

## Reliability formula

$$\text{Reliability} = \sigma^2 / (\sigma^2 + V)$$

where  $\sigma^2$  is the systematic variance between hospitals and  $V$  is the sampling variance of the sample estimate of a hospital's rate (both on the probability scale):

- $\sigma^2 = \sigma_L^2 * p^2 * (1-p)^2$ , where  $\sigma_L^2$  = variance component from model output in logit scale
- $V = p*(1-p) / N$ ,  
where  $p$  = the overall readmission rate across all hospitals and  $N$  = the hospital's volume.