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

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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.

EQ 5D Casemix Adjustment Model (Primary)			
Variable	Definition	Variable name in PROMs/HES data set	Coefficient
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_arrangements4	takes value if patient has 'other' living arrangments	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.

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EQ5D VAS Casemix Adjustment Model (Primary)			
Variable	**Definition**	**Variable name in PROMs/HES data set**	**Coefficient**
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 arrangments	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.

Oxford Score Casemix Adjustment Model (Primary)			
Variable	**Definition**	**Variable name in PROMs/HES data set**	**Coefficient**
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.

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