

# SURVEILLANCE, RESPONSE, AND MANAGEMENT: CASE MANAGEMENT AND TRANSMISSION CONTROL

## COVID-19 IMPROVEMENT STRATEGIES

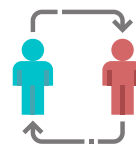
### WHAT IS CASE MANAGEMENT AND TRANSMISSION CONTROL?

As a person's first entry point into the health system, PHC not only provides a platform for ensuring access to essential and routine health services but is also a critical foundation for the direct surveillance, response and management of outbreaks. PHC allows for the multi-sectoral action needed to reduce vulnerability and build resilience of communities. Leveraging PHC for outbreak response is particularly important in low- and middle-income countries where there is often limited access to healthcare overall. Drawing from [PHCPI's Improvement Strategies](#), we identified three core strategies for how PHC systems can be leveraged for COVID-19 surveillance, response and management as shown in the graphic to the right. This document focuses specifically on the role of PHC in the direct management of known or suspected COVID-19 cases and transmission control at the population level.

### WHAT IS CASE MANAGEMENT AND TRANSMISSION CONTROL?

At present, there are no medicines or vaccines proven to cure or prevent the SARS-CoV-2 virus; however, various countries have implemented strategies to control the pandemic by slowing down the transmission and reducing mortality associated with COVID-19. Following on from identifying cases through effective [testing and contact tracing](#), case management strategies include providing necessary medical care (for example, management of symptoms, treatment of acute co-infections, and prevention of complications) and isolating suspected and confirmed COVID-19 cases. Eventually, COVID-19 case management will hopefully include the roll-out of therapeutics and vaccines that will provide longer-term treatment and prevention (1,2). Transmission control focuses on context-appropriate, population-level infection prevention measures to reduce or prevent community spread, such as physical distancing measures, and appropriate restrictions on population mobility (3). By implementing case management and transmission control measures in tandem, countries aim to decrease mortality and morbidity from COVID-19, disrupt the disease transmission chain, and control infectious disease outbreaks in the population (4).

### CORE STRATEGIES



**RISK  
COMMUNICATION**



**TESTING AND  
CONTACT TRACING**



**CASE MANAGEMENT  
AND TRANSMISSION  
CONTROL**

### COVID-19 PROMISING PRACTICES PHILIPPINES



Testing and contact tracing rest at the center of Ghana's response to COVID-19. Ghana has demonstrated rapid response to COVID-19 through anchoring these efforts in existing PHC infrastructure. The country has also utilized the strength in rapid innovation and learning to enhance both testing and contact tracing through the iterative development of mobile applications, partial transition to electronic health records, and pool testing to address resource limitations.

**Learn more about the Philippine's experience [here](#).**

# CHALLENGES & OPPORTUNITIES

Leveraging PHC for COVID-19 risk communication will be challenging no matter the context, however adopting this approach may offer several opportunities for health systems strengthening beyond the COVID-19 time period. These challenges and opportunities may include:



CASE MANAGEMENT  
AND TRANSMISSION  
CONTROL

## KEY CHALLENGES AND OPPORTUNITIES:

### EMERGENCY PREPAREDNESS, RESPONSE, AND RECOVERY

In the short term, risk communication can support effective **surveillance and response** efforts for COVID-19, for example by providing communication channels to track and report new or suspected cases. In addition, it can aid countries in developing plans and strategies for the safe reactivation of **essential services**, such as immunizations and family planning services. For example, risk communication could be involved in informing the public of "decreasing risk" as the pandemic progresses, with guidance that will help to inform them when it is safe to resume seeking essential services that were temporarily halted during the pandemic. (5) To support recovery efforts, it is important for countries to collect regular data and information on non-COVID priority diseases and conditions. This will enable countries to better **determine health needs and priorities** on the road to recovery. (30)

In the longer term, **lessons learned** from COVID-19 risk communication efforts can be integrated into the **ongoing review of national plans and surveillance efforts**, helping to strengthen a country's capacity to effectively prepare and respond to future epidemics. (3,8) This process is enabled by a strong in-country capacity to stimulate and make use of new and existing evidence and incorporate these learnings into changes at scale.

