Introduction

On March 8, 2020, the first cases of COVID-19 were confirmed in Bangladesh. Increasing testing to meet the enormous demand quickly became the paramount national health priority.

In Dhaka, where there was much public fear about the virus, people were queuing but still not getting tested for various reasons.

As the pandemic set in, testing was limited to several public hospitals where demand quickly outstripped supply. Whereas wealthy citizens had access to private testing options, there was a clear need to provide accessible and affordable testing to underprivileged communities in Dhaka, where low-income residents lack regular access to healthcare and live in densely populated neighborhoods. To that end, a public-private partnership was formed to meet the need of the moment. In this partnership, necessity was the mother of invention.

An innovative triage and testing booth—the first of its kind—emerged from the collaboration between social enterprise Digital Healthcare Solutions (DH), private foundation the Institute for Developing Science and Health Initiatives (ideSHi Foundation), and Mugda Medical College & Hospital, a public hospital in Dhaka.

Responsive to the health situation, UKAID provided essential seed money for the infrastructure and proof of concept.
From June 2020, the booth offered free COVID-19 tests and medical attention to Dhaka residents. These partners demonstrated remarkably effective co-operation during an urgent time. The Kampala Principles capture the ingredients of such co-operation so others may also build impactful partnerships with the private sector for sustainable development (see Figure 2 and bolded orange text throughout).

Responding to Crisis

As early as January 2020—before the World Health Organization declared a pandemic—clinicians and technologists at DH started thinking about how to contribute to the public health response. Doctors had been fielding enquiries from telephone callers concerned by the new virus. In March, the DH team brainstormed possible services to offer. They first thought about opting for a technology-driven solution, such as an app to check for symptoms.

“We knew digital healthcare is our core capability,” said Dr. Sharmin Zahan, Head of Ecosystem and Business Development at DH. “Nevertheless, we also thought about combining virtual and facility-based services, which can be helpful in the Bangladesh context.”

When CEO Sajid Rahman shared the South Korean model of a testing booth, the team was inspired to add a digital component. They could create a testing and triage booth so patients could consult with a doctor in real-time via video call. The triage would save expensive testing kits for diagnoses and limit the use of personal protective equipment to the most essential purposes.

This Case’s Connection to the UN Sustainable Development Goals:

“..."
To achieve this vision, DH needed partners who could bring together the various elements of the project: a testing space, technical staff, scientific expertise, patient care, and design and logistical support (Kampala Principle 3: Inclusive Partnership). In true entrepreneurial fashion, the DH team reached out to health ecosystem partners. Through an existing collaboration on an Essential Healthcare for the Disadvantaged project, Concern Worldwide co-ordinated with UKAID to secure funds for the booth.

Key representatives of prospective partner organizations responded quickly and made time to formulate plans. On the public side, Saber Hossain Chowdhury, Member of Parliament, Dhaka-9 Constituency, lent his support and enthusiasm to the idea, and is an integral part of Mugda Medical College & Hospital’s governance team. His support would prove instrumental to sealing an innovative public-private partnership. ideSHi, a private foundation, brought scientific credibility to the endeavor. The institute’s Chairperson, Dr. Firdausi Qadri, has been recognized for her work in infectious diseases. She established ideSHi with a prize from the family foundation Fondation Christophe & Rodolphe Mérieux, which funded facilities for advanced testing. Dr. Qadri acted immediately to bring the foundation on board.

**Sharing the Responsibility**

Following the World Health Organization’s injunction to test, trace, and treat cases of coronavirus, the trio of ideSHi, Mugda Medical College & Hospital, and DH joined forces to convert their integrated solution into reality.
They worked together to obtain approvals from the Directorate General of Health Services (DGHS), then to design, build, and install the triage and testing booth in Dhaka. The parties signed a collaboration agreement outlining the roles and responsibilities of each partner. Following UKAID’s Value for Money principle, each party focused on the judicious use of the funding and wherever possible made in-kind contributions.

