Fundamentals of Computing and Data Display

Term paper template

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Contents

Introduction

This section outlines the research idea. We can also cite related work here (Wickham 2014; Baumer, Kaplan, and Horton 2017).

Note that compiled term paper (the PDF) is supposed to be more text-centered than the RMarkdown documents we used in class, i.e. the text sections are more detailed and big or redundant code chunks can be hidden.

Data

This section describes the data sources and the data gathering process. The COVIDcast package from the Delphi group at Carnegie Mellon University contains data from 19 sources called signals within the package. Each of these signals represent different sources like the COVID-19 Trends and Impact Facebook survey, the CDC, and others. Within those sources there are many variables represented. I wanted to look at proportions of people with COVID-19, both from PCR test results and also estimates from the facebook survey. Beyond that I wanted to see the differences in the data for variables that showed potential exposure. For the first of those variables I wanted to look at estimated use of public transit. The thought here is that being in tight confined spaces, especially in the first year of the pandemic, would increase your risk of catching COVID-19.

```
#census code chunk that is failing
#cs_key <- "1448b92acdfc46410a020ee82b98af8fad7de580"
#census_pg <- getCensus(name = "acs/acs5",
                # vintage = 2020,
                #  vars = c("NAME", "B01001_001E", "B06002_001E", "B19013_001E", "B19301_001E"),
                 # region = "county:*",
                #  region = "state:24+county:033",
                 # key = cs_key)
#head(census_pg)
```

```r
# A code chunk that exemplifies the data gathering process
#code to find the FIPS codes for our counties of interest
pg_fips <- name_to_fips("Prince George's")
moco_fips <- name_to_fips("Montgomery", state = "MD")
#code to find the proportion of positive PCR tests for a county within a certain time period
pg_pcr_pos <- covidcast_signal(data_source = "covid-act-now", signal = "pcr_specimen_positivity_rate",
                        start_day = "2020-10-01", end_day = "2020-12-31",
                        geo_type = "county", geo_value = pg_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(pg_pcr_pos))
moco_pcr_pos <- covidcast_signal(data_source = "covid-act-now", signal = "pcr_specimen_positivity_rate"
                        start_day = "2020-10-01", end_day = "2020-12-31",
                        geo_type = "county", geo_value = moco_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(moco_pcr_pos))
#code to find the estimated proportion of people with covid-like illnesses from the
#COVID-19 Trends and Impacts survey "Estimated percentage of people with COVID-like illness"
pg_fb_pos <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wcli",
                        start_day = "2020-10-01", end_day = "2020-12-31",
                        geo_type = "county", geo_value = pg_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(pg_fb_pos))
moco_fb_pos <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wcli",
                        start_day = "2020-10-01", end_day = "2020-12-31",
                        geo_type = "county", geo_value = moco_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(moco_fb_pos))
#code looking at "Estimated percentage of respondents who "used public transit" in the past 24 hours"
pg_fb_bus <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wpublic_transit_1d",
                        start_day = "2020-10-01", end_day = "2020-12-31",
                        geo_type = "county", geo_value = pg_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(pg_fb_bus))
moco_fb_bus <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wpublic_transit_1d",
                        start_day = "2020-10-01", end_day = "2020-12-31",
                        geo_type = "county", geo_value = moco_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(moco_fb_bus))
#looking at "Estimated percentage of respondents who reported feeling "nervous, anxious, or on edge" fo
pg_fb_anxious <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wanxious_5d",
                      start_day = "2020-10-01", end_day = "2020-12-31",
                      geo_type = "county", geo_value = pg_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(pg_fb_anxious))
moco_fb_anxious <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wanxious_5d",
                      start_day = "2020-10-01", end_day = "2020-12-31",
                      geo_type = "county", geo_value = moco_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(moco_fb_anxious))
#looking at "Cumulative number of confirmed deaths due to COVID-19" from the JHU data
pg_jhu_deaths <- covidcast_signal(data_source = "jhu-csse", signal = "deaths_cumulative_num",
                      start_day = "2020-10-01", end_day = "2020-12-31",
                      geo_type = "county", geo_value = pg_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(pg_jhu_deaths))
moco_jhu_deaths <- covidcast_signal(data_source = "jhu-csse", signal = "deaths_cumulative_num",
                      start_day = "2020-10-01", end_day = "2020-12-31",
                      geo_type = "county", geo_value = moco_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(moco_jhu_deaths))
#Estimated percentage of people who wore a mask for most or all of the time while in public in the past
pg_fb_mask <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wwearing_mask",
                      start_day = "2020-10-01", end_day = "2020-12-31",
                      geo_type = "county", geo_value = pg_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(pg_fb_mask))
moco_fb_mask <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wwearing_mask",
                      start_day = "2020-10-01", end_day = "2020-12-31",
                      geo_type = "county", geo_value = moco_fips)
```

Fetched day 2020-10-01 to 2020-12-31: num_entries = 92

```r
#knitr::kable(head(moco_fb_mask))
#Estimated percentage of respondents who worked or went to school outside their home in the past 24 hou
pg_fb_out <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wwork_outside_home_1d",
                      start_day = "2020-10-01", end_day = "2020-12-31",
                      geo_type = "county", geo_value = pg_fips)
```

```
## Fetched day 2020-10-01 to 2020-12-31: num_entries = 92
```

```
#knitr::kable(head(pg_fb_out))
moco_fb_out <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wwork_outside_home_1d",
                     start_day = "2020-10-01", end_day = "2020-12-31",
                     geo_type = "county", geo_value = moco_fips)
```

```
## Fetched day 2020-10-01 to 2020-12-31: num_entries = 92
```

```
#knitr::kable(head(moco_fb_out))
#Estimated percentage of respondents who report being very or somewhat worried about their "household's
pg_fb_money <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wworried_finances",
                     start_day = "2020-10-01", end_day = "2020-12-31",
                     geo_type = "county", geo_value = pg_fips)
```

```
## Fetched day 2020-10-01 to 2020-12-31: num_entries = 92
```

```
#knitr::kable(head(pg_fb_money))
moco_fb_money <- covidcast_signal(data_source = "fb-survey", signal = "smoothed_wworried_finances",
                     start_day = "2020-10-01", end_day = "2020-12-31",
                     geo_type = "county", geo_value = moco_fips)
```

```
## Fetched day 2020-10-01 to 2020-12-31: num_entries = 92
```

```
#knitr::kable(head(moco_fb_money))
#Estimated percentage of new hospital admissions with COVID-associated diagnoses, based on claims data
pg_hhs_hospital <- covidcast_signal(data_source = "hospital-admissions", signal = "smoothed_covid19_from
                     start_day = "2020-10-01", end_day = "2020-12-31",
                     geo_type = "county", geo_value = pg_fips)
```

```
## Fetched day 2020-10-01 to 2020-12-31: num_entries = 92
```

```
#knitr::kable(head(pg_hhs_hospital))
moco_hhs_hospital <- covidcast_signal(data_source = "hospital-admissions", signal = "smoothed_covid19_fr
                     start_day = "2020-10-01", end_day = "2020-12-31",
                     geo_type = "county", geo_value = moco_fips)
```

```
## Fetched day 2020-10-01 to 2020-12-31: num_entries = 92
```

```
#knitr::kable(head(moco_hhs_hospital))
```

Results

This section presents the main results.

