

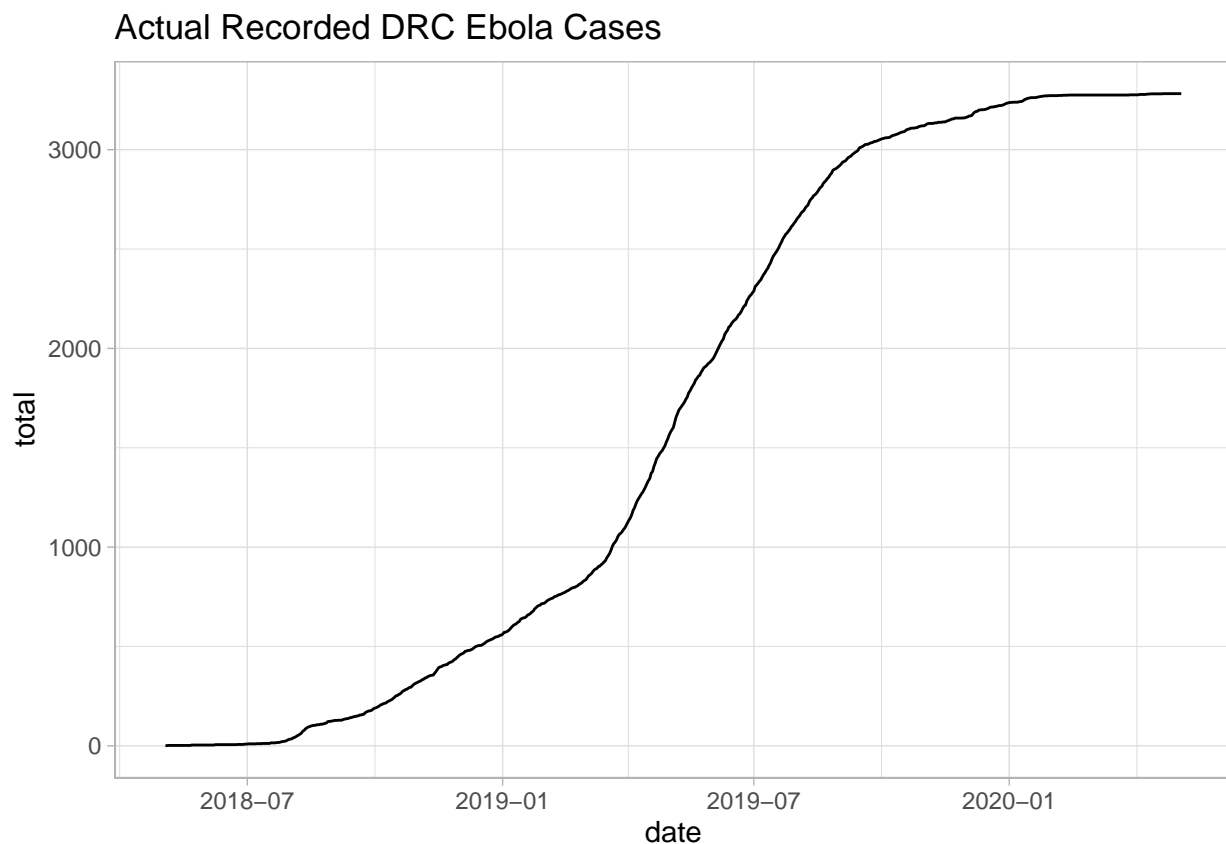
Ebola Forecasting Analysis

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Actual Recorded DRC Ebola Cases

```
source("outbreak_vis.R")
p <- ggplot(data = true,
            mapping = aes(x = date, y = total)) +
  geom_line() + theme_light() # graph of running total of cases
p + labs(title = "Actual Recorded DRC Ebola Cases")
```