### PUBLIC TRUST

Ineffective communication during the COVID-19 pandemic could lead to worsened economic impacts and preventable morbidity and mortality that can carry over into long-term public distrust in the PHC system. (3) Communications that are inaccessible or delivered in a way that people distrust, and therefore disregard, can reduce overall trust and confidence in the system. To **meet community needs** and strengthen public trust in PHC as the **first point of contact**, risk communication must be tailored to the sociocultural context of communities, address misinformation and misconceptions, and provide **timely, accurate, and easy-to-understand advice and information** from trusted sources. (1,2,4,11)

On the other hand, regular, proactive communication that accounts for community needs, concerns, and preferences can help to strengthen public trust and reduce stigma in the immediate and long terms. It can also provide policymakers, planners, and health workers with the information they need to better tailor services to the communities they are designed to serve, reinforcing PHC as the first point of contact and laying the foundation for long term resilience. (2,21)

### EQUITABLE ACCESS

Ensuring **equitable access** to disease education and risk communications for all communities may be a challenge, particularly for remote or marginalized groups. If communications are not designed with at-risk or other marginalized communities in mind, they can exclude the voices and experiences of communities and run the risk of communications not being received at all, exacerbating risk of spread among those who are already at elevated risk. Planners and implementers should tailor communication channels to users' needs and use established **community engagement** and **local priority** setting mechanisms to **involve local stakeholders** to ensure that **diverse voices are represented in planning, implementing, and monitoring risk communication activities** and guarantee the flow of information across levels and sectors. (4,11) Iterative feedback from affected communities and **data from the service delivery level** will help to determine which communication platforms are available and accessible to a diverse audience, and which are exclusionary, helping to inform which channels to use for future outbreaks.

# HOW CAN PHC BE LEVERAGED?



CASE MANAGEMENT  
AND TRANSMISSION  
CONTROL

Globally, countries have adopted various strategies for responding to the COVID-19 pandemic. Because of its community-orientation, PHC is naturally set-up as the **first point of contact** for both COVID-19 and non-COVID concerns. Given that the majority of COVID-19 patients do not require critical care (5,6), PHC is often the main platform for case management; this may be especially true in countries where access to higher acuity care may be particularly limited (7). In addition, population-based transmission control interventions such as community quarantine, physical distancing, and movement restrictions are often implemented at the community level, making PHC a promising potential vehicle for supporting implementation(3). More specifically, PHC systems could be leveraged to help ensure that community needs, attitudes, concerns, and beliefs are identified and incorporated in case management and transmission control strategies. In addition, the PHC workforce and facilities are crucial for the triaging, referring, and isolation efforts necessary for controlling the spread of COVID-19 (8). Potential pathways for leveraging PHC for case management will depend on local context (9), but may include:

## POTENTIAL PATHWAYS:

### LEADERSHIP & GOVERNANCE

COVID-19 response requires a rapid activation of coordination mechanisms to avoid an unmanageable surge of cases in the population. By adopting **participatory leadership** and a **“Health in All Policies”** approach, key stakeholders within the health, transport, travel, trade, finance, security and other sectors can be proactively involved in developing national and sub-national response and management plans that maximize coordination across different levels of care (10–12). Protocols on case management, isolation, and patient referral must be clear, widely disseminated, and ideally embedded in PHC policies--including those on financing, inputs, and service delivery--to ensure access to adequate management for all categories of COVID-19 cases (2).

Such high-level decision-making should also be accompanied by **social accountability** measures at the primary health care level to ensure transparency and accountability of government actions, equitable access to adequate COVID-19 management, and protection of privacy and human rights in the context of strategies such as isolation or community quarantine that may restrict certain liberties (13,14). With the rapidly changing nature of the pandemic, active **innovation and learning**, regular **community engagement**, and dynamic **local priority setting** on case management and transmission control strategies must be adopted to assure measures are relevant, effective and responsive to the needs of the population (1).

