

KEY PRINCIPLES ON COVID-19 RESPONSE IN RESOURCE POOR SETTINGS

“At the outset of every crisis, it's critical not only to rely on lessons learned and relearned but to discern lessons that need to be unlearned.”

-Paul Farmer, MD, PhD

University Professor, Global Health and Social Medicine, Harvard University
Chair of the Department of Global Health and Social Medicine, Harvard Medical School

It is critical to link the emergency response to COVID-19 to efforts to strengthen health systems and all social services.

We should aspire to invest in national institutions to build local capacity (both public and private). Following the 2010 earthquake in Haiti, we saw hundreds of millions of dollars invested in temporary facilities and short-term contracts while the network of public hospitals and schools across the country remained under-equipped and under-resourced.

In the two years after the 2010 earthquake in Haiti, less than 10% of the \$6.4 billion disbursed from bilateral and multilateral funders went to Haitian institutions. Similar trends can be found in other post crisis situations: For example, Liberia only received 3% of its official development assistance (ODA) through national systems prior to the Ebola outbreak.

When ODA is invested in the public sector during emergency responses clear development gains are evident. For example, beginning in 1998 and 1999, while Rwanda was in the midst of recovery from a genocide that killed an estimated 20 percent of the country's population, the Rwandan government set into motion policies that would strengthen national institutions and lead to substantial social and economic progress. Rwanda's Vision 2020 Strategy for Equitable Social and Economic Development emphasized health as a pillar of the national cross-sector approach to reducing poverty by achieving universal access to health care.

With a clear national development strategy in place, Rwanda required all donors to channel funds in support of their national plan and to rebuild government systems, institutions, and processes by investing in them. It maintained the right to *decline* aid that was not aligned with the national strategy or had high transaction costs or conditionalities. NGOs and partners that were unwilling to work in accordance with the government's plans were at times asked to leave the country. Under the leadership of the government, many of the country's donors agreed to provide general budget support beginning in 2000. By 2005, Rwanda was receiving 37 percent of its aid through country systems, more than most least developed countries receive today; by 2010 the figure had increased to over 55 percent.

What were the results of these investments and policies? According to an article by Paul Farmer and his colleagues in the British Medical Journal:

- Between 2005 and 2010 more than a million Rwandans were lifted out of poverty as the proportion of the population living below the poverty line dropped from 77.8 percent in 1994 to 58.9 percent in 2000 and 44.9 percent in 2010.
- Life expectancy climbed from 28 years in 1994 to 56 years in 2012 as mortality associated with HIV disease fell by 78.4 percent (the greatest reduction in the world during that timeframe);
- Mortality from tuberculosis by 77.1 percent (the greatest decline in Africa); and deaths from malaria by 87.3 percent.
- Between 2000 and 2010, the country's maternal mortality ratio fell by 59.5 percent, and child mortality plummeted from 275 deaths per 1,000 live births to 54 deaths per live births, the steepest declines ever recorded in modern history.

Tracking of donor aid in post crisis situations is critical.

Tracking of donor aid is rarely done in settings of fragility: There is no institution mandated to track donor pledges and disbursements following international donor conferences.

Disbursements rates, while critical, are not the full story. A critical metric to any recovery or development effort is the percentage of aid that stays in country: An estimated 75% of all ODA to the poorest countries is invested outside the public sector of the recipient country. In addition, UN flash appeals almost always do not allow for the recipient government to receive funding. Bypassing of the public sector has a significant impact on development outcomes as there is a correlation between investment in the public sector and a decrease in poverty and disease.

Community health workers are necessary to any effective response.

One of the key lessons learned in recent years when responding to epidemics - HIV/AIDS, tuberculosis, cholera, Ebola - is that community health workers are an essential element of a successful response. In addressing the COVID-19 pandemic, community health workers not only can serve as contact tracers but can also support patients to ensure they have access to proper treatment, a safe environment where they can recover, and that they are able to access basic necessities such as food and social safety net programs. Community health workers also play a critical role in information sharing both in terms of preventative measures that individuals should be taking as well as on the status of COVID-19 in their community.

Community health workers need training, protective personal equipment (PPE) and fair compensation to serve in all of these roles to help deliver treatment options or vaccines to ensure that communities have access to them when they become available. In times of such economic downturn and instability, hiring community workers is not only the best community health intervention but can serve at the same time as an extremely effective and powerful job creation program. If at some point evidence shows that those who test

positive for antibodies do have some level of immunity, hiring COVID-19 survivors as community health workers could be prioritized to provide direct patient care. This strategy was successfully used in the Ebola response in West Africa.

