Ebola Forecasting Analysis

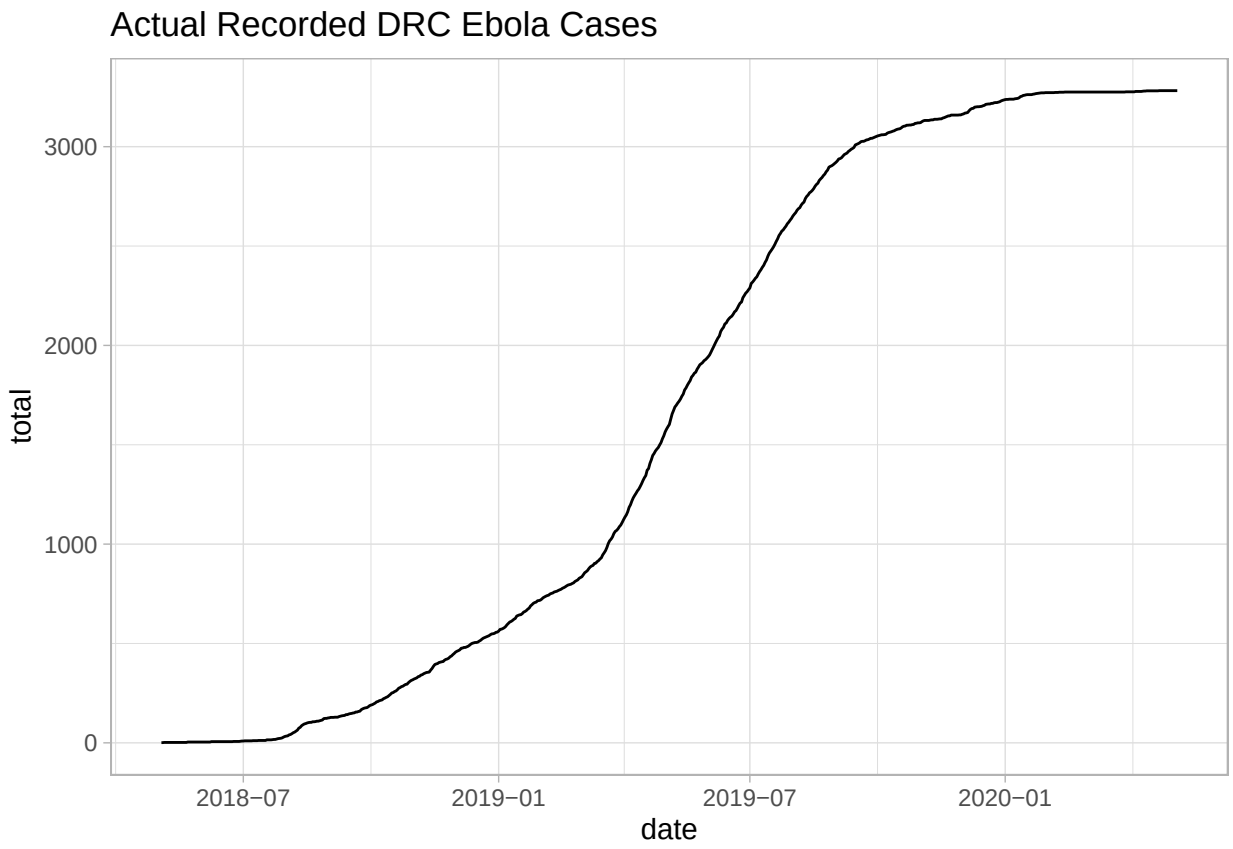
Andy Shen

8/13/2020

Actual Recorded DRC Ebola Cases

```
source("outbreak_vis.R")
p <- ggplot(data = true,
            mapping = aes(x = date, y = total)) +
  geom_line() + theme_light() # grapho of runinng total of cases

p + labs(title = "Actual Recorded DRC Ebola Cases")
```




```
max(ymd("2020-09-23","2020-10-12","2019-12-30"))
```

