	0.057	0.043	0.051
level 3	0.168	0.133	0.157
Self-care			
level 2	0.057	0.064	0.061
level 3	0.121	0.122	0.134
Usual activity			
level 2	0.074	0.070	0.086
level 3	0.134	0.111	0.108
Pain/discomfort			
level 2	0.091	0.099	0.091
level 3	0.217	0.202	0.175
Anxiety/depression			
level 2	0.043	0.057	0.045
level 3	0.111	0.165	0.129
n3	0.157	0.191	0.227
adjusted r^2	0.97	0.96	0.95

7.5 Converting Short-duration VAS values into Short-duration TTO Values

The functional relationship between VAS and TTO described earlier in Section 6.2, was applied to the VAS data obtained from the duration study outlined in Section 7.2 above.

The full tariff of estimated TTO mean values, for 1 month and 1 year durations are given in Tables A29 and A30, of Annexe A.

The full tariff of estimated TTO median values, for 1 month and 1 year durations are given in Tables A31 and A32 in Annexe A.

The use of the conversion formula in this way assumes that the relationship found for the 10 year duration will hold for the other durations (an assumption which we cannot test with our data). Put another way, it assumes that no matter what the health state that is being valued, a rating of 'R' on the VAS scale always corresponds to a rating of 'S' on the TTO scale, where S is inferred from R by the formula in Section 6.2.

8. A GUIDE TO THE SELECTION OF THE APPROPRIATE TARIFF.

We expect that potential users of these tariffs will come to them with a clear idea of the properties they are looking for. The accompanying chart headed "CHOICES" sets out a decision tree which will enable users to find the tariff that meets their requirements. It is preceded by some notes which set out the different properties between which a choice is offered.

NOTES

All tariffs are scaled so that dead = 0 and healthy = 1.

All tariffs may contain negative values (when a state is regarded as worse than being dead).

All tariffs include a directly observed value for "unconscious".

Tariffs vary according to whether they were generated using the Time-Trade-Off (TTO) or the Visual Analogue Scale (VAS) method.

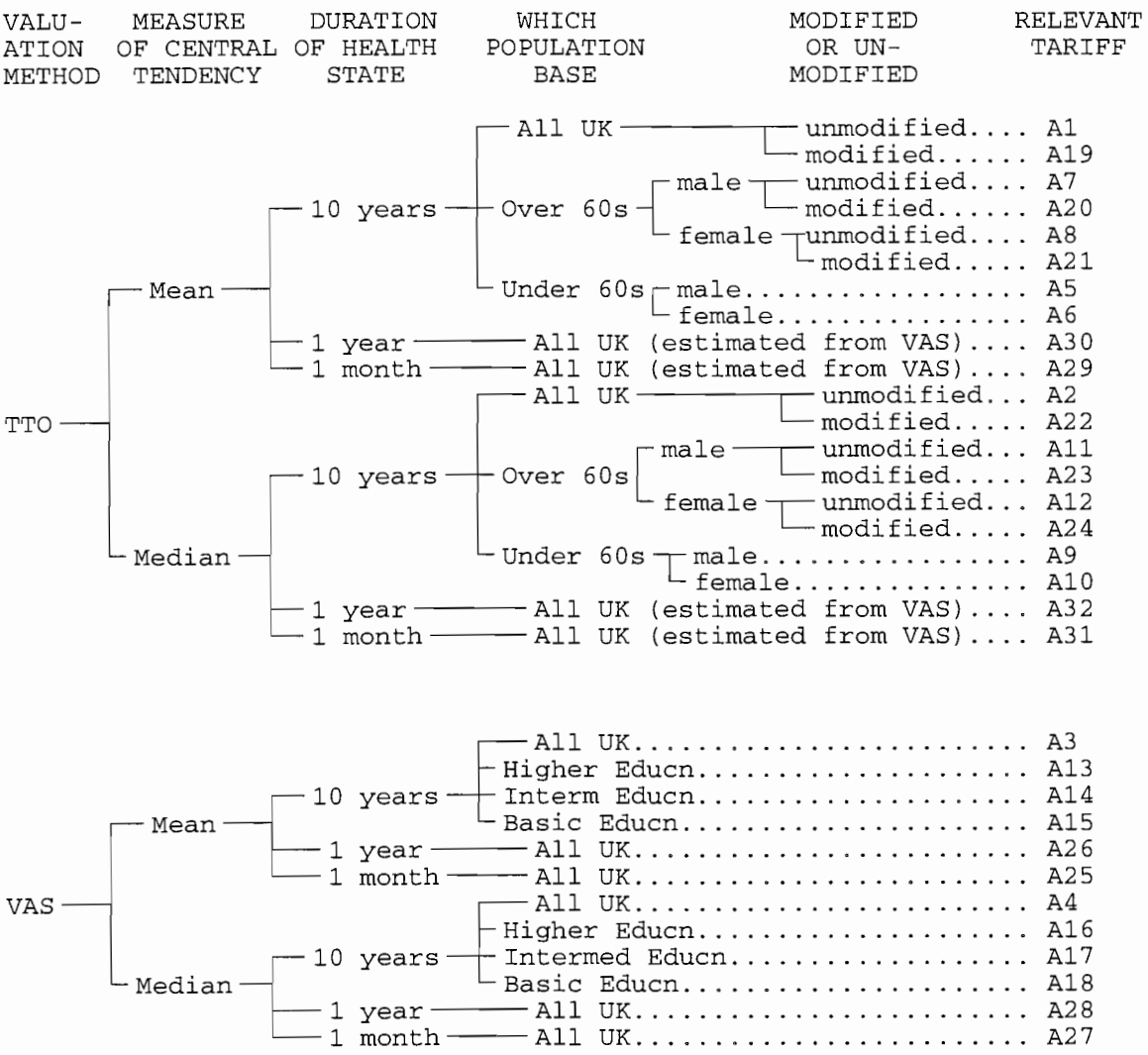
There is a choice of the Mean or the Median as the measure of central tendency.

There is a choice of 3 different durations for the health state.

There is a choice of population base (All UK, by age, by sex, by education level, by area of residence).

Additionally, in some cases it is possible to modify certain tariffs to allow for a possible distortion in the values provided by the over-60s.

CHOICES:


VALU-ATION METHOD
MEASURE OF CENTRAL TENDENCY
DURATION OF HEALTH STATE
WHICH POPULATION BASE
MODIFIED OR UN-MODIFIED
RELEVANT TARIFF
TTO
Mean
10 years
All UK
unmodified.... A1
modified..... A19
Over 60s
male
unmodified.... A7
modified..... A20
female
unmodified.... A8
modified..... A21
Under 60s
male..... A5
female..... A6
1 year
All UK (estimated from VAS).... A30
1 month
All UK (estimated from VAS).... A29
Median
10 years
All UK
unmodified... A2
modified..... A22
Over 60s
male
unmodified... A11
modified..... A23
female
unmodified... A12
modified..... A24
Under 60s
male..... A9
female..... A10
1 year
All UK (estimated from VAS).... A32
1 month
All UK (estimated from VAS).... A31
VAS
Mean
10 years
All UK..... A3
Higher Educn..... A13
Interm Educn..... A14
Basic Educn..... A15
1 year
All UK..... A26
1 month
All UK..... A25
Median
10 years
All UK..... A4
Higher Educn..... A16
Intermed Educn..... A17
Basic Educn..... A18
1 year
All UK..... A28
1 month
All UK..... A27

ANNEXE A
LIST OF TARIFFS

A1 TTO TARIFF OF MEANS: WHOLE POPULATION - 10 year duration

A2 TTO TARIFF OF MEDIANS: WHOLE POPULATION - 10 year duration

A3 VAS TARIFF OF MEANS: WHOLE POPULATION - 10 year duration

A4 VAS TARIFF OF MEDIANS: WHOLE POPULATION - 10 year duration

A5 TTO TARIFF OF MEANS: MALES UNDER 60 - 10 year duration

A6 TTO TARIFF OF MEANS: FEMALES UNDER 60 - 10 year duration

A7 TTO TARIFF OF MEANS: MALES 60 + OVER - 10 year duration

A8 TTO TARIFF OF MEANS: FEMALES 60 + OVER - 10 year duration

A9 TTO TARIFF OF MEDIANS: MALES UNDER 60 - 10 year duration

A10 TTO TARIFF OF MEDIANS: FEMALES UNDER 60 - 10 year duration

A11 TTO TARIFF OF MEDIANS: MALES OVER 60 - 10 year duration

A12 TTO TARIFF OF MEDIANS: FEMALES OVER 60 - 10 year duration

A13 VAS TARIFF OF MEANS: DEGREE LEVEL EDUCATION - 10 year duration

A14 VAS TARIFF OF MEANS: INTERMEDIATE EDUCATION - 10 year duration

A15 VAS TARIFF OF MEANS: MINIMUM EDUCATION - 10 year duration

A16 VAS TARIFF OF MEDIANS: DEGREE LEVEL EDUCATION - 10 year duration

A17 VAS TARIFF OF MEDIANS: INTERMEDIATE EDUCATION - 10 year duration

A18 VAS TARIFF OF MEDIANS: MINIMUM EDUCATION - 10 year duration

A19 TTO TARIFF OF MODIFIED MEANS: WHOLE POPULATION - 10 year duration

A20 TTO TARIFF OF MODIFIED MEANS: MALES 60 + OVER - 10 year duration

A21 TTO TARIFF OF MODIFIED MEANS: FEMALES 60 + OVER - 10 year duration

WHOLE POPULATION TARIFFS
(10 year durations)

TTO Mean

TTO Median

VAS Mean

VAS Median

TARIFF A1: TTO TARIFF OF MEANS: WHOLE POPULATION - 10 year duration

	Level 2	Level 3
Mobility	0.069	0.314
Self-care	0.104	0.214
Usual activity	0.036	0.094
Pain/discomfort	0.123	0.386
Anxiety/depression	0.071	0.236
Constant = 0.081		N3 = 0.269

1 1 1 1 1	1.000	1 2 1 3 2	0.089	1 3 2 2 3	0.041
1 1 1 1 2	0.848	1 2 1 3 3	-0.076	1 3 2 3 1	0.014
1 1 1 1 3	0.414	1 2 2 1 1	0.779	1 3 2 3 2	-0.057
1 1 1 2 1	0.796	1 2 2 1 2	0.708	1 3 2 3 3	-0.222
1 1 1 2 2	0.725	1 2 2 1 3	0.274	1 3 3 1 1	0.342
1 1 1 2 3	0.291	1 2 2 2 1	0.656	1 3 3 1 2	0.271
1 1 1 3 1	0.264	1 2 2 2 2	0.585	1 3 3 1 3	0.106
1 1 1 3 2	0.193	1 2 2 2 3	0.151	1 3 3 2 1	0.219
1 1 1 3 3	0.028	1 2 2 3 1	0.124	1 3 3 2 2	0.148
1 1 2 1 1	0.883	1 2 2 3 2	0.053	1 3 3 2 3	-0.017
1 1 2 1 2	0.812	1 2 2 3 3	-0.112	1 3 3 3 1	-0.044
1 1 2 1 3	0.378	1 2 3 1 1	0.452	1 3 3 3 2	-0.115
1 1 2 2 1	0.760	1 2 3 1 2	0.381	1 3 3 3 3	-0.280
1 1 2 2 2	0.689	1 2 3 1 3	0.216	2 1 1 1 1	0.850
1 1 2 2 3	0.255	1 2 3 2 1	0.329	2 1 1 1 2	0.779
1 1 2 3 1	0.228	1 2 3 2 2	0.258	2 1 1 1 3	0.345
1 1 2 3 2	0.157	1 2 3 2 3	0.093	2 1 1 2 1	0.727
1 1 2 3 3	-0.008	1 2 3 3 1	0.066	2 1 1 2 2	0.656
1 1 3 1 1	0.556	1 2 3 3 2	-0.005	2 1 1 2 3	0.222
1 1 3 1 2	0.485	1 2 3 3 3	-0.170	2 1 1 3 1	0.195
1 1 3 1 3	0.320	1 3 1 1 1	0.436	2 1 1 3 2	0.124
1 1 3 2 1	0.433	1 3 1 1 2	0.365	2 1 1 3 3	-0.041
1 1 3 2 2	0.362	1 3 1 1 3	0.200	2 1 2 1 1	0.814
1 1 3 2 3	0.197	1 3 1 2 1	0.313	2 1 2 1 2	0.743
1 1 3 3 1	0.170	1 3 1 2 2	0.242	2 1 2 1 3	0.309
1 1 3 3 2	0.099	1 3 1 2 3	0.077	2 1 2 2 1	0.691
1 1 3 3 3	-0.066	1 3 1 3 1	0.050	2 1 2 2 2	0.620
1 2 1 1 1	0.815	1 3 1 3 2	-0.021	2 1 2 2 3	0.186
1 2 1 1 2	0.744	1 3 1 3 3	-0.186	2 1 2 3 1	0.159
1 2 1 1 3	0.310	1 3 2 1 1	0.400	2 1 2 3 2	0.088
1 2 1 2 1	0.692	1 3 2 1 2	0.329	2 1 2 3 3	-0.077
1 2 1 2 2	0.621	1 3 2 1 3	0.164	2 1 3 1 1	0.487
1 2 1 2 3	0.187	1 3 2 2 1	0.277	2 1 3 1 2	0.416
1 2 1 3 1	0.160	1 3 2 2 2	0.206	2 1 3 1 3	0.251

2	1	3	2	1	0.364	2	3	2	3	2	-0.126	3	2	2	1	3	-0.040
2	1	3	2	2	0.293	2	3	2	3	3	-0.291	3	2	2	2	1	0.073
2	1	3	2	3	0.128	2	3	3	1	1	0.273	3	2	2	2	2	0.002
2	1	3	3	1	0.101	2	3	3	1	2	0.202	3	2	2	2	3	-0.163
2	1	3	3	2	0.030	2	3	3	1	3	0.037	3	2	2	3	1	-0.190
2	1	3	3	3	-0.135	2	3	3	2	1	0.150	3	2	2	3	2	-0.261
2	2	1	1	1	0.746	2	3	3	2	2	0.079	3	2	2	3	3	-0.426
2	2	1	1	2	0.675	2	3	3	2	3	-0.086	3	2	3	1	1	0.138
2	2	1	1	3	0.241	2	3	3	3	1	-0.113	3	2	3	1	2	0.067
2	2	1	2	1	0.623	2	3	3	3	2	-0.184	3	2	3	1	3	-0.098
2	2	1	2	2	0.552	2	3	3	3	3	-0.349	3	2	3	2	1	0.015
2	2	1	2	3	0.118	3	1	1	1	1	0.336	3	2	3	2	2	-0.056
2	2	1	3	1	0.091	3	1	1	1	2	0.265	3	2	3	2	3	-0.221
2	2	1	3	2	0.020	3	1	1	1	3	0.100	3	2	3	3	1	-0.248
2	2	1	3	3	-0.145	3	1	1	2	1	0.213	3	2	3	3	2	-0.319
2	2	2	1	1	0.710	3	1	1	2	2	0.142	3	2	3	3	3	-0.484
2	2	2	1	2	0.639	3	1	1	2	3	-0.023	3	3	1	1	1	0.122
2	2	2	1	3	0.205	3	1	1	3	1	-0.050	3	3	1	1	2	0.051
2	2	2	2	1	0.587	3	1	1	3	2	-0.121	3	3	1	1	3	-0.114
2	2	2	2	2	0.516	3	1	1	3	3	-0.286	3	3	1	2	1	-0.001
2	2	2	2	3	0.082	3	1	2	1	1	0.300	3	3	1	2	2	-0.072
2	2	2	3	1	0.055	3	1	2	1	2	0.229	3	3	1	2	3	-0.237
2	2	2	3	2	-0.016	3	1	2	1	3	0.064	3	3	1	3	1	-0.264
2	2	2	3	3	-0.181	3	1	2	2	1	0.177	3	3	1	3	2	-0.335
2	2	3	1	1	0.383	3	1	2	2	2	0.106	3	3	1	3	3	-0.500
2	2	3	1	2	0.312	3	1	2	2	3	-0.059	3	3	2	1	1	0.086
2	2	3	1	3	0.147	3	1	2	3	1	-0.086	3	3	2	1	2	0.015
2	2	3	2	1	0.260	3	1	2	3	2	-0.157	3	3	2	1	3	-0.150
2	2	3	2	2	0.189	3	1	2	3	3	-0.322	3	3	2	2	1	-0.037
2	2	3	2	3	0.024	3	1	3	1	1	0.242	3	3	2	2	2	-0.108
2	2	3	3	1	-0.003	3	1	3	1	2	0.171	3	3	2	2	3	-0.273
2	2	3	3	2	-0.074	3	1	3	1	3	0.006	3	3	2	3	1	-0.300
2	2	3	3	3	-0.239	3	1	3	2	1	0.119	3	3	2	3	2	-0.371
2	3	1	1	1	0.367	3	1	3	2	2	0.048	3	3	2	3	3	-0.536
2	3	1	1	2	0.296	3	1	3	2	3	-0.117	3	3	3	1	1	0.028
2	3	1	1	3	0.131	3	1	3	3	1	-0.144	3	3	3	1	2	-0.043
2	3	1	2	1	0.244	3	1	3	3	2	-0.215	3	3	3	1	3	-0.208
2	3	1	2	2	0.173	3	1	3	3	3	-0.380	3	3	3	2	1	-0.095
2	3	1	2	3	0.008	3	2	1	1	1	0.232	3	3	3	2	2	-0.166
2	3	1	3	1	-0.019	3	2	1	1	2	0.161	3	3	3	2	3	-0.331
2	3	1	3	2	-0.090	3	2	1	1	3	-0.004	3	3	3	3	1	-0.358
2	3	1	3	3	-0.255	3	2	1	2	1	0.109	3	3	3	3	2	-0.429
2	3	2	1	1	0.331	3	2	1	2	2	0.038	3	3	3	3	3	-0.594
2	3	2	1	2	0.260	3	2	1	2	3	-0.127	Unconscious [-0.402]					
2	3	2	1	3	0.095	3	2	1	3	1	-0.154						
2	3	2	2	1	0.208	3	2	1	3	2	-0.225						
2	3	2	2	2	0.137	3	2	1	3	3	-0.390						
2	3	2	2	3	-0.028	3	2	2	1	1	0.196						
2	3	2	3	1	-0.055	3	2	2	1	2	0.125						

TARIFF A2: TTO TARIFF OF MEDIANS: WHOLE POPULATION - 10 year duration

	Level 2	Level 3
Mobility	0.054	0.458
Self-care	0.129	0.254
Usual activity	0.044	0.159
Pain/discomfort	0.114	0.522
Anxiety/depression	0.100	0.323
Constant = -0.038		N3 = 0.163

1 1 1 1 1	1.000	1 2 1 3 2	0.125	1 3 2 2 3	0.141
1 1 1 1 2	0.938	1 2 1 3 3	-0.099	1 3 2 3 1	0.056
1 1 1 1 3	0.552	1 2 2 1 1	0.865	1 3 2 3 2	-0.044
1 1 1 2 1	0.924	1 2 2 1 2	0.766	1 3 2 3 3	-0.267
1 1 1 2 2	0.824	1 2 2 1 3	0.380	1 3 3 1 1	0.462
1 1 1 2 3	0.438	1 2 2 2 1	0.751	1 3 3 1 2	0.363
1 1 1 3 1	0.353	1 2 2 2 2	0.652	1 3 3 1 3	0.139
1 1 1 3 2	0.254	1 2 2 2 3	0.266	1 3 3 2 1	0.348
1 1 1 3 3	0.030	1 2 2 3 1	0.181	1 3 3 2 2	0.249
1 1 2 1 1	0.994	1 2 2 3 2	0.081	1 3 3 2 3	0.025
1 1 2 1 2	0.895	1 2 2 3 3	-0.142	1 3 3 3 1	-0.060
1 1 2 1 3	0.508	1 2 3 1 1	0.587	1 3 3 3 2	-0.159
1 1 2 2 1	0.880	1 2 3 1 2	0.488	1 3 3 3 3	-0.383
1 1 2 2 2	0.781	1 2 3 1 3	0.264	2 1 1 1 1	0.984
1 1 2 2 3	0.394	1 2 3 2 1	0.473	2 1 1 1 2	0.884
1 1 2 3 1	0.310	1 2 3 2 2	0.374	2 1 1 1 3	0.498
1 1 2 3 2	0.210	1 2 3 2 3	0.150	2 1 1 2 1	0.870
1 1 2 3 3	-0.014	1 2 3 3 1	0.065	2 1 1 2 2	0.770
1 1 3 1 1	0.716	1 2 3 3 2	-0.034	2 1 1 2 3	0.384
1 1 3 1 2	0.616	1 2 3 3 3	-0.258	2 1 1 3 1	0.299
1 1 3 1 3	0.393	1 3 1 1 1	0.622	2 1 1 3 2	0.200
1 1 3 2 1	0.602	1 3 1 1 2	0.522	2 1 1 3 3	-0.024
1 1 3 2 2	0.502	1 3 1 1 3	0.298	2 1 2 1 1	0.940
1 1 3 2 3	0.279	1 3 1 2 1	0.508	2 1 2 1 2	0.841
1 1 3 3 1	0.194	1 3 1 2 2	0.408	2 1 2 1 3	0.455
1 1 3 3 2	0.094	1 3 1 2 3	0.184	2 1 2 2 1	0.826
1 1 3 3 3	-0.129	1 3 1 3 1	0.100	2 1 2 2 2	0.727
1 2 1 1 1	0.909	1 3 1 3 2	0.000	2 1 2 2 3	0.341
1 2 1 1 2	0.809	1 3 1 3 3	-0.224	2 1 2 3 1	0.256
1 2 1 1 3	0.423	1 3 2 1 1	0.578	2 1 2 3 2	0.156
1 2 1 2 1	0.795	1 3 2 1 2	0.478	2 1 2 3 3	-0.067
1 2 1 2 2	0.695	1 3 2 1 3	0.255	2 1 3 1 1	0.662
1 2 1 2 3	0.309	1 3 2 2 1	0.464	2 1 3 1 2	0.563
1 2 1 3 1	0.224	1 3 2 2 2	0.364	2 1 3 1 3	0.339

2	1	3	2	1	0.548
2	1	3	2	2	0.449
2	1	3	2	3	0.225
2	1	3	3	1	0.140
2	1	3	3	2	0.041
2	1	3	3	3	-0.183
2	2	1	1	1	0.855
2	2	1	1	2	0.756
2	2	1	1	3	0.369
2	2	1	2	1	0.741
2	2	1	2	2	0.642
2	2	1	2	3	0.255
2	2	1	3	1	0.171
2	2	1	3	2	0.071
2	2	1	3	3	-0.152
2	2	2	1	1	0.812
2	2	2	1	2	0.712
2	2	2	1	3	0.326
2	2	2	2	1	0.698
2	2	2	2	2	0.598
2	2	2	2	3	0.212
2	2	2	3	1	0.127
2	2	2	3	2	0.028
2	2	2	3	3	-0.196
2	2	3	1	1	0.533
2	2	3	1	2	0.434
2	2	3	1	3	0.210
2	2	3	2	1	0.419
2	2	3	2	2	0.320
2	2	3	2	3	0.096
2	2	3	3	1	0.012
2	2	3	3	2	-0.088
2	2	3	3	3	-0.312
2	3	1	1	1	0.568
2	3	1	1	2	0.468
2	3	1	1	3	0.245
2	3	1	2	1	0.454
2	3	1	2	2	0.354
2	3	1	2	3	0.131
2	3	1	3	1	0.046
2	3	1	3	2	-0.054
2	3	1	3	3	-0.277
2	3	2	1	1	0.524
2	3	2	1	2	0.425
2	3	2	1	3	0.201
2	3	2	2	1	0.410
2	3	2	2	2	0.311
2	3	2	2	3	0.087
2	3	2	3	1	0.002
2	3	2	3	2	-0.097
2	3	2	3	3	-0.321
2	3	3	1	1	0.409
2	3	3	1	2	0.309
2	3	3	1	3	0.085
2	3	3	2	1	0.295
2	3	3	2	2	0.195
2	3	3	2	3	-0.029
2	3	3	3	1	-0.113
2	3	3	3	2	-0.213
2	3	3	3	3	-0.436
3	1	1	1	1	0.417
3	1	1	1	2	0.318
3	1	1	1	3	0.094
3	1	1	2	1	0.303
3	1	1	2	2	0.204
3	1	1	2	3	-0.020
3	1	1	3	1	-0.105
3	1	1	3	2	-0.204
3	1	1	3	3	-0.428
3	1	2	1	1	0.374
3	1	2	1	2	0.274
3	1	2	1	3	0.050
3	1	2	2	1	0.260
3	1	2	2	2	0.160
3	1	2	2	3	-0.064
3	1	2	3	1	-0.148
3	1	2	3	2	-0.248
3	1	2	3	3	-0.472
3	1	3	1	1	0.258
3	1	3	1	2	0.158
3	1	3	1	3	-0.065
3	1	3	2	1	0.144
3	1	3	2	2	0.044
3	1	3	2	3	-0.179
3	1	3	3	1	-0.264
3	1	3	3	2	-0.364
3	1	3	3	3	-0.587
3	2	1	1	1	0.288
3	2	1	1	2	0.189
3	2	1	1	3	-0.035
3	2	1	2	1	0.174
3	2	1	2	2	0.075
3	2	1	2	3	-0.149
3	2	1	3	1	-0.233
3	2	1	3	2	-0.333
3	2	1	3	3	-0.557
3	2	2	1	1	0.245
3	2	2	1	2	0.145
3	2	2	1	3	-0.078
3	2	2	2	1	0.131
3	2	2	2	2	0.031
3	2	2	2	3	-0.192
3	2	2	3	1	-0.277
3	2	2	3	2	-0.377
3	2	2	3	3	-0.600
3	2	3	1	1	0.129
3	2	3	1	2	0.030
3	2	3	1	3	-0.194
3	2	3	2	1	0.015
3	2	3	2	2	-0.084
3	2	3	2	3	-0.308
3	2	3	3	1	-0.393
3	2	3	3	2	-0.492
3	2	3	3	3	-0.716
3	3	1	1	1	0.164
3	3	1	1	2	0.064
3	3	1	1	3	-0.160
3	3	1	2	1	0.050
3	3	1	2	2	-0.050
3	3	1	2	3	-0.274
3	3	1	3	1	-0.358
3	3	1	3	2	-0.458
3	3	1	3	3	-0.681
3	3	2	1	1	0.120
3	3	2	1	2	0.020
3	3	2	1	3	-0.203
3	3	2	2	1	0.006
3	3	2	2	2	-0.094
3	3	2	2	3	-0.317
3	3	2	3	1	-0.402
3	3	2	3	2	-0.501
3	3	2	3	3	-0.725
3	3	3	1	1	0.004
3	3	3	1	2	-0.095
3	3	3	1	3	-0.319
3	3	3	2	1	-0.110
3	3	3	2	2	-0.209
3	3	3	2	3	-0.433
3	3	3	3	1	-0.517
3	3	3	3	2	-0.617
3	3	3	3	3	-0.841

Unconscious [-0.375]

TARIFF A3: VAS TARIFF OF MEANS: WHOLE POPULATION - 10 YEAR DURATION

	Level 2	Level 3
Mobility	0.071	0.182
Self-care	0.093	0.145
Usual activity	0.031	0.081
Pain/discomfort	0.084	0.171
Anxiety/depression	0.063	0.124
Constant = 0.155		N3 = 0.215

1 1 1 1 1	1.000	1 2 1 3 1	0.366	1 3 2 2 1	0.371
1 1 1 1 2	0.782	1 2 1 3 2	0.303	1 3 2 2 2	0.308
1 1 1 1 3	0.507	1 2 1 3 3	0.243	1 3 2 2 3	0.247
1 1 1 2 1	0.762	1 2 2 1 1	0.721	1 3 2 3 1	0.284
1 1 1 2 2	0.698	1 2 2 1 2	0.658	1 3 2 3 2	0.221
1 1 1 2 3	0.423	1 2 2 1 3	0.383	1 3 2 3 3	0.160
1 1 1 3 1	0.460	1 2 2 2 1	0.638	1 3 3 1 1	0.405
1 1 1 3 2	0.397	1 2 2 2 2	0.575	1 3 3 1 2	0.342
1 1 1 3 3	0.336	1 2 2 2 3	0.299	1 3 3 1 3	0.281
1 1 2 1 1	0.814	1 2 2 3 1	0.336	1 3 3 2 1	0.321
1 1 2 1 2	0.751	1 2 2 3 2	0.273	1 3 3 2 2	0.258
1 1 2 1 3	0.476	1 2 2 3 3	0.212	1 3 3 2 3	0.197
1 1 2 2 1	0.731	1 2 3 1 1	0.457	1 3 3 3 1	0.234
1 1 2 2 2	0.668	1 2 3 1 2	0.394	1 3 3 3 2	0.171
1 1 2 2 3	0.392	1 2 3 1 3	0.333	1 3 3 3 3	0.110
1 1 2 3 1	0.429	1 2 3 2 1	0.373	2 1 1 1 1	0.774
1 1 2 3 2	0.366	1 2 3 2 2	0.310	2 1 1 1 2	0.711
1 1 2 3 3	0.305	1 2 3 2 3	0.249	2 1 1 1 3	0.435
1 1 3 1 1	0.550	1 2 3 3 1	0.286	2 1 1 2 1	0.690
1 1 3 1 2	0.487	1 2 3 3 2	0.223	2 1 1 2 2	0.627
1 1 3 1 3	0.426	1 2 3 3 3	0.162	2 1 1 2 3	0.352
1 1 3 2 1	0.466	1 3 1 1 1	0.485	2 1 1 3 1	0.388
1 1 3 2 2	0.403	1 3 1 1 2	0.422	2 1 1 3 2	0.325
1 1 3 2 3	0.342	1 3 1 1 3	0.361	2 1 1 3 3	0.264
1 1 3 3 1	0.379	1 3 1 2 1	0.402	2 1 2 1 1	0.743
1 1 3 3 2	0.316	1 3 1 2 2	0.339	2 1 2 1 2	0.680
1 1 3 3 3	0.255	1 3 1 2 3	0.278	2 1 2 1 3	0.405
1 2 1 1 1	0.752	1 3 1 3 1	0.314	2 1 2 2 1	0.659
1 2 1 1 2	0.689	1 3 1 3 2	0.251	2 1 2 2 2	0.596
1 2 1 1 3	0.414	1 3 1 3 3	0.190	2 1 2 2 3	0.321
1 2 1 2 1	0.668	1 3 2 1 1	0.455	2 1 2 3 1	0.357
1 2 1 2 2	0.605	1 3 2 1 2	0.392	2 1 2 3 2	0.294
1 2 1 2 3	0.330	1 3 2 1 3	0.331	2 1 2 3 3	0.234

2	1	3	1	1	0.479	2	3	2	2	2	0.236	3	2	1	3	3	0.060
2	1	3	1	2	0.416	2	3	2	2	3	0.176	3	2	2	1	1	0.324
2	1	3	1	3	0.355	2	3	2	3	1	0.212	3	2	2	1	2	0.262
2	1	3	2	1	0.395	2	3	2	3	2	0.149	3	2	2	1	3	0.201
2	1	3	2	2	0.332	2	3	2	3	3	0.088	3	2	2	2	1	0.241
2	1	3	2	3	0.271	2	3	3	1	1	0.333	3	2	2	2	2	0.178
2	1	3	3	1	0.308	2	3	3	1	2	0.270	3	2	2	2	3	0.117
2	1	3	3	2	0.245	2	3	3	1	3	0.209	3	2	2	3	1	0.153
2	1	3	3	3	0.184	2	3	3	2	1	0.250	3	2	2	3	2	0.090
2	2	1	1	1	0.681	2	3	3	2	2	0.187	3	2	2	3	3	0.030
2	2	1	1	2	0.618	2	3	3	2	3	0.126	3	2	3	1	1	0.275
2	2	1	1	3	0.342	2	3	3	3	1	0.162	3	2	3	1	2	0.212
2	2	1	2	1	0.597	2	3	3	3	2	0.099	3	2	3	1	3	0.151
2	2	1	2	2	0.534	2	3	3	3	3	0.038	3	2	3	2	1	0.191
2	2	1	2	3	0.259	3	1	1	1	1	0.448	3	2	3	2	2	0.128
2	2	1	3	1	0.295	3	1	1	1	2	0.385	3	2	3	2	3	0.067
2	2	1	3	2	0.232	3	1	1	1	3	0.324	3	2	3	3	1	0.104
2	2	1	3	3	0.171	3	1	1	2	1	0.365	3	2	3	3	2	0.041
2	2	2	1	1	0.650	3	1	1	2	2	0.302	3	2	3	3	3	-0.020
2	2	2	1	2	0.587	3	1	1	2	3	0.241	3	3	1	1	1	0.303
2	2	2	1	3	0.311	3	1	1	3	1	0.277	3	3	1	1	2	0.240
2	2	2	2	1	0.566	3	1	1	3	2	0.214	3	3	1	1	3	0.179
2	2	2	2	2	0.503	3	1	1	3	3	0.153	3	3	1	2	1	0.219
2	2	2	2	3	0.228	3	1	2	1	1	0.418	3	3	1	2	2	0.156
2	2	2	3	1	0.264	3	1	2	1	2	0.355	3	3	1	2	3	0.096
2	2	2	3	2	0.201	3	1	2	1	3	0.294	3	3	1	3	1	0.132
2	2	2	3	3	0.140	3	1	2	2	1	0.334	3	3	1	3	2	0.069
2	2	3	1	1	0.385	3	1	2	2	2	0.271	3	3	1	3	3	0.008
2	2	3	1	2	0.322	3	1	2	2	3	0.210	3	3	2	1	1	0.272
2	2	3	1	3	0.262	3	1	2	3	1	0.247	3	3	2	1	2	0.209
2	2	3	2	1	0.302	3	1	2	3	2	0.184	3	3	2	1	3	0.148
2	2	3	2	2	0.239	3	1	2	3	3	0.123	3	3	2	2	1	0.189
2	2	3	2	3	0.178	3	1	3	1	1	0.368	3	3	2	2	2	0.126
2	2	3	3	1	0.214	3	1	3	1	2	0.305	3	3	2	2	3	0.065
2	2	3	3	2	0.151	3	1	3	1	3	0.244	3	3	2	3	1	0.101
2	2	3	3	3	0.091	3	1	3	2	1	0.284	3	3	2	3	2	0.038
2	3	1	1	1	0.414	3	1	3	2	2	0.221	3	3	2	3	3	-0.023
2	3	1	1	2	0.351	3	1	3	2	3	0.160	3	3	3	1	1	0.222
2	3	1	1	3	0.290	3	1	3	3	1	0.197	3	3	3	1	2	0.159
2	3	1	2	1	0.330	3	1	3	3	2	0.134	3	3	3	1	3	0.099
2	3	1	2	2	0.267	3	1	3	3	3	0.073	3	3	3	2	1	0.139
2	3	1	2	3	0.206	3	2	1	1	1	0.355	3	3	3	2	2	0.076
2	3	1	3	1	0.243	3	2	1	1	2	0.292	3	3	3	2	3	0.015
2	3	1	3	2	0.180	3	2	1	1	3	0.231	3	3	3	3	1	0.051
2	3	1	3	3	0.119	3	2	1	2	1	0.272	3	3	3	3	2	-0.012
2	3	2	1	1	0.383	3	2	1	2	2	0.209	3	3	3	3	3	-0.072
2	3	2	1	2	0.320	3	2	1	2	3	0.148						
2	3	2	1	3	0.259	3	2	1	3	1	0.184	Unconscious [-0.042]					
2	3	2	2	1	0.299	3	2	1	3	2	0.121						

TARIFF A4: VAS TARIFF OF MEDIANS: WHOLE POPULATION - 10 YEAR DURATION

	Level 2	Level 3
Mobility	0.073	0.179
Self-care	0.100	0.146
Usual activity	0.032	0.072
Pain/discomfort	0.087	0.176
Anxiety/depression	0.067	0.124
Constant = 0.117		N3 = 0.225

1 1 1 1 1	1.000	1 2 1 3 1	0.383	1 3 2 2 1	0.393
1 1 1 1 2	0.816	1 2 1 3 2	0.317	1 3 2 2 2	0.327
1 1 1 1 3	0.534	1 2 1 3 3	0.259	1 3 2 2 3	0.269
1 1 1 2 1	0.796	1 2 2 1 1	0.751	1 3 2 3 1	0.305
1 1 1 2 2	0.729	1 2 2 1 2	0.685	1 3 2 3 2	0.238
1 1 1 2 3	0.447	1 2 2 1 3	0.402	1 3 2 3 3	0.180
1 1 1 3 1	0.483	1 2 2 2 1	0.664	1 3 3 1 1	0.441
1 1 1 3 2	0.416	1 2 2 2 2	0.598	1 3 3 1 2	0.374
1 1 1 3 3	0.359	1 2 2 2 3	0.315	1 3 3 1 3	0.317
1 1 2 1 1	0.851	1 2 2 3 1	0.351	1 3 3 2 1	0.354
1 1 2 1 2	0.784	1 2 2 3 2	0.285	1 3 3 2 2	0.287
1 1 2 1 3	0.502	1 2 2 3 3	0.227	1 3 3 2 3	0.229
1 1 2 2 1	0.764	1 2 3 1 1	0.487	1 3 3 3 1	0.265
1 1 2 2 2	0.697	1 2 3 1 2	0.421	1 3 3 3 2	0.199
1 1 2 2 3	0.415	1 2 3 1 3	0.363	1 3 3 3 3	0.141
1 1 2 3 1	0.451	1 2 3 2 1	0.400	2 1 1 1 1	0.810
1 1 2 3 2	0.384	1 2 3 2 2	0.334	2 1 1 1 2	0.743
1 1 2 3 3	0.326	1 2 3 2 3	0.276	2 1 1 1 3	0.461
1 1 3 1 1	0.587	1 2 3 3 1	0.312	2 1 1 2 1	0.723
1 1 3 1 2	0.520	1 2 3 3 2	0.245	2 1 1 2 2	0.656
1 1 3 1 3	0.463	1 2 3 3 3	0.187	2 1 1 2 3	0.374
1 1 3 2 1	0.500	1 3 1 1 1	0.513	2 1 1 3 1	0.410
1 1 3 2 2	0.433	1 3 1 1 2	0.446	2 1 1 3 2	0.343
1 1 3 2 3	0.376	1 3 1 1 3	0.388	2 1 1 3 3	0.285
1 1 3 3 1	0.411	1 3 1 2 1	0.426	2 1 2 1 1	0.778
1 1 3 3 2	0.345	1 3 1 2 2	0.359	2 1 2 1 2	0.711
1 1 3 3 3	0.287	1 3 1 2 3	0.301	2 1 2 1 3	0.429
1 2 1 1 1	0.784	1 3 1 3 1	0.337	2 1 2 2 1	0.691
1 2 1 1 2	0.717	1 3 1 3 2	0.270	2 1 2 2 2	0.624
1 2 1 1 3	0.435	1 3 1 3 3	0.213	2 1 2 2 3	0.342
1 2 1 2 1	0.697	1 3 2 1 1	0.480	2 1 2 3 1	0.377
1 2 1 2 2	0.630	1 3 2 1 2	0.414	2 1 2 3 2	0.311
1 2 1 2 3	0.348	1 3 2 1 3	0.356	2 1 2 3 3	0.253

2	1	3	1	1	0.514	2	3	2	2	2	0.253	3	2	1	3	3	0.079
2	1	3	1	2	0.447	2	3	2	2	3	0.195	3	2	2	1	1	0.347
2	1	3	1	3	0.389	2	3	2	3	1	0.231	3	2	2	1	2	0.281
2	1	3	2	1	0.427	2	3	2	3	2	0.165	3	2	2	1	3	0.223
2	1	3	2	2	0.360	2	3	2	3	3	0.107	3	2	2	2	1	0.260
2	1	3	2	3	0.302	2	3	3	1	1	0.368	3	2	2	2	2	0.194
2	1	3	3	1	0.338	2	3	3	1	2	0.301	3	2	2	2	3	0.136
2	1	3	3	2	0.271	2	3	3	1	3	0.243	3	2	2	3	1	0.172
2	1	3	3	3	0.213	2	3	3	2	1	0.280	3	2	2	3	2	0.105
2	2	1	1	1	0.710	2	3	3	2	2	0.214	3	2	2	3	3	0.047
2	2	1	1	2	0.643	2	3	3	2	3	0.156	3	2	3	1	1	0.308
2	2	1	1	3	0.361	2	3	3	3	1	0.192	3	2	3	1	2	0.241
2	2	1	2	1	0.623	2	3	3	3	2	0.125	3	2	3	1	3	0.183
2	2	1	2	2	0.556	2	3	3	3	3	0.067	3	2	3	2	1	0.221
2	2	1	2	3	0.274	3	1	1	1	1	0.479	3	2	3	2	2	0.154
2	2	1	3	1	0.310	3	1	1	1	2	0.412	3	2	3	2	3	0.096
2	2	1	3	2	0.243	3	1	1	1	3	0.355	3	2	3	3	1	0.132
2	2	1	3	3	0.185	3	1	1	2	1	0.392	3	2	3	3	2	0.066
2	2	2	1	1	0.678	3	1	1	2	2	0.325	3	2	3	3	3	0.008
2	2	2	1	2	0.611	3	1	1	2	3	0.268	3	3	1	1	1	0.333
2	2	2	1	3	0.329	3	1	1	3	1	0.304	3	3	1	1	2	0.266
2	2	2	2	1	0.591	3	1	1	3	2	0.237	3	3	1	1	3	0.209
2	2	2	2	2	0.524	3	1	1	3	3	0.179	3	3	1	2	1	0.246
2	2	2	2	3	0.242	3	1	2	1	1	0.447	3	3	1	2	2	0.179
2	2	2	3	1	0.278	3	1	2	1	2	0.380	3	3	1	2	3	0.122
2	2	2	3	2	0.211	3	1	2	1	3	0.323	3	3	1	3	1	0.158
2	2	2	3	3	0.153	3	1	2	2	1	0.360	3	3	1	3	2	0.091
2	2	3	1	1	0.414	3	1	2	2	2	0.293	3	3	1	3	3	0.033
2	2	3	1	2	0.347	3	1	2	2	3	0.236	3	3	2	1	1	0.301
2	2	3	1	3	0.289	3	1	2	3	1	0.271	3	3	2	1	2	0.234
2	2	3	2	1	0.327	3	1	2	3	2	0.205	3	3	2	1	3	0.176
2	2	3	2	2	0.260	3	1	2	3	3	0.147	3	3	2	2	1	0.214
2	2	3	2	3	0.202	3	1	3	1	1	0.408	3	3	2	2	2	0.147
2	2	3	3	1	0.238	3	1	3	1	2	0.341	3	3	2	2	3	0.090
2	2	3	3	2	0.172	3	1	3	1	3	0.283	3	3	2	3	1	0.125
2	2	3	3	3	0.114	3	1	3	2	1	0.321	3	3	2	3	2	0.059
2	3	1	1	1	0.439	3	1	3	2	2	0.254	3	3	2	3	3	0.001
2	3	1	1	2	0.372	3	1	3	2	3	0.196	3	3	3	1	1	0.261
2	3	1	1	3	0.315	3	1	3	3	1	0.232	3	3	3	1	2	0.195
2	3	1	2	1	0.352	3	1	3	3	2	0.165	3	3	3	1	3	0.137
2	3	1	2	2	0.285	3	1	3	3	3	0.107	3	3	3	2	1	0.174
2	3	1	2	3	0.228	3	2	1	1	1	0.380	3	3	3	2	2	0.108
2	3	1	3	1	0.264	3	2	1	1	2	0.313	3	3	3	2	3	0.050
2	3	1	3	2	0.197	3	2	1	1	3	0.255	3	3	3	3	1	0.086
2	3	1	3	3	0.139	3	2	1	2	1	0.293	3	3	3	3	2	0.019
2	3	2	1	1	0.407	3	2	1	2	2	0.226	3	3	3	3	3	-0.039
2	3	2	1	2	0.340	3	2	1	2	3	0.168						
2	3	2	1	3	0.283	3	2	1	3	1	0.204	Unconscious [0.010]					
2	3	2	2	1	0.320	3	2	1	3	2	0.137						

SUBGROUP TARIFFS

(10 year durations)

TTO means - males under 60

TTO means - females under 60

TTO means - males 60 and over

TTO means - females 60 and over

TTO medians - males under 60

TTO medians - females under 60

TTO medians - males 60 and over

TTO medians - females 60 and over

VAS means - degree level education

VAS means - intermediate education

VAS means - minimum education

VAS medians - degree education

VAS medians - intermediate education

VAS medians - minimum education

TARIFF A5: TTO TARIFF OF MEANS: MALES UNDER 60 (10 YEAR DURATION)

	Level 2	Level 3
Mobility	0.071	0.320
Self-care	0.075	0.195
Usual activity	0.022	0.106
Pain/discomfort	0.099	0.356
Anxiety/depression	0.076	0.238
Constant = 0.081		N3 = 0.219

