Supplemental material

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**Supplementary Data**

*e-Table I: Final Model, Odds ratio for receiving influenza vaccine by Canadian LTC home residents in New Brunswick*

| Odds Ratio Estimates | | | |
|---|---|---|---|
| **Effect** | | **Point Estimate** | **95% Wald Confidence Limits** |
| **CPS[1]** | **1-2 vs 0** | 1.18 | 0.91 | 1.52 |
| **CPS** | **3-4 vs 0** | 1.47 | 1.12 | 1.92 |
| **CPS** | **5-6 vs 0** | 1.92 | 1.47 | 2.50 |
| **CHESS[2]** | **1-2 vs 0** | 1.30 | 1.12 | 1.50 |
| **CHESS** | **3+ vs 0** | 1.32 | 1.06 | 1.64 |
| **RISE[3]** | **2-4 vs 0-1** | 1.06 | 0.86 | 1.30 |
| **RISE** | **5-6 vs 0-1** | 1.39 | 1.11 | 1.72 |

*C-statistic is 0.569.

[1] Cognitive Performance Scale (CPS) with 6 categories (0 = intact and 6= very severe impairment)

[2] Changes in Health and Symptoms and Signs Scale (CHESS) ranges from 0 = no instability in health to 5 = highly unstable health

[3] Revised Index of Social Engagement (RISE) ranges from 0 = lower levels of social engagement to 6 = higher level of social engagement

*e-Table II: Final Model, Odds ratio for receiving influenza vaccine by Swiss LTC home residents*

| Odds Ratio Estimates | | | | |
|---|---|---|---|---|
| **Effect** | | **Point Estimate** | **95% Wald Confidence Limits** | |
| **Age group** | **65-74 vs <65** | 1.23 | 0.84 | 1.82 |
| **Age group** | **75-84 vs <65** | 1.89 | 1.33 | 2.63 |
| **Age group** | **85+ vs <65** | 2.17 | 1.56 | 3.03 |
| **MCC[1]** | **1 vs 0** | 1.23 | 1.03 | 1.47 |
| **MCC** | **2 vs 0** | 3.45 | 1.56 | 7.69 |
| **CPS[2]** | **1-2 vs 0** | 1.25 | 0.99 | 1.56 |
| **CPS** | **3-4 vs 0** | 1.11 | 0.87 | 1.41 |
| **CPS** | **5-6 vs 0** | 2.13 | 1.59 | 2.86 |
| **CHESS[3]** | **1-2 vs 0** | 1.25 | 1.05 | 1.49 |
| **CHESS** | **3+ vs 0** | 1.25 | 0.90 | 1.72 |
| **RISE[4]** | **2-4 vs 0-1** | 1.56 | 1.30 | 1.89 |
| **RISE** | **5-6 vs 0-1** | 2.56 | 2.08 | 3.13 |
| **ABS[5]** | **1-4 vs 0** | 1.49 | 1.22 | 1.82 |
| **ABS** | **5+ vs 0** | 1.16 | 0.86 | 1.56 |

 *C-statistics is 0.643.

[1] Major Comorbidity Count Algorithm (MCC) ranges from a minimum score of 0 = low risk to a maximum score of 6 = high risk

[2] Cognitive Performance Scale (CPS) with 6 categories (0 = intact and 6= very severe impairment)

[3] Changes in Health and Symptoms and Signs Scale (CHESS) ranges from 0 = no instability in health to 5 = highly unstable health

[4] Aggressive Behavior Scale (ABS) ranges from 0-12 with scores of 5 or more as a cut-off for severe aggressive behaviour disturbance

[5] Revised Index of Social Engagement (RISE) ranges from 0 = lower levels of social engagement to 6 = higher level of social engagement

*e-Table III: Final Model, Odds ratio for receiving influenza vaccine by Dutch LTC home residents*

| Odds Ratio Estimates | | | | |
|---|---|---|---|---|
| **Effect** | | **Point Estimate** | **95% Wald Confidence Limits** | |
| **Age group** | **65-74 vs <65** | 2.08 | 1.15 | 3.85 |
| **Age group** | **75-84 vs <65** | 1.72 | 1.00 | 2.94 |
| **Age group** | **85+ vs <65** | 2.13 | 1.25 | 3.57 |
| **Smoke** | **1 vs 0** | 0.69 | 0.50 | 0.98 |
| **ABS[1]** | **1-4 vs 0** | 0.77 | 0.61 | 0.97 |
| **ABS** | **5+ vs 0** | 0.65 | 0.46 | 0.90 |
| **RISE[2]** | **2-4 vs 0-1** | 1.30 | 0.95 | 1.75 |
| **RISE** | **5-6 vs 0-1** | 1.45 | 1.06 | 1.96 |

*C-statistics is 0.588.

[1]Aggressive Behavior Scale (ABS) ranges from 0-12 with scores of 5 or more as a cut-off for severe aggressive behaviour disturbance

[2]Revised Index of Social Engagement (RISE) ranges from 0 = lower levels of social engagement to 6 = higher level of social engagement