

**Readability, Suitability, and Content Evaluation of Initial, Online Masking Guidance from  
U.S. States During the COVID-19 Pandemic**

by

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Claire Janai McCreavy, MPH

University of Pittsburgh, 2021

## **Abstract**

**Background:** In the beginning of the COVID-19 pandemic, cloth face coverings developed into an essential and widely mandated non-pharmaceutical intervention to mitigate the impact of COVID-19. With the introduction of face mask orders to prevent the spread of COVID-19, the general public may have turned to their state government or health department’s website to find information related to face coverings.

**Aims:** This study seeks to evaluate the readability, suitability, and content of initial masking guidance on state government or state health department websites from U.S. states with face mask orders during the beginning of the COVID-19 pandemic.

**Methods:** From states with mask mandates (n=41), masking guidance and education related to face coverings was collected from June 1st, 2020 to July 15th, 2020 from state government and state health department websites. Each state’s education on face coverings was assessed using three readability indices: Fog Index (FOG), the Simplified Measure of Gobbledygook (SMOG), and the Flesch Kincaid Grade level and the Suitability Assessment for Materials tool for suitability. A novel masking guidance- specific score was developed to evaluate the content on face coverings.

**Results:** Masking guidance varied in literacy demand, format, and content. The mean readability of 11.54 (SD=1.85) surpasses the recommended 6-7<sup>th</sup> grade level. The mean SAM score of 55.9 (SD=9.6) is considered “adequate” for suitability. The mean content score was 5.85

(SD=1.30), and only 18 states' masking guidance contained all seven points of information related to face coverings.

Conclusions: Although most states' initial masking guidance was suitable and contained necessary information, the inconsistency and high readability prevented the American public from educating themselves, ultimately limiting adherence to the mask mandates. During a public health crisis like the COVID-19 pandemic, readable, suitable, and comprehensive and consistent online information is vital in encouraging adherence to public health orders and promoting other preventive health behaviors.

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## Preface

When the COVID-19 pandemic thwarted my funded, practicum in Entebbe, Uganda, Dr. Van Panhuis gave me the opportunity to complete research on COVID-19 interventions with the Models of Infectious Disease Agent Study (MIDAS).

Dr. Van Panhuis, thank you for the freedom and flexibility in developing this research study which complements my background and skill-sets and additionally allowed me to evaluate this current and essential preventive measure in the COVID-19 pandemic. Thank you for your expertise and encouragement in publishing my work.

Dr. Krier, since our first meeting two years ago at the HIV Prevention and Care Project meeting, you have become an incredible academic advisor, thesis advisor, and Schweitzer mentor. I am so thankful for all the time and resources you have invested in me and in all my endeavors in Pittsburgh.

Dr. Felter, I will greatly miss our long phone calls and discussions on health communications, vaccines, and Shots Heard. Witnessing your passion for your students and the topics you teach confirms my motivations to earn a PhD or DrPH to be able to teach public health someday. Thank you for all you have done for my career as a future public health professional.

I am especially grateful for the following Graduate School of Public Health students and their support with my research: Lizz Piccoli (second rater), Alix Glynn (assistance with further statistical analysis), and Gabby Kyle-Lion (assistance with editing and moral support). Lastly, I am so blessed to have the support and love of family, friends, previous mentors, and the welcoming young adult Catholic community in Pittsburgh.

## **List of Abbreviations**

COVID-19	Coronavirus disease 2019
CDC	Centers for Disease Control and Prevention
PPE	Personal protective equipment
NIH	National Institutes of Health
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
WHO	World Health Organization

## 1.0 Introduction

At the beginning of 2021, over 330,000 Americans have died from COVID-19 with a disproportionate impact on minority ethnic communities (7,30). As the COVID-19 pandemic rages on, the use of face masks has become an essential non-pharmaceutical intervention in combination with hand hygiene and social distancing (8). Since the beginnings of the COVID-19 pandemic, the use of non-medical face masks or cloth face coverings continues to be a highly debated and polarizing health issue in the United States despite research on the asymptomatic transmission of SARS-CoV-2 and the effectiveness of face masks in community settings (8).

A face mask is defined as a protective mask covering the nose and mouth or nose and eyes (14). As a preventive measure against infectious pathogens transmitted by respiratory droplets such as SARS-CoV-2, a face mask or cloth face covering acts as source control and provides some protection to the wearer (23). As N95 respirators and surgical masks were reserved for healthcare workers due to limited availability at the onset of the pandemic, the general public was recommended and required in many U.S. states and cities to wear cloth face coverings in certain settings and occasions (8). For states and cities who implemented mask mandates early in the pandemic, online masking guidance was necessary to educate constituents on the importance and proper use of face coverings. As most Americans sheltered in place and limited their contacts, many individuals may have looked online to their state government or health department's website for information on face coverings.

In addition to being truthful, honest, frank, and open when releasing new guidance, communicating clearly with compassion is an equally important best practice in risk communication (37). To communicate a suitable message to the American public, the National

Institutes of Health recommends online health education materials to be written at a grade 6-7<sup>th</sup> reading level (13, 16). Despite the NIH's recommendation for lower reading levels, numerous readability assessments discovered the mean readability to surpass the recommendation (12, 16, 22, 36). This study evaluates the masking guidance from those U.S. state government and health department websites from states with face mask orders starting in April 2020 to July 15<sup>th</sup>, 2020 for readability, suitability, and content which accounts for many of the best practices in public health risk and crisis communication (37).

### **1.1 Previous Use of Face Masks**

The use of face masks to prevent the transmission of respiratory droplets can be traced back to the 17<sup>th</sup> century as an outbreak of bubonic plague swept across Europe (4). At this time, physicians were commonly seen wearing bird-like masks as they cared for dying patients (4). Face masks have been employed in various plagues and pandemics; for example, they were used during the Manchurian plague of 1910-11 and the 1918-19 influenza pandemic and more recently with the 2003 SARS epidemic (28). Additionally, the mask mandates and the mask resistance that followed is not unique to the COVID-19 pandemic (28). Face mask orders were implemented and enforced for police forces, medical workers in some U.S. cities during the 1918-1919 influenza pandemic (28). Despite opposition from the Anti-Mask League of San Francisco, declines in influenza deaths were partly attributed to the face mask orders in the city (28). In spite of a historical use of face masks, there was not a strong or united endorsement for face masks in the beginnings of the COVID-19 pandemic (1).

## **1.2 Research on the Use of Face Masks in Community Settings**

The use of a face mask to cover a person's mouth and nose not only provides personal protection from the inhalation of respiratory droplets, but also a face mask offers source control to prevent exposure to others interacting with the person wearing the face mask (6). In the 1- to 10- $\mu\text{m}$  range, cloth face coverings have been found to limit the dispersion of potentially infectious respiratory droplets and aerosol-sized particles (6). The following two systematic reviews highlight the evidence of both the efficacy and effectiveness of face masks in preventing SARS-CoV-2 transmission in community settings (10,23). MacIntyre et al found eight clinical trials involving the use of masks in the community, and although masks and hand hygiene are more protective together, masks appear to be effective with and without hand hygiene (23). Other randomized control trials discussed suggest protection by masks in high transmission areas such as college settings (23). In analyzing 29 unadjusted studies and ten adjusted studies, Chu et al found the use of both an N95 or face mask by those exposed to infected individuals resulted in a significant reduction in risk of infection (10).

## **1.3 Who's Wearing a Mask?**

When adherence to mask mandates was more unknown, an observational study of Wisconsin grocery stores was conducted and is considered the first direct observational study examining masking behavior in a public setting (2). In the observational study of over 3,000 individuals at grocery stores across 20 Wisconsin counties between May 16th and June 1st, 2020, only 41% of shoppers used face coverings (2). According to the YouGOV COVID-19 behavior

changes tracker, 58% of those surveyed were wearing a face mask when in public places as of April 20, 2020, and by July 14<sup>th</sup>, masking behavior in public places increased to 78% (38).



**Figure 1 “A Detailed Map of Who Is Wearing Masks in the U.S.” from July 2 to July 14, 2020**

From 250,000 survey responses collected between July 2 and July 14, 2020 by Dynata for The New York Times, data analysis revealed mask use was high, and variations reflect not only COVID-19 risk, but also an area’s dominant political party (21). A 20-point difference in many surveys, with Republicans reporting to less likely wear a mask often or always showcased the partisan split for mask wearing (21).

A natural experiment found that state mask requirements from April 8 to May 15, 2020 averted more than 200,000 COVID-19 cases by May 22, 2020 (19). Additional research on the effectiveness of mask mandates will continue to be forthcoming. The systematic reviews of the efficacy of face masks and new research on asymptomatic transmission of COVID-19 prompted

the guidance to change and support face coverings; consequently, many states and cities started to mandate the use of face coverings in certain occasions and places in early April 2020 (15).