1 1 1 1 1	1.000	1 2 1 3 2	0.193	1 3 2 2 3	0.146
1 1 1 1 2	0.843	1 2 1 3 3	0.031	1 3 2 3 1	0.126
1 1 1 1 3	0.462	1 2 2 1 1	0.821	1 3 2 3 2	0.051
1 1 1 2 1	0.820	1 2 2 1 2	0.746	1 3 2 3 3	-0.111
1 1 1 2 2	0.745	1 2 2 1 3	0.365	1 3 3 1 1	0.398
1 1 1 2 3	0.364	1 2 2 2 1	0.723	1 3 3 1 2	0.323
1 1 1 3 1	0.344	1 2 2 2 2	0.647	1 3 3 1 3	0.161
1 1 1 3 2	0.268	1 2 2 2 3	0.266	1 3 3 2 1	0.300
1 1 1 3 3	0.106	1 2 2 3 1	0.246	1 3 3 2 2	0.224
1 1 2 1 1	0.896	1 2 2 3 2	0.171	1 3 3 2 3	0.062
1 1 2 1 2	0.821	1 2 2 3 3	0.009	1 3 3 3 1	0.043
1 1 2 1 3	0.440	1 2 3 1 1	0.519	1 3 3 3 2	-0.033
1 1 2 2 1	0.798	1 2 3 1 2	0.443	1 3 3 3 3	-0.195
1 1 2 2 2	0.722	1 2 3 1 3	0.281	2 1 1 1 1	0.848
1 1 2 2 3	0.341	1 2 3 2 1	0.420	2 1 1 1 2	0.772
1 1 2 3 1	0.322	1 2 3 2 2	0.344	2 1 1 1 3	0.391
1 1 2 3 2	0.246	1 2 3 2 3	0.182	2 1 1 2 1	0.749
1 1 2 3 3	0.084	1 2 3 3 1	0.163	2 1 1 2 2	0.674
1 1 3 1 1	0.594	1 2 3 3 2	0.087	2 1 1 2 3	0.293
1 1 3 1 2	0.518	1 2 3 3 3	-0.075	2 1 1 3 1	0.273
1 1 3 1 3	0.356	1 3 1 1 1	0.505	2 1 1 3 2	0.198
1 1 3 2 1	0.495	1 3 1 1 2	0.429	2 1 1 3 3	0.036
1 1 3 2 2	0.419	1 3 1 1 3	0.267	2 1 2 1 1	0.826
1 1 3 2 3	0.257	1 3 1 2 1	0.406	2 1 2 1 2	0.750
1 1 3 3 1	0.238	1 3 1 2 2	0.330	2 1 2 1 3	0.369
1 1 3 3 2	0.162	1 3 1 2 3	0.168	2 1 2 2 1	0.727
1 1 3 3 3	0.000	1 3 1 3 1	0.149	2 1 2 2 2	0.651
1 2 1 1 1	0.844	1 3 1 3 2	0.073	2 1 2 2 3	0.270
1 2 1 1 2	0.768	1 3 1 3 3	-0.089	2 1 2 3 1	0.251
1 2 1 1 3	0.387	1 3 2 1 1	0.482	2 1 2 3 2	0.175
1 2 1 2 1	0.745	1 3 2 1 2	0.407	2 1 2 3 3	0.013
1 2 1 2 2	0.669	1 3 2 1 3	0.245	2 1 3 1 1	0.523
1 2 1 2 3	0.288	1 3 2 2 1	0.384	2 1 3 1 2	0.447
1 2 1 3 1	0.269	1 3 2 2 2	0.308	2 1 3 1 3	0.285

2	1	3	2	1	0.424
2	1	3	2	2	0.349
2	1	3	2	3	0.187
2	1	3	3	1	0.167
2	1	3	3	2	0.091
2	1	3	3	3	-0.071
2	2	1	1	1	0.773
2	2	1	1	2	0.697
2	2	1	1	3	0.316
2	2	1	2	1	0.674
2	2	1	2	2	0.599
2	2	1	2	3	0.218
2	2	1	3	1	0.198
2	2	1	3	2	0.122
2	2	1	3	3	-0.040
2	2	2	1	1	0.750
2	2	2	1	2	0.675
2	2	2	1	3	0.294
2	2	2	2	1	0.652
2	2	2	2	2	0.576
2	2	2	2	3	0.195
2	2	2	3	1	0.176
2	2	2	3	2	0.100
2	2	2	3	3	-0.062
2	2	3	1	1	0.448
2	2	3	1	2	0.372
2	2	3	1	3	0.210
2	2	3	2	1	0.349
2	2	3	2	2	0.273
2	2	3	2	3	0.111
2	2	3	3	1	0.092
2	2	3	3	2	0.016
2	2	3	3	3	-0.146
2	3	1	1	1	0.434
2	3	1	1	2	0.358
2	3	1	1	3	0.196
2	3	1	2	1	0.335
2	3	1	2	2	0.259
2	3	1	2	3	0.097
2	3	1	3	1	0.078
2	3	1	3	2	0.002
2	3	1	3	3	-0.160
2	3	2	1	1	0.411
2	3	2	1	2	0.336
2	3	2	1	3	0.174
2	3	2	2	1	0.313
2	3	2	2	2	0.237
2	3	2	2	3	0.075
2	3	2	3	1	0.055
2	3	2	3	2	-0.020
2	3	2	3	3	-0.182
2	3	3	1	1	0.328
2	3	3	1	2	0.252
2	3	3	1	3	0.090
2	3	3	2	1	0.229
2	3	3	2	2	0.153
2	3	3	2	3	-0.009
2	3	3	3	1	-0.028
2	3	3	3	2	-0.104
2	3	3	3	3	-0.266
3	1	1	1	1	0.380
3	1	1	1	2	0.304
3	1	1	1	3	0.142
3	1	1	2	1	0.281
3	1	1	2	2	0.205
3	1	1	2	3	0.043
3	1	1	3	1	0.024
3	1	1	3	2	-0.052
3	1	1	3	3	-0.214
3	1	2	1	1	0.357
3	1	2	1	2	0.282
3	1	2	1	3	0.120
3	1	2	2	1	0.259
3	1	2	2	2	0.183
3	1	2	2	3	0.021
3	1	2	3	1	0.001
3	1	2	3	2	-0.074
3	1	2	3	3	-0.236
3	1	3	1	1	0.273
3	1	3	1	2	0.198
3	1	3	1	3	0.036
3	1	3	2	1	0.175
3	1	3	2	2	0.099
3	1	3	2	3	-0.063
3	1	3	3	1	-0.082
3	1	3	3	2	-0.158
3	1	3	3	3	-0.320
3	2	1	1	1	0.304
3	2	1	1	2	0.229
3	2	1	1	3	0.067
3	2	1	2	1	0.206
3	2	1	2	2	0.130
3	2	1	2	3	-0.032
3	2	1	3	1	-0.052
3	2	1	3	2	-0.127
3	2	1	3	3	-0.289
3	2	2	1	1	0.282
3	2	2	1	2	0.206
3	2	2	1	3	0.044
3	2	2	2	1	0.183
3	2	2	2	2	0.108
3	2	2	2	3	-0.054
3	2	2	3	1	-0.074
3	2	2	3	2	-0.150
3	2	2	3	3	-0.312
3	2	3	1	1	0.198
3	2	3	1	2	0.123
3	2	3	1	3	-0.039
3	2	3	2	1	0.100
3	2	3	2	2	0.024
3	2	3	2	3	-0.138
3	2	3	3	1	-0.158
3	2	3	3	2	-0.233
3	2	3	3	3	-0.395
3	3	1	1	1	0.184
3	3	1	1	2	0.109
3	3	1	1	3	-0.053
3	3	1	2	1	0.086
3	3	1	2	2	0.010
3	3	1	2	3	-0.152
3	3	1	3	1	-0.172
3	3	1	3	2	-0.247
3	3	1	3	3	-0.409
3	3	2	1	1	0.162
3	3	2	1	2	0.086
3	3	2	1	3	-0.076
3	3	2	2	1	0.063
3	3	2	2	2	-0.012
3	3	2	2	3	-0.174
3	3	2	3	1	-0.194
3	3	2	3	2	-0.270
3	3	2	3	3	-0.432
3	3	3	1	1	0.078
3	3	3	1	2	0.002
3	3	3	1	3	-0.160
3	3	3	2	1	-0.021
3	3	3	2	2	-0.096
3	3	3	2	3	-0.258
3	3	3	3	1	-0.278
3	3	3	3	2	-0.353
3	3	3	3	3	-0.516

Unconscious [-0.284]

TARIFF A6: TTO TARIFF OF MEANS: FEMALES UNDER 60 (10 YEAR DURATION)

	Level 2	Level 3
Mobility	0.062	0.287
Self-care	0.090	0.203
Usual activity	0.039	0.102
Pain/discomfort	0.135	0.426
Anxiety/depression	0.068	0.254
Constant = 0.071		N3 = 0.253

1 1 1 1 1	1.000	1 2 1 3 2	0.091	1 3 2 2 3	0.044
1 1 1 1 2	0.861	1 2 1 3 3	-0.095	1 3 2 3 1	0.007
1 1 1 1 3	0.422	1 2 2 1 1	0.799	1 3 2 3 2	-0.061
1 1 1 2 1	0.793	1 2 2 1 2	0.731	1 3 2 3 3	-0.247
1 1 1 2 2	0.725	1 2 2 1 3	0.292	1 3 3 1 1	0.371
1 1 1 2 3	0.287	1 2 2 2 1	0.663	1 3 3 1 2	0.303
1 1 1 3 1	0.249	1 2 2 2 2	0.595	1 3 3 1 3	0.117
1 1 1 3 2	0.182	1 2 2 2 3	0.157	1 3 3 2 1	0.235
1 1 1 3 3	-0.004	1 2 2 3 1	0.120	1 3 3 2 2	0.167
1 1 2 1 1	0.889	1 2 2 3 2	0.052	1 3 3 2 3	-0.019
1 1 2 1 2	0.821	1 2 2 3 3	-0.134	1 3 3 3 1	-0.056
1 1 2 1 3	0.383	1 2 3 1 1	0.483	1 3 3 3 2	-0.124
1 1 2 2 1	0.754	1 2 3 1 2	0.415	1 3 3 3 3	-0.310
1 1 2 2 2	0.686	1 2 3 1 3	0.229	2 1 1 1 1	0.866
1 1 2 2 3	0.247	1 2 3 2 1	0.348	2 1 1 1 2	0.798
1 1 2 3 1	0.210	1 2 3 2 2	0.280	2 1 1 1 3	0.360
1 1 2 3 2	0.142	1 2 3 2 3	0.094	2 1 1 2 1	0.731
1 1 2 3 3	-0.044	1 2 3 3 1	0.057	2 1 1 2 2	0.663
1 1 3 1 1	0.574	1 2 3 3 2	-0.011	2 1 1 2 3	0.224
1 1 3 1 2	0.506	1 2 3 3 3	-0.197	2 1 1 3 1	0.187
1 1 3 1 3	0.320	1 3 1 1 1	0.473	2 1 1 3 2	0.119
1 1 3 2 1	0.438	1 3 1 1 2	0.405	2 1 1 3 3	-0.067
1 1 3 2 2	0.370	1 3 1 1 3	0.219	2 1 2 1 1	0.827
1 1 3 2 3	0.184	1 3 1 2 1	0.337	2 1 2 1 2	0.759
1 1 3 3 1	0.147	1 3 1 2 2	0.269	2 1 2 1 3	0.320
1 1 3 3 2	0.079	1 3 1 2 3	0.083	2 1 2 2 1	0.691
1 1 3 3 3	-0.107	1 3 1 3 1	0.046	2 1 2 2 2	0.623
1 2 1 1 1	0.838	1 3 1 3 2	-0.022	2 1 2 2 3	0.185
1 2 1 1 2	0.770	1 3 1 3 3	-0.208	2 1 2 3 1	0.148
1 2 1 1 3	0.332	1 3 2 1 1	0.433	2 1 2 3 2	0.080
1 2 1 2 1	0.703	1 3 2 1 2	0.366	2 1 2 3 3	-0.106
1 2 1 2 2	0.635	1 3 2 1 3	0.179	2 1 3 1 1	0.511
1 2 1 2 3	0.196	1 3 2 2 1	0.298	2 1 3 1 2	0.443
1 2 1 3 1	0.159	1 3 2 2 2	0.230	2 1 3 1 3	0.257

2 1 3 2 1	0.376
2 1 3 2 2	0.308
2 1 3 2 3	0.122
2 1 3 3 1	0.085
2 1 3 3 2	0.017
2 1 3 3 3	-0.169
2 2 1 1 1	0.776
2 2 1 1 2	0.708
2 2 1 1 3	0.269
2 2 1 2 1	0.640
2 2 1 2 2	0.572
2 2 1 2 3	0.134
2 2 1 3 1	0.097
2 2 1 3 2	0.029
2 2 1 3 3	-0.157
2 2 2 1 1	0.736
2 2 2 1 2	0.669
2 2 2 1 3	0.230
2 2 2 2 1	0.601
2 2 2 2 2	0.533
2 2 2 2 3	0.094
2 2 2 3 1	0.057
2 2 2 3 2	-0.011
2 2 2 3 3	-0.197
2 2 3 1 1	0.421
2 2 3 1 2	0.353
2 2 3 1 3	0.167
2 2 3 2 1	0.285
2 2 3 2 2	0.218
2 2 3 2 3	0.032
2 2 3 3 1	-0.006
2 2 3 3 2	-0.073
2 2 3 3 3	-0.259
2 3 1 1 1	0.410
2 3 1 1 2	0.343
2 3 1 1 3	0.156
2 3 1 2 1	0.275
2 3 1 2 2	0.207
2 3 1 2 3	0.021
2 3 1 3 1	-0.016
2 3 1 3 2	-0.084
2 3 1 3 3	-0.270
2 3 2 1 1	0.371
2 3 2 1 2	0.303
2 3 2 1 3	0.117
2 3 2 2 1	0.236
2 3 2 2 2	0.168
2 3 2 2 3	-0.018
2 3 2 3 1	-0.055
2 3 2 3 2	-0.123
2 3 2 3 3	-0.309
2 3 3 1 1	0.308
2 3 3 1 2	0.240
2 3 3 1 3	0.054
2 3 3 2 1	0.173
2 3 3 2 2	0.105
2 3 3 2 3	-0.081
2 3 3 3 1	-0.118
2 3 3 3 2	-0.186
2 3 3 3 3	-0.372
3 1 1 1 1	0.389
3 1 1 1 2	0.322
3 1 1 1 3	0.136
3 1 1 2 1	0.254
3 1 1 2 2	0.186
3 1 1 2 3	0.000
3 1 1 3 1	-0.037
3 1 1 3 2	-0.105
3 1 1 3 3	-0.291
3 1 2 1 1	0.350
3 1 2 1 2	0.282
3 1 2 1 3	0.096
3 1 2 2 1	0.215
3 1 2 2 2	0.147
3 1 2 2 3	-0.039
3 1 2 3 1	-0.076
3 1 2 3 2	-0.144
3 1 2 3 3	-0.330
3 1 3 1 1	0.287
3 1 3 1 2	0.219
3 1 3 1 3	0.033
3 1 3 2 1	0.152
3 1 3 2 2	0.084
3 1 3 2 3	-0.102
3 1 3 3 1	-0.139
3 1 3 3 2	-0.207
3 1 3 3 3	-0.393
3 2 1 1 1	0.299
3 2 1 1 2	0.231
3 2 1 1 3	0.045
3 2 1 2 1	0.164
3 2 1 2 2	0.096
3 2 1 2 3	-0.090
3 2 1 3 1	-0.127
3 2 1 3 2	-0.195
3 2 1 3 3	-0.381
3 2 2 1 1	0.260
3 2 2 1 2	0.192
3 2 2 1 3	0.006
3 2 2 2 1	0.124
3 2 2 2 2	0.056
3 2 2 2 3	-0.130
3 2 2 3 1	-0.167
3 2 2 3 2	-0.235
3 2 2 3 3	-0.421
3 2 3 1 1	0.197
3 2 3 1 2	0.129
3 2 3 1 3	-0.057
3 2 3 2 1	0.061
3 2 3 2 2	-0.007
3 2 3 2 3	-0.193
3 2 3 3 1	-0.230
3 2 3 3 2	-0.298
3 2 3 3 3	-0.484
3 3 1 1 1	0.186
3 3 1 1 2	0.118
3 3 1 1 3	-0.068
3 3 1 2 1	0.051
3 3 1 2 2	-0.017
3 3 1 2 3	-0.203
3 3 1 3 1	-0.240
3 3 1 3 2	-0.308
3 3 1 3 3	-0.494
3 3 2 1 1	0.147
3 3 2 1 2	0.079
3 3 2 1 3	-0.107
3 3 2 2 1	0.011
3 3 2 2 2	-0.056
3 3 2 2 3	-0.242
3 3 2 3 1	-0.280
3 3 2 3 2	-0.347
3 3 2 3 3	-0.534
3 3 3 1 1	0.084
3 3 3 1 2	0.016
3 3 3 1 3	-0.170
3 3 3 2 1	-0.051
3 3 3 2 2	-0.119
3 3 3 2 3	-0.305
3 3 3 3 1	-0.342
3 3 3 3 2	-0.410
3 3 3 3 3	-0.596

Unconscious [-0.399]

TARIFF A7: TTO TARIFF OF MEANS: MALES 60 AND OVER (10 YEAR DURATION)

	Level 2	Level 3
Mobility	0.073	0.374
Self-care	0.126	0.236
Usual activity	0.054	0.060
Pain/discomfort	0.123	0.374
Anxiety/depression	0.044	0.186
Constant = 0.077		N3 = 0.328

1 1 1 1 1	1.000	1 2 1 3 2	0.051	1 3 2 2 3	-0.004	1 1 1 1 1	1.000	1 2 1 3 2	0.051	1 3 2 2 3	-0.004
1 1 1 1 2	0.879	1 2 1 3 3	-0.091	1 3 2 3 1	-0.069	1 1 1 1 2	0.879	1 2 1 3 3	-0.091	1 3 2 3 1	-0.069
1 1 1 1 3	0.409	1 2 2 1 1	0.743	1 3 2 3 2	-0.113	1 1 1 1 3	0.409	1 2 2 1 1	0.743	1 3 2 3 2	-0.113
1 1 1 2 1	0.800	1 2 2 1 2	0.699	1 3 2 3 3	-0.255	1 1 1 2 1	0.800	1 2 2 1 2	0.699	1 3 2 3 3	-0.255
1 1 1 2 2	0.756	1 2 2 1 3	0.229	1 3 3 1 1	0.299	1 1 1 2 2	0.756	1 2 2 1 3	0.229	1 3 3 1 1	0.299
1 1 1 2 3	0.286	1 2 2 2 1	0.620	1 3 3 1 2	0.255	1 1 1 2 3	0.286	1 2 2 2 1	0.620	1 3 3 1 2	0.255
1 1 1 3 1	0.221	1 2 2 2 2	0.576	1 3 3 1 3	0.113	1 1 1 3 1	0.221	1 2 2 2 2	0.576	1 3 3 1 3	0.113
1 1 1 3 2	0.177	1 2 2 2 3	0.106	1 3 3 2 1	0.176	1 1 1 3 2	0.177	1 2 2 2 3	0.106	1 3 3 2 1	0.176
1 1 1 3 3	0.035	1 2 2 3 1	0.041	1 3 3 2 2	0.132	1 1 1 3 3	0.035	1 2 2 3 1	0.041	1 3 3 2 2	0.132
1 1 2 1 1	0.869	1 2 2 3 2	-0.003	1 3 3 2 3	-0.010	1 1 2 1 1	0.869	1 2 2 3 2	-0.003	1 3 3 2 3	-0.010
1 1 2 1 2	0.825	1 2 2 3 3	-0.145	1 3 3 3 1	-0.075	1 1 2 1 2	0.825	1 2 2 3 3	-0.145	1 3 3 3 1	-0.075
1 1 2 1 3	0.355	1 2 3 1 1	0.409	1 3 3 3 2	-0.119	1 1 2 1 3	0.355	1 2 3 1 1	0.409	1 3 3 3 2	-0.119
1 1 2 2 1	0.746	1 2 3 1 2	0.365	1 3 3 3 3	-0.261	1 1 2 2 1	0.746	1 2 3 1 2	0.365	1 3 3 3 3	-0.261
1 1 2 2 2	0.702	1 2 3 1 3	0.223	2 1 1 1 1	0.850	1 1 2 2 2	0.702	1 2 3 1 3	0.223	2 1 1 1 1	0.850
1 1 2 2 3	0.232	1 2 3 2 1	0.286	2 1 1 1 2	0.806	1 1 2 2 3	0.232	1 2 3 2 1	0.286	2 1 1 1 2	0.806
1 1 2 3 1	0.167	1 2 3 2 2	0.242	2 1 1 1 3	0.336	1 1 2 3 1	0.167	1 2 3 2 2	0.242	2 1 1 1 3	0.336
1 1 2 3 2	0.123	1 2 3 2 3	0.100	2 1 1 2 1	0.727	1 1 2 3 2	0.123	1 2 3 2 3	0.100	2 1 1 2 1	0.727
1 1 2 3 3	-0.019	1 2 3 3 1	0.035	2 1 1 2 2	0.683	1 1 2 3 3	-0.019	1 2 3 3 1	0.035	2 1 1 2 2	0.683
1 1 3 1 1	0.535	1 2 3 3 2	-0.009	2 1 1 2 3	0.213	1 1 3 1 1	0.535	1 2 3 3 2	-0.009	2 1 1 2 3	0.213
1 1 3 1 2	0.491	1 2 3 3 3	-0.151	2 1 1 3 1	0.148	1 1 3 1 2	0.491	1 2 3 3 3	-0.151	2 1 1 3 1	0.148
1 1 3 1 3	0.349	1 3 1 1 1	0.359	2 1 1 3 2	0.104	1 1 3 1 3	0.349	1 3 1 1 1	0.359	2 1 1 3 2	0.104
1 1 3 2 1	0.412	1 3 1 1 2	0.315	2 1 1 3 3	-0.038	1 1 3 2 1	0.412	1 3 1 1 2	0.315	2 1 1 3 3	-0.038
1 1 3 2 2	0.368	1 3 1 1 3	0.173	2 1 2 1 1	0.796	1 1 3 2 2	0.368	1 3 1 1 3	0.173	2 1 2 1 1	0.796
1 1 3 2 3	0.226	1 3 1 2 1	0.236	2 1 2 1 2	0.752	1 1 3 2 3	0.226	1 3 1 2 1	0.236	2 1 2 1 2	0.752
1 1 3 3 1	0.161	1 3 1 2 2	0.192	2 1 2 1 3	0.282	1 1 3 3 1	0.161	1 3 1 2 2	0.192	2 1 2 1 3	0.282
1 1 3 3 2	0.117	1 3 1 2 3	0.050	2 1 2 2 1	0.673	1 1 3 3 2	0.117	1 3 1 2 3	0.050	2 1 2 2 1	0.673
1 1 3 3 3	-0.025	1 3 1 3 1	-0.015	2 1 2 2 2	0.629	1 1 3 3 3	-0.025	1 3 1 3 1	-0.015	2 1 2 2 2	0.629
1 2 1 1 1	0.797	1 3 1 3 2	-0.059	2 1 2 2 3	0.159	1 2 1 1 1	0.797	1 3 1 3 2	-0.059	2 1 2 2 3	0.159
1 2 1 1 2	0.753	1 3 1 3 3	-0.201	2 1 2 3 1	0.094	1 2 1 1 2	0.753	1 3 1 3 3	-0.201	2 1 2 3 1	0.094
1 2 1 1 3	0.283	1 3 2 1 1	0.305	2 1 2 3 2	0.050	1 2 1 1 3	0.283	1 3 2 1 1	0.305	2 1 2 3 2	0.050
1 2 1 2 1	0.674	1 3 2 1 2	0.261	2 1 2 3 3	-0.092	1 2 1 2 1	0.674	1 3 2 1 2	0.261	2 1 2 3 3	-0.092
1 2 1 2 2	0.630	1 3 2 1 3	0.119	2 1 3 1 1	0.462	1 2 1 2 2	0.630	1 3 2 1 3	0.119	2 1 3 1 1	0.462
1 2 1 2 3	0.160	1 3 2 2 1	0.182	2 1 3 1 2	0.418	1 2 1 2 3	0.160	1 3 2 2 1	0.182	2 1 3 1 2	0.418
1 2 1 3 1	0.095	1 3 2 2 2	0.138	2 1 3 1 3	0.276	1 2 1 3 1	0.095	1 3 2 2 2	0.138	2 1 3 1 3	0.276

2	1	3	2	1	0.339	2	3	2	3	2	-0.186	3	2	2	1	3	-0.145
2	1	3	2	2	0.295	2	3	2	3	3	-0.328	3	2	2	2	1	-0.082
2	1	3	2	3	0.153	2	3	3	1	1	0.226	3	2	2	2	2	-0.126
2	1	3	3	1	0.088	2	3	3	1	2	0.182	3	2	2	2	3	-0.268
2	1	3	3	2	0.044	2	3	3	1	3	0.040	3	2	2	3	1	-0.333
2	1	3	3	3	-0.098	2	3	3	2	1	0.103	3	2	2	3	2	-0.377
2	2	1	1	1	0.724	2	3	3	2	2	0.059	3	2	2	3	3	-0.519
2	2	1	1	2	0.680	2	3	3	2	3	-0.083	3	2	3	1	1	0.035
2	2	1	1	3	0.210	2	3	3	3	1	-0.148	3	2	3	1	2	-0.009
2	2	1	2	1	0.601	2	3	3	3	2	-0.192	3	2	3	1	3	-0.151
2	2	1	2	2	0.557	2	3	3	3	3	-0.334	3	2	3	2	1	-0.088
2	2	1	2	3	0.087	3	1	1	1	1	0.221	3	2	3	2	2	-0.132
2	2	1	3	1	0.022	3	1	1	1	2	0.177	3	2	3	2	3	-0.274
2	2	1	3	2	-0.022	3	1	1	1	3	0.035	3	2	3	3	1	-0.339
2	2	1	3	3	-0.164	3	1	1	2	1	0.098	3	2	3	3	2	-0.383
2	2	2	1	1	0.670	3	1	1	2	2	0.054	3	2	3	3	3	-0.525
2	2	2	1	2	0.626	3	1	1	2	3	-0.088	3	3	1	1	1	-0.015
2	2	2	1	3	0.156	3	1	1	3	1	-0.153	3	3	1	1	2	-0.059
2	2	2	2	1	0.547	3	1	1	3	2	-0.197	3	3	1	1	3	-0.201
2	2	2	2	2	0.503	3	1	1	3	3	-0.339	3	3	1	2	1	-0.138
2	2	2	2	3	0.033	3	1	2	1	1	0.167	3	3	1	2	2	-0.182
2	2	2	3	1	-0.032	3	1	2	1	2	0.123	3	3	1	2	3	-0.324
2	2	2	3	2	-0.076	3	1	2	1	3	-0.019	3	3	1	3	1	-0.389
2	2	2	3	3	-0.218	3	1	2	2	1	0.044	3	3	1	3	2	-0.433
2	2	3	1	1	0.336	3	1	2	2	2	0.000	3	3	1	3	3	-0.575
2	2	3	1	2	0.292	3	1	2	2	3	-0.142	3	3	2	1	1	-0.069
2	2	3	1	3	0.150	3	1	2	3	1	-0.207	3	3	2	1	2	-0.113
2	2	3	2	1	0.213	3	1	2	3	2	-0.251	3	3	2	1	3	-0.255
2	2	3	2	2	0.169	3	1	2	3	3	-0.393	3	3	2	2	1	-0.192
2	2	3	2	3	0.027	3	1	3	1	1	0.161	3	3	2	2	2	-0.236
2	2	3	3	1	-0.038	3	1	3	1	2	0.117	3	3	2	2	3	-0.378
2	2	3	3	2	-0.082	3	1	3	1	3	-0.025	3	3	2	3	1	-0.443
2	2	3	3	3	-0.224	3	1	3	2	1	0.038	3	3	2	3	2	-0.487
2	3	1	1	1	0.286	3	1	3	2	2	-0.006	3	3	2	3	3	-0.629
2	3	1	1	2	0.242	3	1	3	2	3	-0.148	3	3	3	1	1	-0.075
2	3	1	1	3	0.100	3	1	3	3	1	-0.213	3	3	3	1	2	-0.119
2	3	1	2	1	0.163	3	1	3	3	2	-0.257	3	3	3	1	3	-0.261
2	3	1	2	2	0.119	3	1	3	3	3	-0.399	3	3	3	2	1	-0.198
2	3	1	2	3	-0.023	3	2	1	1	1	0.095	3	3	3	2	2	-0.242
2	3	1	3	1	-0.088	3	2	1	1	2	0.051	3	3	3	2	3	-0.384
2	3	1	3	2	-0.132	3	2	1	1	3	-0.091	3	3	3	3	1	-0.449
2	3	1	3	3	-0.274	3	2	1	2	1	-0.028	3	3	3	3	2	-0.493
2	3	2	1	1	0.232	3	2	1	2	2	-0.072	3	3	3	3	3	-0.635
2	3	2	1	2	0.188	3	2	1	2	3	-0.214						
2	3	2	1	3	0.046	3	2	1	3	1	-0.279	Unconscious [-0.475]					
2	3	2	2	1	0.109	3	2	1	3	2	-0.323						
2	3	2	2	2	0.065	3	2	1	3	3	-0.465						
2	3	2	2	3	-0.077	3	2	2	1	1	0.041						
2	3	2	3	1	-0.142	3	2	2	1	2	-0.003						

TARIFF A8: TTO TARIFF OF MEANS: FEMALES 60 AND OVER (10 YEAR DURATION)

	Level 2	Level 3
Mobility	0.076	0.316
Self-care	0.174	0.259
Usual activity	0.043	0.077
Pain/discomfort	0.139	0.342
Anxiety/depression	0.088	0.230
Constant = 0.102		N3 = 0.364

1	1	1	1	1	1.000	1	2	1	3	1	0.018	1	3	2	2	1	0.093
1	1	1	1	2	0.810	1	2	1	3	2	-0.070	1	3	2	2	2	0.005
1	1	1	1	3	0.304	1	2	1	3	3	-0.212	1	3	2	2	3	-0.137
1	1	1	2	1	0.759	1	2	2	1	1	0.681	1	3	2	3	1	-0.110
1	1	1	2	2	0.671	1	2	2	1	2	0.593	1	3	2	3	2	-0.198
1	1	1	2	3	0.165	1	2	2	1	3	0.087	1	3	2	3	3	-0.340
1	1	1	3	1	0.192	1	2	2	2	1	0.542	1	3	3	1	1	0.198
1	1	1	3	2	0.104	1	2	2	2	2	0.454	1	3	3	1	2	0.110
1	1	1	3	3	-0.038	1	2	2	2	3	-0.052	1	3	3	1	3	-0.032
1	1	2	1	1	0.855	1	2	2	3	1	-0.025	1	3	3	2	1	0.059
1	1	2	1	2	0.767	1	2	2	3	2	-0.113	1	3	3	2	2	-0.029
1	1	2	1	3	0.261	1	2	2	3	3	-0.255	1	3	3	2	3	-0.171
1	1	2	2	1	0.716	1	2	3	1	1	0.283	1	3	3	3	1	-0.144
1	1	2	2	2	0.628	1	2	3	1	2	0.195	1	3	3	3	2	-0.232
1	1	2	2	3	0.122	1	2	3	1	3	0.053	1	3	3	3	3	-0.374
1	1	2	3	1	0.149	1	2	3	2	1	0.144	2	1	1	1	1	0.822
1	1	2	3	2	0.061	1	2	3	2	2	0.056	2	1	1	1	2	0.734
1	1	2	3	3	-0.081	1	2	3	2	3	-0.086	2	1	1	1	3	0.228
1	1	3	1	1	0.457	1	2	3	3	1	-0.059	2	1	1	2	1	0.683
1	1	3	1	2	0.369	1	2	3	3	2	-0.147	2	1	1	2	2	0.595
1	1	3	1	3	0.227	1	2	3	3	3	-0.289	2	1	1	2	3	0.089
1	1	3	2	1	0.318	1	3	1	1	1	0.275	2	1	1	3	1	0.116
1	1	3	2	2	0.230	1	3	1	1	2	0.187	2	1	1	3	2	0.028
1	1	3	2	3	0.088	1	3	1	1	3	0.045	2	1	1	3	3	-0.114
1	1	3	3	1	0.115	1	3	1	2	1	0.136	2	1	2	1	1	0.779
1	1	3	3	2	0.027	1	3	1	2	2	0.048	2	1	2	1	2	0.691
1	1	3	3	3	-0.115	1	3	1	2	3	-0.094	2	1	2	1	3	0.185
1	2	1	1	1	0.724	1	3	1	3	1	-0.067	2	1	2	2	1	0.640
1	2	1	1	2	0.636	1	3	1	3	2	-0.155	2	1	2	2	2	0.552
1	2	1	1	3	0.130	1	3	1	3	3	-0.297	2	1	2	2	3	0.046
1	2	1	2	1	0.585	1	3	2	1	1	0.232	2	1	2	3	1	0.073
1	2	1	2	2	0.497	1	3	2	1	2	0.144	2	1	2	3	2	-0.015
1	2	1	2	3	-0.009	1	3	2	1	3	0.002	2	1	2	3	3	-0.157

2	1	3	1	1	0.381	2	3	2	2	2	-0.071	3	2	1	3	3	-0.528
2	1	3	1	2	0.293	2	3	2	2	3	-0.213	3	2	2	1	1	0.001
2	1	3	1	3	0.151	2	3	2	3	1	-0.186	3	2	2	1	2	-0.087
2	1	3	2	1	0.242	2	3	2	3	2	-0.274	3	2	2	1	3	-0.229
2	1	3	2	2	0.154	2	3	2	3	3	-0.416	3	2	2	2	1	-0.138
2	1	3	2	3	0.012	2	3	3	1	1	0.122	3	2	2	2	2	-0.226
2	1	3	3	1	0.039	2	3	3	1	2	0.034	3	2	2	2	3	-0.368
2	1	3	3	2	-0.049	2	3	3	1	3	-0.108	3	2	2	3	1	-0.341
2	1	3	3	3	-0.191	2	3	3	2	1	-0.017	3	2	2	3	2	-0.429
2	2	1	1	1	0.648	2	3	3	2	2	-0.105	3	2	2	3	3	-0.571
2	2	1	1	2	0.560	2	3	3	2	3	-0.247	3	2	3	1	1	-0.033
2	2	1	1	3	0.054	2	3	3	3	1	-0.220	3	2	3	1	2	-0.121
2	2	1	2	1	0.509	2	3	3	3	2	-0.308	3	2	3	1	3	-0.263
2	2	1	2	2	0.421	2	3	3	3	3	-0.450	3	2	3	2	1	-0.172
2	2	1	2	3	-0.085	3	1	1	1	1	0.218	3	2	3	2	2	-0.260
2	2	1	3	1	-0.058	3	1	1	1	2	0.130	3	2	3	2	3	-0.402
2	2	1	3	2	-0.146	3	1	1	1	3	-0.012	3	2	3	3	1	-0.375
2	2	1	3	3	-0.288	3	1	1	2	1	0.079	3	2	3	3	2	-0.463
2	2	2	1	1	0.605	3	1	1	2	2	-0.009	3	2	3	3	3	-0.605
2	2	2	1	2	0.517	3	1	1	2	3	-0.151	3	3	1	1	1	-0.041
2	2	2	1	3	0.011	3	1	1	3	1	-0.124	3	3	1	1	2	-0.129
2	2	2	2	1	0.466	3	1	1	3	2	-0.212	3	3	1	1	3	-0.271
2	2	2	2	2	0.378	3	1	1	3	3	-0.354	3	3	1	2	1	-0.180
2	2	2	2	3	-0.128	3	1	2	1	1	0.175	3	3	1	2	2	-0.268
2	2	2	3	1	-0.101	3	1	2	1	2	0.087	3	3	1	2	3	-0.410
2	2	2	3	2	-0.189	3	1	2	1	3	-0.055	3	3	1	3	1	-0.383
2	2	2	3	3	-0.331	3	1	2	2	1	0.036	3	3	1	3	2	-0.471
2	2	3	1	1	0.207	3	1	2	2	2	-0.052	3	3	1	3	3	-0.613
2	2	3	1	2	0.119	3	1	2	2	3	-0.194	3	3	2	1	1	-0.084
2	2	3	1	3	-0.023	3	1	2	3	1	-0.167	3	3	2	1	2	-0.172
2	2	3	2	1	0.068	3	1	2	3	2	-0.255	3	3	2	1	3	-0.314
2	2	3	2	2	-0.020	3	1	2	3	3	-0.397	3	3	2	2	1	-0.223
2	2	3	2	3	-0.162	3	1	3	1	1	0.141	3	3	2	2	2	-0.311
2	2	3	3	1	-0.135	3	1	3	1	2	0.053	3	3	2	2	3	-0.453
2	2	3	3	2	-0.223	3	1	3	1	3	-0.089	3	3	2	3	1	-0.426
2	2	3	3	3	-0.365	3	1	3	2	1	0.002	3	3	2	3	2	-0.514
2	3	1	1	1	0.199	3	1	3	2	2	-0.086	3	3	2	3	3	-0.656
2	3	1	1	2	0.111	3	1	3	2	3	-0.228	3	3	3	1	1	-0.118
2	3	1	1	3	-0.031	3	1	3	3	1	-0.201	3	3	3	1	2	-0.206
2	3	1	2	1	0.060	3	1	3	3	2	-0.289	3	3	3	1	3	-0.348
2	3	1	2	2	-0.028	3	1	3	3	3	-0.431	3	3	3	2	1	-0.257
2	3	1	2	3	-0.170	3	2	1	1	1	0.044	3	3	3	2	2	-0.345
2	3	1	3	1	-0.143	3	2	1	1	2	-0.044	3	3	3	2	3	-0.487
2	3	1	3	2	-0.231	3	2	1	1	3	-0.186	3	3	3	3	1	-0.460
2	3	1	3	3	-0.373	3	2	1	2	1	-0.095	3	3	3	3	2	-0.548
2	3	2	1	1	0.156	3	2	1	2	2	-0.183	3	3	3	3	3	-0.690
2	3	2	1	2	0.068	3	2	1	2	3	-0.325						
2	3	2	1	3	-0.074	3	2	1	3	1	-0.298	Unconscious [-0.573]					
2	3	2	2	1	0.017	3	2	1	3	2	-0.386						

TARIFF A9: TTO TARIFF OF MEDIANS : MALES AGED UNDER 60 - 10 year duration

	Level 2	Level 3
Mobility	0.066	0.435
Self-care	0.071	0.229
Usual activity	0.029	0.138
Pain/discomfort	0.088	0.433
Anxiety/depression	0.065	0.286
Constant = 0.017		N3 = 0.121

1 1 1 1 1	1.000	1 2 1 3 2	0.293	1 3 2 2 3	0.230
1 1 1 1 2	0.918	1 2 1 3 3	0.072	1 3 2 3 1	0.171
1 1 1 1 3	0.576	1 2 2 1 1	0.883	1 3 2 3 2	0.106
1 1 1 2 1	0.895	1 2 2 1 2	0.818	1 3 2 3 3	-0.115
1 1 1 2 2	0.830	1 2 2 1 3	0.476	1 3 3 1 1	0.495
1 1 1 2 3	0.488	1 2 2 2 1	0.795	1 3 3 1 2	0.430
1 1 1 3 1	0.429	1 2 2 2 2	0.730	1 3 3 1 3	0.209
1 1 1 3 2	0.364	1 2 2 2 3	0.388	1 3 3 2 1	0.407
1 1 1 3 3	0.143	1 2 2 3 1	0.329	1 3 3 2 2	0.342
1 1 2 1 1	0.954	1 2 2 3 2	0.264	1 3 3 2 3	0.121
1 1 2 1 2	0.889	1 2 2 3 3	0.043	1 3 3 3 1	0.062
1 1 2 1 3	0.547	1 2 3 1 1	0.653	1 3 3 3 2	-0.003
1 1 2 2 1	0.866	1 2 3 1 2	0.588	1 3 3 3 3	-0.224
1 1 2 2 2	0.801	1 2 3 1 3	0.367	2 1 1 1 1	0.917
1 1 2 2 3	0.459	1 2 3 2 1	0.565	2 1 1 1 2	0.852
1 1 2 3 1	0.400	1 2 3 2 2	0.500	2 1 1 1 3	0.510
1 1 2 3 2	0.335	1 2 3 2 3	0.279	2 1 1 2 1	0.829
1 1 2 3 3	0.114	1 2 3 3 1	0.220	2 1 1 2 2	0.764
1 1 3 1 1	0.724	1 2 3 3 2	0.155	2 1 1 2 3	0.422
1 1 3 1 2	0.659	1 2 3 3 3	-0.066	2 1 1 3 1	0.363
1 1 3 1 3	0.438	1 3 1 1 1	0.633	2 1 1 3 2	0.298
1 1 3 2 1	0.636	1 3 1 1 2	0.568	2 1 1 3 3	0.077
1 1 3 2 2	0.571	1 3 1 1 3	0.347	2 1 2 1 1	0.888
1 1 3 2 3	0.350	1 3 1 2 1	0.545	2 1 2 1 2	0.823
1 1 3 3 1	0.291	1 3 1 2 2	0.480	2 1 2 1 3	0.481
1 1 3 3 2	0.226	1 3 1 2 3	0.259	2 1 2 2 1	0.800
1 1 3 3 3	0.005	1 3 1 3 1	0.200	2 1 2 2 2	0.735
1 2 1 1 1	0.912	1 3 1 3 2	0.135	2 1 2 2 3	0.393
1 2 1 1 2	0.847	1 3 1 3 3	-0.086	2 1 2 3 1	0.334
1 2 1 1 3	0.505	1 3 2 1 1	0.604	2 1 2 3 2	0.269
1 2 1 2 1	0.824	1 3 2 1 2	0.539	2 1 2 3 3	0.048
1 2 1 2 2	0.759	1 3 2 1 3	0.318	2 1 3 1 1	0.658
1 2 1 2 3	0.417	1 3 2 2 1	0.516	2 1 3 1 2	0.593
1 2 1 3 1	0.358	1 3 2 2 2	0.451	2 1 3 1 3	0.372

2	1	3	2	1	0.570
2	1	3	2	2	0.505
2	1	3	2	3	0.284
2	1	3	3	1	0.225
2	1	3	3	2	0.160
2	1	3	3	3	-0.061
2	2	1	1	1	0.846
2	2	1	1	2	0.781
2	2	1	1	3	0.439
2	2	1	2	1	0.758
2	2	1	2	2	0.693
2	2	1	2	3	0.351
2	2	1	3	1	0.292
2	2	1	3	2	0.227
2	2	1	3	3	0.006
2	2	2	1	1	0.817
2	2	2	1	2	0.752
2	2	2	1	3	0.410
2	2	2	2	1	0.729
2	2	2	2	2	0.664
2	2	2	2	3	0.322
2	2	2	3	1	0.263
2	2	2	3	2	0.198
2	2	2	3	3	-0.023
2	2	3	1	1	0.587
2	2	3	1	2	0.522
2	2	3	1	3	0.301
2	2	3	2	1	0.499
2	2	3	2	2	0.434
2	2	3	2	3	0.213
2	2	3	3	1	0.154
2	2	3	3	2	0.089
2	2	3	3	3	-0.132
2	3	1	1	1	0.567
2	3	1	1	2	0.502
2	3	1	1	3	0.281
2	3	1	2	1	0.479
2	3	1	2	2	0.414
2	3	1	2	3	0.193
2	3	1	3	1	0.134
2	3	1	3	2	0.069
2	3	1	3	3	-0.152
2	3	2	1	1	0.538
2	3	2	1	2	0.473
2	3	2	1	3	0.252
2	3	2	2	1	0.450
2	3	2	2	2	0.385
2	3	2	2	3	0.164
2	3	2	3	1	0.105
2	3	2	3	2	0.040
2	3	2	3	3	-0.181
2	3	3	1	1	0.429
2	3	3	1	2	0.364
2	3	3	1	3	0.143
2	3	3	2	1	0.341
2	3	3	2	2	0.276
2	3	3	2	3	0.055
2	3	3	3	1	-0.004
2	3	3	3	2	-0.069
2	3	3	3	3	-0.290
3	1	1	1	1	0.427
3	1	1	1	2	0.362
3	1	1	1	3	0.141
3	1	1	2	1	0.339
3	1	1	2	2	0.274
3	1	1	2	3	0.053
3	1	1	3	1	-0.006
3	1	1	3	2	-0.071
3	1	1	3	3	-0.292
3	1	2	1	1	0.398
3	1	2	1	2	0.333
3	1	2	1	3	0.112
3	1	2	2	1	0.310
3	1	2	2	2	0.245
3	1	2	2	3	0.024
3	1	2	3	1	-0.035
3	1	2	3	2	-0.100
3	1	2	3	3	-0.321
3	1	3	1	1	0.289
3	1	3	1	2	0.224
3	1	3	1	3	0.003
3	1	3	2	1	0.201
3	1	3	2	2	0.136
3	1	3	2	3	-0.085
3	1	3	3	1	-0.144
3	1	3	3	2	-0.209
3	1	3	3	3	-0.430
3	2	1	1	1	0.356
3	2	1	1	2	0.291
3	2	1	1	3	0.070
3	2	1	2	1	0.268
3	2	1	2	2	0.203
3	2	1	2	3	-0.018
3	2	1	3	1	-0.077
3	2	1	3	2	-0.142
3	2	1	3	3	-0.363
3	2	2	1	1	0.327
3	2	2	1	2	0.262
3	2	2	1	3	0.041
3	2	2	2	1	0.239
3	2	2	2	2	0.174
3	2	2	2	3	-0.047
3	2	2	3	1	-0.106
3	2	2	3	2	-0.171
3	2	2	3	3	-0.392
3	2	3	1	1	0.218
3	2	3	1	2	0.153
3	2	3	1	3	-0.068
3	2	3	2	1	0.130
3	2	3	2	2	0.065
3	2	3	2	3	-0.156
3	2	3	3	1	-0.215
3	2	3	3	2	-0.280
3	2	3	3	3	-0.501
3	3	1	1	1	0.198
3	3	1	1	2	0.133
3	3	1	1	3	-0.088
3	3	1	2	1	0.110
3	3	1	2	2	0.045
3	3	1	2	3	-0.176
3	3	1	3	1	-0.235
3	3	1	3	2	-0.300
3	3	1	3	3	-0.521
3	3	2	1	1	0.169
3	3	2	1	2	0.104
3	3	2	1	3	-0.117
3	3	2	2	1	0.081
3	3	2	2	2	0.016
3	3	2	2	3	-0.205
3	3	2	3	1	-0.264
3	3	2	3	2	-0.329
3	3	2	3	3	-0.550
3	3	3	1	1	0.060
3	3	3	1	2	-0.005
3	3	3	1	3	-0.226
3	3	3	2	1	-0.028
3	3	3	2	2	-0.093
3	3	3	2	3	-0.314
3	3	3	3	1	-0.373
3	3	3	3	2	-0.438
3	3	3	3	3	-0.659

Unconscious [-0.150]

TARIFF A10: TTO TARRIF OF MEDIANS : FEMALES AGED UNDER 60 - 10 year duration

	Level 2	Level 3
Mobility	0.062	0.389
Self-care	0.126	0.267
Usual activity	0.060	0.134
Pain/discomfort	0.137	0.559
Anxiety/depression	0.104	0.348
Constant = -0.055		N3 = 0.154

