

# **Patient Reported Outcome Measures (PROMs) in England**

*Update to reporting and case-mix adjusting hip and knee procedure data*

*Annex 3: Coefficients for primary knee replacement models*

### Annex 3: Coefficients for primary knee replacement models

Tables 3a – 3c below give the variables that were statistically significant at the 95% level from the first stage of the estimation process and their coefficients for predicting post operative (Q2) scores for the three primary knee replacement indicators.

<b>EQ 5D Casemix Adjustment Model (Primary)</b>			
<b>Variable</b>	<b>Definition</b>	<b>Variable name in PROMs/HES data set</b>	<b>Coefficient</b>
q1_eq5d	pre-operative eq5d index score	q1_eq5d_index	0.188
startage	age at start of episode	startage	0.016
agesq	age at start of episode squared	derived from 'startage'	0.000
sex	female = 1 male = 0	dummy derived from 'sex'	-0.008
ethother	takes value 1 if other, 0 if not	dummy derived from 'ethnos'	0.000
ethnotgiven	takes value 1 if ethnicity not given, 0 if not	dummy derived from 'ethnos'	0.022
imd04	index of multiple deprivation 2010	imd04	-0.001
q1_assisted	takes value 1 if patient was assisted in filling in q1	q1_assisted	0.010
q2_assisted	takes value 1 if patient was assisted in filling in q2	q2_assisted	-0.089
q1_living arrangements2	takes value 1 if patient lives alone	q1_living_arrangements2	-0.007
q1_living_arrangements 4	takes value if patient has 'other' living arrangements	q1_living_arrangements4	-0.056
q1_disability1	takes value 1 if patient has disability at Q1	q1_disability1	-0.086
heart_disease	takes value 1 if patient has ever had heart disease	derived from 'heart_disease'	-0.022
stroke	" stroke	" stroke	-0.036
circulation	" circulation disease	" circulation disease	-0.064
lung_disease	" lung disease	" lung disease	-0.023
diabetes	" diabetes	" diabetes	-0.020
nervous_system	" nervous system	" nervous system	-0.049
depression	" depression	" depression	-0.123
rheum_arthritis	takes value 1 if patient's primary diagnosis is rheumatoid arthritis	diag_01 = M059, M069	-0.040
gen_arthritis	takes value 1 if patient's primary diagnosis is general arthritis	diag_01 = L405, M139, M159	-0.028
_cons	constant	n/a	0.101

Table 3a: Descriptions and coefficients of variables included in the primary knee replacement EQ-5D index statistical prediction model for PROMs case-mix adjustment.

<b>EQ5D VAS Casemix Adjustment Model (Primary)</b>			
<b>Variable</b>	<b>Definition</b>	<b>Variable name in PROMs/HES data set</b>	<b>Coefficient</b>
q1_vas	pre-operative eq5d vas score	q1_eq5d_health_index	-0.076
q1_vas_sq	pre-operative eq5d vas score squared	derived from q1_eq5d_health_index	0.003
startage	age at start of episode	startage	0.950
agesq	age at start of episode squared	derived from 'startage'	-0.006
sex	female = 1 male = 0	dummy derived from 'sex'	-1.101
ethasian	takes value 1 if asian, 0 if not	dummy derived from 'ethnos'	-2.194
ethnotgiven	takes value 1 if ethnicity not given, 0 if not	dummy derived from 'ethnos'	0.920
imd04	index of multiple deprivation 2010	imd04	-0.076
q2_assisted	takes value 1 if patient was assisted in filling in q2	q2_assisted	-6.136
q1_living_arrangements_2	takes value 1 if patient lives alone	q1_living_arrangements_2	-0.457
q1_living_arrangements_4	takes value if patient has 'other' living arrangements	q1_living_arrangements_4	-4.024
q1_disability1	takes value 1 if patient has disability at Q1	q1_disability1	-5.896
heart_disease	takes value 1 if patient has ever had heart disease	derived from 'heart_disease'	-2.332
high_bp	" high blood pressure	" high blood pressure	-0.466
stroke	" stroke	" stroke	-2.709
circulation	" circulation disease	" circulation disease	-4.414
lung_disease	" lung disease	" lung disease	-3.606
diabetes	" diabetes	" diabetes	-1.997
kidney_disease	" kidney disease	" kidney disease	-2.623
nervous_system	" nervous system disease	" nervous system disease	-6.517
cancer	" cancer	" cancer	-1.319
depression	"depression	"depression	-5.709
rheum_arthritis	takes value 1 if patient's primary diagnosis is rheumatoid arthritis	diag_01 = M059, M069	-3.533
_cons	constant	n/a	34.960

Table 3b: Descriptions and coefficients of variables included in the primary knee replacement EQ-5D Visual Analogue Scale statistical prediction model for PROMs case-mix adjustment.

<b>Oxford Score Casemix Adjustment Model (Primary)</b>			
<b>Variable</b>	<b>Definition</b>	<b>Variable name in PROMs/HES data set</b>	<b>Coefficient</b>
kr_q1_score	pre-operative oxford knee score	kr_q1_score	0.710
q1_score_sq	pre-operative oxford knee score squared	derived from 'kr_q1_score'	-0.009
startage	age at start of episode	startage	0.586
agesq	age at start of episode squared	derived from 'startage'	-0.004
sex	female = 1 male = 0	dummy derived from 'sex'	-0.547
ethasian	takes value 1 if asian, 0 if not	dummy derived from 'ethnos'	-2.141
ethblack	takes value 1 if black, 0 if not	dummy derived from 'ethnos'	-1.378
ethnotgiven	takes value 1 if ethnicity not given, 0 if not	dummy derived from 'ethnos'	0.636
imd04	index of multiple deprivation 2010	imd04	-0.054
q1_assisted	takes value 1 if patient was assisted in filling in q1	q1_assisted	0.618
q2_assisted	takes value 1 if patient was assisted in filling in q2	q2_assisted	-2.394
q1_disability1	takes value 1 if patient has disability at Q1	q1_disability1	-2.387
heart_disease	takes value 1 if patient has ever had heart disease	derived from 'heart_disease'	-0.908
stroke	" stroke	" stroke	-1.161
circulation	" circulation	" circulation	-2.858
lung_disease	" lung disease	" lung disease	-0.675
diabetes	" diabetes	" diabetes	-1.176
depression	" depression	" depression	-2.187
rheum_arthritis	takes value 1 if patient's primary diagnosis is rheumatoid arthritis	diag_01 = M059, M069	2.850
gen_arthritis	takes value 1 if patient's primary diagnosis is general arthritis	diag_01 = L405, M139, M159	-0.678
_cons	constant	n/a	5.302

Table 3c: Descriptions and coefficients of variables included in the primary knee replacement Oxford Score statistical prediction model for PROMs case-mix adjustment.