

EPI Info CDC

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Contents

Libraries Used	1
Load CDC data	2
Read CSV File	2
Clean data and calculate cumulative number of cases	2
Visualize all data	2
Filter to remove incomplete reporting	2
Visualize	2

Libraries Used

```
library(tidyverse)
```

```
## -- Attaching packages ----- tidyverse
## v ggplot2 3.3.0      v purrr   0.3.3
## v tibble  3.0.0      v dplyr   0.8.5
## v tidyr   1.0.2      v stringr 1.4.0
## v readr   1.3.1      v forcats 0.5.0

## -- Conflicts ----- tidyverse_core
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(lubridate)
```

```
##
## Attaching package: 'lubridate'

## The following objects are masked from 'package:dplyr':
##
##   intersect, setdiff, union

## The following objects are masked from 'package:base':
##
##   date, intersect, setdiff, union
```

Load CDC data

Read CSV File

```
cdc <- read_csv(file = "../data/CDC_data.csv")
```

Clean data and calculate cumulative number of cases

```
names(cdc)[1:2] <- c("Date",  
                    "Number of new cases")  
cdc$cum <- cumsum(cdc$`Number of new cases`)  
cdc$Date <- as.Date(cdc$Date,  
                   format = "%d-%b-%y")  
cdc$`Week Number` <- week(cdc$Date)
```

Visualize all data

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'  
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## `geom_smooth()` using method = 'loess' and formula 'y ~ x'  