Data exploration

The results section may have a data exploration part, but in general the structure here depends on the specific project.

```
# What happens here depends on the specific project
#Data of PCR Positive Test Proportion
vis_pg_pcr_pos <- pg_pcr_pos %>% select(data_source ,signal, geo_value, time_value,value, sample_size)
knitr::kable(head(vis_pg_pcr_pos),caption = "Proportion of PCR Positive Tests for Prince George's County
```

Table 1: Proportion of PCR Positive Tests for Prince George's County

data_source	signal	geo_value	time_value	value	sample_size
covid-act-now	pcr_specimen_positivity_rate	24033	2020-10-01	0.0770	3680.14
covid-act-now	pcr_specimen_positivity_rate	24033	2020-10-02	0.0799	3544.00
covid-act-now	pcr_specimen_positivity_rate	24033	2020-10-03	0.0820	3261.14
covid-act-now	pcr_specimen_positivity_rate	24033	2020-10-04	0.0786	3302.29
covid-act-now	pcr_specimen_positivity_rate	24033	2020-10-05	0.0747	3366.71
covid-act-now	pcr_specimen_positivity_rate	24033	2020-10-06	0.0734	3317.29

```
vis_moco_pcr_pos <- moco_pcr_pos %>% select(data_source ,signal, geo_value, time_value,value, sample_si:
knitr::kable(head(vis_moco_pcr_pos),caption = "Proportion of PCR Positive Tests for Montgomery County")
```

Table 2: Proportion of PCR Positive Tests for Montgomery County

data_source	signal	geo_value	time_value	value	sample_size
covid-act-now	pcr_specimen_positivity_rate	24031	2020-10-01	0.0421	4384.57
covid-act-now	pcr_specimen_positivity_rate	24031	2020-10-02	0.0438	4410.57
covid-act-now	pcr_specimen_positivity_rate	24031	2020-10-03	0.0440	4179.43
covid-act-now	pcr_specimen_positivity_rate	24031	2020-10-04	0.0409	4241.71
covid-act-now	pcr_specimen_positivity_rate	24031	2020-10-05	0.0377	4334.29
covid-act-now	pcr_specimen_positivity_rate	24031	2020-10-06	0.0373	4498.71

```
#Estimated proportion of individuals with COVID-19
vis_pg_fb_pos <- pg_fb_pos %>% select(data_source ,signal, geo_value, time_value,value, sample_size)
knitr::kable(head(vis_pg_fb_pos),caption = "Estimated proportion of individuals with COVID-19 for Prince
```

Table 3: Estimated proportion of individuals with COVID-19 for Prince George's County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wcli	24033	2020-10-01	1.1205677	389.0416
fb-survey	smoothed_wcli	24033	2020-10-02	0.7472822	386.4784
fb-survey	smoothed_wcli	24033	2020-10-03	0.3525817	389.2014
fb-survey	smoothed_wcli	24033	2020-10-04	0.3575297	385.0670
fb-survey	smoothed_wcli	24033	2020-10-05	0.3547350	417.1189
fb-survey	smoothed_wcli	24033	2020-10-06	0.3581408	438.5893

```
vis_moco_fb_pos <- moco_fb_pos %>% select(data_source ,signal, geo_value, time_value,value, sample_size)
knitr::kable(head(vis_moco_fb_pos),caption = "Estimated proportion of individuals with COVID-19 for Mont
```

Table 4: Estimated proportion of individuals with COVID-19 for
Montgomery County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wcli	24031	2020-10-01	0.0000000	568.2781
fb-survey	smoothed_wcli	24031	2020-10-02	0.0000000	594.1863
fb-survey	smoothed_wcli	24031	2020-10-03	0.0000000	613.5651
fb-survey	smoothed_wcli	24031	2020-10-04	0.1111871	620.4416
fb-survey	smoothed_wcli	24031	2020-10-05	0.1086176	655.4449
fb-survey	smoothed_wcli	24031	2020-10-06	0.1415043	680.1930

```
#Estimated percentage of people who used public transit in the past day
vis_pg_fb_bus <- pg_fb_bus %>% select(data_source ,signal, geo_value, time_value,value, sample_size)
knitr::kable(head(vis_pg_fb_bus),caption = "Estimated percentage of people who used public transit in tl
```

Table 5: Estimated percentage of people who used public transit
in the past day for Prince George's County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wpublic_transit_1d	24033	2020-10-01	5.447850	389.0416
fb-survey	smoothed_wpublic_transit_1d	24033	2020-10-02	5.831585	386.4784
fb-survey	smoothed_wpublic_transit_1d	24033	2020-10-03	6.001997	389.2014
fb-survey	smoothed_wpublic_transit_1d	24033	2020-10-04	5.614835	385.0670
fb-survey	smoothed_wpublic_transit_1d	24033	2020-10-05	6.111265	417.1189
fb-survey	smoothed_wpublic_transit_1d	24033	2020-10-06	6.221379	438.5893

```
vis_moco_fb_bus <- moco_fb_bus %>% select(data_source ,signal, geo_value, time_value,value, sample_size]
knitr::kable(head(vis_moco_fb_bus),caption = "Estimated percentage of people who used public transit in
```

Table 6: Estimated percentage of people who used public transit
in the past day for Montgomery County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wpublic_transit_1d	24031	2020-10-01	3.979161	568.2781
fb-survey	smoothed_wpublic_transit_1d	24031	2020-10-02	4.790498	594.1863
fb-survey	smoothed_wpublic_transit_1d	24031	2020-10-03	4.848172	613.5651
fb-survey	smoothed_wpublic_transit_1d	24031	2020-10-04	4.809215	620.4416
fb-survey	smoothed_wpublic_transit_1d	24031	2020-10-05	4.900251	655.4449
fb-survey	smoothed_wpublic_transit_1d	24031	2020-10-06	4.488456	680.1930

```
#Estimated percentage of people who felt anxious within the past 5 days
vis_pg_fb_anxious <- pg_fb_anxious %>% select(data_source ,signal, geo_value, time_value,value, sample_s
knitr::kable(head(vis_pg_fb_anxious),caption = "Estimated percentage of people who felt anxious within t
```

Table 7: Estimated percentage of people who felt anxious within the past 5 days for Prince George's County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wanxious_5d	24033	2020-10-01	10.433034	346.1823
fb-survey	smoothed_wanxious_5d	24033	2020-10-02	11.622055	341.6191
fb-survey	smoothed_wanxious_5d	24033	2020-10-03	10.442217	340.5645
fb-survey	smoothed_wanxious_5d	24033	2020-10-04	9.107919	344.5623
fb-survey	smoothed_wanxious_5d	24033	2020-10-05	8.536632	371.7629
fb-survey	smoothed_wanxious_5d	24033	2020-10-06	7.548376	382.2398

```
vis_moco_fb_anxious <- moco_fb_anxious %>% select(data_source ,signal, geo_value, time_value,value, samp
knitr::kable(head(vis_moco_fb_anxious),caption = "Estimated percentage of people who felt anxious withi
```

