COVID-19 — AUGUST 2020

Promoting mask-wearing during the COVID-19 pandemic:
A POLICYMAKER'S GUIDE

Contents

This version was updated on August 27, 2020 and is considered a working document that will be updated as guidance becomes available.

Executive summary

Use of face masks and cloth face coverings has been shown to [reduce transmission of SARS-CoV-2](#), the virus that causes COVID-19. [Along with washing hands and practicing physical distancing, wearing a mask](#) is one of three key measures that people can take to decrease their own risk of contracting COVID-19 and decrease the chance that they may infect someone else.

Promoting mask use is one of the key interventions governments, communities, businesses, and other organizations can implement to control COVID-19. Mask use is most effective when combined with comprehensive action to stop COVID-19, including closure of indoor spaces when appropriate, protecting health care workers and health care facilities, and strategic testing, rapid isolation, complete contact tracing, and supportive quarantine.

This document draws on scientific evidence from the COVID-19 pandemic and from prior public health research on behavior change, with the purpose of empowering governments to measure face mask use in their jurisdictions and promote widespread adoption of masks in the general population.[1]

Key findings:

- There is scientific evidence that widespread mask-wearing in non-medical settings, as part of a comprehensive strategy to prevent disease transmission, can reduce spread of COVID-19.

- Not all masks protect equally: some masks are better at protecting others than the wearer, and some masks are much less effective than others. Masks must be worn correctly to be maximally protective.

- Governments should monitor community-wide uptake of masks, conduct social science research to understand differing rates of adherence, and assess epidemiological data to determine if the practice is having a variable impact on subpopulations.

- Evidence supports the effectiveness of mandates, policies that shape social norms and environments, strategic communication and advertising, and community engagement to increase access to masks and provide positive social modeling. Governments should integrate these elements into a masking strategy.

- Widespread mask-wearing should be promoted as a "new normal" that communities should adopt for the foreseeable future, until virus spread is extremely low or vaccination creates immunity.

- Hand-washing and physical distancing, and reducing or eliminating high-risk situations (e.g., crowded indoor gatherings without masks) are also critical to limit spread of COVID-19.

As a living document, this will be updated and amended as new evidence emerges: the most recent version is available at [PreventEpidemics.org](#).

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1   This document does not cover the promotion and use of medical-grade "N95" masks in health care settings.

I. Introduction

Wearing a mask is one of the simplest ways to reduce spread of COVID-19, and persuading people and communities to embrace mask use is a core intervention for curbing the pandemic. The World Health Organization (WHO), the U.S. Centers for Disease Control and Prevention (CDC), the Africa Centers for Disease Control (Africa CDC), and numerous other government and public health agencies have recommended that people use masks in public settings when SARS-CoV-2, the virus that causes COVID-19, is being transmitted in the community.

The evolution of recommendations for widespread mask-wearing in non-medical settings has has understandably caused confusion in some communities. Early in the pandemic, before the accumulation of evidence that mask-wearing can reduce the spread of COVID-19, some countries with no history of the practice resisted adopting mask-wearing recommendations. Other countries modeled their mask policies on prior responses to pandemic influenza, recommending them only for specific groups such as pregnant women. In contrast, where populations had experienced prior epidemics of SARS or MERS (two other diseases caused by coronaviruses), and in settings, mostly in Asia, where mask-wearing is common for people with even a minor cold, people were more likely to consistently wear masks in public spaces, even without mandates.

As scientific understanding of COVID-19 has evolved, the importance of widespread use of masks has become clear, in part because of the transmission dynamics of the virus. People with COVID-19 are most infectious early in the course of disease, including before symptoms develop, and many people infected with COVID-19 never develop symptoms at all. The prevalence of asymptomatic and pre-symptomatic infection and infectivity make wearing masks crucial, even among people who feel healthy. (Promotion of mask-wearing should be part of a package of measures. Promotion of mask-wearing should be part of a package of measures that also includes hand-washing, physical distancing, and interventions to reduce indoor exposures, find infected people and their contacts quickly, and provide rapid and supportive isolation and quarantine services.