To ensure the safety of patients and providers, COVID-19 case management and transmission control should be grounded in existing **quality management infrastructures** (QMI) (15). Existing QMI must be adapted to include globally accepted criteria for community quarantine and isolation, locally-adapted clinical guidelines for managing COVID-19 symptoms, and the operationalization of triaging algorithms for advanced management of acute COVID-19 cases. Additionally, metrics for monitoring and evaluation of the implemented strategies should be established to inform ongoing and future prevention and response activities (e.g. decision to relax quarantine measures) (16–19). To ensure the safety of patients and providers, COVID-19 case management and transmission control should be grounded in existing quality management infrastructures (QMI) (15). Existing QMI must be adapted to include globally accepted criteria for community quarantine and isolation, locally-adapted clinical guidelines for managing COVID-19 symptoms, and the operationalization of triaging algorithms for advanced management of acute COVID-19 cases. Additionally, metrics for monitoring and evaluation of the implemented strategies should be established to inform ongoing and future prevention and response activities (e.g. decision to relax quarantine measures) (16–19).



## SURVEILLANCE, DATA MANAGEMENT AND INFORMATION SYSTEMS

Case management goes hand in hand with disease [surveillance](#) and data management. By leveraging existing PHC surveillance systems, public health authorities can limit the spread of disease, manage the ongoing risk of COVID-19, and determine the next course of action for case management (e.g. increase health facility investment, identify potential disease hotspots, relax quarantine measures) (34). PHC information systems can be utilized to facilitate transfer of patients that cannot be managed at the primary care level to respective COVID-19 referral centers, and strengthen coordination of health care across different health teams (35). In settings where strict physical distancing measures are in place, [continuity](#) in management can be challenging - especially for patients with complex conditions. Strong PHC information systems provide a foundation to support COVID-19 and non-COVID diagnosis, management, and monitoring through interventions like [telehealth](#) (36). Lastly, utilizing PHC information systems can also promote opportunities for participatory research that will bring in localized insights to the complex problems coming from this pandemic (37).

## FACILITY INFRASTRUCTURE

During the pandemic, many PHC facilities are being repurposed as COVID-19 triage and management centers (32). Implementing case management in these facilities will require reconfiguring facility operations, such as adopting new safety protocols, developing procurement and distribution plans for PPEs and medical equipment, prioritizing services to be provided during the pandemic, building capacity for providing basic emergency care for seriously ill patients, and setting-up triaging and referral logistics (19,33). Before being repurposed, it is essential that health facilities first be evaluated on their [capacity to provide adequate response and referral](#). More about necessary changes in [facility organization and management](#) are discussed in the module on Safety & Facility Operations.

## POPULATION HEALTH MANAGEMENT

Population health management strategies are essential both for ensuring the appropriateness of strategies for the local context, as well as ensuring buy-in and compliance. The suitability of the different COVID-19 case management and transmission control strategies may vary depending on local contexts, capacities, and resources. For instance, population-level physical distancing measures may be difficult to enforce in overcrowded slums and rural areas unless added social support measures are integrated to community implementation (20). Additionally, case management strategies may need to be adapted for patients or communities based on pre-existing local or individual burden of disease (21). [Local priority setting](#) mechanisms in place to support PHC organization and service delivery can be leveraged to identify specific health priorities, epidemiological profiles, relevant resources and services, and socio-economic factors that will inform the development of suitable COVID-19 case management and transmission control strategies, both locally and nationally. Triage systems will also help reduce the risk of exposing patients to COVID-19, and prioritize PHC resources for addressing urgent health needs in the community (18).

To further streamline resources, it is important to identify specific populations that would be most at risk for COVID-19 morbidity and mortality (22). Medical care and referral processes for pre-identified populations in the community at high risk can be tailored to address their specific needs using existing PHC strategies like [empanelment](#). Panel data can also help support more targeted decisions and population-level strategies on stratifying risk for exposure and transmission at the level of the community (18,23).

Implementation of community transmission control measures for COVID-19 is complex and requires close partnerships and cooperation between state actors and the population (24). [Community engagement](#) mechanisms are crucial to sensitize the public on their active role in response, and ensure population buy-in and compliance to proposed case management and transmission control strategies (18). This entails regular communication and consultation with local health system users to determine the current strategies for reducing community COVID-19 transmission, and involving the community in the planning and implementation for future case management interventions (e.g. community vaccination and treatments) (1,25).



