

Regional Comparisons of Non-Pharmaceutical Interventions for COVID 19

Data current as of 2 June 2020

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Executive Summary

Non-Pharmaceutical Interventions (NPIs), also referred to as community mitigation strategies, are interventions that people and communities can implement to help slow the spread of respiratory illnesses, including COVID-19. NPIs are especially important before a vaccine or treatment becomes widely available. However, these measures are also disruptive to daily life. Appropriate mitigation strategies for Anchorage will vary based on the level of community transmission, priorities of local policy makers and residents, and the capacity to implement each strategy.

As a means of comparison, this report outlines a subset of NPIs that are currently being implemented in several national and international geographies. Each of these regions is facing a unique COVID-19 timeline of infections, NPI initiation, and in some cases, NPI relaxation or removal. Graphs depicting the epidemic curve (number of daily cases), a 5-day moving average of the number of daily cases, dates of NPI initiation (and relaxation or removal if applicable), and trends in mobility are included for each of these regions. These comparisons are intended to highlight the impact of each NPI on case counts. The subset of NPIs included in this report are: shelter in place orders, social distancing measures, and travel restrictions.

Mitigation strategies advised by local and state governments will only be effective if adopted by residents. One approach to assessing adherence to mitigation strategies is the assessment of mobility data. De-identified, population-level mobility data are reviewed in this report to provide additional context and highlight potential areas for improved communication and incentivization.

Key Points

- Some important trends can be identified:
 - Mobility of the public, as measured by cell phone data, will likely increase over time, and response measures should account for this, by either discouraging mobility or encouraging other mitigating behaviors.
 - Mobility increasing from lower levels that were associated with shelter in place back toward pre-pandemic levels tends to be associated with subsequent spikes in cases; and mobility near pre-pandemics levels tends to be associated with a persistent elevated plateau in cases.
 - **Take-home point: Increased mobility is linked to increased cases.**
 - **Regions with prolonged decreases in COVID-19 case numbers share some commonalities (Table 1) and are unique from regions with increasing cases:**
 - Regions with average mobility below baseline, excluding movement associated with use of parks (e.g., state and federal parks), all have decreasing case numbers.
 - Increases in park mobility did not correspond with increases in cases.
 - Reopening of schools or daycares did not correspond with increases in cases. (Note: Given the gravity of this decision, additional research beyond this report is necessary to develop policy recommendations. School re-openings in regions identified within this report have involved extensive social distancing and hygiene measures.)
 - Three out of four regions with decreasing case numbers ban gatherings of 2+ or 10+ persons.
 - **Regions with spikes in COVID-19 case numbers share some commonalities (Table 1):**
 - Regions with increasing trends in mobility and grocery/pharmacy mobility above pre-pandemic levels all have increasing case numbers.
 - Recommendations to social distance, wear masks, avoid gatherings, and quarantine after travel may be insufficient in a settings of increased mobility and/or incomplete adherence to recommendations.

Table 1. Non-pharmaceutical interventions (NPIs) currently in effect and mobility trends in geographies with increasing or decreasing daily cases.

	Current Implementation of NPIs and Mobility Status Within Each Geography (Green: decreased infection trend; Red: increased infection trend)							
	Denmark	Germany	Hawaii	S. Korea	Anchorage, AK	Alaska	Spokane, WA	Billings, MO
NPIs Currently in Effect in One or More Geographies with a Decreasing Infection Trend and Mobility Status								
Relatively low average non-park mobility ¹	X	X	X	X				
Social distancing encouraged/required		X	X	X	X	X	X	X
Masks required/encouraged		X	X	X	X	X	X	X
Ban on gatherings of 10+ or 2+	X	X	X				X	X
Post-travel quarantine	X		X	X	X	X		
Suspension of elective procedures		X	X					
School closures			X	X	X	X	X	
In-state travel restrictions			X					
Shelter in place	X							
Dine-in services suspended								
Non-essential business closure								

Recommendations

- **Expand communication efforts designed to encourage adherence to social distancing, avoiding gatherings, minimizing mobility, following post-travel quarantine guidelines, and wearing masks.** Consider targeting communications to particular destinations (e.g., grocery stores versus trailheads) and audiences (e.g., those who are unaware of guidelines versus those opposed to guidelines).
 - Communities have developed creative, entertaining, and locally relevant PSAs. Examples include videos featuring local celebrities such as Jeff Bridges in Montana, or mayors or other city officials, like Mayor Lightfoot in Chicago. Hawaii, one of the jurisdictions with the highest adherence to social distancing, put out a video targeting seniors.
 - In Alaska, a consortium of organizations started “Caring is Easy” (<https://www.caringiseasy.com/>) where they have posted dozens of Alaska-specific memes and images that can be used on social media.
 - The health communication advisory group at the Division of Population Health Sciences (headed by Dr. Gabe Garcia, and analyzing the Municipality’s health belief and behavior survey) has also developed and submitted messaging recommendations.

¹ Mobility, as measured by cell phone data, is examined according to various destination categories. These categories include parks (e.g., state and federal), grocery/pharmacy, retail/recreation, residential, transit stations, and workplaces.

- Appendix A provides a list of PSA examples from other communities that may provide ideas for increasing public communication around NPIs in Anchorage and Alaska.
- **Consider a public awareness campaign highlighting:**
 - Economic benefit of observing physical distancing/mask wearing guidelines (preserving business operations and population mobility).
 - If these personal patterns do not change, mandates may have to be reinstated and enforced. Until then, the combined effect will likely continue to lead to a persistent increase in cases.
 - International regions have opened businesses and allowed gatherings with those not from one's household while maintaining mask-wearing, physical distancing, and limiting mobility, without experiencing a COVID-19 resurgence.
 - Metrics that need to be met to be confident in maintaining the reopened economy status. The State of Washington has a [Safe Start Plan](#) that clearly outlines the steps between each phase and may be a useful model for Anchorage/Alaska to employ if mitigation measures need to be reinstated. The pre-established guidelines indicate whether a region is eligible for turning NPIs "on/off." This has the potential for increased community buy-in of mandates given that the case count goals and trends are clearly defined.
- **Consider incentivizing healthy behaviors at the individual, community, and/or business levels.** Some examples include:
 - For every drop in daily cases, a raffle is held for such things as a hunting license, access to Denali, one-time reduction in property taxes, gift certificate to a local business.
 - Reward or highlight businesses that require face masks for employees and patrons, or that adopt innovative business practices to improve social distancing.
- **Consider incentivizing/assisting businesses to adopt practices that minimize mobility.** Some examples include:
 - Expanded carry-out, curbside, and delivery options, including non-food businesses.
 - Expanded telework/telecommute options.
- **Explore innovative approaches the Municipality of Anchorage can adopt to simultaneously support the health of the local economy and reduce the risk of transmission.** Some examples include:
 - Removing regulatory and monetary barriers to businesses utilizing outdoor space (e.g., parking spaces) to serve patrons. Could be applied to shopping, dining, and drive-through services.
 - Closing select streets to through traffic to allow for increased social distancing by pedestrians.
- **Consider improved monitoring of post-travel quarantine and/or adherence to mask-wearing recommendations.**
- **Ensure that testing and tracing capabilities remain at full capacity.**

Factors of Interest

Non-Pharmaceutical Interventions (NPIs)

NPIs, also referred to as community mitigation strategies, are interventions that people and communities can employ to help slow the spread of respiratory illnesses like COVID-19. When selecting mitigation strategies, the Municipality of Anchorage (MOA) is guided by the characteristics of disease transmission, demographics, and public health and healthcare system capacity. Mitigation strategies are scaled up or down depending on the evolving local situation and infection rate. Consideration is also given to all aspects of a community that might be impacted, including populations most vulnerable to severe illness and those that may be more impacted socially or economically, when selecting appropriate actions. A selection of NPIs utilized in this report and incorporated into epidemic curves are listed in Appendix A.

Resident Mobility

Resident mobility can be estimated using mobile phone data (collected through a variety of apps, such as Google and Facebook), and several platforms sharing de-identified data are available (e.g., Unicast, Google Community Mobility Reports, Apple, COVID-19 Mobility Data Network). [Google Community Mobility Reports](#) were used in the document herein, which estimate changes in mobility using “aggregated, anonymized sets of data from users who have turned on the “Location History” setting”, which is normally off by default. Data in the Google Community Mobility Reports are from users with a Google account. Mobility destinations are divided into the categories of retail/recreation, grocery/pharmacy, parks (e.g., state and federal), transit stations, workplaces, and residential.

Geographic Regions for Comparison and Potential Policy Implications

In addition to Anchorage and Alaska, the authors have identified an expanded set of geographies to characterize in terms of NPIs, mobility, and policy response. This report addresses Anchorage, Alaska, Hawaii, Ohio, Billings (Montana), Spokane (Washington), Denmark, Sweden, Germany, and South Korea.

