

EPI Info CDC

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

Filter to remove incomplete reporting

remove dates on or after 3 April as this data may not be completely reported

```
cdc <- cdc %>%  
  filter(Date < as.Date("2020-04-03")) # 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'
```

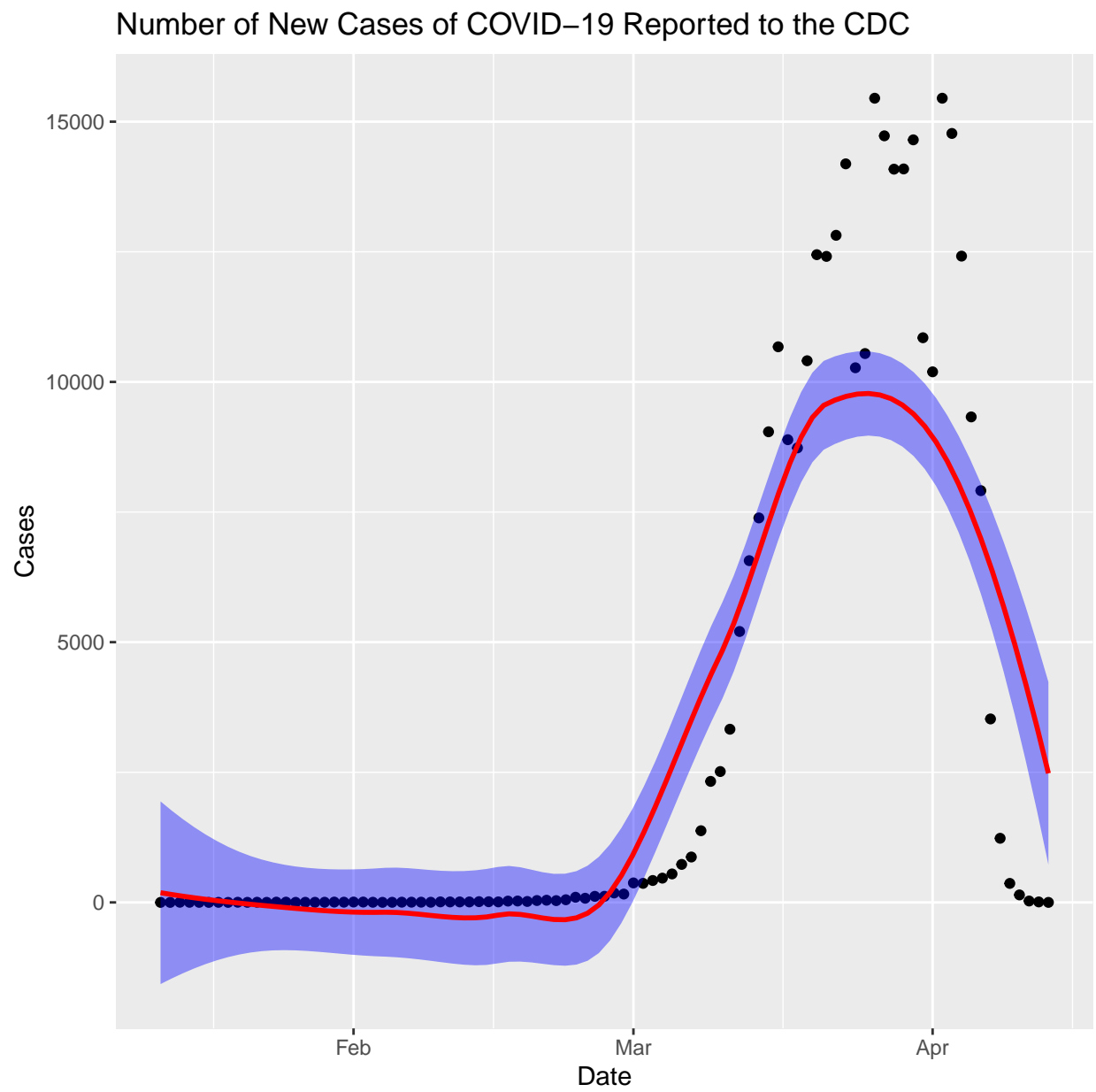


Figure 1: Epi curve 1

