



COVID-19

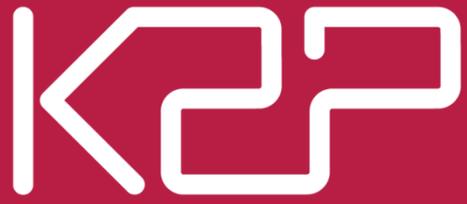
Rapid

Response

Series

Suppressing COVID-19
Epidemic through
Community-Centered
Care Approach

A K2P Rapid Response responds to urgent requests from policymakers and stakeholders by summarizing research evidence drawn from systematic reviews and from single research studies. K2P Rapid Response services provide access to optimally packaged, relevant and high-quality research evidence for decision-making over short periods of time ranging between 3, 10 and 30-days.



Rapid Response

+ Included



Synthesis of evidence
on a priority question
or topic



Local context



International
experiences



Faculty of Health Sciences
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K2P COVID-19 Rapid Response Series
Suppressing COVID-19
Epidemic through
Community-Centered
Care Approach

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Merit Review

The K2P Rapid Response undergoes a merit review process. Reviewers assess the summary based on merit review guidelines.

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Key Messages

Key Messages

- COVID-19 pandemic is outpacing the response of national governments and overwhelming health systems around the world.
- Efforts to surge capacity have focused primarily on hospital settings, with less attention given to community-based surge capacity; particularly that around 80% of COVID-19 patients are expected to experience mild illness, meaning they could be handled in non-hospital settings.
- As has been revealed by COVID-19, a highly hospital-centered care is insufficient alone in a pandemic; community-centered responses- providing for outreach services, community surveillance, triage and initial treatment, non-ambulatory care overflow, and isolation- have proven vital for containing previous outbreaks and shifting the epidemic curve.
- In the Eastern Mediterranean Region (EMR), there has been little emphasis on community-centered care approach in the response plans and strategies of countries to combat COVID-19.
- Failing to harness and integrate community-centered care into the pandemic response puts hospitals at the front line of defense, resulting in catastrophic overload of inpatient and hospital-affiliated resources, with devastating impacts on health, social and economic outcomes.

Rationale for community-centered care approach

Community-centered care approach can serve as first line of defense, preserving the operation of acute care hospitals and the overall health care infrastructure during pandemics. They can alleviate demand on hospitals, reserve capacity for more severe COVID-19 cases and enable continued provision of regular care for non-COVID-19 patients, through:

- Serving as areas for primary screening and triage
- Isolating and quarantining suspected cases of COVID-19
- Managing mild cases of COVID-19
- Providing care to recovering cases of COVID-19 after hospital discharge (reverse-triage)

This rapid response document is part of the K2P COVID-19 Rapid Response Series. It seeks to answer the following questions:

- How can community-centered care approach suppress COVID-19 epidemic?
- What are the roles of communities in pandemic responses?
- How can community-centered care approach be operationalized?

Operationalizing community-centered care approach

Community-centered care approach requires community engagement and mobilization. Key actions to engage and mobilize the right stakeholders include:

-> Collecting background information (identify potential community partners, communication channels, and governance structure)
-> Partnering with the community (including gaining insight on assets that can be mobilized for the response)
-> Defining specific goals and targets and ensure flexible funding
-> Developing the strategy, defining duties and coordinating efforts
-> Monitoring Outcomes over time

Once the right stakeholders are engaged and mobilized, community-centered care approach can be harnessed in a pandemic response. While every community-centered care activation process will be different depending upon the context, scope, duration, and type of public health emergency; some of the key components to take into consideration include:

-> Selection of appropriate locations and facilities for activation
-> Clarification of roles and responsibilities of selected facilities and providers in the response
-> Staffing requirements and trainings
-> Provision of equipment, medical supplies and pharmaceuticals
-> Patient tracking and documentation
-> Activation and support sequence (i.e., responding to surge)
-> Provision of Logistical support

Country level implications

It is critical for governments in the EMR and beyond to include community-centered care approach as an integral part of the pandemic response. It is only through massive deployment of service delivery in the community, leveraging the vast network of primary healthcare centers, public dispensaries and health centers as nodes for testing, surveillance, isolation and clinical management of mild cases that countries can successfully avert such pandemic.

Implications for governments/ministries/communities/facilities:

Coordination and communication

-> Strengthen stewardship function to harness existing community resources and capacities, coordinate and integrate efforts across public and private resources and expertise of the diverse response agencies, and monitor, communicate and steer the overall pandemic response
-> Clarify the roles and responsibilities of community-based care facilities and providers in local and national response, including the lines of reporting through the health system and the linkages between the health system and community health actors
-> Establish a forum to engage hospitals, local public health agencies, communities and other emergency response entities in determining the priorities and scope of services that could be provided by community-centered care approach
-> Develop strategies for expanding community-based care capacity, estimate the additional staff, supplies and related costs incurred by these surge measures, and ensure that appropriate regulatory and logistical issues of care are addressed in coordination with other public and private agencies
-> Reorganize/adapt triage and discharge criteria as well as readjust referral/counter-referral policies to release additional capacity and contain hospital overload (including use of telemedicine and online platforms to augment response)
-> Ensure appropriate regulatory and logistical issues of care are addressed
-> Develop interoperability standard protocols between the various Emergency Operation Centers/district health departments/councils to ensure unified command for pandemic response
-> Organize statewide public information messaging in coordination with communities, hospitals, local emergency management, and public information personnel to inform the public about where and when to seek care to reduce patient flow and inappropriate overburdening of existing infrastructure

Capacity building, logistics and resources

-> Map community resources and capacities: organizational (public and private; primary, secondary and tertiary levels of care); physical (healthcare establishments, equipment); human (number and type of staff; skills and expertise); and material (supplies).

-> Assess community needs and secure funding, proper logistics management, and adequate human resources to meet the increased demand for services created by the pandemic.
-> Develop useful training resources and ensure that staff receive training in order to enhance their ability to fulfil their roles in contributing to the response.
-> Supply staff and community health workers with treatment protocols, guidelines on proper referrals (when to refer and to what health facilities) and communication tools
-> Strengthen information systems with ability to meet needs of the community-based care network and public information officers

Community mobilization

-> Organize community emergency response teams (including trained volunteers) which can be mobilized as needed to perform a number of important response functions
-> Identify who has the capacity to meet which basic needs of vulnerable populations (food, health, shelter, water, sanitation and/or mental health support) at the community level
-> Develop neighborhood support mechanisms so that people who are at home or sick during the pandemic have food, medicines, childcare, and emotional support

Content

Preamble

The world is currently witnessing the worst public health crisis in recent history, with COVID-19 pandemic affecting over 1 million people in over 200 countries and territories around the world (April 6th 2020) (WorldOMeter, 2020).