## WORKFORCE

A competent, motivated, and equitably distributed **workforce** is important for successful case management and transmission control. With the ramping-up of national and local COVID-19 efforts, the existing PHC workforce can be redeployed to meet urgent human resource gaps during the pandemic. The introduction of new COVID-19 response activities (e.g. triaging, isolation monitoring) may entail shifting the roles of health workers through task-shifting, re-assignment, and changes to workforce rostering (e.g. staggering shifts, integration of quarantine schedules) (26,27). In some cases, the existing health workforce may need to be augmented by the hiring of new cadres of workers to support COVID-19 efforts. To maximize the capacity for case management and transmission control, both the existing and new health workforce must be trained on proper **clinical management, infection control guidelines**, as well as equipped with the necessary supplies and PPE to safely carry out these new tasks. Balancing the cadre of available health workers may also help in **preventing an overload in health care surge capacity** brought about by increasing absenteeism, changing health human resource needs, and shortage of crucial resources. For instance, health care workers whose routine patient loads have been reduced by the pandemic may be trained and tasked to implement case identification and basic medical management for COVID-19. Having a registry of skilled health care workers may be a way to streamline efforts to augment the capacity for clinical activities associated to COVID-19. (28).

Infection prevention and control (IPC) measures should be strengthened to prevent unwanted infections in the workforce. Health care workers must be trained on clinical management for COVID-19, as well as equipped with the necessary supplies and PPE to safely deliver care (19). With the changes in the dynamic of health service delivery during the pandemic (i.e. physical distancing, full donning of PPE, and isolation recommendations), building and/or maintaining and capitalizing on an environment of **patient-provider respect and trust** - ideally fostered by the role of the PHC workforce as the first point of contact for **continuous** care over the life course - will also be essential.

## FINANCING AND PROCUREMENT

Effective case management for COVID-19 will entail harnessing public **health financing** resources for setting-up community treatment and triage centers, procurement of personnel protective equipment (PPE), hiring of additional staff for response, and continuous community engagement (19). Local health **procurement and disbursement** processes may need to be accelerated to address immediate appropriation and payment needs. Understanding local-level relevant regulatory systems and public financial management (PFM) mechanisms such as procurement schemes, capacity to reallocate funds, and necessary approval processes at the local level can allow for more rapid identification of budgetary flexibility opportunities and reallocation of resources (29).

This shift in spending priorities may lead to PHC resources being redirected to COVID-19 efforts. In this context, it will be critical to secure continuous funding for PHC services by exploring alternate financing mechanisms (for example social health insurance or health equity funds), and ensuring transparency in financial management (30). In addition, measures should be put into place to address a potential increase in out-of-pocket spending for medical care and financial opportunity costs from isolation measures that will not be covered through current public schemes to ensure continued **financial access** for all (31).



## RELEVANT RESOURCES

### PHCPI RESOURCES

- Primary Sources
  - [COVID-19 in Malawi: Innovating New Approaches in Resource-Limited Settings](#)
  - [New routine in primary care: Experiences from an Austrian PHC center during the COVID-19 crisis](#)
  - [Early Focus on PHC Improves COVID-19 Response in San Luis, Argentina](#)
  - [Improvement Strategies Modules](#)

### GLOBAL LEARNING PLATFORMS

- JLN COVID Response Platform (coming soon)
- [OpenWHO](#)
- [UNICEF COVID-19 Information Center](#)
- [PHCPI Community of Practice - online forum for resilient PHC](#)
- [Exemplars in Global Health](#)

### GLOBAL TOOLS & RESOURCES

- WHO, 2020 - [Operational considerations for case management of COVID-19 in health facility and community](#)
- WHO, 2020 - [2019 Novel Coronavirus \(2019-nCoV\): Strategic preparedness and response plan](#)
- WHO, 2020 - [Clinical management of COVID-19](#)
- WHO, 2020 - [Strengthening Preparedness for COVID-19 in Cities and Urban Settings](#)
- WHO, 2020 - [Considerations in adjusting public health and social measures in the context of COVID-19](#)
- WHO, 2020 [Addressing Human Rights as Key to the COVID-19 Response](#)
- WHO, 2018 [Primary Health Care and Health Emergencies](#)
- Path, 2020 - [Resources to support COVID-19 response in LMICs](#)

*PHCPI is a partnership dedicated to transforming the global state of primary health care, beginning with better measurement. While the content on this website represents the position of the partnership as a whole, it does not necessarily reflect the official policy or position of any partner organization.*