### **1.4 Timeline of Changing Mask Guidance**

In addition to the fear and panic to reserve PPE for healthcare workers in the early days of the pandemic, the mixed and changing masking guidance from the U.S. Surgeon General, White House Coronavirus Task Force, and the Centers for Disease Control and Prevention, may have contributed to the confusion and political division around this preventive measure. On February 29<sup>th</sup>, 2020, the U.S. Surgeon General Jerome M. Adams tweeted “Seriously people- STOP BUYING MASKS! They are NOT effective in preventing general public from catching #Coronavirus, but if healthcare providers can’t get them to care for sick patients, it puts them and our communities at risk!” (1). On April 3<sup>rd</sup>, 2020, the Centers for Disease Control and Prevention changed guidelines and recommended the use of cloth face coverings in public settings. (8). The same day, the CDC uploaded an instructional video of the Surgeon General demonstrating how to make your own face covering (8).

The CDC continues to endorse their recommendation: “all people 2 years of age and older wear a mask in public settings and when around people who don’t live in your household, especially when other social distancing measures are difficult to maintain” (8). As of June 7<sup>th</sup>, 2020, the World Health Organization recommended the use of non-medical, fabric masks among the public for control of COVID-19 in areas of widespread transmission or limited capacity for control measures, and settings where physical distancing is not possible. (34). WHO emphasizes masks as part of a “comprehensive ‘Do it all!’ approach” (34). With the emergence of the new



SARS-CoV-2 variants, the CDC updated their guidance to recommend double masking by using a mask fitter or brace over a disposable mask or a cloth mask” on February 10<sup>th</sup>, 2021 (8).

### **1.4.1 Relevant Theory**

During these unprecedented times, the American public had to choose who they trusted regarding politicized health issues such as the use of face masks. The Trust Determination Model can be used to describe how attempts to build trust shaped the messages around face masks (4). When the U.S. Surgeon General implored Americans to stop wearing masks and to save them for healthcare workers, Dr. Adams anticipated Americans would trust and listen to him because of his competence and expertise (1). At the time, he was open and honest about the lack of evidence on the effectiveness of the use of face masks in community settings.

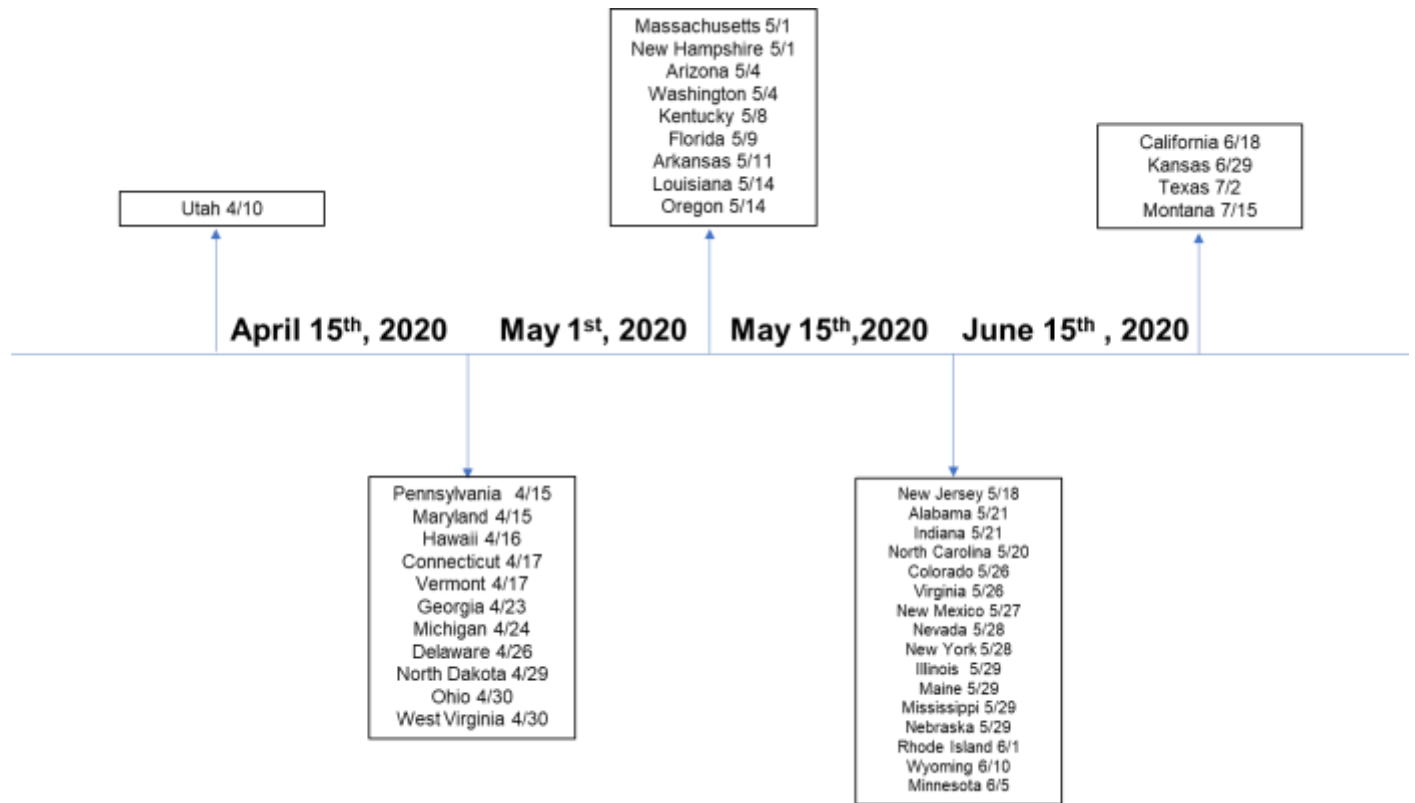
As new research emerged about the transmission of the COVID-19 and previous randomized control trials on the use of face masks in community settings were reviewed, the guidance changed and now promoted the use of face coverings in public settings (8). Dr. Adams, the White House Coronavirus Task Force, and the CDC employed the Trust Determination Model again to encourage masking and rebuild the trust they may have lost due to the changing guidance. These spokespersons and involved organizations emphasized their dedication and commitment to the ongoing research and explained how the new findings prompted the change in guidance

To encourage masking and adherence to the new face mask orders, messaging around face masks now centered around the empathy and caring component of the Trust Determination Model (5). For example, many state and city health departments have chosen to highlight this popular and empathetic message from the Czech Republic, “My mask protects you, your mask protects me” (20). In addition to the components of the Trust Determination Model, additional factors such as

outrage, risk perception factors, and lost credibility contributed to increased masking or the resistance to masking.

### **1.5 Status of U.S. States Requiring Face Coverings**

With the absence of a national masking mandate, governors and state and city health officials started implementing their own orders for face covering requirements in early April 2020. By May 15<sup>th</sup>, 2020, 21 states enacted differing orders for face covering requirements. By June 15<sup>th</sup>, 2020, a total of 37 states required face coverings, and by July 15<sup>th</sup>, 2020, 4 more states passed orders for face covering requirements with varied specifications and exemptions. Of the 41 states with face mask orders by July 15<sup>th</sup>, 14 states required face coverings in public places: both outdoor and indoor settings where it is difficult to maintain a six feet distance. In early November 2020, governors of Iowa and North Dakota issued mask mandates. As of January 15<sup>th</sup>, seven states, Alaska, Idaho, Missouri, Oklahoma, South Carolina, South Dakota, and Tennessee, still do not have state-wide orders for face coverings (18).



**Figure 2 Timeline of U.S. States' Initial Face Mask Orders**

### **1.6 Related Online COVID-19 Education Studies**

Three related studies highlight the importance of comprehensive digital health information during the COVID-19 pandemic. Kruse et al assessed the readability, content, and quality of COVID-19 patient education materials from U.S. academic medical centers (22). Worrall et al reviewed the readability of 240 websites containing COVID-19 information from four English speaking countries, and Basch et al examined 100 websites with the keyword “coronavirus” (3, 36). All three of the studies utilized similar methods found in this evaluation such as calculating various readability tests to determine readability and creating a scoring matrix based on information found on the CDC’s website to assess for the content of the information (3,22,36).

Additionally, both studies revealed how online information on COVID-19 should have been made more readable, comprehensive, and of higher quality particularly during an “infodemic” of misinformation on COVID-19 including the efficacy and health effects of using face masks (3, 22,35,36).

## **1.7 Summary**

From the 1918 pandemic to the ongoing COVID-19 pandemic, face masks remain an essential non-pharmaceutical intervention to mitigate infectious diseases with hand hygiene and social distancing. After systematic reviews of existing literature and new research on the asymptomatic spread of SARS-CoV-2, recommendations changed to strongly advise the use of cloth face coverings. While the public was left confused and unsure of who to trust, governors and state health officials started to implement mask mandates around the country starting in mid-April 2020. The use of face masks steadily increased as face masks were required in more places including indoor and outdoor settings.

To educate the public on face masks and increase adherence to the mask mandates, state government and state health departments provided masking guidance in accordance with CDC’s guidelines. This study seeks to evaluate the readability, suitability, and content of the initial, online masking guidance from the states with face mask orders. Assessing the guidance is critical in evaluating the adoption of the protective behavior of masking during the beginnings of the COVID-19 pandemic.

