**Supplementary Table T3. Interrupted time series model results with maximum auto-correlation lag 0**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | pre-trend | | level change | | trend change | | spring | | summer | | autumn | |
|  | estimate (95% CI) | p | estimate (95% CI) | p | estimate (95% CI) | p | estimate (95% CI) | p | estimate (95% CI) | p | estimate (95% CI) | p |
| Hip Admissions | 0.995 (0.985,1.005) | 0.323 | 1.055 (0.902,1.235) | 0.503 | 0.991 (0.978,1.005) | 0.220 | 1.19 (1.036,1.367) | 0.014 | 1.207 (1.088,1.339) | 0.000 | 1.101 (0.983,1.234) | 0.098 |
| Hip Average Age | -0.015 (-0.134,0.104) | 0.806 | 1.571 (-0.863,4.004) | 0.206 | -0.06 (-0.208,0.088) | 0.427 | 1.52 (-0.079,3.119) | 0.062 | 2.09 (0.685,3.494) | 0.004 | 1.031 (-0.505,2.567) | 0.188 |
| Hip Prop Women | 0.999 (0.993,1.004) | 0.674 | 0.966 (0.826,1.13) | 0.662 | 1.007 (0.997,1.017) | 0.158 | 1.023 (0.937,1.116) | 0.617 | 1.088 (0.995,1.189) | 0.064 | 0.981 (0.878,1.096) | 0.730 |
| Hip Prop 2+ Charlson | 0.994 (0.98,1.009) | 0.455 | 1.411 (0.969,2.055) | 0.072 | 1.01 (0.989,1.031) | 0.344 | 1.195 (0.971,1.471) | 0.092 | 1.306 (1.043,1.637) | 0.020 | 1.003 (0.734,1.37) | 0.986 |
| Hip Prop High Deprivation | 1.003 (0.991,1.014) | 0.631 | 1.027 (0.846,1.247) | 0.787 | 1.004 (0.983,1.025) | 0.704 | 0.937 (0.819,1.072) | 0.342 | 0.877 (0.746,1.03) | 0.110 | 0.996 (0.831,1.193) | 0.965 |
| Hip LoS | -0.006 (-0.038,0.026) | 0.704 | 0.312 (-0.262,0.887) | 0.287 | -0.014 (-0.058,0.03) | 0.542 | 0.502 (0.132,0.872) | 0.008 | 0.135 (-0.292,0.562) | 0.537 | 0.1 (-0.287,0.487) | 0.612 |
| Hip LoS Age 16-59 | -0.003 (-0.033,0.026) | 0.821 | 0.379 (-0.165,0.922) | 0.172 | -0.026 (-0.067,0.015) | 0.210 | 0.223 (-0.17,0.617) | 0.266 | 0.384 (0.053,0.715) | 0.023 | 0.219 (-0.168,0.607) | 0.267 |
| Hip LoS Age 60-69 | -0.004 (-0.046,0.039) | 0.871 | 0.013 (-1.026,1.052) | 0.981 | 0 (-0.069,0.068) | 0.990 | 0.107 (-0.592,0.805) | 0.765 | 0.158 (-0.514,0.829) | 0.645 | 0.162 (-0.588,0.912) | 0.672 |
| Hip LoS Age 70-79 | 0.006 (-0.067,0.078) | 0.879 | -0.753 (-2.031,0.525) | 0.248 | 0.007 (-0.069,0.082) | 0.865 | -0.433 (-1.583,0.716) | 0.460 | -0.842 (-2.028,0.344) | 0.164 | -0.865 (-2.164,0.435) | 0.192 |
| Hip LoS Age 80+ | -0.068 (-0.193,0.058) | 0.291 | 2.109 (0.536,3.682) | 0.009 | -0.002 (-0.16,0.155) | 0.977 | 1.506 (-0.007,3.018) | 0.051 | 0.222 (-1.036,1.48) | 0.729 | 1.003 (-0.375,2.38) | 0.154 |
