# S3 Appendix: Additional Results

Appendix Table 3.1 Analyses of admissions with a primary diagnosis of dementia: odds ratios for base and sensitivity analysis models

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **M1** | **M2** | **M3** | **M4** | **M5** |
|  | (N=31,120) | (N=31,120) | (N=31,120) | (N=33,429) | (31,120) |
| QOF achievement rate | 1.001 | 1.001 | 1.001 | 1.001 | 1.001 |
| *Predisposing factors* |  |  |  |  |  |
| Age | 1.022\*\*\* | 1.022\*\*\* | 1.022\*\*\* | 1.021\*\*\* | 1.022\*\*\* |
| Male | 0.857\*\*\* | 0.861\*\*\* | 0.860\*\*\* | 0.854\*\*\* | 0.857\*\*\* |
| White | 0.992 | 0.988 | 0.994 | 1.001 | 0.992 |
| *Need factors* |  |  |  |  |  |
| Alzheimer’s disease | 1.191\*\*\* | 1.160\*\*\* | 1.180\*\*\* | 1.200\*\*\* | 1.191\*\*\* |
| Vascular | 1.192\*\*\* | 1.155\*\*\* | 1.181\*\*\* | 1.173\*\*\* | 1.192\*\*\* |
| Urinary incontinence | 1.241\*\*\* | 1.214\*\* | 1.229\*\*\* | 1.293\*\*\* | 1.241\*\*\* |
| Faecal incontinence | 1.276\*\* | 1.290\*\* | 1.263\*\* | 1.219\*\* | 1.276\*\* |
| Fall | 1.164\*\*\* | 1.177\*\*\* | 1.185\*\*\* | 1.164\*\*\* | 1.164\*\*\* |
| Hip fracture | 1.477\*\* | 1.340 | 1.392\* | 1.516\*\* | 1.478\*\* |
| Cancer | 1.380\*\*\* | 1.359\*\*\* | 1.373\*\*\* | 1.362\*\*\* | 1.380\*\*\* |
| Myocardial infarction | 0.985 | 1.000 | 0.993 | 0.974 | 0.985 |
| Peripheral vascular disease | 0.849 | 0.838 | 0.848 | 0.869 | 0.849 |
| Cerebrovascular disease | 1.103\*\* | 1.131\*\*\* | 1.120\*\* | 1.111\*\* | 1.103\*\* |
| Delirium | 1.044 | 0.999 | 1.016 | 1.052 | 1.044 |
| Senility | 1.298\*\*\* | 1.282\*\*\* | 1.237\*\*\* | 1.277\*\*\* | 1.298\*\*\* |
| Total diagnoses | 1.125\*\*\* | 1.128\*\*\* | 1.130\*\*\* | 1.123\*\*\* | 1.125\*\*\* |
| *Enabling factors* |  |  |  |  |  |
| % carers 1 to 19 h/w | 1.035\*\*\* | 1.016 | 1.014 | 1.033\*\*\* | 1.035\*\*\* |
| % carers 20 to 49 h/w | 0.915\* | 0.909\*\* | 0.915\* | 0.917\* | 0.915\* |
| % carers >=50 h/w | 0.933\*\*\* | 0.939\*\* | 0.933\*\*\* | 0.936\*\*\* | 0.933\*\*\* |
| % pop 60+ living alone | 0.996 | 0.996 | 0.999 | 0.996 | 0.996 |
| % guarantee credit | 0.989\*\*\* | 0.995 | 0.995\* | 0.988\*\*\* | 0.989\*\*\* |
| % saving credit | 1.019\*\* | 1.017\*\* | 1.015\* | 1.021\*\*\* | 1.019\*\* |
| % guarantee & saving credit | 1.018\*\*\* | 1.011\*\* | 1.011\*\* | 1.019\*\*\* | 1.018\*\*\* |
| CH Beds/100 pop 60+ | 1.011 | 1.012 | 0.993 | 1.008 | 1.011 |
| Urban | 1.062 | 1.046 | 1.070 | 1.069 | 1.063 |
| *Other* |  |  |  |  |  |
| Year=2007/08 | 0.953 | 0.955 | 0.955 | 0.970 | 0.952 |
| Year=2008/09 | 0.931 | 0.931 | 0.926 | 0.944 | 0.930 |
| Year=2009/10 | 0.854\*\*\* | 0.846 | 0.833\*\*\* | 0.864\*\*\* | 0.854\*\*\* |
| Year=2010/11 | 0.668\*\*\* | 0.656 | 0.662\*\*\* | 0.689\*\*\* | 0.667\*\*\* |

Abbreviations: M1: Model 1; M2: Model 2 (PCT fixed effects included); M3: Model 3 (Hospital fixed effects included); M4: Model 4 (multiple spells included); M5: Model 5 (quality measured by underlying achievement); OR: Odds Ratio; QOF, Quality and Outcomes Framework

\* p< 0.1, \*\* p < 0.05, \*\*\* p < 0.01

Appendix Table 3.2 Analyses of admissions for ambulatory care sensitive conditions: odds ratios for base and sensitivity analysis models