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'  
## Warning: Transformation introduced infinite values in continuous y-axis  
## Warning: Transformation introduced infinite values in continuous y-axis  
## Warning: Transformation introduced infinite values in continuous y-axis  
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'  
## Warning: Removed 1 rows containing non-finite values (stat_smooth).  
## Warning: Transformation introduced infinite values in continuous y-axis  
## Warning: Transformation introduced infinite values in continuous y-axis  
## Warning: Transformation introduced infinite values in continuous y-axis  
## Warning: Removed 1 rows containing non-finite values (stat_smooth).
```

Filter to remove incomplete reporting

remove dates on or after 5 April as this data may not be completely reported

```
cdc <- cdc %>%  
  filter(Date < as.Date("05-Apr-2020",  
                       format = "%d-%b-%Y"))
```

update with g

Visualize

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'  
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## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```

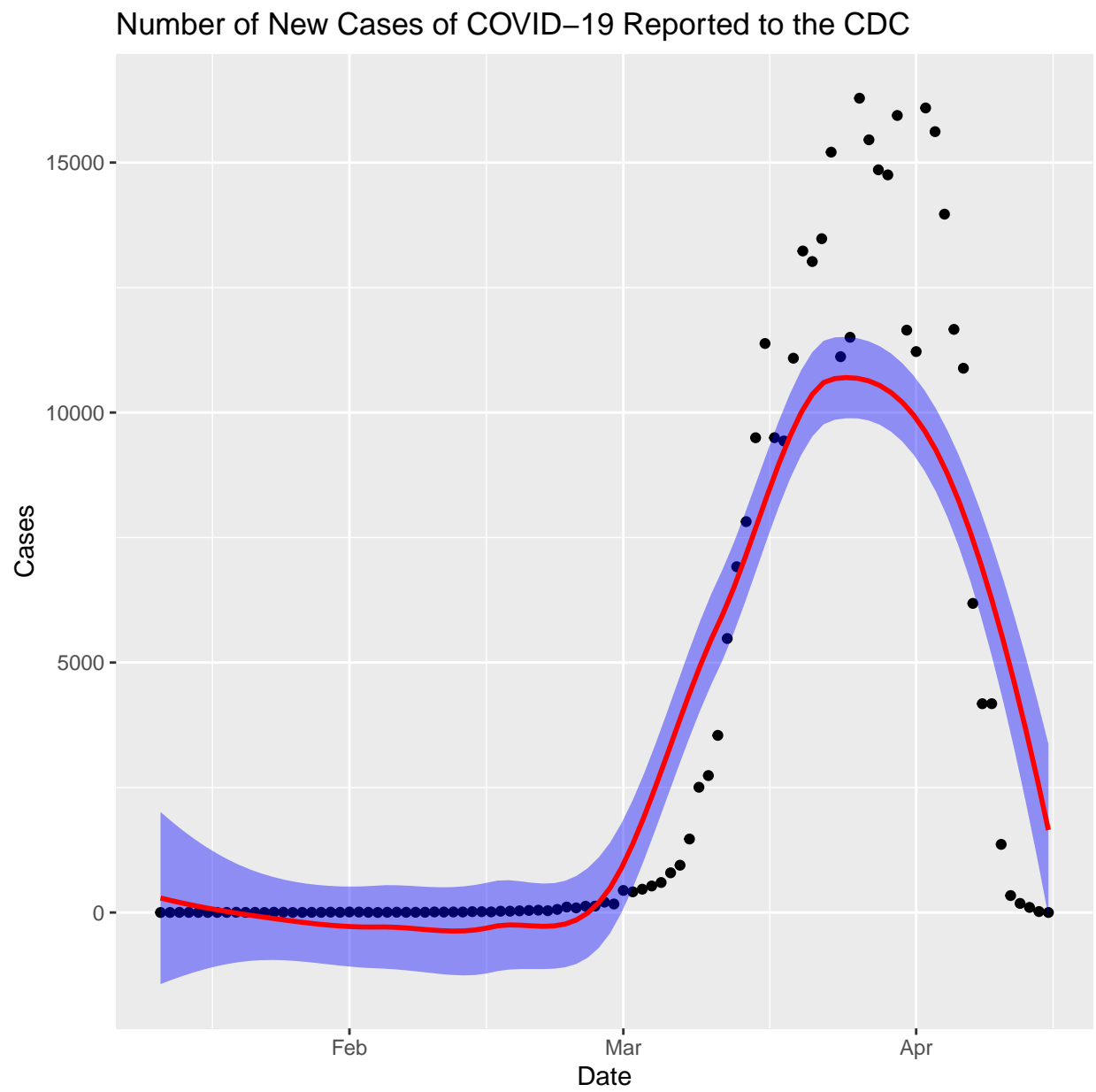


Figure 1: Epi curve 1

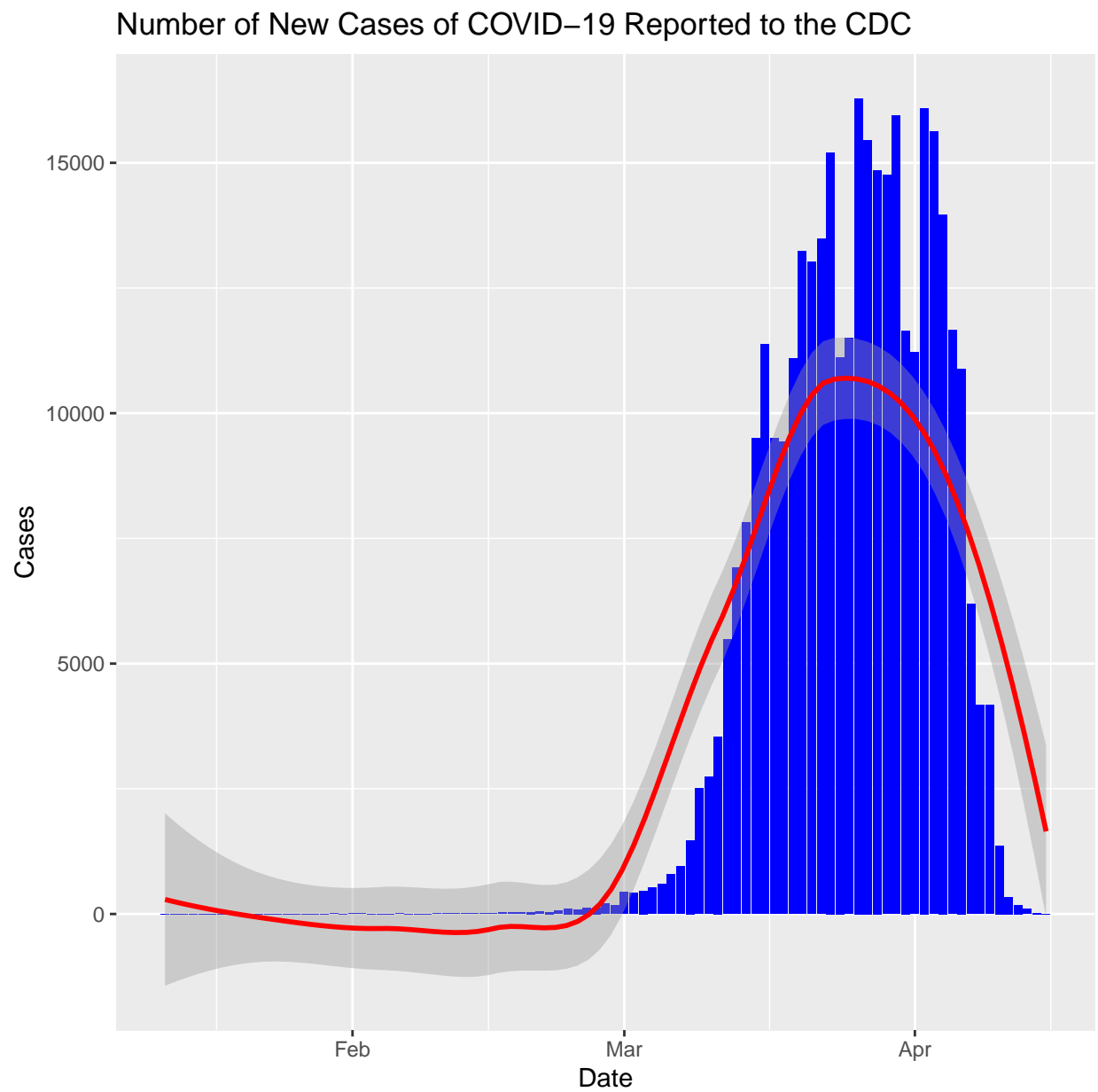


Figure 2: Epi curve 2, traditional

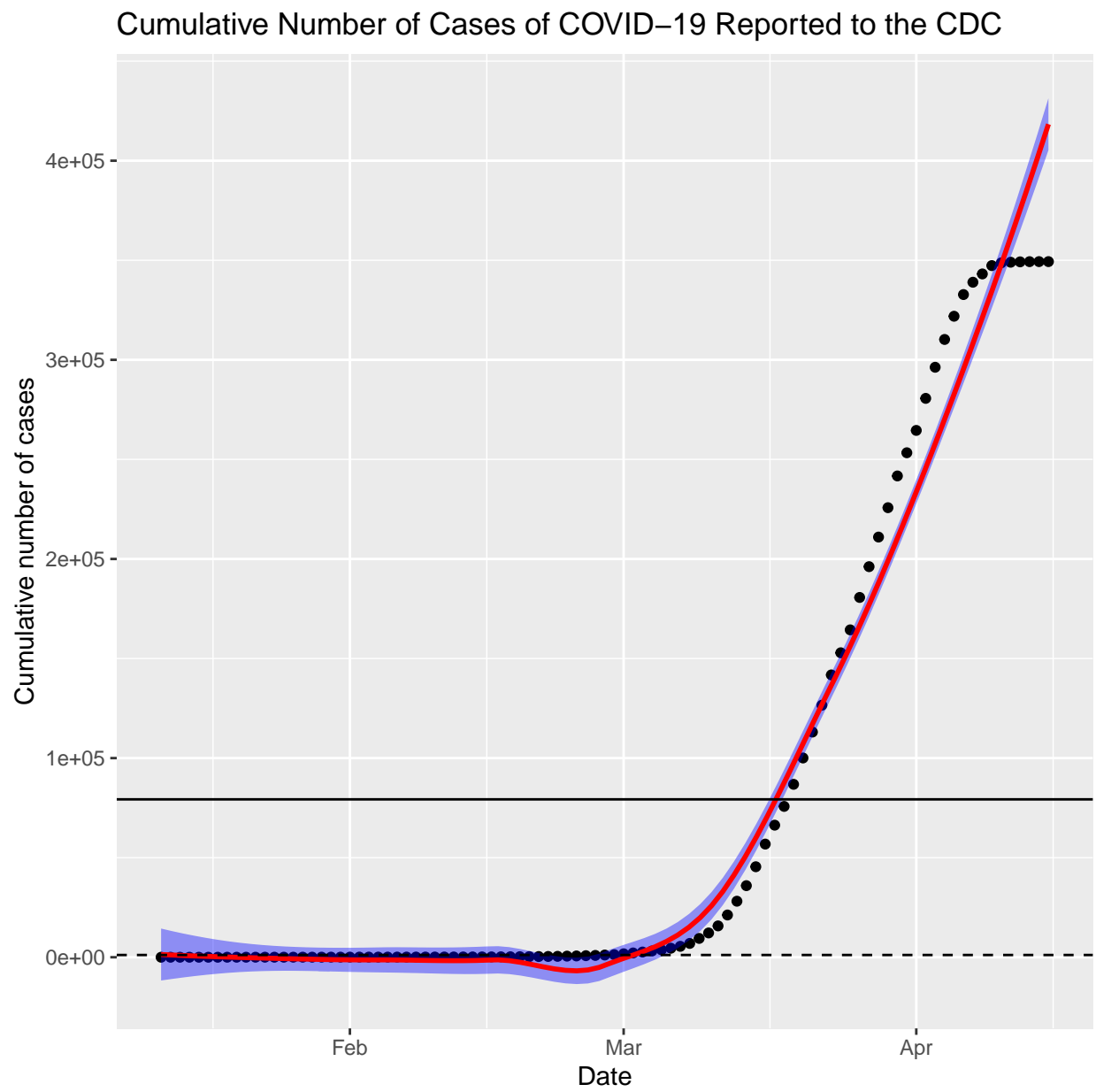


Figure 3: Cumulative cases