Each of these regions is facing a unique COVID-19 timeline of infections, NPI initiation, and in some cases, NPI relaxation or removal. Regional comparisons highlight the potential for successful case mitigation and risk of surges associated with each NPI implementation and removal. Key policy “take-aways” may illuminate potential options for Anchorage to consider should local trends mimic successful geographies.

Graphs depicting the epidemic curve (number of daily cases), a 5-day moving average of the number of daily cases, dates of NPI initiation (and relaxation or removal if applicable), and changes in mobility are included for each region in the following section. An epidemic curve is a visualization of the onset and patterns of disease transmission. It is helpful in showing the disease’s magnitude, incubation period, and response to mitigation measures

Interpreting Figures:

The yellow bars overlying some of the epidemic curves are two weeks in length, with the right boundary corresponding to a second peak in cases following a period of decline, as applicable. Thus, the left boundary draws attention to NPIs and mobility trends occurring approximately two weeks prior to an increase in cases (assuming an estimated 14-day period to confirm a case). Below each epidemic curve, we have included the date in which NPIs were implemented in each region, and if relevant, the date the measures were eased or terminated.

These figures can be utilized to assess the potential impact of NPIs and mobility on the frequency of new cases as well as potential temporal lags in case trends as a result of initiating or easing NPIs. As time lapses, potential correlation between NPI release, mobility, and increase in positive cases will be more evident.

Summary Table of Epidemic Curve, NPI, and Mobility Analysis

Table 2 highlights key points and important context in the analysis of the 10 regions examined.

Table 2. Key points and important context in the analysis of epidemic curves, NPIs, and mobility in 10 regions of interest.

Region (and justification for inclusion)	Key Points	Contextual Notes
Anchorage and Alaska (home regions of interest)	<ul style="list-style-type: none"> • Rollback of mitigation measures correlates with the initiation of a gradual increase in mobility across all non-residential categories. • Increases in mobility followed by a spike in cases. • Increases in mobility are generally greatest Friday-Sunday. • Mobility to grocery/pharmacy locations has returned to baseline levels (i.e., same as pre-pandemic). • Mobility to retail/recreation locations is nearing baseline levels. • Mobility to parks has increased 2-3x since mitigation measures were rolled back. 	<p>Percent of tests positive: 1.36% (Anchorage), 0.87% Alaska</p> <p>Tests per 1000 people: 75 (Anchorage), 80 (Alaska)</p>
Hawaii (Shared traits of geographic remoteness; Pop: 1.46 million)	<ul style="list-style-type: none"> • Low mobility and encouraged public mask wearing (required at retail locations) correlates with low case counts, even when shelter in place is lifted and non-essential businesses and restaurants are reopened. • There have been no large case spikes since adding the closure of beaches, suspension of elective procedures, and increased mask wearing to earlier mitigation measures. • Small increases in cases occurred following the reopening of restaurants, bars, and nonessential businesses, and lifting of shelter in place restrictions. All other mitigation measures remain in place. • Bans on gatherings of 10+ remain in place. • Mobility across all categories remains exceptionally low. 	<p>Percent of tests positive: 1.32%</p> <p>Tests per 1000 people: 35</p>
Ohio (Conservative state with early implementation of NPIs; Pop: 11.69 million)	<ul style="list-style-type: none"> • The majority of mitigation measures remain in place, and new daily cases remains elevated, but flat. • The rollback of personal services closures and the reopening of gyms was not followed by large case spikes in subsequent weeks, but mobility to such locations remained below baseline. • Mobility across all non-residential categories began to increase prior to extensive mitigation rollbacks. • Grocery/pharmacy mobility recently returned to baseline. • In the past month, mobility to parks has increased up to 4x baseline. • Most mitigation measures were removed within the last week (including post-travel quarantine), and it may be too early to assess impacts. 	<p>Percent of tests positive: 8.53%</p> <p>Tests per 1000 people: 37</p> <p>The first large spike in cases is associated with a hotspot and increased testing in a prison facility.</p> <p>Daily cases have remained elevated, but flat.</p>
Spokane, Washington (Northwest hub county with similar demographics of Anchorage; Pop: 219,000)	<ul style="list-style-type: none"> • Mobility to all non-residential locations began to moderately increase prior to any mitigation rollbacks, and initiation of the increase in mobility correlates with falling case numbers. • The increase in mobility is followed by a subsequent spike in cases. • Mobility to grocery/pharmacy locations has returned to baseline. • Mobility to parks has increased up to 3x in the past month. 	<p>Percent of tests positive: 3.7%</p> <p>Tests per 1000 people: 77</p>

	<ul style="list-style-type: none"> Most mitigation measures were removed within the last week (including post-travel quarantine), and it may be too early to assess impacts. 	
Billings, Montana (Northwest hub city with similar demographics of Anchorage; Pop: 109,500)	<ul style="list-style-type: none"> Mobility across all non-residential categories began to increase immediately after the shelter in place mitigation measure was rolled back. Mobility to parks has increased up to 3x in the past month. Mobility to grocery/pharmacy locations is now above baseline. 	<p>Percent of tests positive: 9.45% Tests per 1000 people: 52</p> <p>The percent of tests positive suggests the testing rate may be too low to adequately monitor the spread of the virus.</p> <p>Montana schools were permitted by the Governor to reopen as of May 7, 2020, but most remained closed to in-person instruction. Those that did open, closed again at the end of the school year.</p>
Denmark (Early and aggressive NPI's implemented, low testing rates compared to countries with similar attributes, has since opened schools)	<ul style="list-style-type: none"> Daily case numbers have continued to drop, even after reopening primary school and daycare, and personal services in mid-April. Post-travel quarantine, ban on gatherings of 10+, and recommended shelter in place remain in effect. Mobility across non-residential categories has remained fairly flat, and at or below baseline. It may be too early to assess the impacts of reopening secondary schools, dine-in services, and border crossings, as well as the impacts of the up to 5x increase in mobility to parks. 	<p>Percent of tests positive: 1.75% Tests per 1000 people: 134</p> <p>Testing rate ~1.65x the testing rate of Alaska.</p>
Sweden (Did not implement NPI's for school or business closures and experienced twice mortality of countries with similar attributes (i.e. Denmark))	<ul style="list-style-type: none"> Daily new cases remain flat, but elevated. (Slightly better than Ohio, which has a comparable total population. However, Ohio's testing rate and percent of tests positive are better than Sweden's.) Sweden's mitigation measures are some of the most lenient (Grade 9 – University school closures; banned travel from non-EU countries, spaced dine-in services, ban on gatherings 50+, and discouraged in-state travel). Mobility to grocery/pharmacy and residential locations has remained at baseline, while all other on-park categories remain below baseline. Mobility to parks has increased up to 4x in recent weeks. Sweden does not recommend face masks in public. 	<p>Percent of tests positive: 15% Tests per 1000 people: 27</p> <p>The percent of tests positive suggests the testing rate is too low to adequately monitor the spread of the virus.</p>
Germany (Early NPI implementation with low mortality rate and actively	<ul style="list-style-type: none"> Cases have continued to decline since early April, despite the reopening of schools, non-essential businesses. It may be too early to assess the impacts of loosening post-travel quarantine requirements and reopening restaurants, but no associated spikes in cases followed in the two subsequent weeks. 	<p>Percent of tests positive: 4.25% Tests per 1000 people: 52</p> <p>Reopened schools adopted social distancing and hygiene</p>

releasing NPI restrictions)	<ul style="list-style-type: none"> • A ban on gatherings of 2+ and the required use face masks in public remain in place. • Mobility across all non-residential categories, with the exception of parks, remains below baseline. 	protocols, and some received donated test kits.
South Korea (Early onset of cases)	<ul style="list-style-type: none"> • Total cases relative to total population remains very low, and until early May continued to decline. • The reopening of childcare centers was not followed by a spike in cases. • The recent increase in cases follows a temporary lifting of social distancing expectations and the return of non-residential mobility to baseline (with the exception of parks, which is well above baseline). 	<p>Percent of tests positive: 1.19% Tests per 1000 people: 19</p> <p>Testing capabilities, contact tracing, quarantine, and travel restrictions were strengthened in the very early stages of the pandemic.</p>

Location Graphs of Epidemic Curves, NPIs, and Mobility

Anchorage, Alaska

Testing Snapshot:

-Total Positive: 296

-Tests per 1000 people: 75

-Percent of tests positive: 1.36%

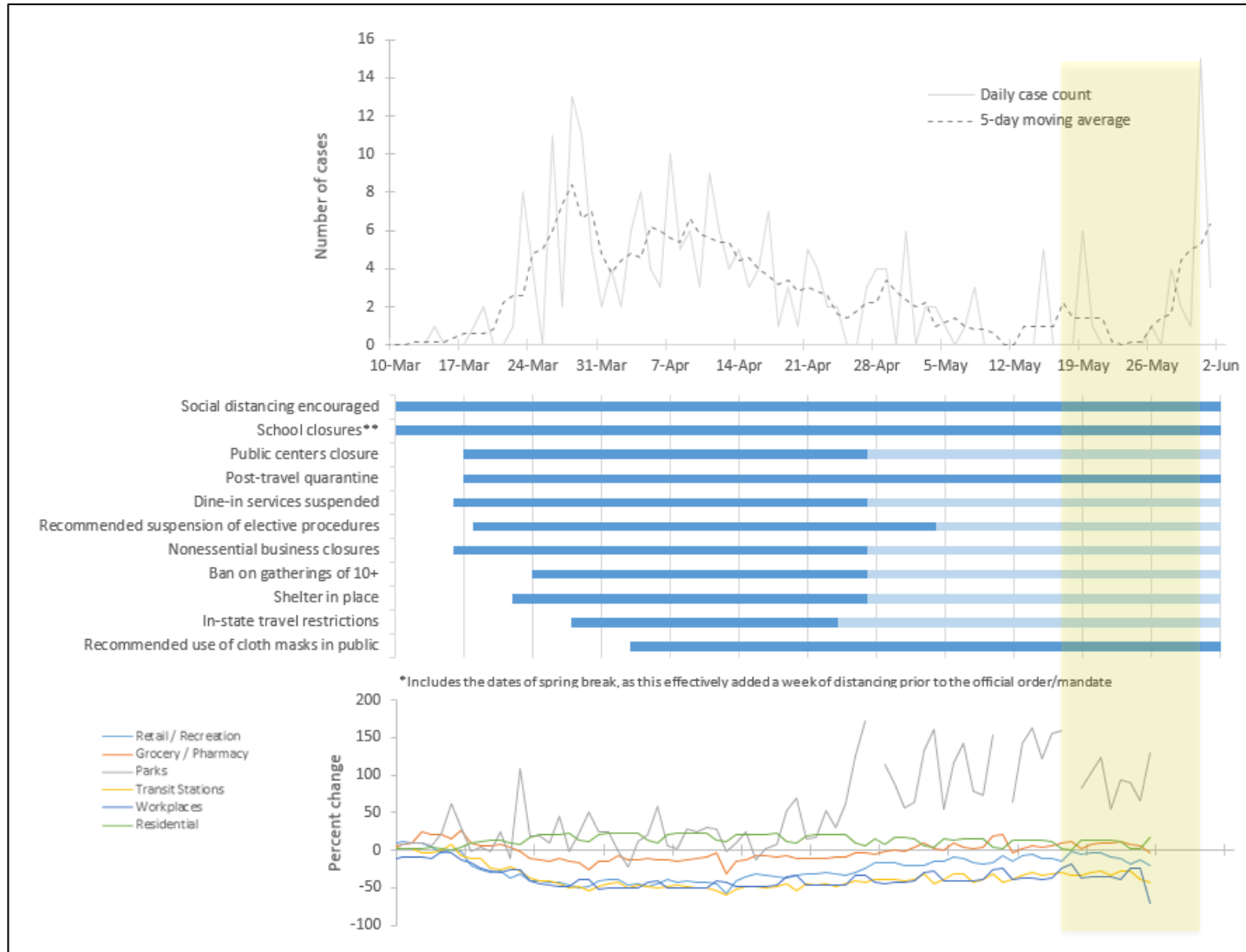


Figure 1. Anchorage epidemic curve, timeline of non-pharmaceutical interventions (NPIs) (dark blue: NPIs implemented; light blue: NPIs relaxed), and changes in average mobility. Yellow bar shows two weeks prior to second spike in cases.

Alaska

Testing Snapshot:

-Total Positive: 505

-Tests per 1000 people: 80

-Percent of tests positive: 0.87%

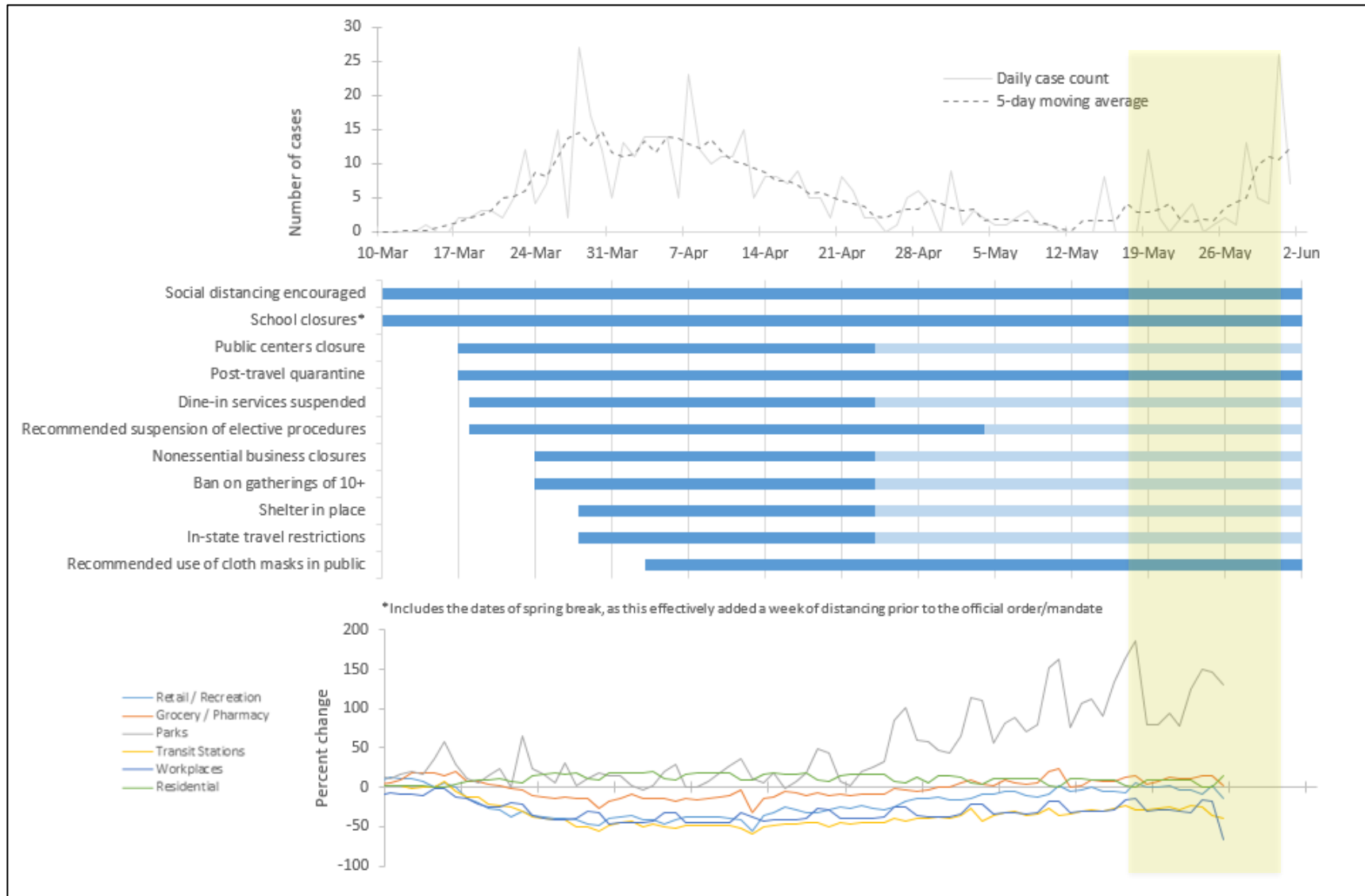


Figure 2. Alaska epidemic curve, timeline of non-pharmaceutical interventions (NPIs) (dark blue: NPIs implemented; light blue: NPIs relaxed), and changes in average mobility. Yellow bar shows two weeks prior to second spike in cases.