## 2.0 Methods

To evaluate the readability, suitability, and content of masking guidance from U.S. states with face mask orders, masking guidance from states with orders for face covering requirements (N=41) was collected between June 1<sup>st</sup>, 2020 and July 15<sup>th</sup>, 2020 (Appendix F). To gather the educational messages, we employed a consistent search strategy. First, we examined the state's COVID-19 resource webpage for the education on face coverings alongside the order for face covering requirements. If the state did not have a specific webpage for COVID-19 but included COVID-19 information on the state's official website, the guidance was found inputting "face coverings" in the search function. If the COVID-19 information was not on the state's official webpage, the same search process was used for the state health department's website to find the masking guidance.

Using the "text only option," the text and graphics related to face coverings were copied directly from the webpage or PDF found on the webpage. With the collection of masking guidance compiled, we investigated whether the messages provided from the 40 states are readable, suitable, and consistent for the American public to educate themselves on the proper use of cloth face coverings. One state, Kentucky, provided their masking guidance in two videos, thus, we only evaluated for the content of the videos.

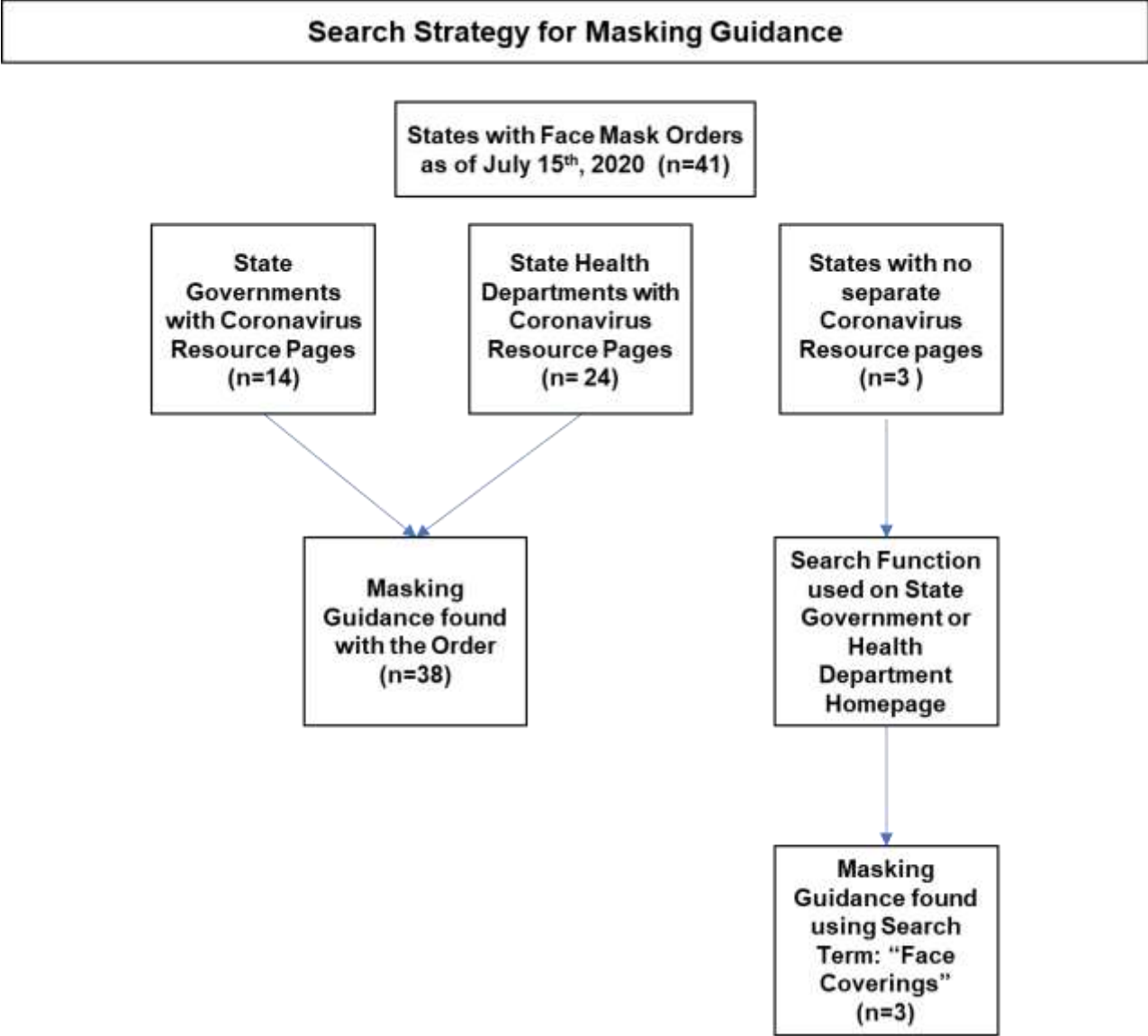


Figure 3 Search Strategy for Masking Guidance

### 2.1 Readability

To evaluate for the readability of the masking guidance, all the text for each state was pasted into an online utility tool (33). Readability statistics were found using the online utility tool which calculated the following reliable and validated readability tests: Fog Index (FOG), the

Simplified Measure of Gobbledygook (SMOG), and the Flesch Kincaid Grade level (33). The three readability tests incorporate different characteristics of the text including number of sentences, sentence length, and number of syllables to compute the readability scores (13). The average of these three measures provided the average readability score for each state's masking guidance. The process of averaging the three measures has been used by Robbins et al among others to produce reliable results (13,26).

## **2.2 Suitability**

To evaluate for the suitability of the masking guidance, we used the validated Suitability Assessment of Material (SAM) tool (12). Doak et al created the SAM tool to assess health education materials in six areas: content, readability, graphics, layout and type, learning stimulation and motivation, and cultural appropriateness (12). The SAM tool has been deployed in multiple evaluations of print and online health education materials for a variety of topics including public health preparedness, male infertility, and colorectal cancer screening (24,26, 31). The SAM tool was most applicable and relevant to our face mask guidance evaluation compared to other more healthcare focused evaluation tools such as HON and DISCERN (9, 15, 27).

For the SAM instrument, two raters independently evaluated the material for the 22 SAM factors across the six assessment areas. Using the SAM evaluation criteria, each factor received 2 points for a superior rating, 1 point for an adequate rating, 0 points for a not suitable rating, or N/A if the factor does not apply to the material (Appendix A). For example, for learning "stimulation and motivation," the evaluation criteria valued interaction in the text and if the desired behavior was modeled and understandable (12). Following the scoring, each rater calculated the total

suitability score for each of the 41 states with face mask orders. The average of the two raters' scores for each state was calculated for final suitability scores. The total possible score is 44, and the given score is divided by the possible score for the final percentage (6). Material receiving a score of 70% to 100% is considered a superior material, 40% to 49% adequate material, and 0 to 39% not adequate material (12).

During discussion between the raters, the raters decided one point would be given for "Match in logic, language, experience (LLE)" in the Cultural Appropriateness section if the text or graphics were translated into other languages.

### **2.3 Content**

To evaluate the content of the masking guidance, a seven-item novel masking guidance-specific score was derived from the five topic content areas on face coverings on the Centers for Disease Control website on "Use of Masks to Help Slow the Spread of COVID-19," (8). As of June 28<sup>th</sup>, 2020, the CDC's webpage divided the information on the webpage into the five topics of "How to Select Masks," "How to Make Masks," "Considerations for Masks," "Making Masks," and "Washing Masks." The novel masking guidance-specific score followed similar methods developed by Connelly et al for their web-based stoma information evaluation (8). For the stoma-specific content score, two scored for the presence of 27 predefined subjects relating to stoma information and determined consensus scores (9).

The seven components of the novel masking guidance-specific score were designed by two of the authors (CM and EF) and consist of seven items: (1) why to wear a face mask, (2) type of face mask to wear, (3) locations or occasions to wear a face mask, (4) who should wear a face



mask, (5) how to wear a face mask, (6) how to wash a face mask, and (7) how to make a face mask. For the novel masking guidance- specific score, two raters scored for presence of seven points of information relating to masking guidance. Each rater calculated the total score by adding the total number of components that the state included in the guidance for a total score of 1-7. Consensus scores were determined after discussion between the two raters.

During discussion for consensus scores, the raters decided the 5<sup>th</sup> point of information on how to wear and use a face covering would be awarded if the text described that a face covering must cover the face and mouth. Additionally, the 4<sup>th</sup> point of information on who should wear a face covering would be given if specifications for age and certain medical conditions were detailed. Due to the vast differences in face mask orders, the individuals required and those exempt from wearing a face covering varied state to state.

## **2.4 Descriptive Statistics**

Once readability, suitability, and content scores were calculated for the web-based health education on face masks, descriptive statistics were used to analyze the data. The mean readability, suitability, and content scores were found and analyzed using IBM SPSS Statistics 25. After finding the mean suitability scores, we used Cronbach's Alpha as a measure for internal consistency reliability. Lastly, IBM SPSS Statistics 25 was also used to run linear regressions for further analysis of the relationship between the state governor's political affiliation and date of first face mask order and the final evaluation scores of this study. Since the study did not involve human subjects, it is exempt from Institutional Review Board (IRB) approval per University of Pittsburgh's IRB guidelines.

