

SMARTER CROWDSOURCING CORONAVIRUS

Smarter Crowdsourcing in the Age of Coronavirus

A Handbook of Innovative Political and Technical
proposals, and a Guide to their Implementation

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INTRODUCTION

Dear Friends,

To address the pressing need for more effective strategies for managing this and preventing future pandemics, the Inter-American Development Bank turned to new technology to convene the world's wisdom into "one room."

Working with partner governments in Latin America and the Caribbean to identify, define, contextualize, and prioritize issues to address, the resulting six conversations that took place during autumn 2020 have enabled us to present to you these eighteen detailed recommendations and implementation plans -- and perhaps more importantly, the network of experts that proposed them now at your disposal -- that we hope you will find useful.

Leaders need to invest in and strengthen the infrastructure and systems that will prepare our communities for the "known unknowns" -- the pandemics that we haven't yet faced. Sustained investments in data systems, public health infrastructure, and government capacity are the strongest line of defense against future disruptions and public health threats. Yet despite this preparedness imperative and countless dollars and hours of investment in activities meant to strengthen public health infrastructure, our world was collectively and unfortunately unprepared for the coronavirus pandemic.

This Smarter Crowdsourcing process demonstrates how we can all do better. Embracing collective wisdom and humbly seeking counsel and advice is a liberating, democratizing, cost effective, and ultimately uplifting story: to solve our world's most pressing problems, leaders need simply ask and, as we saw with this project, countless people will selflessly give of their time, knowhow, insight and experience.



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The tragedy of lives lost and livelihoods destroyed demands of us that we work differently, taking advantage of the collective intelligence of our global and local communities to solve our hardest problems

- *The Smarter Crowdsourcing Team*



SMARTER CROWDSOURCING CORONAVIRUS



EXECUTIVE SUMMARY

This document is the summative/aggregated collection of recommendations and implementation plans from a six-month engagement between the Inter-American Development Bank (IDB) and the Governance Lab of New York University. It centralizes dispersed wisdom and synthesizes the collective knowledge of experts into consumable and actionable recommendations for policymakers, elected officials, and public sector leaders. This document also represents a two way conversation between experts on one side of the table and government officials on the other. The entirety of its content is based on ongoing communications of government officials from Latin American and Caribbean countries expressing their needs, challenges, and barriers and then having experts respond directly to those inquiries.



This document is not, nor does it present itself to be, a comprehensive strategy that national or subnational governments should use as their only tool in the fight against the pandemic. Instead, this document should be approached as offering two distinct use cases:

First, it is a playbook that readers can use to address specific aspects of the pandemic. Governments, policymakers, or other leaders can look at the contents of each chapter of this document as step by step implementation plans for how to address very specific and defined dimensions of the pandemic response (e.g. combating misinformation about testing, addressing interjurisdictional data sharing issues, etc.)

Second, it is a roadmap for how governments might consider approaching aspects of the pandemic not covered within these pages. The process described throughout this document is a scalable, affordable, time-sensitive, and proven method for addressing complex and entrenched problems. Governments and leaders interested in solving public problems can use the processes described in this document to design their own smarter crowdsourcing initiatives to address problems in their own jurisdictions.

From July 2020 through December 2020, the IDB and the GovLab collaborated to perform six cycles of a process called “Smarter Crowdsoyrcing.” In the case of a serious and time sensitive challenge such as coronavirus, what’s needed is to marry the agility and diversity of crowdsourcing with curation to target those with relevant know-how and bring them together in a format designed to produce effective and implementable outcomes. This more targeted form of crowdsourcing, which quickly matches the demand for expertise to the supply of it, is what we call “smarter crowdsourcing.” Each one of the six cycles of this project consisted of the same steps: problem definition, regional contextualization, deliberation, synthesis



and further research, development of recommendations, translation of recommendations into action plans, and delivery of action plans to government principals and policymakers.

Importantly, the six problems covered through this engagement are not presented as the only six problems that need to be solved. Instead, each of the six cycles focused on a specific and concrete problem that the coronavirus pandemic presented to governments in Latin America and the Caribbean. Government partners collectively chose the six topics, but the number six was an arbitrary constraint imposed by the GovLab and IDB. A truly complete process that addressed every problem of the pandemic would demand an untenable list of hundreds if not thousands of items.

