

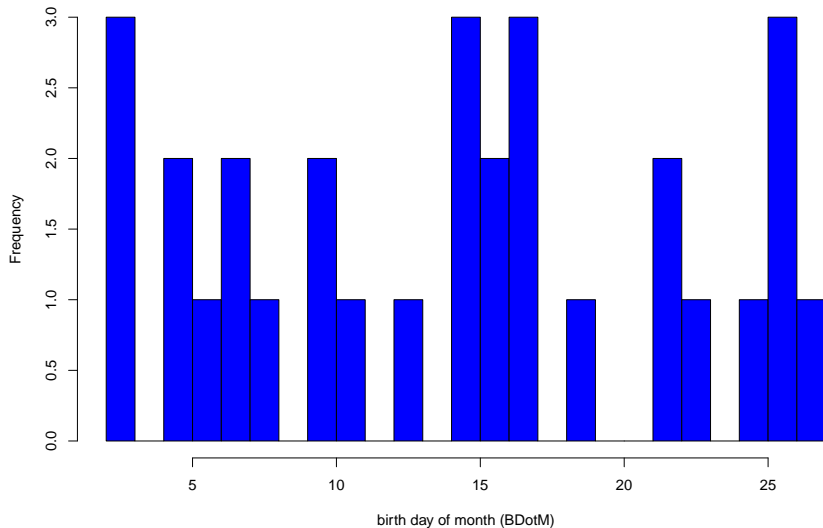
Summary Statistics 1

BIOE 498/598 PJ

Spring 2021

Loading our Birth-day-of-month Data

Population: Mean=14.43, Std Dev=7.88



Aside: Is this what we expected?

We sampled 30 students. How many do we expect to observe on any day? (Assuming no end-of-month effects.)

```
lambda = 30 / 31
```

Assuming the underlying process is Poisson, what is the expected frequency?

```
round(dpois(0:3, lambda), digits=2)
```

```
## [1] 0.38 0.37 0.18 0.06
```

Let's count of the observed frequencies.

```
table(tabulate(days)) / 30
```

```
##
```

```
##    0    1    2    3
```

```
## 0.3 0.3 0.2 0.1
```

Estimating the mean BDotM

```
s = sample(days, 5, replace=TRUE)
```

```
s
```

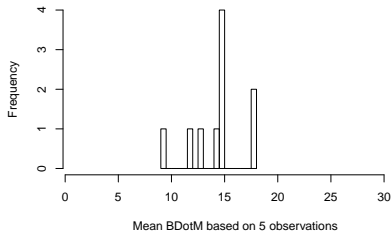
```
## [1] 10 15 16 22 17
```

```
mean(s)
```

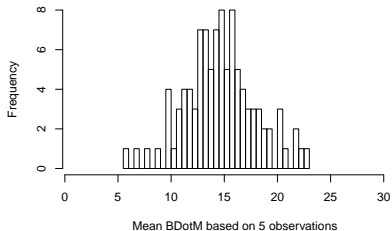
```
## [1] 16
```

Repeated sampling to estimate the mean BDotM

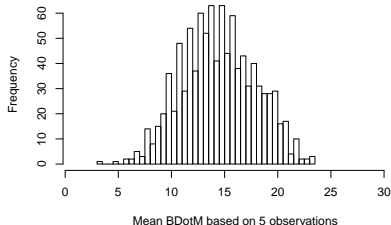
10 samples



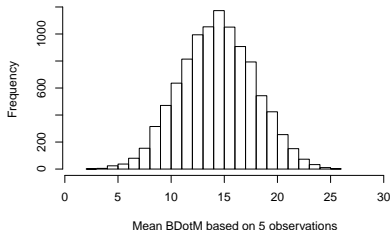
100 samples



1000 samples

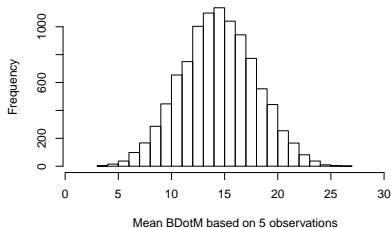


10000 samples

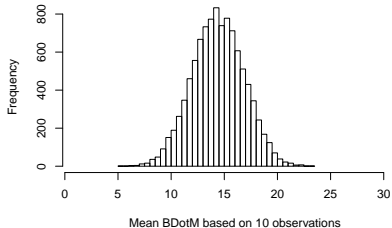


Sampling distribution depends on the # of observations

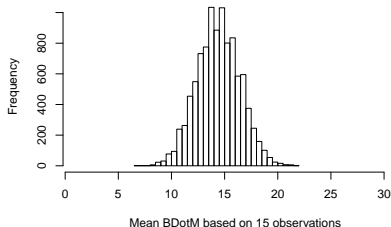
5 observations/sample, Std Dev=3.48



10 observations/sample, Std Dev=2.44



15 observations/sample, Std Dev=2.02



20 observations/sample, Std Dev=1.73

