

$$P(\text{Data}) = P(\text{Cough}|\text{LD}, \text{Cold}) \cdot P(\text{CP}|\text{LD}) \cdot P(\text{SOB}|\text{LD}) \cdot P(\text{F}|\text{Cold}) \cdot \\ P(\text{LD}|S) \cdot P(\text{Cold}) \cdot P(S)$$