



NON-MEDICAL INTERVENTIONS:

A DESK REFERENCE TO HELP PLANNERS RECOVER FROM
COVID-19 AND PREPARE FOR FUTURE OUTBREAKS
AND PANDEMICS



**Homeland
Security**

Science and Technology

Foreword

The Department of Homeland Security (DHS) continues to support the COVID-19 pandemic to protect our nation, increase national preparedness, and connect stakeholders to the best available science and technology to support response and recovery efforts.

The DHS Science and Technology Directorate (S&T) has developed the following document with support from other federal agencies, through collaboration with the National Science and Technology Council's Subcommittee on Resilience Science and Technology (SRST). This document is intended to quickly present current information to planners in the operational response and recovery to COVID-19. The following information has been assembled and evaluated by experts from the SRST, including CDC, CISA, S&T, EPA, FDA, HHS, and NOAA. It summarizes non-medical interventions available to individuals, households, and organizations to help those entities, as planners, protect themselves, their families, and people in their communities and institutions.

It is intended to serve as a quick reference tool and should not be regarded as a comprehensive source of information, nor as necessarily representing the official policies, either expressed or implied, of the DHS or the U.S. federal government. Sources of the information have been provided so that users of this document may independently evaluate its suitability for any particular use. This is a "living document" that will be updated as needed when new information becomes available.

About This Document

Planners, including but not limited to individuals, building owners, organizational leaders, facility managers, safety and security officers, and association advisors, are thinking about options and strategies for mitigating the effects of COVID-19 and other outbreaks. This document aims to help, defining non-medical interventions and introducing a framework for identifying non-medical interventions for different intervention targets (e.g., people, buildings, and natural environments). Common terms and definitions are defined to enable effective communication and discussion across organizations, institutions, and communities. As planners in the public and private sectors, you can use these terms with the proposed framework to identify and select appropriate non-medical interventions as you prepare for, respond to, and recover from COVID-19 as well as potential future outbreaks and pandemics.

The framework focuses on non-medical interventions available to individuals, households, and organizations to help you, as planners, protect yourselves, your families, and people in your communities and institutions. The framework also identifies non-medical interventions that you can use to mitigate the spread of disease, and cascading consequences including stresses to the economy and the medical system, through changes in built and natural environments. The framework provides a variety of options to consider as you identify and assess your own plans both for recovering from the COVID-19 pandemic and in preparing for future outbreaks and pandemics, while the user examples illustrate how different planners might use the framework.

The definitions and the framework build upon relevant White House guidance included in the [Guidelines for Opening Up America Again](#) and by federal agencies including [FEMA](#), [CDC](#),

[OSHA](#), [EPA](#), and others. The interventions described below reflect current best practices. The science related to disease and effective interventions, though, is continuously evolving, so we encourage you to check the latest guidance and non-medical interventions when developing and implementing your own frameworks for recovery and preparedness.

Defining Key Terms

We provide definitions for non-medical interventions applicable to different intervention targets as a starting point for describing the available intervention options. We also provide definitions of medical countermeasures for comparison.

Intervention Targets	Examples
Non-medical interventions: Material, actions, policies, strategies, and resources applied outside of diagnostic and therapeutic medical and public health realms, implemented to help slow the spread of illness and mitigate stress among human and animal populations and to promote the safety and sustainability of food, water, agriculture, and the environment.	Cloth masks, social distancing guidelines, facility closures
Personal interventions: Non-medical interventions used by individuals and households for self-preservation and protection of personal and broader societal health and well-being.	Cloth masks, hand washing, hand sanitizer use, self-quarantine
Institution and community interventions: Non-medical interventions implemented within the population that focus on public, private, or civic organizations.	Body temperature screening, staff retraining, revised sick leave policies
Built environment interventions: Materiel, actions, policies, strategies, and resources that are implemented within buildings, infrastructure, and public spaces—either during design or through modification—to mitigate the spread of illnesses and mitigate stress and shock among human and animal populations, food, water, agriculture, and the environment.	Building usage restrictions, alternate building materials, disinfection of surfaces
Natural environment interventions: Non-medical interventions implemented within buildings, infrastructure, and public spaces—either during design or through modification.	Park closures, increased trails, investment in outdoor space improvements

Intervention Types	Examples
Materiel: Necessary equipment, supplies, physical systems, and structural modifications.	PPE, disinfectants, hand sanitizers, touchless fixtures
Social and behavioral: Action-based changes that consider culture, social norms, knowledge, and values to enable individual behaviors and collective actions to mitigate spread of illnesses.	Social distancing, hand washing, avoiding large crowds
Strategy, policy, and program: Guidance, typically provided by governing organizations, to direct or inform actions to mitigate spread of illness and stress.	Public health management strategy, response preparedness plan

