

Sustaining Essential Health Care during COVID-19: A Toolkit for Local Leaders to Adapt Health Services in Low-Resource Settings

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MANAGEMENT SCIENCES FOR HEALTH

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LIST OF ACRONYMS

CHW	community health worker
COVID-19	coronavirus disease 2019
ICU	intensive care unit
IPC	infection prevention and control
MSH	Management Sciences for Health
NGO	nongovernmental organization
PPE	personal protective equipment
PUI	patient(s) under investigation
RCCE	risk communication and community engagement
SARS-CoV-2	severe acute respiratory syndrome coronavirus 2
SOP	standard operating procedure
STOP AI	Stamping Out Pandemic and Avian Influenza
USAID	United States Agency for International Development
WASH	water, sanitation, and hygiene
WHO	World Health Organization

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EXECUTIVE SUMMARY

THE PURPOSE AND AUDIENCES OF THIS TOOLKIT. The toolkit was developed to assist local leaders to respond to a surge in health care needs that threatens to overwhelm the system. The tools focus on mitigating the spread of the illness, transitioning to a triage-based approach to care, and ensuring access to essential non-pandemic care.

THE ORGANIZATION OF THIS DOCUMENT. The toolkit is organized into three parts: (1) a preliminary section of guidance and background, (2) the three tools listed below, and (3) the nine worksheets listed in the table of contents. The tools are:

- Tool 1: Mitigation Interventions
 - The various mitigation interventions and the benefits and unintended consequences of implementing them
- Tool 2: Maintenance of Essential Health Services
 - A process to identify and plan for the continuation of essential COVID-19 and non-COVID-19 services
- Tool 3: Triage (Surge) Planning
 - An approach to allocate health care resources to maximize outcomes

With proper attribution (see below), MSH is happy to make this toolkit freely available for use or partial use by health managers, leaders and other interested actors. We would love to hear back from you about your experience with the toolkit, how you may have used it, adapted it or built on it, and what we can improve in the next edition. MSH also stands ready to provide assistance and advice on how to use the toolkit during the current COVID-19 pandemic, or to tailor it to future pandemics. Please contact Elke Konings, MSH's Sr Director of Pandemic Preparedness and Response, at Ekonings@msh.org.

When using or adapting this toolkit, please reference the original toolkit using the following citation: Sustaining Essential Health Care during COVID-19 - a Toolkit for Local Leaders to Adapt Health Services in Low-Resource Settings. Management Sciences for Health, 2021.

GENERAL GUIDANCE

INTRODUCTION

This toolkit aims to assist local leaders in maximizing their local health care delivery in a way that efficiently responds to the new needs presented by SARS-CoV-2 while continuing to provide essential non-COVID-19 services. In particular, the toolkit provides a conceptual approach to allocating scarce resources to maximize health care capacity and capabilities of the local area and includes worksheets that facilitate appropriate planning and actions.

The planning and actions focus on activating an emergency response to surges in COVID-19 cases at the local level. An increase in the number of COVID-19 patients necessitates a rapid yet orderly transition from what is often a baseline of limited resources and unmet needs to a health care system that can expand to care for a sudden surge of highly infectious patients while avoiding excess mortality and morbidity from nonepidemic causes. The transition must respect the dignity of patients, protect health care workers, address the needs of vulnerable populations, reflect local cultural and religious practices to the greatest extent possible, and save as many lives as possible in an equitable manner.

Given the vast differences in the pre-existing conditions of local areas within and between countries, as well as the varying impacts across populations of the virus itself, this toolkit does not attempt to project impact scenarios quantitatively. Instead, it draws on existing evidence about possible scenarios to guide local leaders in the response. Mathematical and epidemiological modelers and global experts will continue to adjust their projections based on the evolution of the pandemic. We encourage local leaders to both follow these updates and continuously use their own local evidence and experience to revise their plans accordingly.

The big value of this toolkit lies in the concepts underlying the response plans. These concepts center around the transition of health care delivery to maximize the number of lives saved through mitigation interventions, the maintenance of essential health services, and the use of a triage-based plan for health services delivery. As such, the toolkit does not provide detailed technical guidance on response activities, which may be found on WHO, CDC and other websites.

This toolkit has been adapted from a larger toolkit developed to prepare and respond to an influenza pandemic. Many of those tools are applicable to the SARS-CoV-2 pandemic and are available from MSH.¹ This toolkit focuses on COVID-19; its scope is limited to response at the local level, and, specifically, the changes in health care delivery that lead to the best outcomes for the local population.

¹ Management Sciences for Health and partners, *Leadership during a Pandemic: What Your Municipality Can Do* (Medford, MA: MSH, 2013). Funded by the US Agency for International Development (USAID) under the STOP AI (Stamping Out Pandemic and Avian Influenza) Project. Available from: <https://www.msh.org/resources/leadership-during-a-pandemic>.

The toolkit thus focuses on five areas:

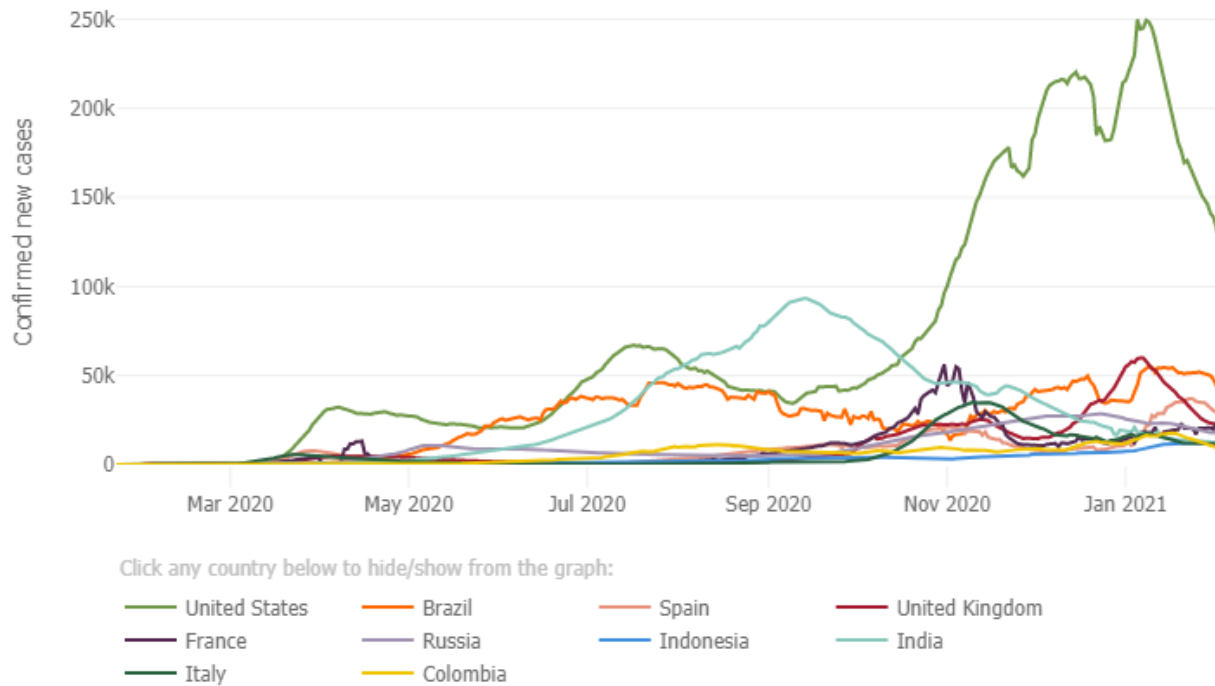
1. Applying best practices of effective leadership and coordinated management
2. Using a health systems approach that engages communities, civil society, health facilities, government, and the private sector
3. Planning to minimize the SARS-CoV-2 health impact and/or improve delivery of care
4. Planning to maintain essential health services for both COVID-19 and non-COVID-19 patients
5. Using triage methodology to reconfigure the delivery of health care to maximize saving lives

Many resources available for additional guidance on these and other technical areas needed for a COVID-19 response, which local leaders need to consult regularly. National COVID-19 preparedness and response plans and national policies address these technical areas comprehensively. For example, they include the critical areas of surveillance, testing, or contact tracing, clinical guidance about case management, and considerations related to personal protective equipment and other supply chain challenges. Local leaders are advised to follow global and national technical guidance, policies, and protocols.²

BACKGROUND

The experience to date with COVID-19 has been one of persistent global impact accompanied by unanswered questions, revised models and epidemiological features, and innovation. Most countries are moving through a rolling series of surges of cases and deaths that resemble a mountain range. What we see to date is a “pandemic period,” characterized by multiple peaks and valleys (Figure 1). Within countries, these ranges occur at different times, heights, and durations, at the subnational and local levels, and become aggregated into a single national graph. When we look closely, we see that within a particular country or province, local areas can be at different phases, some just beginning to see cases, some with a sharp peak and high case rates, and some that are managing to lower their cases after instituting containment and/or mitigation policies. Many variables come into play: the risk factors of the locality, vulnerability of the population, presence of strong leadership, degree of public trust and cooperation, and the public health and health care system’s capability and capacity to manage the situation. In all cases, the ability to predict what the next few months will bring is often more a matter of informed best guesses than models.

² World Health Organization, Emergency: Coronavirus disease (COVID-19) pandemic [webpage] (Geneva, Switzerland: WHO, 2021). Available from: <https://www.who.int/>. Accessed Jan. 26, 2021. See in particular the section entitled Country & Technical Guidance.

Figure 1. COVID-19 is characterized by multiple peaks and valleys

Source: Johns Hopkins University & Medicine, Coronavirus Resource Center, <https://coronavirus.jhu.edu/data/new-cases>, accessed on Feb. 4, 2021

Countries continue to do the important work of collecting and aggregating the data, following the latest scientific research, sharing information and lessons learned with others, and leading their countries through a panoply of imperfect but helpful prevention, containment, mitigation, and case management strategies. Some of those strategies result in fewer cases and deaths but lead to job losses, disruptions in livelihoods, and vast social impacts, such as closed schools and bans on in-person religious services. The leaders at the local level are charged with sustaining their populations through these difficult times. They implement and enforce the response policies and actions and allocate their scarce resources to cope as best they can with the many challenges this pandemic presents, while calming the public and maintaining their trust.

A skilled leader is necessary to balance the need to confront the threat to the public's health, while at the same time working to protect the public from the economic hardship that is an indirect impact of many of the health mitigation strategies. Local leaders are the link between national and international scientific guidance and the needs of the local population. When the national government supports the difficult role of the local leader, the public is more likely to trust and comply with those decisions. However, we have seen many examples of local leaders who have had to institute measures that carry significant negative economic and social impacts for the local population and are not supported by national messages or policies. In these instances, the successful leaders are the ones who have, and maintain, the trust of the people they serve.

