Supplementary 3

*Adjusted staffing model with the frequency of temporary nurses’ deployment*

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|  | **Patient-to-nurse ratio** | |
| *Coefficient* | *Estimates* | *CI (95%)* |
| Intercept | 11.083 \*\*\* | 9.681 – 12.485 |
| Skill & Grade Mix | -0.047 \*\*\* | -0.063 – -0.031 |
| Late shift | 1.766 \*\*\* | 1.028 – 2.503 |
| Night shift | 8.644 \*\*\* | 7.682 – 9.607 |
| Somatic diagnoses ratio | -0.013 | -0.028 – 0.003 |
| Turnover ratio | -0.033 \*\*\* | -0.052 – -0.014 |
| Frequent deployment of temporary | 0.692 | -0.389 – 1.774 |
| **Random Effects** | | |
| σ2 | 15.81 | |
| τ00 unit\_code | 2.19 | |
| ICC | 0.12 | |
| N unit\_code | 79 | |
| Observations | 598 | |
| Marginal R2 / Conditional R2 | 0.383 / 0.458 | |

*Note*. CI = confidence interval; σ2 = residual variance;

τ = rank correlation coefficient; ICC = Interclass correlation;

N = number; R2 = R-squared; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001