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

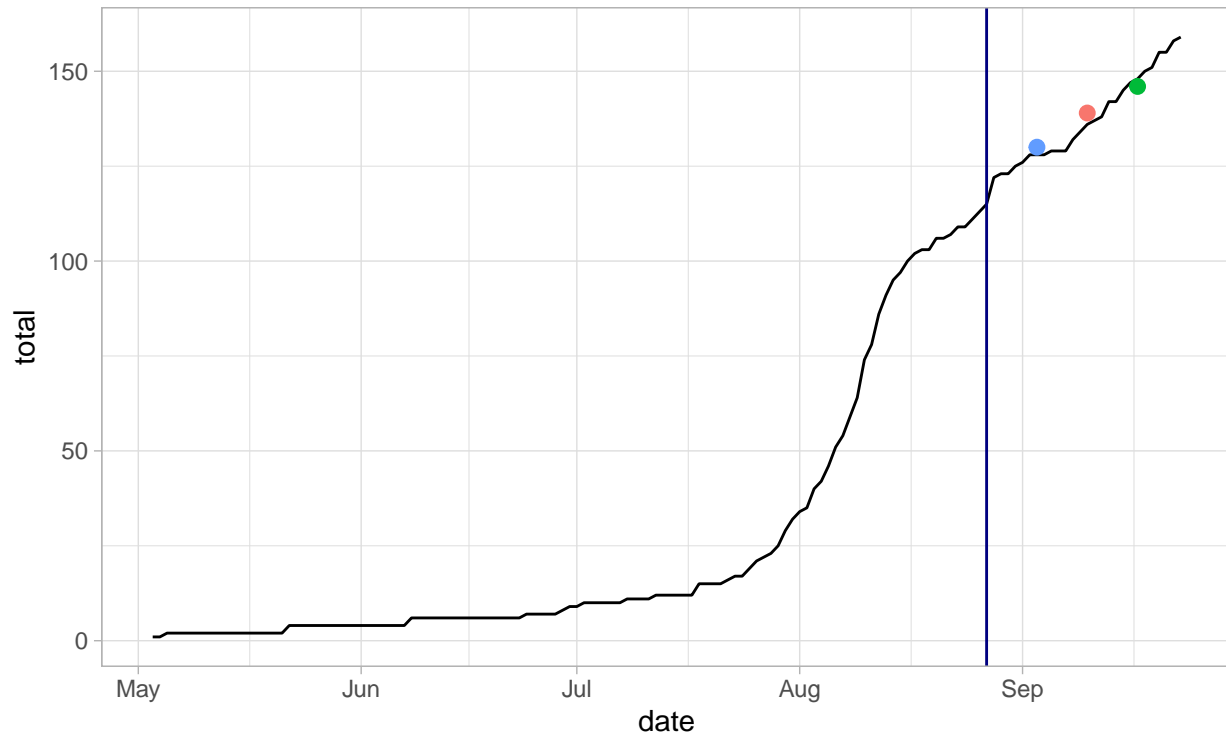
```
## [1] "2020-10-12"
```

Accuracy of Hawkes Projections

Single Forecast Visualization

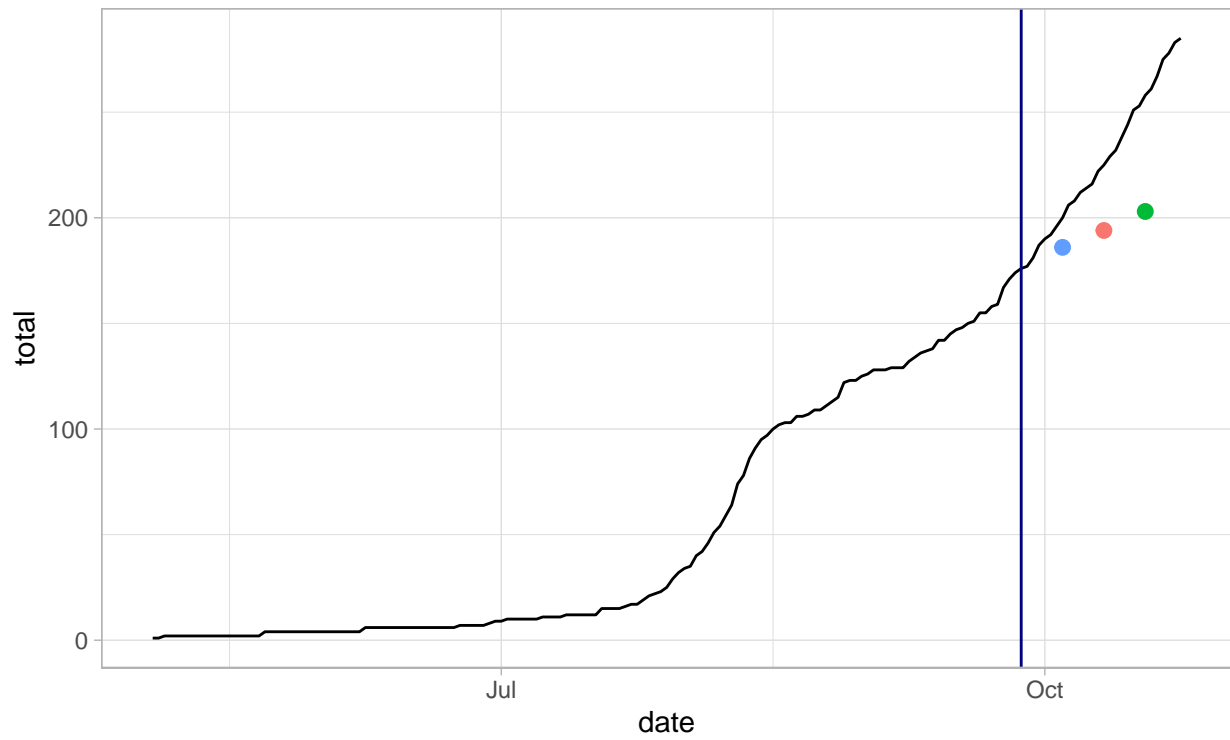
Sample single forecast visualizations.

