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## Supporting Information

## Appendix 1 - Model Diagnostics for Multivariable Model

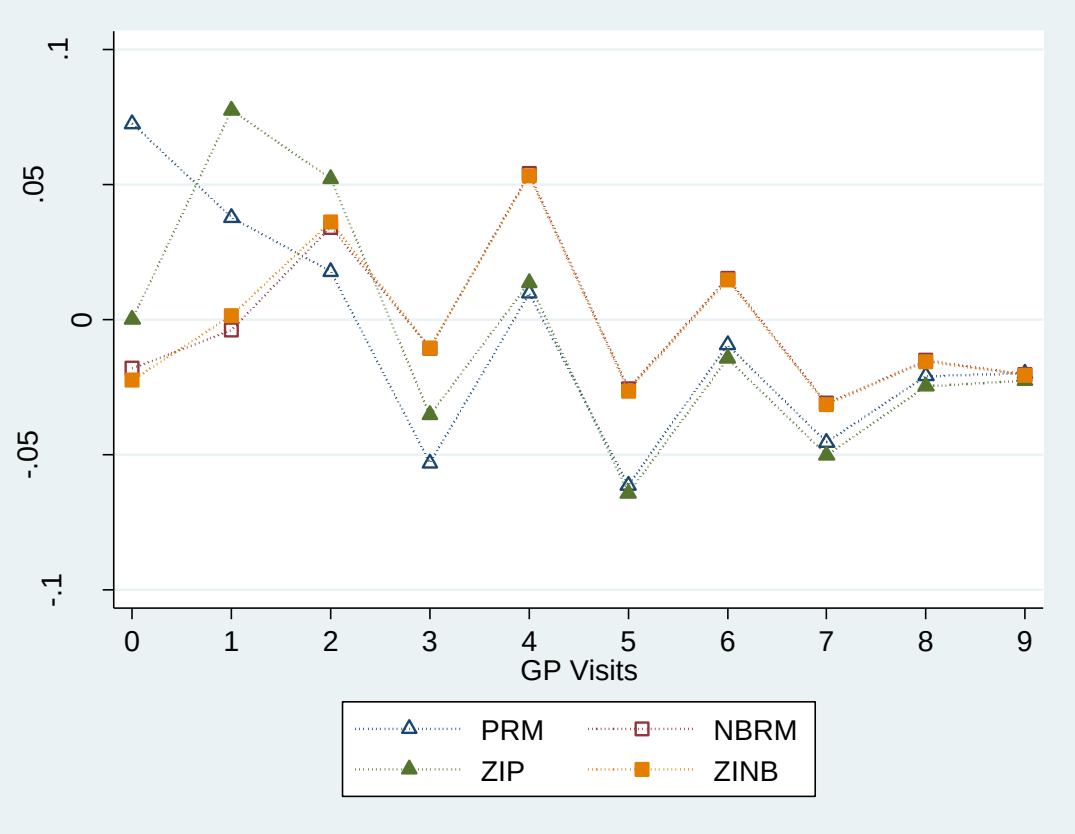
| | Poisson | Negative Binomial | Zero-inflated Poisson | Zero-inflated Negative Binomial |
|---|---|---|---|---|
| **GP visits** | | | | |
| AIC | 44973.985 | 37896.424 | 43761.648 | 37876.907 |
| BIC | 45057.991 | 37987.430 | 43929.660 | 38051.919 |
| Mean difference between observed and predicted counts | 0.035 | 0.023 | 0.036 | 0.023 |
| **Out-patient department** | | | | |
| AIC | 30296.569 | 22843.915 | 24775.994 | 22694.836 |
| BIC | 30380.574 | 22934.921 | 24944.006 | 22869.849 |
| Mean difference between observed and predicted counts | 0.057 | 0.005 | 0.020 | 0.005 |
| **Hospital admission** | | | | |
| AIC | 9031.183 | 8034.123 | 8209.350 | 8203.378 |
| BIC | 9115.189 | 8125.129 | 8377.361 | 8028.366 |
| Mean difference between observed and predicted counts | 0.012 | 0.002 | 0.004 | 0.002 |
| **A&E attendance** | | | | |
| AIC | 9999.863 | 8986.221 | 9191.499 | 8986.277 |
| BIC | 10083.869 | 9077.227 | 9359.510 | 9161.289 |
| Mean difference between observed and predicted counts | 0.013 | 0.002 | 0.004 | 0.002 |

