

$$\text{logit}(C_{ij}^{All}) = \beta_0 + b_{0i} + \text{RegCDR}_{ij}^2 * \beta_1 + \text{RegCDR}_{ij} * \beta_2 + \%Pop65_{ij} * \beta_3 + \ln(5q0)_{ij} * \beta_4 + C_{ij}^{5q0} * \beta_5 + \text{Year} * \beta_6 + e_{ij}$$

(Equation 2)

$$\text{logit}(C_{ij}^{All}) = \beta_0 + b_{0i} + \text{RegCDR}_{ij}^2 * \beta_1 + \text{RegCDR}_{ij} * \beta_2 + \%Pop65_{ij} * \beta_3 + \ln(5q0)_{ij} * \beta_4 + \text{Year} * \beta_5 + e_{ij}$$

(Equation 3)

$$\text{RegCDR} = \frac{\text{Registered Death}}{\text{Population}} \quad \text{Registered Crude Death Rate}$$

$$\text{RegCMR} = \frac{\text{Registered Death (Children Under 5 Years)}}{\text{Birth}} \quad \text{Registered Child Mortality Rate (Under 5 Years \%q0)}$$

$$C^{All} = \frac{\text{RegCDR}}{\text{CDR}} \quad \text{Completeness of Registration of All ages}$$

$$C^{5q0} = \frac{\text{Reg5q0}}{5q0} \quad \text{Completeness of Registration of \%q0}$$

$$\%Pop65 = \frac{\text{Population aged over 65}}{\text{population}} \quad \text{percentage of Population upper than 65 years old}$$

$$\text{logit}(C^{All}) = \ln \left(\frac{C^{All}}{1 - C^{All}} \right)$$