Table 8: Estimated percentage of people who felt anxious within the past 5 days for Montgomery County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wanxious_5d	24031	2020-10-01	18.01492	510.2435
fb-survey	smoothed_wanxious_5d	24031	2020-10-02	17.89208	538.1680
fb-survey	smoothed_wanxious_5d	24031	2020-10-03	17.37788	558.3455
fb-survey	smoothed_wanxious_5d	24031	2020-10-04	15.86337	560.0898
fb-survey	smoothed_wanxious_5d	24031	2020-10-05	16.00815	590.9807
fb-survey	smoothed_wanxious_5d	24031	2020-10-06	15.99091	607.7023

```
#Estimated percentage of people who masked most of the time in the past 5 days
vis_pg_fb_mask <- pg_fb_mask %>% select(data_source ,signal, geo_value, time_value,value, sample_size)
knitr::kable(head(vis_pg_fb_mask),caption = "Estimated percentage of people who masked most of the time
```

Table 9: Estimated percentage of people who masked most of the time in the past 5 days for Prince George's County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wwearing_mask	24033	2020-10-01	96.59740	341.6956
fb-survey	smoothed_wwearing_mask	24033	2020-10-02	97.15269	338.1204
fb-survey	smoothed_wwearing_mask	24033	2020-10-03	95.52754	335.9149
fb-survey	smoothed_wwearing_mask	24033	2020-10-04	95.63788	336.7555
fb-survey	smoothed_wwearing_mask	24033	2020-10-05	95.69659	363.0860
fb-survey	smoothed_wwearing_mask	24033	2020-10-06	94.38246	370.5629

```
vis_moco_fb_mask <- moco_fb_mask %>% select(data_source ,signal, geo_value, time_value,value, sample_si
knitr::kable(head(vis_moco_fb_mask),caption = "Estimated percentage of people who masked most of the ti
```

Table 10: Estimated percentage of people who masked most of the
time in the past 5 days for Montgomery County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wwearing_mask	24031	2020-10-01	94.81161	510.8723
fb-survey	smoothed_wwearing_mask	24031	2020-10-02	95.49223	538.9780
fb-survey	smoothed_wwearing_mask	24031	2020-10-03	95.76241	556.1614
fb-survey	smoothed_wwearing_mask	24031	2020-10-04	96.08837	557.0509
fb-survey	smoothed_wwearing_mask	24031	2020-10-05	96.29473	593.7574
fb-survey	smoothed_wwearing_mask	24031	2020-10-06	96.34647	612.4790

```
#Estimated percentage of respondents who worked or went to school outside their home in the past 24 hou
vis_pg_fb_out <- pg_fb_out %>% select(data_source ,signal, geo_value, time_value,value, sample_size)
knitr::kable(head(vis_pg_fb_out),caption = "Estimated percentage of respondents who worked or went to s
```

Table 11: Estimated percentage of respondents who worked or
went to school outside their home in the past 24 hours for Prince
George's County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-01	31.49282	389.0416
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-02	32.13062	386.4784
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-03	32.08428	389.2014
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-04	31.43518	385.0670
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-05	31.10564	417.1189
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-06	29.14120	438.5893

```
vis_moco_fb_out <- moco_fb_out %>% select(data_source ,signal, geo_value, time_value,value, sample_size
knitr::kable(head(vis_moco_fb_out),caption = "Estimated percentage of respondents who worked or went to
```

Table 12: Estimated percentage of respondents who worked or went
to school outside their home in the past 24 hours for Montgomery
County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wwork_outside_home_1d	24031	2020-10-01	24.86467	568.2781
fb-survey	smoothed_wwork_outside_home_1d	24031	2020-10-02	24.16589	594.1863
fb-survey	smoothed_wwork_outside_home_1d	24031	2020-10-03	25.48571	613.5651
fb-survey	smoothed_wwork_outside_home_1d	24031	2020-10-04	25.46726	620.4416
fb-survey	smoothed_wwork_outside_home_1d	24031	2020-10-05	24.63832	655.4449
fb-survey	smoothed_wwork_outside_home_1d	24031	2020-10-06	24.06113	680.1930

```
#Estimated percentage of respondents who report being very or somewhat worried about their "household's
vis_pg_fb_money <- pg_fb_money %>% select(data_source ,signal, geo_value, time_value,value, sample_size
knitr::kable(head(vis_pg_fb_out),caption = "Estimated percentage of respondents who report being very o
```

Table 13: Estimated percentage of respondents who report being very or somewhat worried about their "household's finances for the next month for Prince George's County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-01	31.49282	389.0416
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-02	32.13062	386.4784
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-03	32.08428	389.2014
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-04	31.43518	385.0670
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-05	31.10564	417.1189
fb-survey	smoothed_wwork_outside_home_1d	24033	2020-10-06	29.14120	438.5893

```
vis_moco_fb_money <- moco_fb_money %>% select(data_source ,signal, geo_value, time_value,value, sample_s
knitr::kable(head(vis_moco_fb_money),caption = "Estimated percentage of respondents who report being ver
```

Table 14: Estimated percentage of respondents who report being very or somewhat worried about their "household's finances for the next month for Montgomery County

data_source	signal	geo_value	time_value	value	sample_size
fb-survey	smoothed_wworried_finances	24031	2020-10-01	32.77689	519.8785
fb-survey	smoothed_wworried_finances	24031	2020-10-02	32.89560	547.8030
fb-survey	smoothed_wworried_finances	24031	2020-10-03	32.95721	566.9805
fb-survey	smoothed_wworried_finances	24031	2020-10-04	32.04075	566.8641
fb-survey	smoothed_wworried_finances	24031	2020-10-05	33.06790	597.7550
fb-survey	smoothed_wworried_finances	24031	2020-10-06	33.50263	617.4766

```
#Estimated percentage of new hospital admissions with COVID-associated diagnoses, based on claims data
vis_pg_hhs_hospital <- pg_hhs_hospital %>% select(data_source ,signal, geo_value, time_value,value, samp
knitr::kable(head(vis_pg_hhs_hospital),caption = "Estimated percentage of new hospital admissions with C
```

Table 15: Estimated percentage of new hospital admissions with COVID-associated diagnoses for Prince George's County

data_source	signal	geo_value	time_value	value	sample_size
hospital-admissions	smoothed_covid19_from_claims	24033	2020-10-01	4.980869	NA
hospital-admissions	smoothed_covid19_from_claims	24033	2020-10-02	5.328849	NA
hospital-admissions	smoothed_covid19_from_claims	24033	2020-10-03	5.701405	NA
hospital-admissions	smoothed_covid19_from_claims	24033	2020-10-04	5.827876	NA
hospital-admissions	smoothed_covid19_from_claims	24033	2020-10-05	5.878814	NA
hospital-admissions	smoothed_covid19_from_claims	24033	2020-10-06	5.760586	NA

```
vis_moco_hhs_hospital <- moco_hhs_hospital %>% select(data_source ,signal, geo_value, time_value,value,
knitr::kable(head(vis_moco_hhs_hospital),caption = "Estimated percentage of new hospital admissions with
```