KEY CONCEPTS OF PANDEMIC PREPAREDNESS AND RESPONSE

Our approach is a conceptual one. We seek to support local leaders' ability to protect and sustain their population during this pandemic period, whatever the number of cases is in their area. This toolkit presents strategies to minimize the impacts of COVID-19 and coordinate and maximize the care and treatment of patients through a rational allocation of resources. Therefore, local leaders must be familiar with the basic concepts of pandemic preparedness and response that will help them to understand the needs and priorities and focus on the most important actions in a systematic way.

As has already been discussed, one of the great challenges in combating this pandemic is the tremendous diversity of experience. We are still improving our knowledge of the epidemiology and clinical course of this virus and the illness. Our ability to predict impacts is very limited and can lead to responses that waste critical resources, result in devastating indirect societal and economic impacts, and erode public trust in governmental and scientific leaders. The need to tailor the response to the local context cannot be overemphasized. The existing health care delivery capacity and capabilities, availability of personal protective equipment (PPE) and other commodities, presence of particular vulnerable groups, and level of community support in the response must guide planning. The key for local leaders is to take all the available information and guidance, as well as their national plans, policies and protocols, and align them with their unique context.

Executive Leadership and the Response Management Team

Leading involves guiding people to the best possible outcome and uniting them through a common, clear mission and an inclusive approach

Addressing the urgent needs of the present is the work of management. You need to make immediate choices and allocate resources. The pace is fast, and actions are decisive. Leading, by contrast, involves guiding people to the best possible eventual outcome over this arc of time. Your focus needs to be on what is likely to come next and readying to meet it. That means seeing beyond the immediate to anticipate the next three, four, or five obstacles... You need to delegate and trust your people as they make tough decisions, providing proper support and guidance based on your experience while resisting the temptation to take over... The solution is to unite people in their efforts and goals as valued members of a cohesive team. This starts with a common, clearly articulated mission that ... is then animated through an inclusive leadership approach where each person understands how they can contribute—and that their contribution is recognized.

Source: Eric J. McNulty and Leonard Marcus, "Are You Leading through the Crisis ... or Managing the Response?" *Harvard Business Review*, March 25, 2020. Available from: <https://hbr.org/2020/03/are-you-leading-through-the-crisis-or-managing-the-response>. Accessed Jan. 26, 2021.

Among the many lessons learned by countries that have experienced large numbers of cases of COVID-19 is that effective leadership is absolutely essential for a successful response. COVID-19 asks a great deal of us. Unlike any prior events in our lifetimes, the pandemic puts every single individual at risk of harm. Our way of life has to change in ways that are uncomfortable and undermine our religious and societal practices. Households must try to stay safe while coping with food shortages, decreased wages, and isolation from loved ones and community.

Local leaders are the visible and tangible decision-makers behind the difficult decisions that affect people's everyday lives. Their communities will hold them accountable during and after the pandemic. Their success depends on their ability to lead.

To be effective, these leaders must be trusted by the people they are responsible for, understand what is needed, and have the authority to make the difficult decisions that will be needed to protect and sustain their population throughout the pandemic period. As we will see in the section on mitigation, many of the measures that are needed to stop the spread of the virus can cause further pain and suffering from lost income, closed schools, and the inability to gather with family, friends, or congregations. There is constant tension between protecting the public's health and restricting life and commerce. When large groups of people are afraid of becoming sick, lack their basic needs, and feel a sense of suffering and despair, they are likely to respond in ways that can cause more panic, civil unrest, and even more deaths. A calm and cooperative public, on the other hand, will work with local authorities to keep themselves and others in their community as safe as possible.

While the ideal situation is strong national leadership with clear guidance and support of local implementation, COVID-19 has presented many variations, including weak national leadership but strong local leaders who have been left to respond on their own. Some aspects of the response, such as procurement and distribution of large quantities of PPE and income replacement for small businesses, depend on the central government. In the end, when we catch our breath and look back at this pandemic, we will see the critical roles played by local leaders who, because of or in spite of their country leadership, managed to inform, calm, and engage their communities in the battle against SARS-CoV-2 to save lives and reduce suffering.

When it comes to protecting and sustaining a population through the pandemic period, however, there needs to be a single, clearly identified local leader who will serve as the executive leader. Executive leaders are those leaders who are vested with the authority to make the key decisions needed to protect a population during a health emergency. They have the authority to create policy, activate and deactivate response plans, and mobilize resources. They are needed at all levels of government during a response, including the local level. They can be representatives of government, such as health ministry staff, or elected or appointed politicians, such as mayors, or nongovernmental persons. At the local level, leaders often are trusted persons to whom the community turns for advice, such as clergy, teachers, and doctors. Whoever the executive is, this person will be responsible for the very difficult decisions and actions that may be needed, including those that result in negative consequences for the population. For example, cancelling events and closing schools and businesses to limit the spread of the illness can result in large economic losses and should be reserved for circumstances in which the benefit of using those measures is greater than the harm they may cause.

The executive will need to work closely with a group of response managers, the Response Management Team, or whatever the local area calls the group of multisectoral technical experts that will manage the response. Once the actions that are needed have been identified, this team will implement and monitor the activities, as well keep the executive leader fully informed and advise him/her on policy and actions. Frequent communication will be needed to scale activities up or down, or add new activities, as the situation evolves.

The priority leadership actions are as follows:

- Establish a Response Management Team with clear roles and responsibilities, up-to-date contact information, and a real-time planning and response process. Make sure to include needed technical areas and skills (e.g., case management, finance and administration, and logistics). *Use Worksheet 1 to establish and organize your response team.*
- Develop a mitigation plan. *See Tool 1.*
- Develop an essential services plan. *See Tool 2.*
- Develop a triage plan. *See Tool 3.*
- Develop a process to continually assess the situation and revise and update response plans as needed.
- Communicate with the public to prevent panic, inform them, and engage their cooperation. *Use Worksheet 2 to review communication needs.*
- Keep government running to ensure that basic services and goods will continue to be provided to people in your local area.

Whole Systems Approach

“Whole systems” refers to the consideration of all health care capacity (both facility and community based, both public and private) and all the health care needs of the population, including both COVID- and non-COVID health care. It extends the concept of health care delivery to the community and enables planning for the support and care of those in facilities as well as home care.

A whole systems approach during the pandemic has two major components:

- **Settings of care:** There is a broad spectrum of COVID-19 infection. Up to 40% of cases may be asymptomatic, yet capable of transmission. Then, among the symptomatic cases, there is a range of mild to severe illness. When taken as a totality, a pyramid of care structure includes the full spectrum, from mild cases in the community to hospitalized cases in the intensive care unit (ICU). Careful planning is needed to determine how to best allocate facility beds and then expand the capacity to care for others in the community. Some local areas may need to set up alternate care sites in community spaces, such as closed schools, college gyms, churches, or mosques. The determination of where and how to care for the full spectrum of patients is one of the most important planning aspects at the local level.
- **Care for both COVID-19 and non-COVID-19 patients:** As the health system is stretched with a large number of infectious COVID-19 patients, access to care and willingness to seek care for other causes of illness and injury may diminish. This can lead to excess morbidity and mortality from lack of acute care for such things as traumatic injuries, heart attacks, and complicated deliveries, as well as the consequences of deferred or disrupted care, such as delaying routine vaccination. Essential health services must be maintained to prevent these outcomes.

Proportionality and Conservation of Resources

Proportionality refers to the balance between the need to respond to the situation and the negative indirect impacts of some of those actions. For example, decisions about who gets a hospital bed or the allocation of PPE should be proportionate to the need, the availability of the resource, and the various impacts of that decision. If there is capacity at the health facilities, it would be disproportionate to refuse admissions and leave beds empty. Policies and protocols need to be constantly assessed to ensure they are proportionate to the need and support the objective of protecting and sustaining the population through a crisis.

Conservation is the deliberate and ongoing attempt to use resources only when and where they are needed. Because most areas will face surges that surpass their capacity and capabilities, deliberate decisions must be made to ensure that limited resources are conserved and not wasted. Cohorting COVID-19 cases within a facility not only helps to limit spread within the facility but also conserves PPE, as the health care workers don't need to change PPE with each patient encounter.

Ongoing assessment and adaptation to the situation will help avoid exhausting human resources and PPE and other commodities. Community support can be eroded as well, as the population suffers the indirect impacts of mitigation interventions without a clear indication of the need for them. Therefore, an intricate and ongoing interaction between the current challenges and the available resources is needed so that the response is proportional to the needs, and scarce resources can be conserved for when they are most needed.

Allocation of Resources by Level of Care

COVID-19 causes illness across a range of severity. Most people who become infected have a mild course, and most of them can be cared for at home. Generally speaking, only 20% of cases are expected to require hospital-level care, and 3%-4% of those will require ICU-type care. These numbers are likely to change from place to place, and over time, and local areas should estimate their own percentages. The percentages in each level of care will also depend on age, the presence of comorbidities, and other factors. It is important for local areas to consider their estimates for levels of care when planning the health care response.

- **Level 1: Unassisted home care.** Most COVID-19 cases are expected to be level 1 cases. These are the mildest cases, and most are expected to recover at home without complications. Level 1 includes both self-care and care by a family member or other available caregiver. These cases do not require outside assistance.
- **Level 2: Assisted home care.** Level 2 cases are uncomplicated cases that need the assistance of community resources, such as a trained community health worker (CHW), for their COVID-19 or other illnesses (e.g., tuberculosis or malaria). The most urgent needs of people falling into level 2 care will be oral hydration and the continuation of medications or other treatments for co-existing illnesses. People whose illness is not severe but who require assistance with the activities of daily living (such as bathing, doing errands, cleaning, cooking, child care, and securing food) while in isolation also fit into this level of care.
- **Level 3: Skilled clinical care.** Level 3 cases require care of moderate intensity by a clinically trained provider. Most of the cases that fall into this level can be cared for at home or at an alternate health care site in the community if nursing care is available.

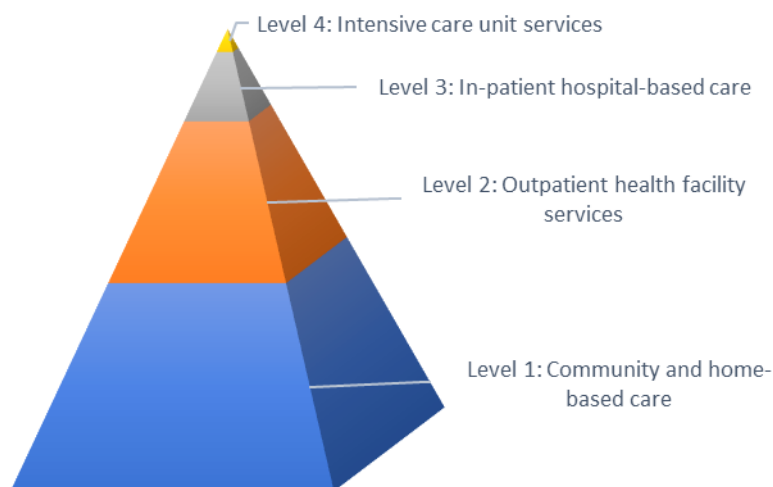
However, some of them will be too sick to be cared for in the community and will require hospital-level care. If there is no room at the hospitals, these patients can be cared for in alternate care centers. Examples of skilled care include examination to assess respiratory distress, intravenous hydration, oxygen, and respiratory treatments.