The six topics selected by the governments of Argentina, Ceara - Brazil, Costa Rica, Honduras, Bahamas, Peru, and Mexico, are:

- ▶ **Testing Strategy** – How do we design and source tests? How do we determine whom to test? What is the best strategy to administer tests and collect data?
- ▶ **Contact Tracing** – What are the challenges associated with locating people with whom an infected person has come into contact?
- ▶ **Behavioral Science and COVID** – How can governments use behavioral science to support the fight against COVID-19?
- ▶ **Supporting Vulnerable and Marginalized Populations** – What are the best strategies to address disparities caused or exacerbated by the pandemic?
- ▶ **Epidemiological Monitoring and Surveillance** – How can governments support a sustained recovery by developing and improving epidemiological monitoring and surveillance strategies for the “new normal?”
- ▶ **Mental Health and Emotional Wellbeing** – What innovative and cost effective solutions can governments and communities implement to support the mental



health needs of specific and general populations caused or exacerbated by the pandemic?

The core of each cycle is the [insert language from SC playbook] curation of experts, whose collective and diverse expertise is the basis for the resulting recommendations and action plans. In total, this project engaged over 150 individual experts who attended online deliberations and offered their expertise on how to solve one or more of the above issues.

For each of the six problems, the GovLab team took the ideas from the online deliberations with global experts and developed stand-alone recommendations and action plans. The resulting action plans with accompanying examples are the contents of this document. Governments or readers wishing to get more information about how to implement these recommendations, including examples to follow, experts to consult, or actions to consider, should explore the chapters in the body of the document. What follows in this executive summary is the topline recommendations resulting from each of the six cycles.

TOPIC: Testing Strategy

- **Pooled Testing**- Governments and researchers should implement pooled testing strategies, innovating with pool design through ranking schemes or geographic schemes.
- **National Patient Identifiers**- Governments should take steps toward developing a unique health identifier/national patient identifier system (UHI/NPI) that unambiguously identifies each individual and links her to her health records, including test results.
- **High-risk populations**- Governments should prioritize conducting tests among populations with a high probability of 1) contracting the virus; 2), spreading it to others; and 3) suffering serious consequences as a result of infection.



TOPIC: Contact Tracing

- ▶ **Metrics**- Governments should establish and use metrics to (1) indicate thresholds where contact tracing is more or less effective as a containment and mitigation strategy; and (2) track progress and effectiveness of ongoing contact tracing programs.
- ▶ **Interjurisdictional Coordination**- Governments should increase vertical and horizontal interjurisdictional coordination by (1) incentivizing the use of interoperable or the same contact tracing platform and data collection process and (2) creating opportunities for knowledge sharing.
- ▶ **Localization**- Governments should increase public trust in contact tracing programs by ensuring the programs incorporate local knowledge and experience. Specifically, they should (1) conduct an assessment that identifies community assets; (2) partner with local community organizations to identify contact tracers; (3) conduct a public health messaging campaign to explain contact tracing; and (4) incorporate information about the local community when training the contact tracing workforce.

TOPIC: Behavioral Science and COVID

- ▶ **Evidence and misinformation**- Combat misinformation through evidence-based, clear, and consistent messaging.
- ▶ **Community and stakeholder engagement**- Engage communities and other stakeholders to make messaging strategies context specific and culturally relevant.
- ▶ **Data and innovation**- Use data and innovations like crowdsourcing to optimize messaging development, reach, and uptake.



TOPIC: Supporting Vulnerable and Marginalized Populations

- ▶ **Improve Data Management-** Improve data management (collection, storage, and analysis) processes to support evidence-driven programs and policies that identify vulnerable populations and account for their needs.
- ▶ **Establish Public-Private Partnerships-** Establish Public-Private Partnerships that support vulnerable populations by filling service delivery gaps that community-based organizations, governments, and NGOs struggle to execute efficiently working on their own, while also benefiting the private institutions by providing them with financing and other resources.
- ▶ **Engage the Public and Civil Society Organizations-** Engage the public and civil society organizations to support vulnerable populations by capitalizing on existing knowledge and expertise, leveraging local assets and resources, building trust with intended beneficiaries, and strengthening the capacity of communities.

TOPIC: Epidemiological Monitoring and Surveillance

- ▶ **Enhance Data Collection-** Enhance data collection capabilities through innovations in technologies, crowdsourcing, symptom-trackers, and partnerships.
 - ▶ **Improve Information Infrastructure-** Improve public health monitoring and surveillance information infrastructure by standardizing data formats and definitions, sharing data, and developing regulations and legislation that support public health monitoring and surveillance.
- Increase Government Capacity-** Increase government capacity to use public health monitoring and surveillance information to make policy and programmatic decisions.