| Hip LoS Men | -0.007 (-0.056,0.042) | 0.783 | 0.347 (-0.58,1.275) | 0.463 | -0.02 (-0.084,0.044) | 0.543 | 0.293 (-0.283,0.87) | 0.319 | 0.289 (-0.314,0.892) | 0.347 | 0.458 (-0.15,1.066) | 0.140 |
| Hip LoS Women | -0.004 (-0.048,0.041) | 0.868 | 0.235 (-0.563,1.033) | 0.564 | -0.014 (-0.071,0.043) | 0.634 | 0.693 (0.164,1.222) | 0.010 | 0.009 (-0.543,0.562) | 0.973 | -0.203 (-0.727,0.322) | 0.448 |
| Hip LoS Charlson 0 | -0.011 (-0.047,0.024) | 0.532 | 0.297 (-0.428,1.023) | 0.422 | -0.005 (-0.049,0.039) | 0.817 | 0.912 (0.522,1.302) | 0.000 | 0.178 (-0.232,0.587) | 0.396 | 0.222 (-0.135,0.579) | 0.223 |
| Hip LoS Charlson 1 | 0.034 (-0.023,0.091) | 0.240 | 0.238 (-0.704,1.179) | 0.621 | -0.077 (-0.157,0.002) | 0.056 | 0.191 (-0.562,0.945) | 0.619 | 0.312 (-0.397,1.022) | 0.388 | 0.014 (-0.544,0.572) | 0.960 |
| Hip LoS Charlson 2+ | -0.123 (-0.266,0.02) | 0.092 | 0.172 (-2.155,2.5) | 0.885 | 0.116 (-0.04,0.273) | 0.144 | -0.789 (-2.218,0.64) | 0.279 | -0.783 (-2.108,0.541) | 0.246 | 0.188 (-1.779,2.156) | 0.851 |
| Hip LoS Dep 1 | 0.004 (-0.039,0.047) | 0.857 | 0.553 (-0.509,1.614) | 0.307 | -0.017 (-0.078,0.045) | 0.599 | 0.784 (0.118,1.451) | 0.021 | 0.42 (-0.084,0.923) | 0.102 | 0.299 (-0.356,0.954) | 0.371 |
| Hip LoS Dep 2 | -0.038 (-0.087,0.01) | 0.124 | 0.822 (-0.528,2.172) | 0.233 | -0.015 (-0.103,0.072) | 0.730 | 1.509 (0.797,2.22) | 0.000 | 0.66 (-0.225,1.546) | 0.144 | 0.589 (-0.26,1.437) | 0.174 |
| Hip LoS Dep 3 | -0.034 (-0.096,0.027) | 0.275 | 0.617 (-1.066,2.3) | 0.472 | 0.01 (-0.09,0.109) | 0.851 | -0.216 (-1.343,0.912) | 0.708 | -0.424 (-1.475,0.627) | 0.429 | -0.701 (-1.667,0.266) | 0.155 |
| Hip LoS Dep 4 | 0.081 (-0.023,0.185) | 0.129 | -0.473 (-2.643,1.698) | 0.670 | -0.112 (-0.258,0.034) | 0.134 | -0.374 (-1.695,0.947) | 0.579 | -1.204 (-2.409,0.001) | 0.050 | -0.491 (-1.978,0.995) | 0.517 |
| Hip LoS Dep 5 | 0.015 (-0.112,0.142) | 0.819 | -0.72 (-2.66,1.221) | 0.467 | 0 (-0.135,0.135) | 0.999 | 0.621 (-0.412,1.655) | 0.239 | 0.689 (-0.485,1.864) | 0.250 | 0.816 (-0.891,2.524) | 0.349 |
| Hip Bed Occ | 0.997 (0.987,1.009) | 0.653 | 1 (0.824,1.215) | 0.997 | 0.987 (0.972,1.002) | 0.097 | 1.291 (1.125,1.48) | 0.000 | 1.283 (1.129,1.458) | 0.000 | 1.146 (0.984,1.334) | 0.080 |
| Hip Public Private | 1.013 (0.985,1.041) | 0.377 | 0.477 (0.29,0.782) | 0.003 | 0.981 (0.951,1.011) | 0.218 | 0.992 (0.809,1.217) | 0.939 | 1.361 (1.166,1.589) | 0.000 | 1.038 (0.847,1.273) | 0.718 |