# REFERENCES

1. WHO. The Global Research and Development Roadmap. World Health Organization; 2020.
2. WHO. Clinical management of COVID-19. Geneva: World Health Organization; 2020 May.
3. WHO. COVID-19 Strategy Update. Geneva: World Health Organization; 2020 Apr.
4. WHO. 2019 Novel Coronavirus (2019-nCoV): Strategic preparedness and response plan . Geneva: World Health Organization; 2020 Apr.
5. Phua J, Weng L, Ling L, Egi M, Lim C-M, Divatia JV, et al. Intensive care management of coronavirus disease 2019 (COVID-19): challenges and recommendations. *Lancet Respir Med.* 2020 Apr 6;8(5):506–17.
6. Guan W-J, Ni Z-Y, Hu Y, Liang W-H, Ou C-Q, He J-X, et al. Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med.* 2020 Feb 28;
7. Bitton A, Ratcliffe HL, Veillard JH, Kress DH, Barkley S, Kimball M, et al. Primary Health Care as a Foundation for Strengthening Health Systems in Low- and Middle-Income Countries. *J Gen Intern Med.* 2017 May;32(5):566–71.
8. WHO. Primary health care and health emergencies [Internet]. World Health Organization; 2018 [cited 2020 May 28]. Report No.: WHO/HIS/SDS/2018.51. Available from: <https://apps.who.int/iris/handle/10665/328105>
9. Hirschhorn L, Smith JD, Frisch MF, Binagwaho A. Integrating implementation science into covid-19 response and recovery. *BMJ.* 2020 May 14;369:m1888.
10. WHO. Open mindsets: participatory leadership for health. World Health Organization; 2016.
11. WHO. WHO | Health in All Policies Helsinki Statement: Framework for Country Action [Internet]. 2014 [cited 2020 May 29]. Available from: <https://www.who.int/healthpromotion/frameworkforcountryaction/en/>
12. Chen Z, Cao C, Yang G. Coordinated multi-sectoral efforts needed to address the COVID-19 pandemic: lessons from China and the United States. *glob health res policy.* 2020 May 7;5:22.
13. Ford CL. Commentary: Addressing Inequities in the Era of COVID-19: The Pandemic and the Urgent Need for Critical Race Theory. *Fam Community Health.* 2020;43(3):184–6.
14. The Lancet. COVID-19: remaking the social contract. *Lancet.* 2020 May 2;395(10234):1401.
15. WHO. Communicable disease surveillance and response systems: guide to monitoring and evaluating. World Health Organization; 2006.
16. National Institute for Health and Care Excellence (NICE) in collaboration with NHS England and NHS Improvement. Managing COVID-19 symptoms (including at the end of life) in the community: summary of NICE guidelines. *BMJ.* 2020 Apr 20;369:m1461.
17. WHO. Considerations for quarantine of individuals in the context of containment for coronavirus disease (COVID-19). Geneva: World Health Organization; 2020 Mar.
18. WHO. Responding to community spread of COVID-19. Geneva: World Health Organization; 2020 Mar.
19. WHO. Operational considerations for case management of COVID-19 in health facility and community. Geneva: World Health Organization; 2020 Mar.
20. Abdel-Moneim AS. Community Mitigation During SARS-CoV-2 Pandemic: Mission Impossible in Developing Countries. *Popul Health Manag.* 2020 May 18;
21. Amimo F, Lambert B, Magit A. What does the COVID-19 pandemic mean for HIV, tuberculosis, and malaria control? *Trop Med Health.* 2020 May 13;48:32.
22. Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, et al. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet.* 2020 Mar 28;395(10229):1054–62.
23. Bearden T, Ratcliffe HL, Sugarman JR, Bitton A, Anaman LA, Buckle G, et al. Empanelment: A foundational component of primary health care [version 1; peer review: 2 approved]. *Gates Open Res.* 2019 Oct 31;3:1654.
24. Wilder-Smith A, Freedman DO. Isolation, quarantine, social distancing and community containment: pivotal role for old-style public health measures in the novel coronavirus (2019-nCoV) outbreak. *J Travel Med.* 2020 Mar 13;27(2).