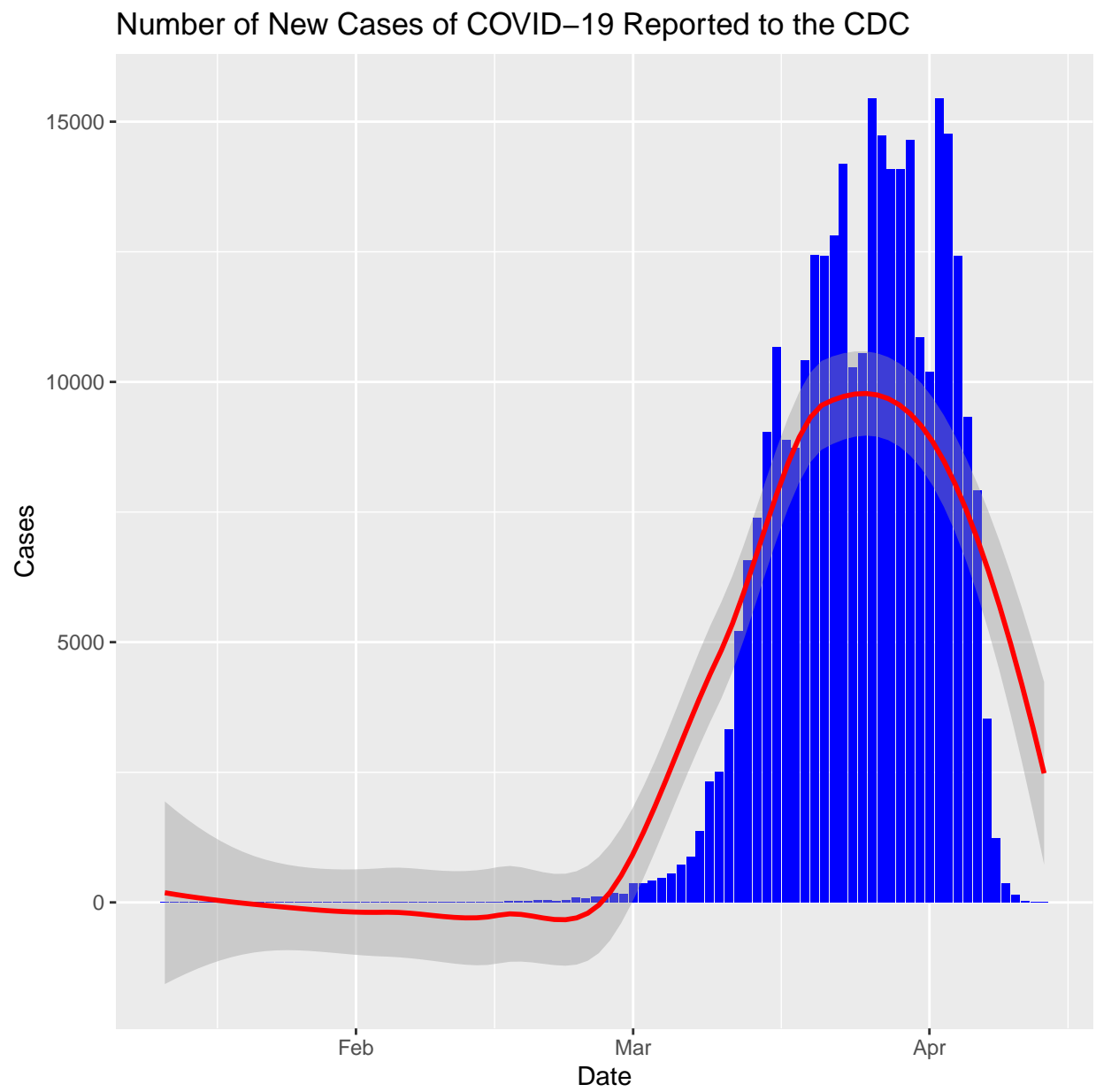


Figure 2: Epi curve 2, traditional

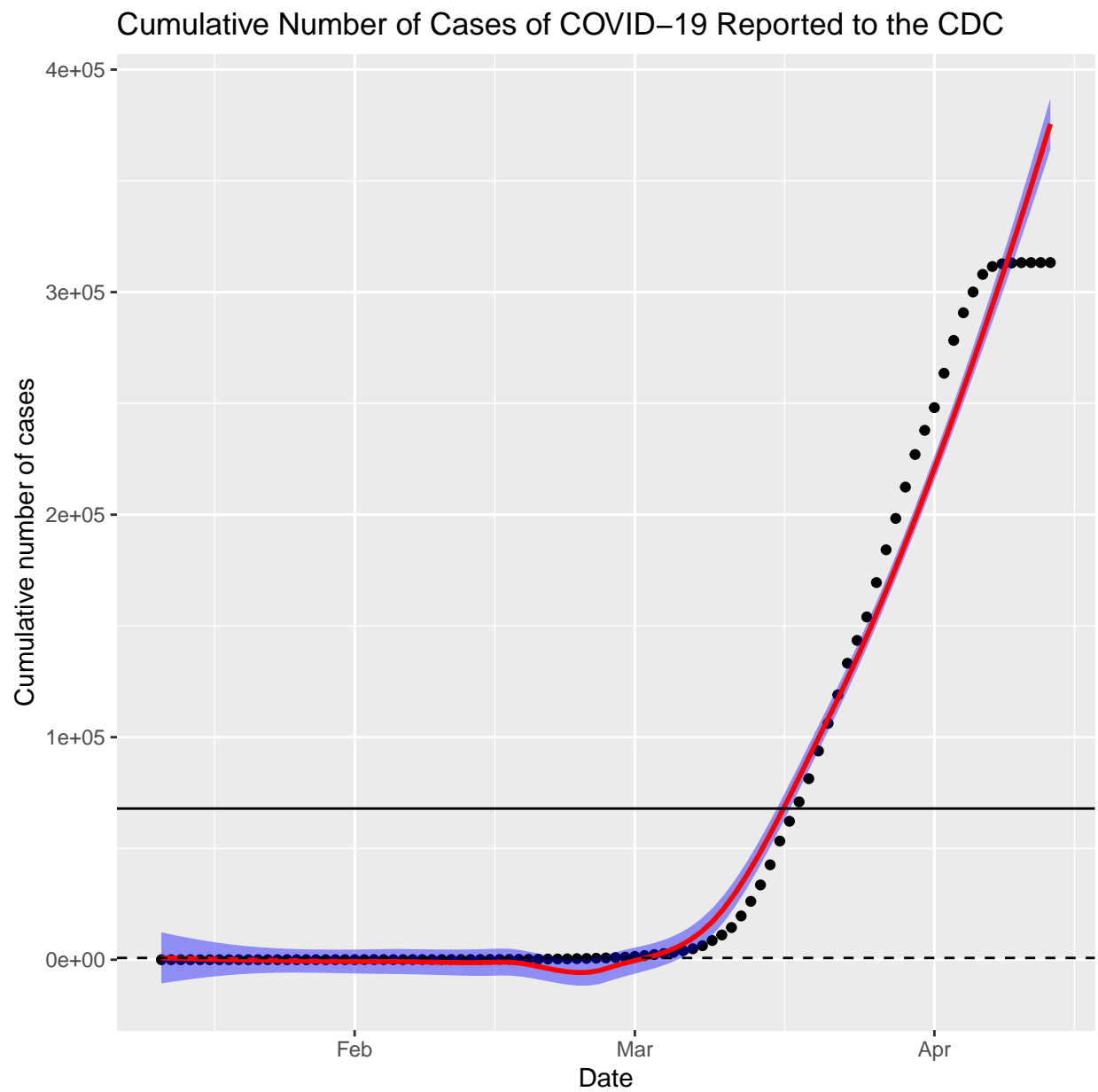


Figure 3: Cumulative cases