There is no single strategy that will guarantee the widespread adoption of mask-wearing; this guide brings together evidence, tools and guidance to help policy-makers develop a comprehensive intervention, including best practices for policy, recommendations for using mass media to establish masks as a social norm, and detailed guidance on how to measure mask use.

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II. Evidence that mask-wearing reduces COVID-19 transmission

The primary mode of transmission of the virus that causes COVID-19 is through tiny respiratory droplets that are exhaled when infected people breathe, speak, cough or sneeze. Masks can prevent the spread of COVID-19 in two ways: by preventing a healthy person from acquiring the disease and by preventing an infected person from spreading the disease. In the latter case, known as source control, the mask acts as a barrier to prevent respiratory droplets from spreading to nearby people or to surfaces where the virus can remain viable.

There is scientific evidence that widespread use of masks in the community prevents the spread of COVID-19. A systematic review that included eight randomized controlled trials conducted in community settings found that mask-wearing protects against respiratory infections in high-transmission community settings. Numerous observational studies have compared disease transmission patterns in settings where mask-wearing is common to settings where it is not. A review and meta-analysis of observational studies on mask use found that mask use significantly reduces the spread of the coronaviruses that cause SARS, MERS and COVID-19 both in and outside health care settings.

Effective source control depends on people consistently wearing masks in public spaces even when they feel well, because a substantial proportion of people with COVID-19 may not have symptoms. Studies have shown that people with COVID-19 who wear masks before they develop symptoms are less likely to transmit the disease to others in their households.

Masks can also protect the wearer. There is abundant evidence from health care settings that both medical procedure masks (also called surgical masks) and respirators (such as N95 respirators) protect the wearer from respiratory viral infections. Observational data from the COVID-19 pandemic suggest that people in the community who wear masks and become infected may be less likely to develop severe disease.

Some have hypothesized that widespread use of masks may give communities a false sense of security, which could reduce adherence to other precautions (e.g., hand-washing, maintaining physical distance) and inadvertently result in more infections. But there is no evidence that mask-wearing increases the spread of COVID-19, and evidence from health care settings suggests that performing certain measures to decrease the spread of infections (e.g., wearing a mask) is associated with increased adherence to other, complementary measures.

III. Best practices for mask-wearing

ALMOST EVERYONE SHOULD MASK WHENEVER THEY ARE IN PUBLIC

With few exceptions, everyone should wear a mask when in public.

Mask use is particularly important in environments where there is a higher risk of transmitting the virus. These include indoor environments, and particularly those with any of the "Three C" characteristics:

- closed/confined places with poor ventilation

- crowded places with many people

- close-contact settings where people may have close conversations

Mask use is also critical in settings where there are people who may be at increased risk of severe COVID-19, including people of advanced age or with certain underlying illnesses or conditions.

PEOPLE SHOULD USE MASKS WITH MAXIMALLY EFFECTIVE MATERIAL AND DESIGN, AND WEAR THEM CORRECTLY

Not all masks are created equal—but an imperfect mask is better than no mask at all.

Data comparing the effectiveness of different types of masks at reducing spread of COVID-19 and other respiratory diseases is limited and still evolving. A meta-analysis of available evidence showed that cloth, gauze, cotton and paper masks were all associated with a reduced risk of COVID-19 infection among healthy mask-wearers. A recent study on the filtration capacity of a variety of community-produced cloth masks showed that masks made from high-thread-count cotton and hybrid materials as well as those made of multiple layers rather than single layers performed best, and that mask effectiveness was reduced when the fit was poor. Other studies have suggested that homemade masks offer greater protection against respiratory viruses than no mask at all, even if fit and adherence are not perfect. Modeling studies have corroborated this, showing that even masks which are only partially effective can substantially reduce the risk of transmission, especially when enough people use them and when they are combined with other effective public health and social measures.