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



Prediction ● 14-Day Forecast ● 21-Day Forecast ● 7-Day Forecast

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

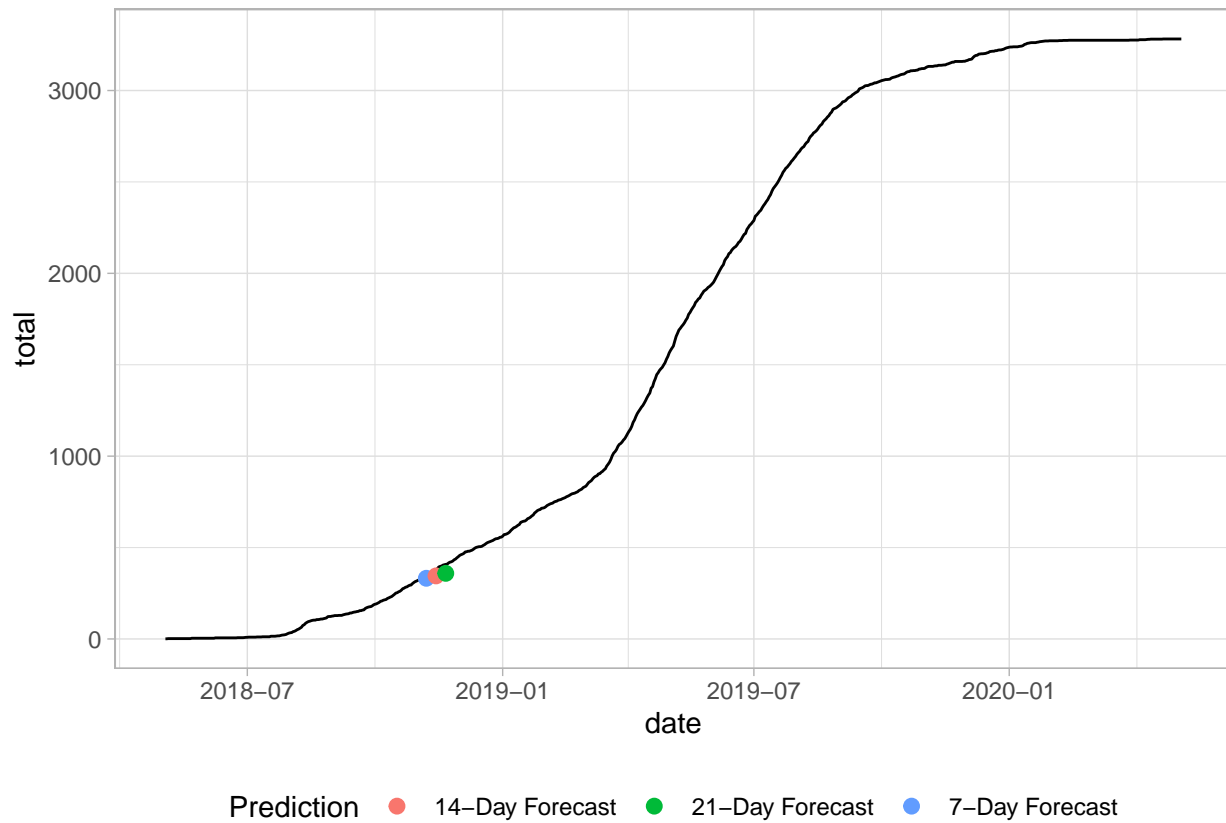