- **Level 4: Highest available level of care.** The most severe cases should be treated in a hospital if one is available. However, in areas with limited resources, these cases are not likely to survive even with the highest available level of care and may be assigned to receive *comfort care* rather than provided with skilled health care resources. Policies for level 4 care should be included in the plan for altered standards of care.

The Pyramid of Care

One way to think about the levels of care is to imagine them as a pyramid (see Figure 2), with level 1 cases at the base and level 4 cases at the top. Then, consider that people can move up or down the pyramid. Someone who is at home may get sicker and may need hospital-level care. Another who had been in the ICU may be able to recuperate at home. The goal of health response should be to try to “build the base” of the pyramid, that is, move people from one level to a lower one, and organize care to prevent patients from moving from one level of care to a higher one. The more patients at the base of the pyramid, the fewer resources will be needed—and the more patients who will survive the pandemic.

Figure 2. The pyramid of care



The Importance of Risk Communication and Community Engagement

Communities around the world have been called on to participate in the COVID-19 response in an unprecedented way. As the novel virus finds its way into local areas, everyone is threatened. This shared vulnerability combined with the severity of the threat has made it necessary to engage the general public in changes in their behavior to mitigate the impact.

Risk communication is an approach to communicating effectively during emergencies. Public health professionals and public information officers use this approach to provide information that helps individuals, stakeholders, and entire communities make the best possible decisions for

themselves and their communities. The ability to effectively engage the cooperation of the public will result in fewer deaths and fewer negative impacts from the threat. Leaders who get it wrong tend to spend valuable time and effort in the midst of a crisis trying to correct misperceptions and rumors, which can delay or diminish the response.

A great deal of research has been done to identify best practices for communicating risk and maintaining public calm. The goal is to impart information from a trusted source to the public to allow for effective prevention and response activities to keep the population safe. The key principles of effective risk communication are:

- **Be first:** The sooner you talk to the public, the better.
- **Be right:** Be sure you are providing accurate, up-to-date information from a trusted source.
- **Be credible:** Build trust and credibility by expressing:
 - Empathy and caring
 - Competence and expertise
 - Honesty and openness
 - Commitment and dedication
- **Address the situation as soon as possible and frequently:** Many people make the mistake of waiting for more information before speaking to the public. Silence from leaders is likely to be as upsetting as the concern around what is happening. Even just saying you don't have answers yet is better than silence. Honesty and transparency will build public trust and confidence.
- **Prepare to answer these questions:**
 - Are my family and I safe?
 - What can I do to protect my family and myself?
 - Who is in charge here?
 - What can we expect?
 - Why did this happen?
 - Were you forewarned?
 - Why wasn't this prevented?
 - What else can go wrong?
 - Where do I go to get care?

The goals of effective public communication

The best outcome requires a calm and cooperative public, which in turn is dependent on strong local leadership and effective public communication. Local leaders must be able to explain the actions taken to reduce deaths from the outbreak. This will be critical in reassuring the public to avoid the panic an outbreak can generate.

Use Worksheet 1 to identify roles and organize contact information for the response team.

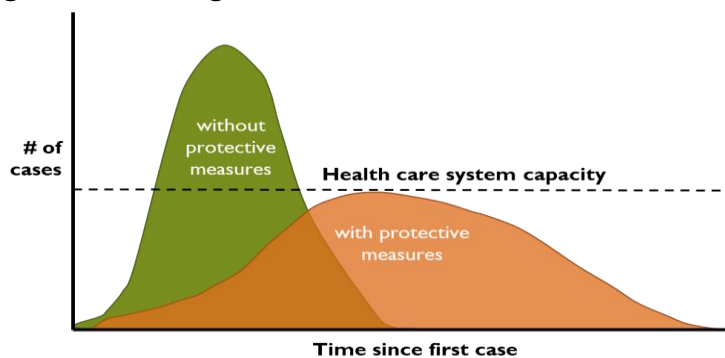
Use Worksheet 2 to review communication needs.

THE TOOLS

TOOL 1: MITIGATION INTERVENTIONS

Until vaccines and effective therapeutics to prevent or treat the disease or its complications are available, countries must rely on a menu of mitigation measures to lower the number of cases by interrupting community transmission and spreading the cases over a longer duration of the wave. This “flattening of the curve” is essential to protect the health care system from becoming overwhelmed, thereby saving lives. With fewer cases at a single point in time, the health system is better able to care for them. Until effective vaccines and treatments are widely available, these measures—called non-pharmaceutical interventions—are the most important tools that response leaders will have to reduce deaths and also protect the health workforce from exhaustion. Non-pharmaceutical interventions are not only available and accessible at the local level, but they are also very effective in limiting the spread of the disease and reducing the number of deaths (see Figure 3).

Figure 3. Flattening the curve



Source: WHO/Thailand, “Coronavirus disease 2019 (COVID-19) WHO Thailand Situation Report – 19 March 2020.” Adapted from CDC/*The Economist*. Available from: https://www.who.int/docs/default-source/searo/thailand/2020-03-19-tha-sitrep-26-covid19.pdf?sfvrsn=6f433d5e_2. Accessed Jan. 27, 2021.

Mitigation activities include both actions that individuals and households can take (e.g., frequent handwashing, wearing masks, and keeping a distance from others) and physical distancing policies that communities can enact (e.g., closing schools, having people work from home, and restricting public gatherings).

Community mitigation interventions may be determined at the national level, but they are implemented and managed at the local level. Not only do local leaders know the local impact of the virus, but they also know the high-risk populations, understand local customs and traditions, and are trusted by the public. Effective communication is extremely important in gaining the cooperation of the public with these measures, which will cause, at the least, inconvenience and interruption of life as usual.

The specific protocols and policies used to limit the spread of the disease will depend on the extent of the outbreak in the area and the phase of outbreak that area is in. The health sector will be responsible for recommending what mitigation interventions are necessary to limit the spread of the disease and reduce the number of deaths. However, the executive leader and/or other governmental authorities will be responsible for providing the resources and legal basis to implement the actions that are recommended and make the necessary declarations that enact and enforce them. These actions may involve quarantine and isolation, as well as closures of schools, businesses, and public transportation. The members of the Response Management Team will need to work very closely together to implement, enforce, and then discontinue the mitigation actions as the situation changes.

Individual-Level Actions

It is critical that the general population, as well as those responding to the outbreak, use these actions to protect themselves and prevent being the cause of transmission to another person:

- **Wash your hands frequently.** Good handwashing practices decrease the transmission of disease when shaking hands or touching surfaces such as door handles and light switches. Individuals should wash their hands frequently with soap and water. If soap and water are unavailable, alcohol-based hand sanitizers are good substitutes.
- **Wear a mask.** Two- or three-layer masks that cover the nose and mouth are generally recommended to be worn in public when a separation of 2 meters (6 feet) cannot be maintained. Some governments and/or businesses require masks at all time.
- **Keep your distance.** It is wise to avoid any contact with anyone who is ill. Due to the presence of asymptomatic spread, it is recommended that a separation of 2 meters (6 feet) between everyone be maintained.
- **Clean and disinfect often and as needed.** All items that may have come into contact with an infected person should be regularly and thoroughly disinfected and safely disposed of.
- **Isolate sick people.** Isolation of sick people prevents them from infecting those who are well. Unless the testing environment changes, most people with symptoms of COVID-19 will be instructed to stay at home and not come to a facility or other site for testing. Even if testing is available, the result may not be known for some time. All persons who are presumed to have COVID-19 should stay home for the infectious period, approximately 7–10 days after becoming sick. If staying at home isn't possible, they can stay in the home of a friend or relative, or a hotel or other location designated as an isolation space. Special efforts should be made to provide support for people who live alone and for families in which all the potential caretakers are ill. Isolation should be done on a voluntary basis, but governments should have plans in place to enforce isolation if it becomes necessary. The community can enlist volunteers to help arrange for the delivery of home care kits, food, non-epidemic medications, and other goods to the homes of the infected.
- **Quarantine exposed people.** Quarantine decreases community transmission by preventing people who have potentially been exposed from spreading the virus. Those who have had contact with a case must stay in quarantine for 14 days (voluntary quarantine) from the last contact with a known case. If an individual develops signs of the disease during the quarantine period, the person should be immediately isolated, and any contacts quarantined. Once the quarantine period passes, it is safe for individuals to resume their usual activities.

A quarantined person cannot go to work, shop at the market, or take care of their children. As with isolation, assisting these persons is critical to ensuring their compliance and maintaining their health.