Public health messaging will only be effective if delivered by those with credibility. In addition, in settings of poverty, international development actors need to ensure that individuals have access to the supplies, goods and services necessary to adhere to the recommended public health guidance.

Past epidemics have taught us that public health messages need to be delivered by figures that are trusted both nationally and within communities. In many countries, for example, daily COVID-19 briefings are only done by the Minister of Health. When public health messages are politicized, decisions are made that can be extremely counterproductive (e.g. not following social distancing recommendations).

In developing countries, the same principle applies: public health messages need to be delivered by trusted members of the community. During the Ebola outbreak, for example, effective messaging was done by community health workers who were often Ebola survivors themselves. We have seen how in West Africa and the Democratic Republic of Congo messages at times were not heeded when delivered by international organizations or politicians who may not have been trusted. The level of distrust was compounded when it became widely understood that the mortality rate in the Ebola Treatment Units (ETU) was at 70%ⁱ.

In settings of poverty, while public health messaging is critical, communities cannot adhere to the recommended guidance if they do not have access to the basic supplies that are needed. We cannot tell communities to wash their hands if there is no soap or running water readily available; we cannot require people to wear masks if there are none to be found. In Haiti, for example, knowledge on best practices for cholera is high but communities don't have access to materials.ⁱⁱ Messaging must also recognize that many people living in poverty might not be able to social distance at home as they live in multigenerational housing. Any kind of community message has to recognize the realistic conditions people are living in and be accompanied by a strategy to ensure the recommendations can be implemented. In the case of COVID-19, international organizations and NGOs working in settings of poverty must ensure as much as possible that free soap, clean water hand washing stations, masks as well as adequate supplies to stay home when recommended including food and other staples are widely available and affordable or free of cost.

People need a “safe haven” where they can safely isolate when sick.

Experience from countries with higher GDP shows that a successful response includes, whenever possible, converting hotels and dormitories into medically supervised isolation facilities for patients who are sick or exposed to the virus. In settings of poverty (where access to private bedrooms and bathrooms is less likely to be available), facilities such as hotels, guest houses and/or dormitories should be used if they exist and can be made available.

This strategy can only be successful if community health workers are fully engaged - they can help find the patients and support them from the minute they have been exposed to the virus until they are fully recovered. Community health workers know how to do this - they are able to bring food to quarantined patients, make phone calls on their behalf, bring medication whenever necessary, and in this time of social distancing and isolation, they provide a human connection:

“Somebody needs to say to people who are worried and not feeling well, ‘We got you. If this is Covid-19, we got you. And we’ll look out for your contacts, your spouse and your children.’ And I think that’s another thing you can do remotely or virtually, is reassure people that there is no reason to believe everything is lost.”

Paul Farmer, April 2020

Any new therapeutic or vaccines that are developed need to be available to people in resource poor settings.

While the type of supportive care that is currently provided in wealthier countries is critical, more efficient diagnostic and surveillance tests, effective therapeutics and a vaccine are essential. The entire biotech world is focused on developing therapeutics and vaccines. This is unlike past instances where infectious diseases such as Ebola or tuberculosis disproportionately affected the poor and therefore saw a slower response. The challenge will be to ensure that as these products come online, they are made available and affordable in resource poor settings. Donor governments and international organizations should work together to lower the price of existing tests.

Always aspire to deliver the highest quality services that evidence supports.

If evidence-based standards exist that can improve people’s lives, these standards should always be the aspiration of any response. The aspiration should not be disregarded because of short-term cost limitations. Reaching the goal of providing the highest quality services may take time and additional resources and partnerships. In the case of COVID-19, this means donors should support hospitals to be equipped with oxygen, PPE, isolation space, ventilation systems for air quality and flow, ventilators with trained staff, minimum intensive care equipment and an ethical framework for rationing equipment and therapeutics. Applying a separate standard of care in resource-poor settings is often ineffective, and, often more costly.

During the Ebola outbreak in West Africa (2014-2016) quality care (including effective measures to address deadly dehydration) was unfortunately rarely available to patients in Ebola Treatment Centers. While patients were being blamed for avoiding taking their loved ones to Ebola Treatment Centers (ETU), there was little in the way of effective treatment happening in such places. A major goal of the ETUs was to stop the spread of disease by isolating sick patients while high quality treatment was not prioritized by international development organizations. The mortality rate was approximately 70% in the ETUs during the first year of the outbreak because international development leaders had determined that it was too expensive and difficult to provide the only effective care available at the time, intravenous fluid replacement. When IV fluid replacement was used, along with intensive

care and the newest therapeutics, for the small number of Americans who contracted Ebola and were treated in U.S. hospitals, the mortality rate was 0%.ⁱⁱⁱ The unacceptably high mortality rate in West Africa could almost certainly have been lowered with any combination of these interventions.