Table 16: Estimated percentage of new hospital admissions with
COVID-associated diagnoses for Montgomery County

data_source	signal	geo_value	time_value	value	sample_size
hospital-admissions	smoothed_covid19_from_claims	24031	2020-10-01	4.081688	NA
hospital-admissions	smoothed_covid19_from_claims	24031	2020-10-02	4.357004	NA
hospital-admissions	smoothed_covid19_from_claims	24031	2020-10-03	4.675541	NA
hospital-admissions	smoothed_covid19_from_claims	24031	2020-10-04	5.113851	NA
hospital-admissions	smoothed_covid19_from_claims	24031	2020-10-05	5.646182	NA
hospital-admissions	smoothed_covid19_from_claims	24031	2020-10-06	6.104618	NA

```r
#looking at "Cumulative number of confirmed deaths due to COVID-19" from the JHU data
vis_pg_jhu_deaths <- pg_jhu_deaths %>% select(data_source ,signal, geo_value, time_value,value, sample_s
knitr::kable(head(vis_pg_jhu_deaths),caption = "Cumulative number of confirmed deaths due to COVID-19 fo
```

Table 17: Cumulative number of confirmed deaths due to COVID-
19 for Prince George's County

data_source	signal	geo_value	time_value	value	sample_size
jhu-csse	deaths_cumulative_num	24033	2020-10-01	828	NA
jhu-csse	deaths_cumulative_num	24033	2020-10-02	827	NA
jhu-csse	deaths_cumulative_num	24033	2020-10-03	828	NA
jhu-csse	deaths_cumulative_num	24033	2020-10-04	830	NA
jhu-csse	deaths_cumulative_num	24033	2020-10-05	830	NA
jhu-csse	deaths_cumulative_num	24033	2020-10-06	831	NA

```r
vis_moco_jhu_deaths <- moco_jhu_deaths %>% select(data_source ,signal, geo_value, time_value,value, samp
knitr::kable(head(vis_moco_jhu_deaths),caption = "Cumulative number of confirmed deaths due to COVID-19
```

Table 18: Cumulative number of confirmed deaths due to COVID-
19 for Montgomery County

data_source	signal	geo_value	time_value	value	sample_size
jhu-csse	deaths_cumulative_num	24031	2020-10-01	850	NA
jhu-csse	deaths_cumulative_num	24031	2020-10-02	851	NA
jhu-csse	deaths_cumulative_num	24031	2020-10-03	849	NA
jhu-csse	deaths_cumulative_num	24031	2020-10-04	849	NA
jhu-csse	deaths_cumulative_num	24031	2020-10-05	850	NA
jhu-csse	deaths_cumulative_num	24031	2020-10-06	850	NA

```r
# What happens here depends on the specific project
```

Analysis

This section presents the main results, such as (for example) stats and graphs that show relationships, model
results and/or clustering, PCA, etc.

```
# What happens here depends on the specific project
#Graph of PCR positive proportion over time for Prince George's County vs Montgomery County
pos_pg <- pg_pcr_pos %>%
  group_by(time_value, value)
pos_moco <- moco_pcr_pos %>%
  group_by(time_value, value)
pos <- ggplot()+geom_line(data=pos_pg, aes(time_value,value), color="blue") +
  geom_line(data=pos_moco, aes(time_value,value), color="black") + labs(title= "PCR Positive Test Propor
pos
```

PCR Positive Test Proportion Over Time
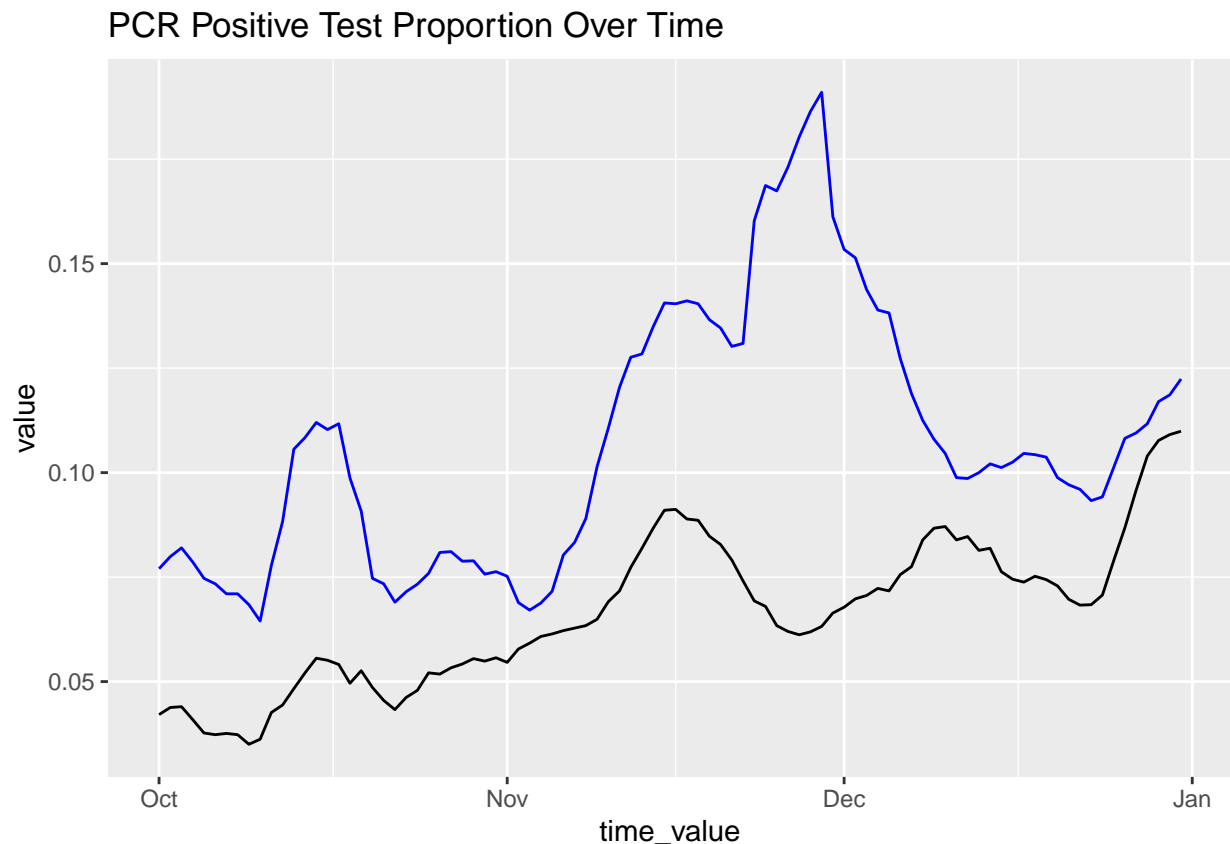

```
# What happens here depends on the specific project
fb_pg <- pg_fb_pos %>%
  group_by(time_value, value)
fb_moco <- moco_fb_pos %>%
  group_by(time_value, value)
pos_fb <- ggplot()+geom_line(data=fb_pg, aes(time_value,value), color="blue") +
  geom_line(data=fb_moco, aes(time_value,value), color="black") + labs(title= "Estimated Proportion of
pos_fb
```