Intervention Types	Examples
<p>Economic and resource: Actions aimed at mitigating the health, safety, and financial risks and consequences of an outbreak or pandemic and promoting a faster recovery, including assistance in the form of loans, grants, subsidies, payments, insurance, tax incentives, and other economic and resource distributions.</p>	<p>Unemployment benefits, business loans, crop insurance</p>

Countermeasures	Examples
<p>Medical Countermeasures (MCMs): Life-saving medicines and medical supplies used to diagnose, prevent, protect from, or treat conditions associated with chemical, biological, radiological, or nuclear threats, emerging infectious diseases, or a natural disaster.</p>	<p>Diagnostic tests, screening devices, vaccines, antibiotics, antivirals, personal protective equipment</p>

Interventions Framework – Organizing Your Options for Consideration

The interventions framework can help all kinds of planners identify different interventions to mitigate the spread of COVID-19 and other infectious diseases. The framework looks at interventions implemented as changes:

- (1) by individuals and households;
- (2) by communities and institutions;
- (3) within built environments; and,
- (4) within natural environments.

As a planner, you can choose the intervention types (e.g., materiel; social and behavioral; strategy, policy, and program; and economic and resource) and the appropriate interventions depending on your roles and responsibilities. Where practical, planners across communities, institutions, and organizations are encouraged to coordinate your efforts and the interventions you select. This will allow you to maximize protections and mitigations while also reducing unintended interactions and consequences.

Some specific interventions may be appropriate for use by multiple stakeholders and across different environments. For example, individuals use masks to protect themselves and others, while organizations may create guidelines for mask use and even provide masks to employees and visitors. There are many different types of masks—cloth face coverings, surgical marks, respirators, and other types—and different masks serve different purposes: MCMs, such as surgical masks or N95 respirators, protect health care workers. Homemade and cloth masks, as non-medical interventions, may help limit the spread of disease in public settings when worn by individuals who do not know they are sick. Individuals and planners should choose the right masks for your role and your environment.

Similarly, social distancing interventions—maintaining physical separation of at least six feet between people outside their homes—may be carried out by individuals, building owners and operators designing features that direct the flow of people, and community leaders making public service announcements via social and traditional media.

Some non-medical interventions apply across multiple intervention targets. For example, planners may use a variety of communication methods to reach your audiences, your community members, your staff, your customers, and your visitors. These include public service announcements, information campaigns, social media messaging, and signs and posters. Topics may include recommendations to stay home when sick, guidelines for self-quarantine, guidance for safe and effective use of disinfectants, choosing the appropriate personal protective equipment (PPE) or face covering, disposing of cleaning and disinfecting materials to protect the sewer system and other infrastructure, and instructions for accessing programs and resources.

In addition, planners should include education about the proper use of the non-medical interventions. The education may describe which interventions to choose and how and when to use them appropriately, safely, and effectively. We also encourage planners to review new research and development and emerging guidance; as our understanding of COVID-19 and emerging diseases evolves, the guidance and recommended non-medical interventions may also change.

The interventions shown below are illustrative and intended to give planners options for consideration. Planners should also consider the need for training to effectively use the interventions. The examples that follow show how you, as a planner, can apply the framework in particular situations. You are encouraged to use the framework to identify the best interventions for the situation at hand, maximizing effectiveness while limiting unintended consequences.

As noted above, the identified interventions focus on protecting people, although many interventions also protect animals, plants, and the environment. For example, proper use of EPA-approved disinfectants on surfaces and objects helps reduce the risk of COVID-19 spread and is often safe for people as well as pets. You could also use the framework to identify specific interventions focused on protecting animals, plants, or the environment.

Using the Framework – Examples

We provide four short examples to illustrate how different types of planners may use the framework. We encourage you to review federal and other guidance to identify recommended interventions for your specific institutions (e.g., small businesses, restaurants, park administrators, ranchers, farmers).

Household planner: When planning for your family, use the first column of the framework to identify material interventions (e.g., masks, gloves, disinfectants); social and behavioral interventions (e.g., social distancing, frequent hand washing, self-quarantine); and economic and resource interventions (e.g., unemployment benefits, tax incentives). You might also review institution and community-level interventions being introduced to identify those which might be used to protect the household.