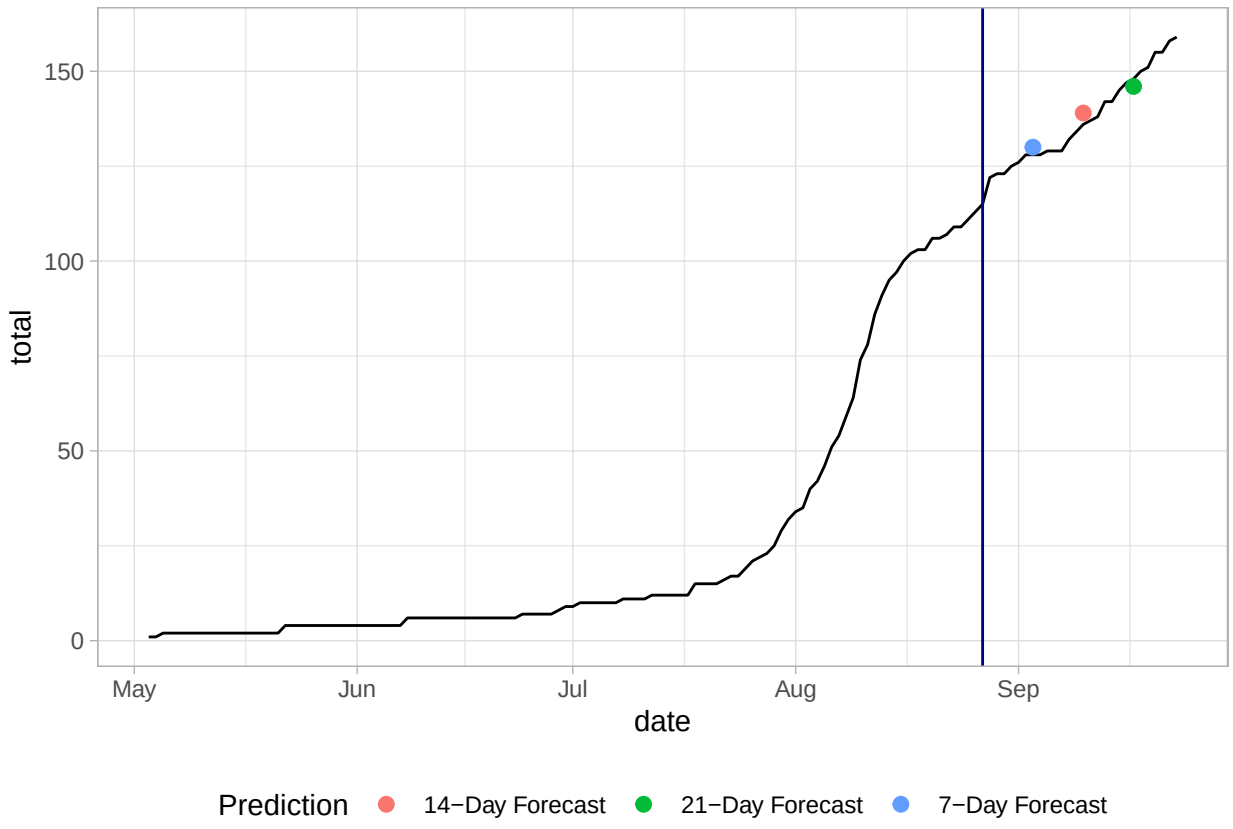
```
## [1] "2020-10-12"
```

Accuracy of Hawkes Projections

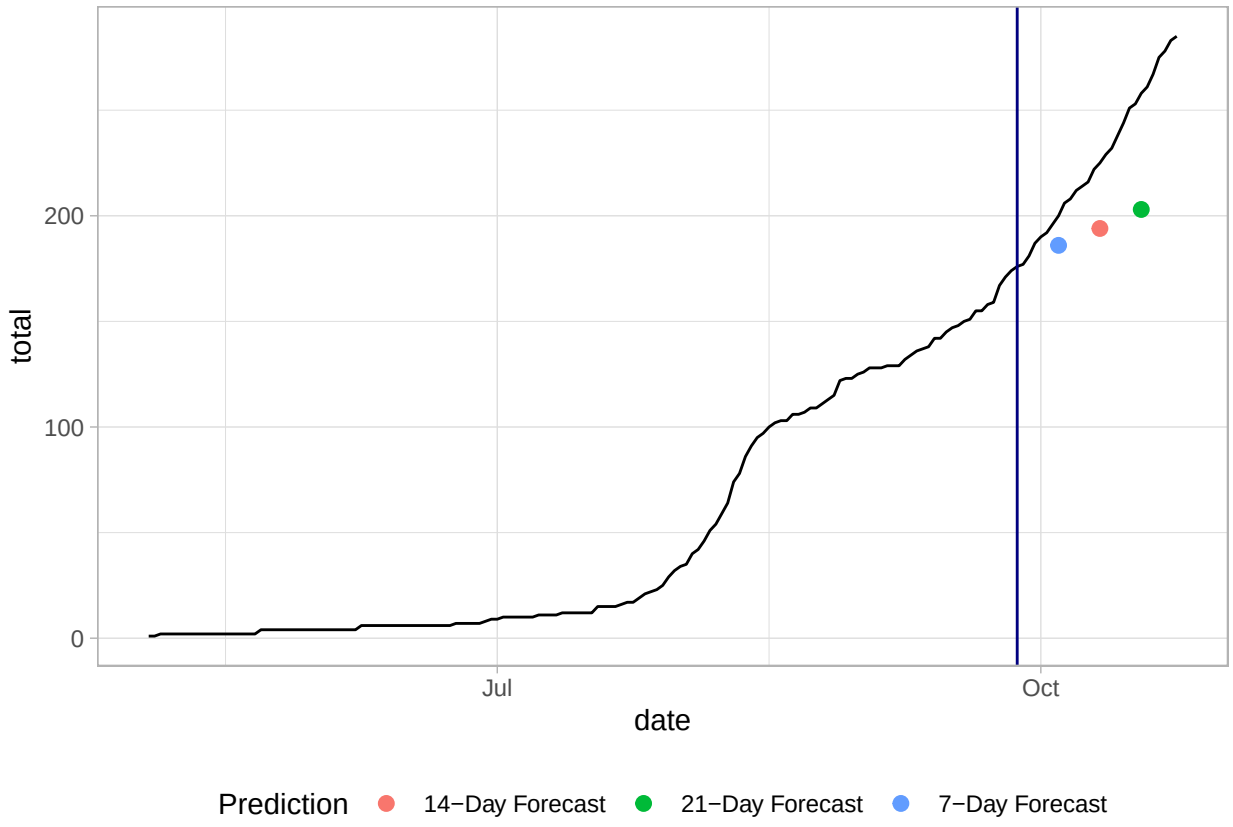
Single Forecast Visualization

Sample single forecast visulizations.

```
multi_forecast("2018-08-27",c(15,24,31)) #shows predicted vs actual for one forecast
```



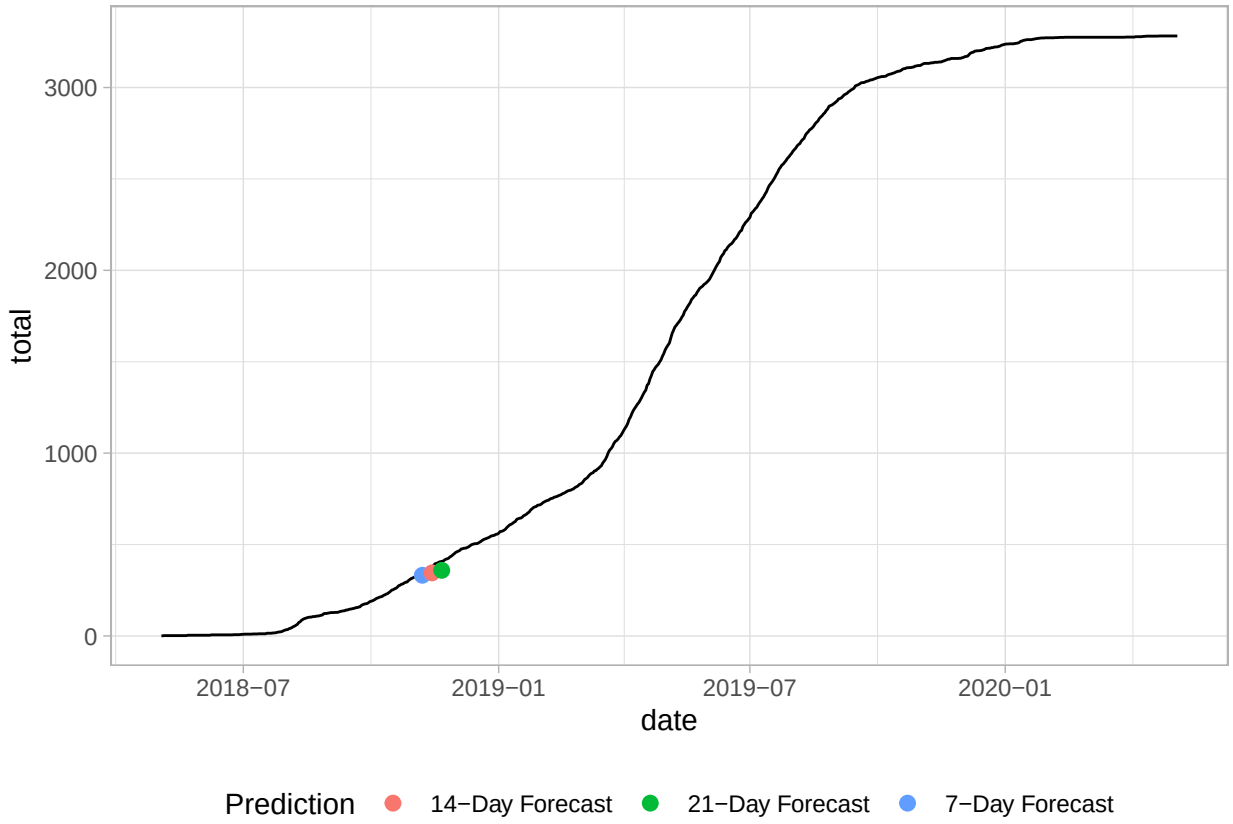

```
multi_forecast("2018-09-27",c(10,18,27)) #shows predicted vs actual for one forecast
```


total
200
100
0
Jul
Oct
date
Prediction
14−Day Forecast
21−Day Forecast
7−Day Forecast

Single Forecast Visualization for Entire Outbreak

Shows predicted vs actual for one forecast with respect to entire outbreak.

```
full_forecast("2018-10-31",c(15,28,42))
```



Forecasts vs Actual in 2018

Monthly forecasts during all available data in 2018.

```
title <- "Forecasts vs Actual in 2018"
dv <- c("2018-08-27","2018-09-27","2018-10-31","2018-11-29","2018-12-30")
mt <- cbind(c(15,24,31),c(10,18,27),c(15,28,42),c(15,29,41),c(21,40,60))
multi_forecast(dv, mt, title = title)
```