Estimated Proportion of People with COVID−like Illnesses
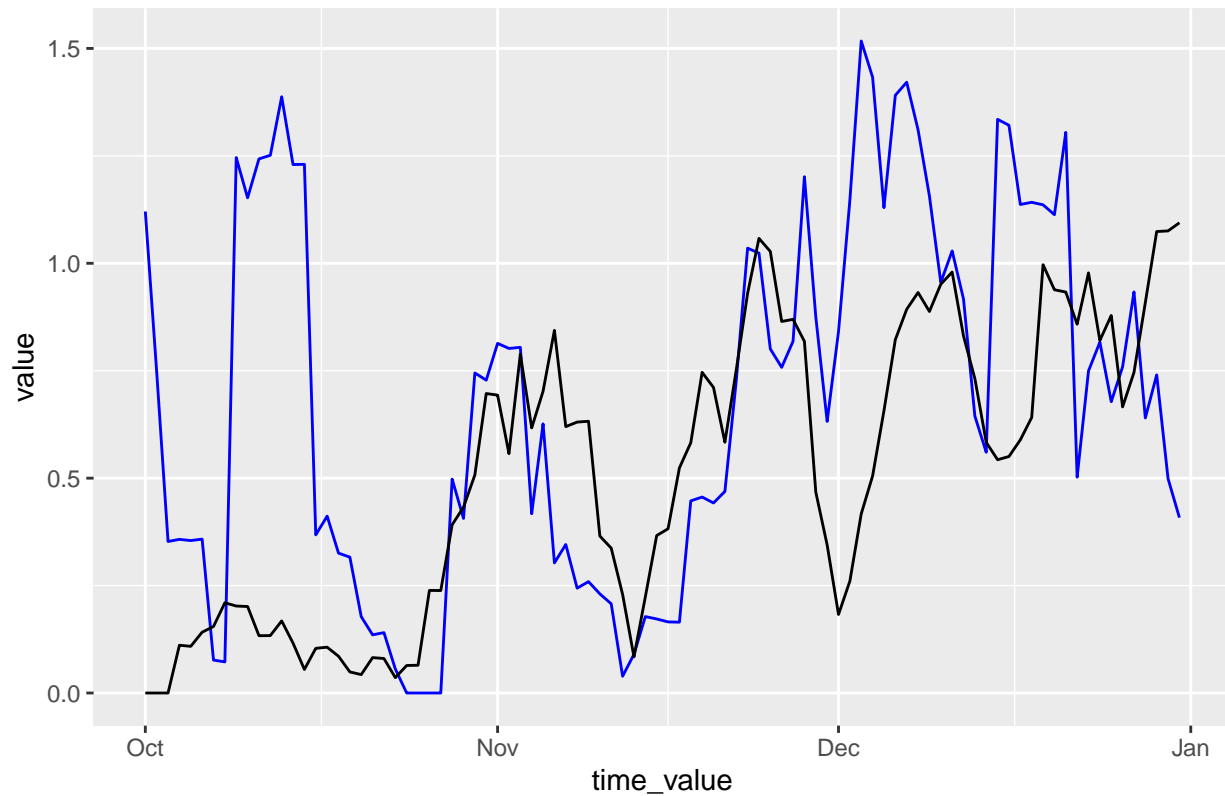

```r
# What happens here depends on the specific project
bus_pg <- pg_fb_bus %>%
  group_by(time_value, value)
bus_moco <- moco_fb_bus %>%
  group_by(time_value, value)
bus <- ggplot()+geom_line(data=bus_pg, aes(time_value,value), color="blue") +
  geom_line(data=bus_moco, aes(time_value,value), color="black") + labs(title= "Percentage of Respondent
bus
```

## Percentage of Respondents Who Used Public Transit in the Past 24 Hours
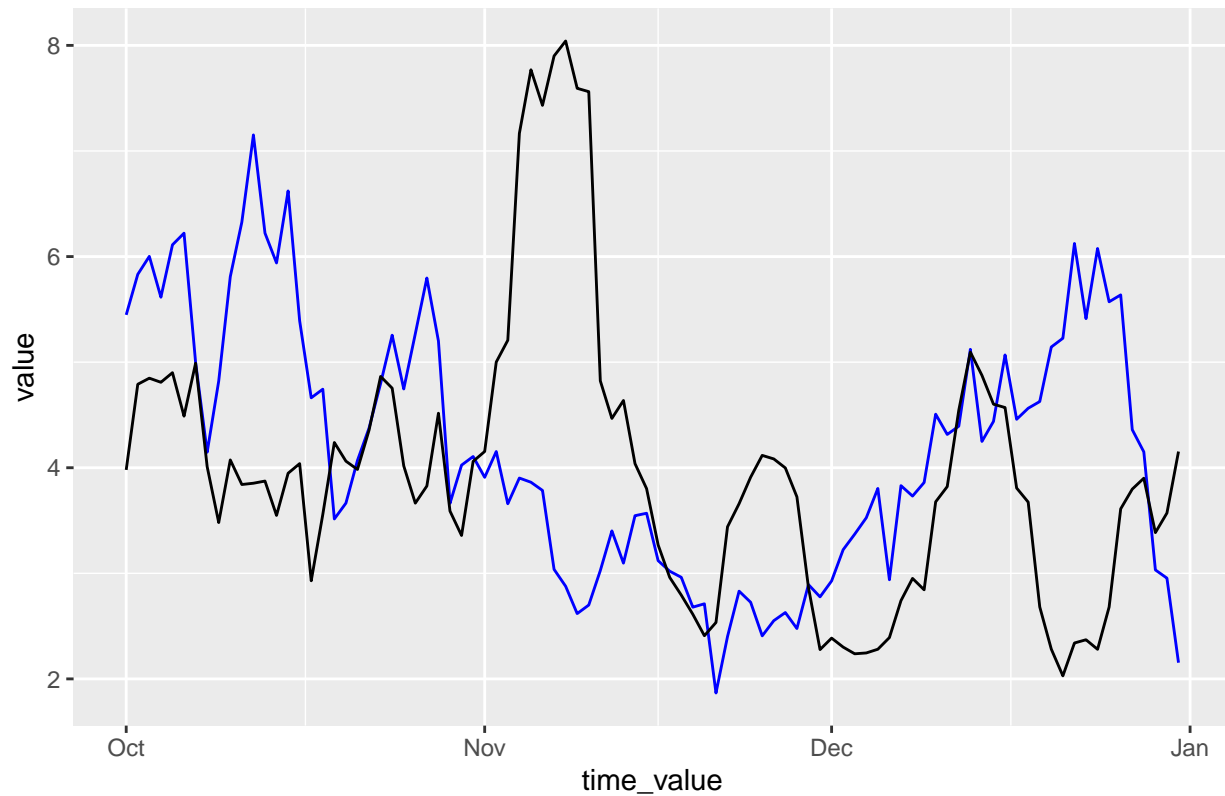


```r
anxious_pg <- pg_fb_anxious %>%
  group_by(time_value, value)
anxious_moco <- moco_fb_anxious %>%
  group_by(time_value, value)
anxious <- ggplot()+geom_line(data=anxious_pg, aes(time_value,value), color="blue") +
  geom_line(data=anxious_moco, aes(time_value,value), color="black") + labs(title= "Estimated Percentag
anxious
```