As the COVID-19 pandemic continues to accelerate, it is outpacing the response of national governments and overwhelming health systems around the world (Grabowski and Maddox 2020; Verelst, Kuylen & Beutels, 2020; Remuzzi and Remuzzi 2020). Many hospitals are collapsing or nearing collapse while mechanical ventilators, personal protective equipment and medical supplies are running short. At the same time, health care systems are struggling to provide essential services to non-COVID patients. Furthermore, when hospitals are overcrowded with infected patients, they may become the hub for COVID-19 carriers, posing risk and facilitating transmission to uninfected patients (Grabowski and Maddox 2020; Verelst, Kuylen & Beutels, 2020; Remuzzi and Remuzzi 2020).

Understandably, significant efforts have been channeled to enhance surge capacity- defined as the ability of a healthcare facility or system to expand beyond its regular operations and accommodate a greater number of patients during a public health emergency (Bonnett et al. 2007). While such efforts have focused primarily on hospital settings, what has received less attention is community-based surge capacity particularly that around 80% of COVID-19 patients are expected to experience mild illness (WHO, 2020a), meaning they could be handled in non-hospital settings. Community-based surge capacity encompasses a community's ability to supplement both the public health response (by engaging in risk communication, surveillance and contact testing) and the health care facility response (by providing care at sites away from overloaded facilities) (Koh et al, 2006).

As has been revealed by COVID-19, a highly hospital-centered care is insufficient alone in a pandemic (Nacoti et al 2020). In such context, community-centered responses- providing for outreach services, community surveillance, triage and initial treatment, non-ambulatory care overflow, and/or

Background to K2P Rapid Response

A K2P Rapid Response responds to urgent requests from policymakers and stakeholders by summarizing research evidence drawn from systematic reviews and from single research studies.

K2P Rapid Response services provide access to optimally packaged, relevant and high-quality research evidence over short periods of time ranging between 3, 10, and 30-day timeframe.

This rapid response was prepared in a 3-day timeframe and involved the following steps:

- 1) Formulating a clear review question on a high priority topic requested by policymakers and stakeholders from K2P Center.
- 2) Establishing what is to be done in what timelines.
- 3) Identifying, selecting, appraising and synthesizing relevant research evidence about the question
- 4) Drafting the K2P Rapid Response in such a way that the research evidence is present concisely and in accessible language.
- 5) Submitting K2P Rapid Response for Peer/Merit Review.
- 6) Finalizing the K2P Rapid Response based on the input of the peer/merit reviewers.
- 7) Final Submission, translation into Arabic, validation, and dissemination of K2P Rapid Response

The quality of evidence is assessed using the AMSTAR rating which stands for A Measurement Tool to Assess Systematic Reviews. This is a reliable and valid measurement tool to assess the methodological quality of systematic reviews using 11 items. AMSTAR characterizes quality of evidence at three levels:

- 8 to 11= high quality
- 4 to 7 =medium quality
- 0 to 3 = low quality

isolation- have proven vital for containing previous outbreaks and shifting the epidemic curve (WHO, 2020; Rugarabamu et al, 2020; Abramowitz et al, 2015; Kutalek et al, 2015; WHO 2014; Gostin et al, 2012; Hick et al 2004).

Within the Eastern Mediterranean Region(EMR), governments are adopting a number of measures to respond to COVID-19 pandemic, ranging from suspending international flights, to imposing curfews, lockdown and social distancing measures, closing academic institutions, enhancing hospital preparedness and information sharing (Al Nsour et al., 2020). While these measures are of great importance, there has been little emphasis on community engagement and community-centered care in the response plans and strategies adopted by countries to combat COVID-19. Indeed, in a region already affected by protracted conflicts, political instability, economic crises, millions of refugee and migrant populations; and above all, the lack of robust health systems capable of handling a large surge of patients (Al Nsour et al., 2020; Malik et al., 2020), a pandemic of such scale is concerning if not properly contained.

This rapid response document aims to provide guidance for suppressing COVID-19 through community-centered care approach. Specifically, it covers the following components: (1) rationale for community-centered care approach; (2) roles of communities in pandemic response; (3) Operationalizing community-centered care approach; and (4) country-level implications.

Failing to harness and include community-centered care as an integral part of the pandemic response puts hospitals at the front line of defense, resulting in catastrophic overload of inpatient and hospital-affiliated resources, with devastating impacts on health, social and economic outcomes.

This rapid response document is part of the K2P COVID-19 Rapid Response Series. It seeks to answer the following questions:

- How can community-centered care approach suppress COVID-19 epidemic?
- What are the roles of communities in pandemic responses?
- How can community-centered care approach be operationalized?

Selection Process

We identified relevant studies by searching the following key databases on April 02, 2020: PubMed, Health Systems Evidence, and Social Systems Evidence.

We used a combination of free word and controlled vocabulary to combine the following concepts: “community” or “community-based care” and “pandemic”.

We also searched Google Scholar and the grey literature.

Rationale for community-centered care approach

Community engagement and mobilization is a key strategy for the appropriate containment of an outbreak and for preventing its further transmission (WHO, 2020; Rugarabamu et al, 2020; Qualls et al 2017; Abramowitz et al 2015; Dhillon and Kelly 2015; Petherick 2015; WHO, 2014). In the event of an epidemic, communities are mobilized to contribute to an array of services including awareness, contact tracing and provision of community-centered care (Rugarabamu et al. 2020; Okware, 2015; Kruk et al, 2015).

Particularly, when the epidemic overwhelms the surge capacity of hospitals, community-centered care facilities may be leveraged to supplement the response and accommodate the surge in patient volume and demands (Gay et al., 2015; du Plessis et al., 2011; Reilly, 2011; Selke et al., 2010). A community-centered care approach covers various types of facilities such as out-of-hospital care sites (i.e. existing non-hospital facilities that are routinely used for patient care) and alternate care facilities (i.e. non-licensed facilities) that can be activated during a response to meet healthcare demands during a pandemic (Gostin et al, 2012). Thus, a community-centered care approach provides a flexible network of “reserve” health care capacity to supplement, support and extend the efforts of acute care hospitals during crisis.

Community-centered care facilities can serve as areas for primary screening and triage or for short-term medical treatment of mild cases while diverting non-acute patients from hospital emergency departments and increasing access to non-life-threatening illnesses in a systematic and efficient manner (Gostin et al, 2012; du Plessis et al., 2011; Reilly, 2011; Selke et al., 2010). They can also be used to decant less critical patients from inpatient wards (e.g. recovering cases of COVID-19 after hospital discharge), thereby increasing the surge capacity of

Key definitions

Community engagement is defined as structured dialogue, joint problem solving, and collaborative action among formal authorities, citizens at-large, and local leaders around a pressing public matter.

Community mobilization is defined as “a planned process to activate a community to use its own social structures and any available resources to accomplish community goals that are decided on primarily by community representatives and that are generally consistent with local values” (Muzyamba, 2017).

Community-centered care features an approach that is based upon and driven by community health needs. It can be provided in a range of community settings, such as people's homes, healthcare clinics, physicians' offices, public health units, hospices, and community centers. Moreover, it is tailored to the preferences and societal values of that community and assures a certain level of ‘community participation’ in the decision-making process (CPSI, 2018).

