Letters on Urgent Issues

An adaptive governance and health system response for the COVID-19 emergency

A B S T R A C T

In the absence of an efficacious and affordable vaccine, the current crisis of COVID-19 is likely to be a long drawn one for many developing countries. In Bangladesh, where the entire population is susceptible and strict lockdown has been relaxed (as of May 31st 2020) due to concerns over saving livelihoods, the best available resources and capacities in the country have to be mobilized for an integrated and adaptive response strategy. In this paper we argue that a suitable response strategy for a country with highly constrained health system, must consider how response components will be delivered at scale, along with what can be delivered. In order to save maximum number of lives, an optimal strategy will be one that is able to iteratively select the most feasible set of health response and the network of organizations that can deliver most effectively at scale. This might require thinking outside of the conventional vertical network of public health system. Given its history of high-capacity non-government organizations in Bangladesh, it is likely that there are multiple alternative horizontal network options for delivering any set of response interventions. In fact many horizontal networks are already actively engaged in COVID-19 response work. The goal should be to identify and coordinate these networks, create new networks, and embed mechanisms for scaling up what works and scaling down what does not work. For a rapidly escalating and unpredictable crisis such as COVID-19, an adaptive response strategy is needed which allows for old and new networks of organizations to align and work collectively with minimum loss of lives.

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COVID-19 will affect the world for much longer than previously thought. An effective vaccine or treatment may be months away. Moreover, concerns about short-lived immune responses and the possibility of mutations means that we may have to live with the virus for years (Walker, Whittaker, & Watson, 2020, Kissler, Tedijanto, Goldstein, Grad, & Lipsitch, 2020). We suggest an adaptive strategy for cost-effective scaling up in a context of governance constraints, which can be applied to developing countries, drawing on emerging experiences.

Several months into the crisis, the basic interventions required to tackle the crisis are known. Fig. 1 summarizes the critical components of an integrated response. Saving the greatest number of lives requires simultaneously determining the most feasible and effective set of lockdown strategies and health responses, then identifying the organizations that can deliver and scale up each component of the response most effectively and at the lowest cost (Khan & Roy, 2020a). 'How to deliver' is as important a question as 'what to deliver' and the two have to be jointly determined.

These are not just health system questions, but also governance and capability question as health systems in developing countries are constrained by capacity, governance and corruption issues (Hutchinson, Balabanova, & McKee, 2019; Molina, 2016; Savedoff & Hussmann, 2006; Lewis, 2006). Effective supply-side responses will require innovative arrangements of bringing together unconventional delivery agencies to deliver appropriate segments of the response. In many countries, such networks have emerged supporting the existing health systems. The challenge is to devise ways of assessing the effectiveness of different delivery networks in a transparent way and enable better scaling-up.

Developing countries have responded with a variety of delivery responses—sometimes spontaneous—involving not just the public health system but also private sector hospitals, NGOs and companies. These responses need to be quality-controlled and coordinated to be effective, so the role of coordination agencies or their absence has been critical. If multiple agencies have to be comparatively assessed, redundancy has to be built in at the outset, with several networks providing similar response components. This provides a feasible way of identifying the cheapest way of delivering each component at a high-enough quality (Khan & Roy, 2020b) (see Fig 2).

Developing countries like Bangladesh or many states within India have not been very successful in enforcing lockdowns or delivering interventions at various levels. Weak centralized systems struggled in communicating the behaviour changes required for social distancing and lockdowns or delivering the required treatments at low cost or at scale. Rapid scaling up of health responses in vertically organized systems with significant capacity, governance and corruption constraints typically resulted in sharp rises in delivery costs or failed to deliver entirely. The cost of interventions is not just its notional market price but also the leakages
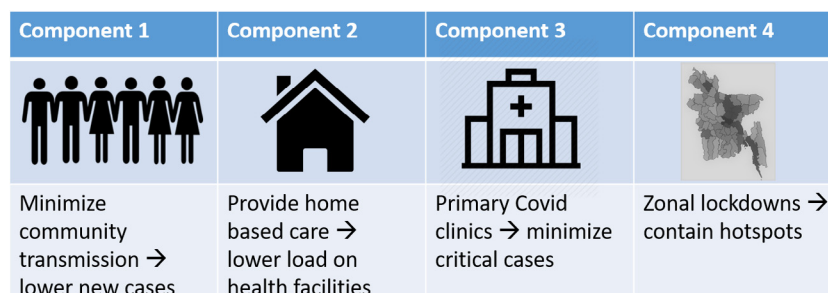
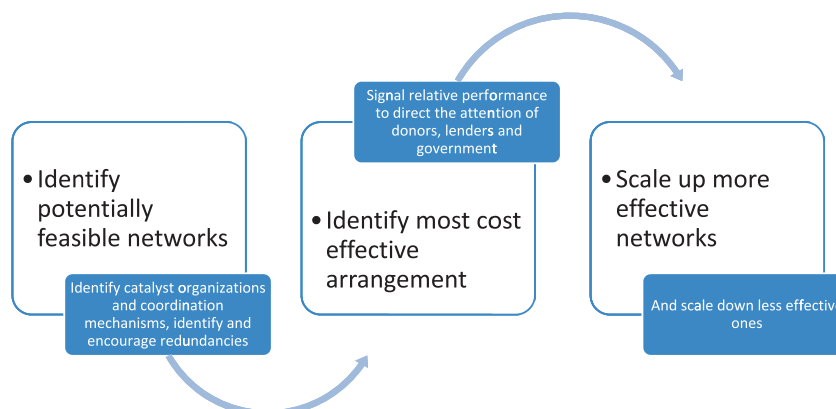| Component 1	Component 2	Component 3	Component 4
Minimize community transmission → lower new cases	Provide home based care → lower load on health facilities	Primary Covid clinics → minimize critical cases	Zonal lockdowns → contain hotspots

Fig. 1. Components of health response strategy.

Fig. 2. An adaptive and integrated response strategy.

that happen in procurement and simply through mismanagement (Barkat & Islam, 2001). Responses have been more effective and affordable when delivery networks were horizontally coordinated by catalyst organizations, involving agencies in the public, private and NGO sectors (Hindu, 2020). These horizontal networks need to cooperate with, but are different from and operate parallel to, the public health system. If multiple horizontal networks are identified and their performance compared for each response component, it becomes possible to identify the fastest and most cost-effective scaleup strategy. There are examples of how public health interventions were scaled up using various horizontal networks even in fragile contexts like Somalia, Afghanistan and Gaza (Cooley & Papoulidis, 2017).

In this approach, we need to ensure that effective coordination agencies are identified, either in government or NGOs that can take charge of maintaining oversight and reporting on outcomes in each network so that there is transparency. Some examples already exist such as the Brihanmumbai (Greater Mumbai) Municipal Corporation (BMC) in Dharavi, the self-help group Kudumbashree in the Indian state of Kerala, and the government of Ghana. Each of these highlight how local enforcement contexts were utilised to deliver effective treatment responses.

BMC's proactive engagement in Dharavi, one of Asia's largest slums – where it liaised with local private doctors and community workers for intensive surveillance and screening—has been credited with keeping the case load relatively low. The Kudumbasree 'model' of women-led community networks in Kerala monitored elderly and vulnerable citizens in quarantine for everyday and medical needs. In Ghana the government worked with a private drone company to deliver test samples while providing loans to local manufacturers to produce personal protective equipment. In countries which have a rich tradition of social self-governance

an adaptive and integrated delivery mechanism would greatly enhance treatment response.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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