Prediction ● 14-Day Forecast ● 21-Day Forecast ● 7-Day Forecast

Single Forecast Visualization for Entire Outbreak

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

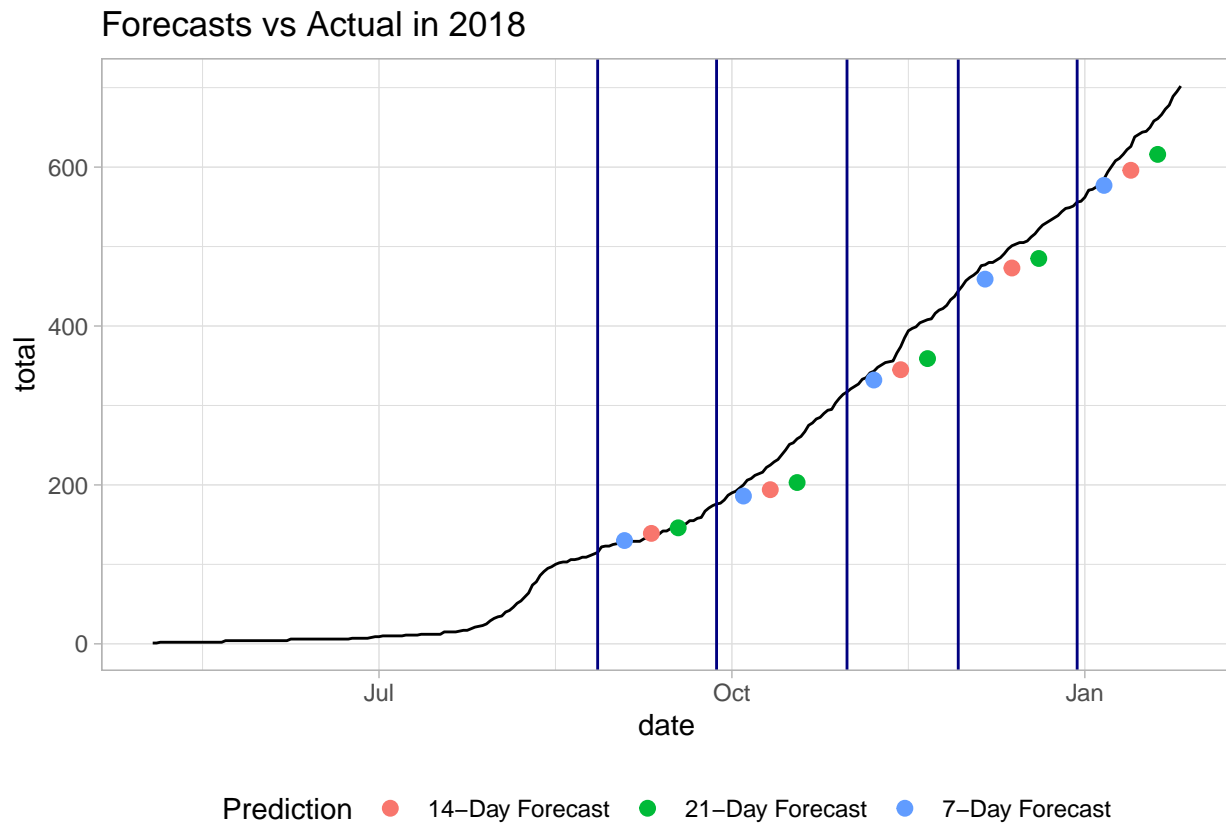
```
full_forecast("2018-10-31",c(15,28,42))
```