## 2.5 Overview of Results

All 41 states with face mask orders provided guidance for their masking mandate on the official state government website or state health department website. Overall, the masking guidance varied in literacy demand, format, graphics, and content. The guidance was too difficult to read for most Americans, and the majority of the guidance was deemed “adequate materials.” Over half of the states’ guidance contained the 7 important points of information on face coverings, and most states followed the content from the CDC’s webpage, “Use of Masks to Help Slow the Spread of COVID-19,” to develop their educational message and guidance documents.

## 2.6 Readability

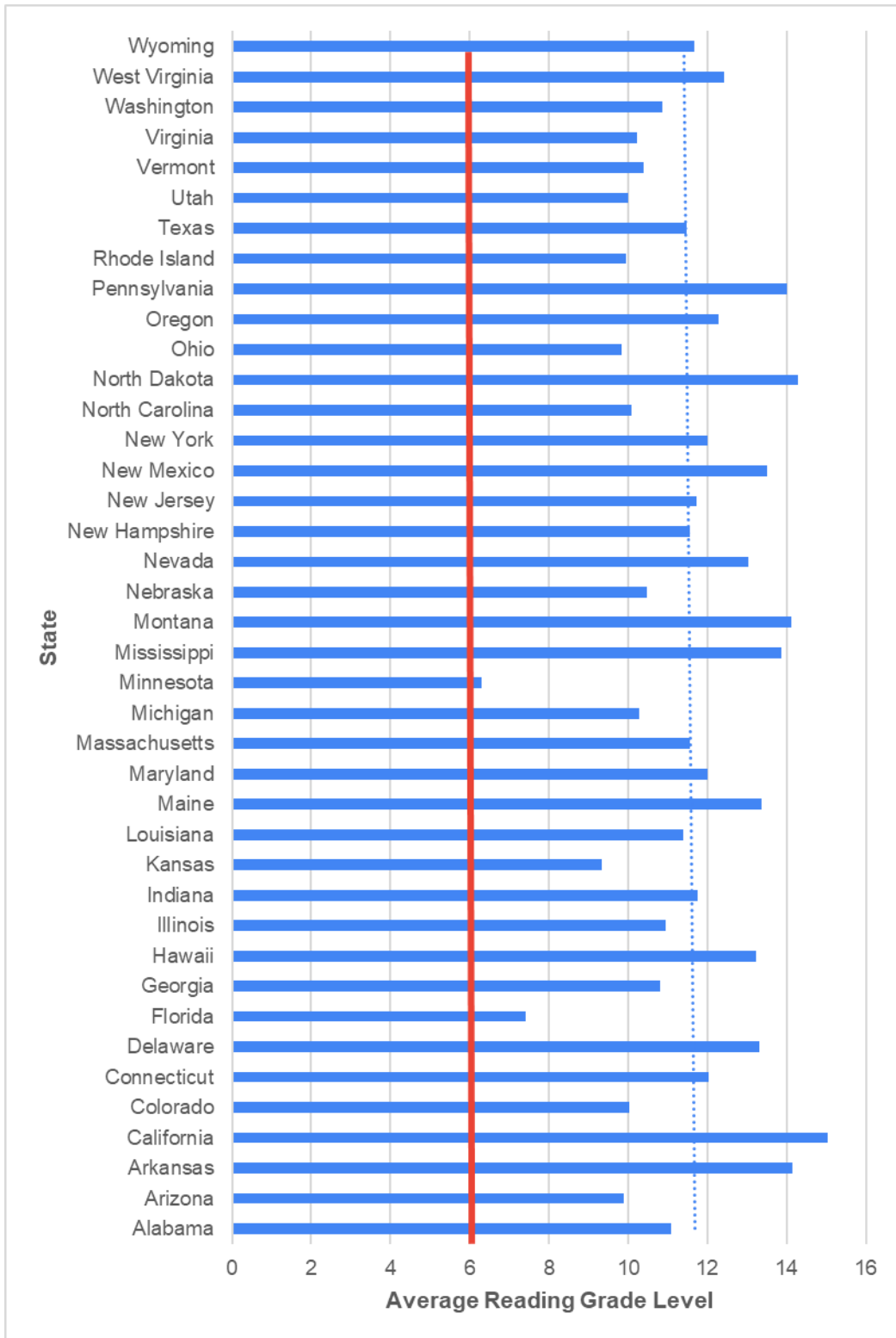
The mean grade level readability score of the 40 states’ masking guidance was 11.54 (SD=1.85). The average grade levels ranged from a minimum of 6.29 to a maximum of 15.03, and 25 out of the 40 states had a grade level higher than 11. None of the 40 states met the NIH’s recommendation of a 6<sup>th</sup> grade reading level. Minnesota’s masking guidance was the closest to the recommendation at 6.29, and California’s masking guidance was the highest at 15.03 (Appendix B). Minnesota COVID-19 Response’s use of plain language, simple sentences, and bullet points for formatting attributed to the accessible grade reading level as shown in this quote.

*“Tips for wearing facemasks or cloth face coverings:*

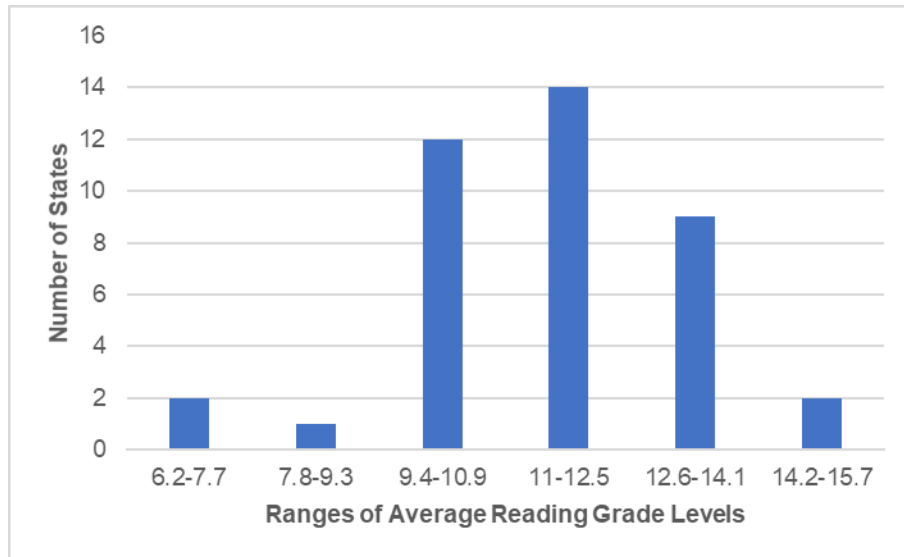
- *Wearing a facemask or cloth face covering helps protect others in case you’re infected but don’t have symptoms.*
- *Wash your hands before putting on your mask and after taking it off.*
- *Cover your nose and mouth and try to fit it snugly against the sides of your face.*

- *Keep the mask on your face the whole time you are out. Don't put the mask around your neck or on your forehead.*
- *Make sure you can breathe easily. Children younger than 2 years or anyone who has trouble breathing, or is unable to remove the mask without assistance should not wear a mask."*

**Table 1 Simple Bar Mean of Average Grade Level Readability Scores by State**



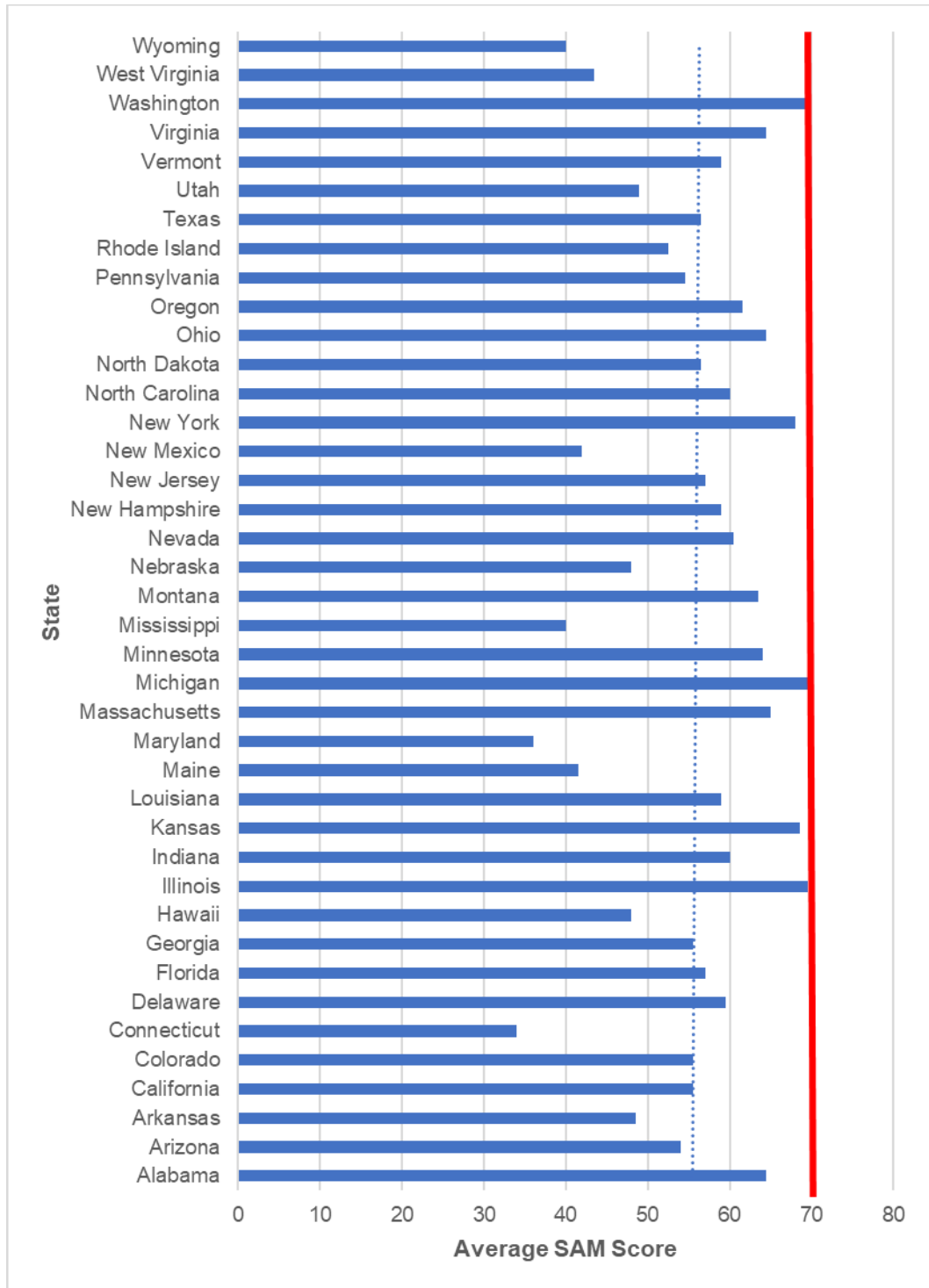
**Table 2 Simple Bar of Ranges of Average Grade Level Readability Scores by Number of States**