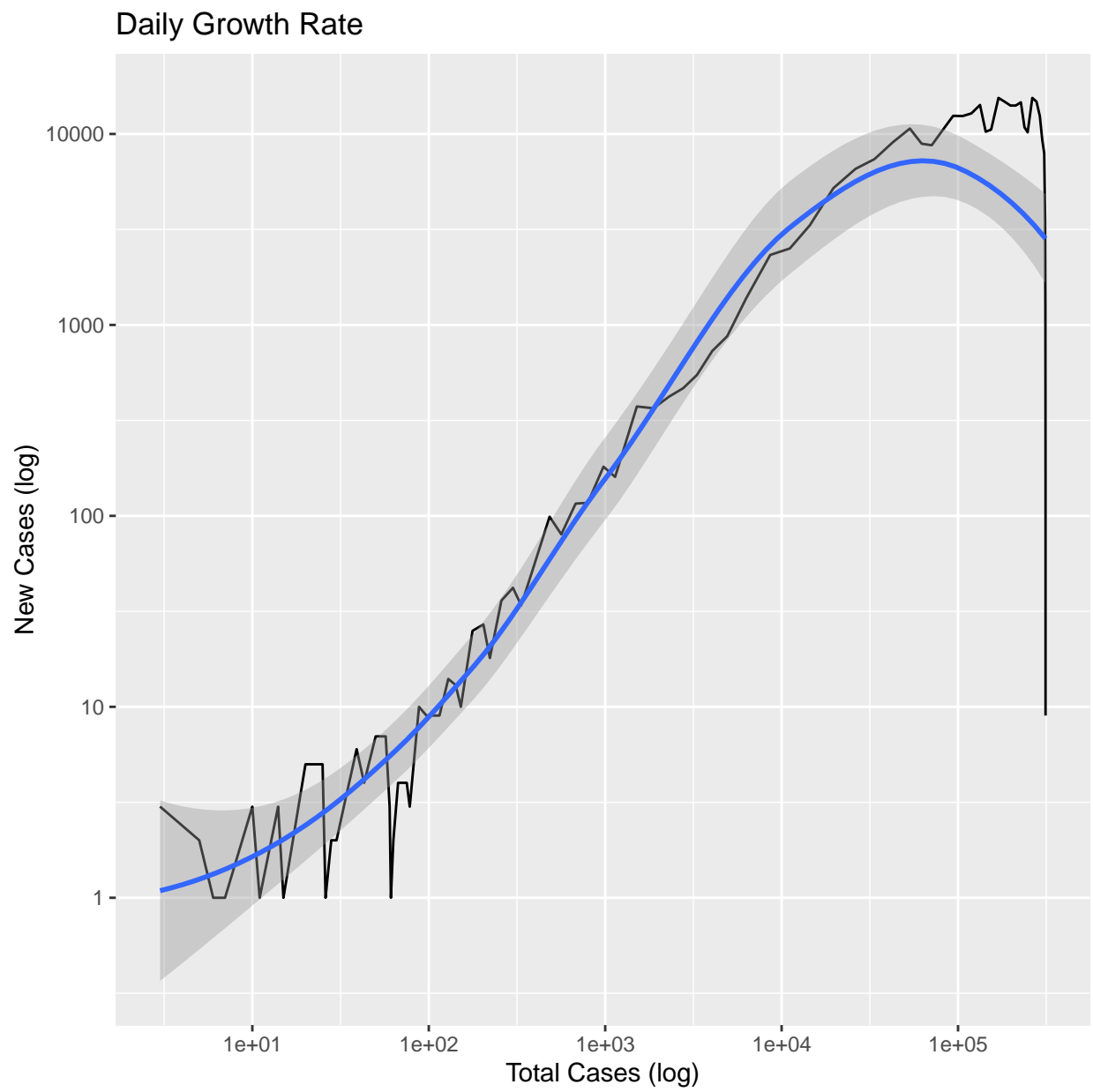


Figure 4: Growth Rate

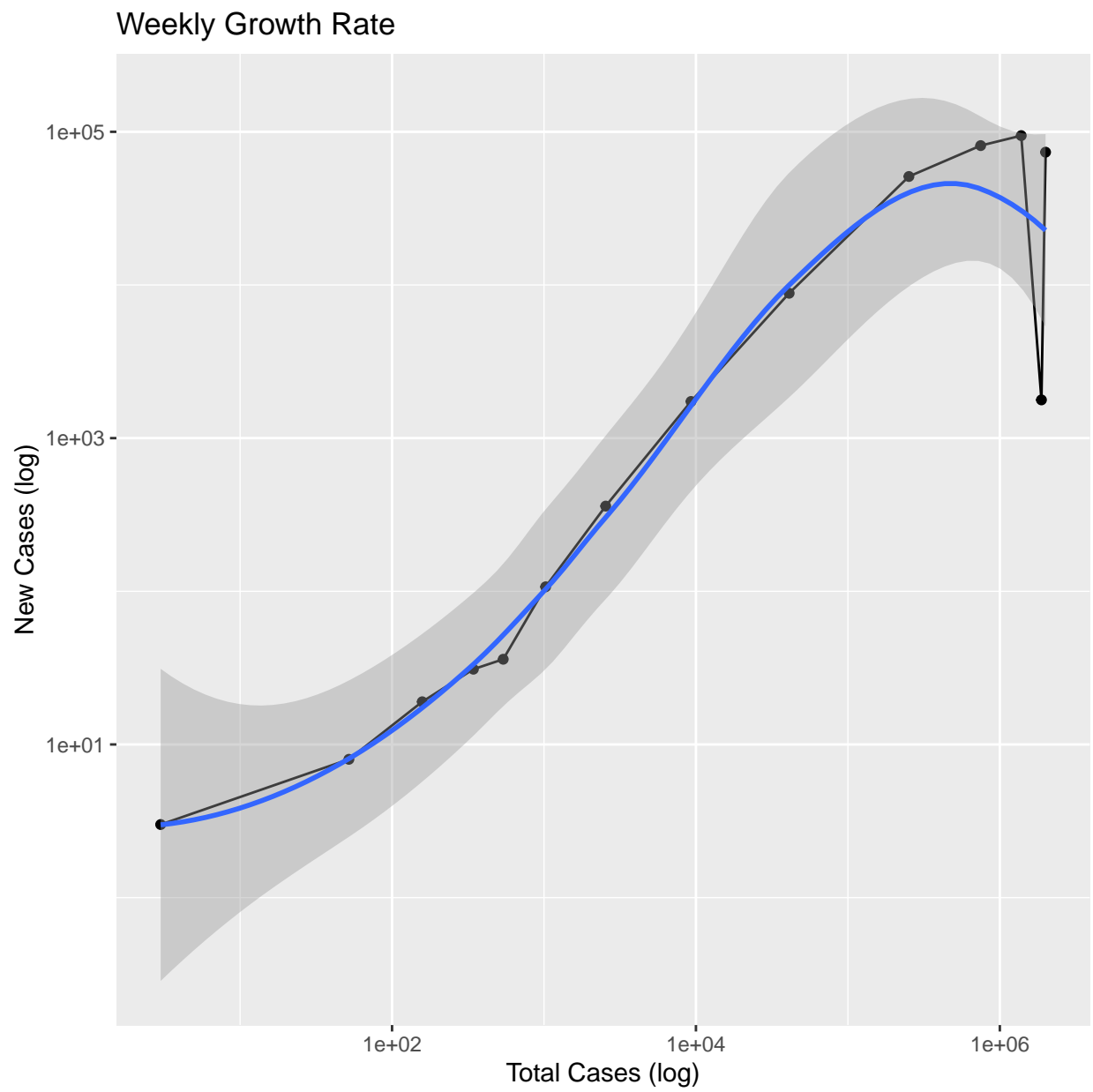


Figure 5: weekly growth rate