| Knee Admissions | 0.995 (0.987,1.004) | 0.274 | 0.843 (0.702,1.013) | 0.068 | 1.005 (0.993,1.017) | 0.422 | 1.308 (1.154,1.483) | 0.000 | 1.26 (1.114,1.426) | 0.000 | 1.286 (1.147,1.441) | 0.000 |
| Knee Average Age | -0.078 (-0.157,0.001) | 0.053 | -1.632 (-3.299,0.035) | 0.055 | 0.211 (0.102,0.32) | 0.000 | 0.926 (-0.129,1.981) | 0.085 | 0.953 (-0.257,2.163) | 0.123 | 0.354 (-0.777,1.485) | 0.540 |
| Knee Prop Women | 1.004 (0.998,1.011) | 0.182 | 0.96 (0.84,1.097) | 0.551 | 0.994 (0.986,1.003) | 0.184 | 1.037 (0.939,1.146) | 0.474 | 1.017 (0.908,1.138) | 0.776 | 1.036 (0.928,1.157) | 0.529 |
| Knee Prop 2+ Charlson | 1.009 (0.988,1.031) | 0.384 | 0.638 (0.392,1.037) | 0.070 | 1.042 (1.008,1.077) | 0.015 | 1.156 (0.891,1.501) | 0.276 | 1.074 (0.829,1.393) | 0.589 | 0.909 (0.636,1.299) | 0.600 |
| Knee Prop High Deprivation | 1.005 (0.997,1.014) | 0.237 | 0.968 (0.784,1.195) | 0.761 | 0.986 (0.974,0.998) | 0.023 | 1.224 (1.099,1.363) | 0.000 | 1.075 (0.956,1.209) | 0.225 | 1.031 (0.911,1.166) | 0.631 |
| Knee LoS | -0.024 (-0.052,0.004) | 0.089 | 0.176 (-0.352,0.703) | 0.515 | -0.008 (-0.041,0.025) | 0.625 | 0.422 (0.117,0.726) | 0.007 | 0.15 (-0.174,0.475) | 0.364 | 0.396 (0.027,0.765) | 0.036 |
| Knee LoS Age 16-59 | -0.016 (-0.048,0.017) | 0.352 | 0.403 (-0.286,1.093) | 0.252 | -0.028 (-0.074,0.019) | 0.246 | 0.484 (0.111,0.857) | 0.011 | 0.422 (-0.111,0.956) | 0.121 | 0.475 (0.056,0.893) | 0.026 |
| Knee LoS Age 16-59 | 0.007 (-0.026,0.041) | 0.664 | -0.295 (-1.22,0.63) | 0.532 | -0.026 (-0.085,0.033) | 0.384 | 0.069 (-0.465,0.604) | 0.799 | -0.194 (-0.754,0.366) | 0.497 | -0.096 (-0.673,0.48) | 0.743 |
| Knee LoS Age 70-79 | -0.009 (-0.072,0.054) | 0.775 | 0.77 (-0.267,1.807) | 0.145 | -0.054 (-0.128,0.02) | 0.154 | -0.086 (-0.782,0.609) | 0.808 | -0.552 (-1.267,0.163) | 0.130 | 0.367 (-0.528,1.261) | 0.421 |
| Knee LoS Age 80+ | -0.051 (-0.154,0.051) | 0.327 | -0.562 (-2.568,1.443) | 0.583 | 0.028 (-0.105,0.161) | 0.678 | 1.521 (-0.076,3.118) | 0.062 | 1.37 (-0.178,2.918) | 0.083 | 1.361 (-0.071,2.794) | 0.063 |
| Knee LoS Men | -0.007 (-0.037,0.023) | 0.656 | 0.096 (-0.512,0.704) | 0.758 | -0.033 (-0.075,0.009) | 0.121 | 0.082 (-0.382,0.547) | 0.729 | 0.157 (-0.272,0.585) | 0.474 | 0.205 (-0.265,0.675) | 0.392 |