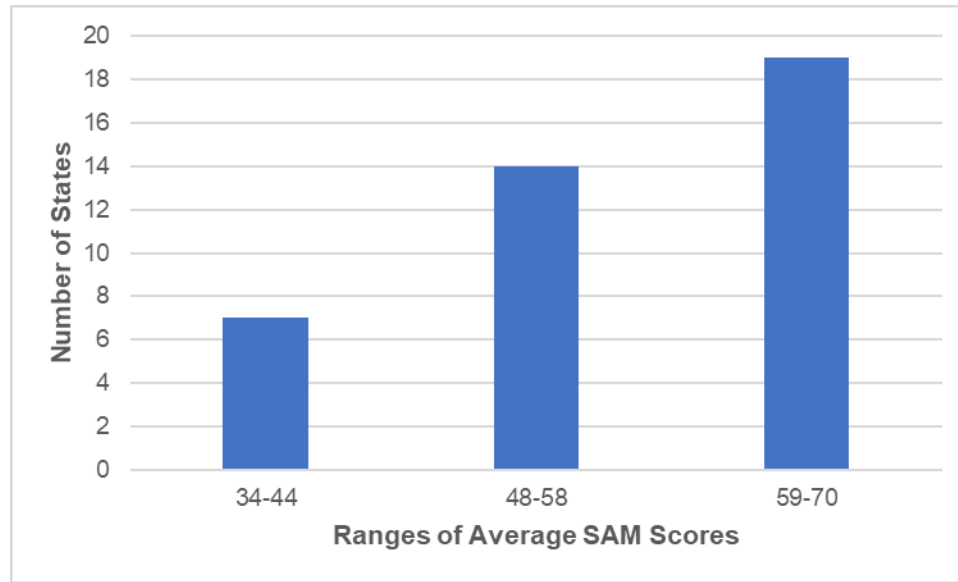
## **2.7 Suitability**

The mean suitability score of the 40 states' masking guidance was 55.9 (SD=9.6) which is considered "adequate" (12). The average suitability scores ranged from a minimum of 34 to a maximum of 70, and 17 of the 40 states had a suitability score lower than the mean. Connecticut's masking guidance is considered "not adequate material" with the lowest SAM score of 34, and Michigan and Washington's masking guidance are considered "superior" materials with the highest SAM scores of 70. In Michigan's masking guidance, the purpose is evident, the scope is limited and focused on behaviors, and the question-and-answer format models the desired behavior of mask-wearing (Appendix C).

**Table 3 Simple Bar Mean of Average SAM Scores by State**



**Table 4 Simple Bar of Ranges of Average Masking Scores by Number of States**



As depicted in Table 2, over 80% of the states' masking guidance was considered "adequate." Despite these sufficient ratings, consistently low scores were found in the literacy demand and layout and typography sections. Graphics and other visual were also not always used to supplement the educational message. We used Cronbach's Alpha to estimate internal consistency, or how closely a set of items are related as a group. The Cronbach's Alpha of the two raters' SAM scores was .892, showing relatively high internal consistency. Similar to McDonough et al, the major discrepancies with the raters' scoring were related to the applicability of certain factors and whether the factor should receive a N/A designation (24).

## **2.8 Content**

The mean content score of the 41 states' masking guidance was 5.85 (SD=1.30). The results of the content score for each point of information are outlined in Table 5.

**Table 5 Content Score Results**

<b>Novel Masking Guidance-Specific Score Results</b>	<b>No. of states</b>	<b>% of states</b>
1) Why to wear a face covering	35	85
2) Type of mask to wear	41	100
3) Locations to wear a face covering	41	100
4) Who should wear a face covering	35	85
5) How to wear and use a face covering	33	80
6) How to wash a face covering	26	41
7) How to make a face covering	28	68

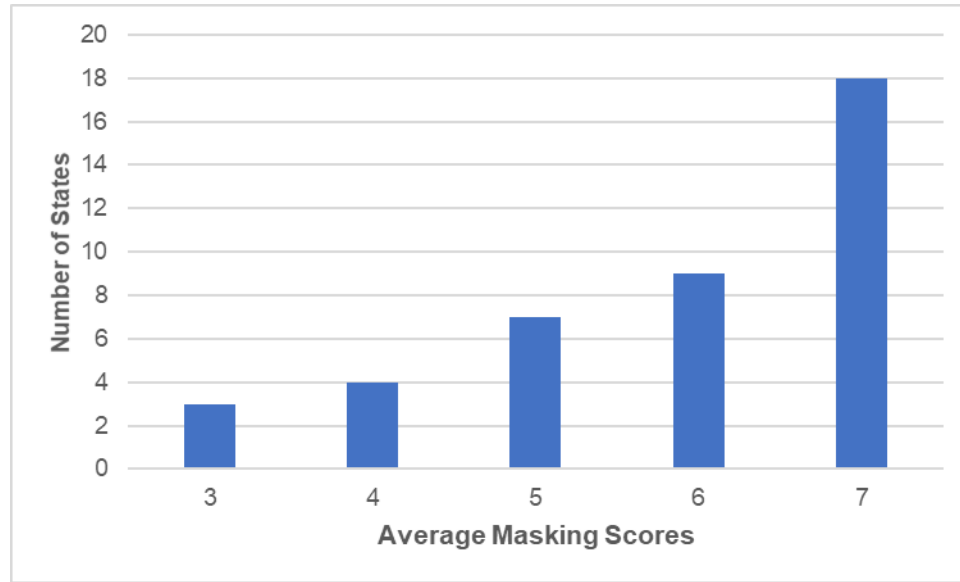
Only 18 states’ masking guidance contained all seven points of information related to face coverings. The 18 states who covered all seven points of information include Arizona, Delaware, Illinois, Indiana, Kansas, Kentucky, Louisiana, Michigan, Nevada, New Hampshire, New Jersey, North Carolina, Ohio, Pennsylvania, Rhode Island, Vermont, Washington, and Wyoming. The three states. Nevada’s masking guidance is one of the 18 states with a perfect score, addressing the seven points of information in the novel masking guidance-specific score (Appendix D). Most of these 18 states created individual websites or PDF documents to cover all important information on face coverings. The three states who mentioned only three points of information are Hawaii, Nebraska, and West Virginia. These three states either spoke about face coverings in a press release or briefly had education on face coverings on the COVID-19 prevention website.

All 41 states’ masking guidance instructed the public on what type of face of mask and what locations and occasions to wear a face covering. 85% of states explained the importance of wearing a face covering and who should wear a face covering. 68% of states showed how to make a face covering by linking the U.S. Surgeon General Dr. Jerome Adams’s video, or step-by-step instructions for a homemade face mask. Surprisingly, 20% of the states’ masking guidance did not



provide the essential message stating that your mask needs to cover your mouth and nose to be effective.

**Table 6 Simple Bar of Ranges of Average Masking Scores by Number of States**



## 2.9 Other Variables of Interest

While collecting points of information for the content score, we also gathered data on other variables of interest. 73% of states ‘masking guidance added visual aids such as pictures, graphics, and videos to supplement the educational text. An example of a graphic from the Washington State Coronavirus Response can be found below.



**Figure 4 Washington State Coronavirus Response Graphic**

Of the 30 states with visual aids, 12 had videos showcasing how to make or wear a face covering. Only 2 of the 41 states mentioned opportunities for the distribution of free masks: New Mexico and Utah. For example, Utah started the “A Mask for Every Utahn” initiative to ensure everyone in their state had access to a mask (32). On the Coronavirus Utah.Gov webpage, there was a publicly available, “COVID-19 Mask Order Form” (32). To improve accessibility of the face mask education, 11 states’ masking guidance was translated into different languages: Colorado, Delaware, Kansas, Massachusetts, Mississippi, Nevada, New Hampshire, New Mexico, Pennsylvania, Texas, and Utah.