Examples of individual and community mitigation actions

Actions that individuals can take:

- Wearing a mask
- Frequent handwashing
- Disinfection of anything that has come into contact with a sick person
- Keeping a 2-meter (6-feet) distance from others
- Individual isolation if positive or symptomatic
- Self-quarantine following exposure to a person who has tested positive for COVID-19

Actions that communities can take (physical distancing):

- Closing schools and businesses
- Restricting travel in and out of the area
- Restricting or prohibiting public gatherings
- Imposing voluntary or forced isolation and quarantine regulations

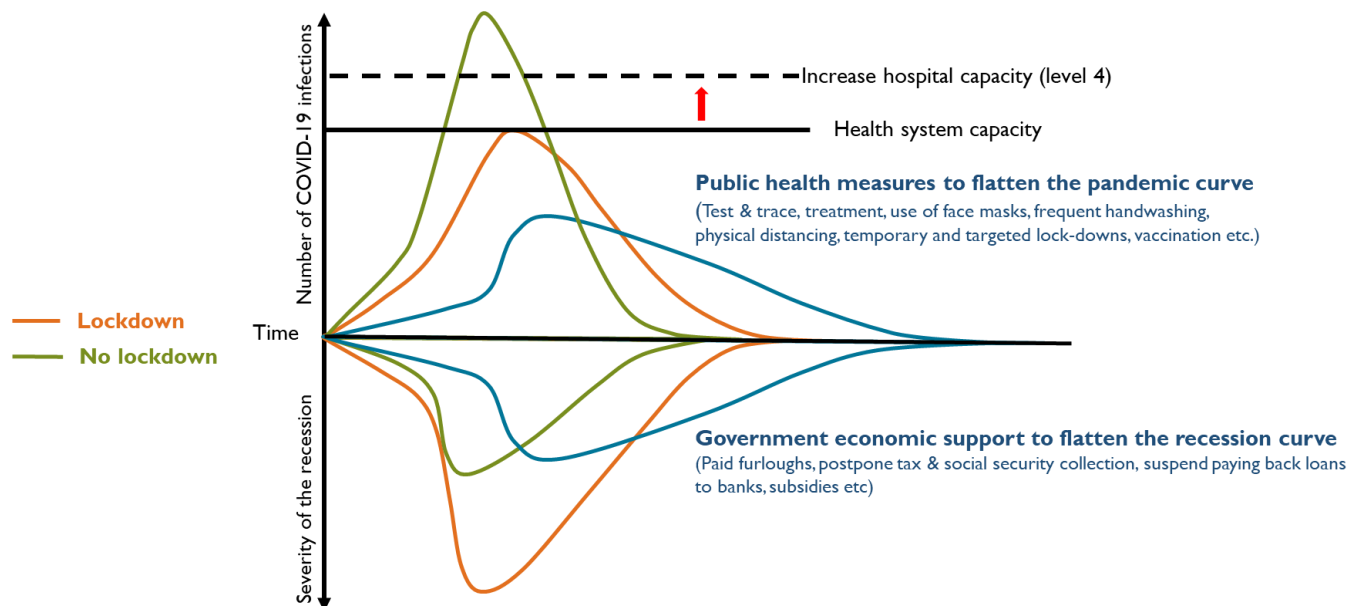
Community-Level Mitigation

Community mitigation is a set of actions that communities can take to help slow the spread of respiratory virus infections. The decrease in the number of people who will be sick at the same time prevents overwhelming of the health care system and allows for better care and better outcomes. Flattening the epidemic curve is especially important before a vaccine or treatment drugs becomes widely available. Each community is unique, and appropriate mitigation strategies will vary based on the level of community transmission, characteristics of the community and their populations, and the local capacity to implement strategies. When developing mitigation plans, communities should identify ways to ensure the physical, mental, and social safety and wellbeing of groups that may be especially impacted by mitigation strategies, including the health work force and individuals at increased risk for severe illness and death, such as the elderly, people who live in congregate settings, and people with co-morbidities.

It is very important to use these measures when they are needed but, at the same time, to avoid using them if they are not necessary. The potential gain and loss from community mitigation measures must be carefully considered before implementing them. All measures carry negative consequences, such as economic losses, disruption of community life, or violations of cultural or religious practices. **Each day of a severe outbreak will be a balancing act between taking actions to limit spread and paying the price for having done so.** For instance, closing nonessential businesses such as restaurants, retail stores, or factories, will slow the spread of COVID-19, but many people will lose income and may even slide into poverty. In the absence of widely

available vaccines, lockdown measures to decrease COVID-19 risks increase economic risks (see Figure 4). Nevertheless, public health and economic interests do and should not compete; they are in fact linked to one another: the economy relies on and needs a healthy workforce. It is therefore recommended that policymakers and political leaders use a “do whatever it takes” approach to both stimulate the economy and mitigate the health impacts of COVID-19. It is also critical that they develop local rather than blanket national plans for the use of physical distancing and other risk reduction policies that can adapt to a changing situation.

Figure 4. Lockdown measures flatten the curve and ease pressures on the health system, but they cause economic stress and deepen the recession



Source: Adapted by J. Konings and E. Konings from P.-O. Gourinchas, "Flattening the pandemic and recession curves," in *Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes*, eds. Richard Baldwin and Beatrice Weder di Mauro (London: CEPR Press, 2020).

To address the public health side, the following strategies can be used in one or more settings, alone or in combination with others, and may be scaled up or down as needed.

- **Close or reduce in-person attendance at schools and child care facilities.** Depending on the severity of the outbreak in your local area, authorized government officials may need to close schools and child care facilities to limit the spread of the disease. Although this virus has largely spared children, there have been deaths at all ages. While an influenza epidemic can be mitigated by closing schools and child care facilities by decreasing the spread of the disease among children—and also decreasing the risk of children bringing the disease home or infecting other members of the community—the experience to date with SARS-CoV-2 suggests that transmission among children and from children into the school is minimal. The teachers and staff at school are at higher risk than the students, in most cases. The decision to close schools results in significant disruption and loss of education. Parents who otherwise could work may need to stay home to care for their children. Depending on the situation in your country, the central government may make the decision about whether or

not to close schools, or they may leave it up to the local areas. Refer to your national and subnational plans, if available, and make sure you know the process to close schools if that is indicated. If schools close, it is important to communicate to parents that when schools close, children must stay home and limit their contacts with others to the greatest degree possible. Allowing children to play together or congregate socially while schools are closed will counteract the effect of closing the schools.

- **Implement physical distancing in the workplace.** Many businesses and shops may be closed, and the government may allow only essential services to remain open. Where the work allows and there is the technology to support it, many workers can work from home. Workplaces that remain open should allow for a separation of 2 meters (6 feet) between workers and require masks, frequent handwashing, and disinfection of surfaces. Other workplace strategies include:
 - Allow and encourage sick employees to stay home
 - Hold conference calls instead of face-to-face meetings
 - Separate people's desks, leaving at least 2 meters (6 feet) between each desk, and discourage close contact
 - Reduce or cancel all in-person meetings
 - Increase indoor ventilation
 - Modify work schedules to allow for day, evening, and night shifts
- **Prohibit large public gatherings.** Prohibiting large public gatherings (such as social events, religious services, sporting events, weddings, and funerals) is a measure being used by many countries to decrease transmission. These measures can result in loss of livelihoods, public fear and unrest, and the stoppage of basic services. This can create many hardships for people, and the public safety sector (police, military, civil defense) may be needed to assist in the enforcement of this intervention.
- **Provide alternative access to food, medications, and other goods.** Delivering necessities directly to homes helps prevent gatherings at markets and other public places and reduces spread of the disease. Delivery of food, medications, and other goods to homes supports the community effort to isolate and quarantine persons to prevent spread of the virus. If that is not possible, use smaller distribution sites with staggered pick-up times to prevent crowds from gathering. Many restaurants, pharmacies, and other businesses have been able to offer pickup or delivery only. This has allowed them to stay in business, and keep their employees, on a smaller scale.
- **Institute stay-at-home (or lockdown) measures.** Some countries have imposed severe mitigation measures, requiring that the population stay at home and go out only to get food or medications. In some cases, fines or imprisonment have been levied. Only essential businesses have been allowed to continue to function. In other places, some parts of the country have been locked down, while others with very small or no outbreaks have continued life as usual.

Which Interventions Should Be Used?

The individual-level measures should always be used. In fact, these are important for a number of communicable diseases that occur every day, such as diarrheal illnesses and other respiratory illnesses. However, the use of the physical distancing policies in the community and workplace

can result in mental health issues, public fear, inconvenience, and loss of income. These are the ones that should be used only when needed but used as early as possible when they are needed. No single intervention is sufficient on its own to limit the spread of this pandemic. It is most effective to use individual- and community-level interventions together. This is sometimes referred to as a “Swiss cheese” strategy—multiple layers, all of which have holes, with the hope that one layer covers the other layer’s holes.

A group of researchers from Imperial College London³ has defined three levels of mitigation interventions, with associated impacts on cases:

- **Low-level mitigation:** A low-intensity physical distancing strategy is recommended for areas with limited ongoing community transmission. It could include voluntary “shelter-in-place” orders for high-risk groups, bans on gatherings of more than 50 people, public advocacy for physical distancing and enhanced hygiene, possible school closures, travel advisories, and passive monitoring of those with symptoms. **This level of intervention is expected to decrease cases by 29%.**
- **Medium-level mitigation:** This level of mitigation would likely include several or all of these: community-wide “shelter-in-place” recommendations, shutdown of non-essential businesses, school closures, bans on gatherings of more than 10 people, passive monitoring of those with symptoms, and possibly closed borders or restricted travel. **This level of intervention is expected to decrease cases by 50%.**
- **High-level mitigation:** This would be a full lockdown, with forced community-wide home quarantine, full shutdown of all businesses, closed borders, and active monitoring. **This level of intervention is expected to decrease cases by 88%.**

The Importance of Risk Communication and Community Engagement

As one of the key concepts of the risk communication and community engagement (RCCE) approach, the need for effective public education and communication cannot be overstated. It is a key determinant in the success of any mitigation strategy. The understanding by the public that they have a responsibility to not only keep their own households safe, but also prevent being the source of spread to others, has contributed to the ability of leaders to impose restrictions on the public and local commerce, despite resulting in financial hardship and disruption of society. Many areas have CHWs or other nonprofit organizations or volunteers who can be powerful communicators to the populations with which they have relationships.

Use Worksheet 3 to identify major mitigation gaps.

Use Worksheet 4 to develop a mitigation plan.

³ Neil M. Ferguson, Daniel Laydon, Gemma Nedjati-Gilani, et al., Report 9: Impact of non-pharmaceutical interventions (NPIs) to reduce COVID19 mortality and healthcare demand. Imperial College London, March 3, 2020. DOI: <https://doi.org/10.25561/77482>.

TOOL 2: MAINTENANCE OF ESSENTIAL HEALTH SERVICES

Essential health services are the life-sustaining services that are absolutely necessary for the survival of a population. Without these services, sickness, poverty, violence, and chaos may result. The 2014-2015 Ebola outbreaks in West Africa provided an illustration of what happens when overstressed health systems fail to ensure the capability to continue core health services. While health workers and facilities struggled to care for Ebola patients, many with non-Ebola health needs were unable to access care. In fact, one-half of the deaths during the outbreaks were from non-Ebola causes. We have seen across the globe the power of the SARS-CoV-2 pandemic to overwhelm and disrupt systems. In addition to the illness and deaths from COVID-19, suffering and death occur as a result of non-epidemic illness and injuries, and there are indirect impacts such as exacerbated food insecurity, utility and communications outages, and interrupted commerce and loss of livelihoods.

It is important to separate basic services from essential services. On one hand, many services form part of what are considered the right of the population to have and/or the responsibility of the government to provide. These are the basic services that the government provides. Essential services, on the other hand, are those services that provide necessary care and treatment. If disrupted, lives may be lost, suffering will be increased, and deferred prevention and treatment can result in more advanced or severe illness than would otherwise have occurred.