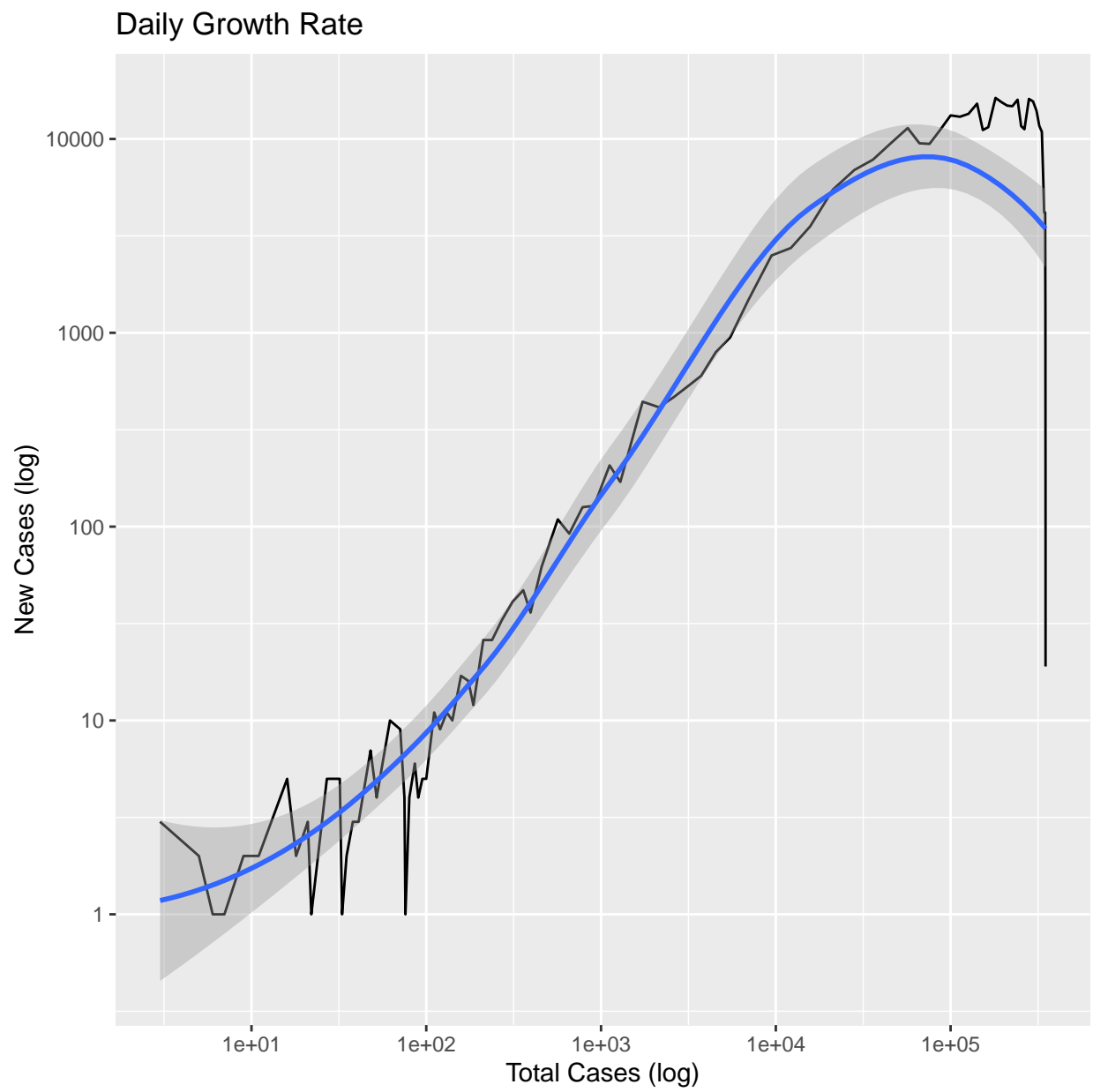


Figure 4: Growth Rate

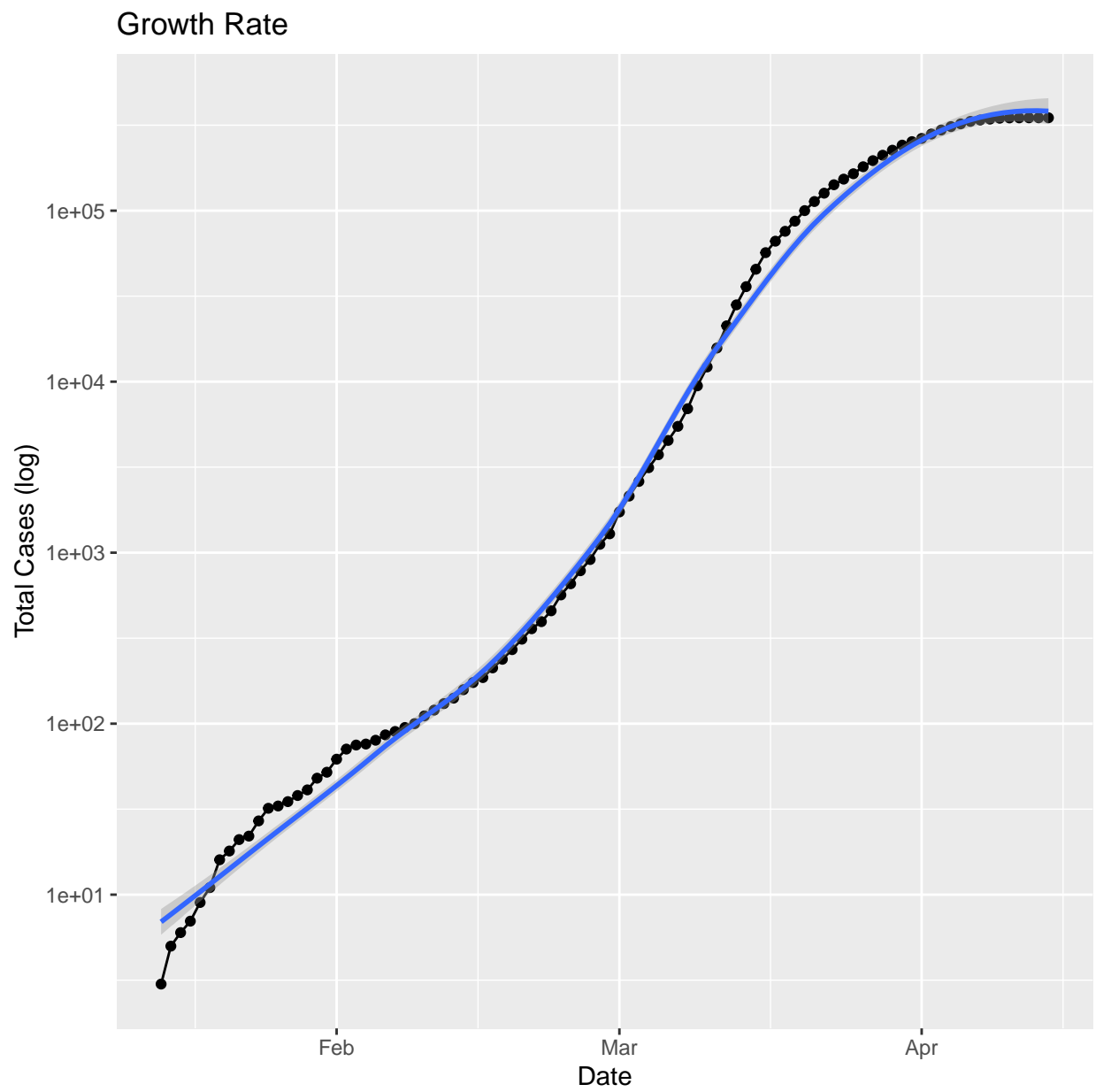


Figure 5: Another look at growth

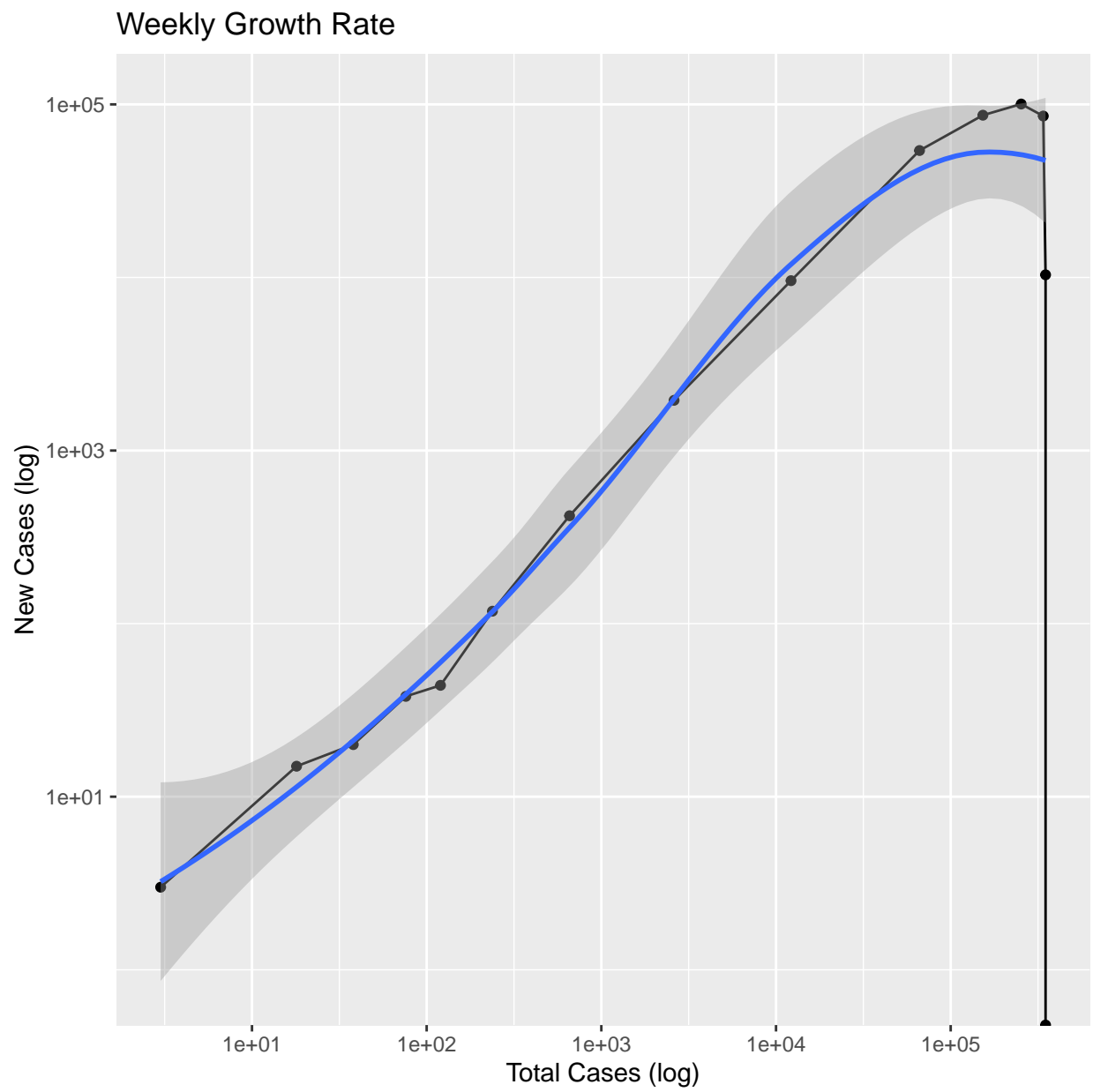


Figure 6: weekly growth rate

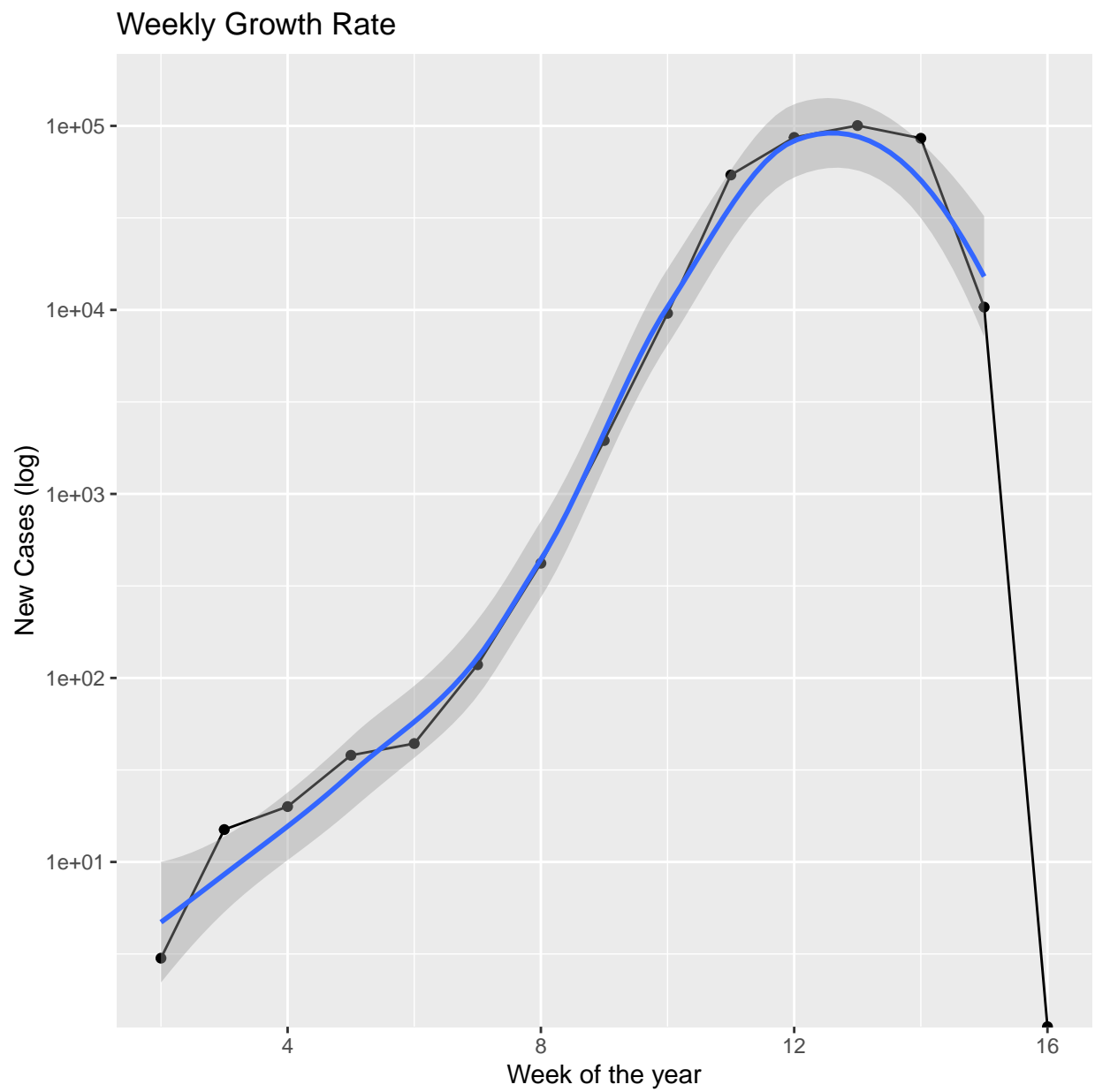


Figure 7: Another look at growth

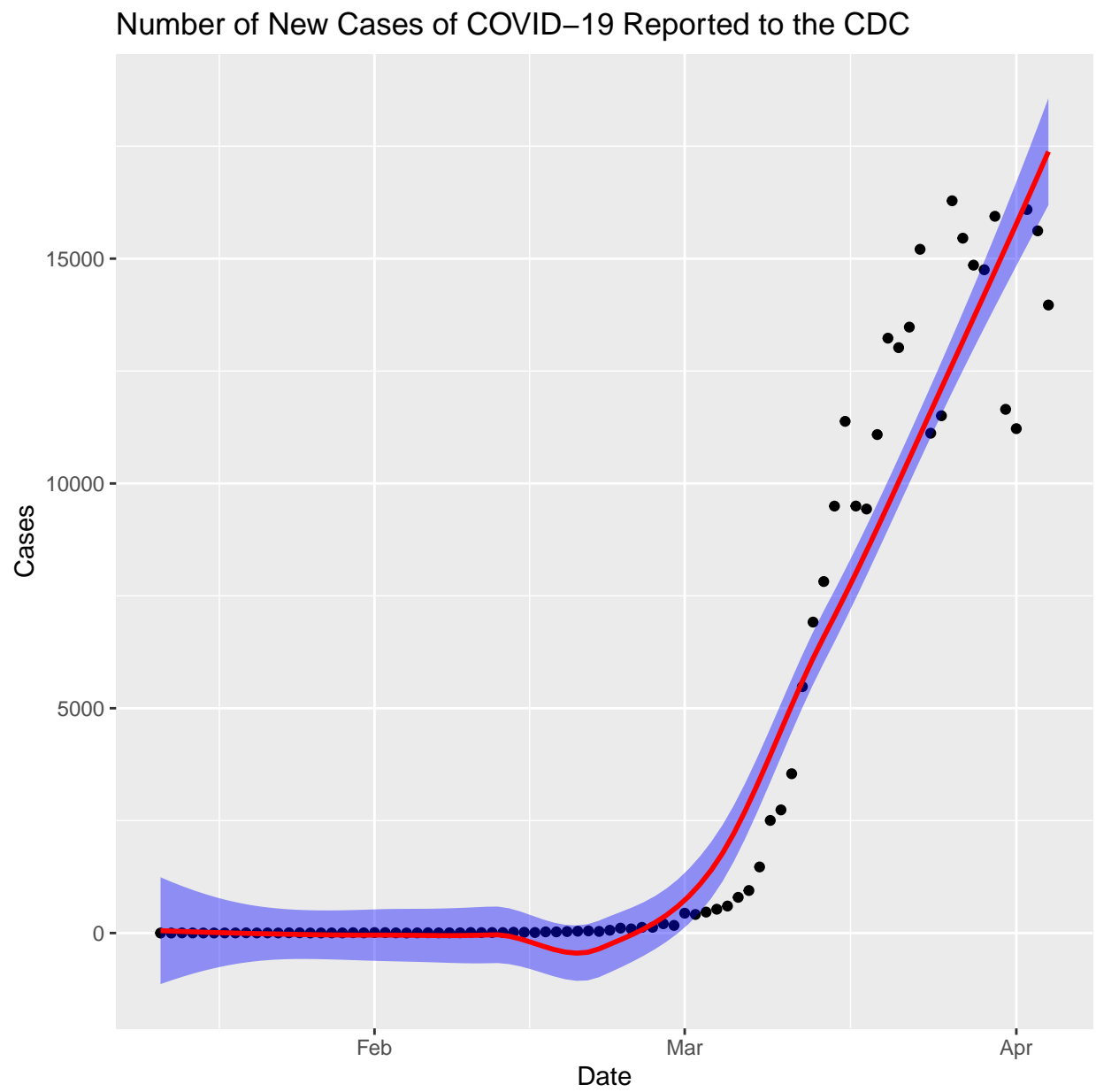


Figure 8: stable Epi curve

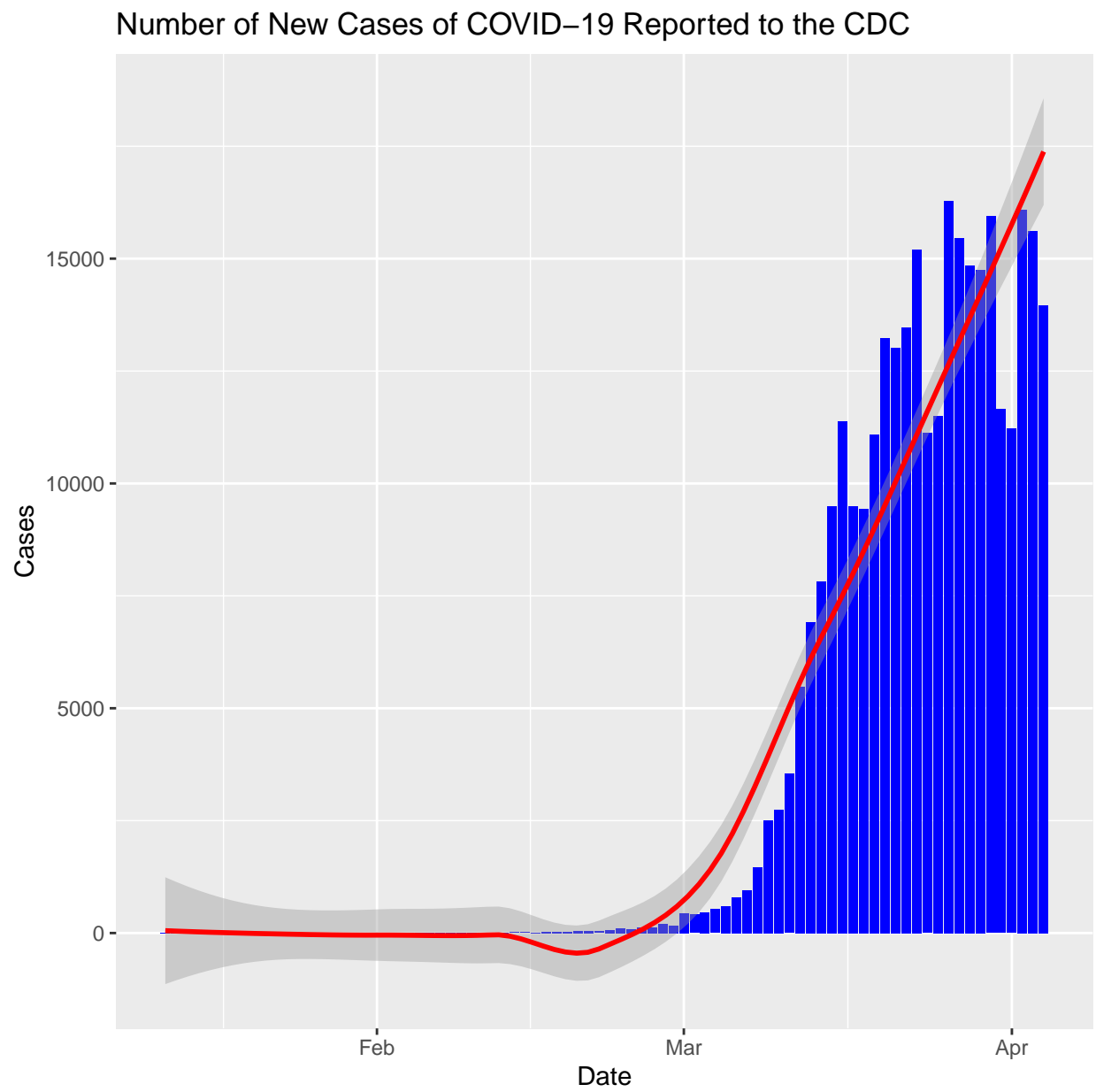


Figure 9: stable Epi curve, traditional

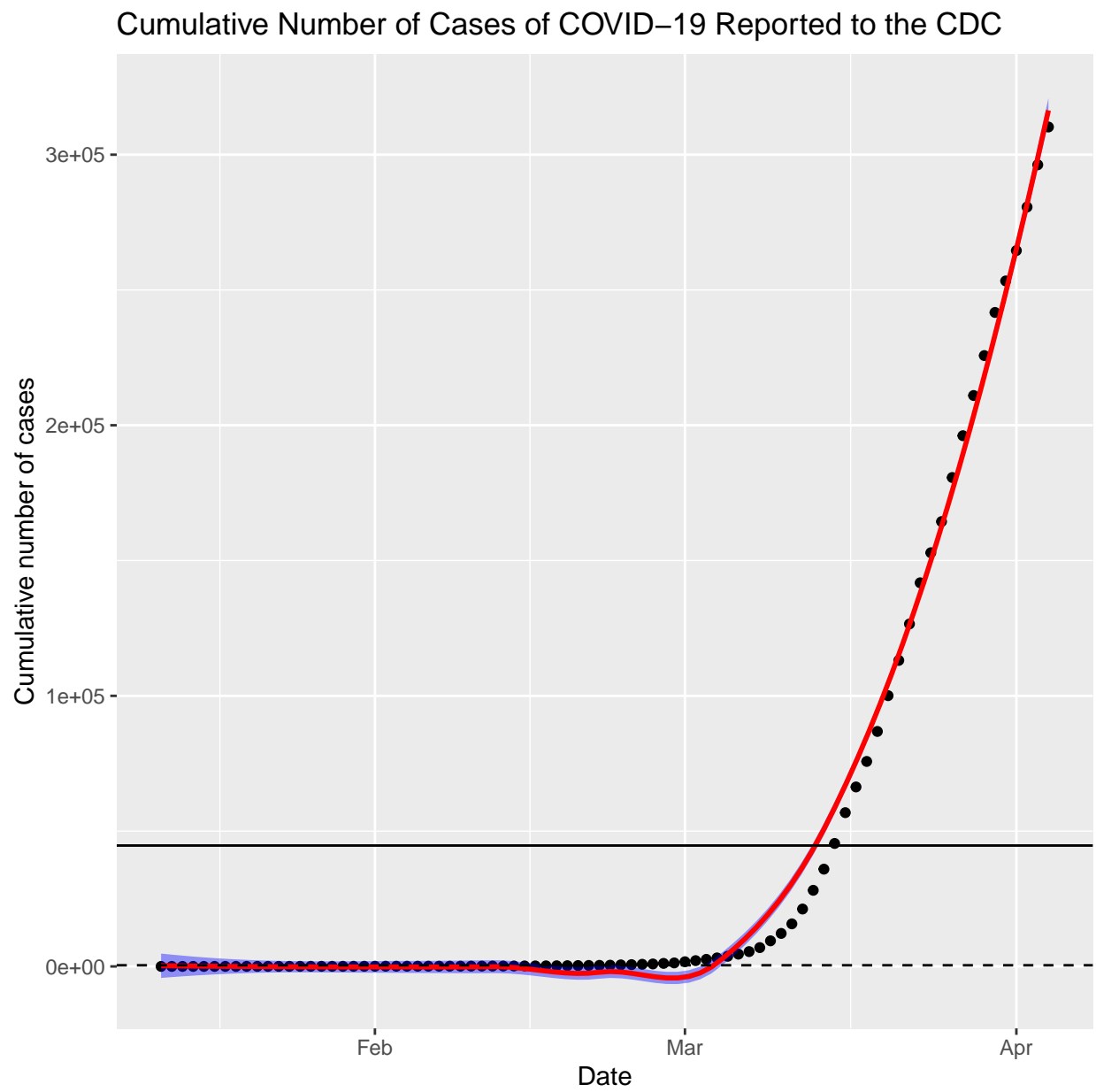


