



OPEN LETTER

# Lessons for responding to COVID-19, from Exemplars in Under-five Mortality Reduction [version 1; peer review: 1 approved with reservations]

Lisa R Hirschhorn <sup>1,2</sup>, Nathaniel Gerthe <sup>3</sup>, David E Phillips<sup>3</sup>, Oliver Rothschild<sup>3</sup>, Manpreet Singh<sup>4</sup>, Agnes Binagwaho<sup>2</sup>

<sup>1</sup>Feinberg School of Medicine, Northwestern University Chicago, Evanston, IL, 60208, USA

<sup>2</sup>University of Global Health Equity, Kigali, Rwanda

<sup>3</sup>Health and Life Sciences, Gates Ventures, Kirkland, WA, 98033, USA

<sup>4</sup>Strategy, Planning & Management | Family Planning; Maternal, Newborn & Child Health; Nutrition, Bill & Melinda Gates Foundation, Seattle, WA, 98109, USA

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## Abstract

COVID-19 may not have the same direct effects on children as it does on older adults, but its indirect effects still pose a threat to child health, by disrupting delivery of routine health services like immunizations. This has happened during previous crises, and early indications point towards similar disruptions due to the coronavirus pandemic. To mitigate this, countries need to build resilient health systems capable of maintaining essential maternal and child health interventions, while also responding to COVID. How can this be accomplished?

To find some answers, we can learn from countries in the past who improved health outcomes in the face of challenging circumstances. Specific to child health, countries with positive-outlier performance in reducing under-five mortality provide helpful strategies. These lessons include a clear national plan that drives rapid response, leveraging existing data systems to inform decision-making, engaging communities via community health workers, and focusing on equity. Today, countries around the world are facing the challenge of responding to the pandemic while building resilient health systems that continue to deliver invaluable maternal and child health services. Studying lessons from previous success stories can help inform the road ahead.

## Keywords

COVID-19, Child health, Indirect effects, Exemplars

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report

1. **Agbessi Amouzou** , Johns Hopkins

Bloomberg School of Public Health,  
Baltimore, USA

Any reports and responses or comments on the article can be found at the end of the article.



This article is included in the [Coronavirus \(COVID-19\)](#) collection.

**Corresponding author:** Agnes Binagwaho ([abinagwaho@ughe.org](mailto:abinagwaho@ughe.org))

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## Introduction: COVID-19's indirect effects pose a threat to child health

COVID-19 is testing national health systems on an unprecedented scale. The response to the pandemic, including prevention, detection, and treatment, has placed difficult and often dangerous demands on frontline health care workers, health officials, and other essential workers, and has challenged policymakers around the globe.

Researchers are currently examining how the crisis and the response, including the diversion of resources, may indirectly impact other areas of public health<sup>1</sup>. We believe one key area that should not be overlooked is the health of children.

Although the direct effects of COVID-19 on children seem to be less severe than on adults, it poses a significant indirect threat to children's health by disrupting the delivery of routine health services such as immunization. We have seen this before. The 2013 and 2019 Ebola outbreaks resulted in decreases in key maternal and child health interventions, including antenatal care, vaccinations, and treatment-seeking for diarrhea and acute respiratory infection<sup>2</sup>. The result was an estimated increase in under-five mortality (U5M) that ranged from 10–28 percent in affected countries<sup>2</sup>.

Some are predicting similar consequences from the COVID crisis<sup>3</sup>. Recent models predict disruptions that could potentially double malaria deaths in 2020 and lead to an excess of 500,000 AIDS-related deaths in sub-Saharan Africa by 2021<sup>4</sup>. Specific to child mortality, other studies are already projecting reductions in coverage of key child and maternal health interventions (facility-based delivery, vaccinations, bed net distribution, and vitamin A supplementation)<sup>5</sup> and a corresponding projected increase of over 500,000 child deaths in the next year<sup>5</sup>. These sobering projections highlight the need to build resilient health systems capable of maintaining health interventions through strategies to adapt to COVID-related disruptions in demand and delivery, while integrating new services in response to new threats.

However, the aforementioned health impacts are not a foregone conclusion. The “Exemplar” countries of U5M reduction (highlighted throughout the [Exemplars in Global Health web platform](#)) offer important insights which may help countries accomplish these aims. Countries such as Rwanda, Senegal, and Peru have demonstrated resilience through crises, and in doing so have leveraged certain key factors to their success. Which, if any, of those strategies might help countries trying to respond to the threat posed by COVID-19?

We focus on four strategies that stand out as especially important for achieving a resilient health system that is capable of responding to the current pandemic and maintaining coverage of key interventions known to reduce U5M.

## Lessons from Exemplar countries

### A. Clear national plan driving rapid response

The first lesson is the importance of a well-coordinated and clearly articulated national plan for the rapid adoption of interventions, including nationally-led collaboration with partners and clear channels of communication<sup>6</sup>. Among the Exemplar countries we studied, Rwanda demonstrated this effectively. After the genocide in the 1990s, Rwanda made a strong commitment to reducing U5M and established a clear vision for the health system, including an emphasis on primary health care and horizontal integration. The country aligned donors and partners with this vision, and ensured successful implementation at the local level through performance contracts to ensure accountability.