The list of essential services should not simply mirror the basic services. A process to determine essential services is included in Worksheet 5. The value of determining essential services lies not only in gaining a clear understanding of how to allocate resources and prioritize activities, but also in determining what the **non-essential** services are. An important strategy to increase health care capacity will be to temporarily discontinue some or all non-essential services. The personnel, supplies, and equipment that support those services can then be deployed to support the response to the epidemic. For example, by discontinuing elective surgeries, health care professionals, bed capacity, and supplies are freed up to support care of epidemic (COVID-19) or non-epidemic patients in need of essential care. Training and equipping CHWs to assist in case detection and support of persons in isolation or quarantine extend the capacity of the health care system.

Examples of non-essential and essential health services

Examples of non-essential health services:

- Elective surgeries
- Well-patient checks
- Nutrition counseling
- Routine disease screening

Examples of essential health services:

- Immunization programs
- Labor and delivery
- Antenatal and prenatal care, including family planning

All health programs and services at every level of government should go through the process of identifying their own essential and non-essential services and personnel, as described below. The private sector should also be encouraged to participate in this planning and in the decisions and actions around the timing of limiting health care to essential services and of resuming other services.

Definitions

Essential goods are the food and other supplies, such as clean water, sanitation, medical supplies, and gasoline, that are needed to support essential services and sustain the population.

Essential workers are the personnel needed to maintain essential services.

Non-essential services are the services that can be temporarily suspended without resulting in increased mortality or significant morbidity. The personnel, offices, equipment, and supplies can be redirected to support the essential services. For example, nurses from a suspended non-essential program can be used to care for COVID-19 patients or an essential service.

The Process of Decision-Making and Selection of Essential Services

Without a clear understanding of the most critical needs of the population and the impact of shortages of essential goods, decisions are made ad hoc, and waste, fraud, and loss of resources can occur. Each local area can use the accompanying worksheets and the decision analysis tool to help them identify their essential and non-essential services and personnel. *Please use Worksheets 5, 6, and 7 to analyze and determine which services are essential and to make a plan for each service.*

The objective of an essential service plan is to determine in advance what the benefit, and the cost, would be of suspending services, and identifying the measures that are needed to implement the changes. A plan should be enacted **only** when needed. Depending on the specifics of a health emergency, there may or may not be a need to transition to an essential services plan. If the health care facilities have the capacity to continue all care safely and have the staffing and other support needed to deliver the services, there is no reason to suspend services. As is the case with mitigation interventions, there is a cost to the public's wellbeing when non-essential services are suspended. Leaders must work closely with the health system and local facilities to determine **if** and then **which** services can be safely suspended to free up capacity. The suspension of services can be done at once, or over time, with additional suspensions added as needed.

Some of the indicators of the need to adapt an essential service plan are:

- Staffing shortages
- Inadequate stores of PPE
- Lack of inpatient beds, isolation capacity, or ICU beds

Key Components and Considerations of the Essential Services Plan

Map resources and address gaps

Most health care services require infrastructure, personnel, supplies, and/or equipment. Many areas suffer from critical shortages of these during normal times, and the outbreak will further strain resources. The key here is to look for new and alternative resources. The temporary suspension of non-essential services should lead to the identification of additional space, staff, products, and policies. When you suspend a service, think about how you can redirect these four resource categories to fit your new needs.

Sources of personnel

Consider all possible sources of personnel—skilled and unskilled personnel from suspended non-essential services, retired physicians and nurses, medical and nursing students, volunteers, humanitarian agencies and other organizations in the area, and task shifting (that is, altered job descriptions that allow lower-level positions to assume more responsibility).

Identify dependencies

Very few essential services can be delivered without help from two or more sectors. For example, consider what it takes to set up an alternate care site to manage the overflow of COVID-19 patients. In addition to health care workers, medical supplies, and equipment, other sectors are needed to provide clean water, disposal of contaminated waste, food for patients and staff, transport of cases to the unit and dead bodies out of the unit, psychosocial support for all involved, and police protection. A multisector management committee allows for the cross-sector planning and implementation that will be needed. Too often, these dependencies are unrecognized and unplanned for unless deliberately searched for. An understanding of the dependencies of essential services is critical to transitioning care during a health emergency.

Planning and reviewing suspensions of services

One of the key planning concepts is to mount a response that reflects local conditions. Given the varying spectrum of caseloads that will occur over time, the suspension of non-essential services should happen only when needed, and for the shortest possible time in order to avoid increases in morbidity and mortality. Each service should be considered independently in terms of whether to continue or suspend it. Frequent reviews are needed to ensure that suspended services are resumed as quickly as possible.

Consider public reaction and the level of cooperation needed

Some actions may not be well accepted, and careful planning is needed to get the public's cooperation. Leaders need to be clear about why they are implementing an essential services plan and then do so in a way that maintains public trust. Leaders must, therefore, consider the following questions before making policy and other decisions:

- Will the public accept the actions taken?
- What rumors or misinformation could interfere with the plan? Who does the public trust?
- How can I use trusted leaders to help gain the confidence of the public?

- What does the public need to feel safe and protected to the greatest extent possible?

Determine unintended consequences and plan to mitigate them if necessary

Sometimes saving lives will result in greater hardships for the population. For example, providing care to sick patients in a closed school rather than a hospital may be difficult for the public to understand. Leaders should consider:

- Who will be harmed by the implementation of this action?
- What will be lost as a result of this action?
- How can I prevent as many of the unintended consequences as possible?

Once the essential service plans are completed, the local Response Management Team is responsible for training its staff to use the plan. Each person needs to know in advance if they are considered essential. If they are essential, they need to be trained on how to continue the services even when COVID-19 strikes, including who the alternate personnel are. Non-essential personnel need to be trained on what their roles and responsibilities will be if they are needed to support the essential services and functions.

Use Worksheet 5 to identify your essential services.

Use Worksheet 6 to assist with a decision analysis of health care services.

Use Worksheet 7 to develop a plan for each service.

TOOL 3: TRIAGE (SURGE) PLANNING

Triage is the process of determining the priority of patients' treatments by the severity of their condition or likelihood of recovery with and without treatment. This rations patient treatment efficiently when resources are insufficient for all to be treated immediately; influencing the order and priority of emergency treatment, emergency transport, or transport destination for the patient.⁴ The purpose of triage is to reorganize the delivery of health care to maximize saving lives.

Hospitals and other health care facilities may quickly become overwhelmed and can become unsafe places for care if contaminated by COVID-19 cases. The most critical initial decisions concern how to care for the COVID-19 patients, how to meet the other health care needs of the population, and how to best allocate available health care resources. The first step in making decisions about where and how to provide care is understanding that epidemics are dynamic, constantly changing situations. What works when you start to see cases may be very different from what is needed as the epidemic escalates. At the start of a wave, there may not be a need for triage. As more people get sick and supplies and human resources decrease, the time will come to implement triage. As cases begin to decline post-peak, the triage plan should be scaled back and eventually discontinued.

If COVID-19 threatens to overwhelm your health care system, health care triage is needed to:

- Provide lifesaving health care services for both COVID-19 and non-COVID-19 conditions
- Protect health care facilities and health care workers from contamination
- Allocate health care personnel and supplies to save the most lives
- Adapt to readily changing conditions

While the term triage is often used to describe the clinical assessment of patients as they enter a health care facility, that is just one part of a larger method of prioritizing care when resources are overwhelmed. Whether triage is used after a large mass casualty event, such as a plane crash or earthquake, or during an epidemic, the ability to prioritize scarce resources is needed to enable the system to safely scale up services. If done properly, triage will save lives.

Triage is not about withholding care from patients; it is about providing the best care to the greatest number of people. The goal of triage is to save as many lives as possible within the context of insufficient resources. Too often, many deaths that occur in these situations are attributable to non-epidemic causes. If all health care facilities and personnel are dedicated to the epidemic, care for non-epidemic morbidity and mortality such as malaria, heart attacks, safe deliveries, and major injuries will suffer. Providing the appropriate level of care in the appropriate setting, including supporting home care, while at the same time continuing essential health care services to non-epidemic patients, is the best way to prevent unnecessary deaths.

⁴ "Triage" [webpage]. In Wikipedia, Jan. 12, 2021. Available from: <https://en.wikipedia.org/wiki/Triage>. Accessed Jan. 27, 2021.

As with all disaster planning, special attention should be paid to care for the poorest and most vulnerable groups, the elderly, internally displaced persons, those with comorbidities, and others who may be at increased risk of disease and death. Public transparency about the need for and objectives of triage and public participation in triage planning and implementation will help ensure an effective response. Finally, **triage should be used only when it is needed and only in proportion to that need.**

The Role of Leaders and Response Managers in Triage

Local leaders and response managers will need to work together to develop the triage plan. A legal basis for the use of triage may already exist at the central, regional, or local level. If not, the national government will need to work with health-sector leaders to develop one. In any case, it is necessary to establish who has the authority to implement a triage plan.

Because the standard of care is directly impacted by this approach, careful consideration must be paid to weigh the intended benefit of the plan against its unavoidable consequences. The national government may have protocols in place to alter the standard of care when absolutely necessary. Those guidelines should govern the development of the local triage plan.

Local leaders should follow the situation daily and adjust the response as needed to ensure that triage is used only when needed, and in proportion to that need. For example, under a triage plan, patients that would normally be cared for in a hospital setting may instead receive care in a local school or other building adapted to provide a particular level of care. The caregivers may be health care workers from suspended non-essential services, or from other geographic locations, who are serving as surge personnel. In some cases, community volunteers may be helping. As hospital capacity becomes available, it is important to update the plan to make use of the added capacity.

Effective triage will require the public to be calm and cooperative, which in turn depends on strong leadership and effective public communication. Response leaders must be able to explain triage and why it is necessary to the community. You will also need to know whether and why alternate community care centers are needed, where they are located, and how to access them so that this information can be provided to the public and other authorities. This will be critical both in helping to prevent health services from being overloaded and in reassuring the public to avoid panic.

The Role of Hospitals and Health Care Providers in Triage

Hospitals and other health care facilities will face a number of challenges during a COVID-19 outbreak. They will need to provide care to a much greater number of patients than normal during a time when they may experience high rates of worker absenteeism. Hospital employees may be ill or may need to care for sick family members or children whose schools have closed. Therefore, at the same time that the number of people needing care increases, the number of people available to provide that care will decrease.

Health facilities need to protect both staff and the other patients from SARS-CoV-2 to the greatest extent possible. Separate treatment areas with separate care providers for COVID-19 patients may be necessary.

It is very important to remember that the non-pandemic needs for hospital-level care will continue during the pandemic. Hospitals must therefore prepare to increase their resources to surge capacity in order to continue to care for those who need it most. As the number of sick people overwhelms available resources, health care providers will need to allocate care efficiently. In this situation, only the very sickest, most critically ill patients who are likely to survive with hospital-level care should be admitted to hospitals. This means that many patients who would normally be admitted to a hospital will receive their care at another type of health facility. This will in turn affect other patients, who, during the epidemic peaks, will need to be cared for outside of the usual health care system, at home, or in community alternate care sites. As such, hospital capacity directly affects how and where patients will be cared for, necessitating the whole systems approach described earlier.