Corporate or factory planner: You and your planning team can use the institution and community column to identify different interventions that can be used as part of the business's recovery efforts to protect staff and visitors. These interventions might include material interventions (e.g., masks provided for staff and visitors, use of EPA-approved disinfectants); social and behavioral interventions (e.g., information campaigns); policy and program interventions (e.g., remote work options, staggered building access); and

economic interventions (e.g., small business loans, paycheck protection programs). Planners may use the built environment column to identify structural and building changes to mitigate the spread of illness, including material interventions (e.g., no-touch entries, touchless faucets, work station barriers, higher fresh air intake) and social and behavioral interventions (e.g., signage to direct traffic flows through buildings).

Community planner: You can use the last three columns as part of your community planning efforts. You can identify institution and community interventions—material that your community could stockpile and new policies and programs that the community could use for educating people—as well as built environment interventions that could be mandated in building codes and designed for in new buildings—such as designing for risk reduction. You may also consider natural environment interventions; for example, your plan could encourage the use of open-air meetings and identification of economic assistance available to protect and develop the natural environment.

Planners serving high-risk populations or in potential high-transmission settings: Some populations (e.g., pregnant and nursing mothers; some ethnic and racial groups; older and immunocompromised people; and individuals with pre-existing conditions) have a higher risk for developing contagious diseases and severe complications. Similarly, some environments (e.g., nursing homes, communal facilities, and factories with workers standing face-to-face or in close proximity) pose unique challenges. If you work with these populations and in these settings, you can also use the framework. To help you plan, the federal government and other organizations have published special guidance and recommendations for reference.

Intervention Examples by Protection Target

Intervention Type	Personal	Institution and Community	Built Environment	Natural Environment
Material	<ul style="list-style-type: none"> ▪ Non-medical grade face coverings ▪ Soap ▪ Hand-Sanitizer ▪ Disinfectants (e.g., EPA-approved disinfecting sprays, wipes) 	<ul style="list-style-type: none"> ▪ Temperature screening equipment ▪ Masks provided for staff and visitors ▪ Disinfectants (e.g., EPA-approved disinfecting sprays, wipes) and cleaning supplies (e.g., soap, hand sanitizer) provided widely 	<ul style="list-style-type: none"> ▪ Workplace reconfiguration ▪ Building material alternatives (e.g., materials durable to frequent disinfection) ▪ Touchless fixtures (e.g., faucets, trash cans) and self-cleaning bathrooms ▪ Cleaning materials appropriate for use in public transportation ▪ Barriers and shields installation to separate visitors and staff ▪ HVAC filters, air exchange rates 	<ul style="list-style-type: none"> ▪ PPE or cloth masks for agricultural workers, maintenance crews, and emergency services staff ▪ Natural barriers and planters to encourage spacing, flow, and stand-off distances ▪ Increased/widened bike and walking trails
Social and behavioral	<ul style="list-style-type: none"> ▪ Social distancing ▪ Hand washing ▪ Self-quarantine ▪ Non-essential travel restriction ▪ Proper disposal of wipes and other materials ▪ Pet protection (e.g., not using face coverings on pets; avoiding large animal gathering places; seeing a vet if your pet is sick) 	<ul style="list-style-type: none"> ▪ Social distancing ▪ Meeting size limitations ▪ Virtual meetings ▪ Employee attendance tracking and sick-at-home guidance ▪ Contact tracing and case isolation ▪ EPA-approved chemicals for disinfection ▪ Equipment cleaning ▪ Education campaigns ▪ Identifying and protecting high-risk individuals ▪ Public trust campaigns ▪ Peer support 	<ul style="list-style-type: none"> ▪ Public space security and resilience guidelines ▪ Proper materials disposal ▪ Research and development efforts to improve structure use and spacing (such as lobbies, waiting areas) ▪ Building usage restrictions and signs directing pedestrian movement ▪ Disinfection of surfaces with EPA-approved chemicals ▪ Design for risk reduction 	<ul style="list-style-type: none"> ▪ Temporary closure of or reduced access to public lands, parks, and recreational areas ▪ Open air meetings – take advantage of the natural environment and space to spread out ▪ Awareness of potential environmental impacts associated with disinfectants on plants or wildlife