Currently available evidence indicates that the following guidance can help ensure maximum mask effectiveness:

Mask material

- Cloth masks should be made of high-grade cotton or a hybrid material (such as cotton combined with a synthetic fiber). If such materials are unavailable, a substitute is preferable to having no mask at all.

- Cloth masks should be made of multiple layers of material. However, wearing a single-layer mask is preferable to having no mask at all.

- Materials that are not effective include plastic or other non-breathable material, because air exchange cannot occur through such material and thus must occur through holes in the mask or gaps around the sides. Overly breathable material, such as knit fabrics, are also less effective.

Mask structure

- Masks with holes that allow exhaled air to escape unfiltered are not effective, such as those with one-way valves and bandannas that have been folded and tied around the face.

- Masks that do not allow a snug fit against the face are also less effective because they allow unfiltered air to escape. This includes bandannas folded over the nose and mouth but not fitted on the sides, as well as plastic face shields if they are used without a mask underneath.

Which Masks Are Best for COVID-19?

✅ Best		✔ Good	❌ Not recommended		
Multi-layered cloth mask	**Surgical mask**	**Single-layered cotton mask**	**Knitted mask**	**Mask with vents**	**Folded bandana**
Good fit Can be secured over nose, behind ears or around head, and under chin	**Tightly woven** or high thread count cotton or cotton blend	**Lower thread count** cotton, silk, linen, polyester	**Poor fit** Noticeable gaps, holes or vents	**Unbreathable material** such as plastic or leather	**Overly porous material** such as nylon and fleece

Figure I. What to look for in a mask

Mask fit

- The mask should be large enough to completely cover the end of the nose, including the nostrils as well as the entire mouth, extending onto the cheeks and down underneath the chin.

- The mask should be snug enough around the edges so that air does not escape unfiltered but rather is forced to pass through the material of the mask. (A sufficiently snug fit is more likely if the mask includes bands around the ears to pull the mask tight, a semi-rigid piece over the bridge of the nose to hold the mask in place, and elastic under the chin to eliminate gaps.)

- It should be possible to breathe and speak easily while wearing the mask.

Appropriate mask use

- Wash hands thoroughly with soap and water or use hand sanitizer before putting on a mask, and before and after removing it.

- The mask should be changed if it becomes damp, damaged, visibly soiled or touched by potentially contaminated hands.

- The mask should be changed regularly, ideally daily. The mask may be cleaned if the material is washable and the mask will not be damaged in the process; if the mask is not washable, it should be disposed of carefully with typical household waste.

Only a few groups of people should be exempt from wearing masks

It can be difficult for very young children to wear masks. In the United States, CDC recommends that children under 2 years of age do not wear masks. Different public health guidelines include different age cut-offs.

Anyone who has trouble removing a mask without assistance should not wear a mask.

Clinicians may be asked to decide whether to recommend a medical exemption to mask-wearing. Guidelines for doing so are limited, but there are conditions that may impede mask-wearing, including facial deformities, mental health conditions, intellectual disabilities.

Wearing a mask that meets the standards recommended above does not reduce oxygen levels, so people with certain chronic lung diseases should not automatically avoid masks. In fact, people with lung diseases that place them at higher risk of severe COVID-19 should be particularly careful to strictly adhere to mask-wearing guidelines.

In most cases, a person with respiratory issues that preclude wearing a mask should avoid public places with a heightened risk of exposure whenever possible. Policymakers should consider whether there is another reasonable accommodation for people with such medical issues, such as providing them with additional services that allow them to shield at home.

IV. Promoting mask-wearing with policy

Community-wide requirements to wear masks will be most effective if they are clear, consistent, legally sound, and designed to encourage broad adherence. Although the details of any given policy will need to be tailored for each jurisdiction, some general characteristics apply.

RULES ON MASK-WEARING SHOULD BE CLEAR AND COMPREHENSIVE

Rules should clearly indicate who must wear a mask, what type of masks are allowed, where[2] and when masks must be worn, and how they must be worn.

