Vaccine Data plot redesign

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Pattern of Original plot

It showed the number of reported cases along with year and pointed out vaccine licensed year and historical year for audience to explain what happened after those event.

Redesign plots

```
library(readr)
library(ggplot2)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

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

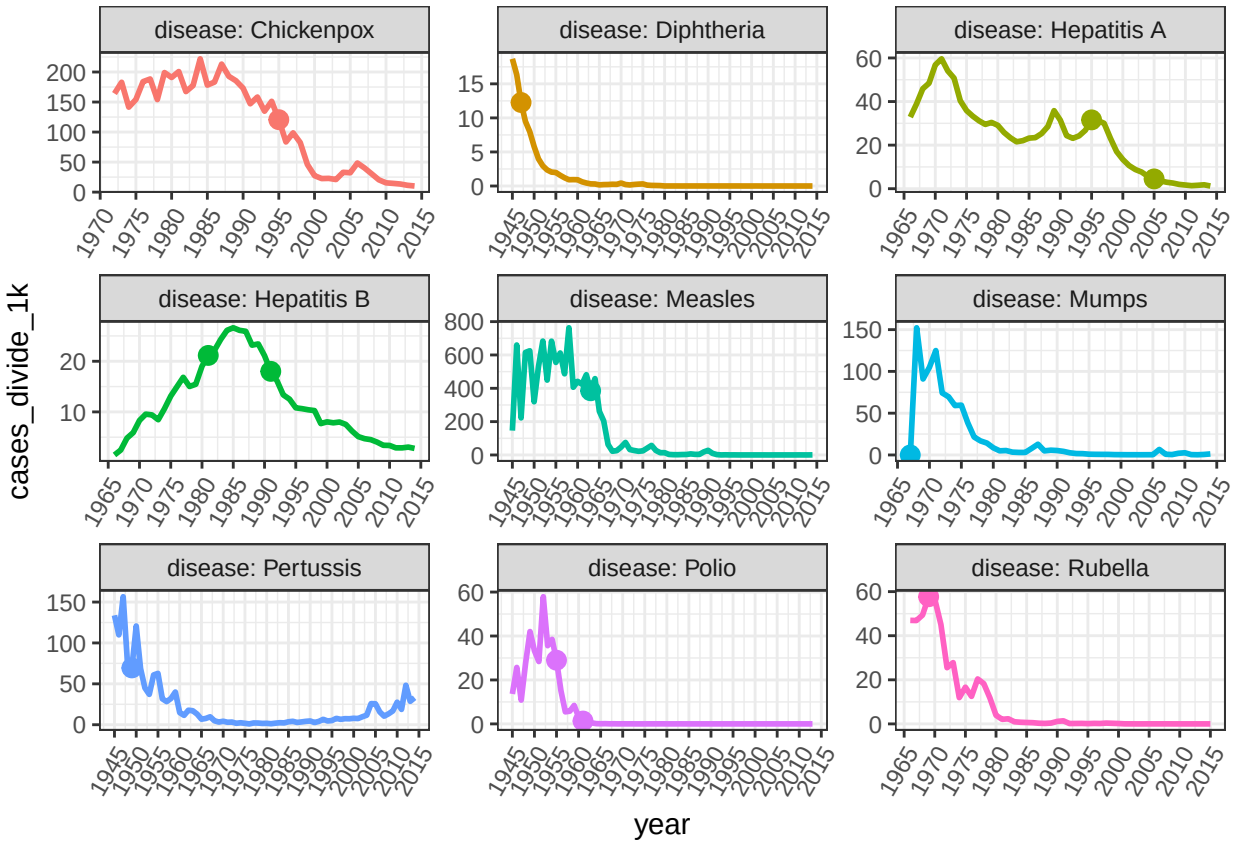
```
theme_set(theme_bw())

vac_data<-(read_csv("vaccine_data_online.csv")
           %>%mutate(cases_divide_1k=cases/1000))
```