Today, Rwanda has leveraged these capacities in their response to COVID-19. The government was successful in preventing two Ebola outbreaks in 2013 and 2019 and is applying learnings on multisectoral coordination and a national contact tracing program to the current pandemic<sup>7</sup>. Rwanda took quick action in mid-January, implementing national policies to screen travelers for COVID and test suspected cases, in an effort to get ahead of the problem<sup>7</sup>. After Rwanda's first case of COVID was identified in mid-March, the government quickly launched contact tracing, COVID-19 testing, and declared a national lock-down<sup>7</sup>. At the local levels, the country has established handwashing stations at transport hubs and strictly enforced national social distancing policies<sup>8</sup>. Local officials have also been trained and equipped with fever scanners to monitor high-risk exposure areas<sup>9</sup>.

Rwanda's success in reducing U5M and their decisive action in response to COVID-19 show the importance of a clear national plan for rapid response, including alignment of international, national, and local stakeholders towards this plan. These learnings have enabled Rwanda to swiftly respond to changing circumstances in the interest of continuously improving quality of the response. These lessons can be applied by other countries looking to build a resilient health system that can manage COVID-19, continue delivering child health interventions, and minimize subsequent increases in mortality from other causes.

### B. Using data for decision-making

A second theme from the Exemplars research is the importance of using data to inform the development and execution of a clear national plan for rapid response. In the context of COVID-19, this entails leveraging existing data systems (e.g. surveillance systems) to help identify where testing and other interventions are needed and to track changes in the spread of the virus.

Senegal is one of the Exemplars that demonstrated this lesson effectively. In the 2000s, Senegal built upon their polio surveillance systems to monitor and respond to measles cases. Today, in their response to the pandemic, Senegal again has shown strength in surveillance, quickly establishing laboratories to conduct testing, and through developing rapid testing diagnostics<sup>8</sup>. As a result, they have outpaced the testing rates of wealthier African countries like Morocco and Kenya<sup>10</sup>.

Senegal's ability to repurpose existing data systems provides lessons that countries today can use to build a resilient health system that is capable of responding to COVID-19 and protecting the health of children.

#### *C. Leverage community health workers to engage communities*

In conjunction with using data for decision-making, it is important for countries to effectively disseminate these decisions to communities. This can be accomplished through community health workers.

Once again, Senegal demonstrated this effectively in their campaign to reduce U5M. The country recognized that data systems and data-driven interventions must be relevant and acceptable to local communities. Towards this end, Senegal mobilized the *bajenou gokh* community health cadre, comprised of older women who are respected by the community. The *bajenou gokh* cadre helped with promotion of maternal, neonatal, and child health, and provided antenatal care, postnatal care, and child immunizations. Moreover, much of Senegal's monitoring and surveillance has also been done by trained community health workers, who report suspected cases of notifiable diseases to district nurses.

Senegal has continued this emphasis on community engagement in their COVID-19 response today. Together with their surveillance and testing efforts, the country has leveraged religious leaders to help reach and educate local communities, while simultaneously developing evidence-based standards and guidelines for treatment to improve quality of care provided<sup>8</sup>.

Senegal's emphasis on pairing data use for decision-making with effective community engagement provides lessons that countries can use to build a resilient health system capable of more effectively responding to COVID-19 and protecting the health of children.

#### *D. A focus on equity*

Finally, another key theme from the Exemplar countries is the importance of a focus on equity, which can be assessed along many dimensions, including geographic, gender, ethnic, and wealth equity. In today's context, equity is especially relevant. As an example of wealth equity, the shutdown of public transportation in response to COVID has made it challenging for both the poor and for healthcare workers to travel to health facilities, resulting in "dramatic reductions in essential public health and clinical interventions", including a 69% reduction in measles, mumps, and rubella vaccination in children [and] a 21% reduction in institutional deliveries in some countries<sup>11</sup>. In addition, early studies are finding that minority ethnicities have a higher risk of both COVID-19 case rates and mortality, showing an example of how COVID-19 is affecting equity among different ethnicities<sup>12</sup>.

Many Exemplar countries demonstrated how to account for equity, by adapting strategies to different groups based on the impact of diseases and corresponding health system responses on these groups. One example is Peru, which prioritized low-income areas for the initial rollout of key child health

interventions, including rotavirus, Haemophilus influenzae type B, and pneumococcal conjugate vaccines, rather than focusing on populations that were the easiest to reach.

