**S1 File. VACO Index Calculation of Predicted COVID-19 30-day Mortality**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable** | **Coefficient** | **Z** | **P-value** | **OR**  | **95% CI** |
| Age, years |  |  |  |  |  |
|  20-50 | -2.228678713 | -2.83 | 0.005 | 0.11 | 0.02 - 0.50 |
|  50-54 | 0.0 |  | - | 1.00 | - |
|  55-59 | 0.400599289 | 0.97 | 0.334 | 1.49 | 0.66 - 3.36 |
|  60-64 | 0.941322019 | 2.50 | 0.013 | 2.56 | 1.22 - 5.37 |
|  65-69 | 1.295007128 | 3.49 | <0.001 | 3.65 | 1.77 - 7.55 |
|  70-74 | 1.629533438 | 4.55 | <0.001 | 5.10 | 2.53 - 10.3 |
|  75-79 | 1.763345763 | 4.72 | <0.001 | 5.83 | 2.81 - 12.12 |
|  80-89 | 1.927443543 | 4.96 | <0.001 | 6.87 | 3.21 - 14.72 |
|  ≥90 | 2.018752269 | 4.39 | <0.001 | 7.53 | 3.06 - 18.54 |
|  |  |  |  |  |  |
| Sex |  |  |  |  |  |
|  Female | 0.0 | - | - | 1.00 | - |
|  Male | 0.322291449 | 0.88 | 0.377 | 1.38 | 0.68 - 2.82 |
|  |  |  |  |  |  |
| CCI and Age Interaction Term |  |  |  |  |  |
|  Age <85 |  |  |  |  |  |
|  CCI |  |  |  |  |  |
|  0 | 0.0 | - | - | - | - |
|  1-3 | 0.612122574 | 2.76 | 0.006 | 1.84 | 1.19 - 2.85 |
|  4-5 | 0.825072847 | 3.36 | 0.001 | 2.28 | 1.41 - 3.69 |
|  6-9 | 0.956099733 | 3.84 | <0.001 | 2.60 | 1.60 - 4.24 |
|  ≥10 | 1.395164653 | 4.25 | <0.001 | 4.04 | 2.12 - 7.68 |
|  Age 85+, any CCI | 1.529325519 | 4.79 | <0.001 | 4.62 | 2.47 - 8.63 |
|  |  |  |  |  |  |
| MI or PVD |  |  |  |  |  |
|  No | 0.0 | - | - | 1.00 | - |
|  Yes | 0.267265312 | 2.18 | 0.029 | 1.31 | 1.03 - 1.66 |
|  |  |  |  |  |  |
| Constant | -4.216058062 | -8.41 | <0.001 | 0.01 | 0.01 - 0.04 |

Abbreviations: OR = odds ratio; CI = confidence interval; CCI =Charlson comorbidity index; MI = myocardial infarction; PVD = peripheral vascular disease

Calculation of predicted mortality risk:

 coefficientsum = Agecoefficient + Sexcoeffient + CCI\_Agecoefficient + MI\_PVDcoefficient + Constantcoefficient

 ORcalc = exp(coefficientsum)

 riskpred = ORcalc / (1 + ORcalc)

Example: 77 year old male with CCI = 5, but no history of MI or PVD

 coefficientsum = 1.763345763 + 0.322291449 + 0.825072847 + 0.0 + (-4.216058062) = -1.305348004

 ORcalc = exp(-1.305348004) = 0. 271078182

 riskpred = 0.271078182 / (1 + 0.271078182) = 0.213266333 = 21%