DH provided telemedicine services to triage patients according to the severity of their symptoms. It offered follow-up care via phone or video call to patients with positive COVID-19 tests when they called the helpline. The social enterprise also brought in the Institute of Architects of Bangladesh, who adapted guidelines from South Korea to design and build the booth to meet the local context, prioritizing easy installation and dismantling and the ability to replicate the booth in other locations.

The ideSHi Foundation carried out sample collection and conducted molecular polymerase chain reaction (PCR) testing of COVID-19 samples. Medical technicians from ideSHi staffed the booth, took patient samples, and transported samples to the lab for testing. ideSHi was one of very few organizations in Bangladesh that had the expertise and molecular biology facilities to conduct instant PCR testing of patient samples. The institute purchased an additional PCR machine from its own resources to increase daily testing capacity, thereby fulfilling demand for quick PCR COVID-19 tests and lessening the workload of Mugda Hospital.

Mugda Medical College & Hospital, where the booth was located, provided the physical space and operational support for the initiative. The Ministry of Health and Family Welfare supported implementation of the project through approvals, contributing financial and in-kind resources, supervising and co-ordinating day-to-day activities, and mobilizing the local community. The project also had buy-in from the government, which gave the initiative a greater degree of legitimacy among the public and promoted local ownership.
The booth began operation in June 2020, offering free COVID-19 testing and medical consultations to patients across Dhaka, many of them low-income residents who otherwise would not be able to receive testing (Kampala Principle 5: Leave No One Behind). Upon arrival, patients were provided with masks and hand sanitizer and screened for severity of symptoms via a digital consultation with a doctor. Next, patients with moderate to severe symptoms were directed to the testing booth where medical personnel took a COVID-19 test sample. Patients received results within 24 to 48 hours via email, text message, or paper copy. Following a positive diagnosis, patients were given medical advice on the importance of self-isolation and monitoring of symptoms. Between June and September, the booth took up to 150 daily samples.

The booth also educated residents about the symptoms, prevention measures, and protocols to slow the spread of COVID-19. Residents received medical advice during the initial screening for symptoms, leaflets with information, and were given instructions on what to do in case of a positive test. Patients also had access to a helpline where they could receive additional information from both government and DH services (see Figure 1 for more results).

On account of efficiencies and private contributions, the cost of testing at the booth was relatively low. Tests were completely free to patients between June and September 2020, while the actual cost of the test for partners was around US $15. This was significantly less expensive than other private testing centers that were charging over US $40 per test.

The initial timeline of the triage and testing booth was planned for three months, with the expectation that the coronavirus situation would improve. As the pandemic continued, DH, Mugda Hospital, and ideSHi agreed to try to convince the Directorate General of Health Services (DGHS), a public Ministry of Health agency, to support continuing service of the booth (Kampala Principle 1: Inclusive Country Ownership).

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**Figure 1: Triage and Testing Booth Results, June 4-September 30, 2020**

- Screened more than 14,000 people for COVID-19 symptoms through a digital doctor’s consultation to determine eligibility for further testing.
- Conducted 8,666 free COVID-19 PCR tests and provided results within 24 to 48 hours.
- Of those tested, 1,429 patients received positive COVID-19 results. They were then digitally connected to doctors to receive follow-up advice on best health practices.
- The COVID-19 positivity rate was 19.34%.
- Educated Dhaka residents on COVID-19 symptoms, prevention measures, and health protocols.
- Reduced unnecessary tests and saved scarce testing kits.
- Alleviated patient anxiety and stress.
Following several consultations, DGHS showed interest to inspect the booth and conduct its own survey of the need for continued service. Finally, at the end of September 2020 when funds were exhausted, DGHS assumed ownership of the project. DGHS has been operating the testing booth (no triage at the moment) since October 2020 and assumed responsibility for necessary financial support. The booth continues to provide low-income Dhaka residents with medical attention and COVID-19 testing for a nominal fee.

The booth provided equitable access to testing and medical advice to vulnerable populations and alleviated public fear about the novel coronavirus. Dr. Qadri of ideShi Foundation viewed the project as an opportunity to expand healthcare access to underprivileged communities without health insurance or the financial means to see a doctor.

