



DRAFT

*format()* adjusts **display**  
using [strptime](#) syntax

Start date is adjustable  
(Monday start shown)

Monday start  
Sunday start

Columns generated  
by [MMWRweek\(\)](#)

Used in USA: first day of a MMWR week is Sunday, with week 1 as the first  
week with at least 4 days in the calendar year.

dates	{lubridate} day()	{lubridate} wday(label=T)	format("%j") Julian day (001-366)	format("%U") Sunday start	format("%W") Monday start	{tsibble} yearweek()	as.Date(yearweek())	aweek::date2week()	{lubridate} floor_date()	{lubridate} isoweek()	{lubridate} epiweek()	MMWRweek()\$MMWRyear	MMWRweek()\$MMWRweek	MMWRweek()\$MMWRday
2021-12-27	27	Mon	361	52	52	2021 W52	2021-12-27	2021-W52	2021-12-27	52	52	2021	52	2
2021-12-28	28	Tue	362	52	52	2021 W52	2021-12-27	2021-W52	2021-12-27	52	52	2021	52	3
2021-12-29	29	Wed	363	52	52	2021 W52	2021-12-27	2021-W52	2021-12-27	52	52	2021	52	4
2021-12-30	30	Thu	364	52	52	2021 W52	2021-12-27	2021-W52	2021-12-27	52	52	2021	52	5
2021-12-31	31	Fri	365	52	52	2021 W52	2021-12-27	2021-W52	2021-12-27	52	52	2021	52	6
2022-01-01	1	Sat	001	00	00	2021 W52	2021-12-27	2021-W52	2021-12-27	52	52	2021	52	7
2022-01-02	2	Sun	002	01	00	2021 W52	2021-12-27	2021-W52	2021-12-27	52	1	2022	1	1
2022-01-03	3	Mon	003	01	01	2022 W01	2022-01-03	2022-W01	2022-01-03	1	1	2022	1	2
2022-01-04	4	Tue	004	01	01	2022 W01	2022-01-03	2022-W01	2022-01-03	1	1	2022	1	3
2022-01-05	5	Wed	005	01	01	2022 W01	2022-01-03	2022-W01	2022-01-03	1	1	2022	1	4
2022-01-06	6	Thu	006	01	01	2022 W01	2022-01-03	2022-W01	2022-01-03	1	1	2022	1	5
2022-01-07	7	Fri	007	01	01	2022 W01	2022-01-03	2022-W01	2022-01-03	1	1	2022	1	6
2022-01-08	8	Sat	008	01	01	2022 W01	2022-01-03	2022-W01	2022-01-03	1	1	2022	1	7
2022-01-09	9	Sun	009	02	01	2022 W01	2022-01-03	2022-W01	2022-01-03	1	2	2022	2	1
2022-01-10	10	Mon	010	02	02	2022 W02	2022-01-10	2022-W02	2022-01-10	2	2	2022	2	2
2022-01-11	11	Tue	011	02	02	2022 W02	2022-01-10	2022-W02	2022-01-10	2	2	2022	2	3

```
> tibble(linelist)
# A tibble: 663 x 4
  case_id date_onset gender district
<chr>    <date>    <chr>    <chr>
1 2ae019  2014-05-06 male    west III
2 974bc1  2014-05-09 female  west III
3 9d4019  2014-05-13 male    west III
4 76b97a  2014-05-16 male    East I
5 dce5cc  2014-05-17 female  East II
6 b8812a  2014-05-18 female  west II
7 c4e706  2014-05-23 male    East I
8 d0523a  2014-05-24 female  west II
9 9e0998  2014-05-26 male    Central II
10 5387a2  2014-05-31 male    west III
# ... with 653 more rows
```

# Preparation

Add two “epiweek” columns

1. YYYY-Www
2. YYYY-MM-DD

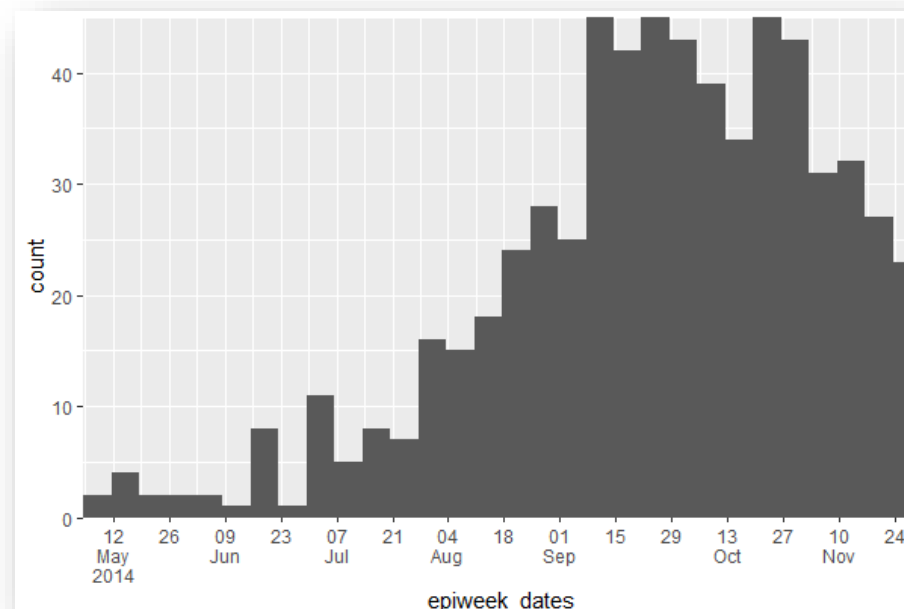
```
# define two epiweek columns
linelist <- linelist %>%
  mutate(epiweek = yearweek(date_onset, week_start = 1), # written as "2014-wxx"
         epiweek_dates = as.Date(epiweek))              # Monday of the week YYYY-MM-DD
```

```
> tibble(linelist)
# A tibble: 663 x 6
  case_id date_onset gender district epiweek epiweek_dates
<chr>    <date>    <chr>    <chr>    <week>    <date>
1 2ae019  2014-05-06 male    west III 2014 w19 2014-05-05
2 974bc1  2014-05-09 female  west III 2014 w19 2014-05-05
3 9d4019  2014-05-13 male    west III 2014 w20 2014-05-12
4 76b97a  2014-05-16 male    East I   2014 w20 2014-05-12
5 dce5cc  2014-05-17 female  East II  2014 w20 2014-05-12
6 b8812a  2014-05-18 female  west II  2014 w20 2014-05-12
7 c4e706  2014-05-23 male    East I   2014 w21 2014-05-19
8 d0523a  2014-05-24 female  west II  2014 w21 2014-05-19
9 9e0998  2014-05-26 male    Central II 2014 w22 2014-05-26
10 5387a2  2014-05-31 male    west III 2014 w22 2014-05-26
# ... with 653 more rows
```

