**Caries Risk Prediction models in medical healthcare setting**

Table 4. Performance of medical-CRA models post-imputation

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **MODELS** | **Adjusted N** | **AUC (95%CI)** | **Cut-off** | **Sensitivity** | **Specificity** | **Pseudo R2** |
| *Medical CRA models predicting caries risk at 2 years* | | | | | | |
| Model I-Ai\* | 535 | 0.75 (0.70-0.81) | 0.17 | 69 | 67 | 0.12 |
| Model I-Bi**#** | 535 | 0.84 (0.76-0.92) | 0.03 | 80 | 72 | 0.17 |
| *Medical CRA models predicting caries risk at 3 years* | | | | | | |
| Model II-Ai\*\* | 721 | 0.71 (0.67-0.75) | 0.41 | 69 | 63 | 0.10 |
| Model II-Ai-a\*\*\* | 480 | 0.80 (0.76-0.84) | 0.14 | 69 | 69 | 0.22 |
| Model II-Bi\*\* | 721 | 0.75 (0.70-0.80) | 0.40 | 70 | 62 | 0.13 |
| Model II-Bi-a\*\*\* | 480 | 0.83 (0.78-0.88) | 0.20 | 75 | 75 | 0.27 |

\*Model I-Ai: ***Prenatal factors-*** Ethnicity, maternal childbearing age, maternal occupation, parity status, history of chronic maternal illness, monthly household income, prenatal tobacco smoke exposure; ***Peri-natal factor***: mode of delivery; ***Post-natal factors:*** History of allergies between 6-12 months (runny nose: 9-12 months; itchy rashes: 6-12 months), history of allergy before first tooth eruption (runny nose, itchy rashes), intake of medications (oral medicines: 6-12 months; nebulizers: 9-12 months; antibiotics: 9-12 months; medications for runny nose: 0-12 months), BMI (12 months), history of infection (ear infection/vomiting/diarrhoea) before first tooth eruption, number of teeth present (12 months), duration of breastfeeding (in months), child’s age for first tooth eruption (in months), age of introduction of solid food (in months)

**#**Model I-Bi: Inclusion of risk predictors similar to Model I-A, except monthly household income and mode of delivery (excluded owing to high standard error)

\*\*Model II-Ai/Bi: ***Prenatal factors:*** Ethnicity, household income, maternal educational levels, maternal occupation, father educational levels, parity status, history of chronic maternal illness, prenatal tobacco smoke exposure; ***Post-natal factors:*** Parental belief for cause of tooth decay (24 months), mother’s brushing frequency (24 months), child’s pre-existing medical condition (6 months), frequency of in between meal sweet snacks (24 months), duration of pacifier use (in months), duration of breastfeeding (in months), maternal regular dental check-up (24 months), child’s brushing frequency (24 months), number of teeth (12 months), sharing feeding/drinking utensils, night-time bottle feeding (24 months), child’s age for first tooth eruption (in months), dry mouth (18 months), previous dental visit (24 months).

\*\*\*Model II-Ai-a/Bi-a: Upon addition of “year-2 anterior caries lesions” as a covariate into Model II-Ai/Bi, significant improvement was demonstrated in the model performance (both P<0.05).