TOPIC: Mental Health and Emotional Wellbeing

- ▶ **Government capacity and regulatory environment-** Improve legislative and regulatory frameworks for mental health services.



- ▶ **Data and Technology**- Use digital technologies and data to expand access to mental health services and improve service delivery.
- ▶ **Increase provider capacity**- Increase provider capacity through innovations in training opportunities and strategies to expand the workforce supply.

Each of the above topics constitutes a separate chapter of this document. Within each chapter, the topics are contextualized to the Latin American context, including how specific aspects of the problem are creating challenges for the national and subnational covid response. In addition to regional context, the chapters provide an in-depth problem definition that analyzes the root causes of each problem.

Finally, the chapters each present three recommendations for how to address the challenges. These high level recommendations are addressed to government leaders and agency principals. The recommendations are accompanied by detailed implementation plans that outline strategies and specific actions that governments can take to implement the recommendation. In addition to outlined steps and actions that governments can take, each chapter includes experts available for consultation as well as examples of the recommendations in action.

In its entirety, this document presents and organizes a considerable amount of information that can be used to address the COVID-19 pandemic and future pandemics or public health crises as well. As with other documents of similar depth, detail, and research there remains a risk that this document will simply sit on the internet equivalent of a dusty bookshelf. One of the most endemic challenges remaining is not how do you find answers but what do you do with them once you have them. This last and most important step -- crossing the chasm from idea to implementation -- is the challenge that we ask of you, the reader, the policymaker, the analyst, the advisor.



METHODOLOGY

WHAT IS CROWDSOURCING?

Technology can help to accelerate communication among, and engagement with, widely dispersed experts. The process of using the Internet to solicit such help from a distributed audience or “crowd” is known as “crowdsourcing.”

Typically, crowdsourcing (also called open innovation) involves putting out an open call inviting all corners to help. Enlisting the aid of a large audience can augment the manpower and wisdom of those inside an organization and help to accomplish many tasks more quickly, such as when an organization turns to the crowd to help classify thousands of photos of space for NASA to advance our understanding of how galaxies form or to help digitize records to help a public institution quickly create a digital archive.

The open call of traditional “crowdsourcing” is not sufficient. By itself, crowdsourcing is too “hit or miss” because crowdsourcing relies on the happenstance of having the right people learn about the opportunity to participate and wanting to do so. It may not attract the people with the right know-how quickly enough. Typically, crowdsourcing works well when the need is to perform small tasks without a high degree of complexity and it almost does not matter who participates.

WHAT IS SMARTER CROWDSOURCING?

In the case of a serious and time sensitive challenge such as the coronavirus pandemic, what is needed is to marry the agility and diversity of crowdsourcing with curation to target those with relevant know-how and bring them together in a format designed to produce effective and implementable outcomes. This more



targeted form of crowdsourcing, which quickly matches the demand for expertise to the supply of it, is what we call “smarter crowdsourcing.”

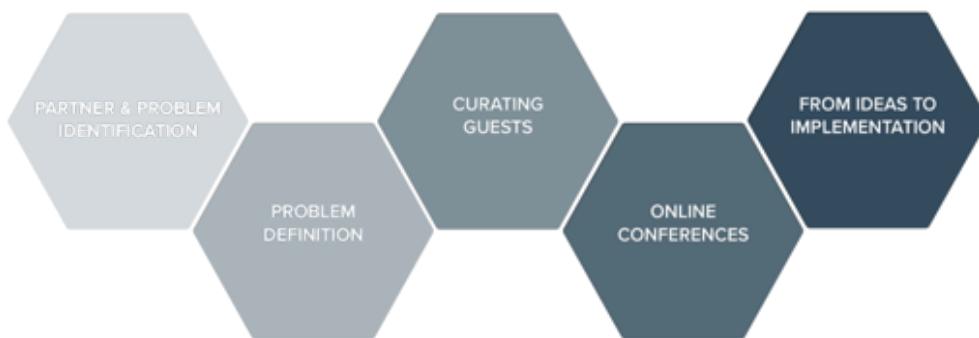
Smarter Crowdsourcing typically involves five steps:

1. ***Identifying partner institutions*** – The process is optimized for providing specific and concrete assistance for a partner(s) who prioritizes the problems to which they need solutions and who is committed to implementing the solutions. It is important to have an identified audience “listening” in order to create incentives for experts to participate.
2. ***Problem Identification*** – The second step focuses on engaging diverse experts and problem owners to narrow a broader issue (e.g. Covid-19) and identify more concrete and specific problems/opportunities (e.g. how to expand testing capacity, state and local health care system capabilities, how to conduct elections, how to hold legislative hearings, how to train teachers to teach online, how to feed low income children during social distancing). This begins by co-creating a taxonomy of issues and a much longer list of problem definitions and then prioritizing among them to develop a selection of longer, evidence-based problems briefs about those problems of greatest priority and concern.
3. ***Curation*** – The third step involves identifying invited, self-selected, and recommended participants from diverse backgrounds who have relevant expertise. We curate participation using: 1) global network analysis, 2) rapid evidence review, 3) friend of a friend recommendations, as well as enabling people to 4) self-select. Guests are those with academic and practical experience, subject matter and related data, tech or methods expertise and, above all, people who have demonstrated success solving the problem.
4. ***Deliberation*** – The fourth step involves convening a series of online deliberative conversations among participants using a web conferencing platform such as



Zoom. Each online discussion typically lasts two hours and is focused on a specific problem. Depending on staffing, the team usually runs one session every week or every other week or once a month.

5. ***From Ideas to Implementation*** – The insights from each dialog are extracted and expanded upon with further research and interviews. Following those conversations, ideas are fleshed out with interviews and research into possible and practical solutions. We develop practical implementation memos, laying out specific next steps, actions to take, time frames, costs and other practical information in the form most useful to the partner institution(s).



Smarter Crowdsourcing Process

The GovLab has deep expertise with designing smarter crowdsourcing projects. We [designed the first crowdsourcing program](#) for the United States Government when we convened scientific and technical experts to help the United States Patent and Trademark Office get the information it needs to make a more informed determination about pending patent applications. We married an online open call with extensive curation to attract knowledgeable participants and replicated the project in several countries, leading to a statutory change to enable citizen engagement in patent practice in the United States.



Later, the GovLab designed and ran a [smarter crowdsourcing project](#) to help government officials in Quito, Ecuador prepare for the imminent eruption of the Cotopaxi Volcano, which was spewing ash for the first time in over a century. In that program, we worked with the municipal government and nonprofit organizations to develop a more nuanced understanding of the public health problems needing to be tackled in connection with the Volcano, including how to notify citizens without causing alarm, how to manage especially vulnerable populations and their evacuation and care, how to deal with the overwhelming demand for key health services, and how to mobilize distributed medical and other emergency personnel.

In 2016, the IDB partnered with the GovLab to use Smarter Crowdsourcing to address the Zika epidemic. In that case, we worked with the city government of Rio de Janeiro in Brazil and the national governments of Argentina, Colombia, and Panama to find solutions. The GovLab team broke down the issue into 15 more specific problems. Partner governments selected six to address: Assessing Public Awareness; Communication and Behavior Change; Predictive Analytics; Trash and Standing Water; Information Collection/Data Governance; and Long-term Care. The team organized six online dialogues over two months in response to each problem – attracting more than 100 global experts, who deliberated online to deepen understanding of the problems and their root causes and to identify solutions. The team then created a Playbook of 20 implementable solutions to these six problem statements along with a database of experts.

In addition to the Zika project, we also ran a Smarter Crowdsourcing effort on fighting corruption in partnership with the Mexican government together with IDB in 2018. At present, the GovLab is doing a series of Smarter Crowdsourcing projects called the [100 Questions initiative](#). The 100 Questions Initiative seeks to map the world's 100 most pressing, high-impact questions that could be answered if relevant datasets were leveraged in a responsible manner. The 100 Questions is an



Initiative from [The GovLab](#), in partnership with [Schmidt Futures](#) and other partners.

For more on crowdsourcing, please see this [video](#).

HOW DOES THE SMARTER CROWDSOURCING: CORONAVIRUS PROJECT WORK?

This six-month initiative targeted and mobilized global expertise to help governments in Latin America and the Caribbean respond to the challenges coronavirus and its aftermath pose, but, at the same time, realizing the opportunities to generate innovative and implementable recommendations.

Like in previous occasions we used the Internet to make it easy for people to lend their time and know-how and deliberate with one another to identify, design and iterate upon implementable ideas that governments can use. This is precisely the working model that this pandemic imposed.

The project progressed through four phases:

1. ***Problem Identification and Prioritization:*** The response to coronavirus can be broken down into a taxonomy of [smaller problems to be tackled](#). The GovLab curated an initial catalog of possible core problems to address with brief descriptions. The IDB, using its network of country officers and partners, prioritized among those problems, added new ones, and chose an initial six. Each topic was the subject of an online conference and briefing.

