



$$\text{Sex} \sim B(0.5)$$

$$\text{Geno}_{\text{Stroke}} \sim B(\text{maf}) | B(\text{maf})$$

$$\text{Geno}_{\text{Death}} \sim B(\text{maf}) | B(\text{maf})$$

$$\text{Stroke}_i : \text{if } \text{stroke}_{\text{age}-1} = 0 \text{ and } \text{death}_{\text{age}-1} = 0 \text{ then } \sim B(p_{\text{stroke}} | \text{sex, age, geno}_{\text{stroke}})$$

$$\text{Death}_i : \text{if } \text{Death}_{\text{age}-1} = 0 \text{ then } \sim B(p_{\text{death}} | \text{sex, age, stroke}_{\text{age}}, \text{geno}_{\text{death}})$$

$$\text{Date of Birth} \sim U(1\text{JAN}1900, 1\text{JAN}2020)$$

$$\text{Date of Stroke} \sim U(\text{Date of Birth} + \text{age}_{\text{stroke}=1}, \text{Date of Birth} + \text{age}_{\text{stroke}=1} + 365.25)$$

$$\text{Date of Death} \sim U(\text{Date of Birth} + \text{age}_{\text{death}=1}, \text{Date of Birth} + \text{age}_{\text{death}=1} + 365.25)$$

Constraints

If Date of Stroke not null then Date of Stroke < Date of Death