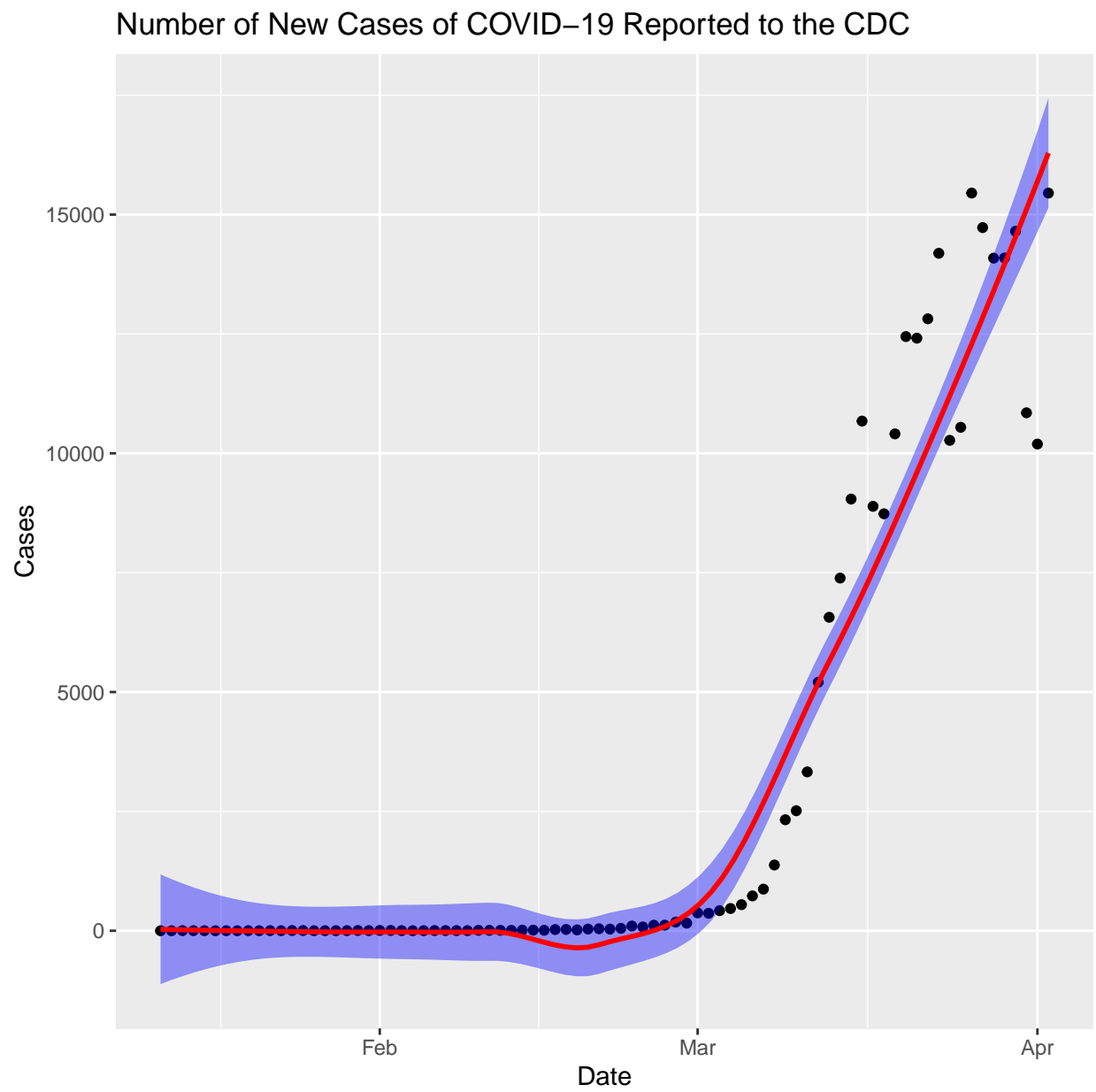


Figure 6: stable Epi curve

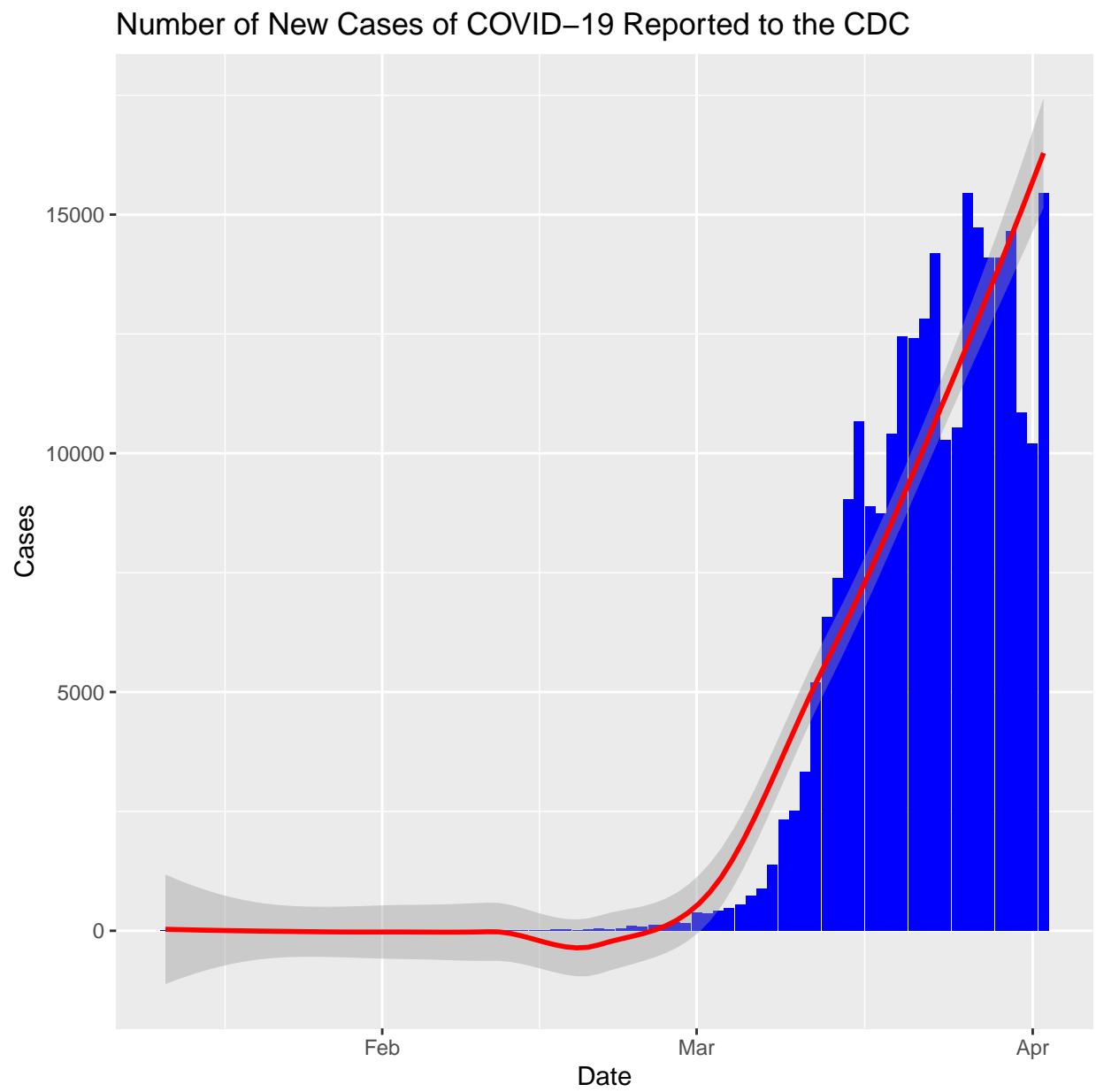