“A Partnership Forged Under the Pressures of a Pandemic”

The one-stop booth at Mugda Medical College & Hospital was born from very pragmatic arrangements among partners, where each partner brought distinctive contributions and committed to making the overall initiative work. “We were under extreme pressure. We didn’t have the time to fine tune the project,” said Saber H. Chowdhury, Member of Parliament for Dhaka-9 Constituency.

“We had to jump into it, find the middle ground when people had different expectations. We innovated as we went along.”

- Mr. Saber H. Chowdhury, MP for Dhaka-9

While this pragmatism reflected the professional and entrepreneurial qualities of the partners, the initiative was propelled by a vision of better service.

The health authorities frequently evaluated the work of the booth to ensure tests were being performed in accordance with agreed upon principles. Said Dr. Zahan: “We were very transparent. Every single day we communicated with each other regarding the challenges faced and bringing the solutions immediately, as well as we have communicated regularly with DGHS.” (Kampala Principle 4: Transparency & Accountability)
For private sector partners, this innovative model demonstrates the potential to mobilize larger scale solutions. Following the successful implementation of the booth in Dhaka, DH plans to explore the possibility of utilizing the digital health technology more widely and replicate similar projects in rural areas of Bangladesh where access to healthcare is limited. Dr. Qadri of ideSHi Foundation has also considered the possibility of applying the model to address other infectious or noncommunicable diseases across the country.

**Conclusion**

The digital triage and testing booth illustrates an effective local response to a public health crisis by drawing on the innovation and resources of the public and private sectors, the international community, and a national government. The booth provided free screening and healthcare services to underprivileged Dhaka residents and bolstered local testing capacity in the early days of the pandemic. This rapidly constructed initiative highlights the relevance of the Kampala Principles to crisis response and multi-stakeholder partnerships.

The value of this effort is apparent in the interdependence of partners who achieved the integrated solution. The public sector needed private capacity for testing and leveraged the ingenuity of the private partners in devising a solution. Meanwhile, the private partners could not have achieved this innovation without investments in the infrastructure, enabled by UKAID and met the requirement of additionality (Kampala Principle 2: Results & Targeted Impact). The government acted as a true partner by assuming ownership of key roles in addition to exercising oversight.
Quality partnerships to promote developmental goals rely on principled approaches that bring out the best in respective parties. In this collaboration, participants identified the following success factors:

- **Rapid innovation based on an openness to new ideas and new partner collaboration**: This introduced the opportunity to adapt a South Korean model to the Bangladeshi setting and enhance it with telemedicine and partner contributions.
- **Adapting to changing circumstances**: Partners looked beyond their standard operating models. UKAID showed flexibility in repurposing project funds. DGHS accepted the opportunity to take ownership of the booth.
- **Leadership at all institutional levels**: Strategic thinking, with shared empathy for marginalized people, brought the partnership together. The government had confidence in private partners but did not issue a blank cheque. Private partners showed courage in holding to the partnership’s principles when other private companies were found to have abused the government test kits they received.

The Kampala Principles provide a ready framework that can be applied to crisis response without adding layers of bureaucracy. In fact, having such a framework helps ensure that partners align with the overarching purpose and that beneficiary rights and key collaborative functions do not get lost in a whirlwind of adaptation. The credibility of a principled partnership forged in the crucible of crisis may set the stage for more enduring collaboration with development partners.

**We need more people to know about the Kampala Principles and #CooperationInAction!**

2. Click here to post directly on Twitter
3. Join the Knowledge Platform and share your thoughts on this case.

For further information, consult the [Kampala Principles](http://www.EffectiveCooperation.org) or contact the Joint Support Team:

- [info@effectivecooperation.org](mailto:info@effectivecooperation.org)
- [@DevCooperation](https://twitter.com/DevCooperation)
- [Global Partnership](https://www.linkedin.com/company/global-partnership/)

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Figure 2: Applying the Kampala Principles*

**Principle 1: Inclusive Country Ownership**

1B: Align and co-ordinate PSE through development co-operation with national priorities and strategies.
- Collaboration agreement with Mugda Medical College & Hospital, a public hospital under supervision of Directorate General of Health Services (DGHS).