| Knee LoS Women | -0.042 (-0.088,0.004) | 0.071 | 0.252 (-0.495,1) | 0.508 | 0.017 (-0.036,0.07) | 0.536 | 0.635 (0.107,1.164) | 0.019 | 0.15 (-0.365,0.666) | 0.567 | 0.49 (-0.022,1.003) | 0.061 |
| Knee LoS Charlson 0 | -0.021 (-0.054,0.012) | 0.214 | 0.067 (-0.49,0.624) | 0.814 | -0.011 (-0.056,0.034) | 0.643 | 0.645 (0.278,1.013) | 0.001 | 0.193 (-0.146,0.533) | 0.265 | 0.415 (-0.078,0.907) | 0.099 |
| Knee LoS Charlson 1 | -0.03 (-0.081,0.022) | 0.260 | 0.47 (-0.741,1.681) | 0.447 | -0.029 (-0.093,0.036) | 0.384 | 0.455 (-0.111,1.021) | 0.115 | 0.324 (-0.426,1.074) | 0.398 | 1.058 (0.262,1.854) | 0.009 |
| Knee LoS Charlson 2+ | -0.04 (-0.111,0.032) | 0.276 | 0.407 (-2.137,2.951) | 0.754 | -0.022 (-0.184,0.14) | 0.788 | -0.627 (-1.883,0.628) | 0.327 | -0.949 (-2.145,0.247) | 0.120 | -1.433 (-2.278,-0.589) | 0.001 |
| Knee LoS Dep 1 | -0.009 (-0.064,0.045) | 0.733 | -0.035 (-0.918,0.847) | 0.937 | -0.008 (-0.082,0.066) | 0.826 | 0.257 (-0.443,0.958) | 0.471 | 0.096 (-0.699,0.89) | 0.813 | -0.127 (-0.786,0.532) | 0.706 |
| Knee LoS Dep 2 | -0.019 (-0.065,0.026) | 0.413 | 0.199 (-1.031,1.429) | 0.751 | -0.043 (-0.116,0.031) | 0.253 | 0.018 (-0.822,0.858) | 0.967 | -0.731 (-1.538,0.077) | 0.076 | 0.05 (-0.819,0.919) | 0.910 |
| Knee LoS Dep 3 | 0.014 (-0.05,0.078) | 0.670 | -0.426 (-1.892,1.04) | 0.569 | -0.036 (-0.116,0.043) | 0.369 | 0.976 (-0.09,2.043) | 0.073 | 0.909 (-0.134,1.952) | 0.088 | 0.547 (-0.408,1.503) | 0.261 |
| Knee LoS Dep 4 | -0.064 (-0.143,0.015) | 0.113 | 0.634 (-0.591,1.858) | 0.310 | 0.033 (-0.057,0.123) | 0.474 | 0.669 (-0.193,1.531) | 0.128 | 0.617 (-0.032,1.266) | 0.063 | 0.852 (-0.138,1.842) | 0.092 |
| Knee LoS Dep 5 | -0.035 (-0.116,0.047) | 0.405 | 0.709 (-0.701,2.119) | 0.324 | 0.015 (-0.076,0.106) | 0.745 | 0.123 (-0.882,1.128) | 0.810 | -0.387 (-1.379,0.606) | 0.445 | 1.104 (-0.268,2.476) | 0.115 |
| Knee Bed Occ | 0.993 (0.984,1.001) | 0.074 | 0.834 (0.711,0.979) | 0.027 | 1 (0.989,1.011) | 0.993 | 1.42 (1.269,1.59) | 0.000 | 1.373 (1.217,1.548) | 0.000 | 1.465 (1.287,1.667) | 0.000 |
| Knee Public Private | 1.006 (0.98,1.032) | 0.667 | 0.621 (0.358,1.077) | 0.090 | 0.985 (0.961,1.01) | 0.225 | 1.119 (0.915,1.369) | 0.274 | 1.318 (1.035,1.678) | 0.025 | 1.139 (0.931,1.394) | 0.205 |
| Elec Emerg Ratio | 0.995 (0.987,1.002) | 0.167 | 0.725 (0.637,0.825) | 0.000 | 0.984 (0.975,0.994) | 0.001 | 0.992 (0.889,1.106) | 0.884 | 0.948 (0.84,1.07) | 0.392 | 0.973 (0.879,1.076) | 0.591 |