

Appendix 8 (as supplied by the authors): Comparison of C-indices (95% confidence intervals) from different model specifications for a Cox model for emergency hospital admission

| | Development model ¹ | | Adjusted scores ² | | | | Unadjusted scores ³ | | | |
|------------------------|--------------------------------|------------------------|----------------------------------|---------------------------------|----------------------------|-------------------------------|----------------------------------|---------------------------------|----------------------------|-------------------------------|
| | 37 conditions | 20 conditions | Extended outcome-specific scores | Primary outcome-specific scores | Charlson comorbidity index | Primary general-outcome score | Extended outcome-specific scores | Primary outcome-specific scores | Charlson comorbidity index | Primary general-outcome score |
| C-index | | | | | | | | | | |
| Development dataset | 0.750 | 0.745 | 0.748 | 0.744 | 0.706 | 0.740 | 0.742 | 0.736 | 0.662 | 0.735 |
| 2015, 1-year follow-up | 0.743 (0.738-0.748) | 0.739 (0.733-0.744) | 0.742 (0.737-0.747) | 0.738 (0.732-0.743) | 0.703 (0.697-0.709) | 0.735 (0.729-0.740) | 0.738 (0.733-0.744) | 0.733 (0.728-0.739) | 0.660 (0.656-0.664) | 0.731 (0.726-0.737) |
| 2011, 1-year follow-up | 0.741 (0.735-0.746) | 0.737 (0.731-0.743) | 0.739 (0.733-0.744) | 0.734 (0.728-0.740) | 0.700 (0.694-0.706) | 0.732 (0.726-0.737) | 0.732 (0.726-0.737) | 0.726 (0.720-0.731) | 0.651 (0.647-0.656) | 0.724 (0.719-0.730) |
| 2011, 5-year follow-up | 0.716 (0.712-0.719) | 0.712 (0.709-0.715) | 0.712 (0.709-0.715) | 0.708 (0.705-0.712) | 0.683 (0.680-0.686) | 0.706 (0.703-0.709) | 0.700 (0.697-0.704) | 0.694 (0.691-0.698) | 0.623 (0.621-0.625) | 0.692 (0.689-0.695) |

1. Using predictions from the score development model with the conditions as binary indicators, adjusted by age and gender.
2. Using predictions from a model including each score (sum of weights) adjusted by age and gender.
3. Using the score directly, without the use of a model (unadjusted).

Extended scores include all 37 conditions. Primary scores include only the 20 most important conditions according to prevalence and impact. Confidence intervals are provided only for validation datasets.