Figure 7: stable Epi curve, traditional

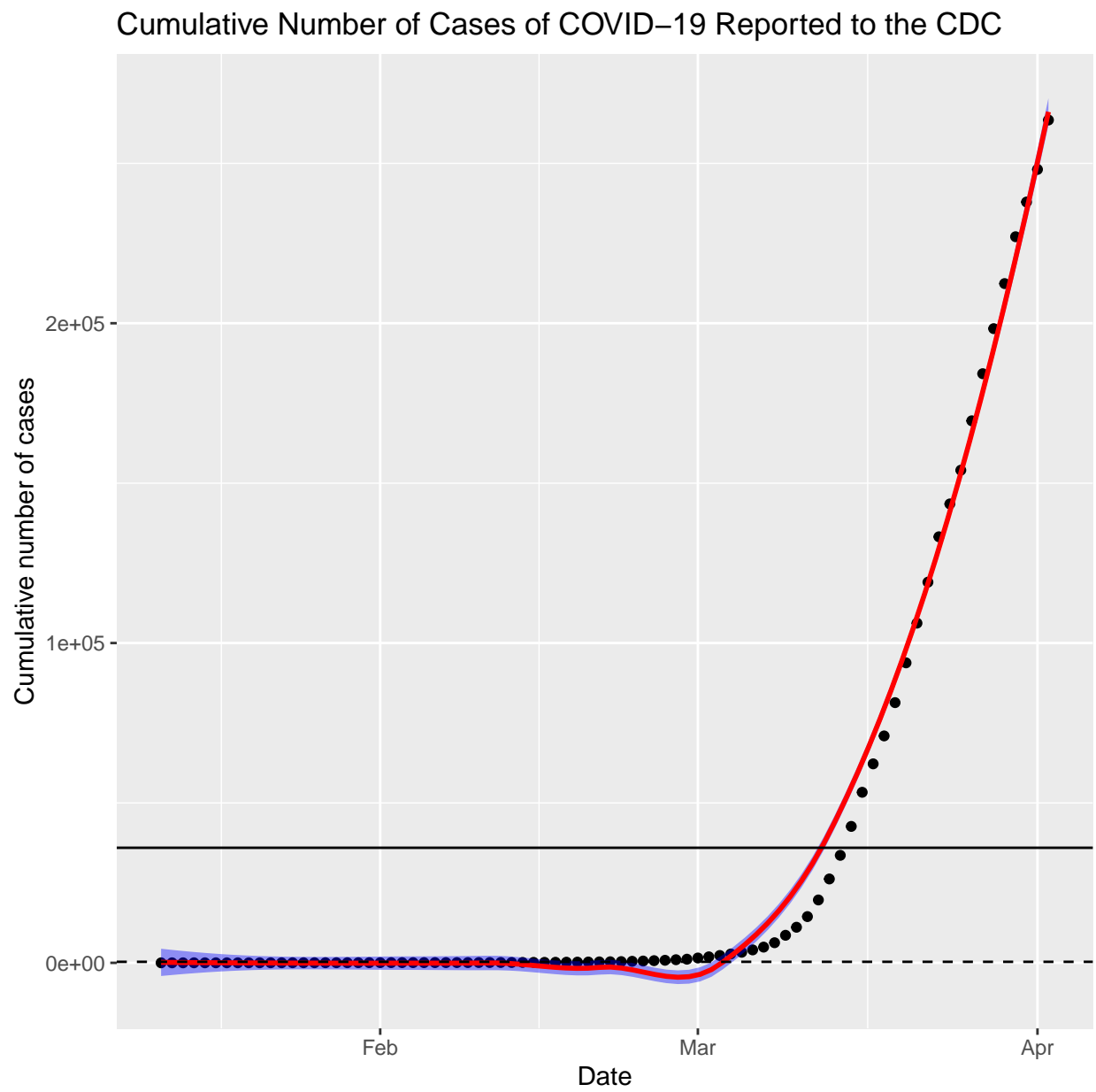


Figure 8: stable Cumulative cases

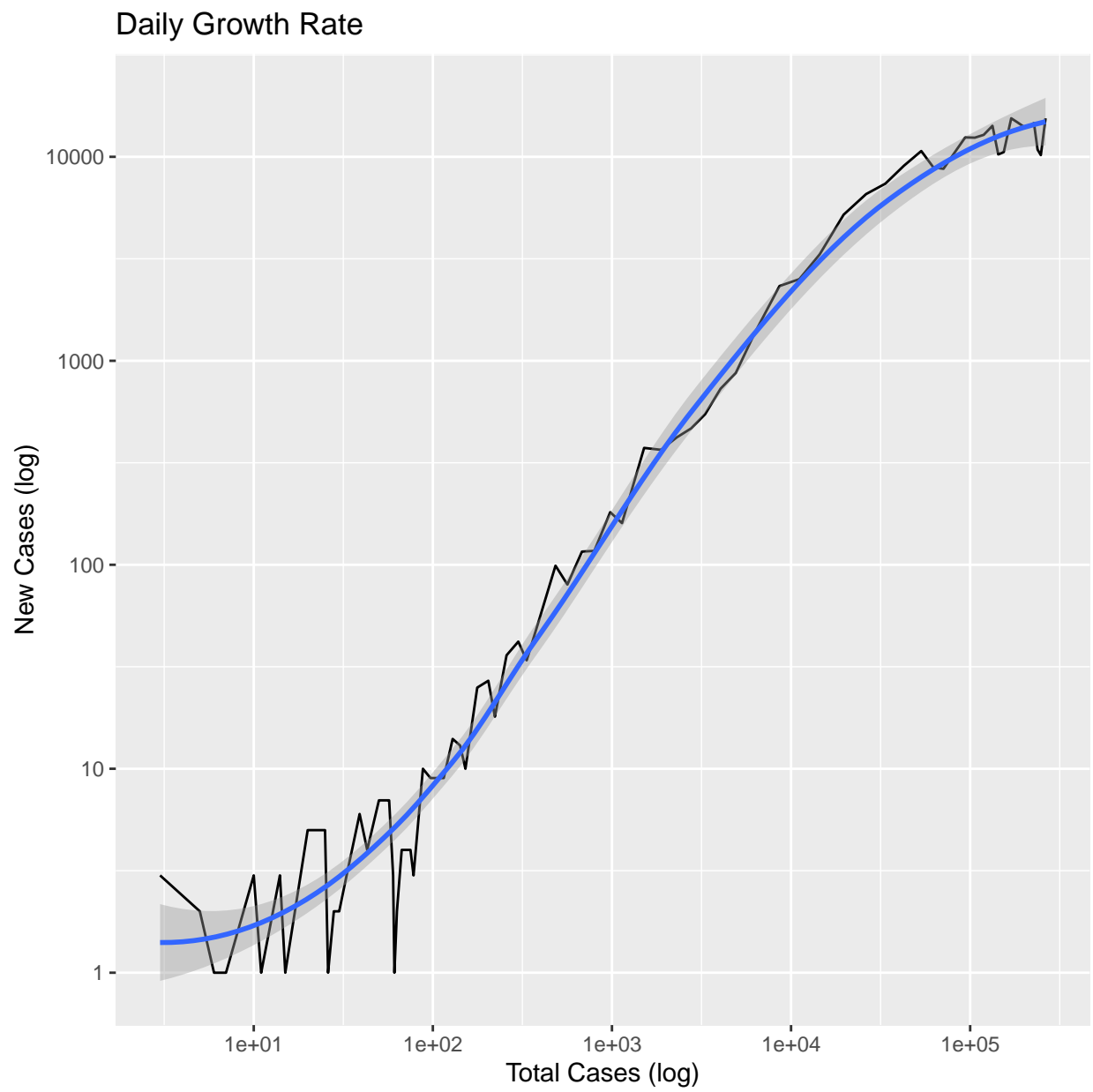