Hawaii

Testing Snapshot:

-Total Positive: 653

-Tests per 1000 people: 35

-Percent of tests positive: 1.32%

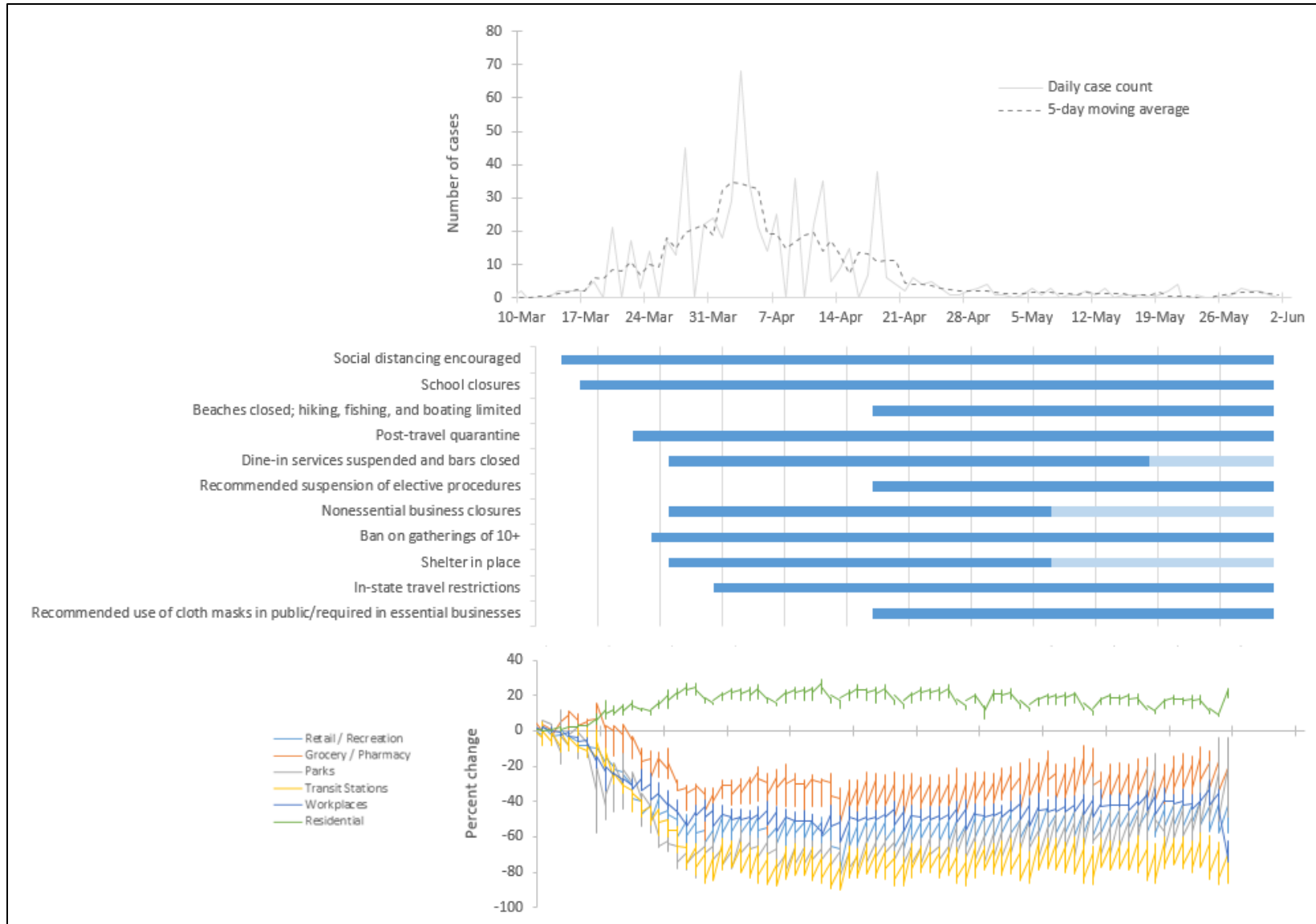


Figure 3. Hawaii epidemic curve, timeline of non-pharmaceutical interventions (NPIs) (dark blue: NPIs implemented; light blue: NPIs relaxed), and changes in average mobility. Yellow bar shows two weeks prior to second spike in cases.

Ohio

Testing Snapshot:

-Total Positive: 37,282

-Tests per 1000 people: 37

-Percent of tests positive: 8.53%

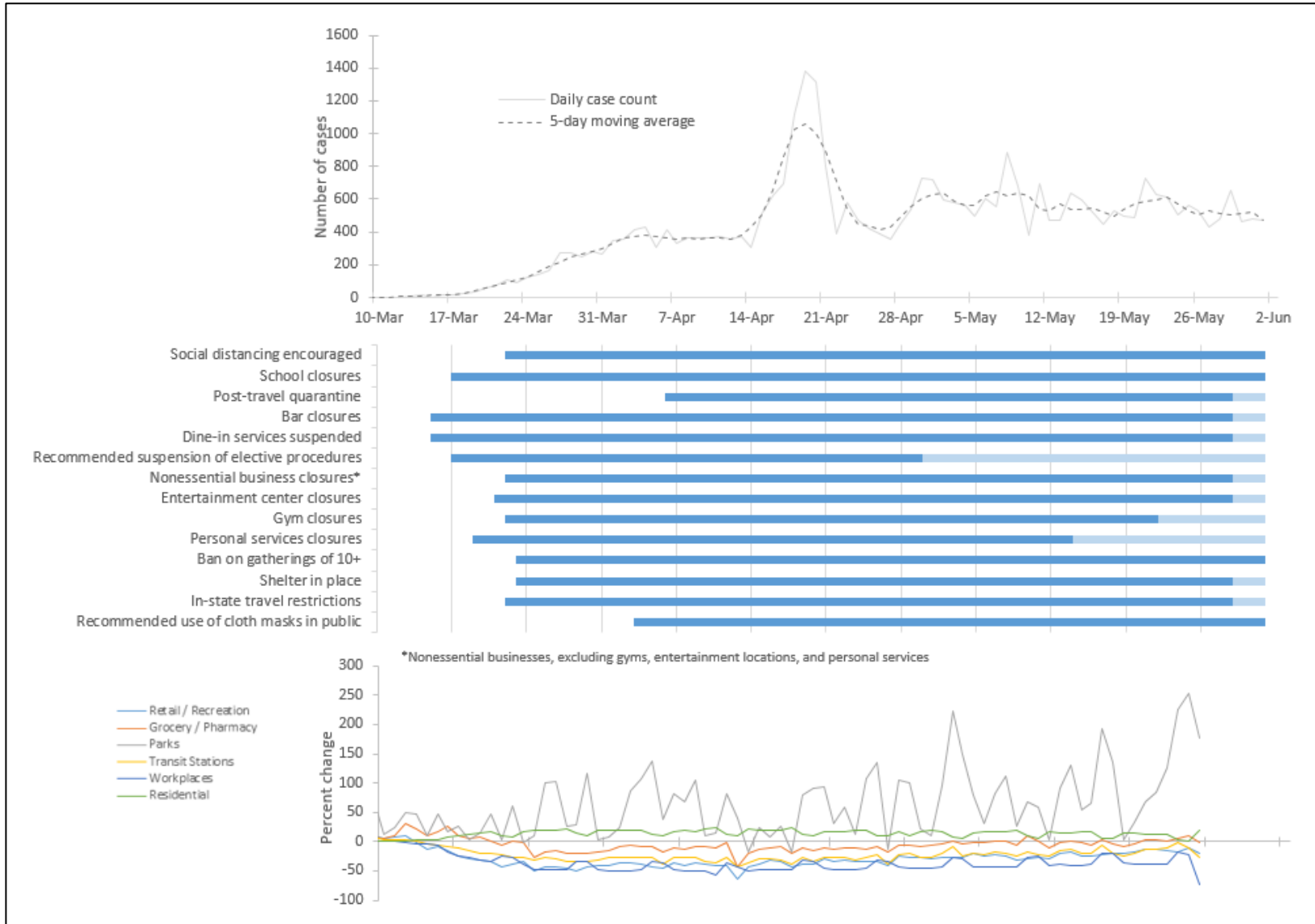


Figure 4. Ohio epidemic curve, timeline of non-pharmaceutical interventions (NPIs) (dark blue: NPIs implemented; light blue: NPIs relaxed), and changes in average mobility. Yellow bar shows two weeks prior to second spike in cases.