The Role of Community Health Workers in the Response to COVID-19

While most countries use either paid or volunteer CHWs to extend access to health care to communities, there is a broad range of programs. Whatever the type and extent of the CHW program in a country, these workers are valuable health care resources who should be considered when developing a response to a health emergency. CHWs can not only assist with home and community-based care or COVID-19 patients, but they can also deliver non-COVID essential health services. They know their communities and have their trust. They can be vital links to furthering health education and combating myths and misinformation. CHWs can assist in case detection activities and monitor and support households under isolation or quarantine. Personal protection, training, and supervision are needed to engage CHWs safely and effectively in the response. By doing so, countries and local leaders can develop surge capacity in their COVID-19 workforce, maintain essential community health services, and enhance an area's ability to disrupt transmission and to care for the ill.

Table 1. Potential roles for community health workers in the COVID-19 epidemic

Roles	Activities
Prevent	Educate communities about signs, symptoms, and transmission routes, as well as promoting personal preventive measures such as social distancing, hand hygiene, coughing/sneezing into elbows, and water, sanitation, and hygiene (WASH) interventions.
	Organize hand hygiene stations in communities and health facilities.
	Support, lead, or reinforce community- and facility-based infection prevention and control (IPC) measures, such as construction of triage areas and use of PPE (e.g., face masks, gloves, and gowns).
Detect	Support preparation of health systems and communities for the eventual introduction of COVID-19 vaccines in development, including outreach to high-risk groups.
	With supervision from nurses, identify signs and symptoms in community members, and support safe collection of samples in communities and health facilities and rapid sample transport to laboratories for analysis, thus reducing risks of nosocomial transmission.

Roles	Activities
Respond	Communicate rapidly and effectively to residents.
	Support self-isolation and monitor patients in the community while ensuring delivery of food, social, and medical support.
	Monitor patients for clinical deterioration and support rapid referral of individuals who require hospitalization, reinforcing links between the health system and communities.
	Support contact tracing, symptom reporting, and monitoring of contacts of COVID-19 patients to ensure access to testing and treatment for those who develop signs and symptoms.
	Implement or support disinfection of high-risk surfaces in communities using appropriate IPC supplies and procedures.
	Sustain routine primary health care services such as vaccinations and integrated community case management of young children with malaria, pneumonia, or diarrhea.

Source: S. Olasford Wiah, et al., Prevent, detect, respond: rapidly expanding healthcare teams through community health workers in the fight against COVID-19. Unpublished.

Plan Components

The triage plan must include the allocation of health care workers and essential goods, settings of care, the continuation of non-epidemic essential health care services, and psychosocial support. Local customs and beliefs should be respected to the fullest extent possible. To develop a triage plan, the following five steps are involved. *Please use worksheets 8 and 9 to assist with implementing these steps.*

Step 1: Assess the likely need for triage

Triage planning should only be considered when the need for lifesaving care is greater than the availability of resources. Those resources include beds, staffing, PPE, and supplies.

Step 2: Identify available resources

Because the use of triage assumes that health care resources are insufficient or overwhelmed, local areas should plan to maintain all essential health services identified in the previous section and consider suspending some or all of the non-essential services. Health care workers, vehicles, and supplies can then be redirected to support either epidemic care or non-epidemic care. This allocation will need to be regularly reviewed and adapted to changing conditions.

Use the results of the essential service planning tool to identify the non-essential resources (the staff, space, and supplies that are aligned with the non-essential services) that could potentially be part of the response. As needs and available resources will change dynamically throughout the pandemic period and into recovery, it is important that there be a process to continually assess and track the availability of resources.

Resource tracking should address the following categories:

- **Space:** All hospitals, clinics, health posts, private clinics and offices, traditional healers, and any other health care delivery sites should be identified. In addition, community spaces that could serve as alternate sites of care, such as closed schools and empty buildings, should be considered. Hospitals should review their surge plans and look for additional bed

capacity in unused rooms and areas. When indicated, canceling elective admissions and procedures will open up capacity.

- **Staff:** Identify all human resources involved in patient care (both skilled and unskilled, essential and non-essential), community and disease prevention staff, logistics and administrative support personnel, and volunteers.
- **Products (medicines, equipment, supplies, and other):** Inventory medical supplies, such as masks, gloves, oral and intravenous fluids and medications, and oxygen; testing equipment and supplies; and non-medical supplies, such as gasoline, refrigerators, computers, and communication devices.
- **Policies, including norms and standards:** Facilities should develop policies to guide the changing situation. A clear decision-maker at each facility will need to make case-by-case decisions about admissions, discharges, and levels of care. In addition, changes in scope-of-practice policies and other changes in the standard of care may be needed to address key shortages. Local areas should consult with the Ministry of Health to develop these alternative protocols and seek guidance on liability and credentialing protocols to allow for the recruitment of out-of-area or retired health care providers. A process to recruit, train, and track volunteers is needed.

Step 3: Allocate resources rationally

When health care resources are overwhelmed and the population suffers from a lack of care, difficult decisions need to be made. During these times, it is important to consider the best use of resources. For example, most people will have a mild illness, but others experience some dehydration and may develop severe pneumonia that requires hospital-based care. A few will develop a rapidly fatal illness. Dedicating scarce health care resources to those who are most likely to die even with the highest level of care available may result in others dying who could have been saved. A focus on providing general support (non-health care) to those sick at home and providing IV hydration and antibiotics to those who need them either in home care or in an alternate care site may save many more lives. Response leaders will need to make decisions about the allocation of resources based on their own situation and the guidance from international and national experts.

Below are suggestions for planning the rational allocation of resources to each level (Figure 2):

- **Level 1 care:** No resources should be allocated for these patients. These patients will have a mild form of the disease and will recover quickly without any assistance. Dedicating resources to level 1 patients during a time when resources are overwhelmed will reduce the care available to those that need it for survival.
- **Level 2 care:** These patients are well enough to remain at home, but they need some care or assistance. They may need deliveries of food or medications for non-COVID-19 illness, such as malaria or diabetes, assistance with oral hydration, clinical assessment to ensure their illness is not advancing and will require a higher level of care, or help with general nutrition, hygiene, or other daily activities. The objective of providing care to level 2 patients is to keep them as healthy as possible. These patients should be able to survive the pandemic with minimal assistance. It is recommended that the least-skilled personnel, such as community volunteers, be used to provide this care.

- **Level 3 care:** This is the most difficult level of care for local areas to provide. These patients have a serious form of COVID-19 and could die if care is not provided. The most frequent and important care that will be needed is intravenous hydration and, if possible, oxygen. Skilled care providers should be used for these patients. However, you may need to plan for alternate care sites for these patients to maximize the use of the skilled personnel. Schools and other municipal buildings that are used as shelters in other types of disasters could be used as alternate care sites.
- **Level 4 care:** While level 4 patients are those that would normally be cared for in a hospital, or the ICU, if resources were available, many will likely die of the disease at home without ever reaching a health care facility. In fact, a triage plan for level 4 should assume that there will not be room for the vast majority of these patients in health facilities, and decisions about referring patients for the highest level of care available should be based on the likelihood that the patient can survive the disease. Those level 4 patients that are almost sure to die even with the highest level of care should be triaged to receive comfort care at home or at an alternate care site (where they can be treated with dignity and may receive mental health support, pain control, child care, grief counseling, etc.). Again, it is important to re-assess the availability of care on a frequent basis. As the number of COVID-19 cases decreases, more patients will be able to be referred for facility-based palliative care.

Allocating resources rationally: an example

A nurse sent to a patient's home to administer intravenous hydration would need many hours to care for just one patient. However, a school or other public building could be used as a temporary, surge care site for a number of patients. Then that one nurse could provide intravenous hydration or other care to many patients in the same amount of time it would take to care for a single patient in their home. This is a much more efficient use of the nurse and will result in many more lives saved.

Step 4: Plan for the settings of care

The plan for where to care for COVID-19 and non-COVID-19 patients will be a daily balancing act between the capacity of the system and the numbers and types of cases. It should reflect the most up-to-date case management information and the currently available resources.

Determinations about settings of care and case management are very challenging, as asymptomatic or pre-symptomatic persons can transmit the virus. Therefore, without a rapid and accessible test, there is always the risk of COVID transmission within a health care setting. Testing is limited in most countries, and, even when testing is available, results often take days to weeks. Some countries have designated certain facilities to be all COVID-19, while others have specific areas of a facility where COVID-19 patients are admitted and isolated from other patients to the highest degree possible. Until rapid point-of-care testing becomes a reality, it will be difficult to tell a COVID-19 patient from patients with symptoms of other respiratory illnesses. A patient who presents with symptoms suggestive of COVID-19 but for whom a test result is unavailable or unknown will be considered a patient under investigation, or PUI. On one hand, if a PUI who ultimately tests negative is admitted to a COVID-19 ward, they will likely become infected. On the other hand, if a PUI is admitted to a non-COVID unit and then tests positive, there is the risk of transmission to others. We still have much to learn about best

practices and countries must stay up-to-date on the latest recommendations for testing and case management. Until rapid tests are available, local epidemiological information and individual history (e.g., exposure history, other history, and community-level spread of COVID-19) will remain an essential part of triage for PUI.

Home care. Because the use of triage assumes that health care resources are, or will become, overwhelmed, it will be necessary to plan to provide as much care as possible to patients in their homes. For the majority of level 1 and 2 COVID-19 cases, home care is the best option until or unless they develop severe dehydration, shortness of breath, or other symptoms requiring hospital-level care. To prevent overwhelming hospitals and contaminating facilities, the public should be directed to stay at home and care for themselves. Education is needed about how to protect other household members, and communities may need to organize a program to provide food, medical supplies, and other essential goods so that the patient and caregiver can remain at home. The most urgent common needs of patients in home care are likely to be oral hydration, nutrition, and the continuation of medications or treatment of co-existing illnesses.

Hospital or other health care facility. Ideally, hospitals will have plans already in place for the following:

Essential services and personnel

- Maximization of capacity by opening up additional beds within the facility, discharging all who can be discharged, and canceling elective surgeries and admissions
- Isolation of infectious patients
- Strategies to prevent contamination of the facility (IPC)
- Provision of PPE and PPE training for health care workers

If such plans do not exist, hospitals should quickly address these areas. Best practices and protocols for managing hospital surge, including strategies to deal with shortage of PPE, are available on the WHO's website and other websites.⁵

COVID-19 treatment unit (alternate care site). Having a dedicated care site for COVID-19 patients may be recommended. It keeps the cases isolated from the general hospital population, allows health care resources to be maximally effective, and keeps health care facilities available for the delivery of essential health care services to non-COVID-19 patients. These treatment units can be set up in any available and appropriate location, such as a school, church, or other building. Setting up these treatment units will require a great deal of planning and support from the response leaders and communities for supplies, equipment, staffing and other patient care needs, such as meals and laundry.