```
## Parsed with column specification:
## cols(
##   id = col_double(),
##   cases = col_integer(),
##   disease = col_character(),
##   year = col_integer(),
##   vaccine = col_character(),
##   event = col_character(),
##   event_date = col_character(),
##   head = col_logical()
## )
```

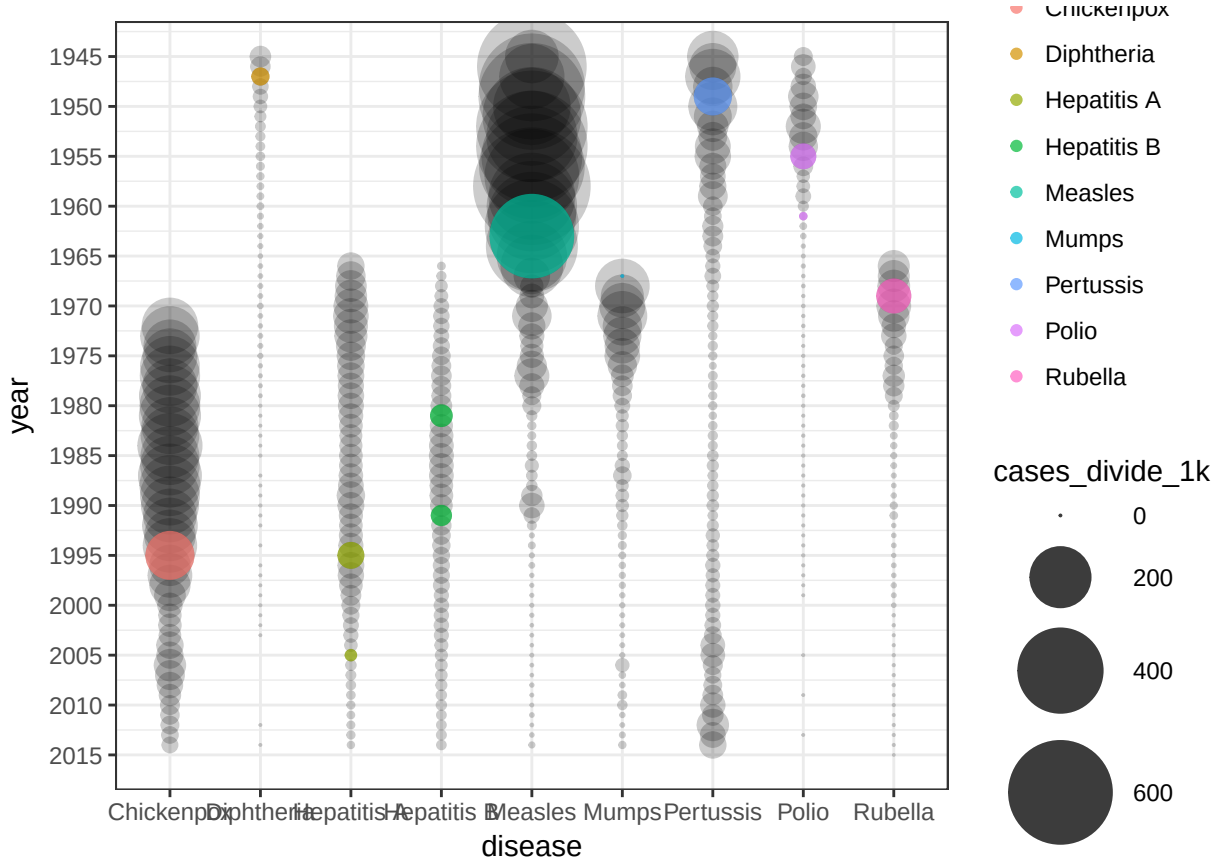
```
vaccine<-(vac_data%>%select(year,cases_divide_1k,disease,vaccine)
          %>%filter(!vaccine %in% c("FALSE")))
g1<-ggplot(vac_data,aes(x=year))+scale_x_continuous(breaks = seq(1945,2015,5))
g2<-g1+geom_line(aes(y=cases_divide_1k,colour=disease,group=disease),size=1,show.legend = FALSE)
g3<-(g2
     +facet_wrap(~disease,labeller = label_both,scales = "free")
     +geom_point(data=vaccine,aes(x=year,y=cases_divide_1k,colour=disease),size=3,show.legend = FALSE)
     +theme(axis.text.x = element_text(angle = 60, hjust = 1))
```

```
)
print(g3)#redesign plot
```




```
g4<-ggplot(vac_data,aes(x=disease))
g5<-(g4+geom_point(aes(y=year,size=cases_divide_1k),alpha=0.2)
     +scale_y_continuous(trans = "reverse",breaks = seq(1945,2015,5))
     +scale_size(range = c(0,20))

)
g6<-(g5+geom_point(data=vaccine,aes(x=disease,y=year,colour=disease,size=cases_divide_1k),alpha=0.7)
)
print(g6)
```



for first plot

- easy to see the trend after vaccine licensed
- scale of cases changed, easier to read the number,each disease has its own y axis scale then easier to capture the changes.

for second plot

just same as example,