Spokane, Washington
 Testing Snapshot:

-Total Positive: 627

-Tests per 1000 people: 77

-Percent of tests positive: 3.7%

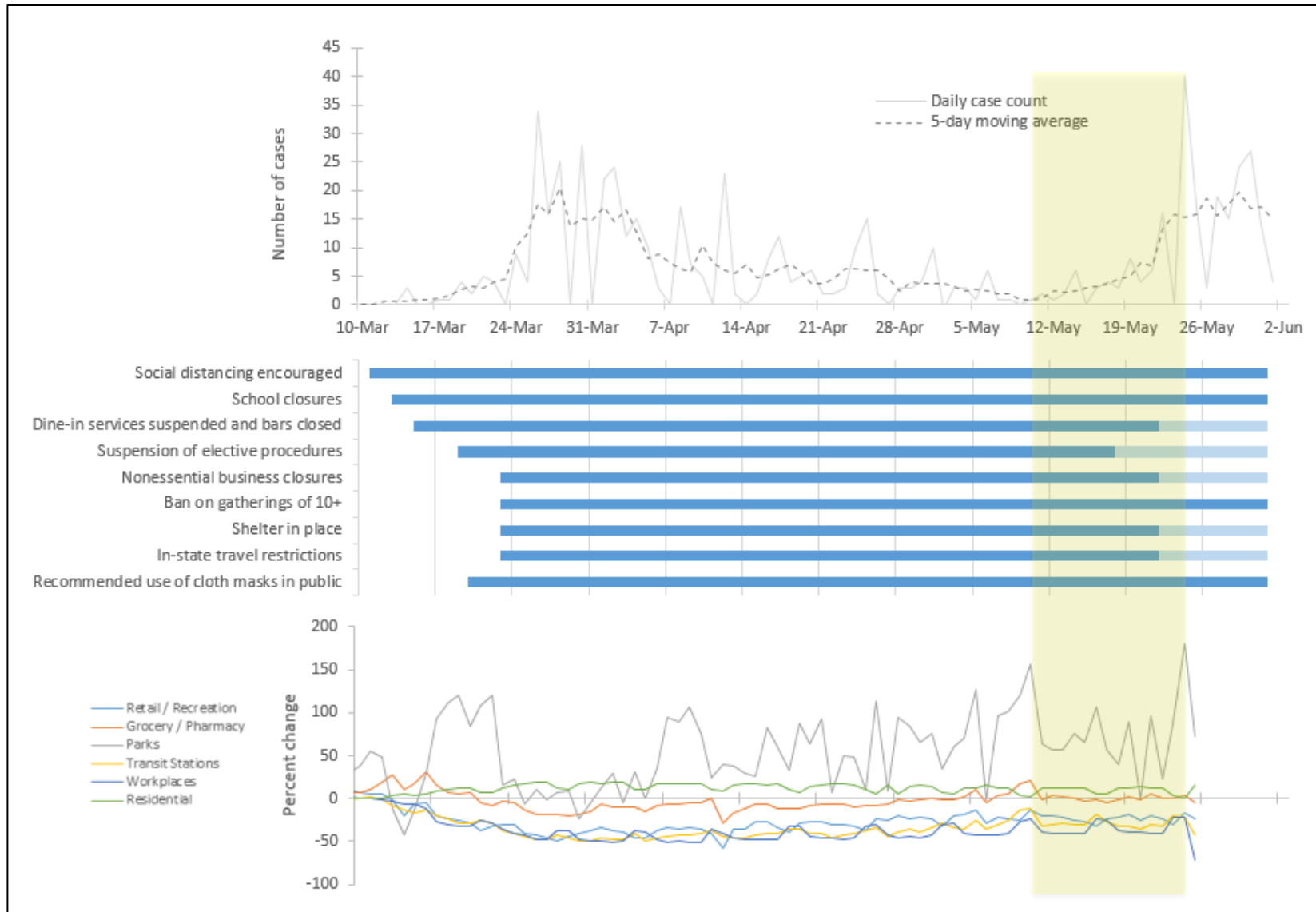


Figure 5. Spokane County, Washington epidemic curve, timeline of non-pharmaceutical interventions (NPIs) (dark blue: NPIs implemented; light blue: NPIs relaxed), and changes in average mobility. Yellow bar shows two weeks prior to second spike in cases.

Billings, Montana
 Testing Snapshot:

-Total Positive: 539

-Tests per 1000 people: 52

-Percent of tests positive: 9.45%

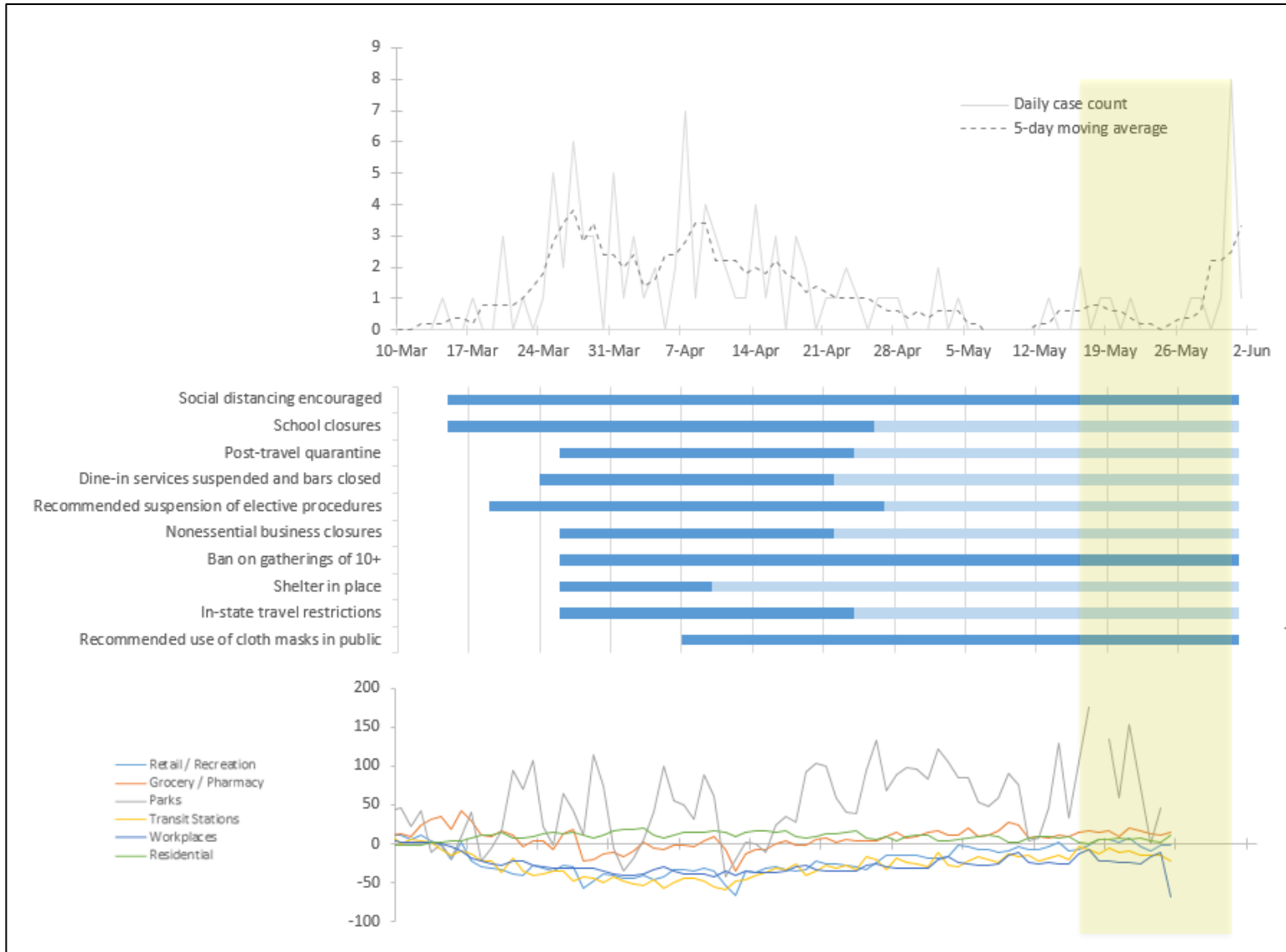


Figure 6. Yellowstone County epidemic curve, timeline of non-pharmaceutical interventions (NPIs) (dark blue: NPIs implemented; light blue: NPIs relaxed), and changes in average mobility. Yellow bar shows two weeks prior to second spike in cases.