⁵ Centers for Disease Control and Prevention, Optimizing Personal Protective Equipment (PPE) Supplies [webpage], updated July 16, 2020, available from: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html>, accessed Feb. 8, 2021; WHO, Hospital Preparedness for Epidemics, 2014, available from: https://apps.who.int/iris/bitstream/handle/10665/151281/9789241548939_eng.pdf, accessed Feb. 8, 2021.

Step 5: Plan for altered standards of care

Emergencies like the COVID-19 pandemic that can overwhelm the health system may necessitate altered standards of care, especially when the normal standards of care can no longer be applied equitably and attempts to adhere to them may cause more harm than good. Altering the standards of care is, however, a measure of last resort. Local leaders should consult with the national government as they develop their plans for adopting altered standards of care.

Consider the legal and ethical implications of triage

Legal protections for health care providers and volunteers who implement triage vary from country to country. Local leaders need to review their legal framework and involve the national government in any new regulations, policies, protocols, or planning.

Task shifting and task sharing

Critical to extending health services in the face of scarce resources is allowing less skilled personnel to assist in the response through task shifting. While this is a fundamental need in a disaster, local areas need to address any laws, policies, and/or protocols to support it. Another strategy is to allow health care workers from non-impacted areas or other countries to assist. Governments may need to provide a process to credential visiting professional staff.

Other considerations

Other considerations for altered standards of care may include the following:

- Allocation of PPE, oxygen, and ventilators
- Staffing ratios
- Volunteers
- Experimental treatments

Use Worksheet 8 to plan for the resources for the levels of care.

Use Worksheet 9 to identify possible community care sites.

WORKSHEETS

WORKSHEET I: RESPONSE MANAGEMENT TEAM

- Use this worksheet to maintain up-to-date contact information for all COVID-19 response team members.
- Adapt the table to the number and type of team members.

PART A: COVID-19 Response Management Team Contact Information

NAME OF LOCAL AREA: _____				
Name of Team Member	Role	Sector	Title	Phone/Email
	Chair (the executive leader)			
	Vice-chair			
	Member			
	Member			
	Member			
	Member			
	Member			

PART B: COVID-19 Response Management Team Members' Roles and Responsibilities

Note: This is just an example and is not exhaustive of the types of roles or the responsibilities under those roles. The actual roles and responsibilities that will be needed will depend on local conditions and response planning.

NAME OF LOCAL AREA: _____			
Name of Team Member	Current Role	COVID-19 Response Role	Key Responsibilities and Dependencies
Mrs. Afeke Numira	District Health Officer	Executive leader	Alignment with national plans and strategies; real-time situational awareness; activation and deactivation of plans; resource mobilization; etc.
Dr. Owibungo	Infectious Disease MD	Case management	Access to national and international guidance, current science, best practices, and standard operating procedures (SOPs); staffing; maintenance of essential COVID and non-COVID services; access to pharmaceuticals and other supplies and equipment; triage protocols; etc.
Mrs. Sarah Johnson	Hospital Nurse	IPC	IPC planning to include households, community, and public buildings and facilities; coordination with WASH, police, emergency medical services to enforce IPC policies, including isolation and quarantine; collaborate with other sectors on PPE supplies; etc.
Mr. Sam Chiwungo	Mayor	Public Information Officer Legal framework	Coordination with higher levels of government; local laws and regulations to support response activities; risk communication
Mrs. Mary Buradwo	Head of local nongovernmental organization (NGO) that works in area	Community engagement and role of CHWs	Integration of community and household response into overall planning; psychosocial support as well as food and caregiving/child care support to households; identification of myths and misinformation; etc.
Mr. Kevin Marade	Administrative head of local area	Finance and administration	Supply chain and commodity management; income alternatives during closures; coordination with national level; etc.
Other			
Other			
Other			

WORKSHEET 2: COMMUNICATION PLAN CHECKLIST

The Response Management Team can use the following checklist to plan to address the public information needs. There are many excellent resources available from WHO and CDC, as well as MSH, for additional guidance on risk communication and community engagement.

Designate a Spokesperson

- ☐ Make sure the spokesperson has access to the information and the changing situation.
- ☐ If possible, have the spokesperson trained in risk communication. NGOs in your area may be able to assist.

Identify Communication Needs

- ☐ Identify target audiences and high-risk groups
- ☐ Develop key messages in advance to address them
- ☐ Update target messages once the situation is known
- ☐ Determine what devices will be used (e.g., mobile phones, websites, TV, or radio)
- ☐ Identify materials needed (e.g., fliers, posters, and signs)

Create a Communication Plan

- ☐ Determine how information will flow
 - Within the local area response team
 - Within the government (all levels)
 - With the public
 - With the media
- ☐ Identify media and communications resources
- ☐ Establish update procedures
- ☐ Prepare talking points
- ☐ Hold press conferences, as needed

Monitor Information Flow and Public Response

WORKSHEET 3: MITIGATION ESSENTIALS

Use this checklist to identify major gaps in mitigation planning.

Real-Time Situational Awareness

- ☐ Obtain and document up-to-date contact information for all key contacts
- ☐ Establish a coordination mechanism between the Response Management Team and the various sector dependencies for implementation and monitoring of mitigation interventions
- ☐ Develop processes to keep the Response Management Team updated about health facility capacity, to include available beds and staffing, area case numbers and trends, and any issues relating to mitigation, and for communication between the Response Management Team and local experts and officials

Alignment and Coordination with the National Level

- ☐ Set up rapid two-way communication between local area and national level
- ☐ Establish clear roles and responsibilities, and delegate authorities for enactment of mitigation measures

Public Communication

- ☐ Identify Public Information Officer and, if possible, train him/her on risk communication
- ☐ Identify communication channels
- ☐ Put ongoing public messaging in place

Partnerships

- ☐ Identify local organizations, academic institutions, NGOs, and private-sector enterprises that can support the response
- ☐ Support local innovations, such as cloth mask production

WORKSHEET 4: PLAN FOR COMMUNITY MITIGATION INTERVENTIONS

Use this table to gather the information needed to complete the plan below. Add more rows as needed.

Intervention	Who Has the Authority?	What Funds or Supplies Are Needed?	Unintended Consequences?	Who Can Help?
Issue mask mandate				
Close schools				
Close businesses				
Prohibit or limit gatherings				
Cancel events				

For each setting, include:

- Who is in charge of issuing the order to implement the interventions (if appropriate)
- Contact information for key decision-makers (e.g., school administrator)
- Which interventions will be used
- Triggers to start and end the use of the intervention
- What resources are needed to implement and enforce the measures

Plan for Use of Community Mitigation Interventions	
Home	
Community	
Schools	
Workplaces	
Stay at home	
Lockdown	

Example: Plan for Use of Community Mitigation Interventions	
<i>Note: This is just an example and is not exhaustive of the types of measures that can be used. The actual mitigation plan that will be needed will depend on local conditions, resources, and response planning.</i>	
Home	<i>Encourage hand hygiene, disinfection of high-touch surfaces, physical distancing, and wearing of masks when unable to physically distance or stay at home.</i>
Community	<i>Home measures plus: Mask wearing in all public places and when within 2 meters (6 feet) of others, restricting or prohibiting of public gatherings (including church services, sporting events, etc.)</i>
Schools	<i>Elementary schools remain open with mask wearing and physical distancing. Middle and high schools move to remote learning or a hybrid of in-person plus distance learning.</i>
Workplaces	<i>Reduce the capacity of restaurants, bars, gyms, and other businesses to 50%.</i>
Stay at home	<i>A stay-at-home order will be issued if the cases continue to rise despite existing mitigation measures.</i>
Lockdown	<i>A full lockdown is not being planned at this time.</i>

WORKSHEET 5: IDENTIFICATION OF ESSENTIAL AND NON-ESSENTIAL SERVICES

Conduct an analysis of all health system services, programs, and activities. Use the worksheet to develop a list of the essential and the non-essential services that you identify. It is important to consider the suffering and deaths that you can prevent from both the disease and other causes. For example, if childhood vaccination programs are not maintained, outbreaks are likely to increase at a later date.

Service	Essential	Non-Essential	Staff	Supplies and Equipment
Vaccination programs (specify)				
HIV treatment clinics				
Well-baby checks				
Preventive diagnostics, such as colonoscopies and mammo-grams				
Elective surgery				
Attended births				
Other				
Other				

WORKSHEET 6: THE DECISION ANALYSIS TOOL

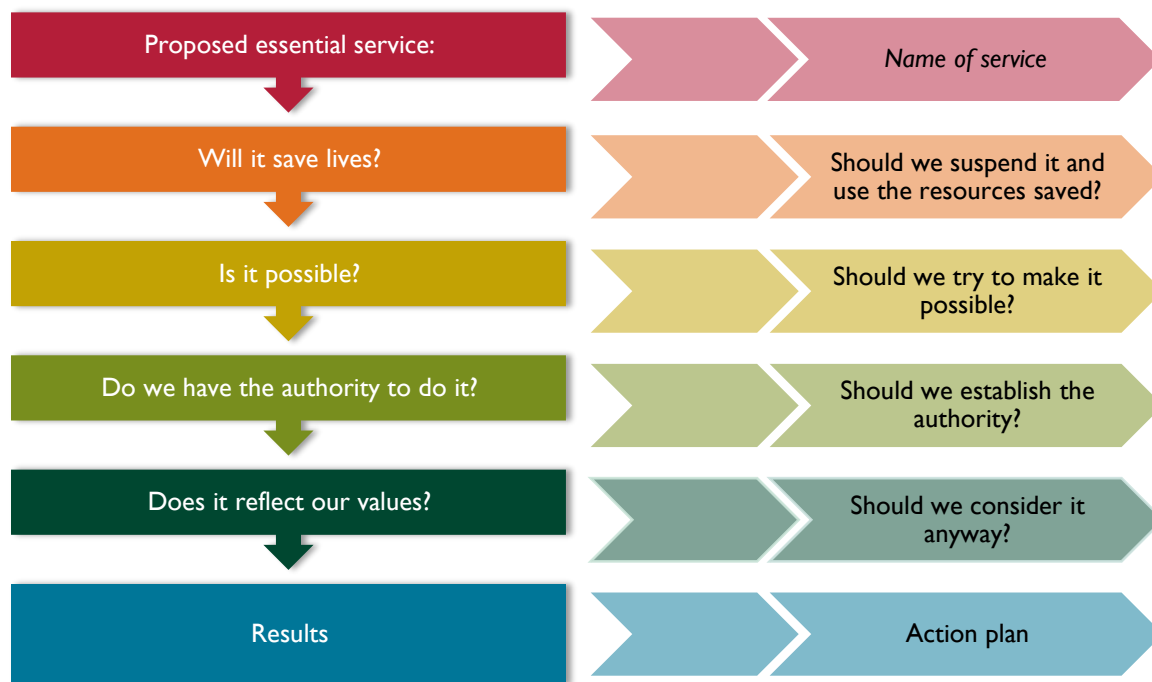
When you are faced with overwhelmed health services, the decision analysis tool is designed to help narrow down your essential services to the ones that are effective and implementable. One fact that must be accepted before you can effectively determine your essential services is that if you experience a severe outbreak of COVID-19, it is likely that you will not have the ability to carry out all services that you feel are essential. There may be services identified that could save many lives or greatly reduce suffering among the population, but you just don't have the resources to provide them or are otherwise unable to carry them out. Wasting planning time or allocating resources to a failed effort will lead to more deaths. Use your time and resources wisely to ensure that you save lives and reduce suffering.