2. ***Problem Definition:*** The GovLab conducted additional rapid evidence reviews and selected interviews to produce evidence-based problem definitions for the top-five ranked problems, outlining problems and their root causes as input for



online dialogues. The five-page briefs for each problem – in English, Spanish, and Portuguese – were circulated to participants ahead of subsequent online discussions.

3. ***Curating Guests:*** Drawing on the deep networks of our consulting conveners, the GovLab rapidly curated and invited a large number of interdisciplinary guests (yielding 25-30 for each conversation) for a two-hour discussion for each identified problem, matching their expertise to the topics. The curation focused on finding those with innovative yet practical approaches to tackling identified problems. The IDB, using its network of country officers and partners, validated the problem briefs and experts to invite.
4. ***Expert Consultation to Map and Curate Solutions*** – The objective of each of these focus groups was to identify good practices worldwide and distill significant learnings that can help to better understand how these initiatives can be reproduced in the region. As part of this exercise, good practices from the region were also identified and studied to better understand its translation to other countries.

Final deliverables available in English, Spanish and Portuguese include:

- ▶ **Expert Curation** – We created a map and database of participating experts to make it easier for institutions to follow up directly with relevant experts and provide a lasting resource.
- ▶ **Moderation Guide** – We prepared a moderation guide and moderate each online discussion.
- ▶ **Post-Session Briefing Materials** – Following each discussion, we published summary notes for annotation and comment.
- ▶ **Action Memos** – We curated the conclusions from the expert consultations and did research to transform them into implementable recommendations.



PROBLEM CATALOGUE

The [Smarter Crowdsourcing](#) process allows us to combine the agility and diversity of crowdsourcing with curation to target those with relevant know-how and bring them together in a format designed to produce effective and implementable outcomes. Problem identification and prioritization is the first phase of this process. The response to the coronavirus pandemic can be broken down into a taxonomy of smaller problems to be tackled. In the following lines, we present an initial catalogue of possible core problems to address with brief descriptions curated by The GovLab. The IDB chose from the master list six top priority problems to tackle. Each selected topic was the subject of an online conference to identify good practices worldwide and distill significant learnings that can help to better understand how these initiatives can be reproduced in the region.

Important areas not covered: as agreed upon by the two parties, The GovLab's engagement with IDB will not address the below areas. Even so, The GovLab is compelled to explicitly list them because considering the problems surrounding these areas is integral for an effective management of the COVID-19 pandemic and building a road to reopening society safely.

- ▶ Education
- ▶ Hospitals
- ▶ Vaccine
- ▶ Fostering Business and Government Solvency
- ▶ Assessing Environmental Impact
- ▶ Understanding the Economic Impact

The entire list of problems is grouped in six different categories:



BUSINESS OF GOVERNMENT

This category considers how certain key functions of Government are poised to develop bottlenecks during a pandemic. These functions include human resources, sourcing and procurement, contracting, inter-agency coordination, and decisionmaking in the bureaucracy.

RESPONSIBLE DATA AND MODELING

This category considers problems that can be addressed through optimizing data collection and use. In addition to how data should be used to guide decisionmaking, this category frames the ethical, privacy and security problems that should inform data collection and use.

INSTITUTIONAL CAPACITY AND RULE OF LAW

In line with *IADB's strategic priorities*, this category considers problems that inhibit the delivery of public services and health business climates during a pandemic. This includes the impact of corruption, institutional mismanagement, and negligence.

PRODUCTIVITY AND INNOVATION

In line with *IADB's strategic priorities*, this category considers problem areas that require technological innovation and approaches/expertise outside the



normal toolbox of government. These problems span manufacturing, digital technology, public infrastructure, and other sectors of public life and the private sector.

PUBLIC HEALTH INFRASTRUCTURE

This category considers problems that interfere with the delivery of essential public health services¹ during a pandemic. Essential infrastructure of a public health system includes a trained and capable workforce, integrated and functioning information systems, and agencies that can function horizontally and vertically with other public health institutions.

SOCIAL INCLUSION AND WELFARE

This category considers the problems that interfere with improving the terms on which individuals and groups access society. It focuses specifically on problems that exacerbate how these affected individuals and groups are further marginalized, put at risk, or excluded from support due to pandemic conditions.