Forecasts vs Actual in 2018

Monthly forecasts during all available data in 2018.

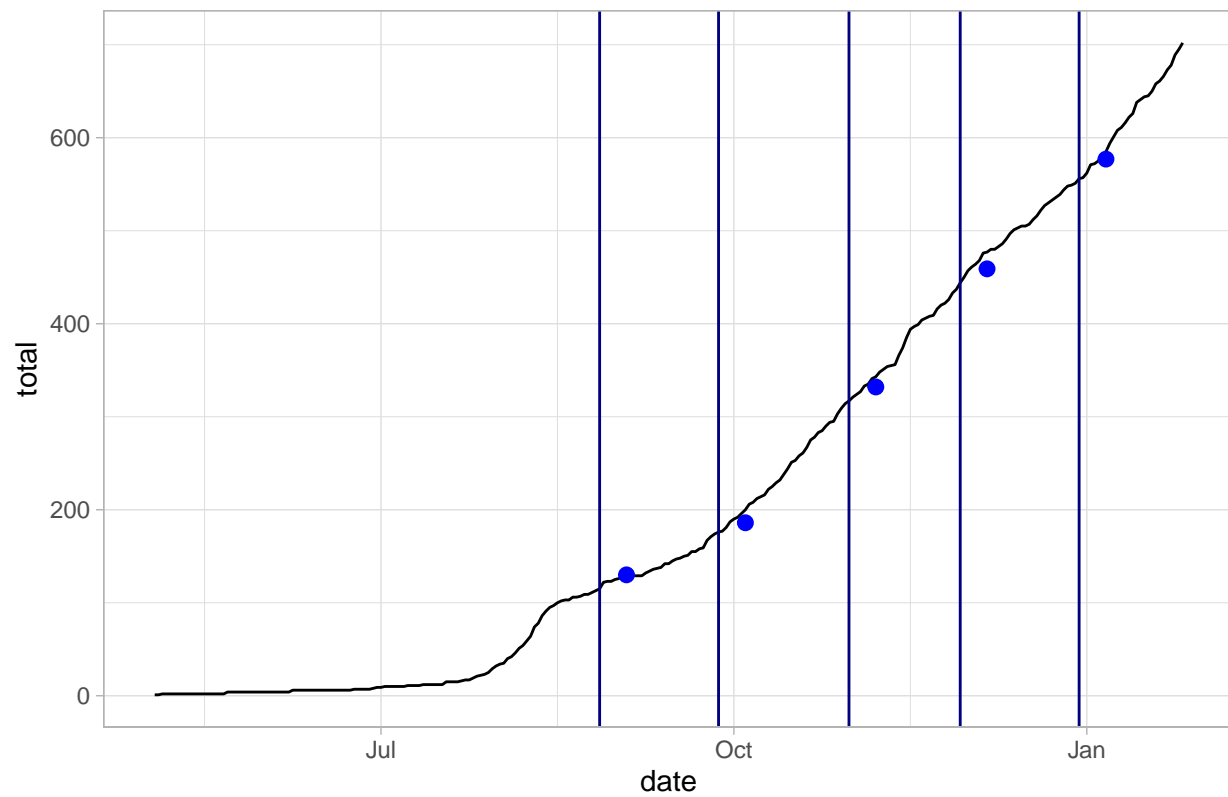
```
title <- "Forecasts vs Actual in 2018"
dv <- c("2018-08-27", "2018-09-27", "2018-10-31", "2018-11-29", "2018-12-30")
mt <- cbind(c(15, 24, 31), c(10, 18, 27), c(15, 28, 42), c(15, 29, 41), c(21, 40, 60))
multi_forecast(dv, mt, title = title)
```