To begin, identify a proposed essential service, and then move down the list of questions. If the answer to a question is yes, continue to the next question. If the answer to a question is no, follow the arrow to the right.

For example, let's say you decide to provide hospital-level care to all COVID-19 patients. The answer to the first question—Will it save lives?—is clearly yes. However, the answer to the next question about its feasibility is almost certainly no. If you follow the arrow to the right, it is also unlikely that there will be any way to make hospital-level care possible for everyone. Therefore, the result of the analysis is to not pursue this service. However, if you consider providing handwashing and disinfection stations at the entrance to all public buildings, you will likely end up with the result of an essential service that warrants action planning.

If you answer no to a question, but you believe that you can address the situation and solve the challenges, move down to the next question. For example, if you want to close markets and instead provide a method to distribute food to the population, you may find you need to create the authority to do so. If you feel you can address this need, you can consider it an essential service and proceed with action planning.

Decision Analysis for Essential Services



Examples Using the Decision Tree Analysis

1. Provide hospital-level care to all COVID-19 patients

- Will it save lives? *Yes*
- Is it possible? *No*
- Is there a way to make it possible? *No*

Result: Do not pursue

2. Keep COVID-19 cases in a remote location and let them die there

- Will it save lives? *Yes* (by isolating the cases)
- Is it possible? *Yes*
- Does it reflect our values? *No*
- Should we reconsider our values? *No*

Result: Do not pursue

3. Provide handwashing and disinfection stations outside all public buildings

- Will it save lives? *Yes*
- Is it possible? *Yes*
- Does it reflect our values? *Yes*
- Do we have the authority? *Yes*

Result: This is a new essential service. Start action planning.

WORKSHEET 7: MAINTENANCE OF ESSENTIAL SERVICES

For every proposed essential service, address each of the areas below in your planning. This is intended to help get you started, but it is not a final or fixed method. You can modify the areas to be addressed and the questions to be answered to your local conditions and needs.

1. Define the service and clarify who is responsible for it

It is important to put down in clear language the answers to the following questions. This will prevent wasted time and resources later on.

- What is the service?
- Who or what sector is responsible for it?
- Who will receive it?
- How will we monitor it and change it as needed?

2. Address needed steps for implementation

Steps may be required before you can start to provide or suspend a service. Consider the following and add any implementation steps you need to address.

- Will new regulation be needed?
- Will a new policy be needed?
- Will authority be needed?
- What other sectors need to be involved?
- Will funding be needed?

3. Identify resources and address gaps

Most services will require personnel, supplies, and/or equipment. Many areas suffer from critical shortages of these during normal times, and the outbreak will further strain resources. The key here is to look for new and alternative resources. The suspension of non-essential services should lead to the identification of the four major categories of resources you will need: space, staff, products, and policies. When you suspend a service, think about how you can redirect these four areas to fit your new needs.

Note: Consider all possible sources of personnel: skilled and unskilled personnel from suspended non-essential services, retired doctors and nurses, students, volunteers, humanitarian agencies and other organizations in the area, and task shifting (allowing lower-level positions to assume more responsibility).

4. Develop a final list of essential services

Use the decision analysis tool to develop a final list of essential services, and then complete the plans for each service.

Essential Service Plan

This is a plan for an individual program, activity, or service.

Essential Service

Sector Responsible:

Current Status:

Target Population:

Decision Tree Analysis: Existing Service

- ☐ Continue
- ☐ Suspend
- ☐ Improve
- ☐ Develop new service

Actions Needed before Implementation:

Resource Needs:

- People
- Supplies
- Equipment

Sources of Resources:

- People
- Supplies
- Equipment

WORKSHEET 8: PLANNING RESOURCE NEEDS BY LEVELS OF CARE

Use this worksheet to identify needs to provide care for the four levels of care. Examples are provided in a separate chart for illustrative purposes only as they may or may not be relevant to your situation. **Change the information to your context before completing the table.** Expand the height of the rows to include as much information as you have. Add additional rows as needed. Then, complete the plan for the levels of care.

	Level 1	Level 2	Level 3	Level 4
Description of care				
Location				
Resources needed				
Skilled health care providers				
Community health workers				
Unskilled care/community support				
IV hydration				
Oxygen				
Non-COVID-19 medications				
Palliative care				
Psychosocial support				
SOPs				

EXAMPLE: Plan for Resource Needs by Level of Care				
<i>Note: This is just an example and is not exhaustive of the types of measures that can be used. The actual resource plan that will be needed will depend on local conditions, resources, and response planning.</i>				
	Level 1	Level 2	Level 3	Level 4
Description of care	No care	Home isolation/quarantine	Alternate care sites/home/facility	ICU/hospital/home (palliative)
Location	Home	Home	Closed schools	Hospital or home
Resources needed	None	Nonskilled clinical and nonclinical support, monitoring, referrals, nonclinical support such as groceries, child care	Skilled health care providers, cots and linens, WASH, toilets, disinfection, oxygen and other medical supplies and equipment, etc.	Psychosocial support, highly skilled health care workers, ventilators and high-flow oxygen
Skilled health care providers	No	No	Yes	Yes
Community health workers	No	Yes	Yes	Yes
Unskilled care/community support	No	Yes	Yes	Yes
IV hydration	No	No	Yes	Yes
Oxygen	No	No	Yes	Yes
Non-COVID-19 medications	No	Yes	Yes	Yes
Palliative care	No	No	No	Yes
Psychosocial support	No	Yes	Yes	Yes
SOPs	No	No	Yes	Yes

Level 1: Unassisted Home Care

Description of care

The level 1 cases are the mildest cases, and most are expected to recover at home without complications. Level 1 includes both self-care and care by a family member or other available caregiver. These cases do not require outside assistance.

Location of care

Home

Resources needed

- Public education on hand hygiene, social distancing

- Household preparedness, especially for food, water, and critical medications
- Availability of water, soap, alcohol gels
- Ability to keep the ill isolated
- Community/extended family assistance with daily living: errands, food preparation, child care, pharmaceuticals, and access to care for non-pandemic illness
- Notification process if the need for a higher level of care is increasing

Level 2: Assisted Home Care

Description of care

Level 2 cases are uncomplicated cases that need the assistance of community resources (such as a trained community health worker) for their COVID-19 or other illnesses (such as TB or malaria). The most urgent needs of people falling into level 2 care probably will be the need for oral hydration (taking liquids by mouth) and the continuation of medications or other treatments for co-existing illnesses. People who require significant assistance with the activities of daily living (such as bathing, doing errands, cleaning, cooking, and securing food) also fit into this level of care.

Location of care

Home

Resources needed

- Level 1 care resources
- Community volunteers trained in both COVID-19 and non-COVID-19 illnesses
- Availability of oral fluids and oral antibiotics
- Protocols for the use of fluids and antibiotics

Level 3: Skilled Clinical Care

Description of care

Level 3 cases require care of moderate intensity by a clinically trained provider. People who fall into this level may be cared for at home or at an alternate health care site in the community. Examples of skilled care include an examination to see if pneumonia is developing, intravenous hydration, intravenous antibiotics, and respiratory treatments.

Location of care

- Home
- Alternate care sites (provide address and capacity)
- Hospital when capacity available

Resources needed

- Level 1 and 2 care resources
- Skilled health workers, but in a lower ratio and/or of lower skill level than usually found in a hospital

- Availability of intravenous fluids and oral antibiotics
- Oxygen, respiratory treatments, and respiratory medications, if available
- Protocols for the use of intravenous fluids and antibiotics, and respiratory therapy
- Community locations where Level 3 care may be provided.

Level 4: Highest Available Level of Care Needed

Description of care

This level of care is for the most severe cases, who should be treated in a hospital if one is available. However, in areas with limited resources, these cases are not likely to survive even with the highest available level of care and may be assigned to comfort care rather than provided with skilled health care resources. Policies for level 4 care should be included in the local area plan for triage.

Location of care

- Home
- Hospital
- Palliative alternate care site (provide address and capacity)

Resources needed

- Level 1, 2, and 3 care resources plus high-flow oxygen, ventilators (if available)
- Volunteers and skilled personnel trained in comfort care. Ideally, this will also include mental health professionals and religious leaders in addition to health care workers.
- Availability of pain medication
- Protocols are needed for a process to determine whether a level 4 patient should be admitted to a health facility or a community care center. While there may not be room at these locations at the peak of the wave, all patients should be provided with the highest level of care available. At the beginning of the wave, and toward the end of the wave, there may be the capacity to admit these patients to a facility or center, or to provide additional resources at home. Level 4 patients should receive all resources available to provide for a dignified and peaceful death.

Plan for Levels of Care

For each level of care, include:

- Who is responsible for coordinating the care
- Where the care will be provided (at home, at a local clinic, hospital, community care site)
- What community resources are needed (and type of volunteers, pharmaceuticals and medical supplies, cots, IV poles, bedding, etc.)
- Plan to train volunteers or health workers, if needed

Level 1

Level 2

Level 3

Level 4

WORKSHEET 9: ALTERNATE CARE SITES

These locations should be physically safe buildings, with at least a minimum of infrastructure (electricity, ventilation, toilets, and washing facilities). Buildings used as shelters may be re-planned as community care sites, as sheltering is not recommended in a communicable disease outbreak.

Possible Sites for Community Care Centers (Level 3 Care)				
	Address and Current Use of Building	Description (Toilets, Running Water, Showers, Information Technology or Communications Infrastructure)	Estimated Capacity (Assume Cots Are Separated by 2 m)	Contact Information for Responsible Party
EXAMPLE:	School, on the main road near the police station	4 toilets, hot and cold running water, no showers. Phone system with multiple lines. No internet access.	50	Mrs. Odewaga 355 42 6578 modewaga@yahoo.com