# Plotting with {ggplot2}

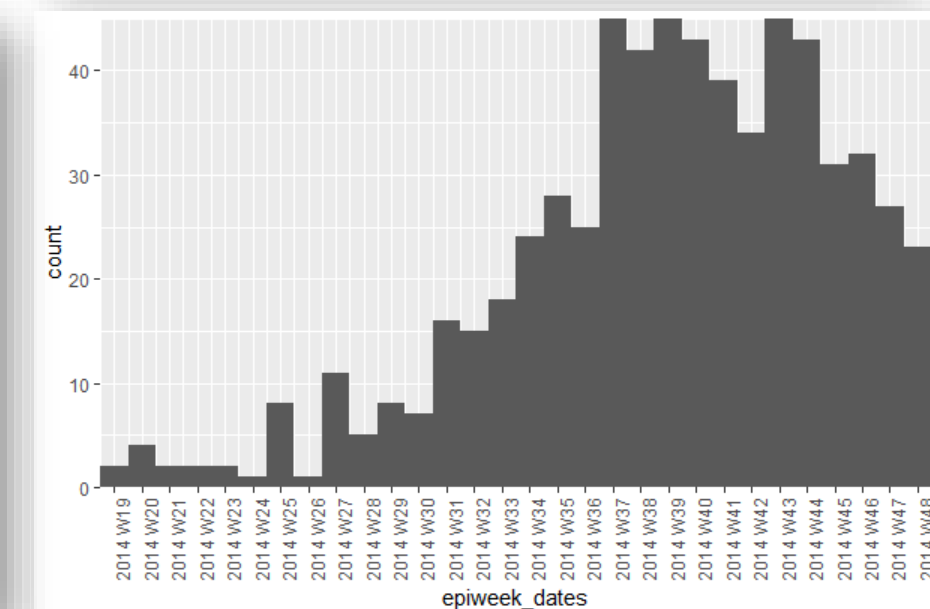
Plot with dates on x-axis

```
# plot with dates on x-axis
ggplot(data = linelist, mapping = aes(x = epiweek_dates)) +
  geom_histogram(closed = "left") +
  scale_x_date(
    date_breaks = "2 weeks",
    labels = label_date_short(),
    expand = c(0,0)) +
  scale_y_continuous(expand = c(0,0))
```



Plot with epiweeks on x-axis

```
# plot with epiweeks on x-axis
ggplot(data = linelist, mapping = aes(x = epiweek_dates)) +
  geom_bar(width = 7) +
  scale_x_date(
    breaks = all_weeks_dates,
    labels = all_weeks,
    expand = c(0,0)) +
  scale_y_continuous(expand = c(0,0)) +
  theme(axis.text.x = element_text(angle = 90))
```



# Preparation

Create complete sequences of weeks in both formats

```
# define complete sequence of epiweeks
all_weeks <- seq(from = min(linelist$epiweek, na.rm = TRUE),
                 to = max(linelist$epiweek, na.rm = TRUE),
                 by = 1)
```

```
# define complete sequence of Mondays
all_weeks_dates <- as.Date(all_weeks)
```

```
> all_weeks
<yearweek[30]>
[1] "2014 w19" "2014 w20" "2014 w21" "2014 w22" "2014 w23" "2014 w24" "2014 w25" "2014 w26" "2014 w27"
[10] "2014 w28" "2014 w29" "2014 w30" "2014 w31" "2014 w32" "2014 w33" "2014 w34" "2014 w35" "2014 w36"
[19] "2014 w37" "2014 w38" "2014 w39" "2014 w40" "2014 w41" "2014 w42" "2014 w43" "2014 w44" "2014 w45"
[28] "2014 w46" "2014 w47" "2014 w48"
# week starts on: Monday
```

```
> all_weeks_dates
[1] "2014-05-05" "2014-05-12" "2014-05-19" "2014-05-26" "2014-06-02" "2014-06-09" "2014-06-16"
[8] "2014-06-23" "2014-06-30" "2014-07-07" "2014-07-14" "2014-07-21" "2014-07-28" "2014-08-04"
[15] "2014-08-11" "2014-08-18" "2014-08-25" "2014-09-01" "2014-09-08" "2014-09-15" "2014-09-22"
[22] "2014-09-29" "2014-10-06" "2014-10-13" "2014-10-20" "2014-10-27" "2014-11-03" "2014-11-10"
[29] "2014-11-17" "2014-11-24"
```