¹ The 10 Essential Public Health Services are: 1) Monitor health status to identify and solve community health problems, 2) Diagnose and investigate health problems and health hazards in the community, 3) Inform, educate, and empower people about health issues, 4) Mobilize community partnerships and action to identify and solve health problems, 5) Develop policies and plans that support individual and community health efforts, 6) Enforce laws and regulations that protect health and ensure safety, 7) Link people to needed personal health services and assure the provision of health care when otherwise unavailable, 8) Assure competent public and personal health care workforce, 9) Evaluate effectiveness, accessibility, and quality of personal and population-based health services, 10) Research for new insights and innovative solutions to health problems. <https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html>



COVID IN THE REGION

OVERVIEW: COVID-19 IN LATIN AMERICA AND THE CARIBBEAN

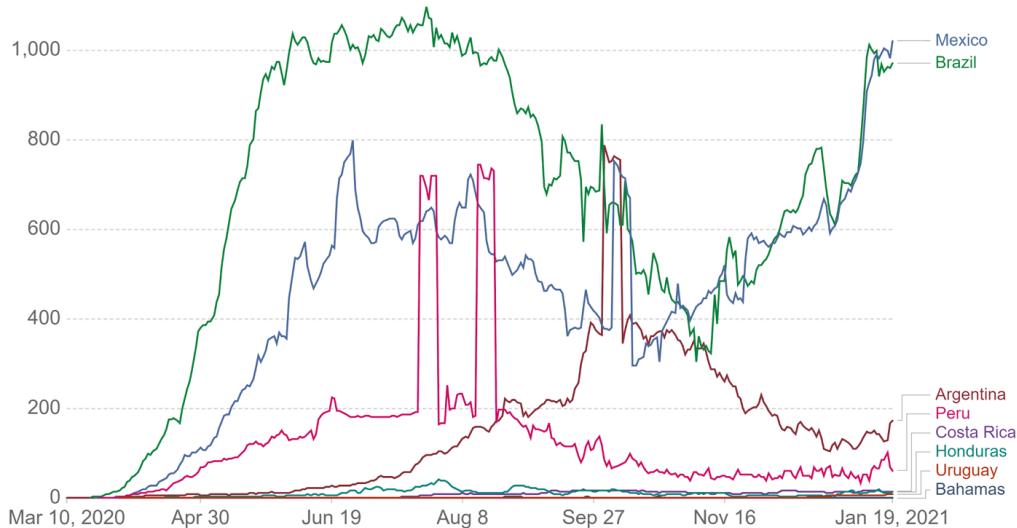
The Pan American Health Organization (PAHO), the World Health Organization's (WHO) Regional Office for the Americas, confirmed the [first case of COVID-19 in Latin America](#) on February 26, 2020, in Brazil. Within a month, the virus had spread to the rest of the region. By mid-June COVID-19 had spread to all 54 countries and territories in the Americas and Latin America became the [epicenter of the pandemic](#) with cases on the rise. In the last week of May 2020, 250,000 of the world's [732,000 COVID-19 cases reported were from Latin America](#). As of June 15, 2020 Brazil had the [greatest number of confirmed cases](#) in South America, followed by Peru, Chile, and Mexico and [Brazil had the second highest number of confirmed cases worldwide](#). As of June 2020 there have been [2,905,432 confirmed cases](#) in the region and 163,248 deaths. The latest PAHO COVID-19 situation report released in December 2020 states that the number increased to 28,591,241 confirmed cases and [753,210 deaths](#). As of January 2021 the number of deaths is [896,318](#). COVID-19 has become an unprecedented social and economic burden in the region.



Daily confirmed COVID-19 deaths, rolling 7-day average

Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.