Estimated Percentage of Respondents Who Felt Anxious Over the Past 5 D:
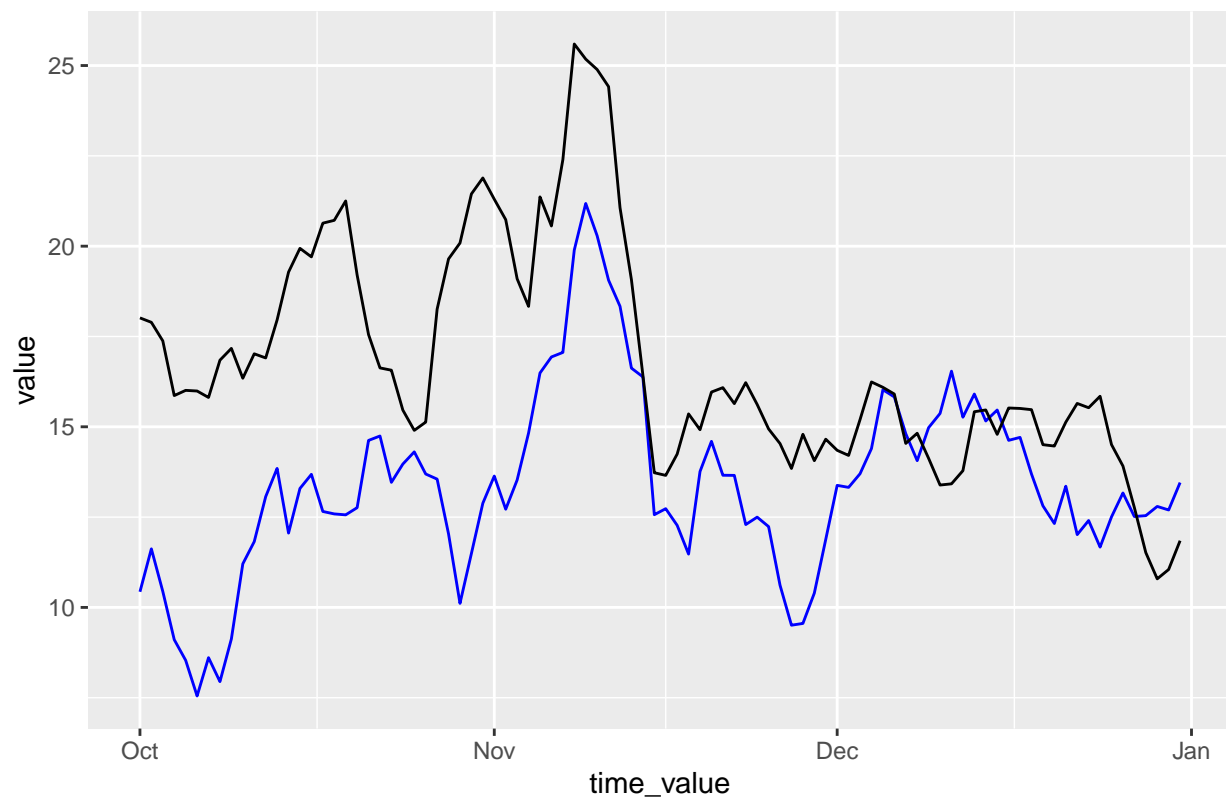

```r
mask_pg <- pg_fb_mask %>%
  group_by(time_value, value)
mask_moco <- moco_fb_mask %>%
  group_by(time_value, value)
mask <- ggplot()+geom_line(data=mask_pg, aes(time_value,value), color="blue") +
  geom_line(data=mask_moco, aes(time_value,value), color="black") + labs(title= "Estimated Percentage o
mask
```

Estimated Percentage of Respondents Who Masked for Most of the Past 5
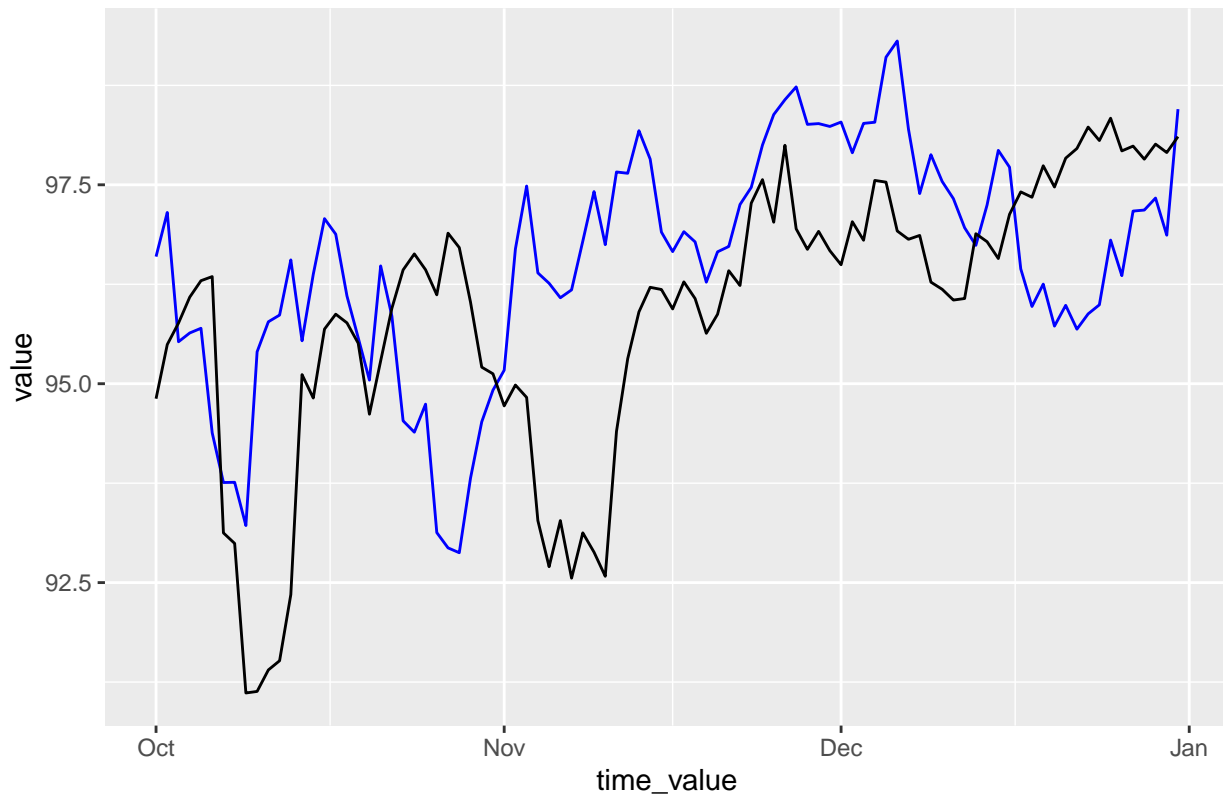

```
out_pg <- pg_fb_out %>%
  group_by(time_value, value)
out_moco <- moco_fb_out %>%
  group_by(time_value, value)
out <- ggplot()+geom_line(data=out_pg, aes(time_value,value), color="blue") +
  geom_line(data=out_moco, aes(time_value,value), color="black") + labs(title= "Est. Percentage of Resp
out
```