Denmark

Testing Snapshot:

-Total Positive: 11811

-Tests per 1000 people: 134

-Percent of tests positive: 1.75%

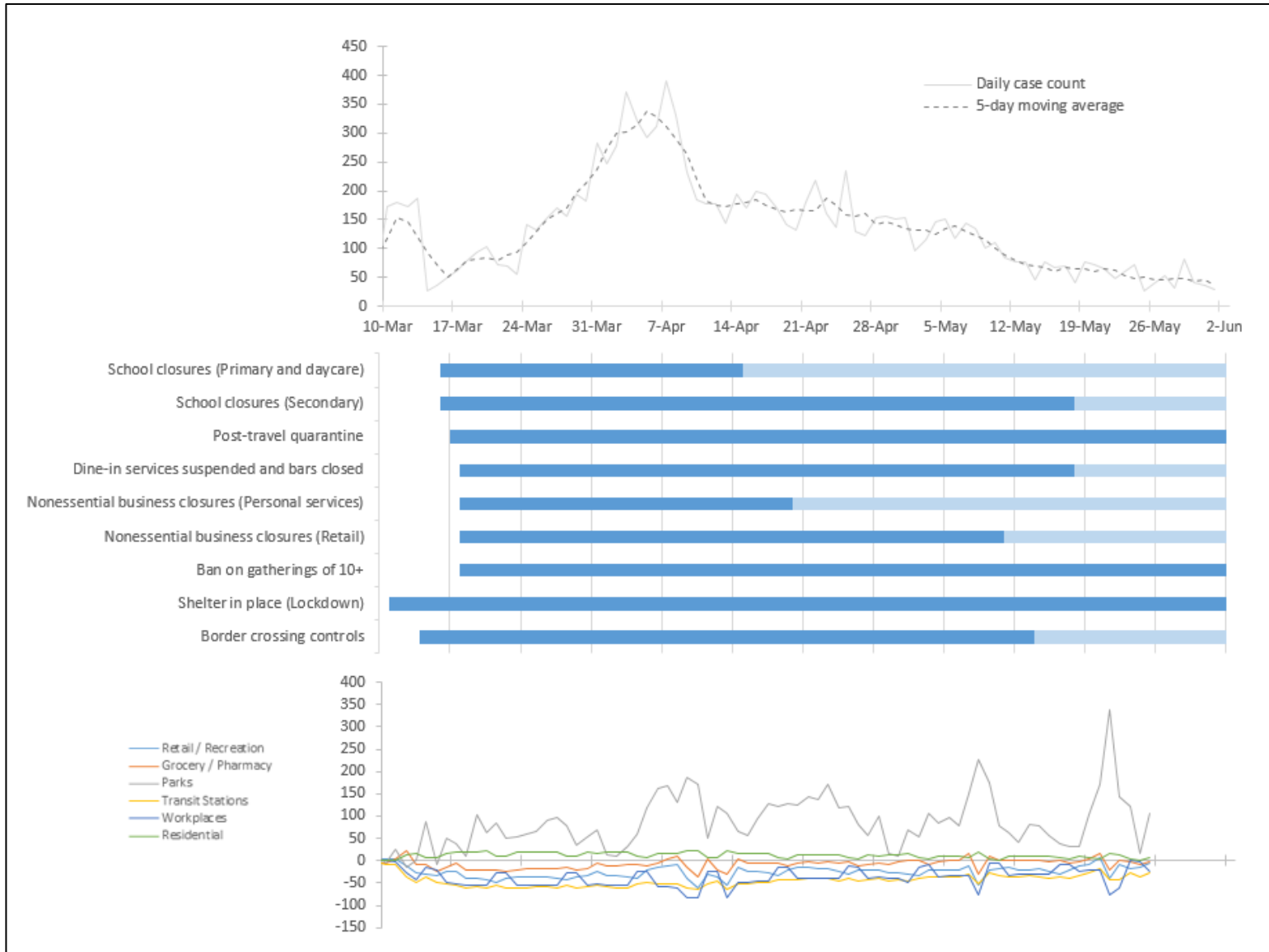


Figure 7. Denmark epidemic curve, timeline of non-pharmaceutical interventions (NPIs) (dark blue: NPIs implemented; light blue: NPIs relaxed), and changes in average mobility. Yellow bar shows two weeks prior to second spike in cases.

Sweden

Testing Snapshot:

-Total Positive:41883

-Tests per 1000 people: 27

-Percent of tests positive: 15%

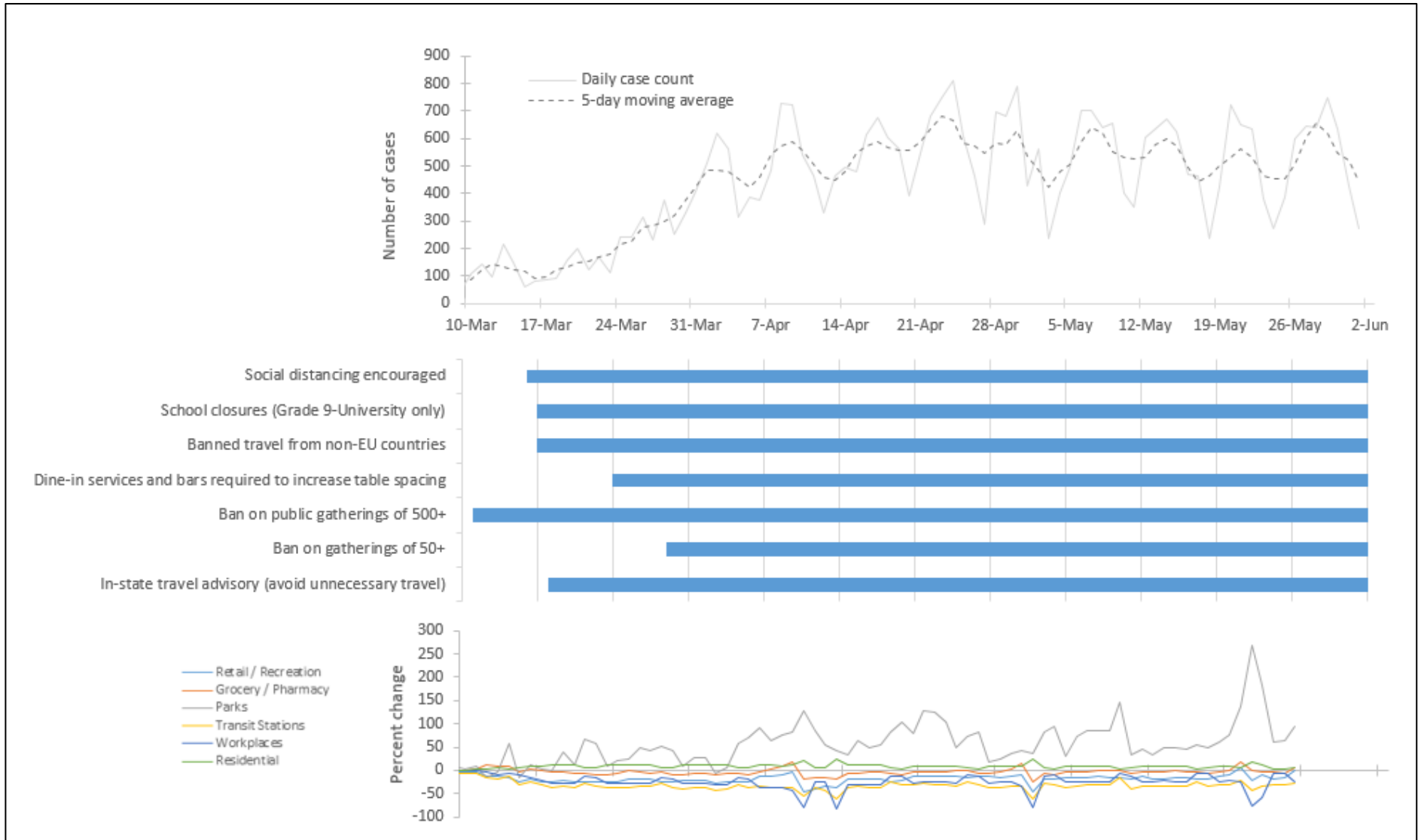


Figure 8. Sweden epidemic curve, timeline of non-pharmaceutical interventions (NPIs) (dark blue: NPIs implemented; light blue: NPIs relaxed), and changes in average mobility. Yellow bar shows two weeks prior to second spike in cases.

Germany

Testing Snapshot:

-Total Positive: 184912

-Tests per 1000 people: 52

-Percent of tests positive: 4.25%

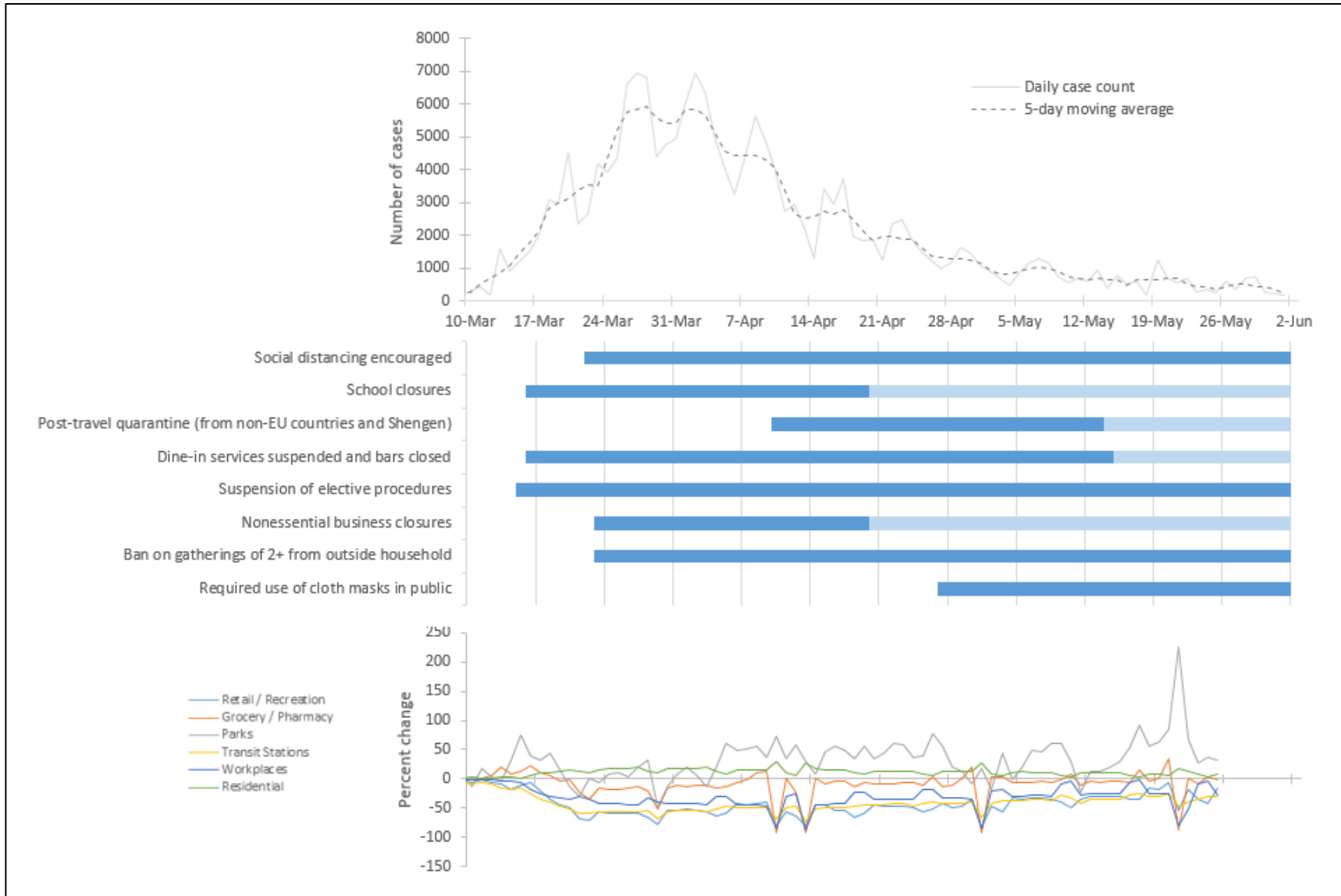


Figure 9. Germany epidemic curve, timeline of non-pharmaceutical interventions (NPIs) (dark blue: NPIs implemented; light blue: NPIs relaxed), and changes in average mobility. Yellow bar shows two weeks prior to second spike in cases.

South Korea

Testing Snapshot:

-Total Positive: 11629

-Tests per 1000 people: 19

-Percent of tests positive: 1.19%

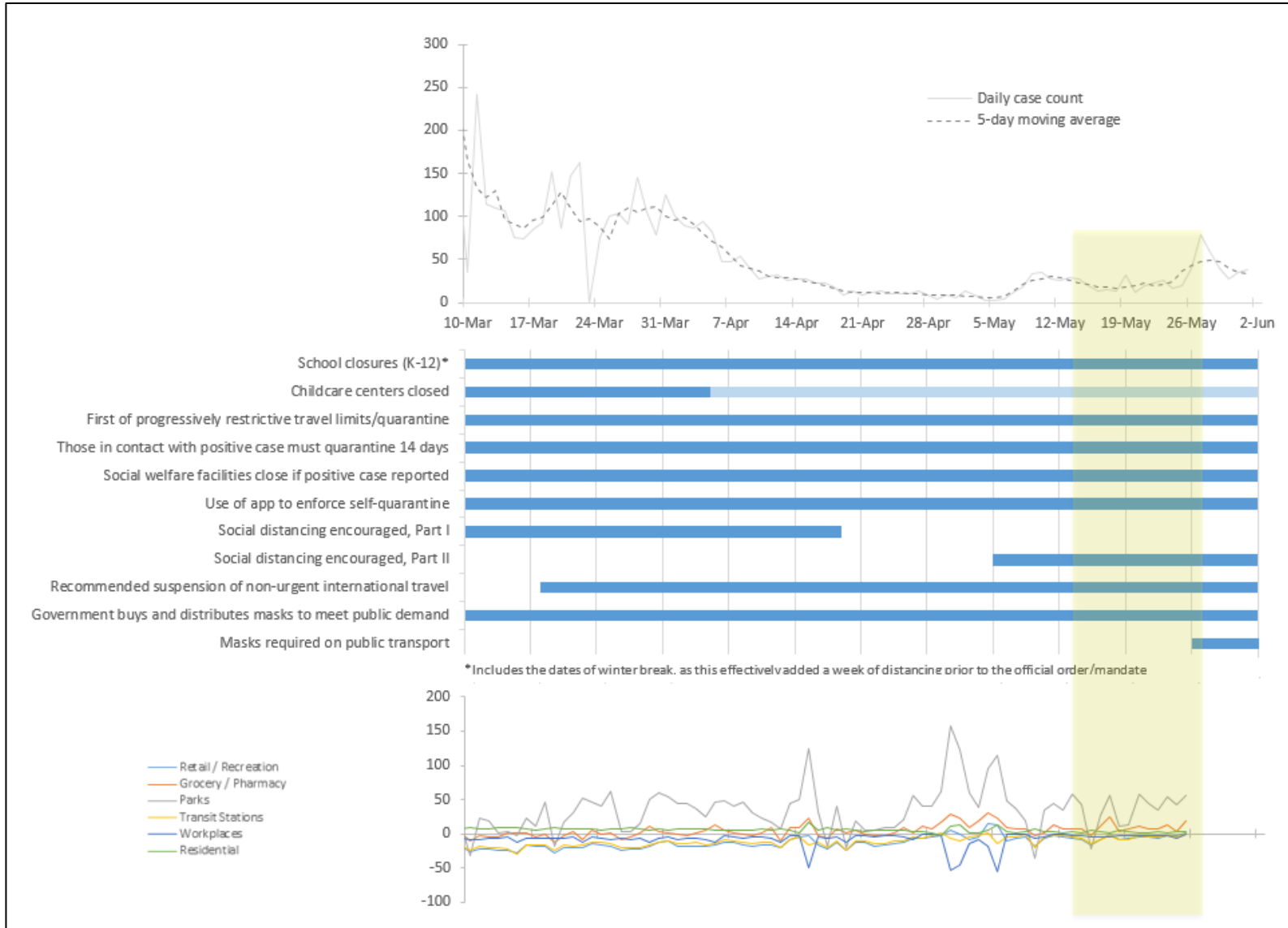


Figure 10. South Korea epidemic curve, timeline of non-pharmaceutical interventions (NPIs) (dark blue: NPIs implemented; light blue: NPIs relaxed), and changes in average mobility. Yellow bar shows two weeks prior to second spike in cases.

Appendix A – Example Public Service Announcement Encouraging Social Distancing and Risk Reduction Behaviors

Hawaii - Funny video targeting seniors

- Video: <https://www.youtube.com/watch?v=EqChkRQNZBA>
- Article: <https://health.hawaii.gov/news/newsroom/hawaii-department-of-health-launches-covid-19-public-awareness-campaign-featuring-frank-de-lima/>

Chicago - Mayor Lightfoot

- Video: <https://www.nbcchicago.com/news/local/chicago-politics/lightfoot-shares-hilarious-psa-urging-people-to-stay-home-save-lives/2247859/>
- Article: <https://www.nbcchicago.com/news/local/chicago-politics/lightfoot-shares-hilarious-psa-urging-people-to-stay-home-save-lives/2247859/>

Kentucky - Ice, ice baby fire department

- Video: https://www.youtube.com/watch?time_continue=16&v=hW8Xydd6xC4&feature=emb_logo

Ohio - Social distancing PSA with ping pong balls

- Video: https://www.youtube.com/watch?v=o4PnSYAqQHU&feature=emb_logo

Montana - Jeff Bridges

- Video: <https://www.youtube.com/watch?v=vq-4SARP8rl&feature=youtu.be>
- Article: <https://nbcmontana.com/news/local/jeff-bridges-stars-in-montana-covid-19-psa>

Vietnam - Tik tok challenge with pop singer

- Original video: https://www.youtube.com/watch?v=V9YirNgAzXI&feature=emb_logo
- Pop singer dance:
https://www.instagram.com/p/B8wTW_BllKj/?utm_source=ig_embed&utm_campaign=embed_video_watch_again
- Article: <https://www.cnn.com/videos/world/2020/03/17/coronavirus-covid-19-hygiene-viral-tiktok-dance-john-oliver-lu-stout-pkg-intl-ldn-vpx.cnn>