Our World
in Data



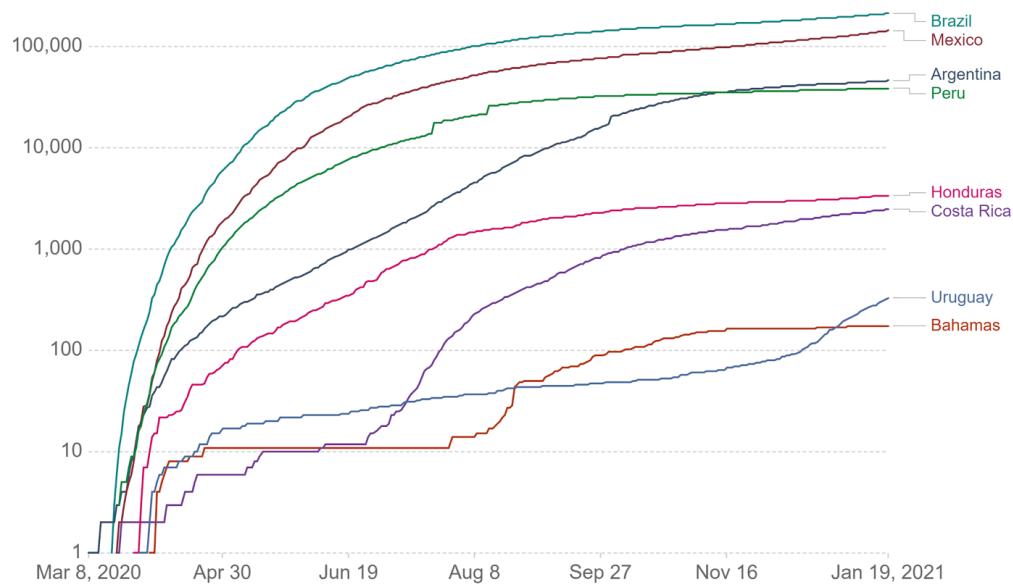
Source: Johns Hopkins University CSSE COVID-19 Data – Last updated 20 January, 14:02 (London time)

Note: The rolling average is the average across seven days – the confirmed deaths on the particular date, and the previous six days. For example, the value for 27th March is the average over the 21st to 27th March.
OurWorldInData.org/coronavirus • CC BY

Cumulative confirmed COVID-19 deaths

Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.

Our World
in Data



Source: Johns Hopkins University CSSE COVID-19 Data – Last updated 20 January, 14:02 (London time)

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MAIN OBSTACLES IN THE REGION

Inequality and the Informal Sector

Given the unique challenges in Latin America and the Caribbean and the severe social and economic impact of COVID-19, most countries have released a series of economic measures to lessen the economic burden on citizens and have implemented social distance measures and public health guidelines. However, the majority of the countries in the region have structural burdens that are further exacerbated by the pandemic, with the greatest obstacle being growing inequality in the region. This is exemplified by the huge dependency on the informal labor market and fragile healthcare systems that lack public health infrastructure. The informal sector in Latin America and the Caribbean is a primary source of job creation in the region. According to the International Labor Organization (ILO) nearly 140 million workers in Latin America and the Caribbean are working under informal conditions. Over 53% of the populations in Latin America and the Caribbean are exposed to insecure working conditions and have irregular income



stability. Given that informal workers operate outside the boundaries of established social protection programs and safety nets, when the pandemic hit, many lost their livelihood and were left unprotected and vulnerable. The considerable informal sector in Latin America and the Caribbean makes it difficult for many workers to follow stay-at-home orders given that without their day-to-day incomes from labor, they have no economic safety net. While lockdowns and quarantine measures were recommended to slow down the rate of contagion, these measures resulted in various vulnerable populations losing their only source of income. The lack of access to basic services and financial safety nets in various Latin America and the Caribbean countries has made it extremely difficult for citizens (specifically those in the informal sector) to comply with quarantine measures and in most countries a large portion of citizens were forced to decide between breaking quarantine measures or going hungry.

Vulnerable Populations

Traditionally vulnerable populations in Latin America and the Caribbean have included indigenous populations, refugees, migrant workers, the rural poor, and specifically rural women. COVID-19 has increased these populations' vulnerability, making them more susceptible to food insecurity and health risks. The pandemic has also broadened the definition of "vulnerable" to include those whose risks of contracting COVID-19 are higher such as the elderly, those with comorbidities and essential workers, among other groups. These groups also tend to have no regular access to healthcare. To make matters more difficult, these same communities are often the ones with least access to information, sanitation and personal protective equipment, making them extremely vulnerable.

Weak Data and Surveillance

In addition, data across Latin America and the Caribbean is skewed by differences in reporting requirements and testing capacities in each country. In some countries, there is a lack of testing capacity and a considerable deficit in monitoring and



tracking, with actual infections estimated to be up to seven times the number of confirmed cases.

Moreover, data infrastructure is lacking in several countries in LAC, especially in rural areas. This includes, but is not limited to: poor internet connectivity in healthcare facilities, digitally illiterate staff, time costly manual data entry protocols, a lack of standardized data sharing protocols, decentralized and incommunicable data frameworks. This all compounds to result in policy makers and government officials not having an accurate and timely picture of on the ground conditions to inform resource allocation and decision making processes.