Solutions are needed to ramp up both diagnostic and surveillance testing.

Testing for both diagnostic and surveillance purposes is critical to effectively bring COVID-19 outbreaks under control in any country. Those places that have been most successful at keeping prevalence down such as Iceland and South Korea have extensively tested those suspected of being infected with COVID-19 with diagnostic polymerase chain reaction (PCR) tests so that those who are infected can be effectively isolated from others and treated. Some countries, such as South Korea and China, complemented their testing for active viral infection with antibody testing that detects immune response for epidemiological surveillance. Antibody tests are used to identify people who have been infected in the past and who have mounted an immune response. These types of tests are needed to conduct effective epidemiologic efforts to track hotspots and see where the virus has been and places where the next outbreaks are likely to occur. Antibody testing can be extremely helpful in order to identify trends that determine community prevalence, fatality rates, which people are most at risk of contracting and spreading the disease, and which people are most at risk for becoming dangerously ill or dying.

The huge challenge facing public health officials in resource poor settings is that PCR diagnostic tests are expensive and currently can only be processed at very few laboratories because of their complexity in processing. It can also take many days or even weeks to get results from the PCR diagnostic tests, valuable time when determining whether suspected patients need to be isolated or how they should be treated.

What are the options for diagnosing suspected cases of COVID-19 when PCR testing is not available to most of the population?

The following approaches must be considered when determining testing strategy in resource poor settings:

1. Take advantage of the widespread availability of GeneXpert machines in low and middle income countries and utilize them for COVID-19 testing.
2. Rapidly disseminate new testing technologies when they are available such as saliva-based testing or point of care antigen tests that are currently coming online.
3. Explore strategies such as pooled testing that are being undertaken in a number of locations.
4. Undertake an exerted effort to ramp up laboratory capacity in resource poor settings so that many more laboratories can process diagnostic tests such as PCR tests.
5. Rely on clinical case finding when diagnostic testing is not available. It is important to note that this type of triage may be more complicated for inpatients than outpatients.

The Science of Implementation Initiative

After a decade of serving as an Under Secretary-General at the United Nations, Paul Farmer is continuing the work of his UN team with the establishment of the Science of Implementation Initiative (SII). The SII team advocates for the “science of implementation” which when applied to the efforts of bilateral and multilateral development entities suggests a rethinking of investment and implementation approaches that can lead to the dramatic reduction of poverty and disease in the poorest countries. When aid is reimagined in this way, it is possible to create durable, high quality and effective public systems to deliver social services that reach all people.

The SII team collaborates closely with colleagues at the United Nations, Partners In Health and Harvard Medical School in a joint effort to further Dr. Farmer’s objective of creating an evidence-based approach to the delivery of aid.

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- ⁱ WHO Response Team, Ebola Virus Disease in West Africa — The First 9 Months of the Epidemic and Forward Projections, *New England Journal of Medicine*, 16 October 2014, <https://www.nejm.org/doi/full/10.1056/NEJMoa1411100>.
- ⁱⁱ [Lana Childs](#), [Jeannot François](#), [Alina Choudhury](#), [Kathleen Wannemuehler](#), [Amber Dismar](#), [Terri B. Hyde](#), [Catherine Y. Yen](#), [Kashmira A. Date](#), [Stanley Juin](#), [Mark A. Katz](#), [Erica Felker Kantor](#), [Janell Routh](#), [Melissa Etheart](#), [Tracie Wright](#), [Paul Adrien](#), [Rania A. Tohme](#), Evaluation of Knowledge and Practices Regarding Cholera, Water Treatment, Hygiene, and Sanitation Before and After an Oral Cholera Vaccination Campaign—Haiti, 2013–2014, *The American Journal of Tropical Medicine and Hygiene*, [Volume 95, Issue 6](#), 7 Dec 2016, p. 1305 – 1313.
- ⁱⁱⁱ “2014–2016 Ebola Outbreak in West Africa.” *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 8 Mar. 2019, <http://www.cdc.gov/vhf/ebola/history/2014-2016-outbreak/index.html>.