1	1	1	1	1	1.000	1	2	1	3	1	0.216	1	3	2	2	1	0.437
1	1	1	1	2	0.951	1	2	1	3	2	0.112	1	3	2	2	2	0.333
1	1	1	1	3	0.553	1	2	1	3	3	-0.132	1	3	2	2	3	0.089
1	1	1	2	1	0.918	1	2	2	1	1	0.869	1	3	2	3	1	0.015
1	1	1	2	2	0.814	1	2	2	1	2	0.765	1	3	2	3	2	-0.089
1	1	1	2	3	0.416	1	2	2	1	3	0.367	1	3	2	3	3	-0.333
1	1	1	3	1	0.342	1	2	2	2	1	0.732	1	3	3	1	1	0.500
1	1	1	3	2	0.238	1	2	2	2	2	0.628	1	3	3	1	2	0.396
1	1	1	3	3	-0.006	1	2	2	2	3	0.230	1	3	3	1	3	0.152
1	1	2	1	1	0.995	1	2	2	3	1	0.156	1	3	3	2	1	0.363
1	1	2	1	2	0.891	1	2	2	3	2	0.052	1	3	3	2	2	0.259
1	1	2	1	3	0.493	1	2	2	3	3	-0.192	1	3	3	2	3	0.015
1	1	2	2	1	0.858	1	2	3	1	1	0.641	1	3	3	3	1	-0.059
1	1	2	2	2	0.754	1	2	3	1	2	0.537	1	3	3	3	2	-0.163
1	1	2	2	3	0.356	1	2	3	1	3	0.293	1	3	3	3	3	-0.407
1	1	2	3	1	0.282	1	2	3	2	1	0.504	2	1	1	1	1	0.993
1	1	2	3	2	0.178	1	2	3	2	2	0.400	2	1	1	1	2	0.889
1	1	2	3	3	-0.066	1	2	3	2	3	0.156	2	1	1	1	3	0.491
1	1	3	1	1	0.767	1	2	3	3	1	0.082	2	1	1	2	1	0.856
1	1	3	1	2	0.663	1	2	3	3	2	-0.022	2	1	1	2	2	0.752
1	1	3	1	3	0.419	1	2	3	3	3	-0.266	2	1	1	2	3	0.354
1	1	3	2	1	0.630	1	3	1	1	1	0.634	2	1	1	3	1	0.280
1	1	3	2	2	0.526	1	3	1	1	2	0.530	2	1	1	3	2	0.176
1	1	3	2	3	0.282	1	3	1	1	3	0.286	2	1	1	3	3	-0.068
1	1	3	3	1	0.208	1	3	1	2	1	0.497	2	1	2	1	1	0.933
1	1	3	3	2	0.104	1	3	1	2	2	0.393	2	1	2	1	2	0.829
1	1	3	3	3	-0.140	1	3	1	2	3	0.149	2	1	2	1	3	0.431
1	2	1	1	1	0.929	1	3	1	3	1	0.075	2	1	2	2	1	0.796
1	2	1	1	2	0.825	1	3	1	3	2	-0.029	2	1	2	2	2	0.692
1	2	1	1	3	0.427	1	3	1	3	3	-0.273	2	1	2	2	3	0.294
1	2	1	2	1	0.792	1	3	2	1	1	0.574	2	1	2	3	1	0.220
1	2	1	2	2	0.688	1	3	2	1	2	0.470	2	1	2	3	2	0.116
1	2	1	2	3	0.290	1	3	2	1	3	0.226	2	1	2	3	3	-0.128

2	1	3	1	1	0.705	2	3	2	2	2	0.271	3	2	1	3	3	-0.521
2	1	3	1	2	0.601	2	3	2	2	3	0.027	3	2	2	1	1	0.326
2	1	3	1	3	0.357	2	3	2	3	1	-0.047	3	2	2	1	2	0.222
2	1	3	2	1	0.568	2	3	2	3	2	-0.151	3	2	2	1	3	-0.022
2	1	3	2	2	0.464	2	3	2	3	3	-0.395	3	2	2	2	1	0.189
2	1	3	2	3	0.220	2	3	3	1	1	0.438	3	2	2	2	2	0.085
2	1	3	3	1	0.146	2	3	3	1	2	0.334	3	2	2	2	3	-0.159
2	1	3	3	2	0.042	2	3	3	1	3	0.090	3	2	2	3	1	-0.233
2	1	3	3	3	-0.202	2	3	3	2	1	0.301	3	2	2	3	2	-0.337
2	2	1	1	1	0.867	2	3	3	2	2	0.197	3	2	2	3	3	-0.581
2	2	1	1	2	0.763	2	3	3	2	3	-0.047	3	2	3	1	1	0.252
2	2	1	1	3	0.365	2	3	3	3	1	-0.121	3	2	3	1	2	0.148
2	2	1	2	1	0.730	2	3	3	3	2	-0.225	3	2	3	1	3	-0.096
2	2	1	2	2	0.626	2	3	3	3	3	-0.469	3	2	3	2	1	0.115
2	2	1	2	3	0.228	3	1	1	1	1	0.512	3	2	3	2	2	0.011
2	2	1	3	1	0.154	3	1	1	1	2	0.408	3	2	3	2	3	-0.233
2	2	1	3	2	0.050	3	1	1	1	3	0.164	3	2	3	3	1	-0.307
2	2	1	3	3	-0.194	3	1	1	2	1	0.375	3	2	3	3	2	-0.411
2	2	2	1	1	0.807	3	1	1	2	2	0.271	3	2	3	3	3	-0.655
2	2	2	1	2	0.703	3	1	1	2	3	0.027	3	3	1	1	1	0.245
2	2	2	1	3	0.305	3	1	1	3	1	-0.047	3	3	1	1	2	0.141
2	2	2	2	1	0.670	3	1	1	3	2	-0.151	3	3	1	1	3	-0.103
2	2	2	2	2	0.566	3	1	1	3	3	-0.395	3	3	1	2	1	0.108
2	2	2	2	3	0.168	3	1	2	1	1	0.452	3	3	1	2	2	0.004
2	2	2	3	1	0.094	3	1	2	1	2	0.348	3	3	1	2	3	-0.240
2	2	2	3	2	-0.010	3	1	2	1	3	0.104	3	3	1	3	1	-0.314
2	2	2	3	3	-0.254	3	1	2	2	1	0.315	3	3	1	3	2	-0.418
2	2	3	1	1	0.579	3	1	2	2	2	0.211	3	3	1	3	3	-0.662
2	2	3	1	2	0.475	3	1	2	2	3	-0.033	3	3	2	1	1	0.185
2	2	3	1	3	0.231	3	1	2	3	1	-0.107	3	3	2	1	2	0.081
2	2	3	2	1	0.442	3	1	2	3	2	-0.211	3	3	2	1	3	-0.163
2	2	3	2	2	0.338	3	1	2	3	3	-0.455	3	3	2	2	1	0.048
2	2	3	2	3	0.094	3	1	3	1	1	0.378	3	3	2	2	2	-0.056
2	2	3	3	1	0.020	3	1	3	1	2	0.274	3	3	2	2	3	-0.300
2	2	3	3	2	-0.084	3	1	3	1	3	0.030	3	3	2	3	1	-0.374
2	2	3	3	3	-0.328	3	1	3	2	1	0.241	3	3	2	3	2	-0.478
2	3	1	1	1	0.572	3	1	3	2	2	0.137	3	3	2	3	3	-0.722
2	3	1	1	2	0.468	3	1	3	2	3	-0.107	3	3	3	1	1	0.111
2	3	1	1	3	0.224	3	1	3	3	1	-0.181	3	3	3	1	2	0.007
2	3	1	2	1	0.435	3	1	3	3	2	-0.285	3	3	3	1	3	-0.237
2	3	1	2	2	0.331	3	1	3	3	3	-0.529	3	3	3	2	1	-0.026
2	3	1	2	3	0.087	3	2	1	1	1	0.386	3	3	3	2	2	-0.130
2	3	1	3	1	0.013	3	2	1	1	2	0.282	3	3	3	2	3	-0.374
2	3	1	3	2	-0.091	3	2	1	1	3	0.038	3	3	3	3	1	-0.448
2	3	1	3	3	-0.335	3	2	1	2	1	0.249	3	3	3	3	2	-0.552
2	3	2	1	1	0.512	3	2	1	2	2	0.145	3	3	3	3	3	-0.796
2	3	2	1	2	0.408	3	2	1	2	3	-0.099	Unconscious					[-0.375]
2	3	2	1	3	0.164	3	2	1	3	1	-0.173						
2	3	2	2	1	0.375	3	2	1	3	2	-0.277						

TARIFF A11: TTO TARIFF OF MEDIANS : MALES AGED 60 AND OVER - 10 year duration

	Level 2	Level 3
Mobility	0.082	0.577
Self-care	0.159	0.363
Usual activity	0.053	0.100
Pain/discomfort	0.081	0.493
Anxiety/depression	0.093	0.310
Constant = -0.081		N3 = 0.207

1	1	1	1	1	1.000	1	2	1	3	1	0.222	1	3	2	2	1	0.377
1	1	1	1	2	0.988	1	2	1	3	2	0.129	1	3	2	2	2	0.284
1	1	1	1	3	0.564	1	2	1	3	3	-0.088	1	3	2	2	3	0.067
1	1	1	2	1	1.000	1	2	2	1	1	0.869	1	3	2	3	1	-0.035
1	1	1	2	2	0.907	1	2	2	1	2	0.776	1	3	2	3	2	-0.128
1	1	1	2	3	0.483	1	2	2	1	3	0.352	1	3	2	3	3	-0.345
1	1	1	3	1	0.381	1	2	2	2	1	0.788	1	3	3	1	1	0.411
1	1	1	3	2	0.288	1	2	2	2	2	0.695	1	3	3	1	2	0.318
1	1	1	3	3	0.071	1	2	2	2	3	0.271	1	3	3	1	3	0.101
1	1	2	1	1	1.028	1	2	2	3	1	0.169	1	3	3	2	1	0.330
1	1	2	1	2	0.935	1	2	2	3	2	0.076	1	3	3	2	2	0.237
1	1	2	1	3	0.511	1	2	2	3	3	-0.141	1	3	3	2	3	0.020
1	1	2	2	1	0.947	1	2	3	1	1	0.615	1	3	3	3	1	-0.082
1	1	2	2	2	0.854	1	2	3	1	2	0.522	1	3	3	3	2	-0.175
1	1	2	2	3	0.430	1	2	3	1	3	0.305	1	3	3	3	3	-0.392
1	1	2	3	1	0.328	1	2	3	2	1	0.534	2	1	1	1	1	0.999
1	1	2	3	2	0.235	1	2	3	2	2	0.441	2	1	1	1	2	0.906
1	1	2	3	3	0.018	1	2	3	2	3	0.224	2	1	1	1	3	0.482
1	1	3	1	1	0.774	1	2	3	3	1	0.122	2	1	1	2	1	0.918
1	1	3	1	2	0.681	1	2	3	3	2	0.029	2	1	1	2	2	0.825
1	1	3	1	3	0.464	1	2	3	3	3	-0.188	2	1	1	2	3	0.401
1	1	3	2	1	0.693	1	3	1	1	1	0.511	2	1	1	3	1	0.299
1	1	3	2	2	0.600	1	3	1	1	2	0.418	2	1	1	3	2	0.206
1	1	3	2	3	0.383	1	3	1	1	3	0.201	2	1	1	3	3	-0.011
1	1	3	3	1	0.281	1	3	1	2	1	0.430	2	1	2	1	1	0.946
1	1	3	3	2	0.188	1	3	1	2	2	0.337	2	1	2	1	2	0.853
1	1	3	3	3	-0.029	1	3	1	2	3	0.120	2	1	2	1	3	0.429
1	2	1	1	1	0.922	1	3	1	3	1	0.018	2	1	2	2	1	0.865
1	2	1	1	2	0.829	1	3	1	3	2	-0.075	2	1	2	2	2	0.772
1	2	1	1	3	0.405	1	3	1	3	3	-0.292	2	1	2	2	3	0.348
1	2	1	2	1	0.841	1	3	2	1	1	0.458	2	1	2	3	1	0.246
1	2	1	2	2	0.748	1	3	2	1	2	0.365	2	1	2	3	2	0.153
1	2	1	2	3	0.324	1	3	2	1	3	0.148	2	1	2	3	3	-0.064

2	1	3	1	1	0.692	2	3	2	2	2	0.202	3	2	1	3	3	-0.665
2	1	3	1	2	0.599	2	3	2	2	3	-0.015	3	2	2	1	1	0.085
2	1	3	1	3	0.382	2	3	2	3	1	-0.117	3	2	2	1	2	-0.008
2	1	3	2	1	0.611	2	3	2	3	2	-0.210	3	2	2	1	3	-0.225
2	1	3	2	2	0.518	2	3	2	3	3	-0.427	3	2	2	2	1	0.004
2	1	3	2	3	0.301	2	3	3	1	1	0.329	3	2	2	2	2	-0.089
2	1	3	3	1	0.199	2	3	3	1	2	0.236	3	2	2	2	3	-0.306
2	1	3	3	2	0.106	2	3	3	1	3	0.019	3	2	2	3	1	-0.408
2	1	3	3	3	-0.111	2	3	3	2	1	0.248	3	2	2	3	2	-0.501
2	2	1	1	1	0.840	2	3	3	2	2	0.155	3	2	2	3	3	-0.718
2	2	1	1	2	0.747	2	3	3	2	3	-0.062	3	2	3	1	1	0.038
2	2	1	1	3	0.323	2	3	3	3	1	-0.164	3	2	3	1	2	-0.055
2	2	1	2	1	0.759	2	3	3	3	2	-0.257	3	2	3	1	3	-0.272
2	2	1	2	2	0.666	2	3	3	3	3	-0.474	3	2	3	2	1	-0.043
2	2	1	2	3	0.242	3	1	1	1	1	0.297	3	2	3	2	2	-0.136
2	2	1	3	1	0.140	3	1	1	1	2	0.204	3	2	3	2	3	-0.353
2	2	1	3	2	0.047	3	1	1	1	3	-0.013	3	2	3	3	1	-0.455
2	2	1	3	3	-0.170	3	1	1	2	1	0.216	3	2	3	3	2	-0.548
2	2	2	1	1	0.787	3	1	1	2	2	0.123	3	2	3	3	3	-0.765
2	2	2	1	2	0.694	3	1	1	2	3	-0.094	3	3	1	1	1	-0.066
2	2	2	1	3	0.270	3	1	1	3	1	-0.196	3	3	1	1	2	-0.159
2	2	2	2	1	0.706	3	1	1	3	2	-0.289	3	3	1	1	3	-0.376
2	2	2	2	2	0.613	3	1	1	3	3	-0.506	3	3	1	2	1	-0.147
2	2	2	2	3	0.189	3	1	2	1	1	0.244	3	3	1	2	2	-0.240
2	2	2	3	1	0.087	3	1	2	1	2	0.151	3	3	1	2	3	-0.457
2	2	2	3	2	-0.006	3	1	2	1	3	-0.066	3	3	1	3	1	-0.559
2	2	2	3	3	-0.223	3	1	2	2	1	0.163	3	3	1	3	2	-0.652
2	2	3	1	1	0.533	3	1	2	2	2	0.070	3	3	1	3	3	-0.869
2	2	3	1	2	0.440	3	1	2	2	3	-0.147	3	3	2	1	1	-0.119
2	2	3	1	3	0.223	3	1	2	3	1	-0.249	3	3	2	1	2	-0.212
2	2	3	2	1	0.452	3	1	2	3	2	-0.342	3	3	2	1	3	-0.429
2	2	3	2	2	0.359	3	1	2	3	3	-0.559	3	3	2	2	1	-0.200
2	2	3	2	3	0.142	3	1	3	1	1	0.197	3	3	2	2	2	-0.293
2	2	3	3	1	0.040	3	1	3	1	2	0.104	3	3	2	2	3	-0.510
2	2	3	3	2	-0.053	3	1	3	1	3	-0.113	3	3	2	3	1	-0.612
2	2	3	3	3	-0.270	3	1	3	2	1	0.116	3	3	2	3	2	-0.705
2	3	1	1	1	0.429	3	1	3	2	2	0.023	3	3	2	3	3	-0.922
2	3	1	1	2	0.336	3	1	3	2	3	-0.194	3	3	3	1	1	-0.166
2	3	1	1	3	0.119	3	1	3	3	1	-0.296	3	3	3	1	2	-0.259
2	3	1	2	1	0.348	3	1	3	3	2	-0.389	3	3	3	1	3	-0.476
2	3	1	2	2	0.255	3	1	3	3	3	-0.606	3	3	3	2	1	-0.247
2	3	1	2	3	0.038	3	2	1	1	1	0.138	3	3	3	2	2	-0.340
2	3	1	3	1	-0.064	3	2	1	1	2	0.045	3	3	3	2	3	-0.557
2	3	1	3	2	-0.157	3	2	1	1	3	-0.172	3	3	3	3	1	-0.659
2	3	1	3	3	-0.374	3	2	1	2	1	0.057	3	3	3	3	2	-0.752
2	3	2	1	1	0.376	3	2	1	2	2	-0.036	3	3	3	3	3	-0.969
2	3	2	1	2	0.283	3	2	1	2	3	-0.253						
2	3	2	1	3	0.066	3	2	1	3	1	-0.355	Unconscious [-0.475]					
2	3	2	2	1	0.295	3	2	1	3	2	-0.448						

TARIFF A12: TTO TARIFF OF MEDIANS : FEMALES AGED 60 AND OVER - 10 year duration

	Level 2	Level 3
Mobility	0.126	0.490
Self-care	0.161	0.330
Usual activity	0.079	0.158
Pain/discomfort	0.133	0.535
Anxiety/depression	0.109	0.424
Constant = -0.090		N3 = 0.294

1	1	1	1	1	1.000	1	2	1	3	1	0.100	1	3	2	2	1	0.254
1	1	1	1	2	0.981	1	2	1	3	2	-0.009	1	3	2	2	2	0.145
1	1	1	1	3	0.372	1	2	1	3	3	-0.324	1	3	2	2	3	-0.170
1	1	1	2	1	0.957	1	2	2	1	1	0.850	1	3	2	3	1	-0.148
1	1	1	2	2	0.848	1	2	2	1	2	0.741	1	3	2	3	2	-0.257
1	1	1	2	3	0.239	1	2	2	1	3	0.132	1	3	2	3	3	-0.572
1	1	1	3	1	0.261	1	2	2	2	1	0.717	1	3	3	1	1	0.308
1	1	1	3	2	0.152	1	2	2	2	2	0.608	1	3	3	1	2	0.199
1	1	1	3	3	-0.163	1	2	2	2	3	-0.001	1	3	3	1	3	-0.116
1	1	2	1	1	1.011	1	2	2	3	1	0.021	1	3	3	2	1	0.175
1	1	2	1	2	0.902	1	2	2	3	2	-0.088	1	3	3	2	2	0.066
1	1	2	1	3	0.293	1	2	2	3	3	-0.403	1	3	3	2	3	-0.249
1	1	2	2	1	0.878	1	2	3	1	1	0.477	1	3	3	3	1	-0.227
1	1	2	2	2	0.769	1	2	3	1	2	0.368	1	3	3	3	2	-0.336
1	1	2	2	3	0.160	1	2	3	1	3	0.053	1	3	3	3	3	-0.651
1	1	2	3	1	0.182	1	2	3	2	1	0.344	2	1	1	1	1	0.964
1	1	2	3	2	0.073	1	2	3	2	2	0.235	2	1	1	1	2	0.855
1	1	2	3	3	-0.242	1	2	3	2	3	-0.080	2	1	1	1	3	0.246
1	1	3	1	1	0.638	1	2	3	3	1	-0.058	2	1	1	2	1	0.831
1	1	3	1	2	0.529	1	2	3	3	2	-0.167	2	1	1	2	2	0.722
1	1	3	1	3	0.214	1	2	3	3	3	-0.482	2	1	1	2	3	0.113
1	1	3	2	1	0.505	1	3	1	1	1	0.466	2	1	1	3	1	0.135
1	1	3	2	2	0.396	1	3	1	1	2	0.357	2	1	1	3	2	0.026
1	1	3	2	3	0.081	1	3	1	1	3	0.042	2	1	1	3	3	-0.289
1	1	3	3	1	0.103	1	3	1	2	1	0.333	2	1	2	1	1	0.885
1	1	3	3	2	-0.006	1	3	1	2	2	0.224	2	1	2	1	2	0.776
1	1	3	3	3	-0.321	1	3	1	2	3	-0.091	2	1	2	1	3	0.167
1	2	1	1	1	0.929	1	3	1	3	1	-0.069	2	1	2	2	1	0.752
1	2	1	1	2	0.820	1	3	1	3	2	-0.178	2	1	2	2	2	0.643
1	2	1	1	3	0.211	1	3	1	3	3	-0.493	2	1	2	2	3	0.034
1	2	1	2	1	0.796	1	3	2	1	1	0.387	2	1	2	3	1	0.056
1	2	1	2	2	0.687	1	3	2	1	2	0.278	2	1	2	3	2	-0.053
1	2	1	2	3	0.078	1	3	2	1	3	-0.037	2	1	2	3	3	-0.368

2	1	3	1	1	0.512
2	1	3	1	2	0.403
2	1	3	1	3	0.088
2	1	3	2	1	0.379
2	1	3	2	2	0.270
2	1	3	2	3	-0.045
2	1	3	3	1	-0.023
2	1	3	3	2	-0.132
2	1	3	3	3	-0.447
2	2	1	1	1	0.803
2	2	1	1	2	0.694
2	2	1	1	3	0.085
2	2	1	2	1	0.670
2	2	1	2	2	0.561
2	2	1	2	3	-0.048
2	2	1	3	1	-0.026
2	2	1	3	2	-0.135
2	2	1	3	3	-0.450
2	2	2	1	1	0.724
2	2	2	1	2	0.615
2	2	2	1	3	0.006
2	2	2	2	1	0.591
2	2	2	2	2	0.482
2	2	2	2	3	-0.127
2	2	2	3	1	-0.105
2	2	2	3	2	-0.214
2	2	2	3	3	-0.529
2	2	3	1	1	0.351
2	2	3	1	2	0.242
2	2	3	1	3	-0.073
2	2	3	2	1	0.218
2	2	3	2	2	0.109
2	2	3	2	3	-0.206
2	2	3	3	1	-0.184
2	2	3	3	2	-0.293
2	2	3	3	3	-0.608
2	3	1	1	1	0.340
2	3	1	1	2	0.231
2	3	1	1	3	-0.084
2	3	1	2	1	0.207
2	3	1	2	2	0.098
2	3	1	2	3	-0.217
2	3	1	3	1	-0.195
2	3	1	3	2	-0.304
2	3	1	3	3	-0.619
2	3	2	1	1	0.261
2	3	2	1	2	0.152
2	3	2	1	3	-0.163
2	3	2	2	1	0.128
2	3	2	2	2	0.019
2	3	2	2	3	-0.296
2	3	2	3	1	-0.274
2	3	2	3	2	-0.383
2	3	2	3	3	-0.698
2	3	3	1	1	0.182
2	3	3	1	2	0.073
2	3	3	1	3	-0.242
2	3	3	2	1	0.049
2	3	3	2	2	-0.060
2	3	3	2	3	-0.375
2	3	3	3	1	-0.353
2	3	3	3	2	-0.462
2	3	3	3	3	-0.777
3	1	1	1	1	0.306
3	1	1	1	2	0.197
3	1	1	1	3	-0.118
3	1	1	2	1	0.173
3	1	1	2	2	0.064
3	1	1	2	3	-0.251
3	1	1	3	1	-0.229
3	1	1	3	2	-0.338
3	1	1	3	3	-0.653
3	1	2	1	1	0.227
3	1	2	1	2	0.118
3	1	2	1	3	-0.197
3	1	2	2	1	0.094
3	1	2	2	2	-0.015
3	1	2	2	3	-0.330
3	1	2	3	1	-0.308
3	1	2	3	2	-0.417
3	1	2	3	3	-0.732
3	1	3	1	1	0.148
3	1	3	1	2	0.039
3	1	3	1	3	-0.276
3	1	3	2	1	0.015
3	1	3	2	2	-0.094
3	1	3	2	3	-0.409
3	1	3	3	1	-0.387
3	1	3	3	2	-0.496
3	1	3	3	3	-0.811
3	2	1	1	1	0.145
3	2	1	1	2	0.036
3	2	1	1	3	-0.279
3	2	1	2	1	0.012
3	2	1	2	2	-0.097
3	2	1	2	3	-0.412
3	2	1	3	1	-0.390
3	2	1	3	2	-0.499
3	2	1	3	3	-0.814
3	2	2	1	1	0.066
3	2	2	1	2	-0.043
3	2	2	1	3	-0.358
3	2	2	2	1	-0.067
3	2	2	2	2	-0.176
3	2	2	2	3	-0.491
3	2	2	3	1	-0.469
3	2	2	3	2	-0.578
3	2	2	3	3	-0.893
3	2	3	1	1	-0.013
3	2	3	1	2	-0.122
3	2	3	1	3	-0.437
3	2	3	2	1	-0.146
3	2	3	2	2	-0.255
3	2	3	2	3	-0.570
3	2	3	3	1	-0.548
3	2	3	3	2	-0.657
3	2	3	3	3	-0.972
3	3	1	1	1	-0.024
3	3	1	1	2	-0.133
3	3	1	1	3	-0.448
3	3	1	2	1	-0.157
3	3	1	2	2	-0.266
3	3	1	2	3	-0.581
3	3	1	3	1	-0.559
3	3	1	3	2	-0.668
3	3	1	3	3	-0.983
3	3	2	1	1	-0.103
3	3	2	1	2	-0.212
3	3	2	1	3	-0.527
3	3	2	2	1	-0.236
3	3	2	2	2	-0.345
3	3	2	2	3	-0.660
3	3	2	3	1	-0.638
3	3	2	3	2	-0.747
3	3	2	3	3	-1.062
3	3	3	1	1	-0.182
3	3	3	1	2	-0.291
3	3	3	1	3	-0.606
3	3	3	2	1	-0.315
3	3	3	2	2	-0.424
3	3	3	2	3	-0.739
3	3	3	3	1	-0.717
3	3	3	3	2	-0.826
3	3	3	3	3	-1.141

Unconscious [-0.650]

TARIFF A13: VAS TARIFF OF MEANS: DEGREE LEVEL EDUCATION (10 YEAR DURATION)

	Level 2	Level 3
Mobility	0.074	0.174
Self-care	0.096	0.126
Usual activity	0.029	0.076
Pain/discomfort	0.094	0.171
Anxiety/depression	0.082	0.141
Constant = 0.158		N3 = 0.251

1	1	1	1	1	1.000	1	2	1	3	1	0.324	1	3	2	2	1	0.342
1	1	1	1	2	0.760	1	2	1	3	2	0.242	1	3	2	2	2	0.260
1	1	1	1	3	0.449	1	2	1	3	3	0.182	1	3	2	2	3	0.200
1	1	1	2	1	0.748	1	2	2	1	1	0.717	1	3	2	3	1	0.265
1	1	1	2	2	0.666	1	2	2	1	2	0.635	1	3	2	3	2	0.183
1	1	1	2	3	0.355	1	2	2	1	3	0.324	1	3	2	3	3	0.123
1	1	1	3	1	0.420	1	2	2	2	1	0.623	1	3	3	1	1	0.389
1	1	1	3	2	0.338	1	2	2	2	2	0.541	1	3	3	1	2	0.307
1	1	1	3	3	0.278	1	2	2	2	3	0.230	1	3	3	1	3	0.247
1	1	2	1	1	0.813	1	2	2	3	1	0.295	1	3	3	2	1	0.295
1	1	2	1	2	0.731	1	2	2	3	2	0.213	1	3	3	2	2	0.213
1	1	2	1	3	0.420	1	2	2	3	3	0.153	1	3	3	2	3	0.153
1	1	2	2	1	0.719	1	2	3	1	1	0.419	1	3	3	3	1	0.218
1	1	2	2	2	0.637	1	2	3	1	2	0.337	1	3	3	3	2	0.136
1	1	2	2	3	0.326	1	2	3	1	3	0.277	1	3	3	3	3	0.076
1	1	2	3	1	0.391	1	2	3	2	1	0.325	2	1	1	1	1	0.768
1	1	2	3	2	0.309	1	2	3	2	2	0.243	2	1	1	1	2	0.686
1	1	2	3	3	0.249	1	2	3	2	3	0.183	2	1	1	1	3	0.375
1	1	3	1	1	0.515	1	2	3	3	1	0.248	2	1	1	2	1	0.674
1	1	3	1	2	0.433	1	2	3	3	2	0.166	2	1	1	2	2	0.592
1	1	3	1	3	0.373	1	2	3	3	3	0.106	2	1	1	2	3	0.281
1	1	3	2	1	0.421	1	3	1	1	1	0.465	2	1	1	3	1	0.346
1	1	3	2	2	0.339	1	3	1	1	2	0.383	2	1	1	3	2	0.264
1	1	3	2	3	0.279	1	3	1	1	3	0.323	2	1	1	3	3	0.204
1	1	3	3	1	0.344	1	3	1	2	1	0.371	2	1	2	1	1	0.739
1	1	3	3	2	0.262	1	3	1	2	2	0.289	2	1	2	1	2	0.657
1	1	3	3	3	0.202	1	3	1	2	3	0.229	2	1	2	1	3	0.346
1	2	1	1	1	0.746	1	3	1	3	1	0.294	2	1	2	2	1	0.645
1	2	1	1	2	0.664	1	3	1	3	2	0.212	2	1	2	2	2	0.563
1	2	1	1	3	0.353	1	3	1	3	3	0.152	2	1	2	2	3	0.252
1	2	1	2	1	0.652	1	3	2	1	1	0.436	2	1	2	3	1	0.317
1	2	1	2	2	0.570	1	3	2	1	2	0.354	2	1	2	3	2	0.235
1	2	1	2	3	0.259	1	3	2	1	3	0.294	2	1	2	3	3	0.175

2	1	3	1	1	0.441	2	3	2	2	2	0.186	3	2	1	3	3	0.008
2	1	3	1	2	0.359	2	3	2	2	3	0.126	3	2	2	1	1	0.292
2	1	3	1	3	0.299	2	3	2	3	1	0.191	3	2	2	1	2	0.210
2	1	3	2	1	0.347	2	3	2	3	2	0.109	3	2	2	1	3	0.150
2	1	3	2	2	0.265	2	3	2	3	3	0.049	3	2	2	2	1	0.198
2	1	3	2	3	0.205	2	3	3	1	1	0.315	3	2	2	2	2	0.116
2	1	3	3	1	0.270	2	3	3	1	2	0.233	3	2	2	2	3	0.056
2	1	3	3	2	0.188	2	3	3	1	3	0.173	3	2	2	3	1	0.121
2	1	3	3	3	0.128	2	3	3	2	1	0.221	3	2	2	3	2	0.039
2	2	1	1	1	0.672	2	3	3	2	2	0.139	3	2	2	3	3	-0.021
2	2	1	1	2	0.590	2	3	3	2	3	0.079	3	2	3	1	1	0.245
2	2	1	1	3	0.279	2	3	3	3	1	0.144	3	2	3	1	2	0.163
2	2	1	2	1	0.578	2	3	3	3	2	0.062	3	2	3	1	3	0.103
2	2	1	2	2	0.496	2	3	3	3	3	0.002	3	2	3	2	1	0.151
2	2	1	2	3	0.185	3	1	1	1	1	0.417	3	2	3	2	2	0.069
2	2	1	3	1	0.250	3	1	1	1	2	0.335	3	2	3	2	3	0.009
2	2	1	3	2	0.168	3	1	1	1	3	0.275	3	2	3	3	1	0.074
2	2	1	3	3	0.108	3	1	1	2	1	0.323	3	2	3	3	2	-0.008
2	2	2	1	1	0.643	3	1	1	2	2	0.241	3	2	3	3	3	-0.068
2	2	2	1	2	0.561	3	1	1	2	3	0.181	3	3	1	1	1	0.291
2	2	2	1	3	0.250	3	1	1	3	1	0.246	3	3	1	1	2	0.209
2	2	2	2	1	0.549	3	1	1	3	2	0.164	3	3	1	1	3	0.149
2	2	2	2	2	0.467	3	1	1	3	3	0.104	3	3	1	2	1	0.197
2	2	2	2	3	0.156	3	1	2	1	1	0.388	3	3	1	2	2	0.115
2	2	2	3	1	0.221	3	1	2	1	2	0.306	3	3	1	2	3	0.055
2	2	2	3	2	0.139	3	1	2	1	3	0.246	3	3	1	3	1	0.120
2	2	2	3	3	0.079	3	1	2	2	1	0.294	3	3	1	3	2	0.038
2	2	3	1	1	0.345	3	1	2	2	2	0.212	3	3	1	3	3	-0.022
2	2	3	1	2	0.263	3	1	2	2	3	0.152	3	3	2	1	1	0.262
2	2	3	1	3	0.203	3	1	2	3	1	0.217	3	3	2	1	2	0.180
2	2	3	2	1	0.251	3	1	2	3	2	0.135	3	3	2	1	3	0.120
2	2	3	2	2	0.169	3	1	2	3	3	0.075	3	3	2	2	1	0.168
2	2	3	2	3	0.109	3	1	3	1	1	0.341	3	3	2	2	2	0.086
2	2	3	3	1	0.174	3	1	3	1	2	0.259	3	3	2	2	3	0.026
2	2	3	3	2	0.092	3	1	3	1	3	0.199	3	3	2	3	1	0.091
2	2	3	3	3	0.032	3	1	3	2	1	0.247	3	3	2	3	2	0.009
2	3	1	1	1	0.391	3	1	3	2	2	0.165	3	3	2	3	3	-0.051
2	3	1	1	2	0.309	3	1	3	2	3	0.105	3	3	3	1	1	0.215
2	3	1	1	3	0.249	3	1	3	3	1	0.170	3	3	3	1	2	0.133
2	3	1	2	1	0.297	3	1	3	3	2	0.088	3	3	3	1	3	0.073
2	3	1	2	2	0.215	3	1	3	3	3	0.028	3	3	3	2	1	0.121
2	3	1	2	3	0.155	3	2	1	1	1	0.321	3	3	3	2	2	0.039
2	3	1	3	1	0.220	3	2	1	1	2	0.239	3	3	3	2	3	-0.021
2	3	1	3	2	0.138	3	2	1	1	3	0.179	3	3	3	3	1	0.044
2	3	1	3	3	0.078	3	2	1	2	1	0.227	3	3	3	3	2	-0.038
2	3	2	1	1	0.362	3	2	1	2	2	0.145	3	3	3	3	3	-0.098
2	3	2	1	2	0.280	3	2	1	2	3	0.085						
2	3	2	1	3	0.220	3	2	1	3	1	0.150	Unconscious [-0.071]					
2	3	2	2	1	0.268	3	2	1	3	2	0.068						

TARIFF A14: VAS TARIFF OF MEANS: INTERMEDIATE EDUCATION (10 YEAR DURATION)

	Level 2	Level 3
Mobility	0.070	0.186
Self-care	0.089	0.142
Usual activity	0.035	0.086
Pain/discomfort	0.090	0.173
Anxiety/depression	0.058	0.111
Constant = 0.158		N3 = 0.220

1	1	1	1	1	1.000	1	2	1	3	1	0.360	1 3 2 2 1 0.355
1	1	1	1	2	0.784	1	2	1	3	2	0.302	1 3 2 2 2 0.297
1	1	1	1	3	0.511	1	2	1	3	3	0.249	1 3 2 2 3 0.244
1	1	1	2	1	0.752	1	2	2	1	1	0.718	1 3 2 3 1 0.272
1	1	1	2	2	0.694	1	2	2	1	2	0.660	1 3 2 3 2 0.214
1	1	1	2	3	0.421	1	2	2	1	3	0.387	1 3 2 3 3 0.161
1	1	1	3	1	0.449	1	2	2	2	1	0.628	1 3 3 1 1 0.394
1	1	1	3	2	0.391	1	2	2	2	2	0.570	1 3 3 1 2 0.336
1	1	1	3	3	0.338	1	2	2	2	3	0.297	1 3 3 1 3 0.283
1	1	2	1	1	0.807	1	2	2	3	1	0.325	1 3 3 2 1 0.304
1	1	2	1	2	0.749	1	2	2	3	2	0.267	1 3 3 2 2 0.246
1	1	2	1	3	0.476	1	2	2	3	3	0.214	1 3 3 2 3 0.193
1	1	2	2	1	0.717	1	2	3	1	1	0.447	1 3 3 3 1 0.221
1	1	2	2	2	0.659	1	2	3	1	2	0.389	1 3 3 3 2 0.163
1	1	2	2	3	0.386	1	2	3	1	3	0.336	1 3 3 3 3 0.110
1	1	2	3	1	0.414	1	2	3	2	1	0.357	2 1 1 1 1 0.772
1	1	2	3	2	0.356	1	2	3	2	2	0.299	2 1 1 1 2 0.714
1	1	2	3	3	0.303	1	2	3	2	3	0.246	2 1 1 1 3 0.441
1	1	3	1	1	0.536	1	2	3	3	1	0.274	2 1 1 2 1 0.682
1	1	3	1	2	0.478	1	2	3	3	2	0.216	2 1 1 2 2 0.624
1	1	3	1	3	0.425	1	2	3	3	3	0.163	2 1 1 2 3 0.351
1	1	3	2	1	0.446	1	3	1	1	1	0.480	2 1 1 3 1 0.379
1	1	3	2	2	0.388	1	3	1	1	2	0.422	2 1 1 3 2 0.321
1	1	3	2	3	0.335	1	3	1	1	3	0.369	2 1 1 3 3 0.268
1	1	3	3	1	0.363	1	3	1	2	1	0.390	2 1 2 1 1 0.737
1	1	3	3	2	0.305	1	3	1	2	2	0.332	2 1 2 1 2 0.679
1	1	3	3	3	0.252	1	3	1	2	3	0.279	2 1 2 1 3 0.406
1	2	1	1	1	0.753	1	3	1	3	1	0.307	2 1 2 2 1 0.647
1	2	1	1	2	0.695	1	3	1	3	2	0.249	2 1 2 2 2 0.589
1	2	1	1	3	0.422	1	3	1	3	3	0.196	2 1 2 2 3 0.316
1	2	1	2	1	0.663	1	3	2	1	1	0.445	2 1 2 3 1 0.344
1	2	1	2	2	0.605	1	3	2	1	2	0.387	2 1 2 3 2 0.286
1	2	1	2	3	0.332	1	3	2	1	3	0.334	2 1 2 3 3 0.233

2	1	3	1	1	0.466	2	3	2	2	2	0.227	3	2	1	3	3	0.063
2	1	3	1	2	0.408	2	3	2	2	3	0.174	3	2	2	1	1	0.312
2	1	3	1	3	0.355	2	3	2	3	1	0.202	3	2	2	1	2	0.254
2	1	3	2	1	0.376	2	3	2	3	2	0.144	3	2	2	1	3	0.201
2	1	3	2	2	0.318	2	3	2	3	3	0.091	3	2	2	2	1	0.222
2	1	3	2	3	0.265	2	3	3	1	1	0.324	3	2	2	2	2	0.164
2	1	3	3	1	0.293	2	3	3	1	2	0.266	3	2	2	2	3	0.111
2	1	3	3	2	0.235	2	3	3	1	3	0.213	3	2	2	3	1	0.139
2	1	3	3	3	0.182	2	3	3	2	1	0.234	3	2	2	3	2	0.081
2	2	1	1	1	0.683	2	3	3	2	2	0.176	3	2	2	3	3	0.028
2	2	1	1	2	0.625	2	3	3	2	3	0.123	3	2	3	1	1	0.261
2	2	1	1	3	0.352	2	3	3	3	1	0.151	3	2	3	1	2	0.203
2	2	1	2	1	0.593	2	3	3	3	2	0.093	3	2	3	1	3	0.150
2	2	1	2	2	0.535	2	3	3	3	3	0.040	3	2	3	2	1	0.171
2	2	1	2	3	0.262	3	1	1	1	1	0.436	3	2	3	2	2	0.113
2	2	1	3	1	0.290	3	1	1	1	2	0.378	3	2	3	2	3	0.060
2	2	1	3	2	0.232	3	1	1	1	3	0.325	3	2	3	3	1	0.088
2	2	1	3	3	0.179	3	1	1	2	1	0.346	3	2	3	3	2	0.030
2	2	2	1	1	0.648	3	1	1	2	2	0.288	3	2	3	3	3	-0.023
2	2	2	1	2	0.590	3	1	1	2	3	0.235	3	3	1	1	1	0.294
2	2	2	1	3	0.317	3	1	1	3	1	0.263	3	3	1	1	2	0.236
2	2	2	2	1	0.558	3	1	1	3	2	0.205	3	3	1	1	3	0.183
2	2	2	2	2	0.500	3	1	1	3	3	0.152	3	3	1	2	1	0.204
2	2	2	2	3	0.227	3	1	2	1	1	0.401	3	3	1	2	2	0.146
2	2	2	3	1	0.255	3	1	2	1	2	0.343	3	3	1	2	3	0.093
2	2	2	3	2	0.197	3	1	2	1	3	0.290	3	3	1	3	1	0.121
2	2	2	3	3	0.144	3	1	2	2	1	0.311	3	3	1	3	2	0.063
2	2	3	1	1	0.377	3	1	2	2	2	0.253	3	3	1	3	3	0.010
2	2	3	1	2	0.319	3	1	2	2	3	0.200	3	3	2	1	1	0.259
2	2	3	1	3	0.266	3	1	2	3	1	0.228	3	3	2	1	2	0.201
2	2	3	2	1	0.287	3	1	2	3	2	0.170	3	3	2	1	3	0.148
2	2	3	2	2	0.229	3	1	2	3	3	0.117	3	3	2	2	1	0.169
2	2	3	2	3	0.176	3	1	3	1	1	0.350	3	3	2	2	2	0.111
2	2	3	3	1	0.204	3	1	3	1	2	0.292	3	3	2	2	3	0.058
2	2	3	3	2	0.146	3	1	3	1	3	0.239	3	3	2	3	1	0.086
2	2	3	3	3	0.093	3	1	3	2	1	0.260	3	3	2	3	2	0.028
2	3	1	1	1	0.410	3	1	3	2	2	0.202	3	3	2	3	3	-0.025
2	3	1	1	2	0.352	3	1	3	2	3	0.149	3	3	3	1	1	0.208
2	3	1	1	3	0.299	3	1	3	3	1	0.177	3	3	3	1	2	0.150
2	3	1	2	1	0.320	3	1	3	3	2	0.119	3	3	3	1	3	0.097
2	3	1	2	2	0.262	3	1	3	3	3	0.066	3	3	3	2	1	0.118
2	3	1	2	3	0.209	3	2	1	1	1	0.347	3	3	3	2	2	0.060
2	3	1	3	1	0.237	3	2	1	1	2	0.289	3	3	3	2	3	0.007
2	3	1	3	2	0.179	3	2	1	1	3	0.236	3	3	3	3	1	0.035
2	3	1	3	3	0.126	3	2	1	2	1	0.257	3	3	3	3	2	-0.023
2	3	2	1	1	0.375	3	2	1	2	2	0.199	3	3	3	3	3	-0.076
2	3	2	1	2	0.317	3	2	1	2	3	0.146						
2	3	2	1	3	0.264	3	2	1	3	1	0.174	Unconscious [-0.013]					
2	3	2	2	1	0.285	3	2	1	3	2	0.116						

TARIFF A15: VAS TARIFF OF MEANS: MINIMUM EDUCATION (10 YEAR DURATION)

	Level 2	Level 3
Mobility	0.071	0.182
Self-care	0.096	0.158
Usual activity	0.027	0.078
Pain/discomfort	0.069	0.160
Anxiety/depression	0.059	0.130
Constant = 0.158		N3 = 0.186

1 1 1 1 1	1.000	1 2 1 3 1	0.400	1 3 2 2 1	0.402
1 1 1 1 2	0.783	1 2 1 3 2	0.341	1 3 2 2 2	0.343
1 1 1 1 3	0.526	1 2 1 3 3	0.270	1 3 2 2 3	0.272
1 1 1 2 1	0.773	1 2 2 1 1	0.719	1 3 2 3 1	0.311
1 1 1 2 2	0.714	1 2 2 1 2	0.660	1 3 2 3 2	0.252
1 1 1 2 3	0.457	1 2 2 1 3	0.403	1 3 2 3 3	0.181
1 1 1 3 1	0.496	1 2 2 2 1	0.650	1 3 3 1 1	0.420
1 1 1 3 2	0.437	1 2 2 2 2	0.591	1 3 3 1 2	0.361
1 1 1 3 3	0.366	1 2 2 2 3	0.334	1 3 3 1 3	0.290
1 1 2 1 1	0.815	1 2 2 3 1	0.373	1 3 3 2 1	0.351
1 1 2 1 2	0.756	1 2 2 3 2	0.314	1 3 3 2 2	0.292
1 1 2 1 3	0.499	1 2 2 3 3	0.243	1 3 3 2 3	0.221
1 1 2 2 1	0.746	1 2 3 1 1	0.482	1 3 3 3 1	0.260
1 1 2 2 2	0.687	1 2 3 1 2	0.423	1 3 3 3 2	0.201
1 1 2 2 3	0.430	1 2 3 1 3	0.352	1 3 3 3 3	0.130
1 1 2 3 1	0.469	1 2 3 2 1	0.413	2 1 1 1 1	0.771
1 1 2 3 2	0.410	1 2 3 2 2	0.354	2 1 1 1 2	0.712
1 1 2 3 3	0.339	1 2 3 2 3	0.283	2 1 1 1 3	0.455
1 1 3 1 1	0.578	1 2 3 3 1	0.322	2 1 1 2 1	0.702
1 1 3 1 2	0.519	1 2 3 3 2	0.263	2 1 1 2 2	0.643
1 1 3 1 3	0.448	1 2 3 3 3	0.192	2 1 1 2 3	0.386
1 1 3 2 1	0.509	1 3 1 1 1	0.498	2 1 1 3 1	0.425
1 1 3 2 2	0.450	1 3 1 1 2	0.439	2 1 1 3 2	0.366
1 1 3 2 3	0.379	1 3 1 1 3	0.368	2 1 1 3 3	0.295
1 1 3 3 1	0.418	1 3 1 2 1	0.429	2 1 2 1 1	0.744
1 1 3 3 2	0.359	1 3 1 2 2	0.370	2 1 2 1 2	0.685
1 1 3 3 3	0.288	1 3 1 2 3	0.299	2 1 2 1 3	0.428
1 2 1 1 1	0.746	1 3 1 3 1	0.338	2 1 2 2 1	0.675
1 2 1 1 2	0.687	1 3 1 3 2	0.279	2 1 2 2 2	0.616
1 2 1 1 3	0.430	1 3 1 3 3	0.208	2 1 2 2 3	0.359
1 2 1 2 1	0.677	1 3 2 1 1	0.471	2 1 2 3 1	0.398
1 2 1 2 2	0.618	1 3 2 1 2	0.412	2 1 2 3 2	0.339
1 2 1 2 3	0.361	1 3 2 1 3	0.341	2 1 2 3 3	0.268