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **M1** | **M2** | **M3** | **M4** | **M5** |
|  | (N=139,267) | (N=139,267) | (N=139,267) | (N=195,158) | (N=139,267) |
| QOF achievement rate | 0.998\*\*\* | 0.998\*\* | 0.999\*\* | 0.999\*\* | 0.998\*\* |
| *Predisposing factors* |  |  |  |  |  |
| Age | 1.025\*\*\* | 1.025\*\*\* | 1.026\*\*\* | 1.026\*\*\* | 1.025\*\*\* |
| Male | 0.875\*\*\* | 0.879\*\*\* | 0.877\*\*\* | 0.879\*\*\* | 0.875\*\*\* |
| White | 1.094\*\*\* | 1.083\*\*\* | 1.076\*\*\* | 1.107\*\*\* | 1.094\*\*\* |
| *Need factors* |  |  |  |  |  |
| Alzheimer disease | 1.040\* | 1.023 | 1.033 | 1.083\*\*\* | 1.040\* |
| Vascular | 1.097\*\*\* | 1.078\*\*\* | 1.092\*\*\* | 1.134\*\*\* | 1.096\*\*\* |
| Urinary incontinence | 1.230\*\*\* | 1.248\*\*\* | 1.244\*\*\* | 1.269\*\*\* | 1.231\*\*\* |
| Faecal incontinence | 1.324\*\*\* | 1.332\*\*\* | 1.327\*\*\* | 1.326\*\*\* | 1.324\*\*\* |
| Fall | 1.196\*\*\* | 1.203\*\*\* | 1.206\*\*\* | 1.202\*\*\* | 1.196\*\*\* |
| Hip fracture | 1.443\*\*\* | 1.455\*\*\* | 1.467\*\*\* | 1.462\*\*\* | 1.444\*\*\* |
| Cancer | 1.054 | 1.059 | 1.054 | 1.064 | 1.053 |
| Myocardial infarction | 1.106\* | 1.104\* | 1.092\* | 1.075 | 1.106\* |
| Peripheral vascular disease | 0.867\*\*\* | 0.871\*\*\* | 0.869\*\*\* | 0.898\*\*\* | 0.866\*\*\* |
| Cerebrovascular disease | 1.253\*\*\* | 1.255\*\*\* | 1.257\*\*\* | 1.247\*\*\* | 1.253\*\*\* |
| Delirium | 1.215\*\* | 1.249\*\*\* | 1.250\*\*\* | 1.231\*\*\* | 1.214\*\* |
| Senility | 1.203\*\*\* | 1.192\*\*\* | 1.167\*\*\* | 1.198\*\*\* | 1.203\*\*\* |
| Total diagnoses | 1.108\*\*\* | 1.108\*\*\* | 1.108\*\*\* | 1.105\*\*\* | 1.108\*\*\* |
| ACSC: Acute (*reference*) |  |  |  |  |  |
| ACSC: Chronic | 0.710\*\*\* | 0.710\*\*\* | 0.708\*\*\* | 0.715\*\*\* | 0.710\*\*\* |
| ACSC: Vaccine | 1.090\*\*\* | 1.104\*\*\* | 1.110\*\*\* | 1.114\*\*\* | 1.090\*\*\* |
| *Enabling factors* |  |  |  |  |  |
| % carers 1 to 19 h/w | 1.015\*\* | 0.997 | 0.992 | 1.015\*\* | 1.015\*\* |
| % carers 20 to 49 h/w | 0.955\* | 0.946\*\* | 0.925\*\*\* | 0.947\*\* | 0.955\* |
| % carers >=50 h/w | 0.902\*\*\* | 0.914\*\*\* | 0.900\*\*\* | 0.895\*\*\* | 0.902\*\*\* |
| % pop 60+ living alone | 0.990\*\*\* | 0.991\*\*\* | 0.999 | 0.990\*\*\* | 0.990\*\*\* |
| % guarantee credit | 0.988\*\*\* | 0.991\*\*\* | 0.992\*\*\* | 0.987\*\*\* | 0.988\*\*\* |
| % saving credit | 1.016\*\*\* | 1.016\*\*\* | 1.013\*\*\* | 1.018\*\*\* | 1.016\*\*\* |
| % guarantee & saving credit | 1.025\*\*\* | 1.018\*\*\* | 1.014\*\*\* | 1.025\*\*\* | 1.025\*\*\* |
| CH Beds/100 pop 60+ | 1.000 | 0.994 | 1.006 | 1.001 | 1.000 |
| Urban | 1.097\*\*\* | 1.026 | 1.065\*\* | 1.089\*\*\* | 1.097\*\*\* |
| *Other* |  |  |  |  |  |
| Year=2007/08 | 0.954\* | 0.956 | 0.953\* | 0.952\* | 0.954\* |
| Year=2008/09 | 0.908\*\*\* | 0.913\*\*\* | 0.915\*\*\* | 0.893\*\*\* | 0.908\*\*\* |
| Year=2009/10 | 0.728\*\*\* | 0.734\*\*\* | 0.737\*\*\* | 0.735\*\*\* | 0.727\*\*\* |
| Year=2010/11 | 0.612\*\*\* | 0.624\*\*\* | 0.618\*\*\* | 0.616\*\*\* | 0.612\*\*\* |