## 2.10 Barriers to Masking

In addition to providing helpful visual aids, opportunities to order a free mask and guidance in different languages, 7 states expanded their masking guidance to explain barriers to wearing a mask for people with hearing loss, and 2 states described barriers to wearing a mask for people of color. North Carolina Department of Health and Human Services and the Oregon Health Authority communicated the barriers for both of these vulnerable and marginalized populations in their guidance. NC Department of Health and Human Services provided the following response to the question of “What if I am a person with hearing loss and am concerned about not being able to read lips?”

*“Deaf and Hard of Hearing people often use lipreading to help understand what those around them are saying. Without being able to lipread, other communication techniques need to be used to help with communication. Some solutions to improve communication include: find a face covering that has a clear plastic area that allows the lips to be visible (there are a number of options out there), increase your distance, write notes back and forth, write on a white board to communicate, use a free speech to text app on your mobile device and allow the person to read what you speak, gesture and if needed step several additional feet back from the person and remove your face covering just long enough to communicate.”*

The Oregon Health Authority addressed the possible harassment or bias people of color may experience while wearing a face mask.

*“People of color may experience harassment, bias, exclusion or other negative reactions or effects when wearing masks or face coverings. This may be because of racial bias, stereotyping or discrimination. This discrimination may be against Oregon law. Oregon law does not allow hate or bias crime. A hate or bias crime is a criminal act, including offensive physical contact, assault, property damage or threats, that may be motivated by another person’s perceived:*

- *Race,*
- *Color,*
- *Disability,*
- *Religion,*
- *National origin,*
- *Sexual orientation, or*
- *Gender identity.*

*Bias incidents are any hostile expression toward another person, including hate language, mocking, mimicking, exclusion, or discriminatory refusal of service, relating*

*to the other person's perceived protected class (listed above)."*

Capturing information relating to visual aids, distribution, language, and barriers to masking provided more context to the differences in the states' masking guidance.

### **2.11 Best Overall Evaluation Scores**

The following five states scored the best overall evaluation scores: Illinois, Kansas, Michigan, Ohio, and Washington as pictured in table 7. All five of these states had average grade level readability scores lower than 11, almost superior to superior SAM scores, and perfect content scores.

**Table 7 Top 5 States with Best Overall Evaluation Scores**

<b>Table 7</b>			
<b>Top 5 States with Best Overall Evaluation Scores</b>	<b>Readability</b>	<b>Suitability</b>	<b>Content</b>
<b>Illinois</b>	10.9	69.5	7
<b>Kansas</b>	9.32	68.5	7
<b>Michigan</b>	10.3	70	7
<b>Ohio</b>	9.8	64.5	7
<b>Washington</b>	10.9	70	7

## 2.12 Relationship between Political Affiliation and Evaluation Scores

As previously described, in the beginning of the COVID-19 pandemic, there was a partisan split for mask-wearing (21). To explore the relationship with the governor’s political affiliation and the final evaluation scores of this study, we chose to run linear regressions.

**Table 8 Final Evaluation Scores by Governor’s Political Affiliation**

<b>Table 8</b>				
<b>Final Evaluation Scores</b>	<b>Democratic Governor</b>	<b>Republican Governor</b>	<b>Difference</b>	<b>P-value</b>
<b>Average Reading Grade Level <math>\geq</math> 11, %</b>	56.5	51.9	.46	.774
<b>Average SAM Score, %</b>	58.1	53.1	4.99	.104
<b>Average Masking Score <math>\geq</math> 6, %</b>	78.3	50.0	28.3	0.06

For average reading grade levels greater than or equal to 11, there is not a statistically significant difference between Democratic and Republican governors. The average SAM scores between Democratic and Republican governors was marginally significant, and states with Republican governors had nearly a 5 point lower score than states with Democratic governors. For average masking scores above 6, the results were significant, and states with Republican governors are 28.3% points less likely to have a score greater than or equal to 6. Therefore, only 50% of states with Republican governors have at least 6 of the points of information on face coverings.

Lastly, we wanted to investigate if there was a relationship between the date of the first face mask order and the state governor’s political affiliation. 39.1% of the face mask orders by Democratic governors were implemented before May 15<sup>th</sup> while only 11.6% of orders by Republican governors were mandated before May 15<sup>th</sup> (p=.084). The difference between the two political affiliations was 27.5% , and these results were marginally significant. Due to the limited

number of observations, this study was underpowered in most cases and unable to detect significant differences in the data.

### 3.0 Discussion

This evaluation of the masking guidance from U.S. states with orders for face covering requirements examined the readability, suitability, and content of the education around the use of cloth face coverings. Our findings are important for several reasons. The mean readability of the masking guidance of 11.54 was not only significantly above the NIH's recommendation of grade 6-7, but also higher than the national average of an 8<sup>th</sup> grade reading level (13, 16). The findings for readability share similar results to readability assessments and other studies of COVID-19 web-based education materials (3, 22, 36).

Although most of states' masking guidance was considered adequate, more improvement can be made in online education materials. With self-directed learning resources such as the masking guidance, it is necessary to target the online education to low-literacy populations to ensure accessibility for all. Supplementing the text with graphics and other visual aids, summarizing important points, modeling desired behaviors, and employing subheadings are just a few actionable revisions.

To improve readability and suitability of the masking guidance, scientific jargon should be replaced with plain language, common words, and pictures to describe the preventive measure of masking. For example, a visualization of a how face mask stops the transmission of SARS-CoV-2 is more understandable compared to the following message from the Arkansas Department of Health: *“More and more evidence supports the transmission of SARS-COV-2 through aerosol droplets (smaller than 5-10  $\mu$ m), which are produced during coughing, singing, speaking, and even quiet breathing. Aerosol droplets can remain in the air for long periods of time and travel*

*longer distances. A closely related virus, SARS-COV-1 (the cause of the SARS epidemic of 2003), is known to travel long distances through the air from sources.”*

The content of the masking guidance mirrored the differences in the health orders from state to state. The results of the content scores emphasized the similarities and inconsistencies in the information included in the masking guidance across the 41 states. Information on what type of mask and where to wear a mask were most frequently discussed. Education on how to wear a face mask, how a face mask should cover both your mouth and nose, and how to wash a face mask were commonly missed and desperately needed to improve effectiveness and prevent self-contamination while wearing a face mask (11). Additionally, every state’s masking guidance should have described how to make a face covering especially if individuals in their state did not have access to order a free one or buy one.

Although the CDC does not recommend the use of face shields, some states did not recommend against the use of face shields. (8). For example, Maine’s guidance said, *“Wearing a face shield would be the 2<sup>nd</sup> BEST choice for protecting others as it will prevent some large respiratory droplets from moving into the air.”* Montana’s guidance did not differentiate a face shield from a face covering; *“‘Face covering’ means a fabric, paper, or disposable face covering that covers the nose and mouth and which does not have an exhalation valve. The term ‘face covering’ includes face shields.”* In addition to providing information on face shields, some states highlighted barriers to masking for people with hearing loss and people of color. The few states that mentioned barriers for people of color recognize the urgency of bringing to light the current barriers to healthcare and racial health disparities of the COVID-19 pandemic (30).

To provide more information on face masks, many states chose to link to the CDC or the state’s executive order detailing the face mask requirements. Particularly for the executive orders,



the general public will most likely not open the link and investigate the order further. With the typical length of text and verbiage found in executive orders, the average readability will most likely be higher than the executive orders; for example, Order of the Governor of the State of Maryland Number 20-04-15-01's average readability is 13.6 (See Appendix E). A future study should analyze the readability of the state health orders during the COVID-19 pandemic.

Previous related studies have more broadly assessed online COVID-19 health information, and COVID-19 patient education materials from academic medical centers (3, 22,36). Kruse et al similarly found the COVID-19 patient education content varied between the academic centers, and “few described the proper use of masks” (22). Laestadius et al was the first to conduct a content analysis solely on masking guidance from 25 countries and regions with the highest number of confirmed COVID-19 cases at the time (17). Likewise, Laestadius et al found little consistency in masking guidance for the public, and their results emphasized the U.S.'s failure in communicating the face mask guidelines (17).

Compared to other related COVID-19 studies, this study provides a more focused analysis of the masking guidelines from U.S. states with face mask orders during the beginning of the COVID-19 pandemic. With the introduction of face masks as a preventive measure to slow the spread of coronavirus, the initial, online masking guidance was essential in educating the public on the science behind face masks and the proper use of face masks. Despite the magnitude of this communications endeavor, the masking guidance from state government and health department websites was too difficult to read for comprehension and actionability. The lack of visual aids, navigable formatting, and consistent information may have hindered individuals from first learning about face masks and then adopting the behavior of masking. Our findings highlight the need for

public health officials to prioritize understandable, comprehensive, and consistent messaging during the COVID-19 pandemic and future public health crises.