Mandates should generally apply to everyone, clearly indicating any narrow exemptions. They should define the types of masks allowed or prohibited, striking a balance between precision and flexibility. (Overly strict requirements could create supply issues, while overly permissive rules could encourage masks that provide little or no protection.) They should specify that the mask cover the nose and mouth at all times. And if surgical masks or other specialty masks, such as N95 masks, are in short supply, policymakers may restrict them to health care workers, requiring the general public use other types of coverings.

Mandates should generally be applied to indoor places accessible to the general public or used collectively,[3] including places of work[4] and public transportation.[5]

Mandates may also apply to heavily trafficked outdoor places, where it is difficult to maintain physical distance consistently. Other outdoor places, especially where there is little transmission of the virus and physical distancing is possible, may not be appropriate for mask mandates.

Jurisdictions may impose modified mask rules on activities that are difficult or impossible while wearing a mask. Activities should only be exempt if minimum physical distancing requirements can be maintained, or if nearby people are wearing masks. (For example, a dental patient could temporarily remove their mask during a procedure but the dentist should continue to wear one.) For some activities that require extreme exertion or exhalation, further distancing requirements should be considered.

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2   The Framework Convention on Tobacco Control offers a helpful parallel in the creation of smoke-free spaces. The FCTC requires Parties to prohibit smoking in indoor workplaces, public transport, indoor public places, and, as appropriate, other public places. The FCTC guidelines provide suggested definitions for each term.

3   Private homes are generally not considered a public place but if non-household members are present in a private home and safe physical distancing cannot be maintained, then people should wear masks there too. For example, California requires masks in "high-risk areas," including any room or enclosed area where other people (except members of the person's own household or residence) are present and unable to physically distance.

4   Mandates should define workplaces as any place used by people during their employment or work, including not only those places at which work is performed, but also all attached or associated places commonly used by the workers in the course of their employment, including corridors, lifts, stairwells, lobbies, shared facilities, cafeterias, toilets, lounges, lunchrooms and outbuildings such as sheds and huts. Vehicles used in the course of work are workplaces and should be specifically identified as such.

5   Public transport should be defined to include any vehicle used for the carriage of members of the public, usually for reward or commercial gain, including taxis.

Activity-based exemptions to a mandate might include:

- Eating or drinking

- Playing sports or exercising

- Practicing or playing a musical instrument

- Activities that involve getting the face wet, such as swimming or showering

- In circumstances when a person is asked to verify their identity for lawful purposes

- Communicating with an individual with a hearing impairment

- Receiving a dental or medical examination or treatment that cannot be performed through a mask

Evidence from US states: mask-wearing mandates work

Natural experiments in South Carolina and Kansas provide evidence that locales with mandates on the use of masks see further decreases in COVID-19. In both states, different counties and cities took different approaches. In South Carolina, **locales with mask mandates saw a 46.3% greater decrease in total number of COVID-19 cases** compared to locales without a mandate. In Kansas, 15 **counties that adopted mask mandates saw a greater reduction in cases** than 90 counties that did not.

MASK MANDATES SHOULD BE ISSUED BY THE MOST APPROPRIATE GOVERNMENT AUTHORITY

Policymakers should consider which government body is the most appropriate to issue a mask mandate. An executive agency, such a ministry of health, or a leader such as a governor, mayor or county executive, may or may not have clear authority to issue such rules. If not, the legislature may need to authorize such rules or create the rules through law.

Multiple agencies—or national, regional and municipal governments—may have overlapping authority to issue rules. Without coordination, this can lead to a conflicting or confusing patchwork of regulations. Policymakers should strive to balance consistency with local variation, especially as different areas could face drastically different risks.

In general, policymakers should strive to set minimum standards that work for their entire community, but allow local jurisdictions to impose more stringent rules. Private businesses or property owners should also be allowed to impose more stringent rules for their employees and people on their property. It is problematic when a larger geographic entity preempts more protective local requirements (for example, when a state prohibits cities from requiring masks), and can undermine communities' ability to protect themselves.

Policymakers should also be sensitive to the public's perception of the issuing agency. The public should view the rules as evidence based, not politically motivated. The choice of which agency issues the rules may affect the public's perception of the rule and their adherence to it.

