Both models are 'bad'
$P(Y \mid H1) \approx P(Y \mid H0)$

The H0 model is 'better'
$P(Y \mid H1) < P(Y \mid H0)$

Legend: P(Y | H0), P(Y | H1), y
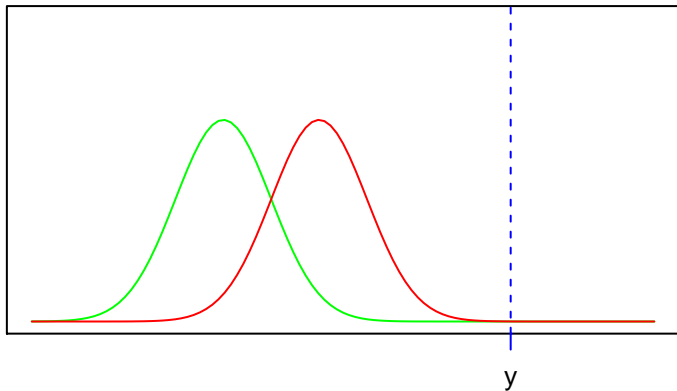
Poor H1 can delay detection
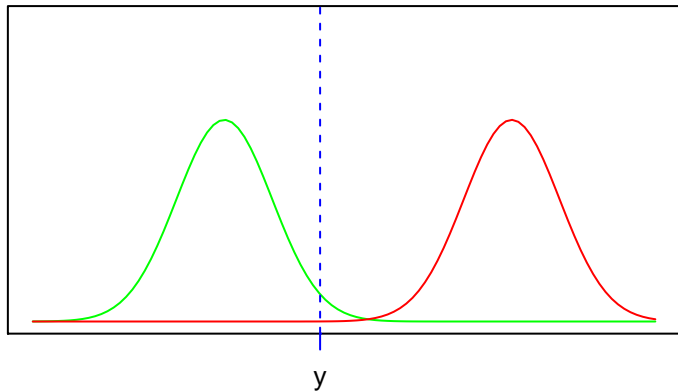
Poor H1 can increase Type II error rate