Aspects of community-based care:

- Public health, primary care services within the community, health promotion, and disease prevention
- Diagnosis, treatment, and management of mild illnesses
- Rehabilitation support
- End-of-life care

acute care hospitals (Reilly, 2011). Thus, by serving as first line of defense, these community-centered care facilities can help in preserving the operation of acute care hospitals and the overall health care infrastructure during pandemics where health resources are depleted and accessibility to health services is threatened (Figure 1).

Recent scientific evidence and previous field experience have shown that if managed properly, community-centered care approach has significant potential for disease outbreak prevention and control and it can be a useful addition to disease outbreak management package (Carter et al 2017; Pronyk et al 2016; Olu et al 2015; Kucharski et al.; Logan et al 2014; Kucharski et al, 2014; WHO 2014; Gostin et al, 2012; Koh et al 2006; Hick et al 2004). Such facilities have served as focal points for community-based disease control, undertaking a range of activities including triage, early isolation, testing, case findings, treatment provision for mild cases, and referral to other facilities. Experience from Sierra Leone has demonstrated the feasibility of such an approach whereby the isolation of Ebola suspected cases within 4 days of symptoms was higher in community-based centers compared with other facilities (85% vs 49%), contributing to a 13% to 32% reduction in the disease reproduction number (Ro) (Pronyk et al 2016).

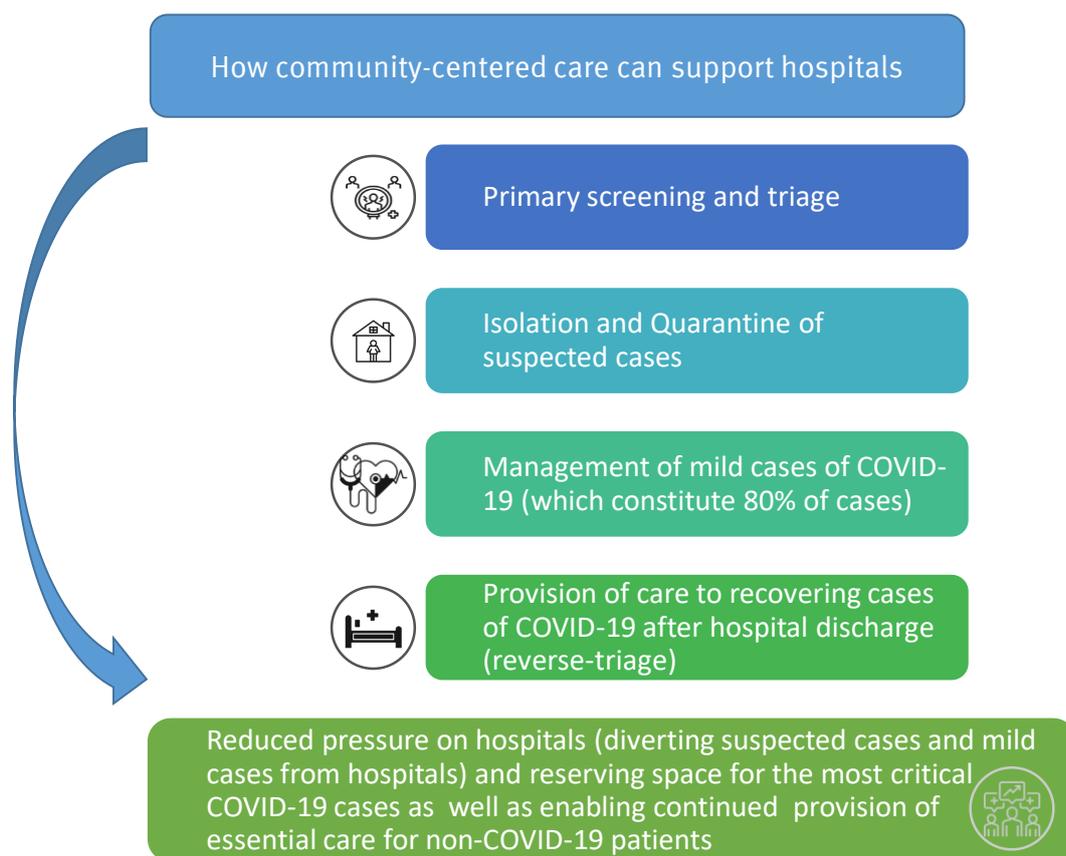
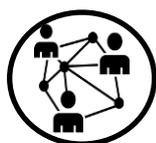


Figure 1 **Community-centered care surge**

Roles of communities in Pandemic Responses

Community engagement and mobilization can improve a community's ability to address the operational, social and economic challenges associated with a pandemic. A review and synthesis of the evidence identified a range of activities that can be undertaken by communities to supplement and augment the pandemic response. These are described below:



Expansion of communication network reach

- Raising awareness, communicating accurate health information, and countering rumors and misinformation that can lead to fear, social unrest, and violence during an outbreak response (Boyce and Katz, 2019; WHO, 2009). In Sierra Leone, chiefs and community religious leaders were educated about Ebola virus disease and its spread, because the local population respected and listened to them, and valued their opinions (Gray et al 2018).
- Advocating for the adoption of prevention strategies (e.g. avoiding crowds and public gatherings, wearing masks in public, social distancing etc.) using culturally appropriate risk and mitigation messages; language interpretation and translation through a variety of methods and communication channels (Gray et al 2018).
- Locally producing and/or distributing appropriate supplies including soap, hand sanitizer, and masks (Gray et al 2018)
- Dispatching community mobilizers to implement house-to-house prevention messaging (Maduka et al 2017)
- Access to social and population groups that may avoid interaction with government officials, and advocating to ensure that government and health authorities are prioritizing community needs and are responsive to their demands during the pandemic (Homeland Security Council; 2006).



Community-based surveillance, contact tracing and active case finding

- Deploying community members and community health workers (CHWs) as “contact tracers” searching for contacts associated with an identified case, for isolation and monitoring of signs and symptoms (Miller et al., 2018; Li et al. 2016)
- Deploying community members and CHWs as “active case finders,” carrying out door-to-door searches for symptomatic people in their communities (Miller et al., 2018; Li et al, 2016)

-> Deploying community members and CHWs to isolate sick patients, report the case to district health officials, and refer them to a health facility (Li et al, Miller et al., 2018)
-> Deploying social mobilization teams to conduct daily house-to-house screening and to observe community compliance to the required response measures (Li et al 2016)
-> Establishing active surveillance networks overseen by taskforce (including community leaders, and representatives of men, women, youths, and elders of the community) to promote compliance with isolation and referral of ill people, ensure active case finding and report deaths at the village level on every alternate day, to the district health team to interrupt the disease transmission (Miller et al, 2018; Saurabh & Prateek, 2017).
-> Establishing mobile clinics or reopening of community clinics to expand testing capacity (Abramowitz et al 2015)
-> Municipalities could open roadside testing facilities across the country, collecting samples in minutes while people can stay in their cars (Terhune et al, 2020).