Case study: Minnesota's mask-wearing policy

On July 25, 2020, Minnesota Governor Tim Walz implemented [Emergency Executive Order 20-81](#) requiring Minnesotans to wear a face covering in certain settings to prevent the spread of COVID-19. This best practice policy addresses each of the issues discussed throughout.

- **Who:** Everyone is required to wear a mask, with limited exceptions for children under two or people with certain medical conditions.

- **What:** A wide array of masks are permitted, including paper or disposable, cloth masks, neck gaiters, scarfs, bandanas, or religious face coverings. Coverings incorporate a valve or have visible gaps in the design or fabric (e.g., mesh) are not allowed.

- **Where:** Masks are required in all indoor public spaces and indoor businesses. Workers are required to wear masks outdoors when distancing cannot be maintained. Special rules apply to schools and other settings.

- **When:** Temporary exemptions to mask-wearing are allowed if people are actively engaging in activities where mask-wearing would be impractical, such as eating, drinking, exercising, showering, swimming, or receiving a medical exam.

- **How:** The covering must cover mouth and nose completely, should not be overly tight or restrictive, and should feel comfortable to wear.

- **Other:**
  - Local jurisdictions and businesses are expressly permitted to enact more protective measures.
  - Violators of the mask requirements may receive a petty misdemeanor citation and fine up to $100.
  - Businesses are responsible for ensuring staff and customers are wearing masks, and must clearly post signage at places that are visible to all. Failure to comply may result license suspension or termination, fines of up to $25,000, or criminal charges for business owners.

Minnesota published a [plain language FAQ](#) explaining the mask mandate, and made it available in several local languages including English, Spanish, Somali, and Hmong.

NARROWLY TAILOR SANCTIONS FOR NON-COMPLIANCE

Ideally, communities will widely adopt mask-wearing requirements without the need for sanctions. Promoting social norms for widespread use of masks (through strategic communication and community engagement strategies described below) is likely to be more effective than enforcement. In some areas, policymakers may still choose to implement sanctions for non-compliance.

Before implementing sanctions, policymakers should ensure that they have clearly communicated the rules, that people have access to masks, and that leaders are modeling good behavior. If these conditions are met and sanctions are still deemed necessary, they should be proportionate to the misbehavior. Sanctions can be graduated, so they become more severe for repeated or egregious violators. For most people, the threat of sanctions may be enough to encourage adherence, and governments may consider publicizing the existence of sanctions in the news media to generate awareness.

Law enforcement should be careful to ensure sanctions are applied consistently across the population, and avoid targeting any particular groups. Enforcement efforts may backfire if the law is

perceived as a tool of discrimination or harassment against certain populations, or if these efforts escalate situations where violence may occur.

ENGAGE BUSINESSES IN PROMOTING MASK-WEARING

Policymakers can extend the reach of mask mandates by imposing special responsibilities on businesses. Governments can condition reopening of businesses on adoption of new rules, including physical distancing, hand-washing, and mask-wearing. Sanctions for businesses that encourage customers or employees to flaunt the rules should be more severe than sanctions for individuals, and could include non-monetary sanctions such a license suspension or revocation.

Employees should be required to wear a mask as a condition of employment, and employers should suspend or terminate employees refuse to do so without legitimate cause.

Businesses should be required to prominently post signs informing all customers and employees to wear a mask at all times on the premises, and should instruct employees to inform customers about the rules and provide masks if available. If customers refuse to comply, staff should ask them to leave the premises, and if necessary, call the authorities.

V. Promoting mask-wearing with strategic communication strategies

In addition to policies that promote mask-wearing, governments should develop communication approaches to support widespread use of masks as the "new normal" for the foreseeable future.

Data from public opinion surveys suggest that there are multiple reasons why people might not wear masks (see Figure 2), and that often people who do not follow mask-wearing norms or regulations may experience multiple, overlapping barriers to mask use. Strategic communication campaigns may be used to change knowledge, attitudes and practices and influence perceived social norms around mask-wearing, addressing some of these barriers.