2018 7-day Forecasts

```
title <- "7-Day Forecasts vs Actual in 2018"  
single_forecast(dv, mt, days = 7, title = title)
```

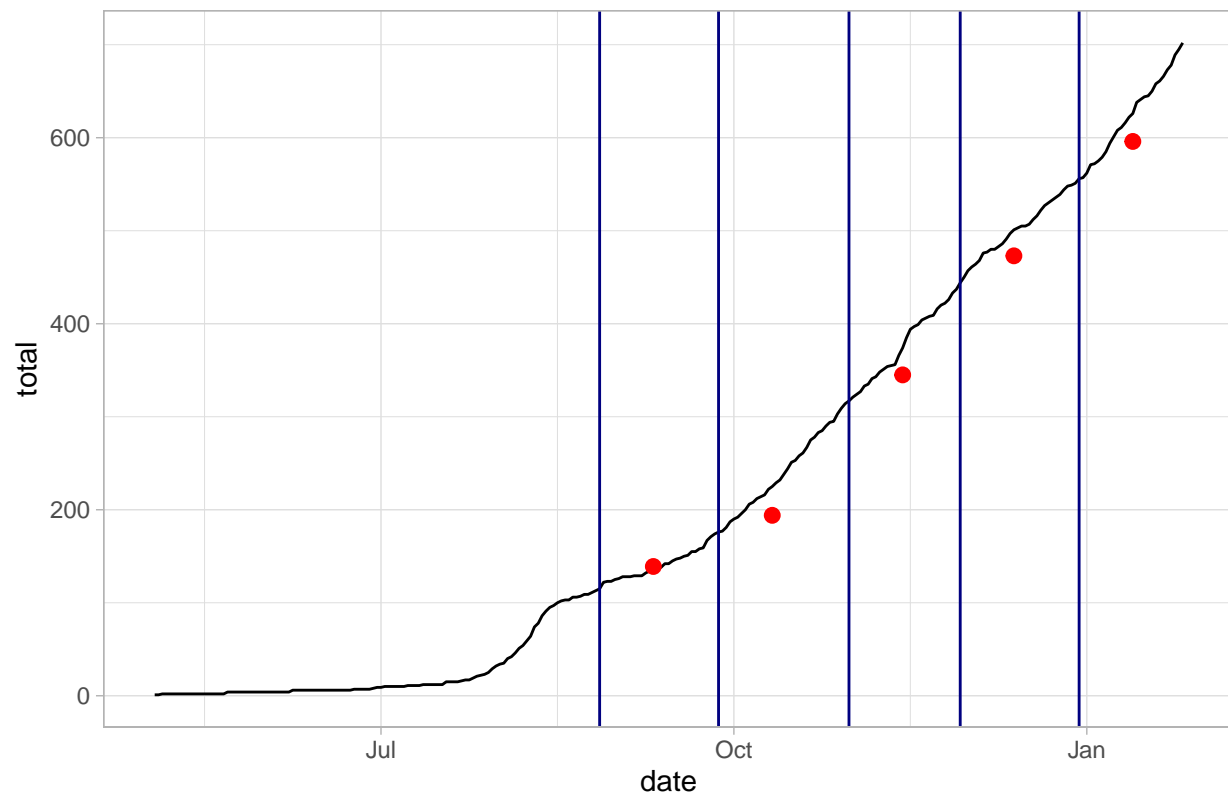
7-Day Forecasts vs Actual in 2018



2018 14-day Forecasts

```
title <- "14-Day Forecasts vs Actual in 2018"  
single_forecast(dv, mt, days = 14, title = title)
```

14-Day Forecasts vs Actual in 2018



2018 21-day Forecasts

```
title <- "21-Day Forecasts vs Actual in 2018"  
single_forecast(dv, mt, days = 21, title = title)
```

21-Day Forecasts vs Actual in 2018