Provision of out of hospital and alternate care systems to alleviate burden on overloaded hospitals

-> Activating community-level triage system
 -> Primary healthcare/community health centers can act as a community-level triage system— treating those with minor illness and referring those with more serious disease to reduce pressures on already over-burdened health systems while ensuring that hospitals are available to provide health services to those most in need (Boyce and Katz, 2019; Pronyk et al 2016).
- Establishing a forum to engage with hospitals and public health agencies to identify where alternative care facilities are best placed in the community, as well as to identify and mobilize the workforce and volunteers willing to staff these sites. Alternate care facilities come in many shapes and sizes, and can be used in a wide variety of ways:
 -> **Quarantine sites:** provide temporary housing to quarantine people who have been exposed to COVID-19 but do not have symptoms. Patients in this type of facility would require limited monitoring and could care for themselves (e.g., do not need assistance with medications or activities of daily living (ADLs)). Since limited medical staff is required, these patients could be housed in a dedicated hotel or dormitory meant for this purpose (CDC 2020)
 -> **Isolation sites:** provide temporary housing for a cohort of patients with COVID-19 who do not need medical attention but who cannot

stay at home (e.g., they have high-risk family members)(CDC, 2020) in addition to health care workers who have been exposed to the virus and want to stay isolated from family members (Binkley 2020)

-> **Quarantine and Isolation sites:** Provide care for both confirmed and suspected COVID-19 patients. Planning would need to address maintaining physical separation between the different patient cohorts and assigning dedicated personnel to work in each area.
-> **Case management sites:** Provide early treatment for mild confirmed cases (Pronyk et al 2016).
-> **'Reverse triage'** to create hospital surge capacity: Provide medical care to recovering cases of COVID-19 after hospital discharge (Grabowski et al 2020).
-> Managing the health and safety of people placed in isolation and alternate sites through food supply, illness surveillance and oversight, reporting, the provision of medical supplies, and communication and information (Abramowitz et al 2015).
-> Mobilizing home care and mobile clinics and leveraging telehealth in primary care practices to avoid unnecessary movements and release pressure from hospitals (WHO, 2020; Mehrotra et al, 2020):
-> Engage with local public health and home health services to deliver early oxygen therapy, pulse oximeters, and nutrition to the homes of mildly ill and convalescent patients, set up a broad surveillance system with adequate isolation and leverage innovative telemedicine instruments.
-> Shift practices to triaging and assessing ill patients (including those affected by COVID-19 and patients with other conditions) remotely using phone, online and telehealth and telemedicine methods to reduce risk of exposure for both patients and staffs and minimize surge on facilities (Mehrotra et al, 2020).



Extension of governments' abilities to implement non-pharmaceutical interventions (NPIs) to contain outbreak

-> Local authorities are prepared to make decisions and recommendations about NPIs (e.g. prohibition of social gatherings and school closures) that reflect community values, especially when faced with data gaps and uncertainty (Qualls et al, 2017).
-> Individuals and communities are prepared to implement NPIs over the course of a pandemic and are better able to communicate, coordinate, and access the public and private resources needed to prevent disease spread and protect its most vulnerable member (Qualls et al, 2017)
-> Community watch committee - including religious, women, and youth leaders - can be mobilized in all parts of the county/province/district to

coordinate response efforts and enforce protocols at the community level (Maduka et al 2017; Gillespie et al 2016; Okware 2015).



Alleviation of social and economic disruptions associated with prevention and control measures

-> Developing neighborhood support mechanisms so that people who are at home or sick during the pandemic have food, medicines, childcare, and emotional support
-> Working with government to identify who has the capacity to meet which basic needs of vulnerable populations (food, health, shelter, water, and sanitation) as well as clarify responsibilities, identify gaps and avoid duplications in planning and implementation (WHO 2009)
-> Supporting quarantined households and providing water and sanitation facilities to affected communities
-> Enabling essential service workers to report to work
-> Engaging in community-wide fundraising activities as well as providing financial support for families in need and whose work was interrupted
-> Gathering local support and mobilizing volunteers for logistic and operational needs for the response
-> Leveraging the capacity of private businesses and non-profit organizations as appropriate (e.g. local production of equipment and personnel protective equipment to address shortages)



Establishment of community mechanisms to cope with tragic circumstances including handling of death

-> Community members can engage in developing a set of guidelines to reflect the community's priorities and obtain residents' acceptance in a crisis regarding the allocation of limited healthcare resources and alterations in standards of care under epidemic circumstances (Mosselmans et al 2011)
-> Spiritual and cultural leaders in a community can meet with health officials, hospital administrators, and professionals to discuss and devise emergency procedures mindful of diverse beliefs and practices (Mosselmans et al 2011)
-> Individuals and community groups can help plan, set up, and maintain a Family Assistance Center—a centralized location (whether virtual or in person) that provides grief and trauma counseling, spiritual and emotional guidance, peer-to-peer support, updates to reduce uncertainty and confusion, and practical assistance in making funeral arrangements (Mosselmans et al 2011)

Operationalizing community-centered care approach

Community-centered care approach requires community engagement and mobilization. Key actions needed to engage and mobilize the right stakeholders for community-centered care approach have been derived based on a review of literature (Ramsbottom, et al. 2018), a case study (Marais et al., 2015), and three frameworks suggested by the CDC (2002), the ECDC (2020), and the WHO (2020). The principles of community engagement by the CDC (2017) were also incorporated.

1. Collect background information

Identify potential community partners, and understand the community's unique culture, its socio-economical condition, most vulnerable individuals, communication channels, and governance structure (CDC, 2017). Marias et al., (2015) in their study "A community-engaged infection prevention and control approach to Ebola" suggested contacting a trusted leader (such as the local mayor) who will serve as a local cultural guide and a starting point for the research. Key community partners may include trusted local leaders, local healthcare team members, religious references, local activists, municipality members, and local media.

Follow a systematic approach to assess community's perception to the current pandemic. This can be done through a rapid assessment of learning using a knowledge and attitude questionnaires (WHO, 2020) or by screening social media and documenting concerns raised through the pandemic hotline (ECDC, 2020).

2. Partner with the community

Viewing the community as a partner and a resource for optimizing response is a key aspect of an effective engagement (ECDC, 2020). While meeting with communities, acknowledge the need for reciprocal learning and engage in two-way conversations (Ramsbottom et al. 2018). Allow the community to identify challenges and suggest potential solutions, for example communities can provide input on challenges in relation to adopting preventive practices (related to the community's culture and resources) as well as provide insight on assets that can be mobilized for the response (Marias et al., 2015; CDC, 2017). This will elicit ownership and motivate engagement as members will be able to identify with the challenges and feel that they can contribute to change (CDC, 2017).

3. Define specific goals and targets and ensure flexible funding

Define specific goals and targets adapted to the community needs (CDC, 2017). During previous outbreaks such as Ebola, communities were mobilized for numerous reasons including raising awareness on prevention practices, assisting in case reporting and contact tracing, encouraging early treatment and care seeking and overcoming cultural barriers to safe burials (Okware, 2015).