Figure 2: Why don't people wear masks?

Personal Barriers
Gaps in knowledge, attitudes, beliefs about COVID-19

- Don't believe that masks protect; don't trust those who say they do
- Don't believe that the threat is urgent, personal, likely or severe
- Believe that the health costs of mask-wearing outweigh the benefits

Social Barriers
Interactions with community members and identity affect likelihood of adopting wearing a mask

- "I'll be judged for wearing a mask"
- "People like me aren't wearing mask"
- "People will think that I am sick"

Environmental Barriers
A person's environment, including access to masks and economic costs/benefits of wearing a mask

- No or limited access to masks
- Lack of environmental cues or reminders such as posters

Masks Required For Entry

Address barriers by using policy, marketing and community engagement to:

- Build individual knowledge, risk perceptions
- Increase positive social norms
- Promote mask-wearing habits
- Support greater access

Often, people who want to use new behaviors such as mask-wearing are inhibited by small barriers such as forgetting a mask or momentary inconveniences ("it's hard to breathe through while I'm jogging.") Campaigns that support formation of new habits—such as leaving a mask by the front door or in the car—may help bridge the gap between intentions and action.
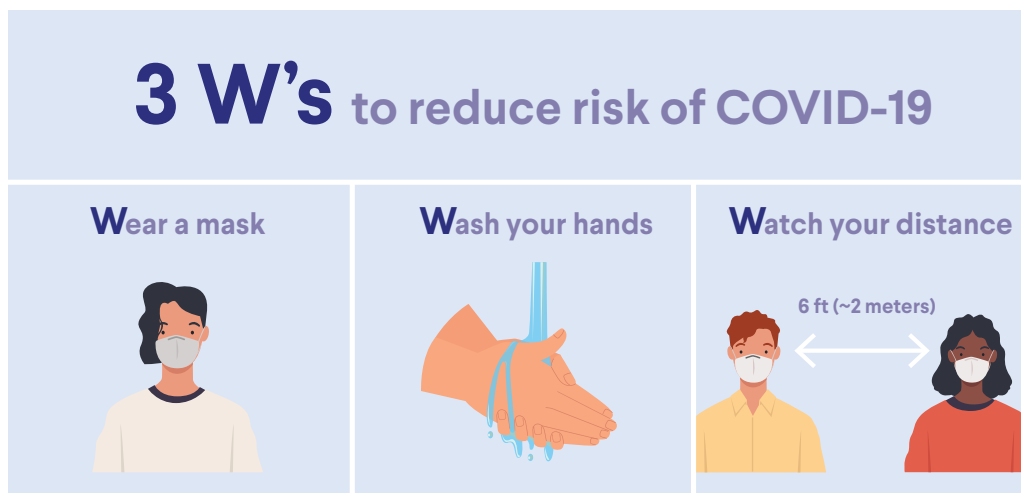
GOVERNMENTS SHOULD TEST EFFECTIVE MESSAGES, CHANNELS AND MESSENGERS

Ideally, messaging should be informed by communication research conducted with focus groups or by survey to ensure key points are understood and perceived as credible, relevant, culturally appropriate and effective. The chosen messages will be most effective if they engage and address the needs of their intended audiences and if these messages are delivered by trusted spokespeople, including community leaders. Governments should consider both communication research and timely epidemiological data together to identify the most important audiences: those at the highest risk, and for whom behavior changes can have the greatest impact.

GOVERNMENTS SHOULD SUSTAIN MESSAGING AS PART OF A LARGER PUBLIC HEALTH STRATEGY

Most audiences need repeat exposure to messages to trigger sustained behavior changes, so public health authorities should endeavor to deliver effective messages via trusted sources that are repeated over time and over different media channels and activities. Messaging should be as simple as possible, consistent, and sustained across different channels, including in local media, government-owned digital properties such as websites or social media pages, and paid advertising and marketing on TV, radio, print, outdoor billboards, digital or social media.