Est. Percentage of Respondents Who Worked/Went to School Outside their
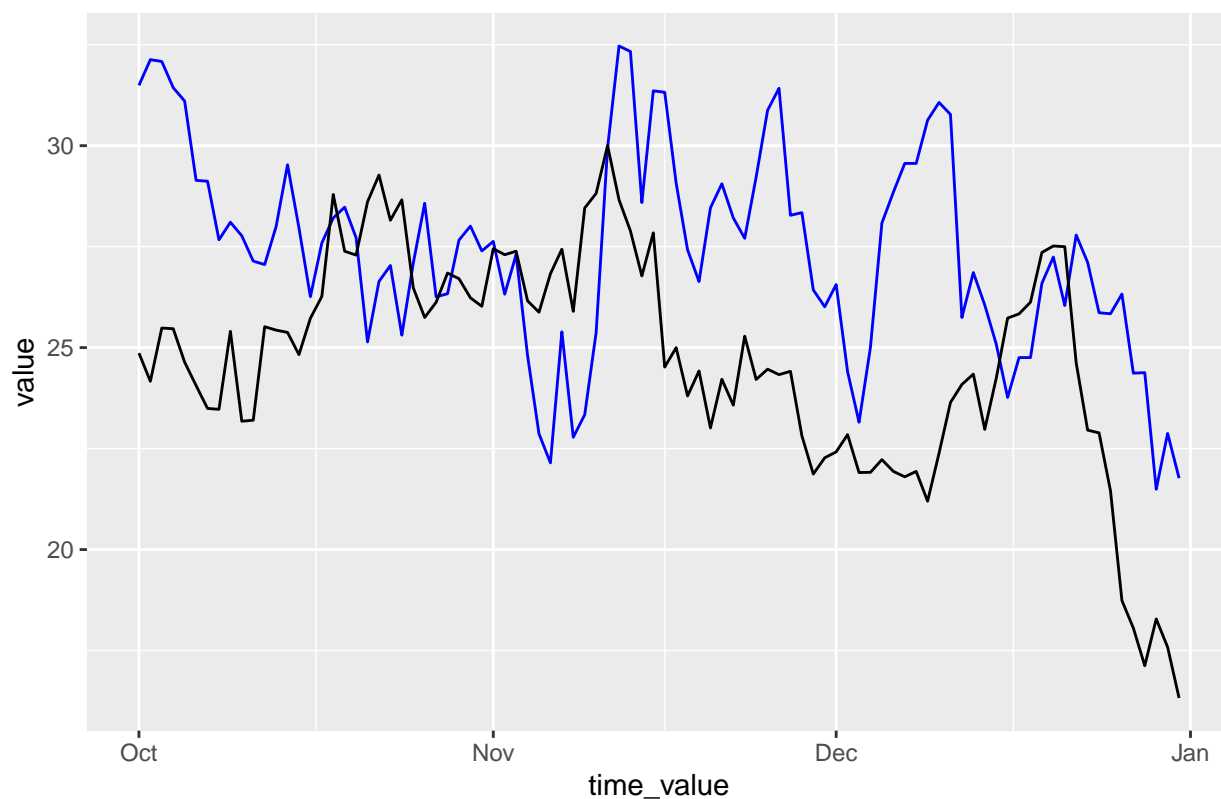

```r
money_pg <- pg_fb_money %>%
  group_by(time_value, value)
money_moco <- moco_fb_money %>%
  group_by(time_value, value)
money <- ggplot()+geom_line(data=money_pg, aes(time_value,value), color="blue") +
  geom_line(data=money_moco, aes(time_value,value), color="black") + labs(title= "Est. Percentage of Res
out
```

Est. Percentage of Respondents Who Worked/Went to School Outside their
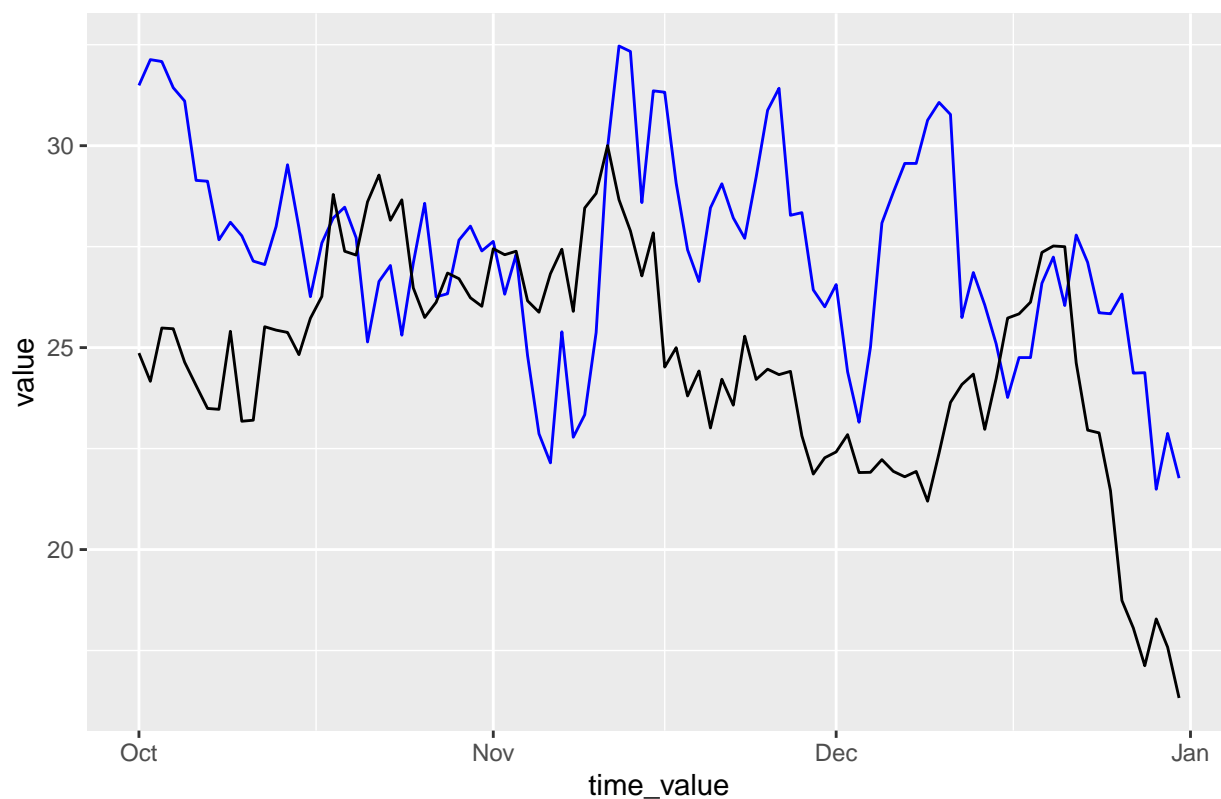


```
hospitals_pg <- pg_hhs_hospital %>%
  group_by(time_value, value)
hospitals_moco <- moco_hhs_hospital %>%
  group_by(time_value, value)
hospitals <- ggplot()+geom_line(data=hospitals_pg, aes(time_value,value), color="blue") +
  geom_line(data=hospitals_moco, aes(time_value,value), color="black") + labs(title= "Est. Percentage o
hospitals
```