Although crises may provide an external trigger to catalyze engagement (Schoch-Spana et al. 2013), the financial burden associated with engagement may hinder it (Ramsbottom, 2018). Therefore, secure funds to provide financial support and compensate engagement before initiation (CDC, 2017). Funds should be flexible as to allow re-allocation based on priorities defined by the community (Ramsbottom, 2018).

4. Develop the strategy, define duties and coordinate efforts

Invite all community stakeholders willing to engage in the response and develop a strategy based on the identified goals, targets, challenges and assets (CDC, 2002). List actions required and information needed (WHO, 2020). Develop an action plan that details every stakeholder's duties and coordinates efforts (CDC, 2002). Continuously review strategies and plans to respond to evolving priorities (WHO, 2020).

- Map stakeholders and define their duties
- Provide a clear line of communication (have an inventory of all stakeholders updated regularly)
- Define competency needs and gaps and train stakeholders accordingly
 - Conduct training needs assessments
 - Identify initiatives that might require training needs (e.g.: provide training material on infection guidance and control) (ECDC, 2020).

5. Monitor Outcome

Develop a monitoring plan to evaluate if the strategy's goals and targets are met (WHO, 2020). Identify pre-specified measures linked to specific action, subject, and objective (WHO, 2020). Establish a baseline and regularly monitor positive change (WHO, 2020). Consider updating strategies and action plans if the desired outcome is not met (WHO, 2020).

Once the right stakeholders are engaged and mobilized, community-centered care approach can be harnessed in a pandemic response. The process encompasses initiation phase and activation phase, and can be adapted to each country's context (Figure 2) (WHO 2014; Einav et al, 2014; Florida Department of Health Bureau of Preparedness and Response, 2013; Gostin et al, 2012; Hick et al, 2004).

Initiation phase

Once a public health emergency occurs and disturbs daily medical operations, various actors (first responders) should have the responsibility to act during the early phases. Once it is realized that the surge will overwhelm the health system capacity, emergency operations center/emergency response team activates to support the incident. Leadership for community-centered care system is then notified. Following the notification, it would be important for concerned stakeholders to determine the priorities and scope of services that will be provided by community-based care facilities and providers to alleviate the surge.

A summary of the initiation steps is depicted below (these should be tailored to each country's context):

- Incident occurs (e.g. pandemic)
- Local units respond

-➤ Number of patients is determined to be unmanageable, creating a surge situation
-➤ Jurisdictions/provinces/governorates recognize that medical surge will overwhelm the health system capacity
-➤ Jurisdictions/provinces/governorates determine the need to activate community-centered care approach to assist with surge
-➤ Emergency operations center/Emergency response team activates to support the incident
-➤ County health department/district health department/council representatives fill a liaison role at the emergency operations center/ Emergency response team
-➤ Leadership for community-centered care system is notified
-➤ Guidance documents are referenced for guidance

Activation phase

While every community-centered care activation process will be different depending upon the context, scope, duration, and type of public health emergency; some of the key components to take into consideration include:

-➤ Selection of appropriate location and facilities for activation (as part of response)
-➤ Clarification of roles and responsibilities of selected facilities and providers in the response
-➤ Staffing requirements and trainings
-➤ Provision of equipment, medical supplies and pharmaceuticals
-➤ Patient tracking and documentation
-➤ Activation and support sequence (i.e. responding to surge):
 - › Medical skills: can be use in regular practice environment; in alternate care systems/ assignments or in the neighborhood
 - › Expansion of infrastructure: using expanded hours, modifying care practices, and adjusting schedules to accommodate increased acute care (and deferring elective appointments); facilities can “surge” to accommodate additional patients
 - › Repurposing of infrastructure: infrastructure may be repurposed, for example, when a subspecialty clinic adjusts its hours or closes to enable the space to be used for other type of care; or when a non-

licensed/non-traditional site is made operational to address a surge in the need for care

→ Provision of logistical support

Once the community-centered care approach is operationalized, it can provide a range of services which can supplement and augment the national response and alleviate the pressure on hospitals. Effectiveness of community-centered approach requires collaboration and coordination from a wide variety of stakeholders including government, community, public health and medical partners. It also requires clarifying the roles and responsibilities of community-based care facilities and providers in the response, including the lines of reporting through the health system and the linkages between the health system and community health actors. Considerations should also be given to revise triage and discharge criteria as well as re-adjust referral/counter referral policies to release additional capacity and contain hospital overload. Importantly, statewide public information messaging needs to be organized in coordination with communities, hospitals, local emergency management, and public information personnel to inform the public about where and when to seek care to reduce patient flow and inappropriate overburdening of existing infrastructure.