Moreover, the country developed the *Juntos* conditional cash transfer program to address inequity and alleviate inter-generational transmission of poverty, by improving access to health services and education. The program, aided by strong data management systems, initially focused on low-income households, but later broadened its scope to consider equity along other dimensions, including households with lower women's literacy and households with limited access to appliances, fuel sources, and public services<sup>13</sup>. As conditions for the cash transfer, families were required to send their children to primary school and take them to routine health care visits, and pregnant mothers were required to attend six antenatal care visits. In this manner, Peru addressed a twofold challenge of reducing poverty and other inequities while simultaneously improving uptake of interventions to reduce U5M.

Today, Peru has adopted an equity lens in its response to COVID-19. Peru has given a voucher of 380 soles (~US\$111) to those whose job and income have been adversely affected by COVID-19<sup>14</sup>. In addition, Peru has approved loans to struggling businesses and spending programs totaling 12 percent of the country's GDP, one of the largest in the world on a percentage basis<sup>15</sup>.

Peru's example of focusing on equity and dismantling barriers to healthcare access are another key attribute of a resilient health system that can deliver essential services during and after times of crisis<sup>6</sup>. An equity lens in responding to the current pandemic will ensure that vulnerable groups are accounted for and prioritized in the response, to improve their access to COVID-19 testing and ensure continued access to essential primary care services.

#### **A call to action for the road ahead**

At the moment, much energy is being spent on a direct response to the pandemic. At the same time, it is also critical to ensure that health systems maintain delivery of essential services, including key maternal and child health interventions, and that people are able to access these services.

To minimize the disruption to primary care caused during and after health shocks, countries can learn from the strategies we have highlighted<sup>6</sup>. A number of these strategies link to domains that are hypothesized as integral to the resilience of health systems, namely integration across sectors and stakeholders, awareness of health threats and available resources, and an ability to adapt to meet population needs<sup>16</sup>. While the examples shown here and throughout the [Exemplars in Global Health platform](#) highlight how to build components of a resilient health system, we look to other work to define the full spectrum<sup>6</sup>.

Overall, the study of the Exemplars illustrates how to work towards resilient health systems in the midst of responding

to COVID-19. Some of the most salient lessons include establishing a national plan for rapid response, leveraging data and community health systems, and accounting for equity; beyond this, the Exemplar country narratives offer both insights and nuances beyond those depicted here.

The challenge of responding to the pandemic while maintaining essential child health services is daunting, but learning from success stories can help smooth the road ahead.

### Data availability

No data are associated with this article.

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## Open Peer Review

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**Agbessi Amouzou** 

Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

This viewpoint tackles a timely subject of interest to all countries and global health actors dealing with health systems resiliency, especially in low- and middle-income countries. The challenge of establishing health systems that can withstand sudden and temporary shocks such as the COVID-19 pandemic can only be met with longer-term vision and strategies that are well implemented, taking into account not only the service provision but also the demand of services. These strategies must help countries withstand the direct effect of a crisis or pandemic but also indirect effects on other components of the system. The viewpoint suggests four strategies that the authors claim have made some countries - those referred to as exemplars - achieve health system resiliency with regards to child health. While the argument is relevant, it would be more substantial and impactful if the authors would clarify further the following:

1. The four strategies that the authors call for are not specific to child health, and therefore it is unclear how they would prevent disruption to child health services such as immunization in the middle of the pandemic. The COVID-19 related guidelines and restrictions that countries, including the cited exemplar countries, have established to control the pandemic discourage public campaigns, limit population interactions, redirect resources and health care workers to fight the pandemic. Being clear on how child health service provision and utilization have been (or can be) maintained without disruption through the proposed strategies would strengthen the viewpoint.
2. The authors appear to be asserting that the exemplar countries cited in the viewpoint would not have any disruption in their child health services. However, it is unclear whether this is the case. These countries do not stand-out as having the lowest direct COVID burden or impact. Peru appears to be hard hit; Senegal also, to some extent, when compared to other African countries. The authors might need to nuance their views, given the current lack of evidence of the indirect impact of COVID.
3. Do countries need to consider the four strategies as necessary or select between them? The

examples provided are discrete and do not really offer a strong argument as to why Rwanda, Senegal, and Peru can be considered to have resilient child health systems. Can you show that these four strategies would prepare countries toward a pandemic like COVID-19?

4. Finally, and related to my previous point, it would be useful to discuss the long-term impact of strategies versus health system resiliency to shocks and crises. While Rwanda, Peru, and Senegal have shown exemplar progress in child health over time, the resiliency of their child health disruption must be demonstrated rather than assumed.

**Is the rationale for the Open Letter provided in sufficient detail?**

Yes

**Does the article adequately reference differing views and opinions?**

No

**Are all factual statements correct, and are statements and arguments made adequately supported by citations?**

Yes

**Is the Open Letter written in accessible language?**

Yes

**Where applicable, are recommendations and next steps explained clearly for others to follow?**

Partly

**Competing Interests:** Participated in the Exemplar in maternal and neonatal mortality study, funded by Gates Ventures. I confirm that this competing interest hasn't affected my ability to write an objective and unbiased review of the article.

**Reviewer Expertise:** Reproductive, maternal, newborn, and child health and mortality

**I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.**

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