**Supplementary Table 1** Comparison of transfusion rates in validation population compared to predicted transfusion rate according to model. Blank cells indicate that there were no patients in this category.

 (THA, Total Hip Arthroplasty; TKA, Total Knee Arthroplasty; F, Female; M, Male)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **THA** | **Preoperative Haemaglobin** | **9 g/dl** | **10 g/dl** | **11 g/dl** | **12 g/dl** | **13 g/dl** | **14 g/dl** | **15 g/dl** | **16 g/dl** |
| F,<65 | Predicted | 0.79 ± 0.12 | 0.65 ± 0.13 | 0.49 ± 0.13  | 0.33 ± 0.10 | 0.20 ± 0.09 | 0.11 ± 0.06 | 0.06 ± 0.04 | 0.03 ± 0.03 |
| Validation | 1 |  | 0.38 | 0.43 | 0.20 | 0.08 |  |  |
| F,>65 | Predicted | 0.93 ± 0.04 | 0.86 ± 0.06 | 0.76 ± 0.07 | 0.62 ± 0.07 | 0.45 ± 0.07 | 0.30 ± 0.07 | 0.17 ± 0.06 | 0.10 ± 0.04 |
| Validation |  | 0.86 | 0.54 | 0.33 | 0.29 | 0 |  | 0 |
| M,<65 | Predicted | 0.85 ± 0.12 | 0.74 ± 0.16 | 0.59 ± 0.18 | 0.42 ± 0.18 | 0.27 ± 0.13 | 0.15 ± 0.09 | 0.08 ±0.06 | 0.04 ± 0.03 |
| Validation |  |  | 1 | 0 | 0 | 0.13 |  |  |
| M,>65 | Predicted | 0.86 ± 0.09 | 0.75 ± 0.15 | 0.60 ± 0.18 | 0.43 ± 0.16 | 0.28 ± 0.09 | 0.16 ± 0.06 | 0.09 ± 0.04 | 0.05 ±0.03 |
| Validation | 1 |  | 0.40 | 0.27 | 0.07 | 0.05 | 0.08 | 0 |
| **TKA** |  |  |  |  |  |  |  |  |  |
| F,<65 | Predicted | 0.51 ± 0.17 | 0.35 ± 0.15 | 0.21 ± 0.03 | 0.12 ± 0.07 | 0.06 ± 0.04 | 0.03 ±0.01 | 0.02 ± 0.01 | 0.01 ± 0.01 |
| Validation | 0.50 | 0.50 | 0.44 | 0 | 0.04 | 0 | 0 | 0 |
| F,>65 | Predicted | 0.78 ± 0.11 | 0.64 ± 0.114 | 0.48 ± 0.09 | 0.31 ± 0.07 | 0.19 ± 0.05 | 0.11 ± 0.04 | 0.06 ± 0.27 | 0.03 ± 0.01 |
| Validation | 0 | 0.71 | 0.36 | 0.13 | 0 | 0 | 0 | 0 |
| M,<65 | Predicted | 0.61 ± 0.23 | 0.45 ± 0.21 | 0.29 ± 0.16 | 0.17 ± 0.11 | 0.09 ± 0.05 | 0.04 ± 0.04 | 0.02 ± 0.01 | 0.01 + 0.001 |
| Validation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| M,>65 | Predicted | 0.62 | 0.46 | 0.30 | 0.18 | 0.10 | 0.05 | 0.03 | 0.01 |
| Validation |  |  | 0 | 0.13 | 0.09 | 0.03 | 0 | 0 |