Figure 10: stable Cumulative cases

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```

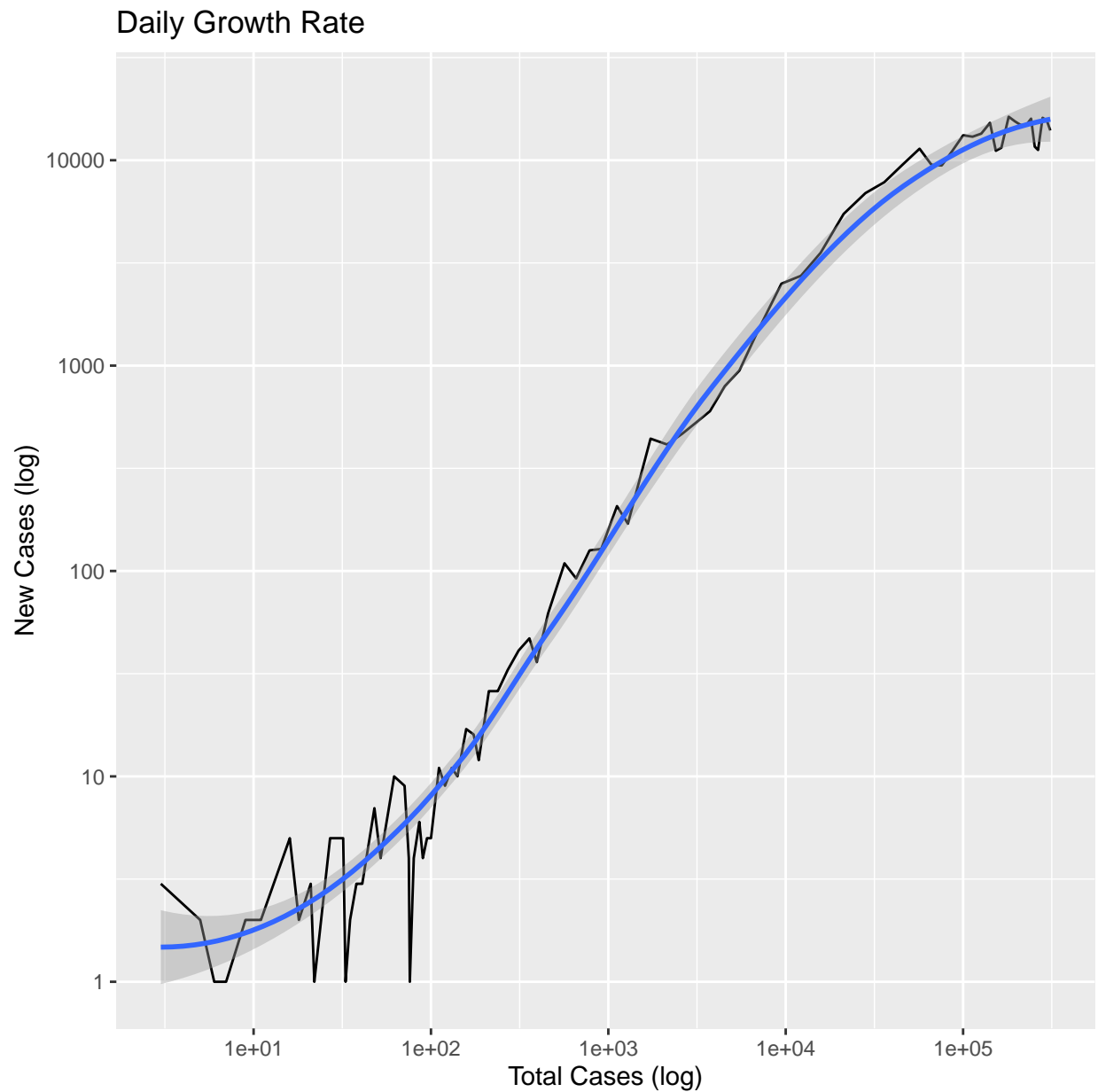


Figure 11: stable Growth Rate

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```

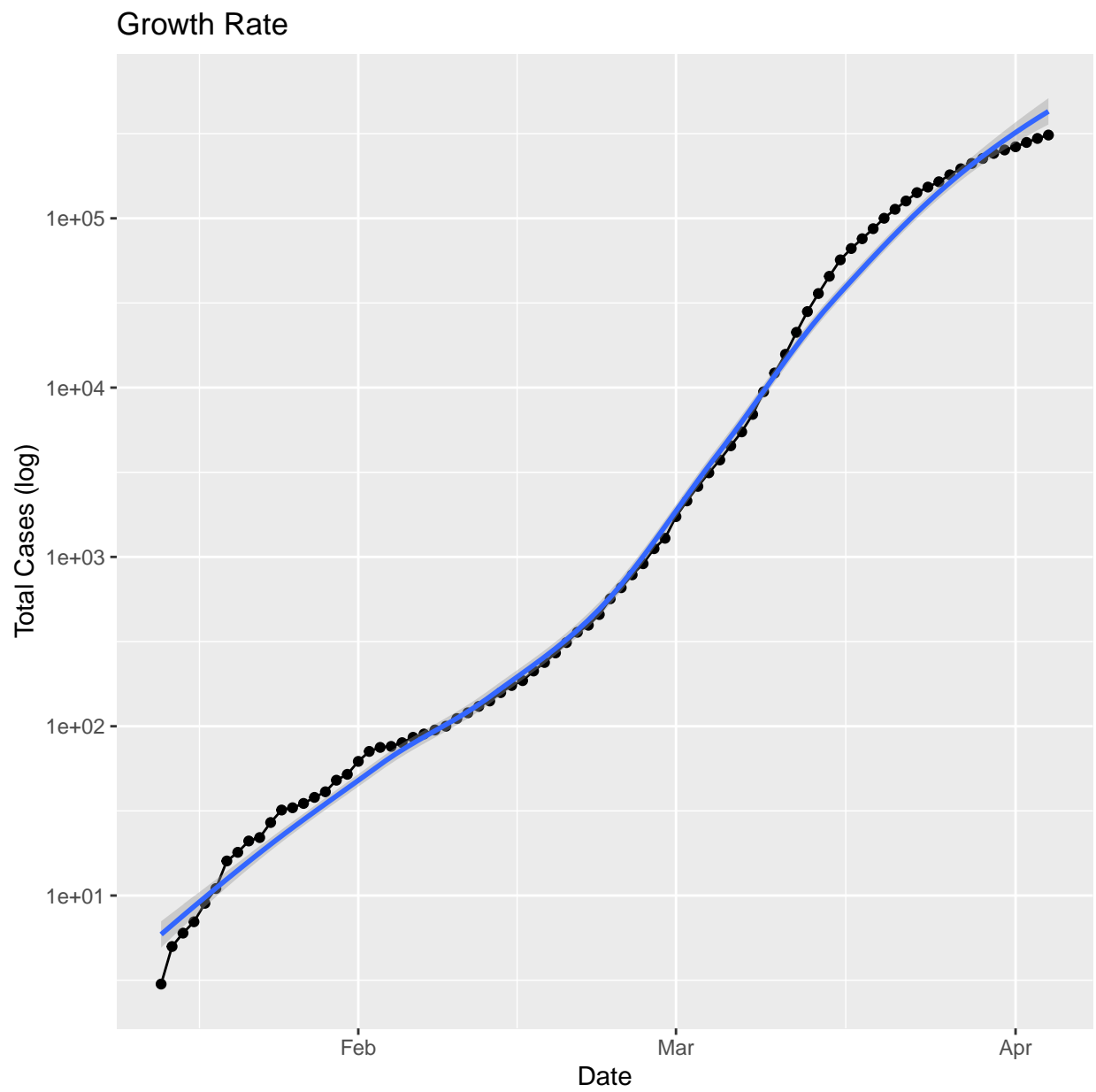


Figure 12: Another look at growth

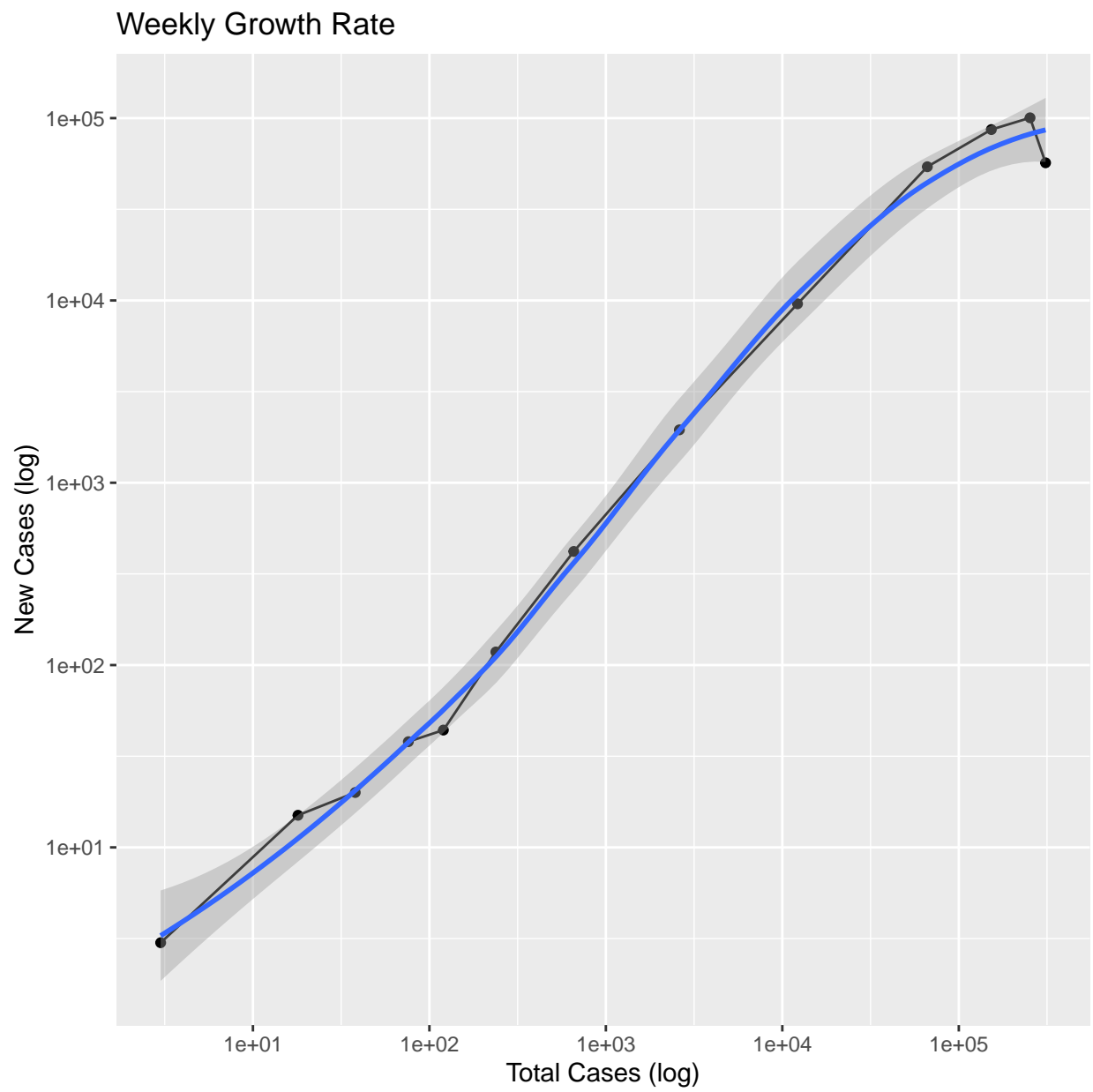


Figure 13: stable weekly growth rate

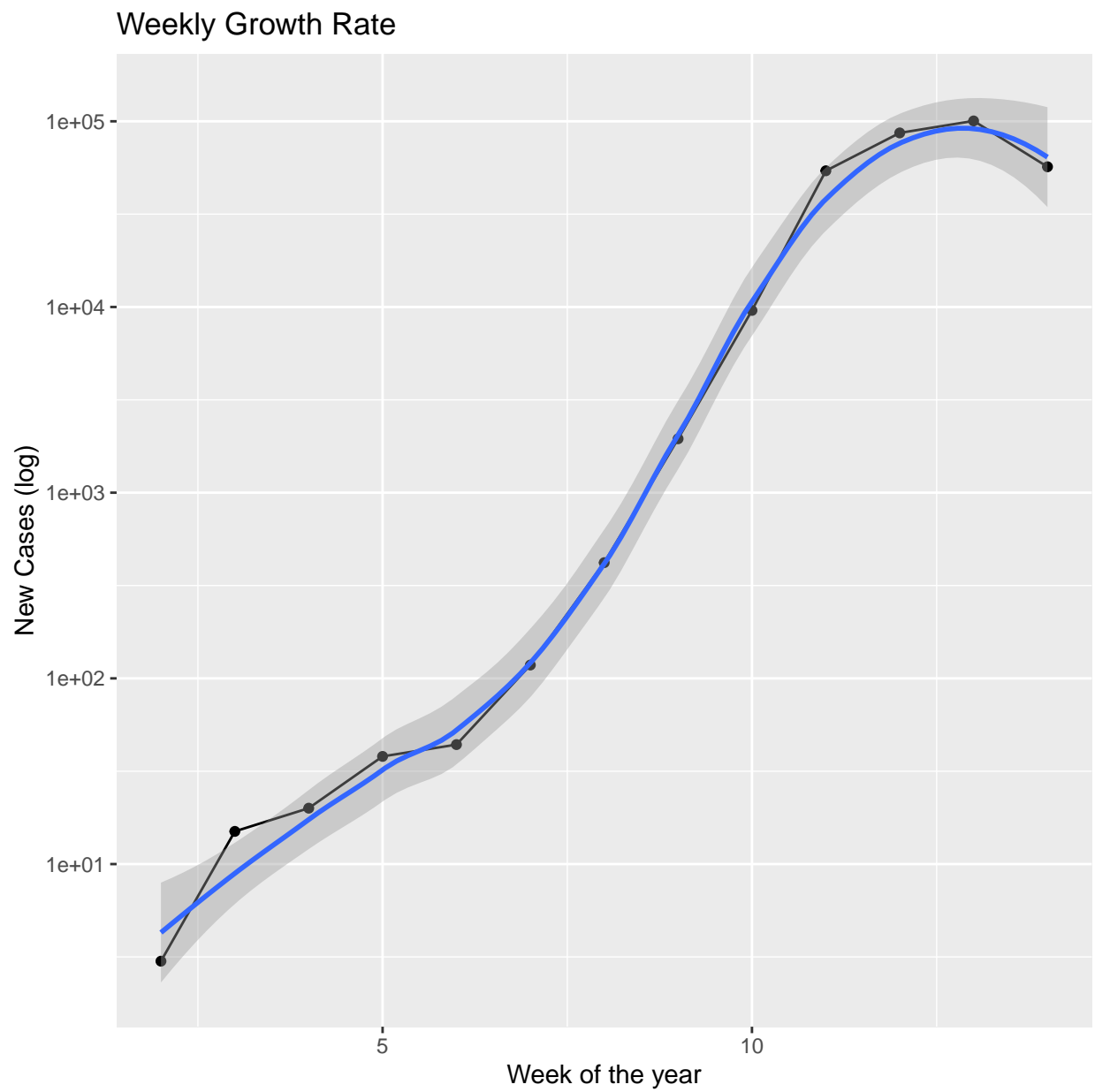


Figure 14: Another look at growth