2	1	3	1	1	0.507	2	3	2	2	2	0.272	3	2	1	3	3	0.088
2	1	3	1	2	0.448	2	3	2	2	3	0.201	3	2	2	1	1	0.351
2	1	3	1	3	0.377	2	3	2	3	1	0.240	3	2	2	1	2	0.292
2	1	3	2	1	0.438	2	3	2	3	2	0.181	3	2	2	1	3	0.221
2	1	3	2	2	0.379	2	3	2	3	3	0.110	3	2	2	2	1	0.282
2	1	3	2	3	0.308	2	3	3	1	1	0.349	3	2	2	2	2	0.223
2	1	3	3	1	0.347	2	3	3	1	2	0.290	3	2	2	2	3	0.152
2	1	3	3	2	0.288	2	3	3	1	3	0.219	3	2	2	3	1	0.191
2	1	3	3	3	0.217	2	3	3	2	1	0.280	3	2	2	3	2	0.132
2	2	1	1	1	0.675	2	3	3	2	2	0.221	3	2	2	3	3	0.061
2	2	1	1	2	0.616	2	3	3	2	3	0.150	3	2	3	1	1	0.300
2	2	1	1	3	0.359	2	3	3	3	1	0.189	3	2	3	1	2	0.241
2	2	1	2	1	0.606	2	3	3	3	2	0.130	3	2	3	1	3	0.170
2	2	1	2	2	0.547	2	3	3	3	3	0.059	3	2	3	2	1	0.231
2	2	1	2	3	0.290	3	1	1	1	1	0.474	3	2	3	2	2	0.172
2	2	1	3	1	0.329	3	1	1	1	2	0.415	3	2	3	2	3	0.101
2	2	1	3	2	0.270	3	1	1	1	3	0.344	3	2	3	3	1	0.140
2	2	1	3	3	0.199	3	1	1	2	1	0.405	3	2	3	3	2	0.081
2	2	2	1	1	0.648	3	1	1	2	2	0.346	3	2	3	3	3	0.010
2	2	2	1	2	0.589	3	1	1	2	3	0.275	3	3	1	1	1	0.316
2	2	2	1	3	0.332	3	1	1	3	1	0.314	3	3	1	1	2	0.257
2	2	2	2	1	0.579	3	1	1	3	2	0.255	3	3	1	1	3	0.186
2	2	2	2	2	0.520	3	1	1	3	3	0.184	3	3	1	2	1	0.247
2	2	2	2	3	0.263	3	1	2	1	1	0.447	3	3	1	2	2	0.188
2	2	2	3	1	0.302	3	1	2	1	2	0.388	3	3	1	2	3	0.117
2	2	2	3	2	0.243	3	1	2	1	3	0.317	3	3	1	3	1	0.156
2	2	2	3	3	0.172	3	1	2	2	1	0.378	3	3	1	3	2	0.097
2	2	3	1	1	0.411	3	1	2	2	2	0.319	3	3	1	3	3	0.026
2	2	3	1	2	0.352	3	1	2	2	3	0.248	3	3	2	1	1	0.289
2	2	3	1	3	0.281	3	1	2	3	1	0.287	3	3	2	1	2	0.230
2	2	3	2	1	0.342	3	1	2	3	2	0.228	3	3	2	1	3	0.159
2	2	3	2	2	0.283	3	1	2	3	3	0.157	3	3	2	2	1	0.220
2	2	3	2	3	0.212	3	1	3	1	1	0.396	3	3	2	2	2	0.161
2	2	3	3	1	0.251	3	1	3	1	2	0.337	3	3	2	2	3	0.090
2	2	3	3	2	0.192	3	1	3	1	3	0.266	3	3	2	3	1	0.129
2	2	3	3	3	0.121	3	1	3	2	1	0.327	3	3	2	3	2	0.070
2	3	1	1	1	0.427	3	1	3	2	2	0.268	3	3	2	3	3	-0.001
2	3	1	1	2	0.368	3	1	3	2	3	0.197	3	3	3	1	1	0.238
2	3	1	1	3	0.297	3	1	3	3	1	0.236	3	3	3	1	2	0.179
2	3	1	2	1	0.358	3	1	3	3	2	0.177	3	3	3	1	3	0.108
2	3	1	2	2	0.299	3	1	3	3	3	0.106	3	3	3	2	1	0.169
2	3	1	2	3	0.228	3	2	1	1	1	0.378	3	3	3	2	2	0.110
2	3	1	3	1	0.267	3	2	1	1	2	0.319	3	3	3	2	3	0.039
2	3	1	3	2	0.208	3	2	1	1	3	0.248	3	3	3	3	1	0.078
2	3	1	3	3	0.137	3	2	1	2	1	0.309	3	3	3	3	2	0.019
2	3	2	1	1	0.400	3	2	1	2	2	0.250	3	3	3	3	3	-0.052
2	3	2	1	2	0.341	3	2	1	2	3	0.179						
2	3	2	1	3	0.270	3	2	1	3	1	0.218	Unconscious [-0.063]					
2	3	2	2	1	0.331	3	2	1	3	2	0.159						

TARIFF A16: VAS TARIFF OF MEDIANS: DEGREE LEVEL EDUCATION (10 YEAR DURATION)

	Level 2	Level 3
Mobility	0.075	0.156
Self-care	0.109	0.150
Usual activity	0.029	0.059
Pain/discomfort	0.086	0.184
Anxiety/depression	0.080	0.126
Constant = 0.120		N3 = 0.260

1	1	1	1	1	1.000	1	2	1	3	1	0.327	1	3	2	2	1	0.355
1	1	1	1	2	0.800	1	2	1	3	2	0.247	1	3	2	2	2	0.275
1	1	1	1	3	0.494	1	2	1	3	3	0.201	1	3	2	2	3	0.229
1	1	1	2	1	0.794	1	2	2	1	1	0.742	1	3	2	3	1	0.257
1	1	1	2	2	0.714	1	2	2	1	2	0.662	1	3	2	3	2	0.177
1	1	1	2	3	0.408	1	2	2	1	3	0.356	1	3	2	3	3	0.131
1	1	1	3	1	0.436	1	2	2	2	1	0.656	1	3	3	1	1	0.411
1	1	1	3	2	0.356	1	2	2	2	2	0.576	1	3	3	1	2	0.331
1	1	1	3	3	0.310	1	2	2	2	3	0.270	1	3	3	1	3	0.285
1	1	2	1	1	0.851	1	2	2	3	1	0.298	1	3	3	2	1	0.325
1	1	2	1	2	0.771	1	2	2	3	2	0.218	1	3	3	2	2	0.245
1	1	2	1	3	0.465	1	2	2	3	3	0.172	1	3	3	2	3	0.199
1	1	2	2	1	0.765	1	2	3	1	1	0.452	1	3	3	3	1	0.227
1	1	2	2	2	0.685	1	2	3	1	2	0.372	1	3	3	3	2	0.147
1	1	2	2	3	0.379	1	2	3	1	3	0.326	1	3	3	3	3	0.101
1	1	2	3	1	0.407	1	2	3	2	1	0.366	2	1	1	1	1	0.805
1	1	2	3	2	0.327	1	2	3	2	2	0.286	2	1	1	1	2	0.725
1	1	2	3	3	0.281	1	2	3	2	3	0.240	2	1	1	1	3	0.419
1	1	3	1	1	0.561	1	2	3	3	1	0.268	2	1	1	2	1	0.719
1	1	3	1	2	0.481	1	2	3	3	2	0.188	2	1	1	2	2	0.639
1	1	3	1	3	0.435	1	2	3	3	3	0.142	2	1	1	2	3	0.333
1	1	3	2	1	0.475	1	3	1	1	1	0.470	2	1	1	3	1	0.361
1	1	3	2	2	0.395	1	3	1	1	2	0.390	2	1	1	3	2	0.281
1	1	3	2	3	0.349	1	3	1	1	3	0.344	2	1	1	3	3	0.235
1	1	3	3	1	0.377	1	3	1	2	1	0.384	2	1	2	1	1	0.776
1	1	3	3	2	0.297	1	3	1	2	2	0.304	2	1	2	1	2	0.696
1	1	3	3	3	0.251	1	3	1	2	3	0.258	2	1	2	1	3	0.390
1	2	1	1	1	0.771	1	3	1	3	1	0.286	2	1	2	2	1	0.690
1	2	1	1	2	0.691	1	3	1	3	2	0.206	2	1	2	2	2	0.610
1	2	1	1	3	0.385	1	3	1	3	3	0.160	2	1	2	2	3	0.304
1	2	1	2	1	0.685	1	3	2	1	1	0.441	2	1	2	3	1	0.332
1	2	1	2	2	0.605	1	3	2	1	2	0.361	2	1	2	3	2	0.252
1	2	1	2	3	0.299	1	3	2	1	3	0.315	2	1	2	3	3	0.206

2	1	3	1	1	0.486	2	3	2	2	2	0.200	3	2	1	3	3	0.045
2	1	3	1	2	0.406	2	3	2	2	3	0.154	3	2	2	1	1	0.326
2	1	3	1	3	0.360	2	3	2	3	1	0.182	3	2	2	1	2	0.246
2	1	3	2	1	0.400	2	3	2	3	2	0.102	3	2	2	1	3	0.200
2	1	3	2	2	0.320	2	3	2	3	3	0.056	3	2	2	2	1	0.240
2	1	3	2	3	0.274	2	3	3	1	1	0.336	3	2	2	2	2	0.160
2	1	3	3	1	0.302	2	3	3	1	2	0.256	3	2	2	2	3	0.114
2	1	3	3	2	0.222	2	3	3	1	3	0.210	3	2	2	3	1	0.142
2	1	3	3	3	0.176	2	3	3	2	1	0.250	3	2	2	3	2	0.062
2	2	1	1	1	0.696	2	3	3	2	2	0.170	3	2	2	3	3	0.016
2	2	1	1	2	0.616	2	3	3	2	3	0.124	3	2	3	1	1	0.296
2	2	1	1	3	0.310	2	3	3	3	1	0.152	3	2	3	1	2	0.216
2	2	1	2	1	0.610	2	3	3	3	2	0.072	3	2	3	1	3	0.170
2	2	1	2	2	0.530	2	3	3	3	3	0.026	3	2	3	2	1	0.210
2	2	1	2	3	0.224	3	1	1	1	1	0.464	3	2	3	2	2	0.130
2	2	1	3	1	0.252	3	1	1	1	2	0.384	3	2	3	2	3	0.084
2	2	1	3	2	0.172	3	1	1	1	3	0.338	3	2	3	3	1	0.112
2	2	1	3	3	0.126	3	1	1	2	1	0.378	3	2	3	3	2	0.032
2	2	2	1	1	0.667	3	1	1	2	2	0.298	3	2	3	3	3	-0.014
2	2	2	1	2	0.587	3	1	1	2	3	0.252	3	3	1	1	1	0.314
2	2	2	1	3	0.281	3	1	1	3	1	0.280	3	3	1	1	2	0.234
2	2	2	2	1	0.581	3	1	1	3	2	0.200	3	3	1	1	3	0.188
2	2	2	2	2	0.501	3	1	1	3	3	0.154	3	3	1	2	1	0.228
2	2	2	2	3	0.195	3	1	2	1	1	0.435	3	3	1	2	2	0.148
2	2	2	3	1	0.223	3	1	2	1	2	0.355	3	3	1	2	3	0.102
2	2	2	3	2	0.143	3	1	2	1	3	0.309	3	3	1	3	1	0.130
2	2	2	3	3	0.097	3	1	2	2	1	0.349	3	3	1	3	2	0.050
2	2	3	1	1	0.377	3	1	2	2	2	0.269	3	3	1	3	3	0.004
2	2	3	1	2	0.297	3	1	2	2	3	0.223	3	3	2	1	1	0.285
2	2	3	1	3	0.251	3	1	2	3	1	0.251	3	3	2	1	2	0.205
2	2	3	2	1	0.291	3	1	2	3	2	0.171	3	3	2	1	3	0.159
2	2	3	2	2	0.211	3	1	2	3	3	0.125	3	3	2	2	1	0.199
2	2	3	2	3	0.165	3	1	3	1	1	0.405	3	3	2	2	2	0.119
2	2	3	3	1	0.193	3	1	3	1	2	0.325	3	3	2	2	3	0.073
2	2	3	3	2	0.113	3	1	3	1	3	0.279	3	3	2	3	1	0.101
2	2	3	3	3	0.067	3	1	3	2	1	0.319	3	3	2	3	2	0.021
2	3	1	1	1	0.395	3	1	3	2	2	0.239	3	3	2	3	3	-0.025
2	3	1	1	2	0.315	3	1	3	2	3	0.193	3	3	3	1	1	0.255
2	3	1	1	3	0.269	3	1	3	3	1	0.221	3	3	3	1	2	0.175
2	3	1	2	1	0.309	3	1	3	3	2	0.141	3	3	3	1	3	0.129
2	3	1	2	2	0.229	3	1	3	3	3	0.095	3	3	3	2	1	0.169
2	3	1	2	3	0.183	3	2	1	1	1	0.355	3	3	3	2	2	0.089
2	3	1	3	1	0.211	3	2	1	1	2	0.275	3	3	3	2	3	0.043
2	3	1	3	2	0.131	3	2	1	1	3	0.229	3	3	3	3	1	0.071
2	3	1	3	3	0.085	3	2	1	2	1	0.269	3	3	3	3	2	-0.009
2	3	2	1	1	0.366	3	2	1	2	2	0.189	3	3	3	3	3	-0.055
2	3	2	1	2	0.286	3	2	1	2	3	0.143						
2	3	2	1	3	0.240	3	2	1	3	1	0.171	Unconscious [0.000]					
2	3	2	2	1	0.280	3	2	1	3	2	0.091						

TARIFF A17: VAS TARIFF OF MEDIANS: INTERMEDIATE EDUCATION (10 YEAR DURATION)

	Level 2	Level 3
Mobility	0.073	0.170
Self-care	0.113	0.157
Usual activity	0.032	0.072
Pain/discomfort	0.078	0.176
Anxiety/depression	0.065	0.110
Constant = 0.115		N3 = 0.230

1	1	1	1	1	1.000	1	2	1	3	1	0.366	1	3	2	2	1	0.388
1	1	1	1	2	0.820	1	2	1	3	2	0.301	1	3	2	2	2	0.323
1	1	1	1	3	0.545	1	2	1	3	3	0.256	1	3	2	2	3	0.278
1	1	1	2	1	0.807	1	2	2	1	1	0.740	1	3	2	3	1	0.290
1	1	1	2	2	0.742	1	2	2	1	2	0.675	1	3	2	3	2	0.225
1	1	1	2	3	0.467	1	2	2	1	3	0.400	1	3	2	3	3	0.180
1	1	1	3	1	0.479	1	2	2	2	1	0.662	1	3	3	1	1	0.426
1	1	1	3	2	0.414	1	2	2	2	2	0.597	1	3	3	1	2	0.361
1	1	1	3	3	0.369	1	2	2	2	3	0.322	1	3	3	1	3	0.316
1	1	2	1	1	0.853	1	2	2	3	1	0.334	1	3	3	2	1	0.348
1	1	2	1	2	0.788	1	2	2	3	2	0.269	1	3	3	2	2	0.283
1	1	2	1	3	0.513	1	2	2	3	3	0.224	1	3	3	2	3	0.238
1	1	2	2	1	0.775	1	2	3	1	1	0.470	1	3	3	3	1	0.250
1	1	2	2	2	0.710	1	2	3	1	2	0.405	1	3	3	3	2	0.185
1	1	2	2	3	0.435	1	2	3	1	3	0.360	1	3	3	3	3	0.140
1	1	2	3	1	0.447	1	2	3	2	1	0.392	2	1	1	1	1	0.812
1	1	2	3	2	0.382	1	2	3	2	2	0.327	2	1	1	1	2	0.747
1	1	2	3	3	0.337	1	2	3	2	3	0.282	2	1	1	1	3	0.472
1	1	3	1	1	0.583	1	2	3	3	1	0.294	2	1	1	2	1	0.734
1	1	3	1	2	0.518	1	2	3	3	2	0.229	2	1	1	2	2	0.669
1	1	3	1	3	0.473	1	2	3	3	3	0.184	2	1	1	2	3	0.394
1	1	3	2	1	0.505	1	3	1	1	1	0.498	2	1	1	3	1	0.406
1	1	3	2	2	0.440	1	3	1	1	2	0.433	2	1	1	3	2	0.341
1	1	3	2	3	0.395	1	3	1	1	3	0.388	2	1	1	3	3	0.296
1	1	3	3	1	0.407	1	3	1	2	1	0.420	2	1	2	1	1	0.780
1	1	3	3	2	0.342	1	3	1	2	2	0.355	2	1	2	1	2	0.715
1	1	3	3	3	0.297	1	3	1	2	3	0.310	2	1	2	1	3	0.440
1	2	1	1	1	0.772	1	3	1	3	1	0.322	2	1	2	2	1	0.702
1	2	1	1	2	0.707	1	3	1	3	2	0.257	2	1	2	2	2	0.637
1	2	1	1	3	0.432	1	3	1	3	3	0.212	2	1	2	2	3	0.362
1	2	1	2	1	0.694	1	3	2	1	1	0.466	2	1	2	3	1	0.374
1	2	1	2	2	0.629	1	3	2	1	2	0.401	2	1	2	3	2	0.309
1	2	1	2	3	0.354	1	3	2	1	3	0.356	2	1	2	3	3	0.264

2	1	3	1	1	0.510	2	3	2	2	2	0.250	3	2	1	3	3	0.086
2	1	3	1	2	0.445	2	3	2	2	3	0.205	3	2	2	1	1	0.340
2	1	3	1	3	0.400	2	3	2	3	1	0.217	3	2	2	1	2	0.275
2	1	3	2	1	0.432	2	3	2	3	2	0.152	3	2	2	1	3	0.230
2	1	3	2	2	0.367	2	3	2	3	3	0.107	3	2	2	2	1	0.262
2	1	3	2	3	0.322	2	3	3	1	1	0.353	3	2	2	2	2	0.197
2	1	3	3	1	0.334	2	3	3	1	2	0.288	3	2	2	2	3	0.152
2	1	3	3	2	0.269	2	3	3	1	3	0.243	3	2	2	3	1	0.164
2	1	3	3	3	0.224	2	3	3	2	1	0.275	3	2	2	3	2	0.099
2	2	1	1	1	0.699	2	3	3	2	2	0.210	3	2	2	3	3	0.054
2	2	1	1	2	0.634	2	3	3	2	3	0.165	3	2	3	1	1	0.300
2	2	1	1	3	0.359	2	3	3	3	1	0.177	3	2	3	1	2	0.235
2	2	1	2	1	0.621	2	3	3	3	2	0.112	3	2	3	1	3	0.190
2	2	1	2	2	0.556	2	3	3	3	3	0.067	3	2	3	2	1	0.222
2	2	1	2	3	0.281	3	1	1	1	1	0.485	3	2	3	2	2	0.157
2	2	1	3	1	0.293	3	1	1	1	2	0.420	3	2	3	2	3	0.112
2	2	1	3	2	0.228	3	1	1	1	3	0.375	3	2	3	3	1	0.124
2	2	1	3	3	0.183	3	1	1	2	1	0.407	3	2	3	3	2	0.059
2	2	2	1	1	0.667	3	1	1	2	2	0.342	3	2	3	3	3	0.014
2	2	2	1	2	0.602	3	1	1	2	3	0.297	3	3	1	1	1	0.328
2	2	2	1	3	0.327	3	1	1	3	1	0.309	3	3	1	1	2	0.263
2	2	2	2	1	0.589	3	1	1	3	2	0.244	3	3	1	1	3	0.218
2	2	2	2	2	0.524	3	1	1	3	3	0.199	3	3	1	2	1	0.250
2	2	2	2	3	0.249	3	1	2	1	1	0.453	3	3	1	2	2	0.185
2	2	2	3	1	0.261	3	1	2	1	2	0.388	3	3	1	2	3	0.140
2	2	2	3	2	0.196	3	1	2	1	3	0.343	3	3	1	3	1	0.152
2	2	2	3	3	0.151	3	1	2	2	1	0.375	3	3	1	3	2	0.087
2	2	3	1	1	0.397	3	1	2	2	2	0.310	3	3	1	3	3	0.042
2	2	3	1	2	0.332	3	1	2	2	3	0.265	3	3	2	1	1	0.296
2	2	3	1	3	0.287	3	1	2	3	1	0.277	3	3	2	1	2	0.231
2	2	3	2	1	0.319	3	1	2	3	2	0.212	3	3	2	1	3	0.186
2	2	3	2	2	0.254	3	1	2	3	3	0.167	3	3	2	2	1	0.218
2	2	3	2	3	0.209	3	1	3	1	1	0.413	3	3	2	2	2	0.153
2	2	3	3	1	0.221	3	1	3	1	2	0.348	3	3	2	2	3	0.108
2	2	3	3	2	0.156	3	1	3	1	3	0.303	3	3	2	3	1	0.120
2	2	3	3	3	0.111	3	1	3	2	1	0.335	3	3	2	3	2	0.055
2	3	1	1	1	0.425	3	1	3	2	2	0.270	3	3	2	3	3	0.010
2	3	1	1	2	0.360	3	1	3	2	3	0.225	3	3	3	1	1	0.256
2	3	1	1	3	0.315	3	1	3	3	1	0.237	3	3	3	1	2	0.191
2	3	1	2	1	0.347	3	1	3	3	2	0.172	3	3	3	1	3	0.146
2	3	1	2	2	0.282	3	1	3	3	3	0.127	3	3	3	2	1	0.178
2	3	1	2	3	0.237	3	2	1	1	1	0.372	3	3	3	2	2	0.113
2	3	1	3	1	0.249	3	2	1	1	2	0.307	3	3	3	2	3	0.068
2	3	1	3	2	0.184	3	2	1	1	3	0.262	3	3	3	3	1	0.080
2	3	1	3	3	0.139	3	2	1	2	1	0.294	3	3	3	3	2	0.015
2	3	2	1	1	0.393	3	2	1	2	2	0.229	3	3	3	3	3	-0.030
2	3	2	1	2	0.328	3	2	1	2	3	0.184						
2	3	2	1	3	0.283	3	2	1	3	1	0.196	Unconscious [0.020]					
2	3	2	2	1	0.315	3	2	1	3	2	0.131						

TARIFF A18: VAS TARIFF OF MEDIANS: MINIMUM EDUCATION (10 YEAR DURATION)

	Level 2	Level 3
Mobility	0.072	0.173
Self-care	0.114	0.166
Usual activity	0.028	0.062
Pain/discomfort	0.075	0.167
Anxiety/depression	0.059	0.118
Constant = 0.110		N3 = 0.213

1 1 1 1 1	1.000	1 2 1 3 1	0.396	1 3 2 2 1	0.408
1 1 1 1 2	0.831	1 2 1 3 2	0.337	1 3 2 2 2	0.349
1 1 1 1 3	0.559	1 2 1 3 3	0.278	1 3 2 2 3	0.290
1 1 1 2 1	0.815	1 2 2 1 1	0.748	1 3 2 3 1	0.316
1 1 1 2 2	0.756	1 2 2 1 2	0.689	1 3 2 3 2	0.257
1 1 1 2 3	0.484	1 2 2 1 3	0.417	1 3 2 3 3	0.198
1 1 1 3 1	0.510	1 2 2 2 1	0.673	1 3 3 1 1	0.449
1 1 1 3 2	0.451	1 2 2 2 2	0.614	1 3 3 1 2	0.390
1 1 1 3 3	0.392	1 2 2 2 3	0.342	1 3 3 1 3	0.331
1 1 2 1 1	0.862	1 2 2 3 1	0.368	1 3 3 2 1	0.374
1 1 2 1 2	0.803	1 2 2 3 2	0.309	1 3 3 2 2	0.315
1 1 2 1 3	0.531	1 2 2 3 3	0.250	1 3 3 2 3	0.256
1 1 2 2 1	0.787	1 2 3 1 1	0.501	1 3 3 3 1	0.282
1 1 2 2 2	0.728	1 2 3 1 2	0.442	1 3 3 3 2	0.223
1 1 2 2 3	0.456	1 2 3 1 3	0.383	1 3 3 3 3	0.164
1 1 2 3 1	0.482	1 2 3 2 1	0.426	2 1 1 1 1	0.818
1 1 2 3 2	0.423	1 2 3 2 2	0.367	2 1 1 1 2	0.759
1 1 2 3 3	0.364	1 2 3 2 3	0.308	2 1 1 1 3	0.487
1 1 3 1 1	0.615	1 2 3 3 1	0.334	2 1 1 2 1	0.743
1 1 3 1 2	0.556	1 2 3 3 2	0.275	2 1 1 2 2	0.684
1 1 3 1 3	0.497	1 2 3 3 3	0.216	2 1 1 2 3	0.412
1 1 3 2 1	0.540	1 3 1 1 1	0.511	2 1 1 3 1	0.438
1 1 3 2 2	0.481	1 3 1 1 2	0.452	2 1 1 3 2	0.379
1 1 3 2 3	0.422	1 3 1 1 3	0.393	2 1 1 3 3	0.320
1 1 3 3 1	0.448	1 3 1 2 1	0.436	2 1 2 1 1	0.790
1 1 3 3 2	0.389	1 3 1 2 2	0.377	2 1 2 1 2	0.731
1 1 3 3 3	0.330	1 3 1 2 3	0.318	2 1 2 1 3	0.459
1 2 1 1 1	0.776	1 3 1 3 1	0.344	2 1 2 2 1	0.715
1 2 1 1 2	0.717	1 3 1 3 2	0.285	2 1 2 2 2	0.656
1 2 1 1 3	0.445	1 3 1 3 3	0.226	2 1 2 2 3	0.384
1 2 1 2 1	0.701	1 3 2 1 1	0.483	2 1 2 3 1	0.410
1 2 1 2 2	0.642	1 3 2 1 2	0.424	2 1 2 3 2	0.351
1 2 1 2 3	0.370	1 3 2 1 3	0.365	2 1 2 3 3	0.292

2	1	3	1	1	0.543	2	3	2	2	2	0.277	3	2	1	3	3	0.105
2	1	3	1	2	0.484	2	3	2	2	3	0.218	3	2	2	1	1	0.362
2	1	3	1	3	0.425	2	3	2	3	1	0.244	3	2	2	1	2	0.303
2	1	3	2	1	0.468	2	3	2	3	2	0.185	3	2	2	1	3	0.244
2	1	3	2	2	0.409	2	3	2	3	3	0.126	3	2	2	2	1	0.287
2	1	3	2	3	0.350	2	3	3	1	1	0.377	3	2	2	2	2	0.228
2	1	3	3	1	0.376	2	3	3	1	2	0.318	3	2	2	2	3	0.169
2	1	3	3	2	0.317	2	3	3	1	3	0.259	3	2	2	3	1	0.195
2	1	3	3	3	0.258	2	3	3	2	1	0.302	3	2	2	3	2	0.136
2	2	1	1	1	0.704	2	3	3	2	2	0.243	3	2	2	3	3	0.077
2	2	1	1	2	0.645	2	3	3	2	3	0.184	3	2	3	1	1	0.328
2	2	1	1	3	0.373	2	3	3	3	1	0.210	3	2	3	1	2	0.269
2	2	1	2	1	0.629	2	3	3	3	2	0.151	3	2	3	1	3	0.210
2	2	1	2	2	0.570	2	3	3	3	3	0.092	3	2	3	2	1	0.253
2	2	1	2	3	0.298	3	1	1	1	1	0.504	3	2	3	2	2	0.194
2	2	1	3	1	0.324	3	1	1	1	2	0.445	3	2	3	2	3	0.135
2	2	1	3	2	0.265	3	1	1	1	3	0.386	3	2	3	3	1	0.161
2	2	1	3	3	0.206	3	1	1	2	1	0.429	3	2	3	3	2	0.102
2	2	2	1	1	0.676	3	1	1	2	2	0.370	3	2	3	3	3	0.043
2	2	2	1	2	0.617	3	1	1	2	3	0.311	3	3	1	1	1	0.338
2	2	2	1	3	0.345	3	1	1	3	1	0.337	3	3	1	1	2	0.279
2	2	2	2	1	0.601	3	1	1	3	2	0.278	3	3	1	1	3	0.220
2	2	2	2	2	0.542	3	1	1	3	3	0.219	3	3	1	2	1	0.263
2	2	2	2	3	0.270	3	1	2	1	1	0.476	3	3	1	2	2	0.204
2	2	2	3	1	0.296	3	1	2	1	2	0.417	3	3	1	2	3	0.145
2	2	2	3	2	0.237	3	1	2	1	3	0.358	3	3	1	3	1	0.171
2	2	2	3	3	0.178	3	1	2	2	1	0.401	3	3	1	3	2	0.112
2	2	3	1	1	0.429	3	1	2	2	2	0.342	3	3	1	3	3	0.053
2	2	3	1	2	0.370	3	1	2	2	3	0.283	3	3	2	1	1	0.310
2	2	3	1	3	0.311	3	1	2	3	1	0.309	3	3	2	1	2	0.251
2	2	3	2	1	0.354	3	1	2	3	2	0.250	3	3	2	1	3	0.192
2	2	3	2	2	0.295	3	1	2	3	3	0.191	3	3	2	2	1	0.235
2	2	3	2	3	0.236	3	1	3	1	1	0.442	3	3	2	2	2	0.176
2	2	3	3	1	0.262	3	1	3	1	2	0.383	3	3	2	2	3	0.117
2	2	3	3	2	0.203	3	1	3	1	3	0.324	3	3	2	3	1	0.143
2	2	3	3	3	0.144	3	1	3	2	1	0.367	3	3	2	3	2	0.084
2	3	1	1	1	0.439	3	1	3	2	2	0.308	3	3	2	3	3	0.025
2	3	1	1	2	0.380	3	1	3	2	3	0.249	3	3	3	1	1	0.276
2	3	1	1	3	0.321	3	1	3	3	1	0.275	3	3	3	1	2	0.217
2	3	1	2	1	0.364	3	1	3	3	2	0.216	3	3	3	1	3	0.158
2	3	1	2	2	0.305	3	1	3	3	3	0.157	3	3	3	2	1	0.201
2	3	1	2	3	0.246	3	2	1	1	1	0.390	3	3	3	2	2	0.142
2	3	1	3	1	0.272	3	2	1	1	2	0.331	3	3	3	2	3	0.083
2	3	1	3	2	0.213	3	2	1	1	3	0.272	3	3	3	3	1	0.109
2	3	1	3	3	0.154	3	2	1	2	1	0.315	3	3	3	3	2	0.050
2	3	2	1	1	0.411	3	2	1	2	2	0.256	3	3	3	3	3	-0.009
2	3	2	1	2	0.352	3	2	1	2	3	0.197						
2	3	2	1	3	0.293	3	2	1	3	1	0.223	Unconscious [0.010]					
2	3	2	2	1	0.336	3	2	1	3	2	0.164						

'Modified' TTO tariffs
(10 year durations)

TTO 'modified' means - whole population

TTO 'modified' means - males aged 60 and over

TTO 'modified' means - females aged 60 and over

TTO 'modified' medians - whole population

TTO 'modified' medians - males aged 60 and over

TTO 'modified' medians - females aged 60 and over

TARIFF A19: TTO TARIFF OF MODIFIED MEANS : WHOLE POPULATION - 10 year duration

	Level 2	Level 3
Mobility	0.063	0.304
Self-care	0.092	0.201
Usual activity	0.035	0.101
Pain/discomfort	0.118	0.390
Anxiety/depression	0.070	0.242
Constant = 0.084		N3 = 0.243

1 1 1 1 1	1.000	1 2 1 3 1	0.191	1 3 2 2 1	0.319
1 1 1 1 2	0.846	1 2 1 3 2	0.121	1 3 2 2 2	0.249
1 1 1 1 3	0.431	1 2 1 3 3	-0.051	1 3 2 2 3	0.077
1 1 1 2 1	0.798	1 2 2 1 1	0.789	1 3 2 3 1	0.047
1 1 1 2 2	0.728	1 2 2 1 2	0.719	1 3 2 3 2	-0.023
1 1 1 2 3	0.313	1 2 2 1 3	0.304	1 3 2 3 3	-0.195
1 1 1 3 1	0.283	1 2 2 2 1	0.671	1 3 3 1 1	0.371
1 1 1 3 2	0.213	1 2 2 2 2	0.601	1 3 3 1 2	0.301
1 1 1 3 3	0.041	1 2 2 2 3	0.186	1 3 3 1 3	0.129
1 1 2 1 1	0.881	1 2 2 3 1	0.156	1 3 3 2 1	0.253
1 1 2 1 2	0.811	1 2 2 3 2	0.086	1 3 3 2 2	0.183
1 1 2 1 3	0.396	1 2 2 3 3	-0.086	1 3 3 2 3	0.011
1 1 2 2 1	0.763	1 2 3 1 1	0.480	1 3 3 3 1	-0.019
1 1 2 2 2	0.693	1 2 3 1 2	0.410	1 3 3 3 2	-0.089
1 1 2 2 3	0.278	1 2 3 1 3	0.238	1 3 3 3 3	-0.261
1 1 2 3 1	0.248	1 2 3 2 1	0.362	2 1 1 1 1	0.853
1 1 2 3 2	0.178	1 2 3 2 2	0.292	2 1 1 1 2	0.783
1 1 2 3 3	0.006	1 2 3 2 3	0.120	2 1 1 1 3	0.368
1 1 3 1 1	0.572	1 2 3 3 1	0.090	2 1 1 2 1	0.735
1 1 3 1 2	0.502	1 2 3 3 2	0.020	2 1 1 2 2	0.665
1 1 3 1 3	0.330	1 2 3 3 3	-0.152	2 1 1 2 3	0.250
1 1 3 2 1	0.454	1 3 1 1 1	0.472	2 1 1 3 1	0.220
1 1 3 2 2	0.384	1 3 1 1 2	0.402	2 1 1 3 2	0.150
1 1 3 2 3	0.212	1 3 1 1 3	0.230	2 1 1 3 3	-0.022
1 1 3 3 1	0.182	1 3 1 2 1	0.354	2 1 2 1 1	0.818
1 1 3 3 2	0.112	1 3 1 2 2	0.284	2 1 2 1 2	0.748
1 1 3 3 3	-0.060	1 3 1 2 3	0.112	2 1 2 1 3	0.333
1 2 1 1 1	0.824	1 3 1 3 1	0.082	2 1 2 2 1	0.700
1 2 1 1 2	0.754	1 3 1 3 2	0.012	2 1 2 2 2	0.630
1 2 1 1 3	0.339	1 3 1 3 3	-0.160	2 1 2 2 3	0.215
1 2 1 2 1	0.706	1 3 2 1 1	0.437	2 1 2 3 1	0.185
1 2 1 2 2	0.636	1 3 2 1 2	0.367	2 1 2 3 2	0.115
1 2 1 2 3	0.221	1 3 2 1 3	0.195	2 1 2 3 3	-0.057

2	1	3	1	1	0.509	2	3	2	2	2	0.186	3	2	1	3	3	-0.355
2	1	3	1	2	0.439	2	3	2	2	3	0.014	3	2	2	1	1	0.242
2	1	3	1	3	0.267	2	3	2	3	1	-0.016	3	2	2	1	2	0.172
2	1	3	2	1	0.391	2	3	2	3	2	-0.086	3	2	2	1	3	0.000
2	1	3	2	2	0.321	2	3	2	3	3	-0.258	3	2	2	2	1	0.124
2	1	3	2	3	0.149	2	3	3	1	1	0.308	3	2	2	2	2	0.054
2	1	3	3	1	0.119	2	3	3	1	2	0.238	3	2	2	2	3	-0.118
2	1	3	3	2	0.049	2	3	3	1	3	0.066	3	2	2	3	1	-0.148
2	1	3	3	3	-0.123	2	3	3	2	1	0.190	3	2	2	3	2	-0.218
2	2	1	1	1	0.761	2	3	3	2	2	0.120	3	2	2	3	3	-0.390
2	2	1	1	2	0.691	2	3	3	2	3	-0.052	3	2	3	1	1	0.176
2	2	1	1	3	0.276	2	3	3	3	1	-0.082	3	2	3	1	2	0.106
2	2	1	2	1	0.643	2	3	3	3	2	-0.152	3	2	3	1	3	-0.066
2	2	1	2	2	0.573	2	3	3	3	3	-0.324	3	2	3	2	1	0.058
2	2	1	2	3	0.158	3	1	1	1	1	0.369	3	2	3	2	2	-0.012
2	2	1	3	1	0.128	3	1	1	1	2	0.299	3	2	3	2	3	-0.184
2	2	1	3	2	0.058	3	1	1	1	3	0.127	3	2	3	3	1	-0.214
2	2	1	3	3	-0.114	3	1	1	2	1	0.251	3	2	3	3	2	-0.284
2	2	2	1	1	0.726	3	1	1	2	2	0.181	3	2	3	3	3	-0.456
2	2	2	1	2	0.656	3	1	1	2	3	0.009	3	3	1	1	1	0.168
2	2	2	1	3	0.241	3	1	1	3	1	-0.021	3	3	1	1	2	0.098
2	2	2	2	1	0.608	3	1	1	3	2	-0.091	3	3	1	1	3	-0.074
2	2	2	2	2	0.538	3	1	1	3	3	-0.263	3	3	1	2	1	0.050
2	2	2	2	3	0.123	3	1	2	1	1	0.334	3	3	1	2	2	-0.020
2	2	2	3	1	0.093	3	1	2	1	2	0.264	3	3	1	2	3	-0.192
2	2	2	3	2	0.023	3	1	2	1	3	0.092	3	3	1	3	1	-0.222
2	2	2	3	3	-0.149	3	1	2	2	1	0.216	3	3	1	3	2	-0.292
2	2	3	1	1	0.417	3	1	2	2	2	0.146	3	3	1	3	3	-0.464
2	2	3	1	2	0.347	3	1	2	2	3	-0.026	3	3	2	1	1	0.133
2	2	3	1	3	0.175	3	1	2	3	1	-0.056	3	3	2	1	2	0.063
2	2	3	2	1	0.299	3	1	2	3	2	-0.126	3	3	2	1	3	-0.109
2	2	3	2	2	0.229	3	1	2	3	3	-0.298	3	3	2	2	1	0.015
2	2	3	2	3	0.057	3	1	3	1	1	0.268	3	3	2	2	2	-0.055
2	2	3	3	1	0.027	3	1	3	1	2	0.198	3	3	2	2	3	-0.227
2	2	3	3	2	-0.043	3	1	3	1	3	0.026	3	3	2	3	1	-0.257
2	2	3	3	3	-0.215	3	1	3	2	1	0.150	3	3	2	3	2	-0.327
2	3	1	1	1	0.409	3	1	3	2	2	0.080	3	3	2	3	3	-0.499
2	3	1	1	2	0.339	3	1	3	2	3	-0.092	3	3	3	1	1	0.067
2	3	1	1	3	0.167	3	1	3	3	1	-0.122	3	3	3	1	2	-0.003
2	3	1	2	1	0.291	3	1	3	3	2	-0.192	3	3	3	1	3	-0.175
2	3	1	2	2	0.221	3	1	3	3	3	-0.364	3	3	3	2	1	-0.051
2	3	1	2	3	0.049	3	2	1	1	1	0.277	3	3	3	2	2	-0.121
2	3	1	3	1	0.019	3	2	1	1	2	0.207	3	3	3	2	3	-0.293
2	3	1	3	2	-0.051	3	2	1	1	3	0.035	3	3	3	3	1	-0.323
2	3	1	3	3	-0.223	3	2	1	2	1	0.159	3	3	3	3	2	-0.393
2	3	2	1	1	0.374	3	2	1	2	2	0.089	3	3	3	3	3	-0.565
2	3	2	1	2	0.304	3	2	1	2	3	-0.083						
2	3	2	1	3	0.132	3	2	1	3	1	-0.113	Unconscious [*.***]					
2	3	2	2	1	0.256	3	2	1	3	2	-0.183						

TARIFF A20: TTO TARIFF OF MODIFIED MEANS : MALES OVER 60 - 10 year duration

	Level 2	Level 3
Mobility	0.057	0.338
Self-care	0.095	0.195
Usual activity	0.038	0.082
Pain/discomfort	0.097	0.365
Anxiety/depression	0.040	0.203
Constant = 0.099		N3 = 0.256

1 1 1 1 1	1.000	1 2 1 3 1	0.185	1 3 2 2 1	0.315
1 1 1 1 2	0.861	1 2 1 3 2	0.145	1 3 2 2 2	0.275
1 1 1 1 3	0.442	1 2 1 3 3	-0.018	1 3 2 2 3	0.112
1 1 1 2 1	0.804	1 2 2 1 1	0.768	1 3 2 3 1	0.047
1 1 1 2 2	0.764	1 2 2 1 2	0.728	1 3 2 3 2	0.007
1 1 1 2 3	0.345	1 2 2 1 3	0.309	1 3 2 3 3	-0.156
1 1 1 3 1	0.280	1 2 2 2 1	0.671	1 3 3 1 1	0.368
1 1 1 3 2	0.240	1 2 2 2 2	0.631	1 3 3 1 2	0.328
1 1 1 3 3	0.077	1 2 2 2 3	0.212	1 3 3 1 3	0.165
1 1 2 1 1	0.863	1 2 2 3 1	0.147	1 3 3 2 1	0.271
1 1 2 1 2	0.823	1 2 2 3 2	0.107	1 3 3 2 2	0.231
1 1 2 1 3	0.404	1 2 2 3 3	-0.056	1 3 3 2 3	0.068
1 1 2 2 1	0.766	1 2 3 1 1	0.468	1 3 3 3 1	0.003
1 1 2 2 2	0.726	1 2 3 1 2	0.428	1 3 3 3 2	-0.037
1 1 2 2 3	0.307	1 2 3 1 3	0.265	1 3 3 3 3	-0.200
1 1 2 3 1	0.242	1 2 3 2 1	0.371	2 1 1 1 1	0.844
1 1 2 3 2	0.202	1 2 3 2 2	0.331	2 1 1 1 2	0.804
1 1 2 3 3	0.039	1 2 3 2 3	0.168	2 1 1 1 3	0.385
1 1 3 1 1	0.563	1 2 3 3 1	0.103	2 1 1 2 1	0.747
1 1 3 1 2	0.523	1 2 3 3 2	0.063	2 1 1 2 2	0.707
1 1 3 1 3	0.360	1 2 3 3 3	-0.100	2 1 1 2 3	0.288
1 1 3 2 1	0.466	1 3 1 1 1	0.450	2 1 1 3 1	0.223
1 1 3 2 2	0.426	1 3 1 1 2	0.410	2 1 1 3 2	0.183
1 1 3 2 3	0.263	1 3 1 1 3	0.247	2 1 1 3 3	0.020
1 1 3 3 1	0.198	1 3 1 2 1	0.353	2 1 2 1 1	0.806
1 1 3 3 2	0.158	1 3 1 2 2	0.313	2 1 2 1 2	0.766
1 1 3 3 3	-0.005	1 3 1 2 3	0.150	2 1 2 1 3	0.347
1 2 1 1 1	0.806	1 3 1 3 1	0.085	2 1 2 2 1	0.709
1 2 1 1 2	0.766	1 3 1 3 2	0.045	2 1 2 2 2	0.669
1 2 1 1 3	0.347	1 3 1 3 3	-0.118	2 1 2 2 3	0.250
1 2 1 2 1	0.709	1 3 2 1 1	0.412	2 1 2 3 1	0.185
1 2 1 2 2	0.669	1 3 2 1 2	0.372	2 1 2 3 2	0.145
1 2 1 2 3	0.250	1 3 2 1 3	0.209	2 1 2 3 3	-0.018

2	1	3	1	1	0.506	2	3	2	2	2	0.218	3	2	1	3	3	-0.356
2	1	3	1	2	0.466	2	3	2	2	3	0.055	3	2	2	1	1	0.174
2	1	3	1	3	0.303	2	3	2	3	1	-0.010	3	2	2	1	2	0.134
2	1	3	2	1	0.409	2	3	2	3	2	-0.050	3	2	2	1	3	-0.029
2	1	3	2	2	0.369	2	3	2	3	3	-0.213	3	2	2	2	1	0.077
2	1	3	2	3	0.206	2	3	3	1	1	0.311	3	2	2	2	2	0.037
2	1	3	3	1	0.141	2	3	3	1	2	0.271	3	2	2	2	3	-0.126
2	1	3	3	2	0.101	2	3	3	1	3	0.108	3	2	2	3	1	-0.191
2	1	3	3	3	-0.062	2	3	3	2	1	0.214	3	2	2	3	2	-0.231
2	2	1	1	1	0.749	2	3	3	2	2	0.174	3	2	2	3	3	-0.394
2	2	1	1	2	0.709	2	3	3	2	3	0.011	3	2	3	1	1	0.130
2	2	1	1	3	0.290	2	3	3	3	1	-0.054	3	2	3	1	2	0.090
2	2	1	2	1	0.652	2	3	3	3	2	-0.094	3	2	3	1	3	-0.073
2	2	1	2	2	0.612	2	3	3	3	3	-0.257	3	2	3	2	1	0.033
2	2	1	2	3	0.193	3	1	1	1	1	0.307	3	2	3	2	2	-0.007
2	2	1	3	1	0.128	3	1	1	1	2	0.267	3	2	3	2	3	-0.170
2	2	1	3	2	0.088	3	1	1	1	3	0.104	3	2	3	3	1	-0.235
2	2	1	3	3	-0.075	3	1	1	2	1	0.210	3	2	3	3	2	-0.275
2	2	2	1	1	0.711	3	1	1	2	2	0.170	3	2	3	3	3	-0.438
2	2	2	1	2	0.671	3	1	1	2	3	0.007	3	3	1	1	1	0.112
2	2	2	1	3	0.252	3	1	1	3	1	-0.058	3	3	1	1	2	0.072
2	2	2	2	1	0.614	3	1	1	3	2	-0.098	3	3	1	1	3	-0.091
2	2	2	2	2	0.574	3	1	1	3	3	-0.261	3	3	1	2	1	0.015
2	2	2	2	3	0.155	3	1	2	1	1	0.269	3	3	1	2	2	-0.025
2	2	2	3	1	0.090	3	1	2	1	2	0.229	3	3	1	2	3	-0.188
2	2	2	3	2	0.050	3	1	2	1	3	0.066	3	3	1	3	1	-0.253
2	2	2	3	3	-0.113	3	1	2	2	1	0.172	3	3	1	3	2	-0.293
2	2	3	1	1	0.411	3	1	2	2	2	0.132	3	3	1	3	3	-0.456
2	2	3	1	2	0.371	3	1	2	2	3	-0.031	3	3	2	1	1	0.074
2	2	3	1	3	0.208	3	1	2	3	1	-0.096	3	3	2	1	2	0.034
2	2	3	2	1	0.314	3	1	2	3	2	-0.136	3	3	2	1	3	-0.129
2	2	3	2	2	0.274	3	1	2	3	3	-0.299	3	3	2	2	1	-0.023
2	2	3	2	3	0.111	3	1	3	1	1	0.225	3	3	2	2	2	-0.063
2	2	3	3	1	0.046	3	1	3	1	2	0.185	3	3	2	2	3	-0.226
2	2	3	3	2	0.006	3	1	3	1	3	0.022	3	3	2	3	1	-0.291
2	2	3	3	3	-0.157	3	1	3	2	1	0.128	3	3	2	3	2	-0.331
2	3	1	1	1	0.393	3	1	3	2	2	0.088	3	3	2	3	3	-0.494
2	3	1	1	2	0.353	3	1	3	2	3	-0.075	3	3	3	1	1	0.030
2	3	1	1	3	0.190	3	1	3	3	1	-0.140	3	3	3	1	2	-0.010
2	3	1	2	1	0.296	3	1	3	3	2	-0.180	3	3	3	1	3	-0.173
2	3	1	2	2	0.256	3	1	3	3	3	-0.343	3	3	3	2	1	-0.067
2	3	1	2	3	0.093	3	2	1	1	1	0.212	3	3	3	2	2	-0.107
2	3	1	3	1	0.028	3	2	1	1	2	0.172	3	3	3	2	3	-0.270
2	3	1	3	2	-0.012	3	2	1	1	3	0.009	3	3	3	3	1	-0.335
2	3	1	3	3	-0.175	3	2	1	2	1	0.115	3	3	3	3	2	-0.375
2	3	2	1	1	0.355	3	2	1	2	2	0.075	3	3	3	3	3	-0.538
2	3	2	1	2	0.315	3	2	1	2	3	-0.088						
2	3	2	1	3	0.152	3	2	1	3	1	-0.153	Unconscious [*.***]					
2	3	2	2	1	0.258	3	2	1	3	2	-0.193						