**Principle 2: Results & Targeted Impact**

2A: Focus on maximizing sustainable development results.
- Expanded testing capacity, saved scarce testing kits and demonstrated the potential of telemedicine in a district with low-income residents who previously were not receiving testing services.
- Testing and triage booth handed over to the public hospital after the project.

2B: Ensure sustainable results by aligning core business and development interests.
- Private partners expanded the capacity of the public hospital for technical work.
- Created an opportunity for private partners to develop the market for telemedicine and establish the credibility of partnerships in healthcare.

2C: Engage in partnerships according to agreed international standards.
- Followed World Health Organization advice on testing.

**Principle 3: Inclusive Partnership**

3B: Promote inclusive, bottom-up, and innovative partnerships and raise awareness of engagement opportunities.
- Social enterprise DH had the inspiration for this innovative partnership, brokered by a Member of Parliament and leveraging a private scientific foundation.
- Mugda Medical College & Hospital ensured a link to the community.

**Principle 4: Transparency & Accountability**

4A: Measure results.
- Daily testing and recording of results in a government database.

4B: Disseminate results.
- Reports and project documents are publicly available through DH’s reporting to Concern Worldwide for the UKAID-funded project; ideSHi Foundation reported to DH per the grant agreement.

4C: Ensure accountability.
- Responsibilities and terms of the partnership were specified in a COVID-19 Collaboration Agreement
- Oversight by the Directorate General of Health Services.

*The table indicates which partnership practices and features correspond to specific Kampala Principles based on the authors’ interpretation of available information.*
Applying the Kampala Principles (continued)

Principle 5: Leave No One Behind

5A: Ensure that a private sector solution is the most appropriate way to reach those furthest behind.
- Public testing capacity was inadequate to meet demand in the early phase of the pandemic.
- The solution was imported and adapted by the private sector.

5B: Target specific locations, markets, value chains, and investor types that are most likely to have a positive impact on those furthest behind.
- Telemedicine can extend the reach of healthcare to underprivileged communities and prioritize use of healthcare resources.
- Booth situated in a high-density, underserved urban district with expensive medical care and unequal access to medical care.

5C: Share risks proportionately to incentivize private sector contributions to leaving no one behind.
- Private partners made significant in-kind contributions as outlined in the Collaboration Agreement.
- UKAID funds covered infrastructure and enabled proof of concept.
- Public health authorities monitored the project and ultimately agreed to maintain the testing booth.

5D: Establish provisions to mitigate and manage risks.
- Approval process from the Directorate General of Health Services to start.
Endnotes

1 - Interview with Dr. Sharmin Zahan, Head of Ecosystem & Business Development, Digital Health Care Solutions (DH) of Grameen Telecom Trust, March 9, 2021.
2 - Interview with Dr. Zahah, March 9, 2021.
3 - Interview with Dr. Zahan, March 9, 2021.
4 - “COVID-19 Collaboration Agreement.”
5 - “COVID-19 Collaboration Agreement.”
6 - Interview with Dr. Firdausi Qadri, Chairperson of Ideshi Foundation, March 12, 2021.
7 - Interview with Dr. Qadri, March 12, 2021.
8 - Interview with Dr. Qadri, March 12, 2021.
9 - Interview with Dr. Firdausi Qadri, Chairperson of Ideshi Foundation and with Dr. Sharmin Zahan, Head of Ecosystem & Business Development, Digital Health Care Solutions (DH) of Grameen Telecom Trust, March 12, 2021.
10 - “COVID-19 Collaboration Agreement.”
12 - Phone conversation with MP Saber Hossain Chowdhury, December 21, 2020.
14 - Interview with Dr. Zahan, March 9, 2021.
16 - Interview with Dr. Qadri and Dr. Zahan, March 12, 2021.
17 - Digital Covid-19 Triage and Testing booth film, provided by Dr. Zahan.
18 - Project Background Document, provided by Dr. Zahan.
19 - Digital Covid-19 Triage and Testing booth film, provided by Dr. Zahan.
20 - Interview with Dr. Qadri and Dr. Zahan, March 12, 2021.
21 - Interview with Dr. Qadri, March 12, 2021.
22 - Interview with Dr. Qadri, March 12, 2021.