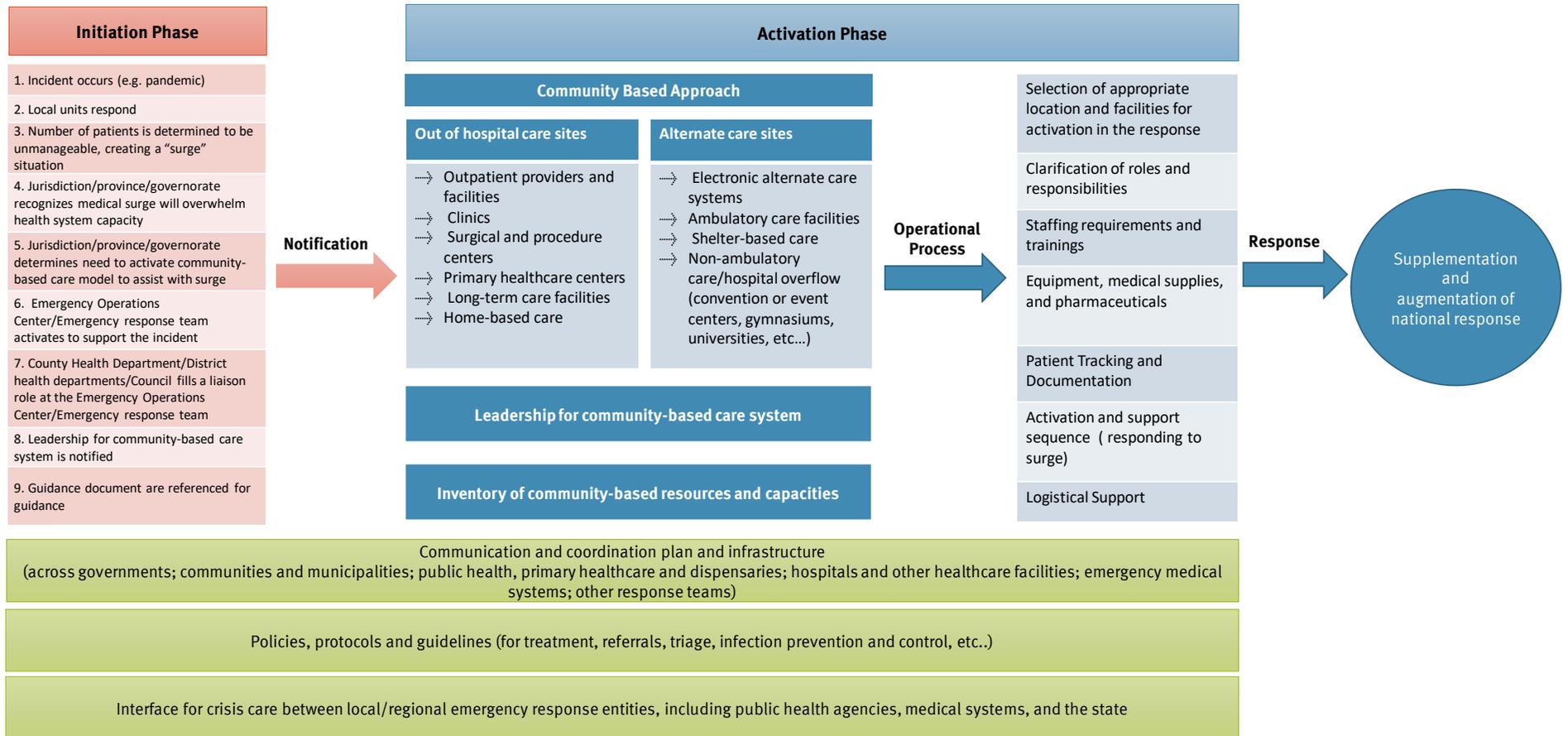


Figure 2 **Operationalizing community-centered care approach**

Additional consideration for preparing facilities for COVID-19

Isolation and Alternate care sites

A surge in the need for care may require communities to establish isolation sites and alternate care sites in non-traditional environments where patients with COVID-19 can remain for the duration of their isolation period (CDC, 2020b). Selection of a facility will be largely dependent upon the availability of structures or areas in a given community, and will change according to the type of event. (Hick et al, 2004).

Possible sites for selection and factors to consider in alternate care site selection are provided in Table 1 (Florida Department of Health Bureau of Preparedness and Response, 2013; Gostin et al 2012; Hick et al 2004).

Table 1 **Sites for selection and factors to consider in alternate care site selection**

Possible alternate site for selection	Factors to consider in alternate care site selection
→ Convention centers	→ Ability to lock down facility
→ Religious buildings	→ Adequate building security personnel
→ Schools, colleges, and universities	→ Adequate lighting
→ Airport hangars	→ Air conditioning/ventilation
→ Sports facilities or stadiums	→ Area for equipment storage
→ Community or recreation halls	→ Biohazard and other waste disposal
→ Medical buildings	→ Communications capability
→ Fitness centers	→ Door size adequate for gurneys
→ Closed hospitals or nursing homes	→ Electrical power with backup
→ Government buildings	→ Family areas
→ Fairgrounds	→ Floor and walls adequate
→ Skating rinks	→ Food supply/preparation area
→ Open warehouses	→ Heating
→ Hotels or motels	→ Laboratory specimen/handling area
→ Military installations	→ Laundry area
→ Open areas large enough for tent setup	→ Loading dock
	→ Oxygen delivery capability
	→ Parking for staff/visitors
	→ Patient decontamination areas
	→ Pharmacy areas

Possible alternate site for selection	Factors to consider in alternate care site selection
	<ul style="list-style-type: none"> → Proximity to hospital → Toilet facilities/showers/waster → Two way radio capability → Water supply → Wired for information technology/ internet access

Furthermore, given that isolation and alternate care sites are typically established in non-traditional environments, it would be important to ensure they can support implementation of recommended infection prevention and control practices. Planning considerations related to physical infrastructure, services and patient care are provided in Table 2 (CDC, 2020b). Annex 1 provides a detailed overview of the different components.

Table 2 Key considerations for infection prevention and control in isolation sites and alternate care sites

Physical infrastructure	Services	Patient care
<ul style="list-style-type: none"> • Layout • Air conditioning and heating • Spacing between patients • Contamination prevention • Accessibility 	<ul style="list-style-type: none"> • Food services • Environmental services • Sanitation • Laundry facilities • Pharmacy access • Diagnostics 	<ul style="list-style-type: none"> • Staffing • Medical supplies • Personal Protective Equipment (PPE) • Hygiene

Outpatient facilities

Some of the key considerations to prepare outpatient facilities for COVID-19 are provided in Annex 2. These are categorized into physical infrastructure, services and patient care.

Country-level Implications

A pandemic is unwelcome news anywhere in the world, but it is particularly alarming in the EMR where institutional gaps and weak governance may hinder effective response (Al Nsour et al., 2020; Malik et al., 2020). The scope and intensity of COVID-19 pandemic means that no single agency can work alone to effectively control and mitigate its impact. Governments need to collaborate and shape collective response through multi-sectoral actions that involve public, private sector and civil society sectors (Patel & Jernigan, 2020). This means that responsibility for the preparedness of the country lies not only with governmental agencies but also with active, engaged, and mobilized communities, businesses, healthcare facilities and nongovernmental organizations (Nelson et al 2007).

As of April 7, 2020, 81,235 cases of COVID-19 were reported in the EMR with 29,986 recoveries and 4,287 deaths (WHO EMRO, 2020).

To prevent health systems from becoming overwhelmed, thus depriving patients with COVID-19 and other urgent medical conditions from needed care (Fisher & Heymann, 2020), it is critical for governments in the EMR and beyond to include community-centered care approach as an integral part of the pandemic response. Early recognition of the valuable role of community-centered care approach at the frontline of defense, complementing governments' and institutions' efforts, as part of a whole-of-society response, will largely determine whether EMR countries will emerge from this crisis successfully and how fast they will recover once the pandemic is over. It is only through leveraging the vast network of service delivery including primary health care, public dispensaries and public health centres as nodes for testing, surveillance, isolation and clinical management of mild symptoms, that this pandemic could be averted.

Implications for governments/ ministries/ communities/ health facilities

Ultimately, a country's success in fighting COVID-19 will come from leadership, planning, cooperation and sharing of resources and expertise across governmental and non-governmental entities, conventional and non-conventional healthcare facilities and communities to make the most of each partners' assets and maximize the response needed to mitigate the devastating pandemic.