TARIFF A21: TTO TARIFF OF MODIFIED MEANS: FEMALES OVER 60 - 10 year duration

	Level 2	Level 3
Mobility	0.060	0.287
Self-care	0.102	0.206
Usual activity	0.041	0.101
Pain/discomfort	0.133	0.413
Anxiety/depression	0.073	0.312
Constant = 0.082		N3 = 0.254

1	1	1	1	1	1.000	1	2	1	3	1	0.149	1	3	2	2	1	0.284
1	1	1	1	2	0.845	1	2	1	3	2	0.076	1	3	2	2	2	0.211
1	1	1	1	3	0.352	1	2	1	3	3	-0.163	1	3	2	2	3	-0.028
1	1	1	2	1	0.785	1	2	2	1	1	0.775	1	3	2	3	1	0.004
1	1	1	2	2	0.712	1	2	2	1	2	0.702	1	3	2	3	2	-0.069
1	1	1	2	3	0.219	1	2	2	1	3	0.209	1	3	2	3	3	-0.308
1	1	1	3	1	0.251	1	2	2	2	1	0.642	1	3	3	1	1	0.357
1	1	1	3	2	0.178	1	2	2	2	2	0.569	1	3	3	1	2	0.284
1	1	1	3	3	-0.061	1	2	2	2	3	0.076	1	3	3	1	3	0.045
1	1	2	1	1	0.877	1	2	2	3	1	0.108	1	3	3	2	1	0.224
1	1	2	1	2	0.804	1	2	2	3	2	0.035	1	3	3	2	2	0.151
1	1	2	1	3	0.311	1	2	2	3	3	-0.204	1	3	3	2	3	-0.088
1	1	2	2	1	0.744	1	2	3	1	1	0.461	1	3	3	3	1	-0.056
1	1	2	2	2	0.671	1	2	3	1	2	0.388	1	3	3	3	2	-0.129
1	1	2	2	3	0.178	1	2	3	1	3	0.149	1	3	3	3	3	-0.368
1	1	2	3	1	0.210	1	2	3	2	1	0.328	2	1	1	1	1	0.858
1	1	2	3	2	0.137	1	2	3	2	2	0.255	2	1	1	1	2	0.785
1	1	2	3	3	-0.102	1	2	3	2	3	0.016	2	1	1	1	3	0.292
1	1	3	1	1	0.563	1	2	3	3	1	0.048	2	1	1	2	1	0.725
1	1	3	1	2	0.490	1	2	3	3	2	-0.025	2	1	1	2	2	0.652
1	1	3	1	3	0.251	1	2	3	3	3	-0.264	2	1	1	2	3	0.159
1	1	3	2	1	0.430	1	3	1	1	1	0.458	2	1	1	3	1	0.191
1	1	3	2	2	0.357	1	3	1	1	2	0.385	2	1	1	3	2	0.118
1	1	3	2	3	0.118	1	3	1	1	3	0.146	2	1	1	3	3	-0.121
1	1	3	3	1	0.150	1	3	1	2	1	0.325	2	1	2	1	1	0.817
1	1	3	3	2	0.077	1	3	1	2	2	0.252	2	1	2	1	2	0.744
1	1	3	3	3	-0.162	1	3	1	2	3	0.013	2	1	2	1	3	0.251
1	2	1	1	1	0.816	1	3	1	3	1	0.045	2	1	2	2	1	0.684
1	2	1	1	2	0.743	1	3	1	3	2	-0.028	2	1	2	2	2	0.611
1	2	1	1	3	0.250	1	3	1	3	3	-0.267	2	1	2	2	3	0.118
1	2	1	2	1	0.683	1	3	2	1	1	0.417	2	1	2	3	1	0.150
1	2	1	2	2	0.610	1	3	2	1	2	0.344	2	1	2	3	2	0.077
1	2	1	2	3	0.117	1	3	2	1	3	0.105	2	1	2	3	3	-0.162

2	1	3	1	1	0.503	2	3	2	2	2	0.151	3	2	1	3	3	-0.450
2	1	3	1	2	0.430	2	3	2	2	3	-0.088	3	2	2	1	1	0.234
2	1	3	1	3	0.191	2	3	2	3	1	-0.056	3	2	2	1	2	0.161
2	1	3	2	1	0.370	2	3	2	3	2	-0.129	3	2	2	1	3	-0.078
2	1	3	2	2	0.297	2	3	2	3	3	-0.368	3	2	2	2	1	0.101
2	1	3	2	3	0.058	2	3	3	1	1	0.297	3	2	2	2	2	0.028
2	1	3	3	1	0.090	2	3	3	1	2	0.224	3	2	2	2	3	-0.211
2	1	3	3	2	0.017	2	3	3	1	3	-0.015	3	2	2	3	1	-0.179
2	1	3	3	3	-0.222	2	3	3	2	1	0.164	3	2	2	3	2	-0.252
2	2	1	1	1	0.756	2	3	3	2	2	0.091	3	2	2	3	3	-0.491
2	2	1	1	2	0.683	2	3	3	2	3	-0.148	3	2	3	1	1	0.174
2	2	1	1	3	0.190	2	3	3	3	1	-0.116	3	2	3	1	2	0.101
2	2	1	2	1	0.623	2	3	3	3	2	-0.189	3	2	3	1	3	-0.138
2	2	1	2	2	0.550	2	3	3	3	3	-0.428	3	2	3	2	1	0.041
2	2	1	2	3	0.057	3	1	1	1	1	0.377	3	2	3	2	2	-0.032
2	2	1	3	1	0.089	3	1	1	1	2	0.304	3	2	3	2	3	-0.271
2	2	1	3	2	0.016	3	1	1	1	3	0.065	3	2	3	3	1	-0.239
2	2	1	3	3	-0.223	3	1	1	2	1	0.244	3	2	3	3	2	-0.312
2	2	2	1	1	0.715	3	1	1	2	2	0.171	3	2	3	3	3	-0.551
2	2	2	1	2	0.642	3	1	1	2	3	-0.068	3	3	1	1	1	0.171
2	2	2	1	3	0.149	3	1	1	3	1	-0.036	3	3	1	1	2	0.098
2	2	2	2	1	0.582	3	1	1	3	2	-0.109	3	3	1	1	3	-0.141
2	2	2	2	2	0.509	3	1	1	3	3	-0.348	3	3	1	2	1	0.038
2	2	2	2	3	0.016	3	1	2	1	1	0.336	3	3	1	2	2	-0.035
2	2	2	3	1	0.048	3	1	2	1	2	0.263	3	3	1	2	3	-0.274
2	2	2	3	2	-0.025	3	1	2	1	3	0.024	3	3	1	3	1	-0.242
2	2	2	3	3	-0.264	3	1	2	2	1	0.203	3	3	1	3	2	-0.315
2	2	3	1	1	0.401	3	1	2	2	2	0.130	3	3	1	3	3	-0.554
2	2	3	1	2	0.328	3	1	2	2	3	-0.109	3	3	2	1	1	0.130
2	2	3	1	3	0.089	3	1	2	3	1	-0.077	3	3	2	1	2	0.057
2	2	3	2	1	0.268	3	1	2	3	2	-0.150	3	3	2	1	3	-0.182
2	2	3	2	2	0.195	3	1	2	3	3	-0.389	3	3	2	2	1	-0.003
2	2	3	2	3	-0.044	3	1	3	1	1	0.276	3	3	2	2	2	-0.076
2	2	3	3	1	-0.012	3	1	3	1	2	0.203	3	3	2	2	3	-0.315
2	2	3	3	2	-0.085	3	1	3	1	3	-0.036	3	3	2	3	1	-0.283
2	2	3	3	3	-0.324	3	1	3	2	1	0.143	3	3	2	3	2	-0.356
2	3	1	1	1	0.398	3	1	3	2	2	0.070	3	3	2	3	3	-0.595
2	3	1	1	2	0.325	3	1	3	2	3	-0.169	3	3	3	1	1	0.070
2	3	1	1	3	0.086	3	1	3	3	1	-0.137	3	3	3	1	2	-0.003
2	3	1	2	1	0.265	3	1	3	3	2	-0.210	3	3	3	1	3	-0.242
2	3	1	2	2	0.192	3	1	3	3	3	-0.449	3	3	3	2	1	-0.063
2	3	1	2	3	-0.047	3	2	1	1	1	0.275	3	3	3	2	2	-0.136
2	3	1	3	1	-0.015	3	2	1	1	2	0.202	3	3	3	2	3	-0.375
2	3	1	3	2	-0.088	3	2	1	1	3	-0.037	3	3	3	3	1	-0.343
2	3	1	3	3	-0.327	3	2	1	2	1	0.142	3	3	3	3	2	-0.416
2	3	2	1	1	0.357	3	2	1	2	2	0.069	3	3	3	3	3	-0.655
2	3	2	1	2	0.284	3	2	1	2	3	-0.170						
2	3	2	1	3	0.045	3	2	1	3	1	-0.138	Unconscious [*.***]					
2	3	2	2	1	0.224	3	2	1	3	2	-0.211						

TARIFF A22: MODIFIED TTO TARIFF OF MEDIANS : WHOLE POPULATION - 10 year duration

	Level 2	Level 3
Mobility	0.060	0.422
Self-care	0.116	0.258
Usual activity	0.037	0.153
Pain/discomfort	0.110	0.493
Anxiety/depression	0.095	0.318
Constant = -0.026		N3 = 0.162

1 1 1 1 1	1.000	1 2 1 3 1	0.255	1 3 2 2 1	0.459
1 1 1 1 2	0.931	1 2 1 3 2	0.160	1 3 2 2 2	0.364
1 1 1 1 3	0.546	1 2 1 3 3	-0.063	1 3 2 2 3	0.141
1 1 1 2 1	0.916	1 2 2 1 1	0.873	1 3 2 3 1	0.076
1 1 1 2 2	0.821	1 2 2 1 2	0.778	1 3 2 3 2	-0.019
1 1 1 2 3	0.436	1 2 2 1 3	0.393	1 3 2 3 3	-0.242
1 1 1 3 1	0.371	1 2 2 2 1	0.763	1 3 3 1 1	0.453
1 1 1 3 2	0.276	1 2 2 2 2	0.668	1 3 3 1 2	0.358
1 1 1 3 3	0.053	1 2 2 2 3	0.283	1 3 3 1 3	0.135
1 1 2 1 1	0.989	1 2 2 3 1	0.218	1 3 3 2 1	0.343
1 1 2 1 2	0.894	1 2 2 3 2	0.123	1 3 3 2 2	0.248
1 1 2 1 3	0.509	1 2 2 3 3	-0.100	1 3 3 2 3	0.025
1 1 2 2 1	0.879	1 2 3 1 1	0.595	1 3 3 3 1	-0.040
1 1 2 2 2	0.784	1 2 3 1 2	0.500	1 3 3 3 2	-0.135
1 1 2 2 3	0.399	1 2 3 1 3	0.277	1 3 3 3 3	-0.358
1 1 2 3 1	0.334	1 2 3 2 1	0.485	2 1 1 1 1	0.966
1 1 2 3 2	0.239	1 2 3 2 2	0.390	2 1 1 1 2	0.871
1 1 2 3 3	0.016	1 2 3 2 3	0.167	2 1 1 1 3	0.486
1 1 3 1 1	0.711	1 2 3 3 1	0.102	2 1 1 2 1	0.856
1 1 3 1 2	0.616	1 2 3 3 2	0.007	2 1 1 2 2	0.761
1 1 3 1 3	0.393	1 2 3 3 3	-0.216	2 1 1 2 3	0.376
1 1 3 2 1	0.601	1 3 1 1 1	0.606	2 1 1 3 1	0.311
1 1 3 2 2	0.506	1 3 1 1 2	0.511	2 1 1 3 2	0.216
1 1 3 2 3	0.283	1 3 1 1 3	0.288	2 1 1 3 3	-0.007
1 1 3 3 1	0.218	1 3 1 2 1	0.496	2 1 2 1 1	0.929
1 1 3 3 2	0.123	1 3 1 2 2	0.401	2 1 2 1 2	0.834
1 1 3 3 3	-0.100	1 3 1 2 3	0.178	2 1 2 1 3	0.449
1 2 1 1 1	0.910	1 3 1 3 1	0.113	2 1 2 2 1	0.819
1 2 1 1 2	0.815	1 3 1 3 2	0.018	2 1 2 2 2	0.724
1 2 1 1 3	0.430	1 3 1 3 3	-0.205	2 1 2 2 3	0.339
1 2 1 2 1	0.800	1 3 2 1 1	0.569	2 1 2 3 1	0.274
1 2 1 2 2	0.705	1 3 2 1 2	0.474	2 1 2 3 2	0.179
1 2 1 2 3	0.320	1 3 2 1 3	0.251	2 1 2 3 3	-0.044

2	1	3	1	1	0.651	2	3	2	2	2	0.304	3	2	1	3	3	-0.485
2	1	3	1	2	0.556	2	3	2	2	3	0.081	3	2	2	1	1	0.289
2	1	3	1	3	0.333	2	3	2	3	1	0.016	3	2	2	1	2	0.194
2	1	3	2	1	0.541	2	3	2	3	2	-0.079	3	2	2	1	3	-0.029
2	1	3	2	2	0.446	2	3	2	3	3	-0.302	3	2	2	2	1	0.179
2	1	3	2	3	0.223	2	3	3	1	1	0.393	3	2	2	2	2	0.084
2	1	3	3	1	0.158	2	3	3	1	2	0.298	3	2	2	2	3	-0.139
2	1	3	3	2	0.063	2	3	3	1	3	0.075	3	2	2	3	1	-0.204
2	1	3	3	3	-0.160	2	3	3	2	1	0.283	3	2	2	3	2	-0.299
2	2	1	1	1	0.850	2	3	3	2	2	0.188	3	2	2	3	3	-0.522
2	2	1	1	2	0.755	2	3	3	2	3	-0.035	3	2	3	1	1	0.173
2	2	1	1	3	0.370	2	3	3	3	1	-0.100	3	2	3	1	2	0.078
2	2	1	2	1	0.740	2	3	3	3	2	-0.195	3	2	3	1	3	-0.145
2	2	1	2	2	0.645	2	3	3	3	3	-0.418	3	2	3	2	1	0.063
2	2	1	2	3	0.260	3	1	1	1	1	0.442	3	2	3	2	2	-0.032
2	2	1	3	1	0.195	3	1	1	1	2	0.347	3	2	3	2	3	-0.255
2	2	1	3	2	0.100	3	1	1	1	3	0.124	3	2	3	3	1	-0.320
2	2	1	3	3	-0.123	3	1	1	2	1	0.332	3	2	3	3	2	-0.415
2	2	2	1	1	0.813	3	1	1	2	2	0.237	3	2	3	3	3	-0.638
2	2	2	1	2	0.718	3	1	1	2	3	0.014	3	3	1	1	1	0.184
2	2	2	1	3	0.333	3	1	1	3	1	-0.051	3	3	1	1	2	0.089
2	2	2	2	1	0.703	3	1	1	3	2	-0.146	3	3	1	1	3	-0.134
2	2	2	2	2	0.608	3	1	1	3	3	-0.369	3	3	1	2	1	0.074
2	2	2	2	3	0.223	3	1	2	1	1	0.405	3	3	1	2	2	-0.021
2	2	2	3	1	0.158	3	1	2	1	2	0.310	3	3	1	2	3	-0.244
2	2	2	3	2	0.063	3	1	2	1	3	0.087	3	3	1	3	1	-0.309
2	2	2	3	3	-0.160	3	1	2	2	1	0.295	3	3	1	3	2	-0.404
2	2	3	1	1	0.535	3	1	2	2	2	0.200	3	3	1	3	3	-0.627
2	2	3	1	2	0.440	3	1	2	2	3	-0.023	3	3	2	1	1	0.147
2	2	3	1	3	0.217	3	1	2	3	1	-0.088	3	3	2	1	2	0.052
2	2	3	2	1	0.425	3	1	2	3	2	-0.183	3	3	2	1	3	-0.171
2	2	3	2	2	0.330	3	1	2	3	3	-0.406	3	3	2	2	1	0.037
2	2	3	2	3	0.107	3	1	3	1	1	0.289	3	3	2	2	2	-0.058
2	2	3	3	1	0.042	3	1	3	1	2	0.194	3	3	2	2	3	-0.281
2	2	3	3	2	-0.053	3	1	3	1	3	-0.029	3	3	2	3	1	-0.346
2	2	3	3	3	-0.276	3	1	3	2	1	0.179	3	3	2	3	2	-0.441
2	3	1	1	1	0.546	3	1	3	2	2	0.084	3	3	2	3	3	-0.664
2	3	1	1	2	0.451	3	1	3	2	3	-0.139	3	3	3	1	1	0.031
2	3	1	1	3	0.228	3	1	3	3	1	-0.204	3	3	3	1	2	-0.064
2	3	1	2	1	0.436	3	1	3	3	2	-0.299	3	3	3	1	3	-0.287
2	3	1	2	2	0.341	3	1	3	3	3	-0.522	3	3	3	2	1	-0.079
2	3	1	2	3	0.118	3	2	1	1	1	0.326	3	3	3	2	2	-0.174
2	3	1	3	1	0.053	3	2	1	1	2	0.231	3	3	3	2	3	-0.397
2	3	1	3	2	-0.042	3	2	1	1	3	0.008	3	3	3	3	1	-0.462
2	3	1	3	3	-0.265	3	2	1	2	1	0.216	3	3	3	3	2	-0.557
2	3	2	1	1	0.509	3	2	1	2	2	0.121	3	3	3	3	3	-0.780
2	3	2	1	2	0.414	3	2	1	2	3	-0.102						
2	3	2	1	3	0.191	3	2	1	3	1	-0.167	Unconscious [*.***]					
2	3	2	2	1	0.399	3	2	1	3	2	-0.262						

TARIFF A23: MODIFIED TTO TARIFF OF MEDIANS : MALE RESPONDENTS AGED 60 + OVER - 10 year duration

	Level 2	Level 3
Mobility	0.082	0.474
Self-care	0.128	0.300
Usual activity	0.034	0.114
Pain/discomfort	0.077	0.438
Anxiety/depression	0.053	0.276
Constant = -0.034		N3 = 0.202

1 1 1 1 1	1.000	1 2 1 3 1	0.266	1 3 2 2 1	0.421
1 1 1 1 2	0.981	1 2 1 3 2	0.213	1 3 2 2 2	0.368
1 1 1 1 3	0.556	1 2 1 3 3	-0.010	1 3 2 2 3	0.145
1 1 1 2 1	0.957	1 2 2 1 1	0.872	1 3 2 3 1	0.060
1 1 1 2 2	0.904	1 2 2 1 2	0.819	1 3 2 3 2	0.007
1 1 1 2 3	0.479	1 2 2 1 3	0.394	1 3 2 3 3	-0.216
1 1 1 3 1	0.394	1 2 2 2 1	0.795	1 3 3 1 1	0.418
1 1 1 3 2	0.341	1 2 2 2 2	0.742	1 3 3 1 2	0.365
1 1 1 3 3	0.118	1 2 2 2 3	0.317	1 3 3 1 3	0.142
1 1 2 1 1	1.000	1 2 2 3 1	0.232	1 3 3 2 1	0.341
1 1 2 1 2	0.947	1 2 2 3 2	0.179	1 3 3 2 2	0.288
1 1 2 1 3	0.522	1 2 2 3 3	-0.044	1 3 3 2 3	0.065
1 1 2 2 1	0.923	1 2 3 1 1	0.590	1 3 3 3 1	-0.020
1 1 2 2 2	0.870	1 2 3 1 2	0.537	1 3 3 3 2	-0.073
1 1 2 2 3	0.445	1 2 3 1 3	0.314	1 3 3 3 3	-0.296
1 1 2 3 1	0.360	1 2 3 2 1	0.513	2 1 1 1 1	0.952
1 1 2 3 2	0.307	1 2 3 2 2	0.460	2 1 1 1 2	0.899
1 1 2 3 3	0.084	1 2 3 2 3	0.237	2 1 1 1 3	0.474
1 1 3 1 1	0.718	1 2 3 3 1	0.152	2 1 1 2 1	0.875
1 1 3 1 2	0.665	1 2 3 3 2	0.099	2 1 1 2 2	0.822
1 1 3 1 3	0.442	1 2 3 3 3	-0.124	2 1 1 2 3	0.397
1 1 3 2 1	0.641	1 3 1 1 1	0.532	2 1 1 3 1	0.312
1 1 3 2 2	0.588	1 3 1 1 2	0.479	2 1 1 3 2	0.259
1 1 3 2 3	0.365	1 3 1 1 3	0.256	2 1 1 3 3	0.036
1 1 3 3 1	0.280	1 3 1 2 1	0.455	2 1 2 1 1	0.918
1 1 3 3 2	0.227	1 3 1 2 2	0.402	2 1 2 1 2	0.865
1 1 3 3 3	0.004	1 3 1 2 3	0.179	2 1 2 1 3	0.440
1 2 1 1 1	0.906	1 3 1 3 1	0.094	2 1 2 2 1	0.841
1 2 1 1 2	0.853	1 3 1 3 2	0.041	2 1 2 2 2	0.788
1 2 1 1 3	0.428	1 3 1 3 3	-0.182	2 1 2 2 3	0.363
1 2 1 2 1	0.829	1 3 2 1 1	0.498	2 1 2 3 1	0.278
1 2 1 2 2	0.776	1 3 2 1 2	0.445	2 1 2 3 2	0.225
1 2 1 2 3	0.351	1 3 2 1 3	0.222	2 1 2 3 3	0.002

2	1	3	1	1	0.636	2	3	2	2	2	0.286	3	2	1	3	3	-0.484
2	1	3	1	2	0.583	2	3	2	2	3	0.063	3	2	2	1	1	0.196
2	1	3	1	3	0.360	2	3	2	3	1	-0.022	3	2	2	1	2	0.143
2	1	3	2	1	0.559	2	3	2	3	2	-0.075	3	2	2	1	3	-0.080
2	1	3	2	2	0.506	2	3	2	3	3	-0.298	3	2	2	2	1	0.119
2	1	3	2	3	0.283	2	3	3	1	1	0.336	3	2	2	2	2	0.066
2	1	3	3	1	0.198	2	3	3	1	2	0.283	3	2	2	2	3	-0.157
2	1	3	3	2	0.145	2	3	3	1	3	0.060	3	2	2	3	1	-0.242
2	1	3	3	3	-0.078	2	3	3	2	1	0.259	3	2	2	3	2	-0.295
2	2	1	1	1	0.824	2	3	3	2	2	0.206	3	2	2	3	3	-0.518
2	2	1	1	2	0.771	2	3	3	2	3	-0.017	3	2	3	1	1	0.116
2	2	1	1	3	0.346	2	3	3	3	1	-0.102	3	2	3	1	2	0.063
2	2	1	2	1	0.747	2	3	3	3	2	-0.155	3	2	3	1	3	-0.160
2	2	1	2	2	0.694	2	3	3	3	3	-0.378	3	2	3	2	1	0.039
2	2	1	2	3	0.269	3	1	1	1	1	0.358	3	2	3	2	2	-0.014
2	2	1	3	1	0.184	3	1	1	1	2	0.305	3	2	3	2	3	-0.237
2	2	1	3	2	0.131	3	1	1	1	3	0.082	3	2	3	3	1	-0.322
2	2	1	3	3	-0.092	3	1	1	2	1	0.281	3	2	3	3	2	-0.375
2	2	2	1	1	0.790	3	1	1	2	2	0.228	3	2	3	3	3	-0.598
2	2	2	1	2	0.737	3	1	1	2	3	0.005	3	3	1	1	1	0.058
2	2	2	1	3	0.312	3	1	1	3	1	-0.080	3	3	1	1	2	0.005
2	2	2	2	1	0.713	3	1	1	3	2	-0.133	3	3	1	1	3	-0.218
2	2	2	2	2	0.660	3	1	1	3	3	-0.356	3	3	1	2	1	-0.019
2	2	2	2	3	0.235	3	1	2	1	1	0.324	3	3	1	2	2	-0.072
2	2	2	3	1	0.150	3	1	2	1	2	0.271	3	3	1	2	3	-0.295
2	2	2	3	2	0.097	3	1	2	1	3	0.048	3	3	1	3	1	-0.380
2	2	2	3	3	-0.126	3	1	2	2	1	0.247	3	3	1	3	2	-0.433
2	2	3	1	1	0.508	3	1	2	2	2	0.194	3	3	1	3	3	-0.656
2	2	3	1	2	0.455	3	1	2	2	3	-0.029	3	3	2	1	1	0.024
2	2	3	1	3	0.232	3	1	2	3	1	-0.114	3	3	2	1	2	-0.029
2	2	3	2	1	0.431	3	1	2	3	2	-0.167	3	3	2	1	3	-0.252
2	2	3	2	2	0.378	3	1	2	3	3	-0.390	3	3	2	2	1	-0.053
2	2	3	2	3	0.155	3	1	3	1	1	0.244	3	3	2	2	2	-0.106
2	2	3	3	1	0.070	3	1	3	1	2	0.191	3	3	2	2	3	-0.329
2	2	3	3	2	0.017	3	1	3	1	3	-0.032	3	3	2	3	1	-0.414
2	2	3	3	3	-0.206	3	1	3	2	1	0.167	3	3	2	3	2	-0.467
2	3	1	1	1	0.450	3	1	3	2	2	0.114	3	3	2	3	3	-0.690
2	3	1	1	2	0.397	3	1	3	2	3	-0.109	3	3	3	1	1	-0.056
2	3	1	1	3	0.174	3	1	3	3	1	-0.194	3	3	3	1	2	-0.109
2	3	1	2	1	0.373	3	1	3	3	2	-0.247	3	3	3	1	3	-0.332
2	3	1	2	2	0.320	3	1	3	3	3	-0.470	3	3	3	2	1	-0.133
2	3	1	2	3	0.097	3	2	1	1	1	0.230	3	3	3	2	2	-0.186
2	3	1	3	1	0.012	3	2	1	1	2	0.177	3	3	3	2	3	-0.409
2	3	1	3	2	-0.041	3	2	1	1	3	-0.046	3	3	3	3	1	-0.494
2	3	1	3	3	-0.264	3	2	1	2	1	0.153	3	3	3	3	2	-0.547
2	3	2	1	1	0.416	3	2	1	2	2	0.100	3	3	3	3	3	-0.770
2	3	2	1	2	0.363	3	2	1	2	3	-0.123						
2	3	2	1	3	0.140	3	2	1	3	1	-0.208	Unconscious [*.***]					
2	3	2	2	1	0.339	3	2	1	3	2	-0.261						

TARIFF A24: MODIFIED TTO TARIFF OF MEDIANS : FEMALE RESPONDENTS AGED 60 + OVER - 10 year duration

	Level 2	Level 3
Mobility	0.095	0.385
Self-care	0.133	0.275
Usual activity	0.090	0.153
Pain/discomfort	0.138	0.484
Anxiety/depression	0.084	0.362
Constant = -0.055		N3 = 0.272

1	1	1	1	1	1.000	1	2	1	3	1	0.166	1	3	2	2	1	0.280
1	1	1	1	2	0.971	1	2	1	3	2	0.082	1	3	2	2	2	0.196
1	1	1	1	3	0.421	1	2	1	3	3	-0.196	1	3	2	2	3	-0.082
1	1	1	2	1	0.917	1	2	2	1	1	0.832	1	3	2	3	1	-0.066
1	1	1	2	2	0.833	1	2	2	1	2	0.748	1	3	2	3	2	-0.150
1	1	1	2	3	0.283	1	2	2	1	3	0.198	1	3	2	3	3	-0.428
1	1	1	3	1	0.299	1	2	2	2	1	0.694	1	3	3	1	1	0.355
1	1	1	3	2	0.215	1	2	2	2	2	0.610	1	3	3	1	2	0.271
1	1	1	3	3	-0.063	1	2	2	2	3	0.060	1	3	3	1	3	-0.007
1	1	2	1	1	0.965	1	2	2	3	1	0.076	1	3	3	2	1	0.217
1	1	2	1	2	0.881	1	2	2	3	2	-0.008	1	3	3	2	2	0.133
1	1	2	1	3	0.331	1	2	2	3	3	-0.286	1	3	3	2	3	-0.145
1	1	2	2	1	0.827	1	2	3	1	1	0.497	1	3	3	3	1	-0.129
1	1	2	2	2	0.743	1	2	3	1	2	0.413	1	3	3	3	2	-0.213
1	1	2	2	3	0.193	1	2	3	1	3	0.135	1	3	3	3	3	-0.491
1	1	2	3	1	0.209	1	2	3	2	1	0.359	2	1	1	1	1	0.960
1	1	2	3	2	0.125	1	2	3	2	2	0.275	2	1	1	1	2	0.876
1	1	2	3	3	-0.153	1	2	3	2	3	-0.003	2	1	1	1	3	0.326
1	1	3	1	1	0.630	1	2	3	3	1	0.013	2	1	1	2	1	0.822
1	1	3	1	2	0.546	1	2	3	3	2	-0.071	2	1	1	2	2	0.738
1	1	3	1	3	0.268	1	2	3	3	3	-0.349	2	1	1	2	3	0.188
1	1	3	2	1	0.492	1	3	1	1	1	0.508	2	1	1	3	1	0.204
1	1	3	2	2	0.408	1	3	1	1	2	0.424	2	1	1	3	2	0.120
1	1	3	2	3	0.130	1	3	1	1	3	0.146	2	1	1	3	3	-0.158
1	1	3	3	1	0.146	1	3	1	2	1	0.370	2	1	2	1	1	0.870
1	1	3	3	2	0.062	1	3	1	2	2	0.286	2	1	2	1	2	0.786
1	1	3	3	3	-0.216	1	3	1	2	3	0.008	2	1	2	1	3	0.236
1	2	1	1	1	0.922	1	3	1	3	1	0.024	2	1	2	2	1	0.732
1	2	1	1	2	0.838	1	3	1	3	2	-0.060	2	1	2	2	2	0.648
1	2	1	1	3	0.288	1	3	1	3	3	-0.338	2	1	2	2	3	0.098
1	2	1	2	1	0.784	1	3	2	1	1	0.418	2	1	2	3	1	0.114
1	2	1	2	2	0.700	1	3	2	1	2	0.334	2	1	2	3	2	0.030
1	2	1	2	3	0.150	1	3	2	1	3	0.056	2	1	2	3	3	-0.248

2	1	3	1	1	0.535
2	1	3	1	2	0.451
2	1	3	1	3	0.173
2	1	3	2	1	0.397
2	1	3	2	2	0.313
2	1	3	2	3	0.035
2	1	3	3	1	0.051
2	1	3	3	2	-0.033
2	1	3	3	3	-0.311
2	2	1	1	1	0.827
2	2	1	1	2	0.743
2	2	1	1	3	0.193
2	2	1	2	1	0.689
2	2	1	2	2	0.605
2	2	1	2	3	0.055
2	2	1	3	1	0.071
2	2	1	3	2	-0.013
2	2	1	3	3	-0.291
2	2	2	1	1	0.737
2	2	2	1	2	0.653
2	2	2	1	3	0.103
2	2	2	2	1	0.599
2	2	2	2	2	0.515
2	2	2	2	3	-0.035
2	2	2	3	1	-0.019
2	2	2	3	2	-0.103
2	2	2	3	3	-0.381
2	2	3	1	1	0.402
2	2	3	1	2	0.318
2	2	3	1	3	0.040
2	2	3	2	1	0.264
2	2	3	2	2	0.180
2	2	3	2	3	-0.098
2	2	3	3	1	-0.082
2	2	3	3	2	-0.166
2	2	3	3	3	-0.444
2	3	1	1	1	0.413
2	3	1	1	2	0.329
2	3	1	1	3	0.051
2	3	1	2	1	0.275
2	3	1	2	2	0.191
2	3	1	2	3	-0.087
2	3	1	3	1	-0.071
2	3	1	3	2	-0.155
2	3	1	3	3	-0.433
2	3	2	1	1	0.323
2	3	2	1	2	0.239
2	3	2	1	3	-0.039
2	3	2	2	1	0.185
2	3	2	2	2	0.101
2	3	2	2	3	-0.177
2	3	2	3	1	-0.161
2	3	2	3	2	-0.245
2	3	2	3	3	-0.523
2	3	3	1	1	0.260
2	3	3	1	2	0.176
2	3	3	1	3	-0.102
2	3	3	2	1	0.122
2	3	3	2	2	0.038
2	3	3	2	3	-0.240
2	3	3	3	1	-0.224
2	3	3	3	2	-0.308
2	3	3	3	3	-0.586
3	1	1	1	1	0.398
3	1	1	1	2	0.314
3	1	1	1	3	0.036
3	1	1	2	1	0.260
3	1	1	2	2	0.176
3	1	1	2	3	-0.102
3	1	1	3	1	-0.086
3	1	1	3	2	-0.170
3	1	1	3	3	-0.448
3	1	2	1	1	0.308
3	1	2	1	2	0.224
3	1	2	1	3	-0.054
3	1	2	2	1	0.170
3	1	2	2	2	0.086
3	1	2	2	3	-0.192
3	1	2	3	1	-0.176
3	1	2	3	2	-0.260
3	1	2	3	3	-0.538
3	1	3	1	1	0.245
3	1	3	1	2	0.161
3	1	3	1	3	-0.117
3	1	3	2	1	0.107
3	1	3	2	2	0.023
3	1	3	2	3	-0.255
3	1	3	3	1	-0.239
3	1	3	3	2	-0.323
3	1	3	3	3	-0.601
3	2	1	1	1	0.265
3	2	1	1	2	0.181
3	2	1	1	3	-0.097
3	2	1	2	1	0.127
3	2	1	2	2	0.043
3	2	1	2	3	-0.235
3	2	1	3	1	-0.219
3	2	1	3	2	-0.303
3	2	1	3	3	-0.581
3	2	2	1	1	0.175
3	2	2	1	2	0.091
3	2	2	1	3	-0.187
3	2	2	2	1	0.037
3	2	2	2	2	-0.047
3	2	2	2	3	-0.325
3	2	2	3	1	-0.309
3	2	2	3	2	-0.393
3	2	2	3	3	-0.671
3	2	3	1	1	0.112
3	2	3	1	2	0.028
3	2	3	1	3	-0.250
3	2	3	2	1	-0.026
3	2	3	2	2	-0.110
3	2	3	2	3	-0.388
3	2	3	3	1	-0.372
3	2	3	3	2	-0.456
3	2	3	3	3	-0.734
3	3	1	1	1	0.123
3	3	1	1	2	0.039
3	3	1	1	3	-0.239
3	3	1	2	1	-0.015
3	3	1	2	2	-0.099
3	3	1	2	3	-0.377
3	3	1	3	1	-0.361
3	3	1	3	2	-0.445
3	3	1	3	3	-0.723
3	3	2	1	1	0.033
3	3	2	1	2	-0.051
3	3	2	1	3	-0.329
3	3	2	2	1	-0.105
3	3	2	2	2	-0.189
3	3	2	2	3	-0.467
3	3	2	3	1	-0.451
3	3	2	3	2	-0.535
3	3	2	3	3	-0.813
3	3	3	1	1	-0.030
3	3	3	1	2	-0.114
3	3	3	1	3	-0.392
3	3	3	2	1	-0.168
3	3	3	2	2	-0.252
3	3	3	2	3	-0.530
3	3	3	3	1	-0.514
3	3	3	3	2	-0.598
3	3	3	3	3	-0.876

Unconscious [*.***]

Tariffs for varying durations (whole population)

VAS mean - 1 month

VAS mean - 1 year

VAS median - 1 month

VAS median - 1 year

estimated TTO mean - 1 month

estimated TTO mean - 1 year

estimated TTO median - 1 month

estimated TTO median - 1 year

Tariff A25: VAS TARIFF OF MEANS : WHOLE POPULATION - 1 month duration

	Level 2	Level 3
Mobility	0.055	0.155
Self-care	0.064	0.122
Usual activity	0.041	0.102
Pain/discomfort	0.079	0.194
Anxiety/depression	0.056	0.115
Constant = 0.107		N3 = 0.147

1 1 1 1 1	1.000	1 2 1 3 2	0.432	1 3 2 2 3	0.390
1 1 1 1 2	0.837	1 2 1 3 3	0.372	1 3 2 3 1	0.390
1 1 1 1 3	0.631	1 2 2 1 1	0.788	1 3 2 3 2	0.334
1 1 1 2 1	0.814	1 2 2 1 2	0.732	1 3 2 3 3	0.275
1 1 1 2 2	0.758	1 2 2 1 3	0.526	1 3 3 1 1	0.523
1 1 1 2 3	0.552	1 2 2 2 1	0.709	1 3 3 1 2	0.467
1 1 1 3 1	0.552	1 2 2 2 2	0.653	1 3 3 1 3	0.407
1 1 1 3 2	0.496	1 2 2 2 3	0.447	1 3 3 2 1	0.443
1 1 1 3 3	0.437	1 2 2 3 1	0.447	1 3 3 2 2	0.387
1 1 2 1 1	0.853	1 2 2 3 2	0.391	1 3 3 2 3	0.328
1 1 2 1 2	0.797	1 2 2 3 3	0.332	1 3 3 3 1	0.328
1 1 2 1 3	0.590	1 2 3 1 1	0.580	1 3 3 3 2	0.272
1 1 2 2 1	0.773	1 2 3 1 2	0.524	1 3 3 3 3	0.213
1 1 2 2 2	0.717	1 2 3 1 3	0.465	2 1 1 1 1	0.838
1 1 2 2 3	0.511	1 2 3 2 1	0.501	2 1 1 1 2	0.782
1 1 2 3 1	0.512	1 2 3 2 2	0.445	2 1 1 1 3	0.576
1 1 2 3 2	0.456	1 2 3 2 3	0.385	2 1 1 2 1	0.759
1 1 2 3 3	0.396	1 2 3 3 1	0.386	2 1 1 2 2	0.703
1 1 3 1 1	0.644	1 2 3 3 2	0.330	2 1 1 2 3	0.497
1 1 3 1 2	0.588	1 2 3 3 3	0.270	2 1 1 3 1	0.497
1 1 3 1 3	0.529	1 3 1 1 1	0.625	2 1 1 3 2	0.441
1 1 3 2 1	0.565	1 3 1 1 2	0.569	2 1 1 3 3	0.382
1 1 3 2 2	0.509	1 3 1 1 3	0.510	2 1 2 1 1	0.798
1 1 3 2 3	0.450	1 3 1 2 1	0.546	2 1 2 1 2	0.742
1 1 3 3 1	0.450	1 3 1 2 2	0.490	2 1 2 1 3	0.535
1 1 3 3 2	0.394	1 3 1 2 3	0.430	2 1 2 2 1	0.718
1 1 3 3 3	0.335	1 3 1 3 1	0.431	2 1 2 2 2	0.662
1 2 1 1 1	0.829	1 3 1 3 2	0.375	2 1 2 2 3	0.456
1 2 1 1 2	0.773	1 3 1 3 3	0.315	2 1 2 3 1	0.456
1 2 1 1 3	0.567	1 3 2 1 1	0.584	2 1 2 3 2	0.400
1 2 1 2 1	0.750	1 3 2 1 2	0.528	2 1 2 3 3	0.341
1 2 1 2 2	0.694	1 3 2 1 3	0.469	2 1 3 1 1	0.589
1 2 1 2 3	0.487	1 3 2 2 1	0.505	2 1 3 1 2	0.533
1 2 1 3 1	0.488	1 3 2 2 2	0.449	2 1 3 1 3	0.474

2	1	3	2	1	0.510	2	3	2	3	2	0.279	3	2	2	1	3	0.371
2	1	3	2	2	0.454	2	3	2	3	3	0.220	3	2	2	2	1	0.407
2	1	3	2	3	0.395	2	3	3	1	1	0.468	3	2	2	2	2	0.351
2	1	3	3	1	0.395	2	3	3	1	2	0.412	3	2	2	2	3	0.292
2	1	3	3	2	0.339	2	3	3	1	3	0.352	3	2	2	3	1	0.292
2	1	3	3	3	0.280	2	3	3	2	1	0.388	3	2	2	3	2	0.236
2	2	1	1	1	0.774	2	3	3	2	2	0.332	3	2	2	3	3	0.177
2	2	1	1	2	0.718	2	3	3	2	3	0.273	3	2	3	1	1	0.425
2	2	1	1	3	0.512	2	3	3	3	1	0.273	3	2	3	1	2	0.369
2	2	1	2	1	0.695	2	3	3	3	2	0.217	3	2	3	1	3	0.310
2	2	1	2	2	0.639	2	3	3	3	3	0.158	3	2	3	2	1	0.346
2	2	1	2	3	0.432	3	1	1	1	1	0.592	3	2	3	2	2	0.290
2	2	1	3	1	0.433	3	1	1	1	2	0.536	3	2	3	2	3	0.230
2	2	1	3	2	0.377	3	1	1	1	3	0.476	3	2	3	3	1	0.231
2	2	1	3	3	0.317	3	1	1	2	1	0.512	3	2	3	3	2	0.175
2	2	2	1	1	0.733	3	1	1	2	2	0.456	3	2	3	3	3	0.115
2	2	2	1	2	0.677	3	1	1	2	3	0.397	3	3	1	1	1	0.470
2	2	2	1	3	0.471	3	1	1	3	1	0.397	3	3	1	1	2	0.414
2	2	2	2	1	0.654	3	1	1	3	2	0.341	3	3	1	1	3	0.355
2	2	2	2	2	0.598	3	1	1	3	3	0.282	3	3	1	2	1	0.391
2	2	2	2	3	0.392	3	1	2	1	1	0.551	3	3	1	2	2	0.335
2	2	2	3	1	0.392	3	1	2	1	2	0.495	3	3	1	2	3	0.275
2	2	2	3	2	0.336	3	1	2	1	3	0.436	3	3	1	3	1	0.276
2	2	2	3	3	0.277	3	1	2	2	1	0.472	3	3	1	3	2	0.220
2	2	3	1	1	0.525	3	1	2	2	2	0.416	3	3	1	3	3	0.160
2	2	3	1	2	0.469	3	1	2	2	3	0.356	3	3	2	1	1	0.429
2	2	3	1	3	0.410	3	1	2	3	1	0.357	3	3	2	1	2	0.373
2	2	3	2	1	0.446	3	1	2	3	2	0.301	3	3	2	1	3	0.314
2	2	3	2	2	0.390	3	1	2	3	3	0.241	3	3	2	2	1	0.350
2	2	3	2	3	0.330	3	1	3	1	1	0.489	3	3	2	2	2	0.294
2	2	3	3	1	0.331	3	1	3	1	2	0.433	3	3	2	2	3	0.235
2	2	3	3	2	0.275	3	1	3	1	3	0.374	3	3	2	3	1	0.235
2	2	3	3	3	0.215	3	1	3	2	1	0.410	3	3	2	3	2	0.179
2	3	1	1	1	0.570	3	1	3	2	2	0.354	3	3	2	3	3	0.120
2	3	1	1	2	0.514	3	1	3	2	3	0.295	3	3	3	1	1	0.368
2	3	1	1	3	0.455	3	1	3	3	1	0.295	3	3	3	1	2	0.312
2	3	1	2	1	0.491	3	1	3	3	2	0.239	3	3	3	1	3	0.252
2	3	1	2	2	0.435	3	1	3	3	3	0.180	3	3	3	2	1	0.288
2	3	1	2	3	0.375	3	2	1	1	1	0.527	3	3	3	2	2	0.232
2	3	1	3	1	0.376	3	2	1	1	2	0.471	3	3	3	2	3	0.173
2	3	1	3	2	0.320	3	2	1	1	3	0.412	3	3	3	3	1	0.173
2	3	1	3	3	0.260	3	2	1	2	1	0.448	3	3	3	3	2	0.117
2	3	2	1	1	0.529	3	2	1	2	2	0.392	3	3	3	3	3	0.058
2	3	2	1	2	0.473	3	2	1	2	3	0.332						
2	3	2	1	3	0.414	3	2	1	3	1	0.333	Unconscious [*.***]					
2	3	2	2	1	0.450	3	2	1	3	2	0.277						
2	3	2	2	2	0.394	3	2	1	3	3	0.217						
2	3	2	2	3	0.335	3	2	2	1	1	0.486						
2	3	2	3	1	0.335	3	2	2	1	2	0.430						

Tariff A26: VAS TARIFF OF MEANS : WHOLE POPULATION - 1 year duration

	Level 2	Level 3
Mobility	0.052	0.151
Self-care	0.073	0.138
Usual activity	0.045	0.095
Pain/discomfort	0.096	0.187
Anxiety/depression	0.063	0.140
Constant = 0.113		N3 = 0.183