**Table S1** – Evidence for Model Selection

AIC - Akaike Information Criterion

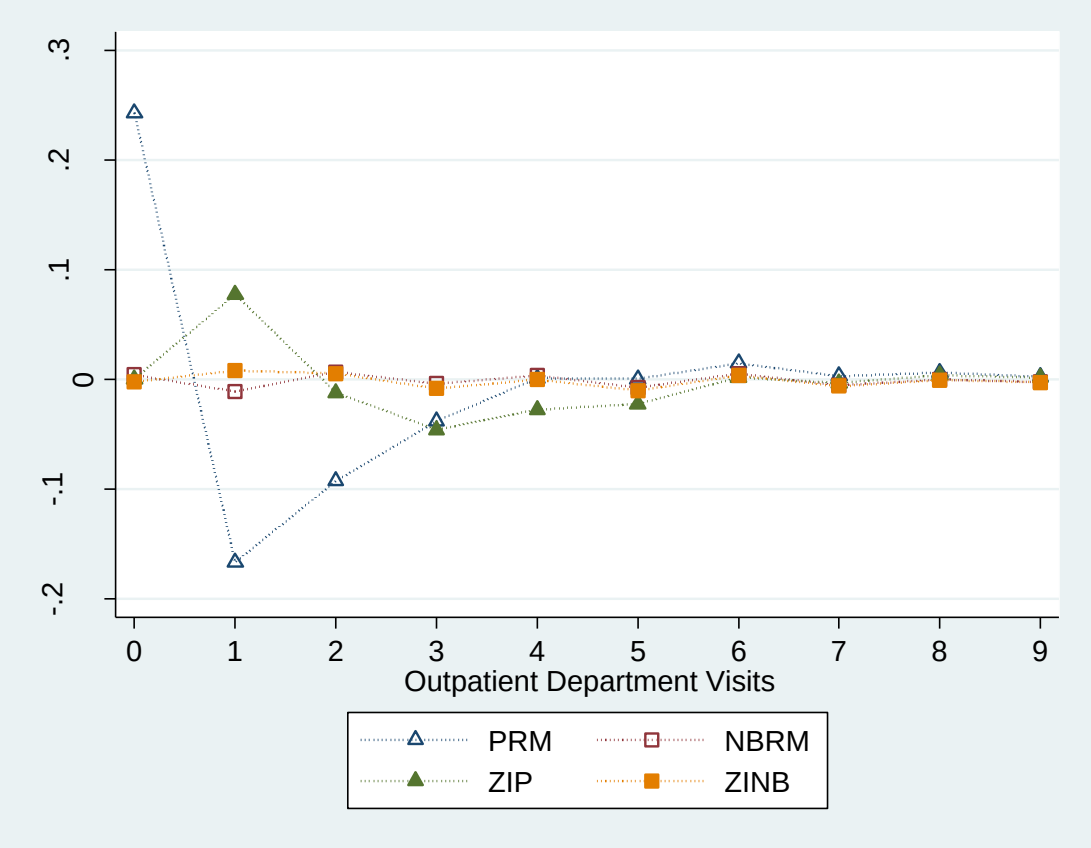
BIC - Bayesian Information Criterion

**Figure S1** – Residual plot: GP visits



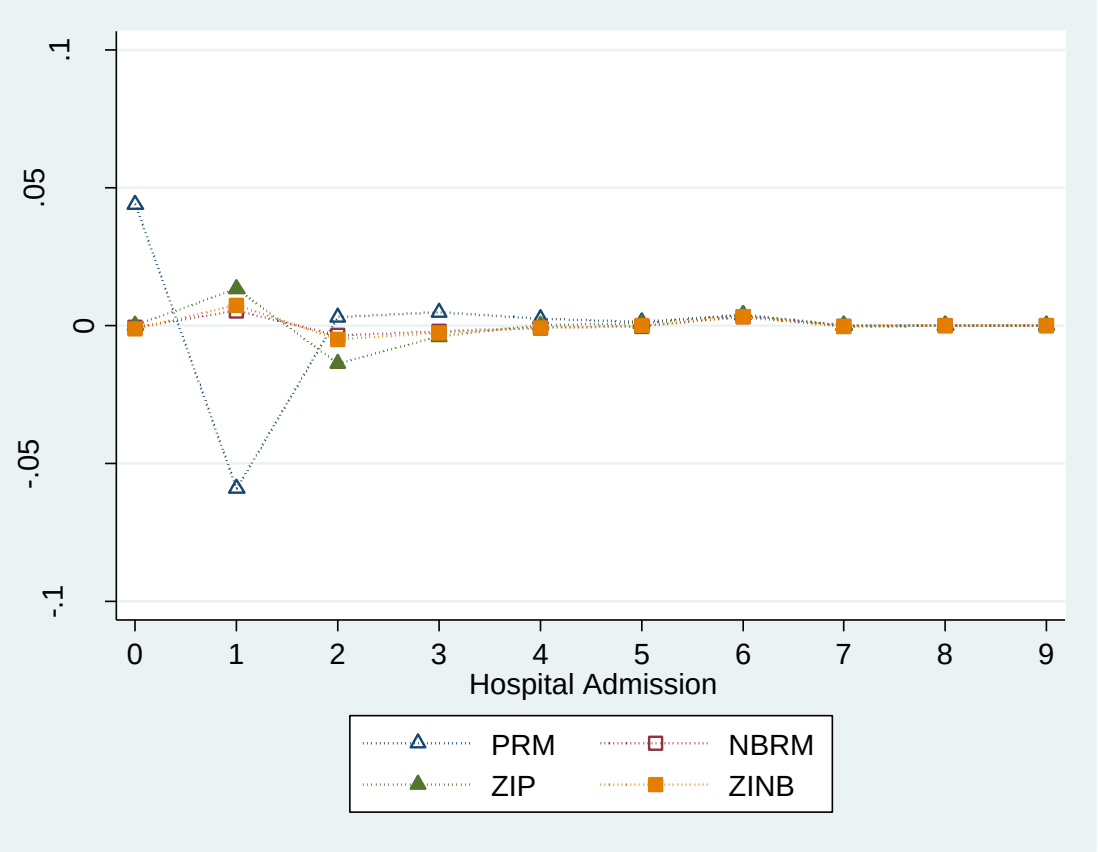

PRM – Poisson Model
NBRM – Negative Binomial Model
ZIP – Zero-inflated Poisson Model
ZINB – Zero-inflated Negative Binomial Model

