

# EPI Info CDC

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3/16/2020

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## Libraries Used

```
library(tidyverse)
```

```
## -- Attaching packages -----  
## 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 -----  
## 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'  
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'  
## `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).
```

## Filter to remove incomplete reporting

remove dates on or after 28 March as this data may not be completely reported

```
cdc <- cdc %>%  
  filter(Date < as.Date("2020-03-29"))
```

# update with g

### Visualize

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

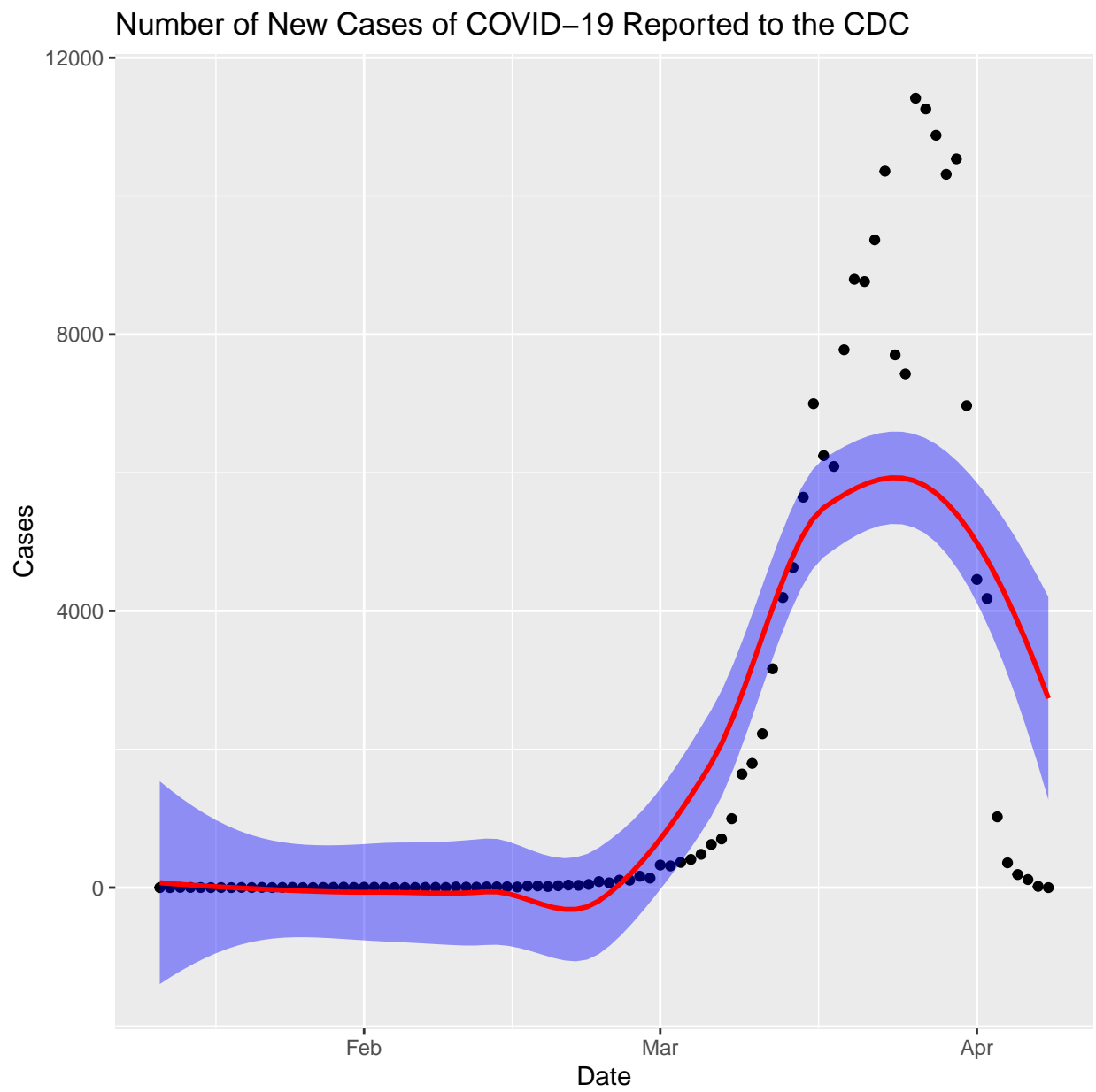


Figure 1: Epi curve 1

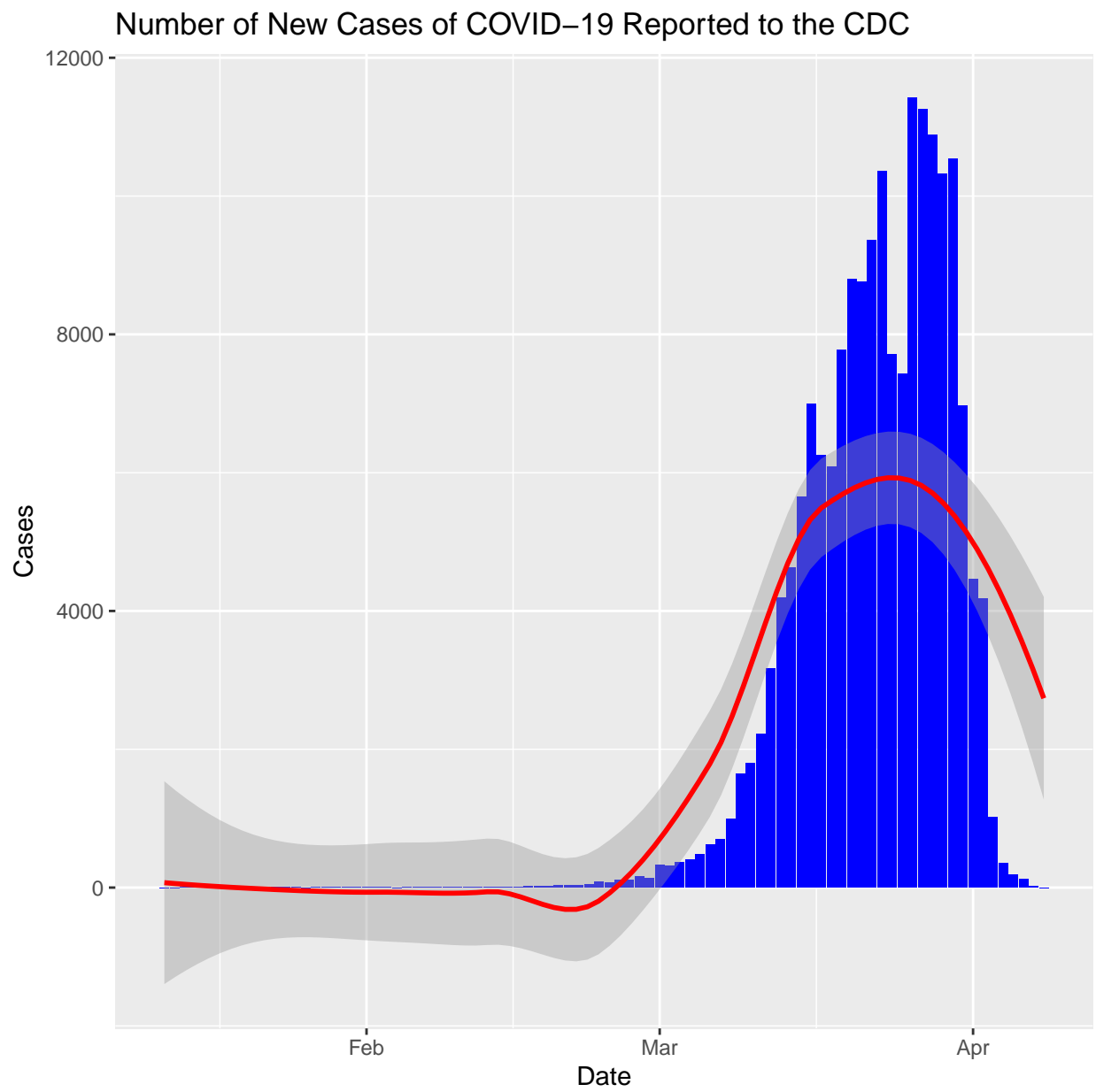


Figure 2: Epi curve 2, traditional

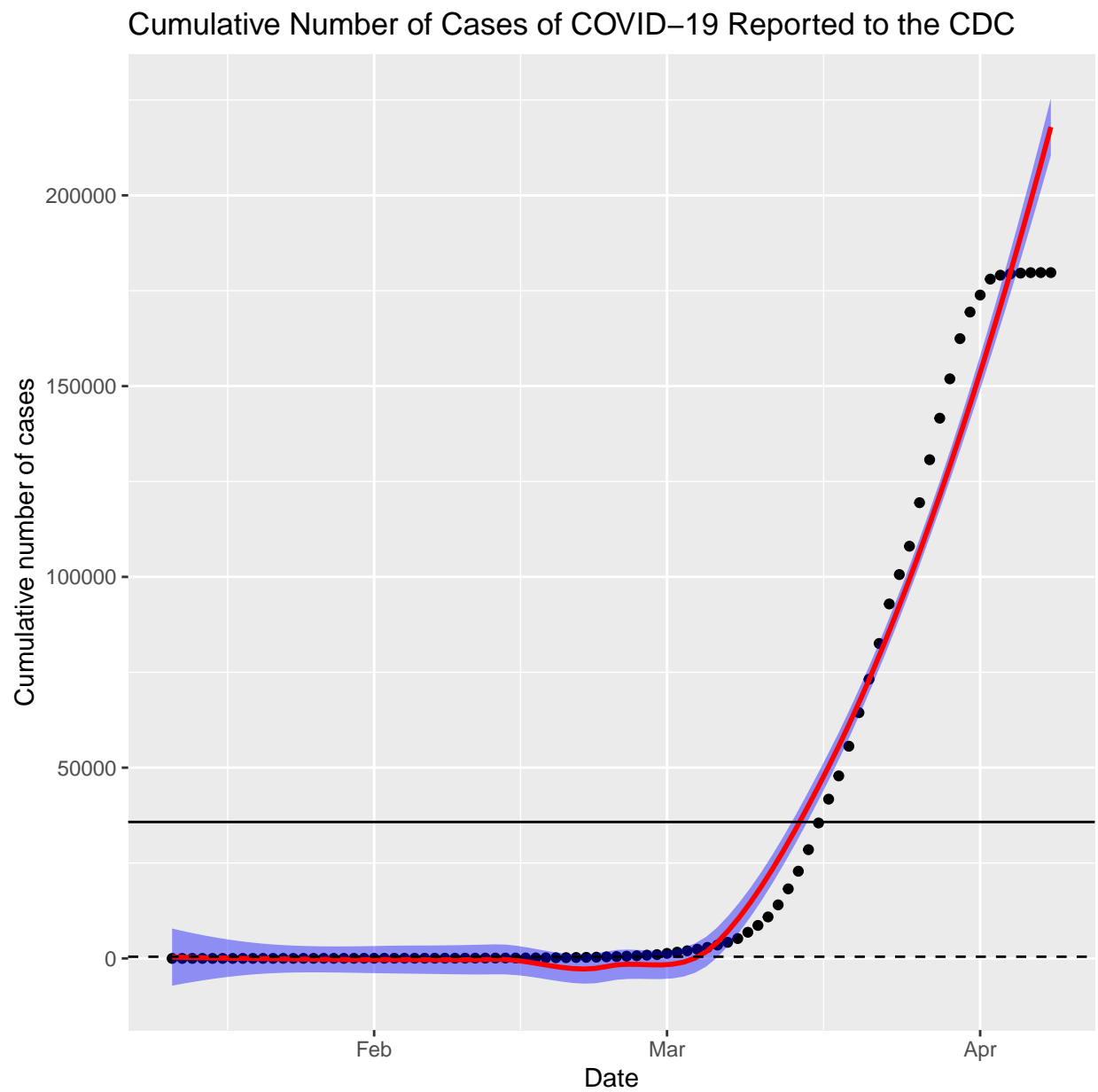