Intervention Type	Personal	Institution and Community	Built Environment	Natural Environment
Strategy, policy, and program	<ul style="list-style-type: none"> ▪ Local and business guidelines regarding gathering sizes, building capacity, etc. 	<ul style="list-style-type: none"> ▪ Remote work options ▪ Staggered building entry, work hours/days policies ▪ Transportation and travel restrictions ▪ Infectious disease plan development, implementation, exercise ▪ Flexible schedule options ▪ Updated sick leave, administrative leave policies 	<ul style="list-style-type: none"> ▪ City/county ordinances on building standards—spacing in public spaces ▪ Public transportation standards (e.g., cleaning, occupancy limits) ▪ Development of a long-term strategy for managing public health and well-being in public spaces 	<ul style="list-style-type: none"> ▪ Guidance for access to, phased reopening of public lands, parks and recreation areas ▪ Strategies to protect habitats, limit wildlife trade ▪ Campaigns to include nature as part of healing from collective trauma
Economic and resource	<ul style="list-style-type: none"> ▪ Personal subsidies ▪ Unemployment benefits ▪ Loan/rent forgiveness ▪ Disability benefits ▪ Medical insurance ▪ Tax incentives 	<ul style="list-style-type: none"> ▪ Small business loans ▪ Paycheck protection program ▪ Family/child care policies and assistance ▪ Increased funding and flexibility for nutrition assistance programs, school meals, food banks, pantries ▪ Economic assistance (e.g., flexibility in crop insurance) for small agricultural producers, farmers, and ranchers 	<ul style="list-style-type: none"> ▪ Ensuring a resilient supply chain for disinfectants, masks, other necessary materials 	<ul style="list-style-type: none"> ▪ Loan and grant programs to fund nature-based feature improvements ▪ Reduced fees for use of parks and recreation lands ▪ Support for park upgrades and nature-based tourism economies

The framework supports a systems approach to identifying, prioritizing, and undertaking interventions. As a planner using the framework, consider:

- Ways to prioritize interventions targeting the highest-risk activities and places or most at-risk populations.
- What, if any, secondary consequences exist when implementing the interventions.
- What education is needed to ensure people implement and use the non-medical interventions safely and effectively.
- How interventions work in concert with, or contrary to, one another (e.g. installing a plexiglass barrier may reduce the need for face shields).
- How undertaking non-medical interventions might alter the effectiveness of MCMs.
- How interventions may need to change over the course of the pandemic—e.g., allowing low-risk activities as well as preventing high-risk situations.
- How scientific research is developing and changing ways to implement the interventions.
- What, if any, costs and benefits of interventions and unintended consequences are important when choosing non-medical interventions.

Additional Resources

Please check the following Federal COVID-19 webpages, in addition to the websites for relevant state and local authorities and private sector organizations, for additional resources and to ensure access to the most recent interventions, developments, and guidance:

- Coronavirus.gov: www.coronavirus.gov
- Centers for Disease Control and Prevention (CDC): www.cdc.gov/coronavirus/2019-ncov
- CDC Guidance on Use of Cloth Face Coverings to Help Slow the Spread of COVID-19: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/diy-cloth-face-coverings.html>
- FEMA COVID-19 Response: www.fema.gov/coronavirus
- FEMA Continuity Resource Toolkit: www.fema.gov/continuity-resource-toolkit
- FDA COVID-19 Response: <https://www.fda.gov/emergency-preparedness-and-response/counterterrorism-and-emerging-threats/coronavirus-disease-2019-covid-19>
- U.S. Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response: <https://www.phe.gov/emergency/events/COVID19/>
- U.S. Department of Homeland Security (DHS): <https://www.dhs.gov/coronavirus>

- U.S. Department of Homeland Security (DHS) Cybersecurity and Infrastructure Security Agency (CISA): www.cisa.gov/coronavirus (Note: The Joint Cross Sector Council is also currently working on sector specific agency recovery options for consideration.)
- U.S. Department of Homeland Security (DHS) Science and Technology Directorate(S&T) Master Question List for COVID-19 (caused by SARS-CoV-2): Information for Government Decision Makers on what is known about the virus: <https://www.dhs.gov/publication/st-master-question-list-covid-19>
- U.S. Department of Homeland Security (DHS) Science and Technology Directorate(S&T) SARS-Cov-2 Predictive Modeling Tools for Decay of the Virus That Causes COVID-19: <https://www.dhs.gov/science-and-technology/sars-calculator>
- U.S. Department of Labor: www.dol.gov/coronavirus
- U.S. Department of Labor, Occupational Safety and Health Administration: www.osha.gov
- U.S. Department of Transportation: www.transportation.gov/coronavirus
- U.S. Environmental Protection Agency: <https://www.epa.gov/coronavirus>
- U.S. Small Business Administration: www.sba.gov/disaster-assistance/coronavirus-covid-19