These communications should be conveyed in coordination with additional messages that promote avoidance of higher risk environments such as crowds, indoor spaces with poor ventilation and close-contact settings such as meetings. Vital Strategies and Resolve to Save Lives promote these steps using the "3 W's" mnemonic:

3 W's to reduce risk of COVID-19

Wear a mask

Wash your hands

Watch your distance

6 ft (~2 meters)

"3 W's" messages provide an excellent "umbrella" campaign for all audiences that should be complemented with more targeted strategic communication focused on smaller audiences such as at-risk Black and Latinx populations, demographics with low rates of mask-wearing, or people who are in high-risk geographies or demographics. These segmented campaigns may use community messengers that appeal to subpopulations, use targeted media buys to serve culturally appropriate messages to key audiences, or provide geographically targeted media placements such as billboards or digital ads.

LEADERS SHOULD ESTABLISH POSITIVE NORMS THROUGH NEWS MEDIA

People are heavily influenced by what they perceive as the values of their community. Governments should use news media to promote mask-wearing as a social norm; some strategies include releasing polling data that demonstrate widespread community approval for masks, sharing monitoring data of widespread adherence, and encouraging news stories about positive trends in mask-wearing as greater numbers of community members don masks.

Those who defy mask requirements may receive outsized media attention relative to their numbers; public health authorities should avoid calling attention to them, . As recently as June 2020, while two-thirds of Americans reported wearing masks all or most of the time, their perception was that fewer than half of Americans did so.

Government officials and health authorities should wear masks in public to model the behavior, including at news conferences when they are not speaking, and should share photographs of themselves wearing masks on their social media feeds. Government media should also exemplify this "new normal" by depicting people wearing masks and practicing physical distancing in print and video advertising.

COMMUNICATION SHOULD APPEAL TO EMOTIONS AND VALUES

For many behavior change campaigns, graphic imagery that emotionally conveys the health harms of not taking protective action is effective.

Vital Strategies' focus groups for the "Be The One" campaign, conveying that taking protective behaviors was likely to protect neighbors and community was motivating, especially for Black and Latinx audiences. Similarly, mask promotion videos from the #MaskUp campaign use this key message: "Whatever your mask says about you, it says you care about others."

Another strategy may be to promote masks in ways that are in line with the identity of segmented audiences. In the United States, recent research has concluded that partisan identity (such as Republican and Democrat) is the strongest determinant of public health behavior during COVID-19. For some people, wearing a mask is a partisan act, with Republicans less likely to wear a mask and Democrats more likely to do so. However, over a two-month study, mask-wearing

> ### Case Study: "Be The One"
>
> In July 2020, Vital Strategies, conducted focus group research among Black and Latinx audiences and community leaders to identify which campaign themes and messages were most likely to promote participation in contact tracing. Findings demonstrated that among these audiences, disproportionately affected by COVID-19 and likely less trusting of government authorities, the highest performing messages appealed to the community benefit of contact tracing. Audiences were motivated to "Be The One" whose actions helped protect their family, friends and peers.

increased and was high among all groups. Messages that highlight bipartisan support for mask-wearing and growing adherence may appeal to some segments of the population.

Formative research that examines knowledge, attitudes and behaviors may include exploratory qualitative research, in the form of indepth interviews or focus groups, or representative surveys, conducted by phone or internet. For a sample survey questionnaire, please see: **Annex I: Sample questionnaire on mask usage**.

VI. Promoting mask-wearing through community engagement

Communities have been affected by the COVID-19 pandemic in different ways. Community engagement strategies seek to involve community leaders and members in the public health response, and deliver context-specific and culturally appropriate support to overcoming barriers and promoting positive information and behaviors. Such strategies are important during any public health intervention, and critically important during a pandemic.

ENGAGE AND EMPOWER COMMUNITY LEADERS

During the 2014 Ebola epidemic, distrust of the government and public health authorities in many countries led some communities to forgo protective behaviors such as modified burial practices. Engaging and empowering religious leaders was considered one of the critical strategies to bring the outbreak under control.

