

Appendix

Model formulae

For total penicillin dispensing rates:

$$\text{Log}\left(\frac{Y_t}{P_t}\right) = \beta_0 + \beta_1 T + \beta_2 T^2 + \beta_3 D + \beta_4 I_t + \beta_5 DI_t$$

For amoxicillin and amoxicillin-clavulanate dispensing rates, such that the trend in dispensing rates differs depending on RFPP group:

$$\text{Log}\left(\frac{Y_t}{P_t}\right) = \beta_0 + \beta_1 T + \beta_2 T^2 + \beta_3 D + \beta_4 I_t + \beta_5 DI_t + \beta_6 DT + \beta_7 DT^2$$

Where:

T = time (calendar year)

D = a dummy variable indicating the DHBs participating in the RFPP (coded 1) or not participating (coded 0)

I_t = a dummy variable indicating the RFPP intervention period coded 1, else 0

P_t = population size at time t

Y_t = penicillin dispensing at time t

Appendix Figure 1: Observed incidence rates for penicillin dispensing (all classes) between 2005–2018, stratified by DHB.