Est. Percentage of New Hospital Admissions with COVID−Associated Diagn
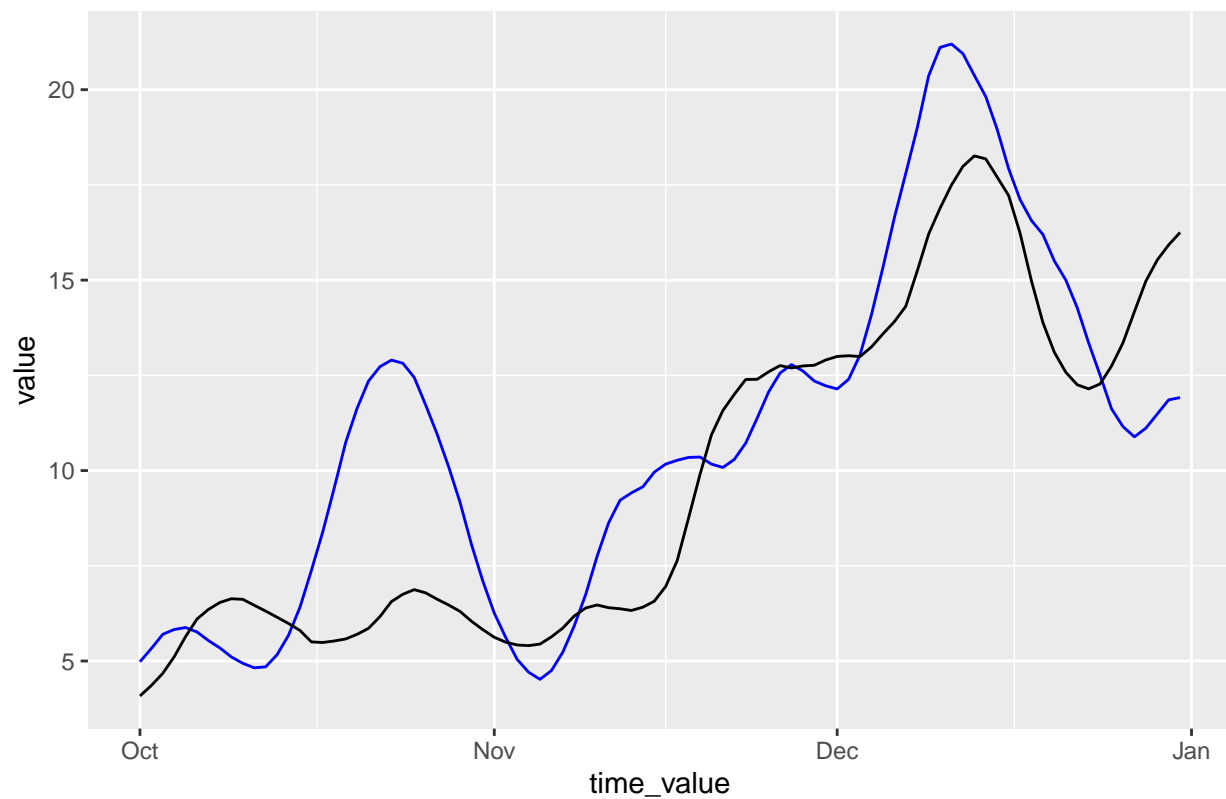

```
deaths_pg <- pg_jhu_deaths %>%
  group_by(time_value, value)
deaths_moco <- moco_jhu_deaths %>%
  group_by(time_value, value)
deaths <- ggplot()+geom_line(data=deaths_pg, aes(time_value,value), color="blue") +
  geom_line(data=deaths_moco, aes(time_value,value), color="black") + labs(title= "Cumulative number of
deaths
```

Cumulative number of confirmed deaths due to COVID−19
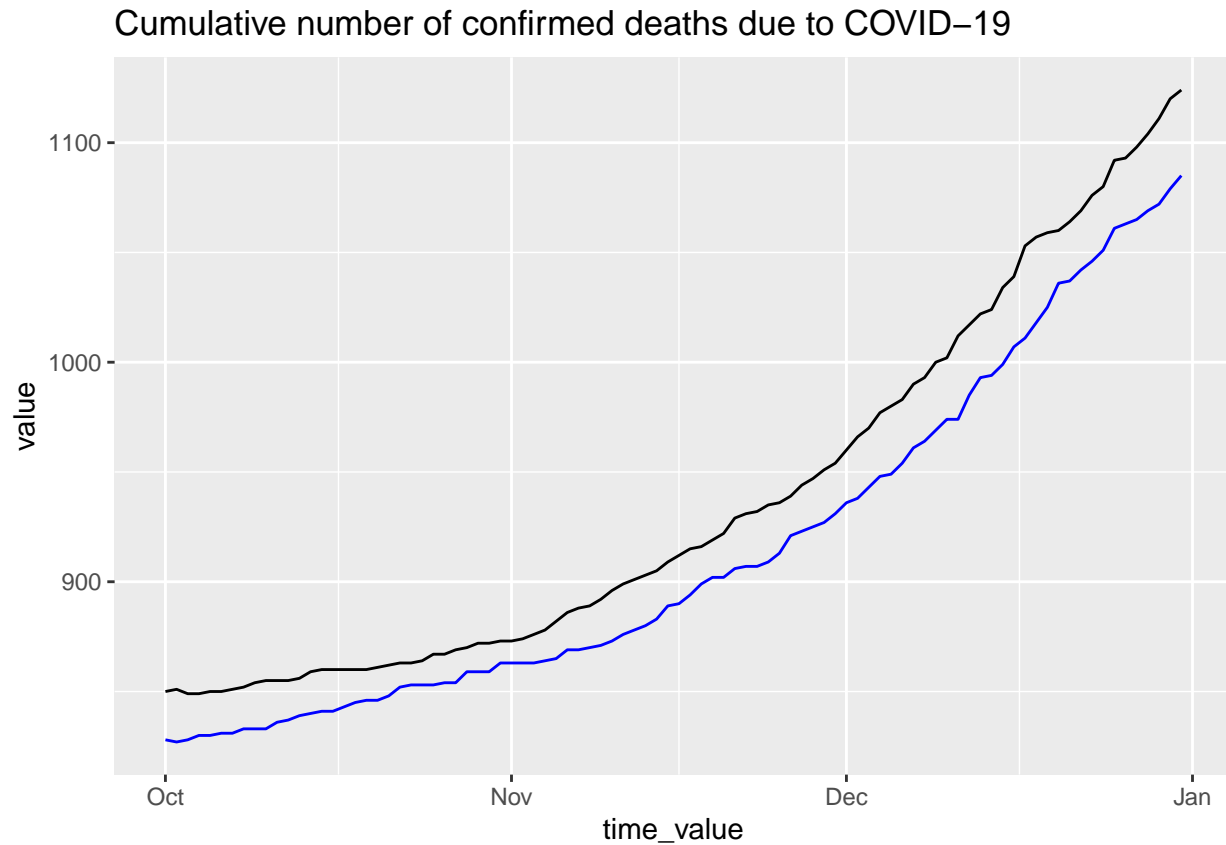
Discussion

This section summarizes the results and may briefly outline advantages and limitations of the work presented.

References

Baumer, Benjamin S., Daniel T. Kaplan, and Nicholas J. Horton. 2017. *Modern Data Science with R*. Chapman & Hall/CRC Press.

Wickham, Hadley. 2014. "Tidy Data." *Journal of Statistical Software* 59 (10): 1–23.