## 4.0 Limitations

The results of this readability, suitability, and evaluation should be interpreted in the context of the study's limitations. The collection of masking guidance and related educational messages was copied from the official state governments or state health department websites. The collection did not include social media posts, hashtags, videos, or other graphics found through the state's active social media accounts. The general public may have chosen to learn about face masks through their state's social media accounts or other health related social media accounts. We did not examine how these social media messages were distributed or if these messages were successful by their engagement rate, reach, and number of views. Other Americans may have also used other health related websites, social media platforms, television, podcasts, or peers to first educate themselves about the use of cloth face coverings.

Due to the changing nature of the pandemic, the states' face mask orders adapted to meet the new CDC recommendations and the COVID-19 case counts in their area. The masking guidance also then adapted to match the new requirements. Since the masking guidance was only collected and updated from June 1<sup>st</sup>, 2020 to July 15<sup>th</sup>, 2020, the final scores are only descriptive of the guidance posted during a cross-section of time. Additionally, we did not assess the accuracy of the masking guidance. Future studies should seek to examine how closely the masking guidance aligned with the Center for Disease Control and Prevention's recommendations at multiple time points in the pandemic. Lastly, the SAM tool is more widely used with print materials and brochures compared to web-based documents and webpages (24). Another notable limitation of the SAM tool is rater subjectivity in reviewing each factor.

## 5.0 Conclusion

In the beginning of the COVID-19 pandemic, the changing recommendations for the use of face masks led to various and sometimes conflicting communication on face masks. In addition to consistency, the initial, online education around the masking guidance from state government and health department websites should have been readable, suitable, and consistent for all American audiences. Readable, suitable, and consistent messages help contribute to an individual's ability to understand the recommended protective health behaviors in a health crisis like the COVID-19 pandemic. With comprehensive and consistent information on face masks, the general public may have been originally more understanding, trusting, and willing to engage in the health behavior of mask-wearing.

Inclusive messaging that addresses all outrage factors, risk perception factors, and trust issues was desperately needed to increase masking. All the components of the Trust Determination Model should be employed to build trust in the science and those promoting the use of face masks. This negative trust destroying event will be another barrier for health communicators for the foreseeable future. Masking and face mask orders continue to remain an essential public health intervention as the U.S. population is vaccinated. The next public health communications challenge is messaging effectively why vaccinated individuals still need to wear a mask.

## Appendix A Suitability Assessment of Materials Tool

FACTORS TO BE RATED	SCORE
<b>1. CONTENT</b> (a) Purpose is evident (b) Content about behaviors (c) Scope is limited (d) Summary or review included	a: b: c: d:
<b>2. LITERACY DEMAND</b> (a) Reading grade level (b) Writing style, active voice (c) Vocabulary uses common words (d) Context is given first (e) Learning aids via “road signs,” subtitles and captions	a: b: c: d: e:
<b>3. GRAPHICS</b> (a) Cover graphic shows purpose (b) Type of graphics (c) Relevance of illustrations (d) Lists and tables explained (e) Captions used for graphics	a: b: c: d: e:
<b>4. LAYOUT AND TYPOGRAPHY</b> (a) Layout factors (b) Typography (c) Subheads (“chunking”) used	a: b: c:
<b>5. LEARNING STIMULATION, MOTIVATION</b> (a) Interaction used (b) Behaviors are modeled and specific (c) Motivation, self-efficacy	a: b: c:
<b>6. CULTURAL APPROPRIATENESS</b> (a) Match in logic, language, experience (LLE) (b) Cultural image and examples	a: b:

## Appendix B California Masking Guidance



State of California—Health and Human Services Agency  
California Department of Public Health



June 18, 2020

### GUIDANCE FOR THE USE OF FACE COVERINGS

Because of our collective actions, California has limited the spread of COVID-19 and associated hospitalizations and deaths in our state. Still, the risk for COVID-19 remains and the increasing number of Californians who are leaving their homes for work and other needs, increases the risk for COVID-19 exposure and infection.

Over the last four months, we have learned a lot about COVID-19 transmission, most notably that people who are infected but are asymptomatic or pre-symptomatic play an important part in community spread. The use of face coverings by everyone can limit the release of infected droplets when talking, coughing, and/or sneezing, as well as reinforce physical distancing.

This document updates existing [CDPH guidance](#) for the use of cloth face coverings by the general public when outside the home. It mandates that face coverings be worn state-wide in the circumstances and with the exceptions outlined below. It does not substitute for existing guidance about social distancing and handwashing.

#### Guidance

People in California must wear face coverings when they are in the high-risk situations listed below:

- Inside of, or in line to enter, any indoor public space;<sup>1</sup>
- Obtaining services from the healthcare sector in settings including, but not limited to, a hospital, pharmacy, medical clinic, laboratory, physician or dental office, veterinary clinic, or blood bank;<sup>2</sup>
- Waiting for or riding on public transportation or paratransit or while in a taxi, private car service, or ride-sharing vehicle;
- Engaged in work, whether at the workplace or performing work off-site, when:
  - Interacting in-person with any member of the public;
  - Working in any space visited by members of the public, regardless of whether anyone from the public is present at the time;

<sup>1</sup> Unless exempted by state guidelines for specific public settings (e.g., school or childcare center)

<sup>2</sup> Unless directed otherwise by an employee or healthcare provider

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California Department of Public Health  
P.O. Box 997377, MS0500 • Sacramento, CA 95899-7377  
[Department Website](http://www.cdph.ca.gov) (www.cdph.ca.gov)



## Appendix C Michigan Masking Guidance



### Face Coverings: Frequently Asked Questions

The Michigan Department of Health and Human Services recommends that Michiganders wear a face covering when outside of their home to help stop the spread of coronavirus disease 2019 (COVID-19).

Wearing a face covering is an additional precaution we can take that may help stop the spread of COVID-19. The best way to keep from getting sick is to stay home as much as possible, practice social distancing – keep at least 6 feet of distance from others, and good hand hygiene.

#### What is a face covering?

- A face covering is any well-secured cloth (like a bandana or scarf) that covers your mouth and nose.
- A face covering is different from a surgical or N95 mask which must be reserved for healthcare workers.

#### Who should and should not wear a face covering?

Cloth face coverings **should not** be placed on:

- young children under age 2,
- anyone who has trouble breathing, is unconscious, incapacitated, and
- anyone otherwise unable to remove the mask without assistance.

Cloth face coverings **should** be worn by:

- All others when they need to be outside their home and within 6 feet of others.
- People who are sick should wear a face covering while at home if they cannot maintain at least 6 feet of distance from others.
- People who are sick and who need to leave home, such as to get urgent medical care, should always wear a face covering.

#### Do I need to wear a face covering all the time when outside my house?

- **If you are sick**, yes. Remember you must stay home if you are sick and only leave for essential medical care. Arrange for essential items, like groceries, to be delivered to you through a delivery service or through friends or family.
- **If you are not sick**, you should wear a face covering whenever you need to leave home and might be closer than 6 feet from others. Examples include using public transportation, riding in a taxi or car service, walking on a busy street, going to pharmacies and grocery stores, and going to the doctor or a hospital.
- **Essential workers** should also wear a face covering at work when they cannot maintain at least 6 feet of distance between themselves and others.



For more information, visit [Michigan.gov/Coronavirus](https://Michigan.gov/Coronavirus).

TA 20147 04/09/2020

## Appendix D Nevada Masking Guidance



**NEVADA  
HEALTH  
RESPONSE**

**Nevada Medical Advisory Team:**  
**Guidance on Directive 024: Face Coverings**  
**June 24, 2020**

**Summary:** This document provides guidance on Directive 024, which enhances the original [GUIDANCE](#) on improvised face coverings released in conjunction with the advice of the Nevada Medical Advisory Team on April 3. This new directive requires Nevadans and visitors to wear face coverings when they are out in public, with limited exceptions as outlined below. Read on to learn more about the directive mandating face coverings:

**When and where am I required to wear a face covering?**

Whenever you leave the house. To keep businesses open and help slow the spread, face coverings are required.