Appendix B – Non-Pharmaceutical Intervention (NPI) Definitions

NPI	Definition(s) and potential implementation
<i>Social distancing encouraged</i>	Social distancing is typically defined as maintaining a distance of six feet or greater from any individuals with whom one does not currently reside
<i>School closures</i>	Region wide closure of K-12 schools and a widespread move from in-person school to remote school. May include widespread closure of universities and widespread closure of nursery schools and daycares (potentially exempting children of “essential” personnel)
<i>Public centers closure</i>	State and locally operated facilities (libraries, sports venues, museums, etc.) closed to public visitation
<i>Post-travel quarantine</i>	Domestic travelers between cities/states required to self-quarantine for at least 14 days
<i>Dine-in services suspended</i>	All food service establishments are closed to dine-in services. Often, entities are encouraged to offer food and beverages using delivery service, window service, walk-up service, drive-through service, or drive-up service, and to use precautions in doing so to mitigate the potential transmission of COVID-19, including social distancing
<i>Recommended suspension of elective procedures</i>	Requires patients, providers, hospitals, and surgical centers to postpone or cancel non-urgent or elective procedures in order help prevent the spread of COVID-19, reduce pressure on health care system and preserve protective equipment.
<i>Nonessential business closures</i>	Suspension of many types of nonessential business with additional suggestions for encouraging people and workplaces to work remotely
<i>Ban on gatherings of 10+</i>	Gatherings of a certain size banned in closed spaces and outdoor spaces (possibly different parameters)
<i>Shelter in place</i>	All residents required to shelter at residence unless performing “essential” services, caring for family members and/or acquiring supplies for households
<i>In-state travel restrictions</i>	All in-state travel between communities, whether resident, worker, or visitor, is prohibited unless travel is to support critical infrastructure, or for critical personal needs.
<i>Recommended use of cloth masks</i>	Mandated use of masks when outside of residence. The mandates often specified acceptable type of mask, ranging from surgical/medical grade to homemade cloth masks.

Appendix C - Data Sources

Case data

Case data were obtained from the Johns Hopkins University Center for Systems Science and Engineering COVID-19 data repository (<https://github.com/CSSEGISandData/COVID-19>). Their daily time series summary tables include the number of confirmed cases and deaths by jurisdiction, including countries and states/provinces where available. Data for the U.S. are available at the county level. These data are updated approximately once per day. Data in this report were pulled on 29 April 2020.

NPI data

NPI data were gleaned from health mandates posted to official State response websites, compilation databases, and the media. Sources available upon request.

Appendix D - Additional NPIs

There are additional NPIs that other geographies have considered and implemented, potentially available for policy consideration by Anchorage. Below is a list of potential NPI's with reference to Anchorage's level of engagement.

(Source: [COVID-19 Forecasting project](#); University of Oxford)

NPI	Definition and Implementation Options	Local Implementation
<i>Symptomatic Isolation (blanket)</i>	<p>Contact isolation - symptoms: Close contacts of confirmed cases directed to isolate if they have symptoms</p> <p>Cohort isolation - symptoms: groups of 10-1000 people (e.g. school, workplace) are directed to isolate if they have symptoms on the basis of contact with a known case</p> <p>Confirmed case isolation: Confirmed COVID cases are directed to isolate themselves</p> <p>Discharged patient isolation: Discharged COVID patients are required to isolate themselves for a period after recovery</p>	Contact isolation – symptoms, Confirmed case isolation; Discharged patient isolation
<i>Asymptomatic Isolation (targeted)</i>	<p>Contact isolation - no symptoms: close contacts of confirmed cases are required to isolate whether or not they have symptoms</p> <p>Cohort isolation - no symptoms: Groups of 10-1000 people are required to isolate on the basis of contact with known cases</p>	
<i>Asymptomatic Isolation (blanket)</i>	<p>Cluster isolation - no symptoms: Entire districts or large groups (e.g. every member of a major church) directed to isolate for at least 14 days (these restrictions might be weaker than actual isolation directions)</p> <p>total vehicle ban: vehicles on roads are disallowed enforced by police checkpoints</p> <p>Blanket curfew - no symptoms: Entire cities or countries placing restrictions on people's movement and freedom to leave home, but where people are still allowed some freedom to go shopping, exercise outside when they wish</p> <p>Blanket isolation - no symptoms: Entire cities or countries placing restrictions on people's movement with strict conditions that must be met for anyone to leave home</p> <p>Natural village quarantine: Only one person from an entire community is allowed to leave their house</p>	
<i>Domestic Travel Restriction</i>	<p>Domestic traveler quarantine: Domestic travelers between cities/states required to isolate for at least 14 days</p> <p>Domestic travel limitation: Restrictions on domestic travel that are different to bans or quarantines</p> <p>Domestic travel ban: Domestic travelers not permitted at all</p>	In State Travel Restrictions include Domestic traveler quarantine and Domestic travel limitation
<i>International Travel Restriction</i>	<p>International travel ban - risk countries: travelers from specific source countries with high levels of infection are not permitted to enter the implementing country</p> <p>International travel ban - all countries: international travelers are not permitted to enter the implementing country at all</p> <p>International traveler screening - risk countries: travelers from specific source countries with high levels of infection are subject to temperature and symptom screening at the border</p> <p>International traveler screening - all countries: all international travelers are subject to temperature and symptom screenings at the border</p>	Federal travel policies include International travel ban (risk countries); International traveler screening (all countries)

	<p>International traveler quarantine - risk countries: travelers from specific countries with high levels of infection are required to isolate themselves on entry to the implementing country</p> <p>International traveler quarantine - all countries: travelers from all countries are required to isolate themselves on entry to the implementing country</p>	
<i>Mask Wearing</i>	Public mask wearing: encourage all person to wear mask when outside of home	Public mask wearing encouraged
<i>Public Cleaning</i>	<p>Public transport cleaning: regular cleaning of vehicles used for public transport</p> <p>Public facility cleaning: regular cleaning of public facilities</p>	Public transport and public facility cleaning
<i>Public Hygiene Supply</i>	<p>Public mask supply: supplying masks to the general public</p> <p>Public hand sanitizer supply: supplying masks to the general public</p> <p>Public mask and hygiene supply: supplying masks or other hygiene paraphernalia to the general public</p>	
<i>Hygiene and Distancing Advice</i>	<p>Coronavirus educational activities: Adverts, announcements and other activities aimed at educating the public about COVID</p> <p>Handwashing encouragement: any measures aimed at getting the general public to wash their hands more often and more carefully</p> <p>Stay home advice: advice for people to stay home if possible</p> <p>Space minimum: advice for people to maintain a minimum amount of space from others when outside</p> <p>social distancing advice: general advice to practice social distancing</p> <p>Outdoor person density: advice on maximum safe density of people in outdoor areas</p> <p>indoor person density: advice on maximum safe density of people in indoor areas</p> <p>Handshakes banned: banning of handshakes as a greeting</p> <p>Geographic infection alert: alerting people to confirmed COVID cases in their area and encouraging them to practice hygiene and distancing measures</p>	Coronavirus educational activities, Handwashing encouragement, Stay home advice (including elective medical procedures suspended), Space minimum, Outdoor person density
<i>Gatherings Banned</i>	<p>Indoor gatherings banned: gatherings of a certain size banned in closed spaces</p> <p>Outdoor gatherings banned: gatherings of a certain size banned</p>	Gatherings banned of 10 or more
<i>Nonessential Business Suspension</i>	<p>General nonessential business suspension: suspension of many types of nonessential business</p> <p>Remote work: encourage people and workplaces to work remotely</p> <p>Closure of gathering places: closure of venues where people frequently gather</p> <p>Limited nonessential business suspension: suspension of some types of nonessential business and services</p>	General nonessential business suspension (including restaurants-dine-in service suspended), Remote work, Closure of gathering places, Limited nonessential business suspension
<i>School Closures</i>	<p>School closure - limited: closure of a small number of schools, or a policy to close schools reactively in response to confirmed cases</p> <p>University closure: widespread closure of universities</p> <p>nursery school closure: widespread closure of nursery schools and daycares</p> <p>Remote schooling: a widespread move from in-person school to remote school</p> <p>Remote schooling - limited: a small number of schools moving to implement remote schooling</p>	School Closure, University of Closure, nursery school closure, Remote schooling

<i>Activity Cancellation</i>	<p>Public transport stopped: Ban or limitation on public transport</p> <p>Very large event cancellation: Large, one-off events (e.g. conferences) either postponed or cancelled</p> <p>Remote cultural content: Important cultural events and practices happening remotely (e.g. via video chat)</p> <p>all others: Events limited or cancelled</p>	Very large event cancellation
<i>Contact Tracing</i>	Contacts traced: Trace contacts of confirmed positive cases	Contacts traced