Figure 3: Cumulative cases

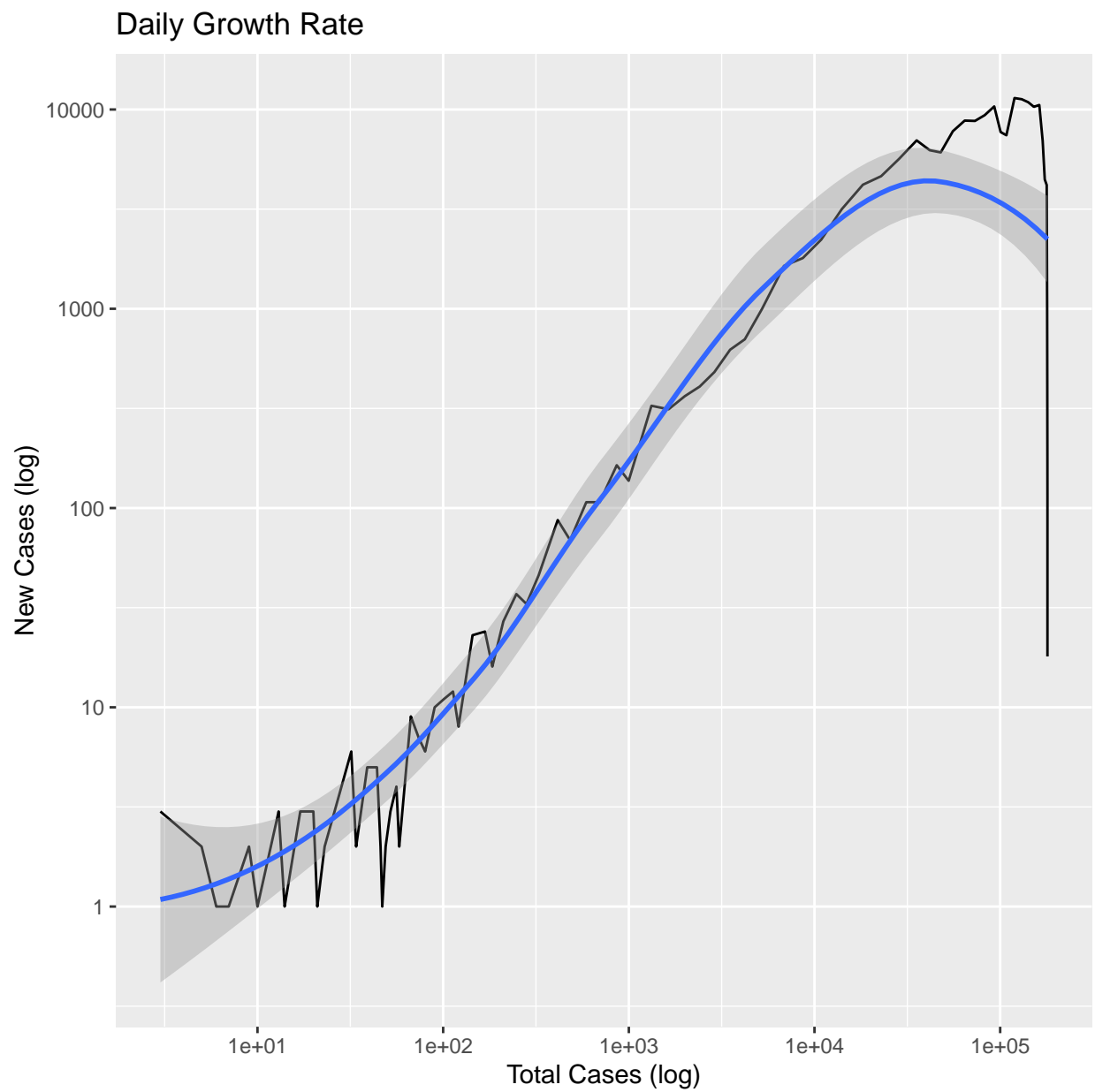


Figure 4: Growth Rate

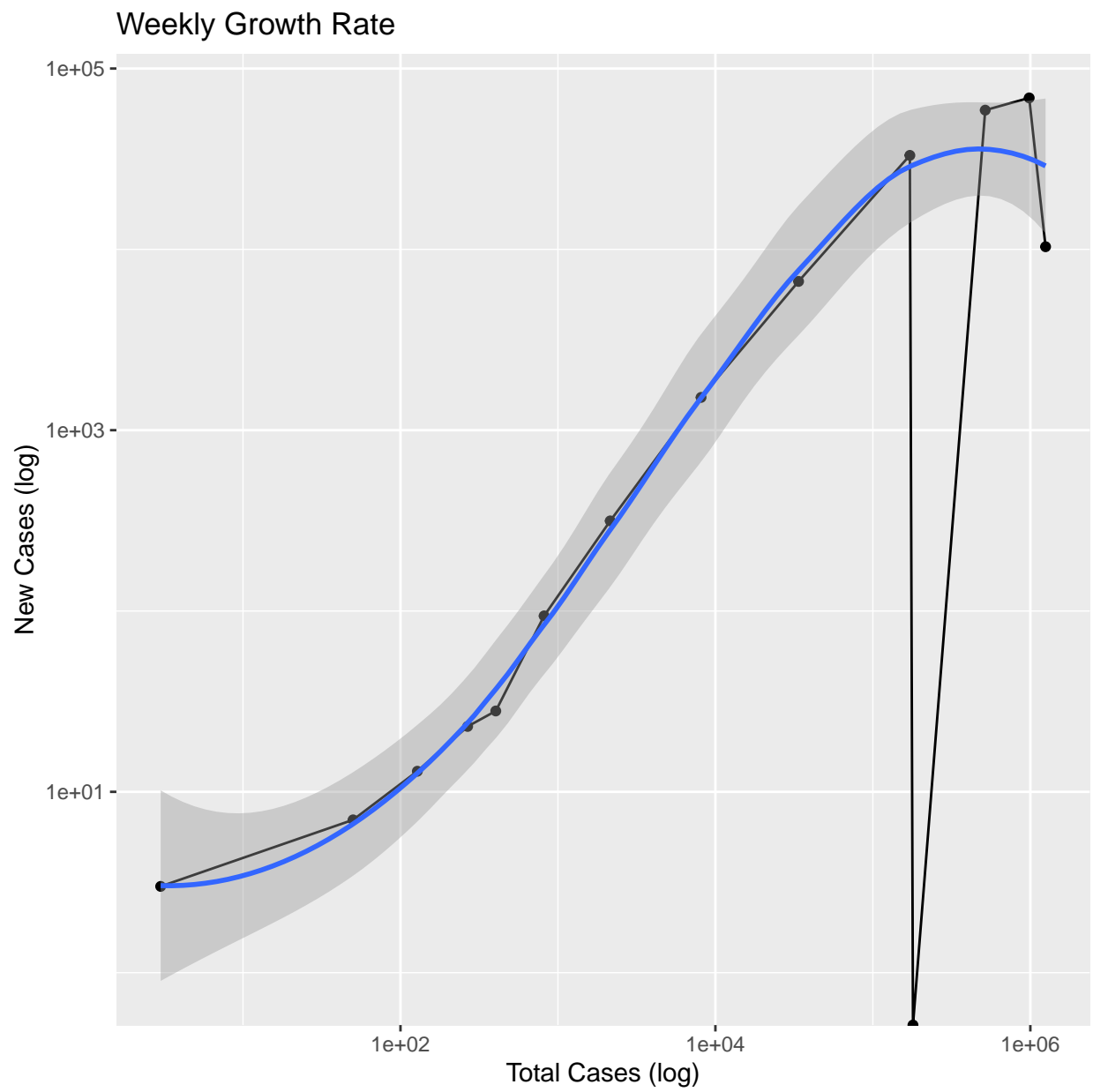


Figure 5: weekly growth rate