1 1 1 1 1	1.000	1 2 1 3 2	0.381	1 3 2 2 3	0.285
1 1 1 1 2	0.824	1 2 1 3 3	0.304	1 3 2 3 1	0.334
1 1 1 1 3	0.564	1 2 2 1 1	0.769	1 3 2 3 2	0.271
1 1 1 2 1	0.791	1 2 2 1 2	0.707	1 3 2 3 3	0.194
1 1 1 2 2	0.729	1 2 2 1 3	0.446	1 3 3 1 1	0.471
1 1 1 2 3	0.468	1 2 2 2 1	0.673	1 3 3 1 2	0.408
1 1 1 3 1	0.516	1 2 2 2 2	0.611	1 3 3 1 3	0.331
1 1 1 3 2	0.454	1 2 2 2 3	0.351	1 3 3 2 1	0.375
1 1 1 3 3	0.377	1 2 2 3 1	0.399	1 3 3 2 2	0.312
1 1 2 1 1	0.842	1 2 2 3 2	0.336	1 3 3 2 3	0.235
1 1 2 1 2	0.779	1 2 2 3 3	0.259	1 3 3 3 1	0.283
1 1 2 1 3	0.519	1 2 3 1 1	0.536	1 3 3 3 2	0.221
1 1 2 2 1	0.746	1 2 3 1 2	0.473	1 3 3 3 3	0.144
1 1 2 2 2	0.684	1 2 3 1 3	0.396	2 1 1 1 1	0.835
1 1 2 2 3	0.423	1 2 3 2 1	0.440	2 1 1 1 2	0.772
1 1 2 3 1	0.471	1 2 3 2 2	0.377	2 1 1 1 3	0.512
1 1 2 3 2	0.409	1 2 3 2 3	0.300	2 1 1 2 1	0.739
1 1 2 3 3	0.332	1 2 3 3 1	0.348	2 1 1 2 2	0.677
1 1 3 1 1	0.608	1 2 3 3 2	0.286	2 1 1 2 3	0.416
1 1 3 1 2	0.546	1 2 3 3 3	0.209	2 1 1 3 1	0.464
1 1 3 1 3	0.469	1 3 1 1 1	0.566	2 1 1 3 2	0.402
1 1 3 2 1	0.513	1 3 1 1 2	0.503	2 1 1 3 3	0.325
1 1 3 2 2	0.450	1 3 1 1 3	0.426	2 1 2 1 1	0.790
1 1 3 2 3	0.373	1 3 1 2 1	0.470	2 1 2 1 2	0.727
1 1 3 3 1	0.421	1 3 1 2 2	0.408	2 1 2 1 3	0.467
1 1 3 3 2	0.359	1 3 1 2 3	0.331	2 1 2 2 1	0.694
1 1 3 3 3	0.281	1 3 1 3 1	0.379	2 1 2 2 2	0.632
1 2 1 1 1	0.814	1 3 1 3 2	0.316	2 1 2 2 3	0.371
1 2 1 1 2	0.752	1 3 1 3 3	0.239	2 1 2 3 1	0.419
1 2 1 1 3	0.491	1 3 2 1 1	0.521	2 1 2 3 2	0.357
1 2 1 2 1	0.718	1 3 2 1 2	0.458	2 1 2 3 3	0.280
1 2 1 2 2	0.656	1 3 2 1 3	0.381	2 1 3 1 1	0.556
1 2 1 2 3	0.396	1 3 2 2 1	0.425	2 1 3 1 2	0.494
1 2 1 3 1	0.444	1 3 2 2 2	0.363	2 1 3 1 3	0.417

2	1	3	2	1	0.461
2	1	3	2	2	0.398
2	1	3	2	3	0.321
2	1	3	3	1	0.369
2	1	3	3	2	0.307
2	1	3	3	3	0.229
2	2	1	1	1	0.762
2	2	1	1	2	0.700
2	2	1	1	3	0.439
2	2	1	2	1	0.666
2	2	1	2	2	0.604
2	2	1	2	3	0.344
2	2	1	3	1	0.392
2	2	1	3	2	0.329
2	2	1	3	3	0.252
2	2	2	1	1	0.717
2	2	2	1	2	0.655
2	2	2	1	3	0.394
2	2	2	2	1	0.621
2	2	2	2	2	0.559
2	2	2	2	3	0.299
2	2	2	3	1	0.347
2	2	2	3	2	0.284
2	2	2	3	3	0.207
2	2	3	1	1	0.484
2	2	3	1	2	0.421
2	2	3	1	3	0.344
2	2	3	2	1	0.388
2	2	3	2	2	0.325
2	2	3	2	3	0.248
2	2	3	3	1	0.296
2	2	3	3	2	0.234
2	2	3	3	3	0.157
2	3	1	1	1	0.514
2	3	1	1	2	0.451
2	3	1	1	3	0.374
2	3	1	2	1	0.418
2	3	1	2	2	0.356
2	3	1	2	3	0.279
2	3	1	3	1	0.327
2	3	1	3	2	0.264
2	3	1	3	3	0.187
2	3	2	1	1	0.469
2	3	2	1	2	0.406
2	3	2	1	3	0.329
2	3	2	2	1	0.373
2	3	2	2	2	0.311
2	3	2	2	3	0.234
2	3	2	3	1	0.282
2	3	2	3	2	0.219
2	3	2	3	3	0.142
2	3	3	1	1	0.419
2	3	3	1	2	0.356
2	3	3	1	3	0.279
2	3	3	2	1	0.323
2	3	3	2	2	0.260
2	3	3	2	3	0.183
2	3	3	3	1	0.231
2	3	3	3	2	0.169
2	3	3	3	3	0.092
3	1	1	1	1	0.553
3	1	1	1	2	0.490
3	1	1	1	3	0.413
3	1	1	2	1	0.457
3	1	1	2	2	0.394
3	1	1	2	3	0.317
3	1	1	3	1	0.365
3	1	1	3	2	0.303
3	1	1	3	3	0.226
3	1	2	1	1	0.508
3	1	2	1	2	0.445
3	1	2	1	3	0.368
3	1	2	2	1	0.412
3	1	2	2	2	0.349
3	1	2	2	3	0.272
3	1	2	3	1	0.320
3	1	2	3	2	0.258
3	1	2	3	3	0.181
3	1	3	1	1	0.457
3	1	3	1	2	0.395
3	1	3	1	3	0.318
3	1	3	2	1	0.362
3	1	3	2	2	0.299
3	1	3	2	3	0.222
3	1	3	3	1	0.270
3	1	3	3	2	0.208
3	1	3	3	3	0.130
3	2	1	1	1	0.480
3	2	1	1	2	0.417
3	2	1	1	3	0.340
3	2	1	2	1	0.384
3	2	1	2	2	0.322
3	2	1	2	3	0.245
3	2	1	3	1	0.293
3	2	1	3	2	0.230
3	2	1	3	3	0.153
3	2	2	1	1	0.435
3	2	2	1	2	0.372
3	2	2	1	3	0.295
3	2	2	2	1	0.339
3	2	2	2	2	0.277
3	2	2	2	3	0.200
3	2	2	3	1	0.248
3	2	2	3	2	0.185
3	2	2	3	3	0.108
3	2	3	1	1	0.385
3	2	3	1	2	0.322
3	2	3	1	3	0.245
3	2	3	2	1	0.289
3	2	3	2	2	0.226
3	2	3	2	3	0.149
3	2	3	3	1	0.197
3	2	3	3	2	0.135
3	2	3	3	3	0.058
3	3	1	1	1	0.415
3	3	1	1	2	0.352
3	3	1	1	3	0.275
3	3	1	2	1	0.319
3	3	1	2	2	0.257
3	3	1	2	3	0.179
3	3	1	3	1	0.228
3	3	1	3	2	0.165
3	3	1	3	3	0.088
3	3	2	1	1	0.370
3	3	2	1	2	0.307
3	3	2	1	3	0.230
3	3	2	2	1	0.274
3	3	2	2	2	0.212
3	3	2	2	3	0.134
3	3	2	3	1	0.183
3	3	2	3	2	0.120
3	3	2	3	3	0.043
3	3	3	1	1	0.320
3	3	3	1	2	0.257
3	3	3	1	3	0.180
3	3	3	2	1	0.224
3	3	3	2	2	0.161
3	3	3	2	3	0.084
3	3	3	3	1	0.132
3	3	3	3	2	0.070
3	3	3	3	3	-0.007

Unconscious [*.***]

Tariff A27: VAS TARIFF OF MEDIANS : WHOLE POPULATION - 1 month duration

	Level 2	Level 3
Mobility	0.057	0.168
Self-care	0.057	0.121
Usual activity	0.074	0.134
Pain/discomfort	0.091	0.217
Anxiety/depression	0.043	0.111
Constant = 0.069		N3 = 0.157

1 1 1 1 1	1.000	1 2 1 3 2	0.457	1 3 2 2 3	0.377
1 1 1 1 2	0.888	1 2 1 3 3	0.388	1 3 2 3 1	0.362
1 1 1 1 3	0.662	1 2 2 1 1	0.801	1 3 2 3 2	0.319
1 1 1 2 1	0.840	1 2 2 1 2	0.758	1 3 2 3 3	0.250
1 1 1 2 2	0.797	1 2 2 1 3	0.532	1 3 3 1 1	0.518
1 1 1 2 3	0.571	1 2 2 2 1	0.710	1 3 3 1 2	0.475
1 1 1 3 1	0.556	1 2 2 2 2	0.667	1 3 3 1 3	0.407
1 1 1 3 2	0.513	1 2 2 2 3	0.441	1 3 3 2 1	0.427
1 1 1 3 3	0.445	1 2 2 3 1	0.426	1 3 3 2 2	0.384
1 1 2 1 1	0.857	1 2 2 3 2	0.383	1 3 3 2 3	0.316
1 1 2 1 2	0.814	1 2 2 3 3	0.315	1 3 3 3 1	0.301
1 1 2 1 3	0.588	1 2 3 1 1	0.583	1 3 3 3 2	0.258
1 1 2 2 1	0.766	1 2 3 1 2	0.540	1 3 3 3 3	0.190
1 1 2 2 2	0.724	1 2 3 1 3	0.471	2 1 1 1 1	0.874
1 1 2 2 3	0.498	1 2 3 2 1	0.492	2 1 1 1 2	0.831
1 1 2 3 1	0.483	1 2 3 2 2	0.449	2 1 1 1 3	0.605
1 1 2 3 2	0.440	1 2 3 2 3	0.380	2 1 1 2 1	0.783
1 1 2 3 3	0.371	1 2 3 3 1	0.365	2 1 1 2 2	0.740
1 1 3 1 1	0.639	1 2 3 3 2	0.322	2 1 1 2 3	0.514
1 1 3 1 2	0.596	1 2 3 3 3	0.254	2 1 1 3 1	0.499
1 1 3 1 3	0.528	1 3 1 1 1	0.653	2 1 1 3 2	0.456
1 1 3 2 1	0.548	1 3 1 1 2	0.610	2 1 1 3 3	0.388
1 1 3 2 2	0.505	1 3 1 1 3	0.541	2 1 2 1 1	0.800
1 1 3 2 3	0.437	1 3 1 2 1	0.562	2 1 2 1 2	0.757
1 1 3 3 1	0.422	1 3 1 2 2	0.519	2 1 2 1 3	0.531
1 1 3 3 2	0.379	1 3 1 2 3	0.450	2 1 2 2 1	0.709
1 1 3 3 3	0.310	1 3 1 3 1	0.435	2 1 2 2 2	0.666
1 2 1 1 1	0.874	1 3 1 3 2	0.392	2 1 2 2 3	0.440
1 2 1 1 2	0.831	1 3 1 3 3	0.324	2 1 2 3 1	0.425
1 2 1 1 3	0.605	1 3 2 1 1	0.579	2 1 2 3 2	0.382
1 2 1 2 1	0.784	1 3 2 1 2	0.536	2 1 2 3 3	0.314
1 2 1 2 2	0.741	1 3 2 1 3	0.468	2 1 3 1 1	0.582
1 2 1 2 3	0.515	1 3 2 2 1	0.488	2 1 3 1 2	0.539
1 2 1 3 1	0.500	1 3 2 2 2	0.445	2 1 3 1 3	0.470

2	1	3	2	1	0.491	2	3	2	3	2	0.261	3	2	2	1	3	0.364
2	1	3	2	2	0.448	2	3	2	3	3	0.193	3	2	2	2	1	0.384
2	1	3	2	3	0.380	2	3	3	1	1	0.461	3	2	2	2	2	0.341
2	1	3	3	1	0.365	2	3	3	1	2	0.418	3	2	2	2	3	0.273
2	1	3	3	2	0.322	2	3	3	1	3	0.350	3	2	2	3	1	0.258
2	1	3	3	3	0.253	2	3	3	2	1	0.370	3	2	2	3	2	0.215
2	2	1	1	1	0.817	2	3	3	2	2	0.327	3	2	2	3	3	0.146
2	2	1	1	2	0.774	2	3	3	2	3	0.259	3	2	3	1	1	0.414
2	2	1	1	3	0.548	2	3	3	3	1	0.244	3	2	3	1	2	0.371
2	2	1	2	1	0.726	2	3	3	3	2	0.201	3	2	3	1	3	0.303
2	2	1	2	2	0.683	2	3	3	3	3	0.132	3	2	3	2	1	0.324
2	2	1	2	3	0.457	3	1	1	1	1	0.605	3	2	3	2	2	0.280
2	2	1	3	1	0.442	3	1	1	1	2	0.562	3	2	3	2	3	0.212
2	2	1	3	2	0.399	3	1	1	1	3	0.494	3	2	3	3	1	0.197
2	2	1	3	3	0.331	3	1	1	2	1	0.514	3	2	3	3	2	0.154
2	2	2	1	1	0.743	3	1	1	2	2	0.471	3	2	3	3	3	0.086
2	2	2	1	2	0.700	3	1	1	2	3	0.403	3	3	1	1	1	0.484
2	2	2	1	3	0.475	3	1	1	3	1	0.388	3	3	1	1	2	0.441
2	2	2	2	1	0.653	3	1	1	3	2	0.345	3	3	1	1	3	0.373
2	2	2	2	2	0.610	3	1	1	3	3	0.277	3	3	1	2	1	0.394
2	2	2	2	3	0.384	3	1	2	1	1	0.532	3	3	1	2	2	0.351
2	2	2	3	1	0.369	3	1	2	1	2	0.489	3	3	1	2	3	0.282
2	2	2	3	2	0.326	3	1	2	1	3	0.420	3	3	1	3	1	0.267
2	2	2	3	3	0.257	3	1	2	2	1	0.441	3	3	1	3	2	0.224
2	2	3	1	1	0.525	3	1	2	2	2	0.398	3	3	1	3	3	0.156
2	2	3	1	2	0.482	3	1	2	2	3	0.329	3	3	2	1	1	0.411
2	2	3	1	3	0.414	3	1	2	3	1	0.314	3	3	2	1	2	0.368
2	2	3	2	1	0.434	3	1	2	3	2	0.271	3	3	2	1	3	0.299
2	2	3	2	2	0.391	3	1	2	3	3	0.203	3	3	2	2	1	0.320
2	2	3	2	3	0.323	3	1	3	1	1	0.471	3	3	2	2	2	0.277
2	2	3	3	1	0.308	3	1	3	1	2	0.428	3	3	2	2	3	0.208
2	2	3	3	2	0.265	3	1	3	1	3	0.359	3	3	2	3	1	0.193
2	2	3	3	3	0.197	3	1	3	2	1	0.380	3	3	2	3	2	0.150
2	3	1	1	1	0.595	3	1	3	2	2	0.337	3	3	2	3	3	0.082
2	3	1	1	2	0.552	3	1	3	2	3	0.269	3	3	3	1	1	0.350
2	3	1	1	3	0.484	3	1	3	3	1	0.254	3	3	3	1	2	0.307
2	3	1	2	1	0.504	3	1	3	3	2	0.211	3	3	3	1	3	0.239
2	3	1	2	2	0.461	3	1	3	3	3	0.142	3	3	3	2	1	0.259
2	3	1	2	3	0.393	3	2	1	1	1	0.549	3	3	3	2	2	0.216
2	3	1	3	1	0.378	3	2	1	1	2	0.506	3	3	3	2	3	0.148
2	3	1	3	2	0.335	3	2	1	1	3	0.437	3	3	3	3	1	0.133
2	3	1	3	3	0.267	3	2	1	2	1	0.458	3	3	3	3	2	0.090
2	3	2	1	1	0.522	3	2	1	2	2	0.415	3	3	3	3	3	0.021
2	3	2	1	2	0.479	3	2	1	2	3	0.346						
2	3	2	1	3	0.410	3	2	1	3	1	0.331	Unconscious [*.***]					
2	3	2	2	1	0.431	3	2	1	3	2	0.288						
2	3	2	2	2	0.388	3	2	1	3	3	0.220						
2	3	2	2	3	0.319	3	2	2	1	1	0.475						
2	3	2	3	1	0.304	3	2	2	1	2	0.432						

Tariff A28: VAS TARIFF OF MEDIANS : WHOLE POPULATION - 1 year duration

	Level 2	Level 3
Mobility	0.043	0.133
Self-care	0.064	0.121
Usual activity	0.070	0.112
Pain/discomfort	0.099	0.203
Anxiety/depression	0.057	0.165
Constant = 0.086		N3 = 0.191

1 1 1 1 1	1.000	1 2 1 3 2	0.399	1 3 2 2 3	0.268
1 1 1 1 2	0.857	1 2 1 3 3	0.291	1 3 2 3 1	0.329
1 1 1 1 3	0.558	1 2 2 1 1	0.780	1 3 2 3 2	0.272
1 1 1 2 1	0.815	1 2 2 1 2	0.723	1 3 2 3 3	0.164
1 1 1 2 2	0.758	1 2 2 1 3	0.424	1 3 3 1 1	0.490
1 1 1 2 3	0.459	1 2 2 2 1	0.681	1 3 3 1 2	0.433
1 1 1 3 1	0.520	1 2 2 2 2	0.624	1 3 3 1 3	0.325
1 1 1 3 2	0.463	1 2 2 2 3	0.325	1 3 3 2 1	0.391
1 1 1 3 3	0.355	1 2 2 3 1	0.386	1 3 3 2 2	0.334
1 1 2 1 1	0.844	1 2 2 3 2	0.329	1 3 3 2 3	0.226
1 1 2 1 2	0.787	1 2 2 3 3	0.221	1 3 3 3 1	0.287
1 1 2 1 3	0.488	1 2 3 1 1	0.547	1 3 3 3 2	0.230
1 1 2 2 1	0.745	1 2 3 1 2	0.490	1 3 3 3 3	0.122
1 1 2 2 2	0.688	1 2 3 1 3	0.382	2 1 1 1 1	0.871
1 1 2 2 3	0.389	1 2 3 2 1	0.448	2 1 1 1 2	0.814
1 1 2 3 1	0.450	1 2 3 2 2	0.391	2 1 1 1 3	0.515
1 1 2 3 2	0.393	1 2 3 2 3	0.283	2 1 1 2 1	0.772
1 1 2 3 3	0.285	1 2 3 3 1	0.344	2 1 1 2 2	0.715
1 1 3 1 1	0.611	1 2 3 3 2	0.287	2 1 1 2 3	0.416
1 1 3 1 2	0.554	1 2 3 3 3	0.179	2 1 1 3 1	0.477
1 1 3 1 3	0.446	1 3 1 1 1	0.602	2 1 1 3 2	0.420
1 1 3 2 1	0.512	1 3 1 1 2	0.545	2 1 1 3 3	0.312
1 1 3 2 2	0.455	1 3 1 1 3	0.437	2 1 2 1 1	0.801
1 1 3 2 3	0.347	1 3 1 2 1	0.503	2 1 2 1 2	0.744
1 1 3 3 1	0.408	1 3 1 2 2	0.446	2 1 2 1 3	0.445
1 1 3 3 2	0.351	1 3 1 2 3	0.338	2 1 2 2 1	0.702
1 1 3 3 3	0.243	1 3 1 3 1	0.399	2 1 2 2 2	0.645
1 2 1 1 1	0.850	1 3 1 3 2	0.342	2 1 2 2 3	0.346
1 2 1 1 2	0.793	1 3 1 3 3	0.234	2 1 2 3 1	0.407
1 2 1 1 3	0.494	1 3 2 1 1	0.532	2 1 2 3 2	0.350
1 2 1 2 1	0.751	1 3 2 1 2	0.475	2 1 2 3 3	0.242
1 2 1 2 2	0.694	1 3 2 1 3	0.367	2 1 3 1 1	0.568
1 2 1 2 3	0.395	1 3 2 2 1	0.433	2 1 3 1 2	0.511
1 2 1 3 1	0.456	1 3 2 2 2	0.376	2 1 3 1 3	0.403

2	1	3	2	1	0.469	2	3	2	3	2	0.229	3	2	2	1	3	0.291
2	1	3	2	2	0.412	2	3	2	3	3	0.121	3	2	2	2	1	0.357
2	1	3	2	3	0.304	2	3	3	1	1	0.447	3	2	2	2	2	0.300
2	1	3	3	1	0.365	2	3	3	1	2	0.390	3	2	2	2	3	0.192
2	1	3	3	2	0.308	2	3	3	1	3	0.282	3	2	2	3	1	0.253
2	1	3	3	3	0.200	2	3	3	2	1	0.348	3	2	2	3	2	0.196
2	2	1	1	1	0.807	2	3	3	2	2	0.291	3	2	2	3	3	0.088
2	2	1	1	2	0.750	2	3	3	2	3	0.183	3	2	3	1	1	0.414
2	2	1	1	3	0.451	2	3	3	3	1	0.244	3	2	3	1	2	0.357
2	2	1	2	1	0.708	2	3	3	3	2	0.187	3	2	3	1	3	0.249
2	2	1	2	2	0.651	2	3	3	3	3	0.079	3	2	3	2	1	0.315
2	2	1	2	3	0.352	3	1	1	1	1	0.590	3	2	3	2	2	0.258
2	2	1	3	1	0.413	3	1	1	1	2	0.533	3	2	3	2	3	0.150
2	2	1	3	2	0.356	3	1	1	1	3	0.425	3	2	3	3	1	0.211
2	2	1	3	3	0.248	3	1	1	2	1	0.491	3	2	3	3	2	0.154
2	2	2	1	1	0.737	3	1	1	2	2	0.434	3	2	3	3	3	0.046
2	2	2	1	2	0.680	3	1	1	2	3	0.326	3	3	1	1	1	0.469
2	2	2	1	3	0.381	3	1	1	3	1	0.387	3	3	1	1	2	0.412
2	2	2	2	1	0.638	3	1	1	3	2	0.330	3	3	1	1	3	0.304
2	2	2	2	2	0.581	3	1	1	3	3	0.222	3	3	1	2	1	0.370
2	2	2	2	3	0.282	3	1	2	1	1	0.520	3	3	1	2	2	0.313
2	2	2	3	1	0.343	3	1	2	1	2	0.463	3	3	1	2	3	0.205
2	2	2	3	2	0.286	3	1	2	1	3	0.355	3	3	1	3	1	0.266
2	2	2	3	3	0.178	3	1	2	2	1	0.421	3	3	1	3	2	0.209
2	2	3	1	1	0.504	3	1	2	2	2	0.364	3	3	1	3	3	0.101
2	2	3	1	2	0.447	3	1	2	2	3	0.256	3	3	2	1	1	0.399
2	2	3	1	3	0.339	3	1	2	3	1	0.317	3	3	2	1	2	0.342
2	2	3	2	1	0.405	3	1	2	3	2	0.260	3	3	2	1	3	0.234
2	2	3	2	2	0.348	3	1	2	3	3	0.152	3	3	2	2	1	0.300
2	2	3	2	3	0.240	3	1	3	1	1	0.478	3	3	2	2	2	0.243
2	2	3	3	1	0.301	3	1	3	1	2	0.421	3	3	2	2	3	0.135
2	2	3	3	2	0.244	3	1	3	1	3	0.313	3	3	2	3	1	0.196
2	2	3	3	3	0.136	3	1	3	2	1	0.379	3	3	2	3	2	0.139
2	3	1	1	1	0.559	3	1	3	2	2	0.322	3	3	2	3	3	0.031
2	3	1	1	2	0.502	3	1	3	2	3	0.214	3	3	3	1	1	0.357
2	3	1	1	3	0.394	3	1	3	3	1	0.275	3	3	3	1	2	0.300
2	3	1	2	1	0.460	3	1	3	3	2	0.218	3	3	3	1	3	0.192
2	3	1	2	2	0.403	3	1	3	3	3	0.110	3	3	3	2	1	0.258
2	3	1	2	3	0.295	3	2	1	1	1	0.526	3	3	3	2	2	0.201
2	3	1	3	1	0.356	3	2	1	1	2	0.469	3	3	3	2	3	0.093
2	3	1	3	2	0.299	3	2	1	1	3	0.361	3	3	3	3	1	0.154
2	3	1	3	3	0.191	3	2	1	2	1	0.427	3	3	3	3	2	0.097
2	3	2	1	1	0.489	3	2	1	2	2	0.370	3	3	3	3	3	-0.011
2	3	2	1	2	0.432	3	2	1	2	3	0.262						
2	3	2	1	3	0.324	3	2	1	3	1	0.323	Unconscious [*.***]					
2	3	2	2	1	0.390	3	2	1	3	2	0.266						
2	3	2	2	2	0.333	3	2	1	3	3	0.158						
2	3	2	2	3	0.225	3	2	2	1	1	0.456						
2	3	2	3	1	0.286	3	2	2	1	2	0.399						

Tariff A29: TTO TARIFF OF MEANS ESTIMATED FROM VAS 1 MONTH DATA : whole population

	Level 2	Level 3
Mobility	0.055	0.155
Self-care	0.064	0.122
Usual activity	0.041	0.102
Pain/discomfort	0.079	0.194
Anxiety/depression	0.056	0.115
Constant = 0.107		N3 = 0.147

1 1 1 1 2	0.916	1 2 1 3 2	0.359	1 3 2 2 2	0.386
1 1 1 1 3	0.657	1 2 1 3 3	0.260	1 3 2 2 3	0.290
1 1 1 2 1	0.890	1 2 2 1 1	0.859	1 3 2 3 1	0.290
1 1 1 2 2	0.823	1 2 2 1 2	0.790	1 3 2 3 2	0.196
1 1 1 2 3	0.544	1 2 2 1 3	0.505	1 3 2 3 3	0.092
1 1 1 3 1	0.544	1 2 2 2 1	0.761	1 3 3 1 1	0.501
1 1 1 3 2	0.460	1 2 2 2 2	0.687	1 3 3 1 2	0.415
1 1 1 3 3	0.367	1 2 2 2 3	0.383	1 3 3 1 3	0.319
1 1 2 1 1	0.935	1 2 2 3 1	0.383	1 3 3 2 1	0.377
1 1 2 1 2	0.870	1 2 2 3 2	0.292	1 3 3 2 2	0.285
1 1 2 1 3	0.599	1 2 2 3 3	0.192	1 3 3 2 3	0.185
1 1 2 2 1	0.841	1 2 3 1 1	0.585	1 3 3 3 1	0.185
1 1 2 2 2	0.771	1 2 3 1 2	0.502	1 3 3 3 2	0.087
1 1 2 2 3	0.483	1 2 3 1 3	0.412	1 3 3 3 3	-0.021
1 1 2 3 1	0.484	1 2 3 2 1	0.468	2 1 1 1 1	0.918
1 1 2 3 2	0.397	1 2 3 2 2	0.380	2 1 1 1 2	0.852
1 1 2 3 3	0.300	1 2 3 2 3	0.282	2 1 1 1 3	0.579
1 1 3 1 1	0.675	1 2 3 3 1	0.284	2 1 1 2 1	0.824
1 1 3 1 2	0.596	1 2 3 3 2	0.189	2 1 1 2 2	0.753
1 1 3 1 3	0.510	1 2 3 3 3	0.083	2 1 1 2 3	0.461
1 1 3 2 1	0.563	1 3 1 1 1	0.648	2 1 1 3 1	0.461
1 1 3 2 2	0.480	1 3 1 1 2	0.569	2 1 1 3 2	0.374
1 1 3 2 3	0.388	1 3 1 1 3	0.481	2 1 1 3 3	0.277
1 1 3 3 1	0.388	1 3 1 2 1	0.535	2 1 2 1 1	0.871
1 1 3 3 2	0.297	1 3 1 2 2	0.451	2 1 2 1 2	0.803
1 1 3 3 3	0.197	1 3 1 2 3	0.356	2 1 2 1 3	0.519
1 2 1 1 1	0.907	1 3 1 3 1	0.358	2 1 2 2 1	0.772
1 2 1 1 2	0.841	1 3 1 3 2	0.265	2 1 2 2 2	0.699
1 2 1 1 3	0.566	1 3 1 3 3	0.163	2 1 2 2 3	0.397
1 2 1 2 1	0.813	1 3 2 1 1	0.591	2 1 2 3 1	0.397
1 2 1 2 2	0.741	1 3 2 1 2	0.508	2 1 2 3 2	0.307
1 2 1 2 3	0.446	1 3 2 1 3	0.418	2 1 2 3 3	0.208
1 2 1 3 1	0.448	1 3 2 2 1	0.474	2 1 3 1 1	0.598

2	1	3	1	2	0.516	2	3	2	2	3	0.197	3	2	2	1	1	0.444
2	1	3	1	3	0.426	2	3	2	3	1	0.197	3	2	2	1	2	0.356
2	1	3	2	1	0.481	2	3	2	3	2	0.099	3	2	2	1	3	0.259
2	1	3	2	2	0.394	2	3	2	3	3	-0.008	3	2	2	2	1	0.319
2	1	3	2	3	0.299	2	3	3	1	1	0.416	3	2	2	2	2	0.225
2	1	3	3	1	0.299	2	3	3	1	2	0.327	3	2	2	2	3	0.122
2	1	3	3	2	0.204	2	3	3	1	3	0.227	3	2	2	3	1	0.122
2	1	3	3	3	0.101	2	3	3	2	1	0.287	3	2	2	3	2	0.021
2	2	1	1	1	0.842	2	3	3	2	2	0.192	3	2	2	3	3	-0.089
2	2	1	1	2	0.772	2	3	3	2	3	0.088	3	2	3	1	1	0.348
2	2	1	1	3	0.484	2	3	3	3	1	0.088	3	2	3	1	2	0.255
2	2	1	2	1	0.743	2	3	3	3	2	-0.014	3	2	3	1	3	0.154
2	2	1	2	2	0.668	2	3	3	3	3	-0.126	3	2	3	2	1	0.216
2	2	1	2	3	0.359	3	1	1	1	1	0.602	3	2	3	2	2	0.119
2	2	1	3	1	0.361	3	1	1	1	2	0.520	3	2	3	2	3	0.010
2	2	1	3	2	0.269	3	1	1	1	3	0.429	3	2	3	3	1	0.012
2	2	1	3	3	0.166	3	1	1	2	1	0.484	3	2	3	3	2	-0.093
2	2	2	1	1	0.791	3	1	1	2	2	0.397	3	2	3	3	3	-0.210
2	2	2	1	2	0.719	3	1	1	2	3	0.302	3	3	1	1	1	0.420
2	2	2	1	3	0.421	3	1	1	3	1	0.302	3	3	1	1	2	0.330
2	2	2	2	1	0.688	3	1	1	3	2	0.208	3	3	1	1	3	0.232
2	2	2	2	2	0.611	3	1	1	3	3	0.104	3	3	1	2	1	0.292
2	2	2	2	3	0.294	3	1	2	1	1	0.543	3	3	1	2	2	0.197
2	2	2	3	1	0.294	3	1	2	1	2	0.458	3	3	1	2	3	0.092
2	2	2	3	2	0.199	3	1	2	1	3	0.366	3	3	1	3	1	0.094
2	2	2	3	3	0.096	3	1	2	2	1	0.423	3	3	1	3	2	-0.008
2	2	3	1	1	0.504	3	1	2	2	2	0.333	3	3	1	3	3	-0.122
2	2	3	1	2	0.418	3	1	2	2	3	0.233	3	3	2	1	1	0.354
2	2	3	1	3	0.323	3	1	2	3	1	0.235	3	3	2	1	2	0.262
2	2	3	2	1	0.382	3	1	2	3	2	0.138	3	3	2	1	3	0.161
2	2	3	2	2	0.290	3	1	2	3	3	0.030	3	3	2	2	1	0.223
2	2	3	2	3	0.189	3	1	3	1	1	0.449	3	3	2	2	2	0.126
2	2	3	3	1	0.191	3	1	3	1	2	0.361	3	3	2	2	3	0.019
2	2	3	3	2	0.092	3	1	3	1	3	0.264	3	3	2	3	1	0.019
2	2	3	3	3	-0.018	3	1	3	2	1	0.323	3	3	2	3	2	-0.086
2	3	1	1	1	0.570	3	1	3	2	2	0.230	3	3	2	3	3	-0.200
2	3	1	1	2	0.487	3	1	3	2	3	0.128	3	3	3	1	1	0.254
2	3	1	1	3	0.396	3	1	3	3	1	0.128	3	3	3	1	2	0.157
2	3	1	2	1	0.452	3	1	3	3	2	0.027	3	3	3	1	3	0.050
2	3	1	2	2	0.364	3	1	3	3	3	-0.084	3	3	3	2	1	0.115
2	3	1	2	3	0.265	3	2	1	1	1	0.507	3	3	3	2	2	0.014
2	3	1	3	1	0.267	3	2	1	1	2	0.421	3	3	3	2	3	-0.097
2	3	1	3	2	0.171	3	2	1	1	3	0.327	3	3	3	3	1	-0.097
2	3	1	3	3	0.065	3	2	1	2	1	0.385	3	3	3	3	2	-0.206
2	3	2	1	1	0.510	3	2	1	2	2	0.294	3	3	3	3	3	-0.324
2	3	2	1	2	0.424	3	2	1	2	3	0.192						
2	3	2	1	3	0.330	3	2	1	3	1	0.194	Unconscious [*.***]					
2	3	2	2	1	0.388	3	2	1	3	2	0.096						
2	3	2	2	2	0.297	3	2	1	3	3	-0.014						

TARIFF A30: TTO TARIFF OF MEANS ESTIMATED FROM VAS 1 YEAR DATA: whole population

	Level 2	Level 3
Mobility	0.052	0.151
Self-care	0.073	0.138
Usual activity	0.045	0.095
Pain/discomfort	0.096	0.187
Anxiety/depression	0.063	0.140
Constant = 0.113		N3 = 0.183

1 1 1 1 2	0.901	1 2 1 3 2	0.275	1 3 2 2 2	0.245
1 1 1 1 3	0.562	1 2 1 3 3	0.143	1 3 2 2 3	0.110
1 1 1 2 1	0.863	1 2 2 1 1	0.836	1 3 2 3 1	0.196
1 1 1 2 2	0.786	1 2 2 1 2	0.758	1 3 2 3 2	0.085
1 1 1 2 3	0.416	1 2 2 1 3	0.382	1 3 2 3 3	-0.057
1 1 1 3 1	0.490	1 2 2 2 1	0.714	1 3 3 1 1	0.421
1 1 1 3 2	0.394	1 2 2 2 2	0.629	1 3 3 1 2	0.320
1 1 1 3 3	0.269	1 2 2 2 3	0.225	1 3 3 1 3	0.191
1 1 2 1 1	0.922	1 2 2 3 1	0.305	1 3 3 2 1	0.265
1 1 2 1 2	0.848	1 2 2 3 2	0.199	1 3 3 2 2	0.157
1 1 2 1 3	0.495	1 2 2 3 3	0.063	1 3 3 2 3	0.019
1 1 2 2 1	0.808	1 2 3 1 1	0.520	1 3 3 3 1	0.106
1 1 2 2 2	0.728	1 2 3 1 2	0.424	1 3 3 3 2	-0.007
1 1 2 2 3	0.345	1 2 3 1 3	0.300	1 3 3 3 3	-0.153
1 1 2 3 1	0.421	1 2 3 2 1	0.372	2 1 1 1 1	0.914
1 1 2 3 2	0.322	1 2 3 2 2	0.269	2 1 1 1 2	0.840
1 1 2 3 3	0.192	1 2 3 2 3	0.136	2 1 1 1 3	0.484
1 1 3 1 1	0.625	1 2 3 3 1	0.220	2 1 1 2 1	0.799
1 1 3 1 2	0.535	1 2 3 3 2	0.112	2 1 1 2 2	0.719
1 1 3 1 3	0.418	1 2 3 3 3	-0.029	2 1 1 2 3	0.333
1 1 3 2 1	0.486	1 3 1 1 1	0.565	2 1 1 3 1	0.410
1 1 3 2 2	0.388	1 3 1 1 2	0.471	2 1 1 3 2	0.310
1 1 3 2 3	0.262	1 3 1 1 3	0.349	2 1 1 3 3	0.180
1 1 3 3 1	0.341	1 3 1 2 1	0.420	2 1 2 1 1	0.862
1 1 3 3 2	0.238	1 3 1 2 2	0.320	2 1 2 1 2	0.784
1 1 3 3 3	0.103	1 3 1 2 3	0.191	2 1 2 1 3	0.415
1 2 1 1 1	0.890	1 3 1 3 1	0.272	2 1 2 2 1	0.741
1 2 1 1 2	0.815	1 3 1 3 2	0.164	2 1 2 2 2	0.658
1 2 1 1 3	0.452	1 3 1 3 3	0.027	2 1 2 2 3	0.259
1 2 1 2 1	0.772	1 3 2 1 1	0.498	2 1 2 3 1	0.338
1 2 1 2 2	0.691	1 3 2 1 2	0.401	2 1 2 3 2	0.235
1 2 1 2 3	0.300	1 3 2 1 3	0.275	2 1 2 3 3	0.101
1 2 1 3 1	0.378	1 3 2 2 1	0.348	2 1 3 1 1	0.550

2	1	3	1	2	0.457	2	3	2	2	3	0.017	3	2	2	1	1	0.364
2	1	3	1	3	0.335	2	3	2	3	1	0.104	3	2	2	1	2	0.260
2	1	3	2	1	0.405	2	3	2	3	2	-0.010	3	2	2	1	3	0.128
2	1	3	2	2	0.304	2	3	2	3	3	-0.157	3	2	2	2	1	0.204
2	1	3	2	3	0.173	2	3	3	1	1	0.338	3	2	2	2	2	0.096
2	1	3	3	1	0.255	2	3	3	1	2	0.233	3	2	2	2	3	-0.046
2	1	3	3	2	0.149	2	3	3	1	3	0.099	3	2	2	3	1	0.043
2	1	3	3	3	0.008	2	3	3	2	1	0.177	3	2	2	3	2	-0.074
2	2	1	1	1	0.828	2	3	3	2	2	0.065	3	2	2	3	3	-0.224
2	2	1	1	2	0.749	2	3	3	2	3	-0.078	3	2	3	1	1	0.282
2	2	1	1	3	0.370	2	3	3	3	1	0.012	3	2	3	1	2	0.175
2	2	1	2	1	0.704	2	3	3	3	2	-0.105	3	2	3	1	3	0.038
2	2	1	2	2	0.619	2	3	3	3	3	-0.256	3	2	3	2	1	0.117
2	2	1	2	3	0.213	3	1	1	1	1	0.546	3	2	3	2	2	0.003
2	2	1	3	1	0.294	3	1	1	1	2	0.451	3	2	3	2	3	-0.143
2	2	1	3	2	0.187	3	1	1	1	3	0.328	3	2	3	3	1	-0.051
2	2	1	3	3	0.050	3	1	1	2	1	0.399	3	2	3	3	2	-0.170
2	2	2	1	1	0.771	3	1	1	2	2	0.297	3	2	3	3	3	-0.324
2	2	2	1	2	0.690	3	1	1	2	3	0.166	3	3	1	1	1	0.332
2	2	2	1	3	0.297	3	1	1	3	1	0.249	3	3	1	1	2	0.227
2	2	2	2	1	0.643	3	1	1	3	2	0.142	3	3	1	1	3	0.092
2	2	2	2	2	0.554	3	1	1	3	3	0.003	3	3	1	2	1	0.170
2	2	2	2	3	0.135	3	1	2	1	1	0.478	3	3	1	2	2	0.059
2	2	2	3	1	0.218	3	1	2	1	2	0.380	3	3	1	2	3	-0.086
2	2	2	3	2	0.108	3	1	2	1	3	0.254	3	3	1	3	1	0.006
2	2	2	3	3	-0.033	3	1	2	2	1	0.327	3	3	1	3	2	-0.112
2	2	3	1	1	0.441	3	1	2	2	2	0.221	3	3	1	3	3	-0.264
2	2	3	1	2	0.341	3	1	2	2	3	0.087	3	3	2	1	1	0.257
2	2	3	1	3	0.213	3	1	2	3	1	0.171	3	3	2	1	2	0.149
2	2	3	2	1	0.287	3	1	2	3	2	0.061	3	3	2	1	3	0.010
2	2	3	2	2	0.180	3	1	2	3	3	-0.082	3	3	2	2	1	0.090
2	2	3	2	3	0.043	3	1	3	1	1	0.399	3	3	2	2	2	-0.023
2	2	3	3	1	0.129	3	1	3	1	2	0.299	3	3	2	2	3	-0.172
2	2	3	3	2	0.017	3	1	3	1	3	0.168	3	3	2	3	1	-0.078
2	2	3	3	3	-0.128	3	1	3	2	1	0.244	3	3	2	3	2	-0.200
2	3	1	1	1	0.487	3	1	3	2	2	0.135	3	3	2	3	3	-0.355
2	3	1	1	2	0.390	3	1	3	2	3	-0.005	3	3	3	1	1	0.171
2	3	1	1	3	0.264	3	1	3	3	1	0.083	3	3	3	1	2	0.059
2	3	1	2	1	0.336	3	1	3	3	2	-0.031	3	3	3	1	3	-0.084
2	3	1	2	2	0.233	3	1	3	3	3	-0.180	3	3	3	2	1	-0.001
2	3	1	2	3	0.099	3	2	1	1	1	0.435	3	3	3	2	2	-0.120
2	3	1	3	1	0.184	3	2	1	1	2	0.335	3	3	3	2	3	-0.272
2	3	1	3	2	0.072	3	2	1	1	3	0.206	3	3	3	3	1	-0.176
2	3	1	3	3	-0.070	3	2	1	2	1	0.280	3	3	3	3	2	-0.300
2	3	2	1	1	0.418	3	2	1	2	2	0.175	3	3	3	3	3	-0.460
2	3	2	1	2	0.317	3	2	1	2	3	0.038						
2	3	2	1	3	0.187	3	2	1	3	1	0.124	Unconscious [*.***]					
2	3	2	2	1	0.262	3	2	1	3	2	0.010						
2	3	2	2	2	0.156	3	2	1	3	3	-0.135						

TARIFF A31: TTO TARIFF OF MEDIANS ESTIMATED FROM VAS 1 MONTH DATA : whole population

	Level 2	Level 3
Mobility	0.057	0.168
Self-care	0.057	0.121
Usual activity	0.074	0.134
Pain/discomfort	0.091	0.217
Anxiety/depression	0.043	0.111
Constant = 0.069		N3 = 0.157

1 1 1 1 2	0.973	1 2 1 3 2	0.475	1 3 2 2 2	0.453
1 1 1 1 3	0.786	1 2 1 3 3	0.340	1 3 2 2 3	0.317
1 1 1 2 1	0.947	1 2 2 1 1	0.921	1 3 2 3 1	0.285
1 1 1 2 2	0.918	1 2 2 1 2	0.886	1 3 2 3 2	0.190
1 1 1 2 3	0.665	1 2 2 1 3	0.605	1 3 2 3 3	0.024
1 1 1 3 1	0.642	1 2 2 2 1	0.840	1 3 3 1 1	0.582
1 1 1 3 2	0.573	1 2 2 2 2	0.792	1 3 3 1 2	0.508
1 1 1 3 3	0.453	1 2 2 2 3	0.445	1 3 3 1 3	0.379
1 1 2 1 1	0.957	1 2 2 3 1	0.416	1 3 3 2 1	0.418
1 1 2 1 2	0.930	1 2 2 3 2	0.330	1 3 3 2 2	0.332
1 1 2 1 3	0.689	1 2 2 3 3	0.180	1 3 3 2 3	0.183
1 1 2 2 1	0.893	1 2 3 1 1	0.682	1 3 3 3 1	0.148
1 1 2 2 2	0.854	1 2 3 1 2	0.617	1 3 3 3 2	0.044
1 1 2 2 3	0.548	1 2 3 1 3	0.501	1 3 3 3 3	-0.132
1 1 2 3 1	0.522	1 2 3 2 1	0.538	2 1 1 1 1	0.966
1 1 2 3 2	0.443	1 2 3 2 2	0.460	2 1 1 1 2	0.941
1 1 2 3 3	0.304	1 2 3 2 3	0.323	2 1 1 1 3	0.713
1 1 3 1 1	0.758	1 2 3 3 1	0.292	2 1 1 2 1	0.907
1 1 3 1 2	0.701	1 2 3 3 2	0.196	2 1 1 2 2	0.869
1 1 3 1 3	0.598	1 2 3 3 3	0.034	2 1 1 2 3	0.575
1 1 3 2 1	0.630	1 3 1 1 1	0.775	2 1 1 3 1	0.550
1 1 3 2 2	0.560	1 3 1 1 2	0.720	2 1 1 3 2	0.473
1 1 3 2 3	0.437	1 3 1 1 3	0.619	2 1 1 3 3	0.340
1 1 3 3 1	0.408	1 3 1 2 1	0.651	2 1 2 1 1	0.920
1 1 3 3 2	0.321	1 3 1 2 2	0.583	2 1 2 1 2	0.885
1 1 3 3 3	0.169	1 3 1 2 3	0.462	2 1 2 1 3	0.603
1 2 1 1 1	0.966	1 3 1 3 1	0.434	2 1 2 2 1	0.839
1 2 1 1 2	0.941	1 3 1 3 2	0.348	2 1 2 2 2	0.791
1 2 1 1 3	0.713	1 3 1 3 3	0.201	2 1 2 2 3	0.443
1 2 1 2 1	0.907	1 3 2 1 1	0.677	2 1 2 3 1	0.414
1 2 1 2 2	0.870	1 3 2 1 2	0.611	2 1 2 3 2	0.328
1 2 1 2 3	0.577	1 3 2 1 3	0.495	2 1 2 3 3	0.178
1 2 1 3 1	0.551	1 3 2 2 1	0.531	2 1 3 1 1	0.681

