# Supplementary Material 20: Multiple imputation model performance

The performance of the imputed model was investigated by comparing the frequency of readmission by explanatory variables in all cases (i.e. the original dataset), complete cases and imputed cases.

**Frequency of variables and by readmission in all cases (original dataset), complete cases and imputed cases**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **TOT (Readmitted +non-readmitted)** |  | **Readmitted/TOT** |
|  | ***Original dataset*** | **Complete cases** | **Imputed dataset** |  | **Original dataset** | **Complete cases** | **Imputed dataset**  |
|  | *(%)* | (%) | (%) |  | %  | %  | %  |
|  |  |  |  |  | 21.4 | 27.0 | 21.4 |
| **Gender** (n=231,659) |  |  |  |  |  |  |
| Male | 49.7 | 47.9 | 49.7 |  | 20.8 | 26.5 | 20.8 |
| Female | 50.3 | 52.1 | 50.3 |  | 21.9 | 27.4 | 21.9 |
| **Marital status (**n=181,579) |  |  |  |  |  |  |
| Single | 60.1 | 59.2 | 60.4 |  | 24.2 | 27.8 | 22.0 |
| Married/civil | 24.3 | 24.7 | 24.3 |  | 22.0 | 25.0 | 20.1 |
| Other | 15.6 | 16.1 | 15.3 |  | 23.9 | 26.9 | 22.0 |
| **Age at baseline (**n=231,998) |  |  |  |  |  |  |  |
| 16-24 years | 17.0 | 13.9 | 17.0 |  | 19.4 | 26.6 | 19.4 |
| 25-34 years | 21.6 | 20.9 | 21.6 |  | 20.9 | 27.1 | 20.9 |
| 35-44 years | 21.2 | 21.7 | 21.2 |  | 21.8 | 27.3 | 21.8 |
| 45-54 years | 20.6 | 21.8 | 20.6 |  | 22.7 | 27.9 | 22.7 |
| 55-64 years | 10.5 | 11.5 | 10.5 |  | 23.1 | 27.5 | 23.1 |
| >64 years | 9.1 | 10.3 | 9.1 |  | 20.2 | 23.8 | 20.2 |
| **Ethnic group** (n= 206,309) |  |  |  |  |  |  |
| White | 84.8 | 83.4 | 84.9 |  | 22.6 | 27.2\* | 21.5 |
| Mixed | 1.7 | 1.9 | 1.7 |  | 24.8 | 28.9 | 23.7 |
| Asian/Asian British | 5.3 | 5.7 | 5.2 |  | 21.0 | 24.4 | 20.0 |
| Black/Black British | 5.0 | 5.8 | 4.9 |  | 23.8 | 26.7 | 22.8\*\* |
| Other | 3.3 | 3.1 | 2.2 |  | 20.2 | 23.8 | 19.3 |
| **Cluster at discharge** (n=172,321) |  |  |  |  |  |
| Non-psychotic (0-9) | 63.3 | 60.1 | 66.1 |  | 23.9 | 25.4 | 19.8 |
| Less severe psychotic (10,11,14,15) | 19.4 | 20.3 | 20.1 |  | 26.8 | 27.9 | 22.5 |
| Severe psychotic (12,13,16,17) | 17.4 | 19.7 | 13.8 |  | 30.0 | 30.6 | 29.3 |
| **IMD at baseline** (n=227,872) |  |  |  |  |  |  |
| 1st quintile | 10.3 | 9.5 | 10.3 |  | 20.4 | 26.0 | 20.4 |
| 2nd quintile | 13.3 | 12.8 | 13.3 |  | 20.8 | 26.4 | 20.8 |
| 3rd quintile | 17.8 | 17.4 | 17.8 |  | 21.4 | 26.9 | 21.5 |
| 4th quintile | 24.5 | 25.0 | 24.5 |  | 22.1 | 27.5 | 22.1 |
| 5th quintile | 34.1 | 35.4 | 34.1 |  | 21.9 | 27.1 | 21.9 |

\*In the complete cases dataset overall the proportions of readmission are slightly higher than the proportions in the original dataset (because readmission cases are more likely to have no missing data). However, the proportion of people of white ethnicity is much higher than we would expect.

\*\*In the imputed dataset the proportions of readmission are slightly lower than the proportions in the original dataset (around 1% less) but there is not differences across ethnic groups suggesting a good performance of the imputed dataset.