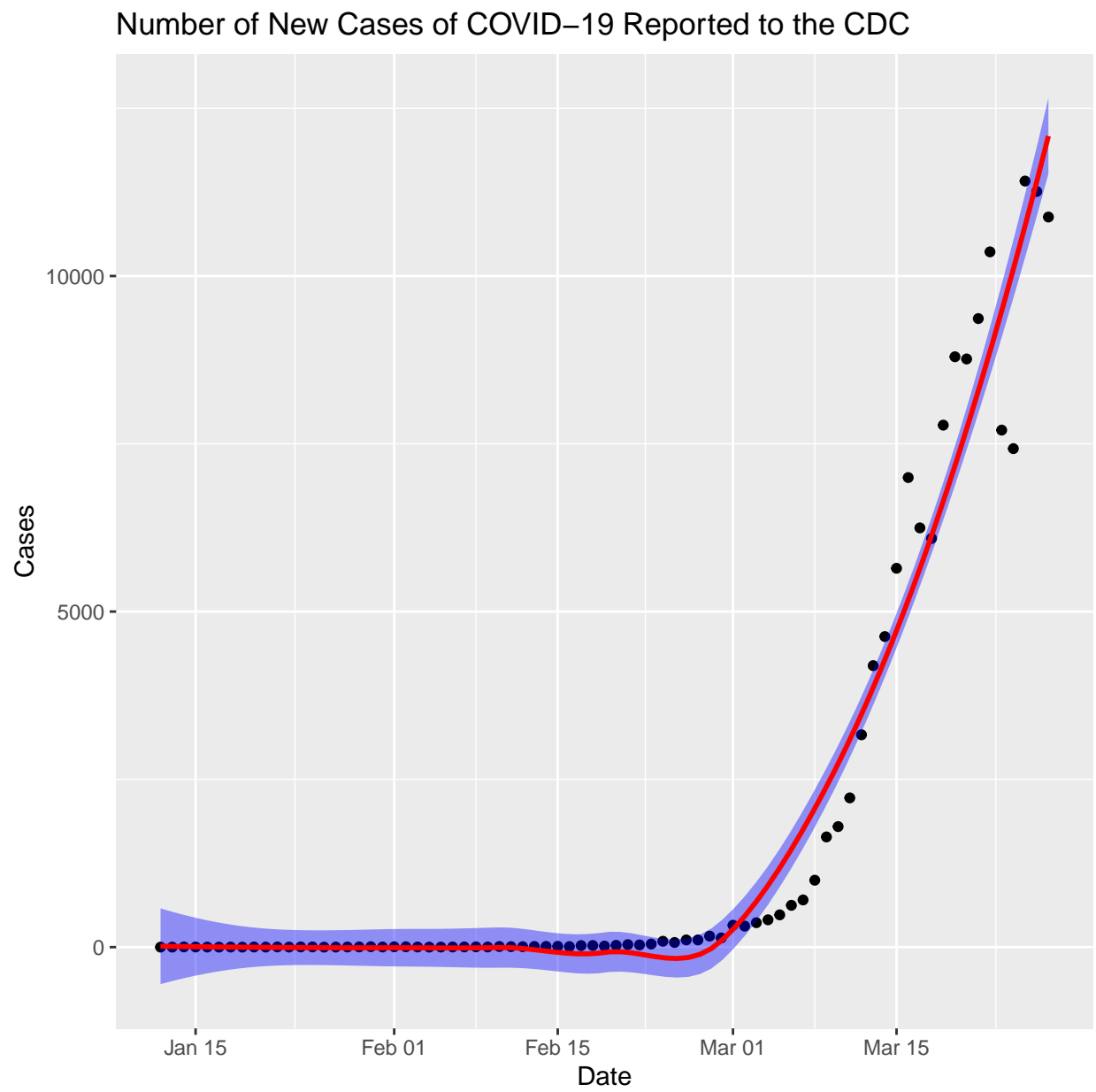


Figure 6: stable Epi curve



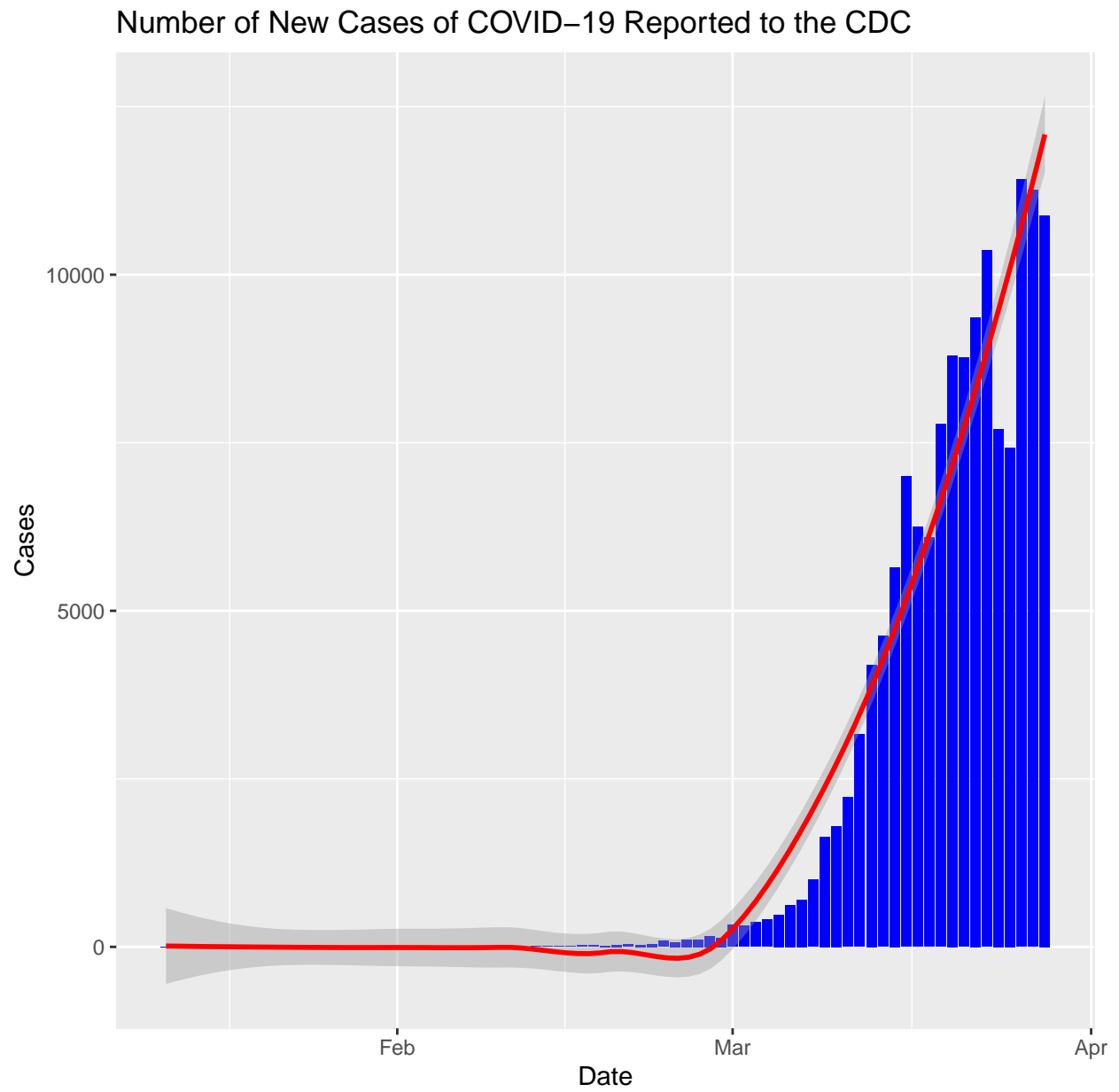


Figure 7: stable Epi curve, traditional

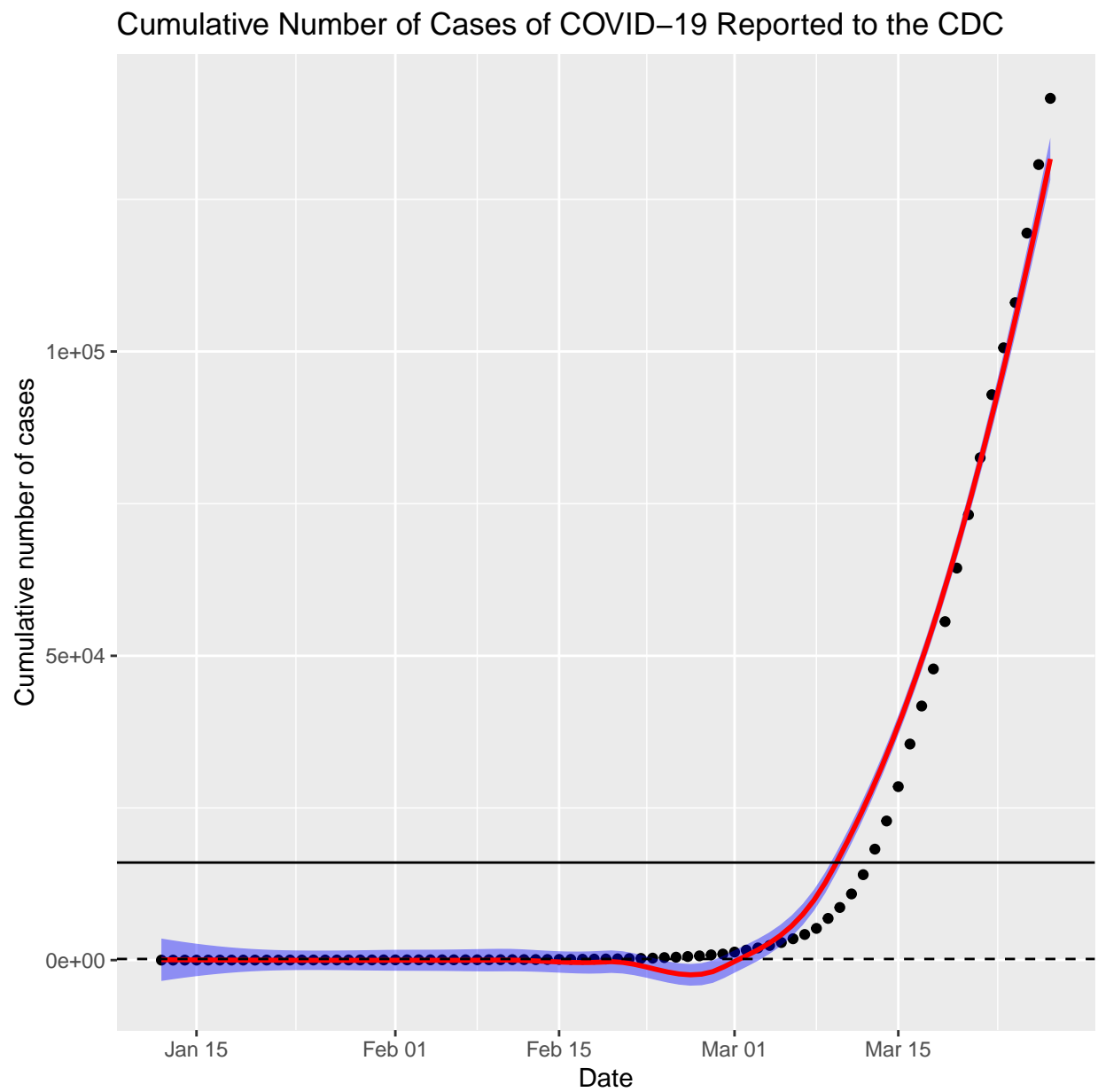