2	1	3	1	2	0.616	2	3	2	2	3	0.190	3	2	2	1	1	0.508
2	1	3	1	3	0.499	2	3	2	3	1	0.155	3	2	2	1	2	0.428
2	1	3	2	1	0.536	2	3	2	3	2	0.051	3	2	2	1	3	0.289
2	1	3	2	2	0.458	2	3	2	3	3	-0.124	3	2	2	2	1	0.332
2	1	3	2	3	0.323	2	3	3	1	1	0.482	3	2	2	2	2	0.239
2	1	3	3	1	0.292	2	3	3	1	2	0.401	3	2	2	2	3	0.081
2	1	3	3	2	0.196	2	3	3	1	3	0.259	3	2	2	3	1	0.044
2	1	3	3	3	0.032	2	3	3	2	1	0.302	3	2	2	3	2	-0.066
2	2	1	1	1	0.932	2	3	3	2	2	0.208	3	2	2	3	3	-0.254
2	2	1	1	2	0.899	2	3	3	2	3	0.046	3	2	3	1	1	0.393
2	2	1	1	3	0.630	2	3	3	3	1	0.009	3	2	3	1	2	0.304
2	2	1	2	1	0.856	2	3	3	3	2	-0.103	3	2	3	1	3	0.153
2	2	1	2	2	0.811	2	3	3	3	3	-0.295	3	2	3	2	1	0.201
2	2	1	2	3	0.475	3	1	1	1	1	0.713	3	2	3	2	2	0.098
2	2	1	3	1	0.447	3	1	1	1	2	0.651	3	2	3	2	3	-0.074
2	2	1	3	2	0.363	3	1	1	1	3	0.541	3	2	3	3	1	-0.114
2	2	1	3	3	0.217	3	1	1	2	1	0.575	3	2	3	3	2	-0.232
2	2	2	1	1	0.872	3	1	1	2	2	0.501	3	2	3	3	3	-0.431
2	2	2	1	2	0.829	3	1	1	2	3	0.371	3	3	1	1	1	0.524
2	2	2	1	3	0.508	3	1	1	3	1	0.340	3	3	1	1	2	0.445
2	2	2	2	1	0.775	3	1	1	3	2	0.248	3	3	1	1	3	0.309
2	2	2	2	2	0.720	3	1	1	3	3	0.091	3	3	1	2	1	0.352
2	2	2	2	3	0.332	3	1	2	1	1	0.605	3	3	1	2	2	0.261
2	2	2	3	1	0.300	3	1	2	1	2	0.533	3	3	1	2	3	0.103
2	2	2	3	2	0.206	3	1	2	1	3	0.405	3	3	1	3	1	0.066
2	2	2	3	3	0.041	3	1	2	2	1	0.445	3	3	1	3	2	-0.042
2	2	3	1	1	0.593	3	1	2	2	2	0.360	3	3	1	3	3	-0.226
2	2	3	1	2	0.520	3	1	2	2	3	0.212	3	3	2	1	1	0.387
2	2	3	1	3	0.393	3	1	2	3	1	0.178	3	3	2	1	2	0.298
2	2	3	2	1	0.432	3	1	2	3	2	0.076	3	3	2	1	3	0.143
2	2	3	2	2	0.346	3	1	2	3	3	-0.098	3	3	2	2	1	0.192
2	2	3	2	3	0.199	3	1	3	1	1	0.501	3	3	2	2	2	0.091
2	2	3	3	1	0.164	3	1	3	1	2	0.420	3	3	2	2	3	-0.084
2	2	3	3	2	0.061	3	1	3	1	3	0.279	3	3	2	3	1	-0.124
2	2	3	3	3	-0.114	3	1	3	2	1	0.323	3	3	2	3	2	-0.243
2	3	1	1	1	0.699	3	1	3	2	2	0.230	3	3	2	3	3	-0.443
2	3	1	1	2	0.636	3	1	3	2	3	0.071	3	3	3	1	1	0.259
2	3	1	1	3	0.524	3	1	3	3	1	0.034	3	3	3	1	2	0.162
2	3	1	2	1	0.558	3	1	3	3	2	-0.076	3	3	3	1	3	-0.004
2	3	1	2	2	0.482	3	1	3	3	3	-0.266	3	3	3	2	1	0.046
2	3	1	2	3	0.350	3	2	1	1	1	0.631	3	3	3	2	2	-0.063
2	3	1	3	1	0.319	3	2	1	1	2	0.562	3	3	3	2	3	-0.249
2	3	1	3	2	0.226	3	2	1	1	3	0.437	3	3	3	3	1	-0.292
2	3	1	3	3	0.066	3	2	1	2	1	0.477	3	3	3	3	2	-0.419
2	3	2	1	1	0.588	3	2	1	2	2	0.395	3	3	3	3	3	-0.635
2	3	2	1	2	0.515	3	2	1	2	3	0.250						
2	3	2	1	3	0.385	3	2	1	3	1	0.217	Unconscious [*.***]					
2	3	2	2	1	0.426	3	2	1	3	2	0.117						
2	3	2	2	2	0.340	3	2	1	3	3	-0.053						

TARIFF A32: TTO TARIFF OF MEDIANS ESTIMATED FROM VAS 1 YEAR DATA : whole population

	Level 2	Level 3
Mobility	0.043	0.133
Self-care	0.064	0.122
Usual activity	0.070	0.111
Pain/discomfort	0.099	0.202
Anxiety/depression	0.057	0.165
Constant = 0.086		N3 = 0.191

1 1 1 1 2	0.957	1 2 1 3 2	0.363	1 3 2 2 2	0.315
1 1 1 1 3	0.645	1 2 1 3 3	0.124	1 3 2 2 3	0.069
1 1 1 2 1	0.931	1 2 2 1 1	0.904	1 3 2 3 1	0.212
1 1 1 2 2	0.886	1 2 2 1 2	0.853	1 3 2 3 2	0.078
1 1 1 2 3	0.479	1 2 2 1 3	0.412	1 3 2 3 3	-0.204
1 1 1 3 1	0.585	1 2 2 2 1	0.808	1 3 3 1 1	0.534
1 1 1 3 2	0.486	1 2 2 2 2	0.739	1 3 3 1 2	0.430
1 1 1 3 3	0.270	1 2 2 2 3	0.203	1 3 3 1 3	0.203
1 1 2 1 1	0.950	1 2 2 3 1	0.336	1 3 3 2 1	0.346
1 1 2 1 2	0.910	1 2 2 3 2	0.212	1 3 3 2 2	0.224
1 1 2 1 3	0.531	1 2 2 3 3	-0.050	1 3 3 2 3	-0.037
1 1 2 2 1	0.874	1 2 3 1 1	0.628	1 3 3 3 1	0.115
1 1 2 2 2	0.816	1 2 3 1 2	0.534	1 3 3 3 2	-0.027
1 1 2 2 3	0.342	1 2 3 1 3	0.328	1 3 3 3 3	-0.324
1 1 2 3 1	0.462	1 2 3 2 1	0.458	2 1 1 1 1	0.965
1 1 2 3 2	0.350	1 2 3 2 2	0.346	2 1 1 1 2	0.930
1 1 2 3 3	0.110	1 2 3 2 3	0.105	2 1 1 1 3	0.577
1 1 3 1 1	0.721	1 2 3 3 1	0.246	2 1 1 2 1	0.898
1 1 3 1 2	0.639	1 2 3 3 2	0.115	2 1 1 2 2	0.845
1 1 3 1 3	0.455	1 2 3 3 3	-0.162	2 1 1 2 3	0.397
1 1 3 2 1	0.572	1 3 1 1 1	0.709	2 1 1 3 1	0.511
1 1 3 2 2	0.471	1 3 1 1 2	0.625	2 1 1 3 2	0.405
1 1 3 2 3	0.252	1 3 1 1 3	0.437	2 1 1 3 3	0.174
1 1 3 3 1	0.381	1 3 1 2 1	0.557	2 1 2 1 1	0.921
1 1 3 3 2	0.261	1 3 1 2 2	0.455	2 1 2 1 2	0.873
1 1 3 3 3	0.006	1 3 1 2 3	0.233	2 1 2 1 3	0.453
1 2 1 1 1	0.953	1 3 1 3 1	0.363	2 1 2 2 1	0.831
1 2 1 1 2	0.915	1 3 1 3 2	0.241	2 1 2 2 2	0.766
1 2 1 1 3	0.541	1 3 1 3 3	-0.017	2 1 2 2 3	0.250
1 2 1 2 1	0.879	1 3 2 1 1	0.605	2 1 2 3 1	0.379
1 2 1 2 2	0.823	1 3 2 1 2	0.508	2 1 2 3 2	0.259
1 2 1 2 3	0.354	1 3 2 1 3	0.296	2 1 2 3 3	0.004
1 2 1 3 1	0.473	1 3 2 2 1	0.430	2 1 3 1 1	0.660

2	1	3	1	2	0.570	2	3	2	2	3	-0.040	3	2	2	1	1	0.473
2	1	3	1	3	0.371	2	3	2	3	1	0.112	3	2	2	1	2	0.363
2	1	3	2	1	0.497	2	3	2	3	2	-0.029	3	2	2	1	3	0.124
2	1	3	2	2	0.389	2	3	2	3	3	-0.327	3	2	2	2	1	0.274
2	1	3	2	3	0.155	2	3	3	1	1	0.456	3	2	2	2	2	0.146
2	1	3	3	1	0.292	2	3	3	1	2	0.344	3	2	2	2	3	-0.127
2	1	3	3	2	0.164	2	3	3	1	3	0.103	3	2	2	3	1	0.032
2	1	3	3	3	-0.106	2	3	3	2	1	0.255	3	2	2	3	2	-0.116
2	2	1	1	1	0.925	2	3	3	2	2	0.124	3	2	2	3	3	-0.425
2	2	1	1	2	0.879	2	3	3	2	3	-0.151	3	2	3	1	1	0.393
2	2	1	1	3	0.464	2	3	3	3	1	0.009	3	2	3	1	2	0.274
2	2	1	2	1	0.838	2	3	3	3	2	-0.141	3	2	3	1	3	0.021
2	2	1	2	2	0.773	2	3	3	3	3	-0.452	3	2	3	2	1	0.180
2	2	1	2	3	0.263	3	1	1	1	1	0.692	3	2	3	2	2	0.044
2	2	1	3	1	0.391	3	1	1	1	2	0.606	3	2	3	2	3	-0.243
2	2	1	3	2	0.272	3	1	1	1	3	0.414	3	2	3	3	1	-0.076
2	2	1	3	3	0.019	3	1	1	2	1	0.536	3	2	3	3	2	-0.232
2	2	2	1	1	0.866	3	1	1	2	2	0.432	3	2	3	3	3	-0.555
2	2	2	1	2	0.807	3	1	1	2	3	0.206	3	3	1	1	1	0.497
2	2	2	1	3	0.325	3	1	1	3	1	0.338	3	3	1	1	2	0.389
2	2	2	2	1	0.757	3	1	1	3	2	0.215	3	3	1	1	3	0.155
2	2	2	2	2	0.679	3	1	1	3	3	-0.048	3	3	1	2	1	0.302
2	2	2	2	3	0.103	3	1	2	1	1	0.585	3	3	1	2	2	0.176
2	2	2	3	1	0.244	3	1	2	1	2	0.486	3	3	1	2	3	-0.092
2	2	2	3	2	0.112	3	1	2	1	3	0.270	3	3	1	3	1	0.064
2	2	2	3	3	-0.165	3	1	2	2	1	0.406	3	3	1	3	2	-0.082
2	2	3	1	1	0.558	3	1	2	2	2	0.289	3	3	1	3	3	-0.386
2	2	3	1	2	0.456	3	1	2	2	3	0.039	3	3	2	1	1	0.363
2	2	3	1	3	0.235	3	1	2	3	1	0.185	3	3	2	1	2	0.241
2	2	3	2	1	0.375	3	1	2	3	2	0.049	3	3	2	1	3	-0.017
2	2	3	2	2	0.255	3	1	2	3	3	-0.237	3	3	2	2	1	0.146
2	2	3	2	3	-0.001	3	1	3	1	1	0.513	3	3	2	2	2	0.006
2	2	3	3	1	0.148	3	1	3	1	2	0.406	3	3	2	2	3	-0.286
2	2	3	3	2	0.009	3	1	3	1	3	0.176	3	3	2	3	1	-0.116
2	2	3	3	3	-0.283	3	1	3	2	1	0.321	3	3	2	3	2	-0.274
2	3	1	1	1	0.647	3	1	3	2	2	0.196	3	3	2	3	3	-0.603
2	3	1	1	2	0.555	3	1	3	2	3	-0.068	3	3	3	1	1	0.274
2	3	1	1	3	0.352	3	1	3	3	1	0.086	3	3	3	1	2	0.146
2	3	1	2	1	0.481	3	1	3	3	2	-0.058	3	3	3	1	3	-0.127
2	3	1	2	2	0.371	3	1	3	3	3	-0.359	3	3	3	2	1	0.044
2	3	1	2	3	0.134	3	2	1	1	1	0.595	3	3	3	2	2	-0.103
2	3	1	3	1	0.272	3	2	1	1	2	0.497	3	3	3	2	3	-0.410
2	3	1	3	2	0.143	3	2	1	1	3	0.283	3	3	3	3	1	-0.232
2	3	1	3	3	-0.130	3	2	1	2	1	0.418	3	3	3	3	2	-0.398
2	3	2	1	1	0.533	3	2	1	2	2	0.302	3	3	3	3	3	-0.741
2	3	2	1	2	0.428	3	2	1	2	3	0.054						
2	3	2	1	3	0.201	3	2	1	3	1	0.199	Unconscious [*.***]					
2	3	2	2	1	0.344	3	2	1	3	2	0.064						
2	3	2	2	2	0.221	3	2	1	3	3	-0.221						

ANNEXE B

Tariffs for the Euroqol health states based on modelling the individual VAS and TTO data of the York survey

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Introduction

This paper is a sequel to our paper on the grouped VAS and TTO data of the York survey. In the interest of brevity this paper assumes that readers have access to that first paper. The aim of this paper is to provide suitable models that describe the individual VAS and TTO adjusted scores in terms of the 5 health factors and the respondents' characteristics.

Statistical Method

Notation

1. Four link functions will be investigated:

(i) The identity link function:	$g_0(M) = M$
(i) The logit function:	$g_1(M) = \ln (M / (1-M))$
(ii)The complementary log-log function form 1:	$g_2(M) = \ln (-\ln (1-M))$
(iii)The complementary log-log function form 2:	$g_3(M) = \ln (-\ln(M))$.

2. The adjusted VAS and TTO scores lie between -1 and 1. The following transformation which maps the interval (-1, 1) onto the unit interval (0,1) has therefore been applied to the data before using the link functions g_1, g_2 and g_3:

$f(M) = (M+1) / 2$

3. The set of covariates that will be considered to explain the variation in the adjusted scores are:

(i) The main effects of the 5 health factors, redefined here as follows:

Linear effects $F_i(k)$ = -1 if for state k factor i is at level 1
= 0 if for state k factor i is at level 2
= 1 if for state k factor i is at level 3

Non linear effects $F_{i3}(k)$ = 1 if for state k factor i is at level 3
= 0 if for state k factor i is not at level 3

(ii) The main effects of the 10 variables defining the 'extremity' of each state, ie all of the E_{1m} and E_{3m} (m=1,...,5) where:

$E_{1m}(k)$ = 1 if for state k the number of 1s is equal to m
= 0 if for state k the number of 1s is not equal to m.

$E_{3m}(k)$ = 1 if for state k the number of 3s is equal to m
= 0 if for state k the number of 3s is not equal to m.

(iii) Two dummy variables to indicate whether any of the dimensions is at level 1 or any of the dimensions is at level 3.

$ANY_1(k)$ = 1 if for state k there is one factor or more at level 1.
= 0 if for state k there is no factor at level 1.

$ANY_3(k)$ = 1 if for state k there is one factor or more at level 3.
= 0 if for state k there is no factor at level 3.

(iv) Covariates that describes the available demographic and social characteristics of each respondent, denoted here by C_{lr} (where r denotes the respondent number, ie r =1,2,...,2844 and l denotes the lth characteristics). Note that respondents with missing characteristics have been excluded from models that include respondent characteristics; hence the maximum of r is 2844 instead of 2997.

Strategy

Our strategy in the search of a suitable model can be summarised as follows:

1. Use one of the suggested link function g_L (L=0,1,2 or 3) to produce a set of transformed scores $Y_L(r,k)$ (r=1,2,...2844 or 2997 and k=1,2,..42). (Note that for each respondent information is available about only 12 states out of the total of 42).

2. For a given L, fit the following models:

Model 1: $Y_L(r,k) = \alpha + \alpha_1 ANY_1(k) + \alpha_2 ANY_3(k) + \varepsilon(r,k)$

Model 2: $Y_L(r,k) = \alpha + \Sigma_i \beta_i F_i(k) + \Sigma_i \beta_{i3} F_{i3}(k) + \varepsilon(r,k)$

Model 3: $Y_L(r,k) = \alpha + \alpha_2 ANY_3(k) + \Sigma_i \beta_i F_i(k) + \Sigma_i \beta_{i3} F_{i3}(k) + \varepsilon(r,k)$

Model 4: $Y_L(r,k) = \alpha + \alpha_1 ANY_1(k) + \alpha_2 ANY_3(k) + \Sigma_i \beta_i F_i(k) + \Sigma_i \beta_{i3} F_{i3}(k) + \varepsilon(r,k)$

$$\text{Model 5: } Y_L(r,k) = \alpha + \Sigma_i \beta_i F_i(k) + \Sigma_i \beta_{i3} F_{i3}(k) + \Sigma_m \gamma_{1m} E_{1m}(k) + \Sigma_m \gamma_{3m} E_{3m}(k) + \varepsilon(r,k)$$

$$\text{Model 6: } Y_L(r,k) = \alpha + \Sigma_i \beta_i F_i(k) + \Sigma_i \beta_{i3} F_{i3}(k) + \Sigma_l \eta_l C_l(r) + \varepsilon(r,k)$$

$$\text{Model 7: } Y_L(r,k) = \alpha + \alpha_2 ANY_3(k) + \Sigma_i \beta_i F_i(k) + \Sigma_i \beta_{i3} F_{i3}(k) + \Sigma_l \eta_l C_l(r) + \varepsilon(r,k)$$

$$\text{Model 8: } Y_L(r,k) = \alpha + \alpha_1 ANY_1(k) + \alpha_2 ANY_3(k) + \Sigma_i \beta_i F_i(k) + \Sigma_i \beta_{i3} F_{i3}(k) + \Sigma_l \eta_l C_l(r) + \varepsilon(r,k)$$

$$\text{Model 9: } Y_L(r,k) = \alpha + \Sigma_i \beta_i F_i(k) + \Sigma_i \beta_{i3} F_{i3}(k) + \Sigma_m \gamma_{1m} E_{1m}(k) + \Sigma_m \gamma_{3m} E_{3m}(k) + \Sigma_l \eta_l C_l(r) + \varepsilon(r,k)$$

where the α, βs, γs and ηs are unknown parameters to be estimated using least squares methods under the assumption that $\varepsilon(r,k)$ are independently Normally distributed random variables. This assumption is simplistic, since it implies that all respondents with the same characteristics have the same values, subject only to random error. A more realistic form of Model 1 would have been:

$$\text{Model 1': } Y_L(r,k) = \alpha(r) + \alpha_1 ANY_1(k) + \alpha_2 ANY_3(k) + \varepsilon(r,k)$$

where $\alpha(r)$ are the mean values for each respondent r. Since computationally this means estimating 2997 respondent-specific parameters, the simpler models 1 to 9 were pursued instead. Note that model 1 describes the data in terms of whether any of the factors is at level 1 and any at level 3; model 2 describes the data in terms of the main effects of the 5 health factors; and model 4 is a combination of models 1 and 2. Model 3 is a simplified version of model 4 that describes the data in terms of the main effects of the 5 health factors and whether any factor is at level 3. Model 5 describes the data in terms of the main effects of the 5 health factors and the extremity of the states. Models 6, 7, 8 and 9 are as models 2, 3, 4 and 5 with the addition of the respondent characteristics. Note also that the intercept parameter α in models 1, 2, 3, 4 and 5 represents the estimated $Y_L(16)$, where state 16 is the state '22222'.

3. When fitting the additional terms in models 6, 7, 8 and 9 over and above models 2, 3, 4 and 5, use stepwise linear regression with significance levels of 0.1% to enter a new variable and 1% to remove an existing variable. These stringent significance levels have been used to overcome the problem of multiple comparisons that is inherent in the stepwise procedure especially when using so many possible covariates. These significance levels will reduce the probability of including terms that are associated with the response variable just by chance.

4. Assess the goodness of fit for each model, firstly by R^2 and secondly by examining the residuals produced by the model, informally via residual plots and formally by testing for Normality by the Kolmogorov-Smirnov test, testing for the independence of the error terms by the Durbin Watson test, and testing for heteroscedasticity by regressing the square of the residuals on the predicted values (so that a significant F-test from this regression would mean significant heteroscedasticity).

Results

VAS DATA

Only some of the models examined need be summarised here. Table 1 summarises the R^2 of models 1, 2, 3, 4 and 5 when using the link functions g_0, g_1, g_2 and g_3. The goodness of fit produced by these models when using form 2 of the complementary log link function, g_3, were higher than when using the other link functions. Table 2 shows the summary statistics for models 2, 3, 4, 5 and 7 when using g_3 as the link function. To combine goodness of fit with simplicity, model 3 is chosen as the 'best buy' since it explains 52.3% of the variation in the data by using 11 explanatory variables; in comparison model 5 explains only an extra 1.5% with an extra six explanatory variables. For completeness, tables 3, 4 and 5 show the parameter estimates for models 2, 3 and 7. Table 5 shows the type of respondent characteristics that are associated with the VAS ratings in addition to the basic variables of model 3. All of these models seem to be 'mispecified', showing significant heteroscedasticity and non-normal errors. Nevertheless they all show non-significant Durbin Watson tests, suggesting that the errors are at least independent. Table 6 shows the predicted values for the 42 states using model 3 and their deviations from the observed means and medians.

TTO DATA

Again only some of the models examined need be summarised here. Table 7 summarises the R^2 of models 1, 2, 3, 4 and 5 when using the link functions g_0, g_1, g_2

and g_3. The goodness of fit produced by g_0 was in general the best. Table 8 shows the analysis of variance for models 2, 3, 4, 5 and 7 when using g_0 as the link function. As for the VAS data, to combine goodness of fit with simplicity model 3 is chosen as the 'best buy'. For completeness, tables 9, 10 and 11 show the parameter estimates for the models 2, 3 and 7. All of these models seem to be 'mispecified', showing significant heteroscedasticity and non-normal errors. Nevertheless they all show non-significant Durbin Watson tests, suggesting that the errors are at least independent. Table 12 shows the predicted values for the 42 states using model 3, and their deviations from the observed means and medians.

Discussion

In this paper two important aspects of model selection for the individual VAS and TTO data were investigated. The first was the choice of the scale of measurement. Among the investigated link functions, the complementary log provided the best fit for the VAS data. This suggests that for this method of rating the adjusted scores are not symmetric about zero ie death. This can be confirmed by examining the means of the VAS data for each state; table 6 shows that only one state (33333) had a mean value which is negative ie worse than death. Using this method of scaling the estimated adjusted score for each state is generally closer to the median than the mean adjusted score (table 6). This achievement of more robust estimates for the adjusted VAS scores is a positive reason for scaling the data by the complementary log link function.

For the TTO data, none of the link functions investigated provided a better fit than the identity link. This absence of any benefit from scaling the data means that the resulting estimates are closer to the mean than to the median adjusted score for each state (table 12). However, the skewness of the data as illustrated by the differences between the means and medians of table 12 and the asymmetry of the residual plot in figure 2, suggest that a successful scaling of the TTO data is still needed. The link functions g_1, g_2 and g_3 were chosen because they can map the data from the range (-1,1) to the range $(-\infty, \infty)$ via the range (0,1), no other link function was investigated. The failure of these link functions suggests that a better strategy would be to use the Box-Cox family of transformations to estimate the scaling parameter that achieves the best compromise between Normality, heteroscedasticity and independence of the transformed data.

The second aspect of model selection investigated in this paper was the choice of covariates that best explain the data. The covariates investigated were the main effects

of the five health factors, ten variables defining the 'extremity' of each state, a range of respondent characteristics and finally two variables that summarise the extremity of the state (ANY_1 and ANY_3). For the VAS data, the main effects of the five health factors (model 2) explained 47.2% of the variation in the data, 4.2% more than model 1, which uses only the two summary variables ANY_1 and ANY_3. Adding ANY_3 to model 2 explained a further 5.1% of the variation. In contrast model 5 explained 1.5% more of the variation than model 2 by using 7 extra variables (the main effects of the extremity of each state). The simplicity and goodness of fit of model 3 were the main reasons for choosing it to summarise the VAS data. Similarly model 3 provides a good summary for the TTO data. Although nine respondent characteristics were significantly associated with the TTO method of rating, the resulting model 7 explained only 1.4% more of the variation in the data than model 3. This improvement in the fit was thought to be too costly since it would complicate the calculation of the tariff considerably. Nevertheless the parameter estimates of model 7 are provided so that the reader can study the effect of these characteristics on the rating of the states. In particular respondents with poor self care had considerably higher TTO estimates (table 11).

Despite the R^2 achieved by the models studied none of them passed the tests for Normality or heteroscedasticity of the residual errors. This is not surprising since the power of these tests is very high with such a large number of observations (35964). Nevertheless, it is clear from the residual plot of the TTO data (Figure 2) that there is a systematic pattern in the residuals. A better scaling of the TTO data may overcome this effect.

In summary the two models (model 3 with a complementary log link function form 2 and model 3 with an identity link function) chosen to summarise the individual VAS and TTO adjusted score both combine simplicity and goodness of fit to the data. Nevertheless neither is ideal. With such simple models this seems inevitable. Fortunately we can identify three analytical procedures with the potential to improve these models in future. First, in analysing visual analogue scales, it is preferable to begin with raw data rather than adjusted scores. Secondly the Box-Cox family of transformations is more flexible than the three specific transformations that we investigated. Finally in the short time available to us we could not access any software with the power to estimate parameters for each of the 3000 or so respondents.

Conclusion

Thus we believe that further investment in statistical analysis would lead to even better models and hence better tariffs. Nevertheless the fact that one simple model explains 52% of the variation in individual VAS scores (table 2) and another simple model explains 46% of the variation in individual TTO scores (table 8) represents a major achievement for the MVH team at York. More important it represents a sound basis on which to recommend tariffs for the EuroQol health states. Our tariff for the VAS data can be derived directly from table 4 and that of the TTO data from table 10. The performance of these tariffs is summarised in table 6 and table 12 respectively. That table 12 is virtually identical to the corresponding table of the MVH team's own analysis (table 8 of Dolan, 1994) represents a satisfactory validation of their tariff for the TTO data.

Table 1 Goodness of fit (R^2) for the VAS data using the 4 different link functions

	g_0	g_1	g_2	g_3
Model 1 (2 df[1])	41.1	36.4	25.8	43.0
Model 2 (10 df)	46.9	40.5	29.5	47.2
Model 3 (11 df)	49.0	44.1	31.1	52.3
Model 4 (12 df)	49.4	44.4	31.2	52.8
Model 5 (17 df)	49.5	44.9	31.4	53.6

1 df = degrees of freedom

Table 2 Summary statistics for the VAS data using the complementary log link function form 2

	Sum of squares	DF	Mean square	F-test	Significance of goodness of fit tests (K-S, F for H , D-W)[1]
Model 2 (R^2=47.2%)					
Due to model 2	17620.0	10	1762.0	3215.9	(0.001, 0.001, 0.10)
Residual	19698.7	35953	0.55		
Model 3 (R^2=52.3%)					
Due to model 2	17620.0	10	1762.0	3595.9	(0.001, 0.001, 0.08)
model 3 - model 2	1907.3	1	1907.3	3892.4	
Residual	17791.4	35952	0.49		
Model 4 (R^2=52.8%)					
Due to model 3	19527.3	11	1775.2	3622.9	(0.001, 0.001, 0.08)
model 4 - model 3	190.0	1	190.0	387.8	
Residual	17601.4	35951	0.49		
Model 5 (R^2=53.8%)					
Due to model 3	19527.3	11	1775.2	3622.9	(0.001, 0.001, 0.08)
model 5 - model 3	459.9	6	76.6	156.3	
Residual	17331.5	35946	0.49		
Model 7 (R^2=53.0%)					
Due to model 2	16757.1	10	1675.7	3419.8	(0.001, 0.001, 0.08)
model 3 - model 2	1788.5	1	1788.5	3650.0	
respondent's characteristics	224.2	10	22.4	45.7	
Residual	16641.3	34106	0.49		

1 The goodness of fit tests summarised are the Kolmogorov-Smirnov test for Normality (K-S), the F test for heteroscedasticity (F for H) and the Durbin Watson test for independence (D-W).

Table 3 Parameter estimates for the VAS data using the complementary log link function form 2 and model 2

Parameter	Estimate	SE	T-value
Constant	-1.107	.011	-99.3
F1	0.245	.010	24.9
F2	0.310	.010	29.9
F3	0.333	.011	29.9
F4	0.213	.011	21.7
F5	0.283	.010	27.6
F13	-.085	.018	-4.8
F23	-.183	.018	-10.3
F33	-.088	.019	-4.8
F43	0.174	.017	10.0
F53	-.025	.018	-1.4

Table 4 Parameter estimates for the VAS data using the complementary log link function form 2 and model 3

Parameter	Estimate	SE	T-value
Constant	-1.397	0.012	-120.6
F1	0.235	0.009	25.1
F2	0.375	0.100	37.8
F3	0.079	0.011	7.0
F4	0.308	0.010	32.6
F5	0.266	0.010	27.3
F13	-.128	0.017	-7.6
F23	-.359	0.017	-20.9
F33	0.019	0.018	1.1
F43	-.224	0.017	-12.7
F53	-.249	0.018	-14.0
ANY3	0.813	0.013	62.1

Table 5 Parameter estimates for the VAS data using the complementary log link function form 2 and model 7

Parameter	Estimate	SE	T-value
Constant	-1.442	0.018	-80.1
F1	0.236	0.010	24.7
F2	0.379	0.010	37.5
F3	0.078	0.012	6.7
F4	0.308	0.010	32.0
F5	0.268	0.010	26.9
F13	-.125	0.017	-7.4
F23	-.365	0.017	-24.7
F33	-.020	0.019	-1.1
F43	-.225	0.018	-12.5
F53	-.250	0.018	-13.8
ANY3	0.808	0.013	60.5
The respondent has a degree (including nurses & teachers)	0.106	0.013	8.1
The respondent mobility is mediocre[1]	-.056	0.012	-4.5
The respondent has experienced illness in others	0.061	0.008	7.2
The respondent social class is 4 or 5 (semi or unskilled)	-.109	0.012	-9.1
The respondent social class is 3 (skilled but not managerial)	-.073	0.010	-7.3
The respondent is separated, divorced or widowed	0.052	0.010	5.4
The respondent is a smoker	0.048	0.008	5.8
The respondent has passed school leaving examination	0.049	0.009	5.1
The respondent is older than 60	0.038	0.010	3.9
The respondent usual activity level is mediocre[1]	-0.051	0.013	-3.9

1 Mediocre means the second level of this variable

Table 6 Predicted adjusted VAS scores for an average respondent using the complementary log link function form 2 and model 3, compared with the observed median and mean scores

State	code	Predicted	Median	Mean	Predicted - Median	Predicted - Mean
1	21111	0.83	0.85	0.79	-0.02	0.04
2	11211	0.85	0.85	0.80	0	0.05
3	11121	0.82	0.85	0.81	-0.03	0.01
4	12111	0.81	0.84	0.79	-0.03	0.02
5	11112	0.83	0.87	0.81	-0.04	0.02
6	12211	0.79	0.73	0.69	0.06	0.10
7	12121	0.74	0.70	0.66	-0.04	0.08
8	11122	0.77	0.72	0.67	0.05	0.10
9	22121	0.68	0.68	0.58	0	0.10
10	22112	0.69	0.615	0.59	0.07	0.10
11	11312	0.56	0.54	0.51	0.02	0.05
12	21222	0.69	0.56	0.53	0.13	0.16
13	12222	0.64	0.55	0.53	0.09	0.11
14	21312	0.47	0.50	0.45	-0.03	0.02
15	22122	0.59	0.53	0.51	0.06	0.08
16	22222	0.56	0.50	0.46	0.06	0.10
17	11113	0.62	0.51	0.49	0.11	0.13
18	13212	0.44	0.45	0.42	-0.01	0.02
19	13311	0.51	0.40	0.38	0.11	0.13
20	11131	0.58	0.45	0.40	0.13	0.18
21	12223	0.28	0.37	0.34	-0.09	-0.06
22	21323	0.30	0.30	0.26	0	0.04
23	23321	0.24	0.27	0.25	-0.03	-0.01
24	32211	0.41	0.30	0.29	0.11	0.12
25	21232	0.32	0.33	0.31	-0.01	0.01
26	22323	0.07	0.25	0.20	-0.18	-0.13
27	33212	0.26	0.21	0.18	0.05	0.08
28	23313	0.25	0.20	0.16	0.05	0.09
29	22331	0.20	0.25	0.21	-0.05	-0.01
30	11133	0.47	0.34	0.27	0.13	0.20
31	21133	0.35	0.25	0.23	0.10	0.12
32	23232	0.08	0.21	0.20	-0.13	-0.12
33	33321	0.17	0.15	0.11	0.02	0.06
34	32313	0.20	0.16	0.13	0.04	0.07
35	22233	0.08	0.17	0.16	-0.09	-0.08
36	32223	0.06	0.16	0.13	-0.10	-0.07
37	13332	0.17	0.16	0.14	0.01	0.03
38	32232	0.02	0.17	0.12	-0.15	-0.10
39	32331	0.13	0.13	0.09	0	0.04
40	33232	0.01	0.10	0.06	-0.09	-0.05
41	33323	-.01	0.07	0.02	-0.08	-0.03
42	33333	-0.07	0.00	-0.07	-0.07	0

Table 7 Goodness of fit (R^2) for the TTO data using the 4 different link functions

	g_0	g_1	g_2	g_3
Model 1 (2 df)	37.8	36.8	32.3	37.7
Model 2 (10 df)	44.6	42.0	39.2	41.3
Model 3 (11 df)	45.9	44.0	39.9	44.5
Model 4 (12 df)	46.0	44.2	40.0	44.8
Model 5 (17 df)	46.2	44.3	40.0	44.9

Table 8 Summary statistics for the TTO data using the identity link function

	Sum of squares	DF	Mean square	F-test	Significance of goodness of fit tests (K-S, F for H, D-W)[1]
Model 2 (R^2=44.6%)					
Due to model 2	7034.8	10	703.5	2931.3	(0.001, 0.001, 0.07)
Residual	8752.9	35953	0.24		
Model 3 (R^2=45.9%)					
Due to model 2	7034.8	10	703.5	2931.3	(0.001, 0.001, 0.06)
model 3 - model 2	214.3	1	214.3	892.9	
Residual	8538.6	35952	.24		
Model 4 (R^2=46.0%)					
Due to model 3	7249.1	11	629.0	2745.9	(0.001, 0.001, 0.06)
model 4 - model 3	16.4	1	16.4	68.3	
Residual	8522.2	35951	.24		
Model 5 (R^2=46.2%)					
Due to model 3	7249.1	11	659.0	2745.8	(0.001, 0.001, 0.06)
model 5 - model 3	38.7	6	6.5	27.1	
Residual	8499.9	35946	.24		
Model 7 (R^2=47.3%)					
Due to model 2	6715.0	10	671.5	2919.5	(0.001, 0.001, 0.06)
model 3 - model 2	197.5	1	197.5	858.7	
respondent's characteristics	181.0	9	20.1	87.4	
Residual	7906.5	34107	.23		

1 The goodness of fit tests summarised are the Kolmogorov-Smirnov test for Normality (K-S), the F test for heteroscedasticity (F for H) and the Durbin Watson test for independence (D-W).

Table 9 Parameter estimates for the TTO data using the identity link function and model 2

Parameter	Estimate	SE	T-value
Constant	0.424	0.007	57.0
F1	-.071	0.007	-10.7
F2	-.084	0.007	-12.1
F3	-.118	0.007	-15.9
F4	-.088	0.007	-13.4
F5	-.078	0.007	-11.4
F13	-.191	0.012	-16.4
F23	-.066	0.012	-5.6
F33	0.014	0.012	1.2
F43	-.277	0.012	-23.9
F53	-.160	0.012	-13.9

Table 10 Parameter estimates for the TTO data using the identify link function and model 3

Parameter	Estimate	SE	T-value
Constant	0.521	0.009	59.9
F1	-.067	0.007	-10.3
F2	-.105	0.007	-15.4
F3	-.033	0.008	-4.2
F4	-.119	0.007	-18.3
F5	-.072	0.007	-10.7
F13	-.177	.012	-15.3
F23	-.007	.012	-.62
F33	-.022	0.013	-1.8
F43	-.143	0.012	-11.7
F53	-.094	0.012	-7.6
ANY3	-.273	0.010	-30.0

Table 11 Parameter estimates for the TTO data using the identity link function and model 7

Parameter	Estimate	SE	T-value
Constant	0.568	0.009	59.9
F1	-.066	0.007	-10.0
F2	-.105	0.007	-15.1
F3	-.036	0.007	-4.5
F4	-.119	0.007	-17.9
F5	-0.070	0.007	-10.3
F13	-.176	0.012	-15.0
F23	-.010	0.012	-.79
F33	0.018	0.013	1.4
F43	-.145	0.012	-11.6
F53	-.103	0.013	-8.2
ANY3	-.269	0.010	-29.2
The respondent is older than 60	-.123	0.006	-19.4
The respondent is a male	0.043	0.005	7.9
The respondent is single	-.076	0.007	-10.5
The respondent is separated, divorced or widowed	-.063	0.007	-9.2
The respondent's mobility is mediocre[1]	0.045	0.008	5.7
The respondent's self care is poor[2]	0.374	0.070	5.4
The respondent's self care is mediocre[1]	0.066	0.014	4.5
The respondent's social class is 3	-.020	0.005	-3.8
The respondent's job cares for ill people	-.026	0.008	-3.5

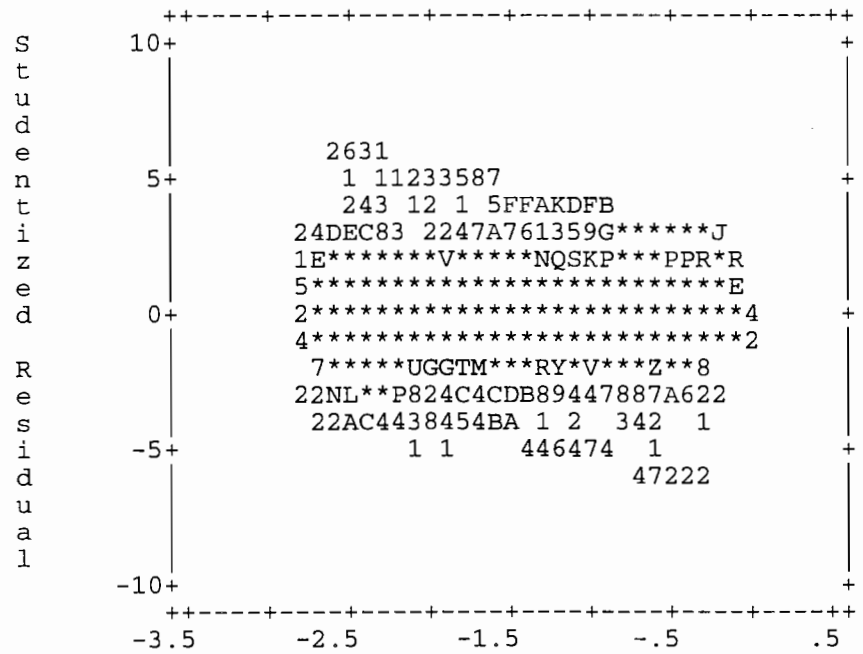
1 Mediocre means the second level of this variable

2 Poor means the third level of this variable

Table 12 Predicted adjusted TTO scores for an average respondent using the identity link function and model 3, compared with the observed median and mean scores

State	code	Predicted	Median	Mean	Predicted - Median	Predicted - Mean
1	21111	0.85	0.95	0.88	-0.10	-0.03
2	11211	0.88	0.95	0.87	-0.07	0.01
3	11121	0.80	0.93	0.85	-0.13	-0.05
4	12111	0.81	0.93	0.83	-0.12	-0.02
5	11112	0.85	0.93	0.83	-0.08	0.02
6	12211	0.78	0.90	0.77	-0.12	0.01
7	12121	0.69	0.85	0.74	-0.16	-0.05
8	11122	0.73	0.83	0.72	-0.10	0.01
9	22121	0.63	0.78	0.64	-0.15	-0.01
10	22112	0.67	0.75	0.66	-0.08	0.01
11	11312	0.48	0.68	0.55	-0.20	-0.07
12	21222	0.63	0.65	0.55	-0.02	0.08
13	12222	0.59	0.65	0.55	-0.06	0.04
14	21312	0.42	0.65	0.54	-0.23	-0.12
15	22122	0.55	0.65	0.54	-0.10	0.01
16	22222	0.52	0.63	0.50	-0.11	0.02
17	11113	0.41	0.50	0.39	-0.09	0.02
18	13212	0.32	0.50	0.39	-0.18	-0.07
19	13311	0.34	0.50	0.35	-0.16	-0.01
20	11131	0.26	0.38	0.20	-0.12	0.06
21	12223	0.15	0.38	0.22	-0.23	-0.07
22	21323	0.13	0.38	0.16	-0.25	-0.03
23	23321	0.15	0.30	0.15	-0.15	0
24	32211	0.19	0.28	0.15	-0.09	0.04
25	21232	0.09	0.14	0.06	-0.05	0.03
26	22323	0.03	0.03	0.04	0	-0.01
27	33212	0.01	0.0	-0.02	0.01	0.03
28	23313	0.03	0.0	-0.07	0.03	0.10
29	22331	0	0.0	-0.01	0	0.01
30	11133	0.03	0.0	-0.05	0.03	0.08
31	21133	-0.04	-0.03	-0.06	-0.01	0.02
32	23232	-0.13	-0.03	-0.08	-0.10	-0.05
33	33321	-0.09	-0.18	-0.12	0.09	0.03
34	32313	-0.10	-0.23	-0.15	0.13	0.05
35	22233	-0.18	-0.23	-0.14	0.05	-0.04
36	32223	-0.16	-0.28	-0.17	0.12	0.01
37	13332	-0.11	-0.38	-0.23	0.27	0.12
38	32232	-0.26	-0.38	-0.22	0.12	-0.04
39	32331	-0.24	-0.38	-0.28	0.14	0.04
40	33232	-0.37	-0.43	-0.33	0.06	-0.04
41	33323	-0.33	-0.48	-0.39	0.15	0.06
42	33333	-0.59	-0.63	-0.54	0.04	-0.05

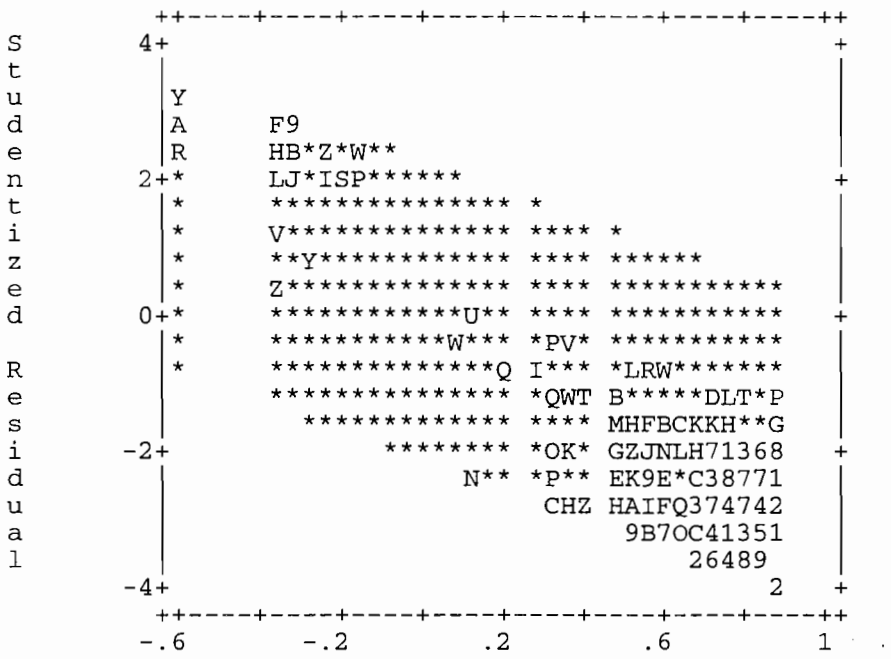
Figure 1 Plot of studentised residuals against predicted values for the VAS data using the complementary log function form 2 and model 3



Symbols used:

1 - 1	11 - B	21 - L	31 - V
2 - 2	12 - C	22 - M	32 - W
3 - 3	13 - D	23 - N	33 - X
4 - 4	14 - E	24 - O	34 - Y
5 - 5	15 - F	25 - P	35 - Z
6 - 6	16 - G	26 - Q	36 or more - *
7 - 7	17 - H	27 - R	
8 - 8	18 - I	28 - S	
9 - 9	19 - J	29 - T	
10 - A	20 - K	30 - U	

Figure 2 Plot of studentised residuals against predicted values for the TTO data using the identity link function and model 3



Symbols Used:

1 - 1	11 - B	21 - L	31 - V
2 - 2	12 - C	22 - M	32 - W
3 - 3	13 - D	23 - N	33 - X
4 - 4	14 - E	24 - O	34 - Y
5 - 5	15 - F	25 - P	35 - Z
6 - 6	16 - G	26 - Q	36 or more - *
7 - 7	17 - H	27 - R	
8 - 8	18 - I	28 - S	
9 - 9	19 - J	29 - T	
10 - A	20 - K	30 - U	

ANNEXE C

Why does the VAS produce different results from TTO ?

January 1995

Angela Robinson, Paul Dolan, Alan Williams and Graham Loomes

Introduction

In evaluating the outcome of health care, one important element is health-related quality- of-life (HRQOL). It is obviously desirable that when assessing such benefits the views of the potential beneficiaries should play a significant role.

HRQOL assessment methods generally involve the direct elicitation of the values attached by individuals to various states of health. However, it has been well documented that different valuation methods yield different results (i.e. Bombardier et al 1982, Torrance 1976 and Llewellyn- Thomas 1984). Whist numerous studies have explored *how* valuations differ, there has been relatively little research into *why* they differ (Nord 1992 does tackle this issue). This study attempts to redress this balance, the motivation being provided, in particular, by the findings of a large scale national study.