Face coverings should be worn at all times in the following circumstances:

- Public spaces:
  - Inside of, or standing in line waiting to enter, any indoor public space.
  - While outside in a public space when 6 feet of social distancing from those not in your same household isn't possible.
- Public or Private Transportation or paratransit that others **HAVE** used or **WILL** use:
  - While waiting for or riding on public transportation or paratransit.
  - While riding in taxis, private car services, monorails, trams, and rideshares like Uber and Lyft.
  - While driving or operating any form of transportation or paratransit when passengers not in your same household are



Appendix E Order of the Governor of the State of Maryland Number 20-04-15-01



**The State of Maryland**  
Executive Department

ORDER  
OF THE  
GOVERNOR OF THE STATE OF MARYLAND  
NUMBER 20-04-15-01

REQUIRING USE OF FACE COVERINGS UNDER CERTAIN CIRCUMSTANCES AND  
REQUIRING IMPLEMENTATION OF CERTAIN PHYSICAL DISTANCING MEASURES

- WHEREAS, A state of emergency and catastrophic health emergency was proclaimed on March 5, 2020, renewed on March 17, 2020, and renewed again on April 10, 2020, to control and prevent the spread of COVID-19 within the state, and the state of emergency and catastrophic health emergency still exists;
- WHEREAS, COVID-19, a respiratory disease that spreads easily from person to person and may result in serious illness or death, is a public health catastrophe and has been confirmed throughout Maryland;
- WHEREAS, To reduce the spread of COVID-19, the U.S. Centers for Disease Control and Prevention and the Maryland Department of Health recommend canceling large gatherings and physical distancing in smaller gatherings;
- WHEREAS, The currently known and available scientific evidence and best practices support limitations on large gatherings and physical distancing to prevent exposures and transmissions, and reduce the threat to especially vulnerable populations, including older individuals and those with chronic health conditions;
- WHEREAS, To reduce the threat to human health caused by transmission of the novel coronavirus in Maryland, and to protect and save lives, it is necessary and reasonable that individuals in the state refrain from congregating;
- WHEREAS, To protect the public health, welfare, and safety, prevent the transmission of the novel coronavirus, control the spread of COVID-19, and save lives, it is necessary to control and direct the movement of individuals in Maryland, including those on the public streets; and
- WHEREAS, It is further necessary to control and direct in Maryland the occupancy and use of buildings and premises, as well as places of amusement and assembly;

## Appendix F Aggregated U.S. States' Data Sources

- Alabama (AL)
  - Alabama.gov COVID-19 Information Hub: <https://covid19.alabama.gov/search.html?query=face+covering>
- Arizona (AZ)
  - Arizona Department of Health Services: <https://directorsblog.health.azdhs.gov/>
- Arkansas (AR)
  - Arkansas Department of Health: [https://www.healthy.arkansas.gov/images/uploads/pdf/guidance\\_face\\_coverings.pdf](https://www.healthy.arkansas.gov/images/uploads/pdf/guidance_face_coverings.pdf)
- California (CA)
  - California Department of Public Health: [https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/COVID-19/Guidance-for-Face-Coverings\\_06-18-2020.pdf](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/COVID-19/Guidance-for-Face-Coverings_06-18-2020.pdf)
- Colorado (CO)
  - Colorado Department of Public Health & Environment: <https://covid19.colorado.gov/mask-guidance>
- Connecticut (CT)
  - Connecticut COVID-19 Response: <https://portal.ct.gov/Coronavirus/Covid-19-Knowledge-Base/Latest-Guidance>
- Delaware (DE)
  - Delaware's (COVID-19) Response: <https://coronavirus.delaware.gov/guidance-for-face-coverings/>
- Florida (FL)
  - Florida COVID-19 Response: <https://floridahealthcovid19.gov/prevention/>
- Georgia (GA)
  - Georgia.gov: <https://georgia.gov/covid-19-coronavirus-georgia/covid-19-state-services-georgia/covid-19-unite-stop-spread>
- Hawaii (HI)
  - COVID-19 State of Hawai'i Portal: <https://hawaiiicovid19.com/governor-ige-and-hawaii-department-of-health-provide-additional-guidance-on-face-masks-to-prevent-the-spread-of-covid-19/>
- Illinois (IL)
  - Illinois Department of Public Health: <https://www.dph.illinois.gov/covid19/community-guidance/mask-use>
- Indiana (IN)

- Indiana State Department of Health: [https://www.coronavirus.in.gov/files/IN\\_COVID19\\_Cloth%20Face%20Coverings%204.5.20.pdf](https://www.coronavirus.in.gov/files/IN_COVID19_Cloth%20Face%20Coverings%204.5.20.pdf)
- Kansas (KS)
  - Kansas Department of Health and Environment: <https://www.coronavirus.kdheks.gov/225/How-to-Protect-Yourself-Others>
- Kentucky (KY)
  - KYDH YouTube channel: [https://www.youtube.com/watch?v=csMp8SLjiSU&feature=emb\\_logo](https://www.youtube.com/watch?v=csMp8SLjiSU&feature=emb_logo)
- Louisiana (LA)
  - Louisiana Department of Health: <https://ldh.la.gov/index.cfm/page/3940>
- Maine (ME)
  - State of Maine Department of Health and Human Services: <https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/airborne/documents/InformationOnFaceClothCoverings.pdf>
- Maryland (MD)
  - Maryland Department of Health: [https://phpa.health.maryland.gov/Documents/coronavirus\\_FAQ.pdf](https://phpa.health.maryland.gov/Documents/coronavirus_FAQ.pdf)
- Massachusetts (MA)
  - Mass.gov: <https://www.mass.gov/news/mask-up-ma>
- Michigan (MI)
  - Michigan.gov: [https://www.michigan.gov/documents/coronavirus/Face\\_Coverings\\_Guidance\\_for\\_non-healthcare\\_workers\\_Final\\_685949\\_7.pdf](https://www.michigan.gov/documents/coronavirus/Face_Coverings_Guidance_for_non-healthcare_workers_Final_685949_7.pdf)
- Minnesota (MN)
  - Minnesota COVID-19 Response: <https://mn.gov/covid19/>
- Mississippi (MS)
  - Mississippi State Department of Health: [https://msdh.ms.gov/msdhsite/\\_static/14,21866,420.html](https://msdh.ms.gov/msdhsite/_static/14,21866,420.html)
- Montana (MT)
  - Montana.gov: <https://covid19.mt.gov/Masks-and-Face-Coverings>
- Nebraska (NE)
  - Nebraska Dept. of Health and Human Services: <https://dhhs.ne.gov/Pages/10-Actions-for-Every-Nebraskan-to-be-Taking-Now-to-Slow-Spread-of-COVID-19.aspx>
- Nevada (NV)
  - Nevada Health Response: <https://nvhealthresponse.nv.gov/state-information/governor-directives-and-declarations/>
- New Hampshire (NH)
  - NH Division of Public Health Services: <https://www.dhhs.nh.gov/dphs/cdcs/covid19/covid-mask-guidance.pdf>
- New Jersey (NJ)
  - New Jersey COVID-19 Information Hub: <https://covid19.nj.gov/faqs/nj-information/slowing-the-spread/should-i-wear-a-mask-to-stop-the-spread-of-covid-19>
- New Mexico (NM)

- The State of New Mexico: <https://www.newmexico.gov/2020/04/07/video-homemade-face-coverings/>
- New York (NY)
  - New York State: <https://coronavirus.health.ny.gov/home>
- North Carolina (NC)
  - NC Department of Health and Human Services: <https://files.nc.gov/covid/documents/about/managing-overall-health/FAQs-Cloth-Face-Coverings.pdf>
- North Dakota (ND)
  - South Dakota Department of Health: [https://doh.sd.gov/documents/COVID19/COVID\\_masks.pdf](https://doh.sd.gov/documents/COVID19/COVID_masks.pdf)
- Ohio (OH)
  - Ohio Department of Health: [https://coronavirus.ohio.gov/wps/wcm/connect/gov/1fb8797e-d5d4-4268-83b1-127f5a1ca886/Face+Mask+%2805-19-2020%29+xx+%281%29.pdf?MOD=AJPERES&CONVERT\\_TO=url&CACHEID=ROOTWORKSPACE.Z18\\_M1HGGIK0N0JO00QO9DDDDM3000-1fb8797e-d5d4-4268-83b1-127f5a1ca886-n8TWNut](https://coronavirus.ohio.gov/wps/wcm/connect/gov/1fb8797e-d5d4-4268-83b1-127f5a1ca886/Face+Mask+%2805-19-2020%29+xx+%281%29.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_M1HGGIK0N0JO00QO9DDDDM3000-1fb8797e-d5d4-4268-83b1-127f5a1ca886-n8TWNut)
- Oregon (OR)
  - Oregon Health Authority: <https://sharesystems.dhsoha.state.or.us/DHSForms/Served/1e2390e.pdf>
- Pennsylvania (PA)
  - DOH: <https://www.health.pa.gov/topics/disease/coronavirus/Pages/Stop-the-Spread.aspx>
- Rhode Island (RI)
  - Reopening RI: [https://reopeningri.com/resource\\_pdfs/COVID-19\\_Advisory-face-covering-English.pdf](https://reopeningri.com/resource_pdfs/COVID-19_Advisory-face-covering-English.pdf)
- Texas (TX)
  - Texas Health and Human Services: <https://dshs.texas.gov/coronavirus/faq.aspx?terms=face%20covering>
- Utah (UT)
  - Coronavirus Utah.Gov: <https://coronavirus.utah.gov/protect-yourself/>
- Vermont (VT)
  - Vermont Department of Health: <https://www.healthvermont.gov/Help-Slow-the-Spread-of-COVID-19-By-Wearing-Cloth-Face-Mask-April-23-2020>
- Virginia (VA)
  - Virginia Department of Health: <https://www.vdh.virginia.gov/peninsula/cloth-face-covers/>
- Washington (WA)
  - Washington State Coronavirus Response (COVID-19): <https://coronavirus.wa.gov/information-for/you-and-your-family/face-masks-or-cloth-face-covering>
- West Virginia (WV)

- WV.gov: <https://governor.wv.gov/News/press-releases/2020/Pages/COVID-19-UPDATE-Gov.-Justice-announces-statewide-indoor-face-covering-requirement.aspx>
- Wyoming (WY)
  - Wyoming Department of Health: <https://health.wyo.gov/targeted-use-of-personal-face-coverings-recommended-for-wyoming-residents/>

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