

# Prior distribution study

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## Set up

## Parameters

The number of sampling times is 1000;  
Prior distribution  $\theta \sim \text{Beta}(\alpha, \beta)$ ,  $Y \sim \text{Bin}(100, \theta)$ ;  
Observed data is 82 responses in the first cohort of 100 patients;

## Scenario 1:

**\*\*  $\alpha = 1, \beta = 1$  \*\***

**## [1] "mean = 0.5"**

**## [1] "variance = 0.0833333333333333"**

**## Running /Library/Frameworks/R.framework/Resources/bin/R CMD SHLIB foo.c**

**## clang -mmacosx-version-min=10.13 -I"/Library/Frameworks/R.framework/Resources/include" -DNDEBUG -I**

**## In file included from <built-in>:1:**

**## In file included from /Library/Frameworks/R.framework/Versions/4.1/Resources/library/StanHeaders/inc**

**## In file included from /Library/Frameworks/R.framework/Versions/4.1/Resources/library/RcppEigen/inclu**

**## In file included from /Library/Frameworks/R.framework/Versions/4.1/Resources/library/RcppEigen/inclu**

**## /Library/Frameworks/R.framework/Versions/4.1/Resources/library/RcppEigen/include/Eigen/src/Core/util**

**## namespace Eigen {**

**## ^**

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**## ;**

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**## /Library/Frameworks/R.framework/Versions/4.1/Resources/library/RcppEigen/include/Eigen/Core:96:10: f**

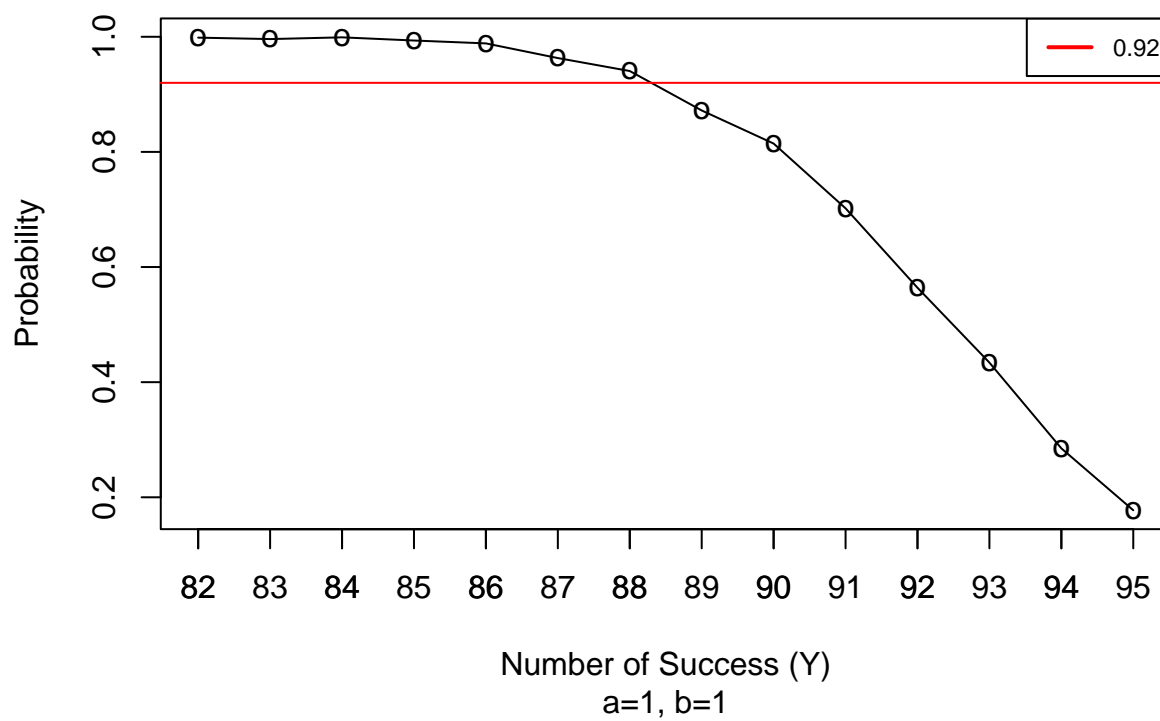
**## #include <complex>**

**## ^~~~~~**

**## 3 errors generated.**

**## make: \*\*\* [foo.o] Error 1**

## Posterior distribution of theta



```
## [1] "P|Y=88: 0.9405"
```

```
## [1] "P|Y=89: 0.872"
```