Key implications for communication and coordination of response; capacity building, logistics and resources; and community mobilization are provided below (Wignjadiputro et al., 2020; Rugarabamu et al 2020; Dibley et al., 2019; Dibley et al., 2019; Miller et al, 2018; Gillespie et al 2016; WHO, 2014; Ndlela, 2012; Hick et al., 2014; FEMA, 2011; Homeland Community Council 2006):

Communication and coordination of response

-> Strengthen stewardship functions to harness existing community resources and capacities, coordinate and integrate efforts across public and private resources and expertise of diverse response agencies, and monitor, communicate and steer the overall pandemic response
-> Clarify the roles and responsibilities of community-centered care facilities and providers in local and national response, including the lines of reporting through the health system and the linkages between the health system and community health actors
-> Establish a forum to engage hospitals, local public health agencies, communities and other emergency response entities in determining the priorities and scope of services that could be provided by community-centered care approach (as first line of defense)
-> Develop strategies for expanding community-centered care capacity and estimate the additional staff, supplies and related costs incurred by these surge measures:
 - > Develop tiered, scalable, and flexible surge capacity action plan which is tailored to the characteristics of the pandemic, and which incorporates both hospital and community-based surge capacity
 - > Establish mechanisms for facilitating mutual support and coordination between hospitals and local health care providers to prevent or mitigate hospital overload
 - > Reorganize/adapt triage and discharge criteria to release additional capacity and contain hospital overload; readjust referral/counter-referral policies and telephone scripting to provide consistency across agencies/entities (including use telemedicine and online platforms to augment response); and clarify transfer, transport and diversion policies
 - > Ensure appropriate regulatory and logistical issues of care are addressed
-> Develop interoperability standard protocols between the various Emergency Operation Centers/district health departments/councils to ensure unified command for pandemic response
-> Establish communication plan for adequate and timely notification of critical personnel and exchange of information with government agencies and health facilities to maintain the flexibility required to implement strategies and tactics in a timely manner

-> Organize statewide public information messaging in coordination with communities, hospitals, local emergency management and public information personnel to inform the public about where and when to seek care to reduce patient flow and inappropriate overburdening of existing infrastructure

Capacity building, logistics and resources

-> Map community resources and capacities: organizational (public and private; primary, secondary and tertiary levels of care); physical (healthcare establishments, equipment); human (number and type of staff; skills and expertise) and material (supplies).
-> Assess community needs and secure funding, proper logistics management and adequate human resources to meet the increased demand for services created by the pandemic.
-> Develop useful training resources and ensure that staff receive training in order to enhance their ability to fulfil their roles in contributing to the hospital's surge capacity.
-> Supply staff and community health workers with treatment protocols, guidelines on proper referrals (when to refer and to what health facilities) and communication tools
-> Create repositories and platforms for knowledge and resources sharing
-> Strengthen information systems with ability to meet needs of the community-based care network and public information officers

Community mobilization

-> Mobilize communities to lead in identifying priorities, organizing support, and making plans that are tailored for communities and by communities
-> Organize community emergency response teams including trained volunteers (to serve as a central cooperation and support organ for the county/province/district leaders) which can be mobilized as needed to perform a number of important response functions
-> Identify who has the capacity to meet which basic needs of vulnerable populations (food, health, shelter, water, sanitation and/or mental health support) at the community level
-> Develop neighborhood support mechanisms so that people who are at home or sick during the pandemic have food, medicines, childcare, and emotional support

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Annexes

Annexes

Annex I: Key considerations for infection prevention and control in isolation sites and alternate care sites (adopted from CDC 2020b):

This section highlights the planning considerations related to i) Physical infrastructure, ii) Patient care and iii) Services

Isolation sites: Temporary housing for a cohort of patients with COVID-19 who do not need medical attention but who cannot stay at home. A separate facility could be considered to quarantine people who have been exposed to the virus but do not have symptoms

Alternate case sites for managing mild cases: Could house recovering cases of COVID-19 after hospital discharge; or residents with COVID-19 who need to be moved from nursing homes that are experiencing COVID-19 outbreaks

Facilities that care for both confirmed and suspected COVID-19 patients would require additional infection prevention and control (IPC) and staffing considerations, including maintaining physical separation between the different patient cohorts and assigning dedicate personnel to work in each area.

Component	Planning consideration
1. Physical Infrastructure	
Layout	Ensure layout includes the following areas: <ul style="list-style-type: none"> → Patient triage → Staff respite area separate from patient care area with a bathroom for staff use only: staff can store personal belongings, take breaks, and eat → Area for staff to put on and remove personal protective equipment (PPE) → Patient care area or rooms with access to patient bathrooms/shower areas → Designated area in patient care area where staff can document and monitor patients → Clean supply area → Medication storage/preparation area → Dirty utility area
Functional HVAC (heating and cooling) system	Ensure functional HVAC (heating and cooling) system <ul style="list-style-type: none"> → For isolation sites, it would be ideal to have a facility whose HVAC units are mounted on an external wall and able to accommodate some outdoor air dilution as opposed to internal, 100% recirculation units → For sites for managing mild cases, HVAC has air supply at one end of the space and air return at the other end of the space. Staff respite area would ideally be in

Component	Planning consideration
	a room separate from the patient care area; at a minimum it should not be in a location near the air return
Spacing between patients	<p>Determine maximum number of patients who can safely receive care in the facility and plan for safe spacing between patients</p> <ul style="list-style-type: none"> → For isolation sites (e.g., hotel rooms), each patient should have a separate room with a separate bathroom → For sites for managing mild cases, there should be: <ul style="list-style-type: none"> → At least 6 feet of space between beds → Physical barrier between beds, if possible → Bed placement alternating in a head-to-toe configuration; ideally beds and barriers should be oriented parallel to directional airflow (if applicable)
Storage areas	<p>Establish space for clean and dirty storage</p> <ul style="list-style-type: none"> → Space for clean storage would ideally have a refrigerated section for medications and a room temperature section for other clean supplies (e.g., linen, PPE) → Space for dirty storage would have space for medical and non-medical waste and dirty equipment waiting to be reprocessed
Contamination prevention	Ensure cleanable floors and surfaces while avoiding porous surfaces (e.g., upholstered furniture, carpet, and rugs) as much as possible for contamination prevention
Accessibility	Ensure facility is functional for patient movement, including doors that are wide enough for wheelchairs and stretchers
Visitor access	Impose no visitors or pets rule to avoid unnecessary risks to patients and staff; post signage at entrances to the facility indicating this policy

2. Patient care

Staffing	<p>Ensure staff is appropriate for the level of care provided</p> <ul style="list-style-type: none"> → Staffing plan (including medical, IPC, occupational health, administrative, and support staff) → Implement sick leave policies for staff/employees that are flexible and non-punitive → Ensure at least one individual with IPC training is included in planning and is regularly available to address questions and concerns → Ensure that staff receive job-specific IPC training, including educating them on hand hygiene, proper selection and use of PPE and to not report to work when ill → Ensure staff have access to occupational health services if they experience a work-place exposure or become ill
Medical supplies	Provide necessary medical supplies are available at or accessible to staff at the facility. Examples of additional supplies include alcohol-based hand sanitizer, soap and paper towels, briefs, bedside commodes, urinals, personal hygiene supplies, vital sign machines, thermometers, wheelchairs
Personal Protective Equipment (PPE)	<p>Necessary PPE are available at or accessible to the facility</p> <ul style="list-style-type: none"> → At a minimum, staff should wear an N95 respirator (or a facemask if respirator is not available) and eye protection while in the patient care area → Staff should wear gloves for contact with patients or their environment → Staff should put on a clean lab coat or isolation gown at the beginning of each shift, and, at a minimum, change the coat or gown if it becomes soiled → Staff should remove PPE and perform hand hygiene when leaving the patient care area