**Figure S2** – Residual plot: Outpatient Department Visits



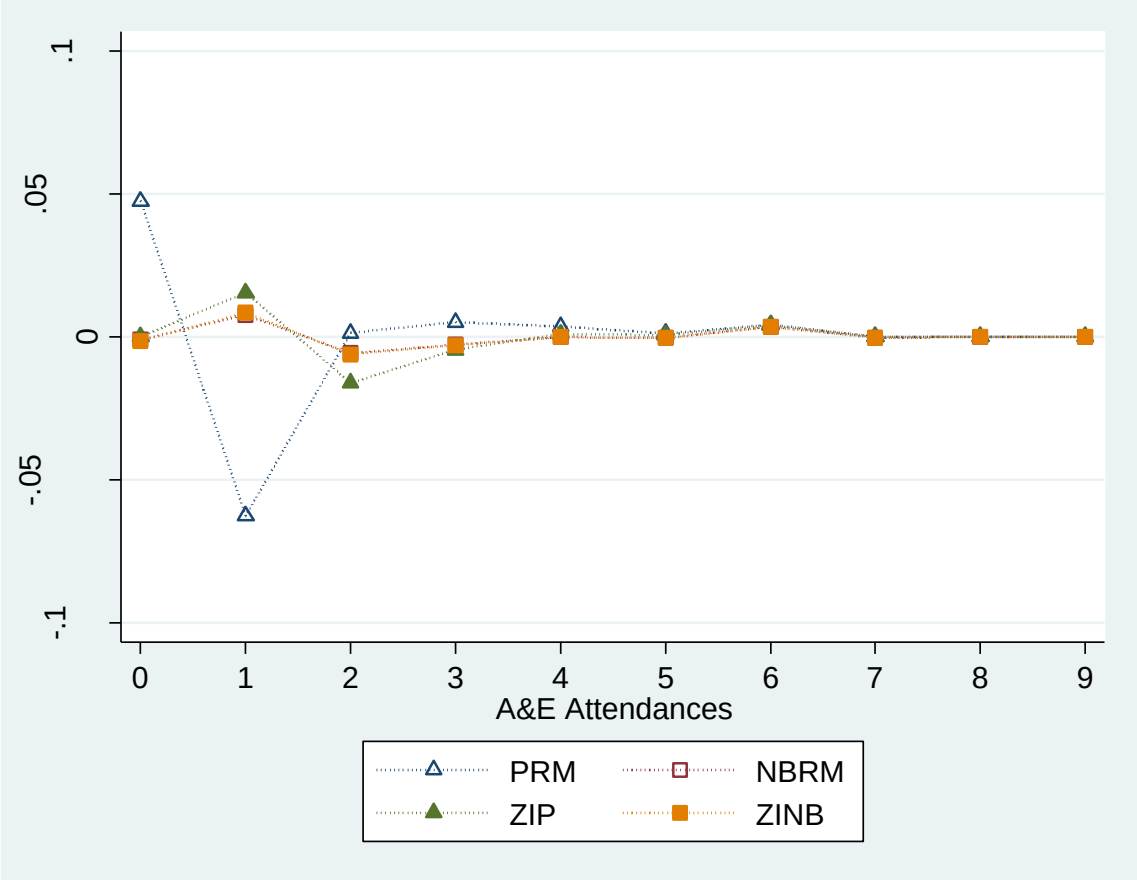

PRM – Poisson Model
NBRM – Negative Binomial Model
ZIP – Zero-inflated Poisson Model
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**Figure S3** – Residual plot: Hospital Admission




PRM – Poisson Model
NBRM – Negative Binomial Model
ZIP – Zero-inflated Poisson Model
ZINB – Zero-inflated Negative Binomial Model

**Figure S4** – Residual plot: A&E Attendances




PRM – Poisson Model
NBRM – Negative Binomial Model
ZIP – Zero-inflated Poisson Model
ZINB – Zero-inflated Negative Binomial Model

**Appendix 2 - Health Service Utilisation and Socioeconomic Status**

**Table S2 – Health Service Utilisation Stratified by Diabetes and Public Health Insurance Cover***

| | Diabetes | | | No Diabetes | | |
|---|---|---|---|---|---|---|
| | Public health insurance (n=281) | Other (n=340) | p-value | Public health insurance (n=2,310) | Other (n=5,176) | p-value |
| **GP visits** | | | | | | |
| Attended past year | 98 | 94 | 0.006 | 92 | 84 | <0.001 |
| Mean (SD) no. visits past year | 7.2 (5.3) | 4.4 (4.6) | <0.001 | 5.2 (4.5) | 3 (3.4) | <0.001 |
| **Outpatient department visits** | | | | | | |
| Attended past year | 64 | 58 | 0.1 | 42 | 38 | 0.002 |
| Mean (SD) no. visits past year | 2.5 (2.9) | 1.8 (2.7) | 0.005 | 1.3 (2.2) | 1 (2) | <0.001 |
| **Hospital admissions** | | | | | | |
| Attended past year | 23 | 17 | 0.06 | 16 | 11 | <0.001 |
| Mean (SD) no. visits past year | 0.4 (0.9) | 0.2 (0.6) | 0.02 | 0.2 (0.6) | 0.1 (0.6) | <0.001 |
| **A&E attendance** | | | | | | |
| Attended past year | 24 | 17 | 0.05 | 18 | 13 | <0.001 |
| Mean (SD) no. visits past year | 0.4 (0.8) | 0.3 (0.8) | 0.2 | 0.3 (0.7) | 0.2 (0.6) | <0.001 |

*Public health insurance cover was used as a proxy variable for socioeconomic status. Individuals with private insurance, dual cover or no cover were classed as “Other”