During the COVID-19 pandemic, governments should engage leaders from ethnic and religious minorities, with an emphasis on any communities that are at higher risk. For instance, in the United States, Black and Latinx people are more than twice as likely to die of coronavirus. Engaging community leaders can provide powerful insights into what types of community engagement will best improve mask use, and community leaders can be important and trusted messengers for promoting mask-wearing. This could include measures such as asking leaders to reach out through community-based media such as WhatsApp or Facebook groups.

USE COMMUNITY-LEVEL ACTIVITIES TO INCREASE ACCESS TO MASKS

There is evidence of the effectiveness of health promotion campaigns that combine strategic communication with low- or no-cost products (e.g., condoms). Dispensing masks in low-resource, low-adherence communities, along with health promotion messages, may help increase mask use. This may include teaching community members how to make masks from materials ready at hand.

VII. Measuring use of masks in the community

Localities may monitor and measure the rate of community-wide mask use for a number of reasons. Aggregate data on mask adherence can inform governments, communities and other organizations about how well they are promoting proper mask use, and help them implement and assess strategies to increase the proportion of people who use masks correctly. It can also identify locations for targeted messaging and intervention.

For example, if data show most people are wearing masks when in public settings, this indicates that mask use is becoming a social norm, and publicizing this may further improve adherence. If the data show mask use is uncommon, that can trigger community engagement and education activities to improve adherence or policies to deter non-adherence, along with evaluations to refine the interventions.

METHODS FOR MONITORING MASK USE

First, governments must decide what to measure: overall mask use, correct mask use or the demographic characteristics of mask-wearers. Authorities should choose measures that are guided by their overall goals, and only collect information that will inform decision making. The data collected on mask use should be used to inform public health decision-making and improve outcomes rather than for punitive measures.

Second, governments must decide how to measure mask use, whether through direct observation by trained observers, or with other methods, such as self-reported surveys or the analysis of camera footage or other technologies.

Direct in-person observation is currently considered the gold standard of data collection. Public health entities should assign or train different observers to collect data that can be compared and collated across settings and time. For example, observers must be trained to consistently recognize what constitutes a public indoor space, what constitutes a mask and what constitutes appropriate mask usage, and they must use a standardized instrument to collect and document data that can be compared.

Analyzing live or recorded video is an alternative method for measuring correct mask-wearing. Even rudimentary footage, such as that recorded by security cameras at store entrances or in some public spaces, can be used, if human observers review the tape to determine the percentage of people who have masks and the percentage who wear masks correctly. Video may be particularly useful in high- or low-volume observation points where it is difficult to collect data accurately in real time, or where the presence of an observer is thought to affect mask-wearing behavior.

Observations should be prioritized in locations where mask use may be most important. Attention should be given to the "three C's" (closed/confined places with poor ventilation; crowded places with many people; close-contact settings where people may have close conversations) in selecting locations for mask use. Some examples of locations include public indoor settings such as shops, public transportation, places of cultural or faith-based importance where crowding may be likely, markets and government offices. Care should be taken to select locations accessible to, and

frequented by, diverse segments of society. In addition, locations in a diversity of neighborhoods should be selected, as this may shed light on mask-use patterns and allow for targeted messaging.

Some private companies and governments have developed and employed more advanced technologies to monitor mask use, by automatically assessing mask adherence through machine learning. Due to a lack of data on their performance as well as privacy and legal concerns, it is not possible to endorse any specific technology platform at this time. But automated assessments, if validated, could provide useful, aggregated (that is, not personally identifiable) information on correct mask-wearing.

Observers should record data with standardized techniques that reduce potential for human error and facilitate rapid data collation and analysis, such as smartphone applications, clipboards or punch counters. It is preferable that observations are made covertly in order to avoid the Hawthorne effect, so a discreet data collection tool should be used.

For further information, see Annex II: Mask-use adherence measurement technical reference and **Annex III: Seven steps to establishing a mask-use monitoring program.**