In 1993 the Measurement and Valuation of Health (MVH) group at the University of York, began the fieldwork of a study which set out to establish the relative valuations attached to different states of health (described in HRQOL terms) by members of the general public. A health state description consists of one statement from each of 5 dimensions covering various aspects of HRQOL. The study used the Euroqol classification system which describes HRQOL in five dimensions with no disease specificity. Three levels are possible within each dimension namely : no problems, some problems and severe problems, denoted by 1, 2 and 3 respectively. Under this system the state 11111 is essentially full health whilst the state 33333 involves severe problems on all 5 dimensions (see appendix 1 for details).

The EuroQol classification generates 245 theoretically possible health states, some of which are unlikely to occur in practice. As obtaining direct valuations on this number of states would have been a huge task, actual values were obtained for a subset of the 245 states and subsequently used to interpolate values for the remaining states. It was estimated that values on 45 states, including death, unconscious and 11111 would be sufficient for this purpose. However, no single respondent could be expected to handle this number of health states, so each evaluated a subset of 15 spread over the descriptive space in terms of severity. Each respondent valued 11111, Immediate Death, Unconscious and 33333, two 'very mild' states,

three 'mild' states, three 'moderate' states and three 'severe' states (see appendix 1). The two principal measurement methods to be used were the Time Trade-Off (TTO) and Visual Analogue Scaling (VAS). Both methods are described in detail below. A total of 3395 interviews were carried out.

Structure of the interviews carried out in the main study

Each respondent was first asked to describe their own health using the EuroQol descriptive system. They were then asked to rank a predetermined set of 15 health states which were printed on cards. It was explained that each state was to be regarded as lasting for 10 years without any change, followed by death. The respondent was then asked by a process of 'bisection'[1] to indicate where on a vertical 'thermometer' type Visual Analogue Scale (VAS) with endpoints of 100 (best imaginable health state) and 0 (worst imaginable health state) they would rate each of the states. They were told that ties were allowed and they could change the order of the health states from the ranking exercise if they so wished. They then rated their own health on a similar VAS.

13 health states (15 minus 11111 and 'Immediate death', which are used as anchors) were then valued by the TTO method using a specially -designed double-sided board. One side was relevant for states which were regarded as being better than dead, and the other side for states that were regarded as worse than dead. First of all respondents were asked whether they preferred 10 years in H to immediate death (i.e. zero years in 11111).

For states which were preferred to immediate death respondents were led by an iterative process to select the length of time in the 11111 state (X) that they regarded as equivalent to 10 years in the target state (H) ; the shorter the equivalent length of time, the worse the health state[2]. In the case of states worse than dead, the choice was between dying immediately and spending a length of time (X) in the target state followed by (10-X) years in the 11111 state : the more time required in the 11111 state to compensate for a shorter time in the target state, the worse the target state.

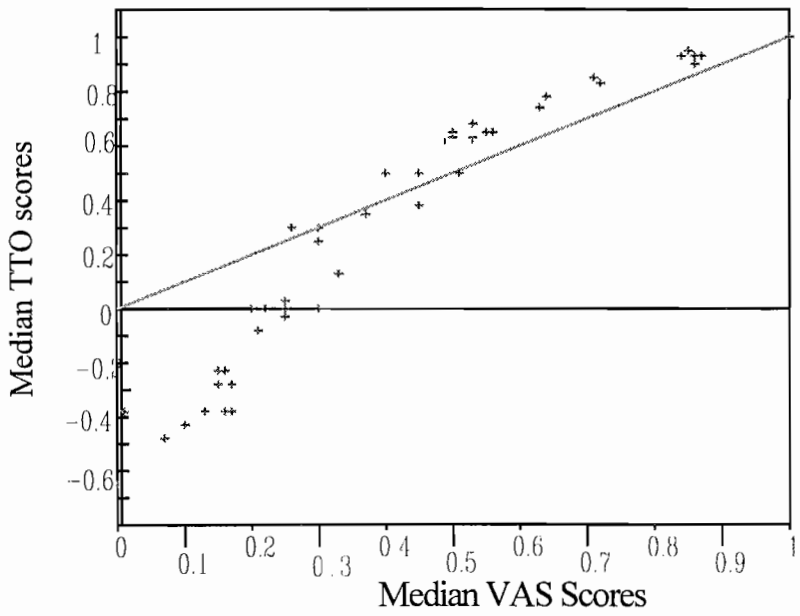
At the end of the interview , personal background data were collected from each respondent. For details of study population, data quality and re-test reliability the reader is recommended to refer to the MVH First Report, Dolan et al (1994).

Findings to be investigated further

Some of the principal results of the main study which are of particular interest here are outlined below. Figure 1 shows a plot of the median (adjusted) VAS scores against median (adjusted) TTO scores for all 43 health states valued by respondents[3]. This shows VAS valuations to be lower than TTO values for the less severe health states but markedly higher than TTO valuations at the more severe end of the health state spectrum. Most notable are the states with TTO valuations well into the negative region while the corresponding VAS scores are positive. For 13 of the 43 health states the median VAS score rates that state better than dead whilst the median TTO score rates it worse than dead. Appendix 2 contains selected results for illustrative purposes (readers are advised to refer to the MVH report for valuations of all 43 health states).

A variety of relationships between the two sets of values has been reported in the literature. Torrance et al (1982), Bombardier et al (1982), and Read et al (1984) report TTO scores

Figure 1



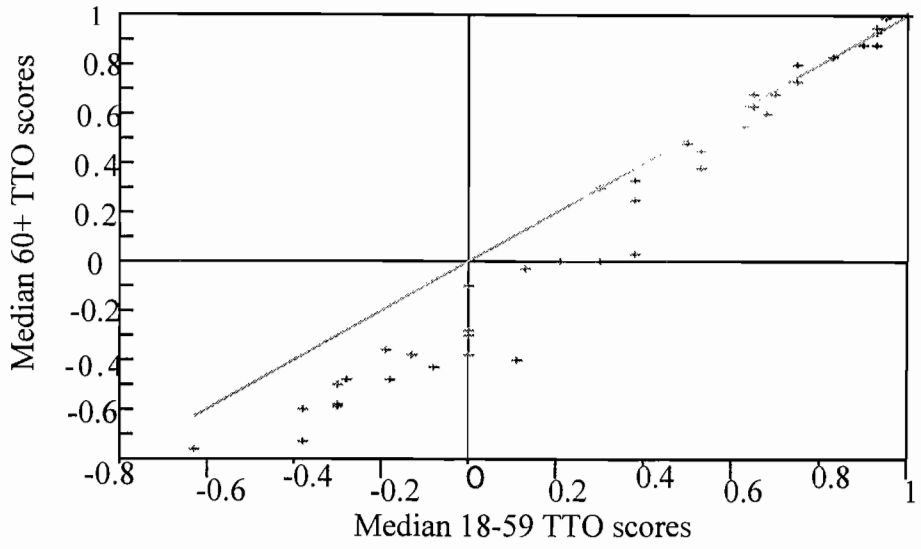
which are all higher than VAS scores whilst Churchill et al (1987) report TTO scores which are all lower than VAS scores. Richardson et al (1989) report TTO scores which are higher than VAS scores for milder states but lower than VAS scores for the more severe states, as found in the MVH study.

Whilst it is difficult to point to any theoretical link between the scores generated by VAS and those generated by TTO[4] we would expect, at least at the individual level, that a state rated better than dead in one exercise would be rated better than dead in the other. However, 85.2% of respondents rated state 33333 worse than death in the TTO whilst only 40.26% did likewise in the VAS, indicating that *within-subject* preference reversals of this kind were occurring on a wide scale. One possible interpretation is that respondents were simply making some sort of 'mistake' in one or other of the exercises; either 'immediate death' was given a VAS position which did not reflect the respondent's preference for dying immediately over spending 10 years in H, or alternatively, the 'wrong' choice was made at the initial better/worse than dead decision node in the TTO.

Several other noteworthy and, at first sight, puzzling phenomena were uncovered. For the less severe states, many respondents were unwilling to trade off any length of life at all in order to avoid a health state which they placed below 11111 on the VAS. Of the 522 respondents unwilling to trade off any time whatsoever to avoid state 11112, only 3 had placed that state equal to 11111 on the VAS. One possible interpretation of this behaviour is that respondents were simply refusing 'to play the game' in the TTO and that these were protest responses. Another possibility is that respondents were giving 'no time at all' responses to approximate some very short, but nevertheless positive, length of time they would be prepared to give up in order to avoid the health state[5].

Another finding which is of particular interest in this study, was that the TTO values of older respondents were lower for the severe health states than those of the younger age groups.[6] For 20 of the 43 health states the values of the 60 + age group were significantly ($p < 0.01$) lower than those of the under 60's. These were predominantly the more severe states and are listed in Table 15 in Appendix 4. This finding is contrary to that of Sackett and Torrance (1978). Figure 2 shows a plot of median 60+ TTO scores against median 18-59 TTO scores.

Figure 2



This raises two possibilities: either the valuations of older respondents are *genuinely* lower than those of the younger age groups or some *artefact* was responsible for the pattern uncovered. It is hypothesised that one such artefact may be that many older respondents did not expect to live for another 10 years and hence were giving up years they did not expect to reach anyway. This explanation does not of course explain why the values of older respondents *for the milder health states* were not significantly lower than those of other age groups. One possible real explanation of the above finding is that older respondents may feel that they have 'had a good innings' and are therefore less prepared to struggle on in an unsatisfactory health state. They also may be more acutely aware of the fact that they may become a burden to their family. If this is the case then we would expect such considerations to also show up in VAS scores which showed no significant differences across the age groups.

Likewise, the burden explanation could be used to explain another important finding in the MVH study; namely, why men gave higher TTO valuations than women to 14 of the 24 most severe states. Women may have more experience of caring for elderly relatives which may make them less inclined to allow their own family to go through this. Unlike the age differences outlined above, there is no obvious artefact explanation of the gender differences uncovered above (age and sex were found not to be correlated with one another).

Thus, four key questions, seemed to emerge from the findings outlined above;

1. Why are some states rated better than dead on the VAS often rated as worse than dead in TTO ?
2. Why are some respondents unwilling to trade- off any time at all in order to avoid a health state that they place below 11111 on VAS ?
3. Why are TTO valuations of older respondents for the more severe health states lower than those of the younger age groups ?
4. Why are TTO valuations of women for the more severe health states lower than those of men ?

Whilst a number of hypothesis have been put forward as possible explanations of the above, it was clear that a better understanding of the cognitive processes at work when respondents complete VAS and TTO exercises was required. To this end a small sub-sample of respondents underwent a (tape recorded) re-interview.

Methods

Eighty three respondents (who had taken part in the main study and had indicated a willingness to be re-interviewed) residing in 3 postal areas in the North East of England were selected for this follow- up study. One of the 83 one had died and 10 had moved leaving 72 respondents available for follow up. 45 interviews were achieved, giving a response rate of 62.5%. The age-sex breakdown of these 45 respondents is shown in Table 1. Of these 45 interviews, two were aborted as the respondents could not understand what was required of them. One was a female in the 60+ age group, the other a male in the 18-39 age group.

Table 1

	18-39	**40-59**	**60+**	**Total**
Male	8	7	5	**20**
Female	8	7	10	**25**
Total	**16**	**14**	**15**	**45**

As the object of the present study was qualitative, rather than quantitative, each respondent was asked to value only 7 states, including death and 11111. The other 5 health states were a subsample of the set of 13 respondents had seen in the first interview and were chosen in order to maximise the likelihood of reproducing the disparities outlined above. Each respondent was given their highest scoring VAS state (apart from 11111), their 2 states with TTO scores either side of zero and the two 'core' states, 33333 and UN. This required each respondent to rank and scale 7 health states and complete 5 TTO questions.

As far as possible the structure of the interview matched the one in the main study. However, respondents were asked to 'think aloud' as they completed the ranking and scaling exercises. If they decided that one health was better (or worse) than another the instructions asked them to say what it was about that state which made it better (or worse) for them personally. If they positioned one state roughly halfway between another two states on the VAS they were asked *what* it was that made it about halfway for them personally.

One slight change to the TTO questions was that it was made clear to respondents that they could trade-off even just a few days if they wished to do so. In addition, respondents were also asked to explain why they made certain decisions during the TTO exercise. It was made clear to respondents that everyone was to be routinely asked the same questions and they did not mean that their preceding answer was wrong or unusual in any way. Respondents were asked " Do you think you could try to tell me why you chose life A (so many years in 11111) or life B (10 years in the target state) just now ?" at the following key points in the TTO :

1. Where they made the initial worse than death (WD)/better than death (BD) decision
2. At the '5 years' point - i.e. the decision immediately following the BD/WD one.
3. When (if) no time was traded off at all.

After completing the ranking, VAS and TTO exercises respondents were asked more specific questions about their responses. Those respondents who had rated at least one state BD and at least one state WD *in the TTO* were asked to explain what it was that made one BD whilst the other WD. For each of these two states they were asked a question designed to discover whether or not they would stick with their BD or WD decision if the state lasted for a

lifetime, rather than for 10 years. Respondents were then asked what had gone through their mind when they considered the WD scenario in the TTO. Respondents who had rated the same state as BD on the VAS but WD in the TTO were asked to comment upon this disparity. Finally, respondents who had not traded any time at all in order to avoid a health state which they had below state 11111 on the VAS were asked to comment on this (see appendix 6 for details).

Results

Whilst gathering more quantitative data on the health states was not the primary aim of this study Figure 3 and Tables 2 & 3 suggest that the findings of the main study outlined above have been broadly replicated here. In tables 2 and 3, due to the relatively small number of observations on each state, all states apart from UN and 33333 have been grouped together according to the classification given in Appendix 1.

Figure 3

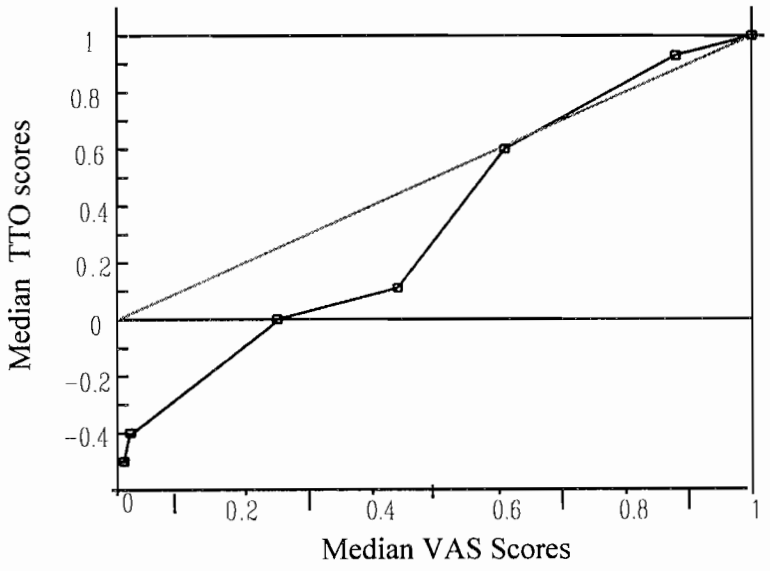


Table 2: Category Rating Scores

	Mean (SD)	Median	N
Unconscious	0.01 (.30)	0.02	42
33333	- 0.04 (.43)	0.01	43
Very Mild	0.81 (.17)	0.88	42
Mild	0.55 (.27)	0.61	19
Moderate	0.34 (.24)	0.44	18
Severe	0.14 (.53)	0.25	42

Table 3: Time trade-Off Scores

	Mean (SD)	Median	N
Unconscious	-0.46 (.36)	-0.40	42
33333	-0.43 (.44)	-0.50	42
Very Mild	0.78 (.33)	0.93	43
Mild	0.54 (.43)	0.60	19
Moderate	0.09 (.49)	0.11	18
Severe	-0.002 (.49)	0.00	43

Within-subject disparities in rating a state better than/worse than dead

Twenty- nine respondents ranked and scored at least one state above death on the VAS but subsequently rated that state as WD in the TTO. One possible interpretation is that these respondents simply made the 'wrong' choice at the initial WD/BD decision node. All 43 respondents were asked to explain their decision at this point in all their TTO questions and, with the exception of the replies of 2 respondents[7], the reasons given were entirely consistent with the choices made. When asked whether their VAS answer meant that they personally

preferred 10 years in that health state to immediate death (question 14.i), 12 of the 29 said that it did, 14 said that it did not whilst 3 did not know.

In order to gain a clearer picture of what was going on during the VAS, it is necessary to look more closely at how respondents treated the 'immediate death' state in this exercise. Eighteen of the 29 had death at the bottom of the scale (though not necessarily at zero). Of this subgroup, 14 respondents made comments which seemed to imply that for them death 'automatically' went to the bottom of the scale. These fell into one of two categories; 5 making references to death as 'having to be' worst or bottom and 9 making references to death in the chronological order of events i.e. being last or final. Whilst a typical comment from a respondent in the former group would be 'death has got to be the worst for everybody doesn't it?', respondents in the latter group tended to describe their scale as a sort of natural progression through time with death necessarily being the last state. One comment which made this particularly explicit was the following ;

" then the last one where you are confined to bed ...and then you come to UN and I suppose death follows doesn't it after that?"

Of the 18 respondents with death at the bottom of the scale 7 talked about their VAS values in terms of percentages, offering some support for the finding of Morris & Durand (1989) that VAS scales can be interpreted as percentages of fitness scores[8].

Respondents unwilling to trade- off any time at all to avoid a health state

Fifteen respondents refused to trade- off even a few days or weeks in order to avoid a health state which they had placed below 11111 on the VAS. All 15 confirmed (question 14.m) that their VAS response *did* mean that they considered 10 years in that state to be worse than 10 years in 11111. They did not, however, seem to translate this into a willingness to trade-off time to avoid that state. The predominant message from these respondents was that, as long as they could cope with the state in question, they would not consider giving up any of the 10 years to avoid it. Consider two examples of comments made by such respondents :

" This (11112) *can be controlled...I mean it's not a show stopper. It has to be less than AP* (11111) *but only slightly less... its not worth giving up time for"*

or

" Of course I would rather have AP (11111), *anybody would, but I could cope with this* (11121). *If I could have AP I would have it but I can put up with this- I would not lose my life because of a bit pain."*

Two of the 15 respondents (both under 40) who were unwilling to give up any of the 10 years did indicate that they would be willing to give up some time *at the end of their life* (question 14.p).

Valuations and Age

As in the main study, respondents in the 60+ age group gave lower TTO valuations to the severe states than the other age groups : Table 14 in Appendix 3 gives the scores for the two core states UN and 33333. Whilst the life expectancy argument seemed to offer an artefact explanation for this, no respondent said directly that they did not expect to live for 10 years[9]. Tables 4 & 5 show that there were 12 cases (out of 79) where respondents switched a 'for 10 years' BD decision to a 'for rest of life' WD decision , or vice versa. In only 2 of these 12 cases (both involving respondents aged under 60) was age or life expectancy used as an explanation of the 'for rest of your life' choice.

Table 4 : Respondents changing BD decision to WD when TTO scenario was for rest of life (question 14.c)

	18-39	**40-59**	**60+**	**Total**
yes	1	2	4	7
no	14	11	7	32
Total	15	13	11	

Table 5 : Respondents changing WD decision to BD when TTO scenario was for rest of life -(question 14.e.)

	18-39	40-59	60+	Total
yes	1	2	2	5
no	14	10	11	35
Total	15	12	13	

One possible real explanation for the lower TTO scores for severe health states is that older respondents are more worried about becoming a burden to their families. Table 6 shows the number of respondents in each age group mentioning this in the TTO and that, if anything, a higher proportion (though not significantly so at the 10% level) of younger respondents mentioned becoming a burden.

Table 6 : No of respondents who mentioned being a burden in TTO by age

	18-39	40-59	60+	Total
Yes	11	8	8	27
No	4	6	6	16
Total	15	14	14	

Whilst there was no strong evidence to support an artefact explanation on the grounds of life expectancy, it did emerge that older respondents are less likely than younger ones to find the WD scenario plausible. Whilst no respondent in the 18-39 age group questioned whether they would return to full health after a number of years in the target health state, half of the respondents in the 60+ age group said that they thought this was impossible. Consider one comment from a 78 year old :

"This just does not happen , you have more problems as you get older, you do not expect to get better"

or another from an 80 year old :

"After this (33333) *you could not possibly get better...you would never get to the pink state* (11111)"

Table 7 contains only those respondents saying the scenario was implausible as they answered the TTO questions or at the general 'what went through your mind' question 14g[10]. A chi-squared test shows that finding the scenario implausible is not independent of age ($p < 0.05$). The mean score for state 33333 of those 10 respondents saying the scenario was implausible is -0 .71 as opposed to -0.36 for the remainder, indicating that this particular artefact may have a considerable influence on valuations.

Table 7 : No of respondents who said that the WD TTO scenario was implausible by age

	18-39	40-59	60+	Total
Yes	0	3	7	**10**
No	15	11	7	**33**
Total	15	14	14	**43**

Valuations and Gender

For states UN and 33333 the scores from females are significantly ($p < 0.10$) lower than for males. One possible explanation for this finding is that women are more worried than men about becoming a burden to their family. However, a breakdown of respondents in Table 6 does not yield any gender difference: of the 27 respondents who mentioned being a burden in the TTO 12 were male and 15 female. There may, however, be some evidence to support a strength of preference argument; 6 of the 7 respondents who mentioned being a burden during the ranking and VAS exercises were female[11]. If the strength of preference argument held we would expect the gender difference to be more marked in the mean scores of those respondents who said that they did not wish to be a burden (figures in brackets in Table 8) than in the sample as a whole. Table 8 shows this is true for UN (but only just) whilst the gender gap narrows considerably for state 33333.

Table 8 : Mean TTO scores for 33333 and UN by gender

	Male		Female	
Uncon	-0.33	(-0.32)	-0.56	(-0.58)
33333	-0.35	(-0.45)	-0.57	(-0.55)

There is no strong evidence here to support the hypothesis that women give lower TTO scores than men to the more severe states because they are more concerned about becoming a burden to their family.

Re- examination of the age disparity of TTO scores in the main data set.

In light of the evidence that the WD TTO scores of the elderly may be contaminated by some artefact, those 20 states in the main study with significantly lower scores for this age group than for the 18-59 age group were re-examined. For these states some combination of the following factors must be at play :

a. States received lower BD valuations from the 60 + age group
b. States were rated as being WD more often by the 60 + age group
c. States received lower WD valuations from the 60 + age group.

Whilst the implausibility argument may offer a partial explanation for c, there is no evidence in this study to suggest there is anything other than a real explanation for a (had life expectancy proved an important factor we would have expected this to contaminate BD scores also). If older respondents are more likely to get the BD/WD decision 'wrong', then there may be an artefact explanation for b. If this were true we would expect the proportions of the elderly rating the *very mild states* as WD to be different from those in other age groups. However, for only 1 of the 5 very mild states was this difference significant and the numbers involved were very small.[12]

Table 15 shows that for 12 of the 20 states with lower 60+ valuations, this age group was more likely to rate that state as WD *and go on to* give significantly lower WD valuations for that state. ($p < 0.01$) For 3 states a significantly greater ($p < 0.01$) number of older

respondents rated it as WD *but did not* go on to give significantly lower WD valuations. For 4 states the number of elderly rating it WD was not significantly different *but they did* go on to give significantly lower ($p < 0.01$) WD valuations for that state.[13] No state had significantly different BD valuations ($p< 0.01$). The manner in which the overall scores of these states have been broken down in order to measure the relative influence of each of the 3 factors listed above is demonstrated below using state 13332 as an example.

Table 9 shows that 42% of the 18-59 age group rated state 13332 as BD (this includes equal to death), 58% rating it as (strictly) WD. The mean BD and WD scores for this age group are 0.357 and -0.562 respectively, giving an overall 18-59 score of -0.18. 28% of 60+ age group rated state 13332 as BD, 72% rating it as strictly WD. The mean BD and WD scores for this age group are 0.452 and -0.660 respectively, giving an overall 60+ score of -0.35. As we have reason to believe that the 60+ WD mean score, and this score alone, contains some artefact, we can isolate the influence this has on the overall score for state 13332. Table 9 shows the result of replacing the 60+ WD score with that of the younger age group. This allows an upper bound to be placed on the influence of artefact on the overall valuation.

Table 9 : Adjustment of 60 + scores for possible artefact

	Mean BD score	**weight**	**Mean WD score**	**weight**	**Mean Total Score**
18-59 scores	0.357	0.42	-0.562.	0.58	-0.18
60+ scores	0.452	0.28	-0.660	0.72	-0.35
'Adjusted' 60+ scores	0.452	0.28	-0.562	0.72	-0.28

The observed difference is -0.18 - (-0.35) = 0.17 The difference which is due to factors thought to be real is -0.18 - (-0.28) = 0.10. The difference due to that factor which may be subject to artefact is -0.35 - (-0.28) = 0.07. We do not know how much of the 0.07 is real and how much artefact but we can say that 0.10 and 0.07 respectively give the 'minimum real'

and 'maximum artefact' effects on the total score for that state. These figures are given in Table 16 in appendix 5 for all 20 states where significantly different scores were given by the under and over 60,s. Broadly speaking this shows that the potential effect of artefact is greatest for the most severe of those 20 states, where the proportion of respondents who consider the state to be WD is high in *both* age groups.

Discussion

The results presented in this paper suggest that the finding in the MVH study, that more states are considered to be worse than dead in the TTO method than on the VAS, is a robust one. With respect to either spending 10 years in a health state or dying immediately we would expect the two assessment methods to 'reveal' the same ordering of preferences. However, Behavioural Decision Theory suggests that preferences are often constructed, rather than revealed (see Payne and Bettman (1992) for an overview). Most decision problems are solved without a complete search of information, but, rather, simplifying strategies are used, the adoption of which may result in reversals of preference across response modes. Svenson (1979) shows that as the information available increases the amount used decreases. Specifically, as the number of alternatives increases respondents switch to simpler choice strategies.

One way in which the choice can be made to appear simpler is by the 'editing out' of information common to all alternatives. As the duration of the health states was constant (10 years) and less than a third of respondents mentioned time at all during either the ranking or VAS, it seems possible there was a certain amount of this going on.[14] Likewise, only 7 respondents mentioned the effect the health state would have on their family during the Ranking and VAS whilst 27 did so during the TTO. This suggests that respondents were able to consider a wider range of issues in the pairwise choice TTO exercise than when faced with 7 alternatives at once (15 in the main study) in the VAS.

There may also be explanations rooted in Behavioural Decision Theory for those respondents who were unwilling to trade-off any time at all in order to avoid a health state they clearly stated they did not think was as good as full health. In the TTO scenario respondents are

given 10 years in the target health state and asked if they will give up any of this time in order to achieve state 11111. Thus, they are asked to weigh up the prospect of a loss (period of time) in order to receive a gain (improved quality of life). In Prospect Theory, losses are weighted more heavily than gains so an asymmetry arises in the value function around the reference point (see Kahneman and Tversky 1979). This would result in a disproportionately large gain in terms of improved health status being required as compensation for the loss of some time. This may explain why the health state had to be below some 'tolerance level' before they would be willing to give up even a few days to avoid it.

Although the possibility that some respondents may find the WD TTO scenario implausible had not been considered prior to conducting the present study, it is not difficult to see why this may be the case. For certain states the WD scenario asks respondents to believe that they will be confined to bed for 5 years after which time they will return to full health. Whilst younger respondents may be able to imagine a lengthy period of illness from which they will eventually recover this may be much harder for older respondents. Even more than this however, the scenario is asking some older respondents, who are in less than full health now, to believe that there will be an *improvement* in their health status following the period of illness.

One way to avoid this problem is to place the years in good health *before* the years in the target health state in the WD scenario, as formulated by Torrance (1986). The potential problem with this WD scenario is that respondents might adopt an 'I'll have the good years and then jump in front of a train' attitude. This would result in biasing the valuations of WD states upwards. It would seem that valuations derived using either of the two formulations of the WD scenario are, at least potentially, subject to the influence of artefact.

Conclusion

The broad pattern of responses uncovered in the main study have more or less been replicated here. Thus, at least some evidence has been uncovered on each of the four key issues this study set out to examine. Regarding the first question; the majority of respondents who rated

a state BD on VAS but WD on TTO indicated that it was their VAS response which did not truly reflect their preference for spending 10 years in that state compared with dying immediately. A number of factors arose which each seem to offer a partial explanation for this. A minority of respondents were clearly interpreting their VAS as a sort of percentage of functioning scale. In addition, respondents did not appear to consider either the duration of the state or its likely affect on them and their family. That a number of health states are being assessed simultaneously during this exercise offers a plausible explanation of this finding. This is not to say that the actual scores generated by TTO are more valid than VAS valuations. The validity of the assumptions underpinning the derivation of TTO scores would have to be further tested in order to arrive at this conclusion.

The evidence from this study suggests that 'no trade-off at all' responses were not generally being used to approximate some short length of time respondents would be willing to give up to avoid the health state. Rather, there is evidence of the existence of a 'threshold of tolerability' below which states would have to fall before some respondents would be willing to give up even a few days.

There was no evidence uncovered here to suggest that the observation that older respondents give lower TTO scores to severe health states is *predominantly* artefact. Whilst older respondents are less likely to accept the WD TTO scenario, for the majority of states, the main factor contributing to their lower TTO scores is that they rate a state as WD more often than younger respondents. This appears to be a genuine reflection of the fact that older respondents are less prepared to live for the next 10 years in a diminished health state. There was no convincing evidence here that this is due to the fact that the elderly are more concerned than younger respondents about becoming a burden to their families.

With respect to the gender differences, this study has uncovered no compelling explanation of why females assign lower TTO valuations to the more severe health than males. This remains an issue which warrants further exploration.

Of course, it would be unwise to draw too many firm conclusions from a relatively small sample. However, this study has offered some tentative explanations of what might lie

behind some of the findings uncovered in the MVH study. Such explanations would have to be verified elsewhere, preferably with a larger data set, but, this study has shown the ways in which quantitative data can be enhanced by qualitative research.

Footnotes

[1] They were first asked to place the card they had ranked as best on the scale and then to do likewise with the card they had ranked worst. They were then asked if they felt any of the remaining cards would come roughly half way between the best and the worst and if so to locate this state on the scale. If there was such a halfway card this 'bisection' procedure was repeated first using the top half of the scale followed by the bottom half. They were asked to locate the remaining health states somewhere on the scale such that states they felt were are almost the same would have scores that were close together whilst those they felt were very different would have scores which were further apart.

[2] In this process respondents were first asked to consider whether they would prefer 5 years in 11111 to 10 years in the target health state (H). Whenever respondents indicated that they preferred the 5 years in 11111 (or the 10 years in H) the question was repeated with the number of years in 11111 being reduced (or increased) by one year. This process continued until either a point of indifference, X, was identified directly or respondents switched from one option to the other in two adjacent years. In the latter case respondents were asked whether they preferred 'something and 6 months' in 11111 to 10 years in H.

[3] Raw VAS scores are adjusted in order to set 11111 equal to 1 and 'Immediate death ' equal to zero. For states that are rated better than dead on the TTO there is no need for further adjustment since the method implicitly assigns a score of 1 to full health and zero to death. The score is therefore simply the number of years (X) in state 11111 the respondent considers equivalent to 10 years in the target state divided by 10. For states that are rated worse than dead, the score is given by the following formula: $T_{(h)} = -\frac{X}{10-X}$

Where $T_{(h)}$ = the TTO score for state h
X = the number of years spent in good health.
This produces scores which range from -0.026 (X = 0.25) to -39 (X = 9.75). Following Poulton (1989), these valuations have been transformed by a process that produces numbers that range from 1 to -1, so that the overall scores work within a range that has an equal distance from death in both the positive and negative directions. This transformation makes the WD score simply ; - X/10. (See MVH report for details)

[4] The pattern depicted in figure 1 clearly does not take the form of power function which is often assumed to represent the relationship between VAS and TTO scores. This follows the finding of Torrance (1976) that TTO scores were systematically higher than VAS scores. One justification for the use of a power function has its origins in the psychometric scaling literature in which the difference between a category scale and a magnitude scale can be described as a power function.

[5] Respondents were asked whether they would be willing to give up a few weeks or months at this stage.

[6] In fact the values for certain states tended to rise in the middle aged groups then fall sharply in the over 60's.

[7] The exception to this was a couple of elderly respondents who seemed to get a bit 'locked in' to saying that they would rather die immediately and said this even for the very mild states.

[8] An additional 5 respondents who did not have death at the bottom of their scale also talked about their scale in terms of percentages.

[9] Some comments were made which may be construed as references to limited life expectancy i.e. 'you take one day at a time at my age'. In addition two respondents

Footnotes

(one under 60) said that they did not expect to have very long lives when asked the 'for the rest of your life' questions.

[10] An additional 4 respondents, 3 in the 40-59 age group and 1 in the 60+ group, said the idea had crossed their mind when they were asked the specific "Did you think about whether you would actually get the good years" question (14h). There is a danger that these respondents were merely reacting to a suggestive question. Including these respondents does not change the result that finding the scenario implausible is not independent of age.

[11] This is a significantly greater number (at the 5% level) than would be expected if mentioning being a burden in the ranking and scaling was independent of gender (a chi-squared of 3.89).

[12] For state 12111 4% of the over 60's rated it as WD compared to 1.6% of under 60,s.

[13] There were an additional 9 states, predominantly in the milder groups, where the older respondents were more likely to rate them worse than death but whose overall valuations were not significantly different. A further 5 states had significantly lower WD scores for the older respondents whose overall valuations were not significantly different.

[14] As few respondents changed their ordinal ranking between the ranking and scaling exercises, a better/worse than death VAS response usually had its origins in the ranking exercise. As time plays such a fundamental role in the TTO, it would be meaningless to make a comparison of this nature between the two response modes.

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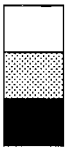
Appendix 1

Mobility

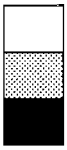


No problems in walking about

Some problems in walking about

Confined to bed

Self- Care

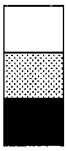


No problems with self care

Some problems with washing or dressing self

Unable to wash or dress self

Usual Activities

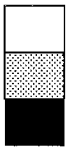


No problems with performing usual activities

Some problems with performing usual activities

Unable to perform usual activities

Pain & Discomfort

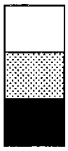


No pain or discomfort

Moderate pain or discomfort

Extreme pain or discomfort

Anxiety & Depression



Not anxious or depressed

Moderately anxious or depressed

Extremely anxious or depressed

Core	Very Mild	Mild	Moderate	Severe
11111	11112	12211	13212	33232
33333	11121	11133	32331	23232
Unconscious	11211	22121	13311	23321
Death	12111	12121	22122	13332
	21111	22112	12222	22233
		11122	21323	22323
		11312	32211	32223
		21312	12223	32232
		21222	22331	33321
		21133	21232	33323
		11113	32313	23313
		11131	22222	33212

Appendix 2

Table 10 : Main Study VAS TTO Scores for selected states

		VAS		TTO	
		Mean	Median	Mean	Median
21111	**(very mild)**	0.79	0.85	0.87	0.95
11122	**(mild)**	0.66	0.72	0.72	0.83
22222	**(moderate)**	0.45	0.50	0.50	0.63
22233	**(severe)**	0.12	0.17	-0.15	-0.28
Uncon	**Core**	-0.04	0.01	-0.41	-0.38
33333		-0.13	0.00	-0.54	-0.65

Results taken from tables 6.2 (p.143) and 7.2 (p.165) MVH First Report, Dolan et al (1994)

Table 11 : Main Study TTO scores for selected states by age

		18-39	40-59	60+
		Median	Median	Median
21111	**(very mild)**	0.93	0.98	0.99
11122	**(mild)**	0.80	0.93	0.83
22222	**(moderate)**	0.60	0.68	0.55
22233	**(severe)**	-0.18	-0.23	-0.36
Uncon	**Core**	-0.28	-0.38	-0.59
33333		-0.63	-0.63	-0.76

Results are taken from table 7.4 (p.167) MVH First Report, Dolan et al (1994)

Table 12 : Main study TTO scores for selected states by gender.

		Male	Female
		Median	Median
21111	**(very mild)**	0.95	0.95
11122	**(mild)**	0.88	0.83
22222	**(moderate)**	0.63	0.60
22233	**(severe)**	0.00	-0.38
Uncon	**Core**	-0.28	-0.45
33333		-0.60	-0.70

Results are taken from table 3 (Appendix 3) Dolan 1994

In tables 10,11 and 12 have been chosen arbitrarily - full sets of results, covering all 43 health states, are given in each case in the referenced material.

Appendix 3

Table 13: VAS Scores by Age

		18-39	40-59	60+
Very Mild	Mean	0.85	0.79	0.77
	Median	0.89	0.88	0.86
UN	Mean	0.05	0.04	-0.03
	Median	0.05	0.01	0.08
33333	Mean	-0.10	-0.01	-0.01
	Median	0.00	-0.02	0.11

Table 14: Time trade-off Scores by Age

		18-39	40-59	60+
Very Mild	Mean	0.85	0.86	0.62
	Median	0.90	0.93	1.00
UN	Mean	-0.20	-0.51	-0.69
	Median	-0.10	-0.50	-0.73
33333	Mean	-0.36	-0.44	-0.60
	Median	-0.38	-0.58	-0.65

Appendix 4

Table 15 : Scores of 60+ group different from 18-59 group					
	18-59	**60+**	**BD Scores**	**% WD**	**WD scores**
13311	0.39	0.18		✓	
12223	0.25	0.11			✓
32211	0.22	-0.06		✓	✓
23321	0.18	0.02		✓	
22323	0.09	-0.10			✓
33212	0.06	-0.22		✓	✓
32313	-0.10	-0.28		✓	✓
21133	-0.03	-0.16		✓	✓
23232	-0.03	-0.24		✓	✓
23313	-0.03	-0.16		✓	✓
33321	-0.09	-0.24		✓	
22233	-0.11	-0.24			
32223	-0.12	-0.34		✓	✓
32232	-0.17	-0.38		✓	✓
13332	-0.18	-0.35		✓	✓
32331	-0.21	-0.41		✓	✓
33232	-0.29	-0.43			✓
33323	-0.33	-0.52		✓	✓
UN	-0.35	-0.54		✓	✓
33333	-0.52	-0.6			✓

* The mean scores shown in this table appear in table 7.7 on page 169 of MVH report.
* All differences are significant at ($p<.01$). Even at ($p<.10$) BD scores were significantly different for states 13332 and 23313 only.

Appendix 5

Table 16: Difference in scores of 18-59 and 60+ age groups			
	Observed difference	Min 'real'	Max 'artefact'
13311	0.21	0.18	0.03
12223	0.14	0.09	0.05
32211	0.28	0.22	0.06
23321	0.16	0.12	0.04
22323	0.19	0.10	0.09
33212	0.28	0.20	0.08
32313	0.18	0.10	0.08
21133	0.13	0.07	0.06
23232	0.21	0.14	0.07
23313	0.13	0.09	0.04
33321	0.15	0.11	0.04
22233	0.13	0.06	0.07
32223	0.22	0.15	0.07
32232	0.21	0.12	0.09
13332	0.17	0.10	0.07
32331	0.20	0.11	0.09
33232	0.14	0.04	0.10
33323	0.19	0.07	0.12
UN	0.19	0.03	0.16
33333	0.08	0.00	0.08

* The figures in the columns headed 'min real' and 'maximum artefact' are explained below table above.

That is the end of the first part of the interview. I would now like to ask you some more detailed questions about the responses you gave.

USING TWO CARDS CLOSEST TO DEATH, ABOVE AND BELOW

CODE LETTERS

I)	Better than death	
II)	Worse than death	

Can we just talk a little bit about those questions you have just answered. Each time we started with the pointer on zero like this (**side 1 -marker on zero**). This means that life A is immediate death.

IF ONLY I FILLED IN- 14.c. IF ONLY II FILLED IN- 14.e.

IF BOTH I & II FILLED IN ASK :
Depending on which card was down here (**life B**), you sometimes preferred life B to immediate death (**show them card I in life B**). When other cards were down here you preferred immediate death to life B (**show them card II in life B**).

GENERAL QUESTION:

14.a Concentrating on these two here-can you tell me what it is about this card which makes you prefer 10 years in this state (**card I**) to immediate death whilst you prefer immediate death to spending 10 years in this other state (**card II**)?.

SPECIFIC:

14.b If you had to choose one or more of the things listed on the cards which was (were) the most important factor(s) in making this decision which would you choose?

Tick any mentioned.

Walking about	
Self-care	
Usual Activities	
Pain	
Anxiety	

STILL WITH LIFE A ON ZERO- CARD I in LIFE B

14.c Now, if in life B, you were in this state for the rest of your natural life, rather than for 10 years, would you choose life A or life B.?

LIFE A	LIFE B	SAME

14.d Can you tell me why?

IF NO CARD II GO TO 14.m
LIFE A STILL ON ZERO-CARD II IN LIFE B :

14.e. Now, if in life B, you were in this state for the rest of your natural life, rather than for ten years, would you choose life A or life B.?

LIFE A	LIFE B	SAME

14.f Can you tell me why?

STILL WITH CARD II)

Now you said you felt the same about spending x years in this health state followed by 10-x years in this health state as you did about dying immediately. When the pointer is like this, you will have x years with these health problems here- you will then have 10-x years after these problems have gone. Life A means you have to go through these 'bad' years to get to these 'good' years later on. Immediate death means that you do not have to go through the 'bad' years but also of course that you do not get the 'good' years either.

GENERAL:

14.g Can you tell me what went through your mind when you thought about the prospect the 'bad' years followed by the 'good' years?

SPECIFIC:

14.h Did you think about whether you would actually get to the 'good' years for some reason or another ?.

YES	NO	Don't KNOW

ANY CARD RATED ABOVE DEATH IN VAS BUT WORSE THAN IN TTO:

III)	

IF NO CARD IN III- 14 m. IF CARD IN III ASK:

14.i Looking at this card here, I notice that you have put the line for this health state above the line for death. Did this mean that you personally preferred 10 years in this health state followed by death to immediate death ?

YES	NO	Don't KNOW

IF NO :

14j. Can you tell me what you had in mind when you put the line there?

GENERAL:

14.k In this survey, quite a few people have put states like this higher than death on this scale, but when using the board they said that they preferred immediate death - as you did. Could you tell me a little more about why you put this state higher than death on the scale but said that you preferred immediate death to this state on the board.?

SPECIFIC:

14.l Do you think that you took more notice of the 10 year time span in one exercise than the other?

Took more notice of time in VAS	Took more notice of time in TTO	Equally important to me in both exercises

USING ANY MILD STATE WHICH WAS PLACED BELOW 11111 ON VAS BUT FOR WHICH NO TIME WAS TRADED-OFF IN TTO.

IV)	

14m Can we look at some of these other states now. I notice that you put the line on the thermometer for this state (**IV**) below the line for the 'good' health state. Did this mean that for you personally 10 years in this state followed by death is definitely worse than 10 years in the 'good' health state followed by death ?

YES	NO	Don't KNOW

IF NO :

14 n Could you try to tell me what the position of that health state on the scale means to you?

GENERAL:

14o I notice that you did not give up any time at all to avoid this state on the board. We have noticed that quite a lot of people do as you did - placed some states below the 'good' health state on the scale but were not willing to give up any time at all to avoid that state on the board. Can you tell me a little more about why this might be the case?

SPECIFIC :

14p Imagine now that life A and life B each lasted for the rest of your life, rather than for 10 years. Would you be willing now to trade-off any time at all to avoid this state?

YES	NO	Don't KNOW

Figure 1: Main study VAS and TTO Scores

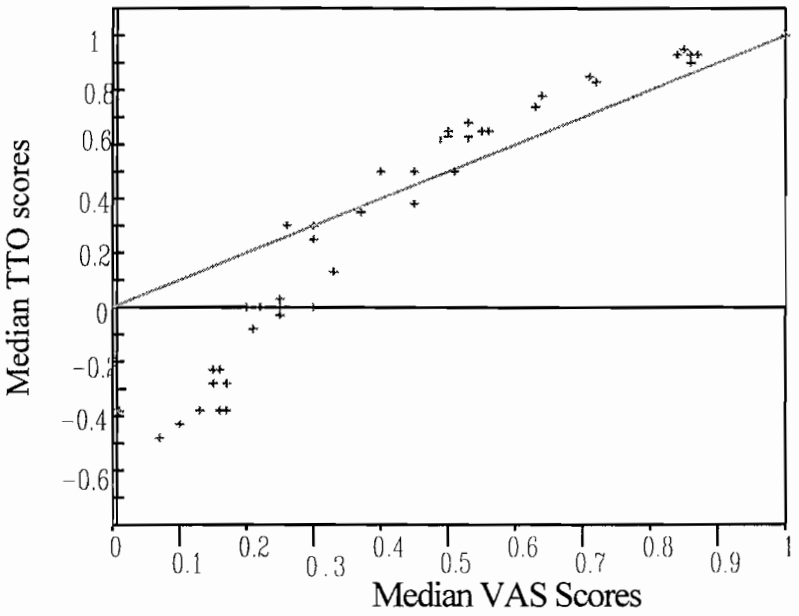


Figure 2 : Main study TTO scores by age group

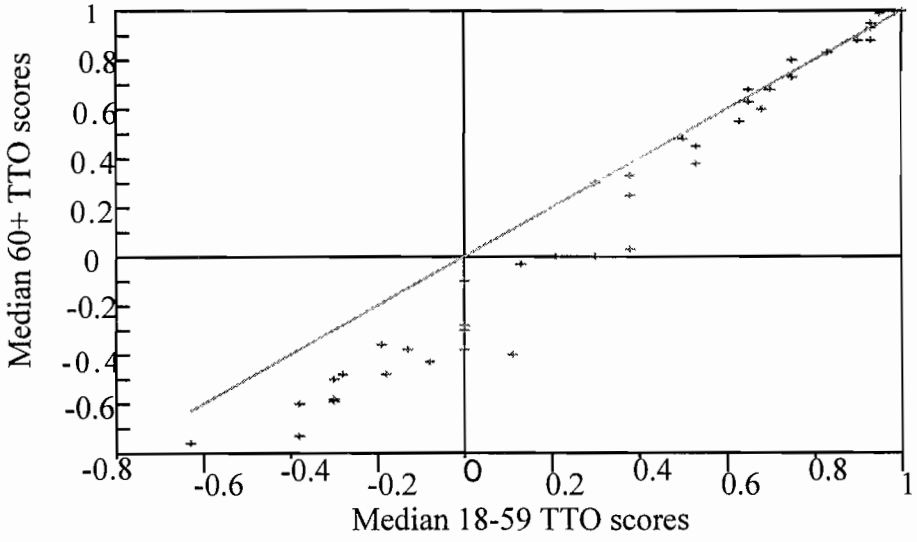


Figure 3 : VAS and TTO scores