25. Hu G, Qiu W. From guidance to practice: Promoting risk communication and community engagement for prevention and control of coronavirus disease (COVID-19) outbreak in China. *J Evid Based Med.* 2020 May 22;
26. WHO. Strengthening Preparedness for COVID-19 in Cities and Urban Settings [Internet]. 2020 [cited 2020 May 29]. Available from: <https://www.who.int/publications-detail/strengthening-preparedness-for-covid-19-in-cities-and-urban-settings>
27. Chua WLT, Quah LJJ, Shen Y, Zakaria D, Wan PW, Tan K, et al. Emergency department “outbreak rostering” to meet challenges of COVID-19. *Emerg Med J.* 2020 May 28;
28. Van Acker W. Overcoming bureaucratic hurdles to health care surge capacity [Internet]. World Bank Blogs. 2020 [cited 2020 Jun 11]. Available from: <https://blogs.worldbank.org/governance/overcoming-bureaucratic-hurdles-health-care-surge-capacity>
29. WHO. How to budget for COVID-19 response? A rapid scan of budgetary mechanisms in highly affected countries. World Health Organization; 2020 Mar.
30. Oladele TT, Olakunde BO, Oladele EA, Ogbuoji O, Yamey G. The impact of COVID-19 on HIV financing in Nigeria: a call for proactive measures. *BMJ Glob Health.* 2020;5(5).
31. Bachireddy C, Chen C, Dar M. Securing the Safety Net and Protecting Public Health During a Pandemic: Medicaid’s Response to COVID-19. *JAMA.* 2020 Mar 19;
32. WHO. Critical preparedness, readiness and response actions for COVID-19. Geneva: World Health Organization; 2020 Mar.
33. FEMA. Planning Considerations for Organizations in Reconstituting Operations During the COVID-19 Pandemic [Internet]. FEMA. 2020 [cited 2020 May 29]. Available from: <https://www.fema.gov/news-release/2020/04/30/planning-considerations-organizations-reconstituting-operations-during-covid>
34. WHO. Surveillance strategies for COVID-19 human infection: interim guidance, 10 May 2020. Geneva: World Health Organization; 2020 May.
35. PAHO. Prehospital Emergency Medical Services Readiness Checklist for COVID-19: Instructive. Pan American Health Organization; 2020 Mar.
36. Contreras CM, Metzger GA, Beane JD, Dedhia PH, Ejaz A, Pawlik TM. Telemedicine: Patient-Provider Clinical Engagement During the COVID-19 Pandemic and Beyond. *J Gastrointest Surg.* 2020 May 8;
37. Jull J, Giles A, Graham ID. Community-based participatory research and integrated knowledge translation: advancing the co-creation of knowledge. *Implement Sci.* 2017 Dec 19;12(1):150.
38. Blanchet K, Nam SL, Ramalingam B, Pozo-Martin F. Governance and capacity to manage resilience of health systems: towards a new conceptual framework. *Int J Health Policy Manag.* 2017 Aug 1;6(8):431–5.
39. Gilson L, Palmer N, Schneider H. Trust and health worker performance: exploring a conceptual framework using South African evidence. *Soc Sci Med.* 2005 Oct;61(7):1418–29.
40. Ryan MJ, Giles-Vernick T, Graham JE. Technologies of trust in epidemic response: openness, reflexivity and accountability during the 2014–2016 Ebola outbreak in West Africa. *BMJ Glob Health.* 2019 Feb 13;4(1):e001272.
41. Garg S, Basu S, Rustagi R, Borle A. Primary healthcare facility preparedness for outpatient service provision during the COVID-19 pandemic in India. *JMIR Public Health Surveill.* 2020 May 26;
42. Fendrick AM, Shrosbree B. Expanding coverage for essential care during COVID-19. *Am J Manag Care.* 2020 May;26(5):195–6.
43. WHO. COVID-19: Operational guidance for maintaining essential health services during an outbreak [Internet]. 2020 [cited 2020 May 6]. Available from: <https://www.who.int/publications-detail/covid-19-operational-guidance-for-maintaining-essential-health-services-during-an-outbreak>
44. WHO. Addressing Human Rights as Key to the COVID-19 Response. WHO; 2020.
45. Duckett S. What should primary care look like after the COVID-19 pandemic? *Aust J Prim Health.* 2020 May 27;