Figure 8: stable Cumulative cases

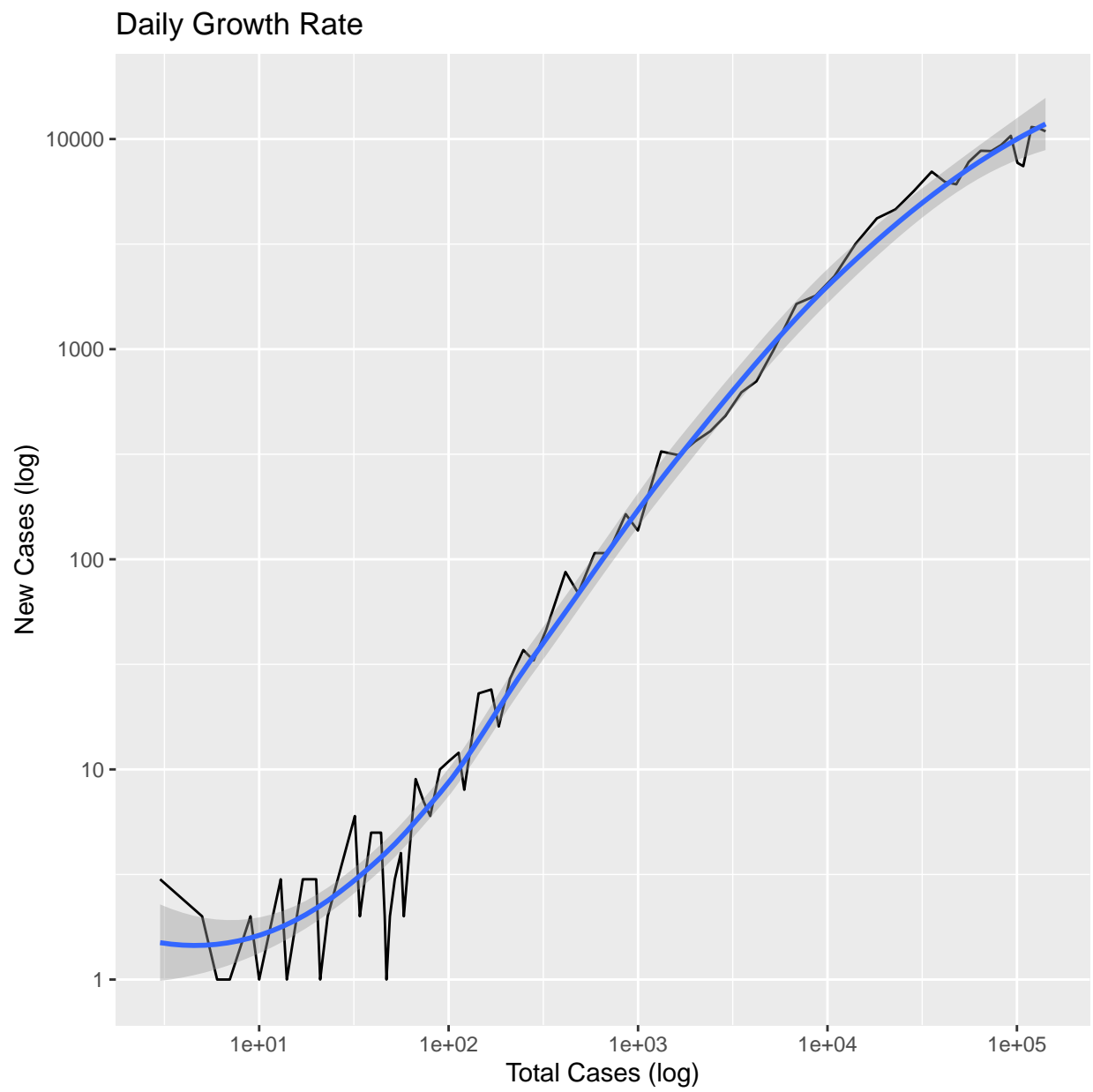


Figure 9: stable Growth Rate

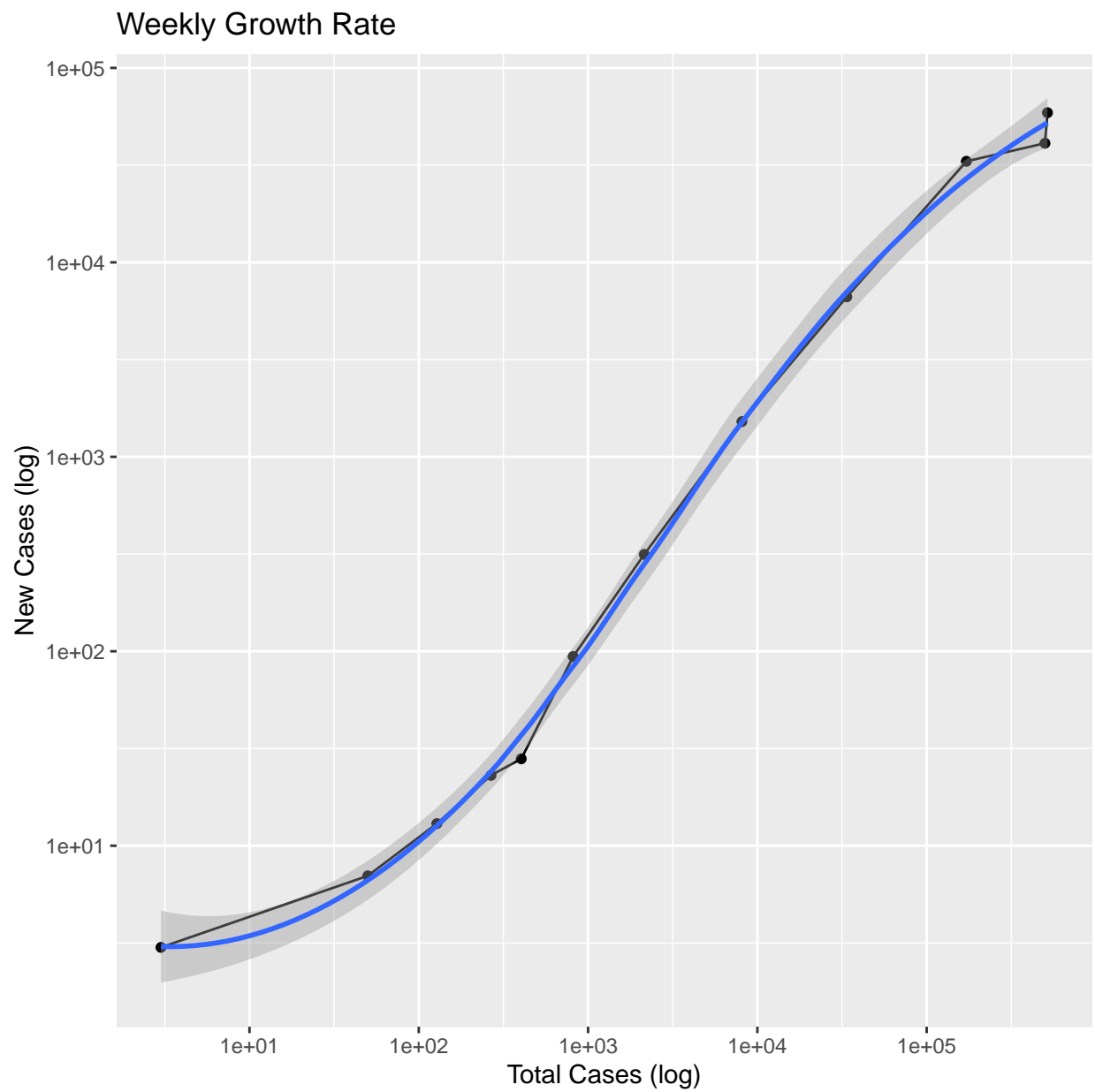


Figure 10: stable weekly growth rate