Component	Planning consideration
	<ul style="list-style-type: none"> → PPE should not be worn in the staff respite area
Hygiene	<p>Promote appropriate hygiene practices</p> <ul style="list-style-type: none"> → Adequate sinks for hand hygiene are available → Adequate numbers of toilets, including a separate toilet for staff are available → Adequate shower facilities are available → Based on the population being served, an appropriate supply of bedside commodes, urinals, and personal hygiene supplies (e.g., soap, toothpaste) should be available → For isolation sites, each patient should have a separate room with a separate bathroom → For sites for managing mild cases, secure a minimum of 1 toilet for every 20 persons, or 1 toilet for every 6 persons with disabilities, and approximate ratio of 1 shower for every 25 persons, or 1 shower for every 6 persons with disabilities
3. Services	
Food services	Provide catering with disposable plates/utensil, with place for staff to eat without wearing PPE
Environmental services	<p>Provide environmental services regularly and safely by trained staff</p> <ul style="list-style-type: none"> → Environmental services staff have all necessary training and wear appropriate PPE for exposure to disinfectants and patients with COVID-19 → EPA-registered disinfectants from List N are used according to label instructions → For isolation sites, environmental services staff perform terminal cleaning of rooms and patients perform daily cleaning: → Patients should be provided cleaning materials (i.e., disinfectant wipes, gloves) and instructed to clean high-touch surfaces and any surfaces that may have blood, stool, or body fluids on them daily, according to the label instructions → Establish a process for at least daily removal of trash from rooms → For sites for managing mild cases, environmental services staff would perform both daily and terminal cleaning: → Wipe-down of all floors and horizontal surfaces at least once daily → Immediate clean-up of all spills of blood or body fluids³ → Regular disinfection of high-touch surfaces (e.g., doorknobs) → At least daily cleaning of bathrooms
Sanitation	Ensure sanitation and waste services are available for medical waste (if required) and for routine waste
Laundry facilities	Provide laundry services in accordance with routine laundering practices using either washer and dryers on site or through a contract with a laundry service
Pharmacy access	<p>Secure easy access to pharmacy</p> <ul style="list-style-type: none"> → Medications are properly labeled and stored → To the extent possible, patients should arrive with all necessary medications → The layout has designated a space for medication preparation activities that is not in the immediate patient care area and is away from potential sources of contamination (e.g., sink) → Staff who prepare and administer medications have been appropriately trained on methods to prevent medication errors and contamination
Diagnostics	Ensure availability of appropriate diagnostics

Component	Planning consideration
	<ul style="list-style-type: none">→ On-site glucose monitoring using personal glucometers (no sharing of glucometers)→ If oxygen is provided, pulse oximeters are required→ On-site anticoagulation monitoring might also be needed depending on patient characteristics

Annex 2: Key considerations to prepare outpatient facilities

The key considerations to prepare outpatient facilities have been grouped into physical infrastructure, services and patient care (adopted from: AAFP, 2020; CDC 2020a; CCDC 2020b).

Component	Planning consideration
1. Physical Infrastructure	
Layout	<ul style="list-style-type: none"> → Design a COVID-19 office management plan that includes patient flow, triage, treatment and design → Post visual alerts (signs, posters) at entrances and in strategic places providing instruction on hand hygiene, respiratory hygiene, and cough etiquette → Post signage in appropriate languages at the entrance and inside the office to alert all patients with respiratory symptoms and fever to notify staff immediately. → Reorganize waiting areas to keep patients with respiratory symptoms a minimum of 6 feet away from others and/or have a separate waiting area for patients with respiratory illness → Designate an area at the facility (e.g., an ancillary building or temporary structure) or identify a location in the area to be a “respiratory virus evaluation center” where patients with fever or respiratory symptoms can seek evaluation and care.
2. Patient care	
Staffing	<ul style="list-style-type: none"> → Ensure that staff receive job-specific infection prevention and control training, including educating them on hand hygiene, proper selection and use of PPE and to not report to work when ill → Ensure staff have access to occupational health services if they experience a work-place exposure or become ill → Implement sick leave policies for staff/employees that are flexible and non-punitive
Supplies	<ul style="list-style-type: none"> → Ensure facemasks, gloves and supplies are available (alcohol-based hand sanitizer, tissues, waste receptacles) → Ensure adequate medical supplies (e.g., IV solutions, antivirals, antibiotics)
Notifications and alerts	<ul style="list-style-type: none"> → Implement mechanisms and policies that promptly alert key facility staff including infection control, health care epidemiology, facility leadership, occupational health, clinical laboratory, and frontline staff about known suspected COVID-19 patients
Patient Management	<ul style="list-style-type: none"> → Consider rescheduling non-urgent outpatient visits as necessary → Ask patients with respiratory symptoms and fever to call the office before arrival, and schedule patients with ARI for the end of a day or at another designated time. → For patients who meet the risk criteria, ask the patient to wear a surgical mask and follow infection control procedures. → Consider reaching out to patients who may be a higher risk of COVID-19-related complications (e.g., elderly, those with medical co-morbidities) to ensure adherence to current medications and therapeutic regimens, sufficiency of medication and provide instructions to notify their provider by phone if they become ill.
Distant/home care	<ul style="list-style-type: none"> → Explore alternatives to face-to-face triage and visits such as providing more telemedicine and online appointments.

Component	Planning consideration
	<ul style="list-style-type: none"> → When possible, manage mildly ill COVID-19 patients at home: → Assess the patient’s ability to engage in home monitoring, safe isolation at home, and risk of transmission in home environment. → Provide clear instructions regarding home care and when and how to access the healthcare system for face-to-face care or urgent/emergency conditions. → If possible, assign staff who can monitor those patients at home with daily “check-ins” using online means. → Engage local public health, home health services, and community organizations to assist with support services (such as delivery of food, medication and other goods) for those treated at home.
3. Services	
Sanitation	<ul style="list-style-type: none"> → Provide no-touch waste containers with disposable liners in all reception, waiting, patient care, and restroom areas → Contact representatives from waste disposal service regarding plans for appropriate waste disposal → Perform management of laundry, food service utensils, and medical waste in accordance with routine procedures
Cleaning	<ul style="list-style-type: none"> → Review proper office and medical cleaning routines (routine cleaning and disinfection procedures are appropriate for COVID-19 in health care settings, with products with emerging viral pathogens claims recommended for use against COVID-19). → Dedicate equipment, such as stethoscopes and thermometers, to be used in acute respiratory illness (ARI) areas and make sure it is cleaned with appropriate cleaning solutions for each patient.

Knowledge to Policy Center draws on an unparalleled breadth of synthesized evidence and context-specific knowledge to impact policy agendas and action. K2P does not restrict itself to research evidence but draws on and integrates multiple types and levels of knowledge to inform policy including grey literature, opinions and expertise of stakeholders.

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