Figure 9: stable Growth Rate

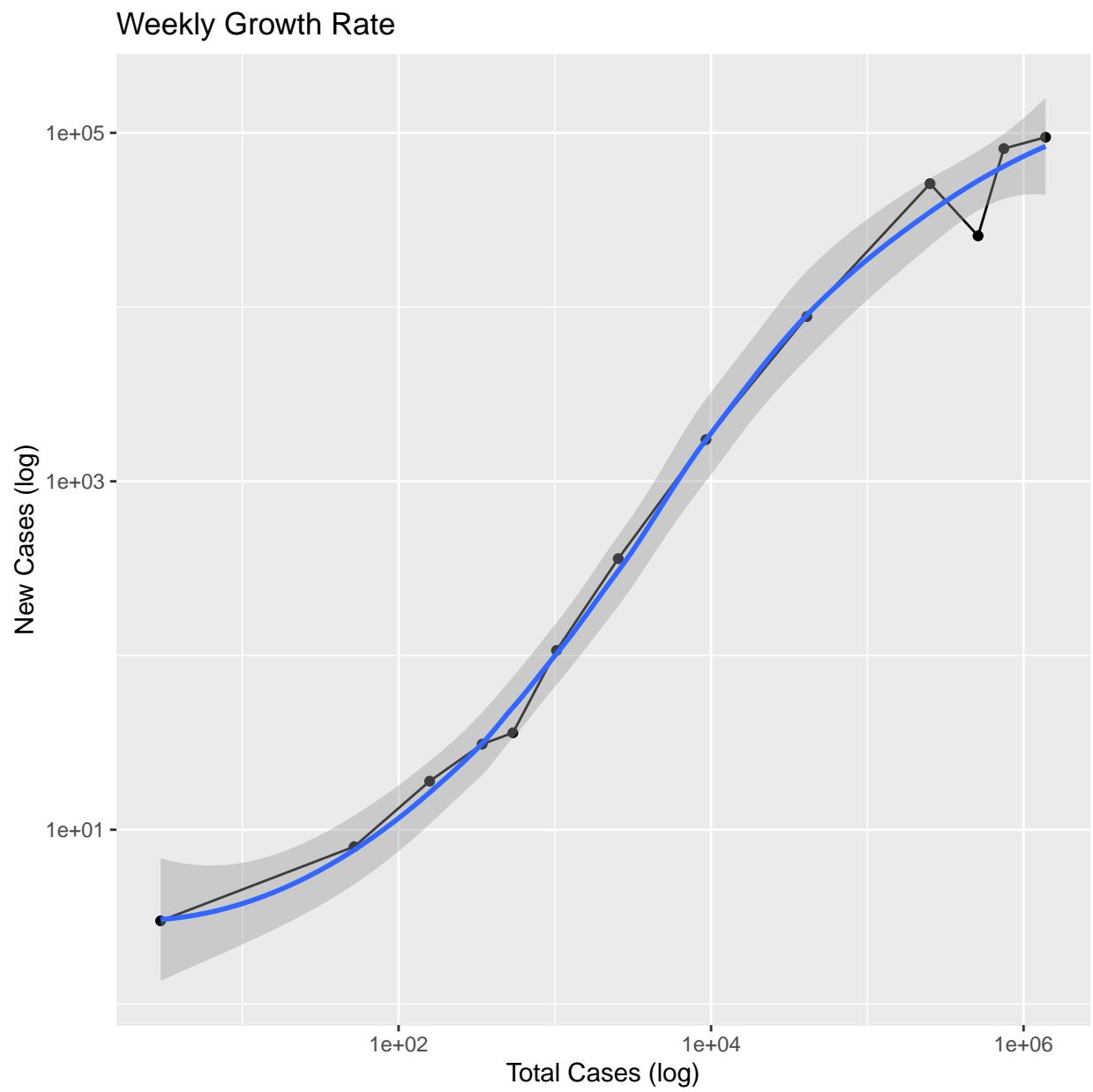


Figure 10: stable weekly growth rate