Abbreviations: M1: Model 1; M2: Model 2 (PCT fixed effects included); M3: Model 3 (Hospital fixed effects included); M4: Model 4 (multiple spells included); M5: Model 5 (quality measured by underlying achievement); ACSC: Ambulatory care sensitive condition; OR: Odds Ratio; QOF, Quality and Outcomes Framework  
\* p< 0.1, \*\* p < 0.05, \*\*\* p < 0.01

Appendix Table 3.3 Marginal effects

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Admissions for dementia** | | **Admissions for ACSC** | |
| Variable | change in | % change in | change in | % change in |
| probability | probability | probability | probability |
| *Changes from 0 to 1* |  |  |  |  |
| Male | -0.022\*\*\* | -11.98\*\*\* | -0.013\*\*\* | -10.77\*\*\* |
| White | -0.001 | -0.64 | 0.010\*\*\* | 9.43\*\*\* |
| Alzheimer’s disease | 0.025\*\*\* | 15.38\*\*\* | 0.008\*\*\* | 7.25\*\*\* |
| Vascular dementia | 0.025\*\*\* | 15.48\*\*\* | 0.013\*\*\* | 11.72\*\*\* |
| Urinary incontinence | 0.032\*\*\* | 19.12\*\*\* | 0.026\*\*\* | 23.14\*\*\* |
| Faecal incontinence | 0.037\*\* | 21.75\*\* | 0.031\*\*\* | 27.86\*\*\* |
| Fall | 0.022\*\*\* | 13.20\*\*\* | 0.019\*\*\* | 17.51\*\*\* |
| Hip fracture | 0.061\* | 36.37\* | 0.043\*\*\* | 38.82\*\*\* |
| Cancer | 0.050\*\*\* | 29.44\*\*\* | 0.006 | 5.65 |
| Myocardial infarction | -0.002 | -1.27 | 0.007 | 6.62 |
| Peripheral vascular disease | -0.022 | -12.77 | -0.010\*\*\* | -9.09\*\*\* |
| Cerebrovascular disease | 0.014\*\* | 8.32\*\* | 0.023\*\*\* | 21.29\*\*\* |
| Delirium | 0.006 | 3.62 | 0.022\*\*\* | 19.86\*\*\* |
| Senility | 0.039\*\*\* | 23.46\*\*\* | 0.019\*\*\* | 17.13\*\*\* |
| ACSC: Acute (*reference*) |  |  |  |  |
| ACSC: Chronic |  |  | -0.032\*\*\* | -25.85\*\*\* |
| ACSC: Vaccine |  |  | 0.011\*\*\* | 9.96\*\*\* |
| Urban | 0.008 | 5.13 | 0.008\*\*\* | 7.83\*\*\* |
| Year=2007/08 | -0.007 | -3.90 | -0.005\*\* | -4.27\*\* |
| Year=2008/09 | -0.010 | -5.76 | -0.011\*\*\* | -9.54\*\*\* |
| Year=2009/10 | -0.022\*\*\* | -12.26\*\*\* | -0.029\*\*\* | -23.95\*\*\* |
| Year=2010/11 | -0.053\*\*\* | -28.67\*\*\* | -0.045\*\*\* | -35.07\*\*\* |
| *Unit change from x to x+1&* |  |  |  |  |
| QOF achievement rate | 0.000 | 0.06 | -0.0001\*\* | -0.11\*\* |
| Total diagnoses | 0.017\*\*\* | 10.10\*\*\* | 0.010\*\*\* | 9.17\*\*\* |
| % carers 1 to 19 h/w | 0.005\*\*\* | 2.86\*\*\* | 0.002\*\* | 1.30 |
| % carers 20 to 49 h/w | -0.012\*\* | -7.12\*\* | -0.005\*\* | -4.71 |
| % carers >=50 h/w | -0.010\*\*\* | -5.55\*\*\* | -0.011\*\*\* | -9.37\*\*\* |
| % pop 60+ living alone | -0.001 | -0.30 | -0.001\*\*\* | -0.87\*\*\* |
| % guarantee credit | -0.002\*\*\* | -0.91\*\*\* | -0.001\*\*\* | -1.14\*\*\* |
| % saving credit | 0.003\*\* | 1.60\*\* | 0.002\*\*\* | 1.60\*\*\* |
| % guarantee & saving credit | 0.003\*\*\* | 1.50\*\*\* | 0.003\*\*\* | 2.18\*\*\* |
| CH Beds/100 pop 60+ | 0.002 | 0.90 | 0.0001 | 0.12 |
| *Partial change* |  |  |  |  |
| Age | 0.003\*\*\* | 1.77\*\*\* | 0.003\*\*\* | 2.24\*\*\* |

& For percentages, a unit change is equivalent to one percentage point change

ACSC: ambulatory care sensitive condition; CH: care home; QOF: quality and outcomes framework