Unprepared Public Health Infrastructure (Lack of Staffing and Resources to Combat a Pandemic)

In Latin America and the Caribbean understaffing is a main concern. In Argentina, for example, there is a lack of validated tests, delay in the processing of samples, and the absence of proper health-care facilities in smaller cities. These conditions might have led to an initial underreporting of cases, which could explain the surges in reported cases and fatalities. In Ceara, the Secretariat of Health suffers from understaffing at nearly all levels of operation, from local IT personnel who fix technical problems at healthcare facilities to data analysts to run the COVID online dashboard. In Ceara, like in most of LAC, testing capacity is still highly centralized in the capital city, meaning peripheral regions lack agility in testing and response capabilities.

Similarly, the main obstacles in Honduras are the low-quality public health infrastructure, high poverty rate, and lack of information. In March 2020, between both public and private hospitals there were only 100 ventilators for the entire country. Representatives from the Ministry of Health also highlighted that the capacity to administer a COVID-19 test and follow up with confirmed case remains a significant challenge.



Political Barriers:

The response to the pandemic has increased political fragmentation in many countries, including in LAC. Due to the polarization about the appropriate response and the unpopularity of social distancing measures, messaging from political leaders in the region has been highly fragmented. Often, different levels of government put out different messages, sometimes minimizing the impact of COVID-19 as “just a cold”, or spreading fake news. Studies have [correlated](#) political support to specific leaders with a higher contagion rate, especially in cases where leaders are promoting inaccurate or false information. This has made it very difficult for governments to release consistent, cohesive communications and has thus fragmented how citizens behave during the pandemic.



TESTING STRATEGY

On July 8th, 2020, a group of 20 experts from nine countries joined officials representing the Argentine, Barbadian, Brazilian, Colombian, Costa Rican, Honduran, Mexican, Peruvian, and Trinidadian and Toboggan governments in a two-hour advising session to identify novel solutions that leaders can use to implement successful testing strategies in the fight against COVID-19. The discussion focused on three topics around how to build a testing strategy: 1) designing and sourcing tests; 2) determining whom to test and how; and 3) collecting and sharing data.

Following the advisory session, participants from the Latin American and Caribbean governments identified those solutions which they were most interested in implementing. The GovLab then conducted further research, interviewed various subject matter experts and potential partners, and developed this high-level action plan that Latin American and Caribbean governments can use to better incorporate



testing strategy innovations into their efforts to combat COVID-19. The content of the document, including its recommendations, is the sole responsibility of The GovLab and does not represent IDB's official position or view on this matter, nor an endorsement of any individual or firm to perform activities related to the recommendations.

EXECUTIVE SUMMARY

Problem Statement:

Governments do not have a clear understanding of when and whom to test, and which types of tests to use. To control the pandemic and move towards reopening its economies, governments in Latin America and the Caribbean must develop and implement strong and effective testing strategies. Testing is essential for all governments because it is the cornerstone to any successful and comprehensive national strategy to curb the COVID-19 pandemic:

- ▶ Testing leads to quick identification and confirmation of positive cases;
- ▶ Testing informs clinical treatment;
- ▶ Testing indicates the need to isolate and quarantine;
- ▶ Testing helps identify people who need to be contacted because they were in contact with a positive COVID-19 case;
- ▶ Testing helps public health officials and researchers understand characteristics of the pandemic by understanding prevalence, transmission, hotspots and other important surveillance elements.

Recommendations and strategies to address the problem:

Implementing an effective testing strategy requires widespread cooperation and trust between the public and the government. It also requires governments to work in new arrangements, including public-private partnerships, cooperation between



multiple levels of government, between health authorities and universities, and coordination with community groups, to conduct tests and collect data.

1. **Pooled Testing:** Governments and researchers should implement pooled testing strategies, innovating with pool design through ranking schemes or geographic schemes.

Key Strategies for Implementation

- ▶ Partner with academic institutions, researchers and private sector laboratories.
- ▶ Waive regulatory barriers.
- ▶ Iterate learning and share best practices.
- ▶ Rapidly pilot pooled testing schemes.

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	~ 3 months		
For additional information see: Implementation Memorandum			

2. **National Patient Identifiers:** Governments should take steps toward developing a unique health identifier/national patient identifier system (UHI/NPI) that unambiguously identifies each individual and links her to her health records, including test results.

Key Strategies for Implementation

- ▶ Conduct feasibility studies.
- ▶ Standardize data entry fields across existing systems.
- ▶ Adjust existing data collection processes.



- ▶ Develop, advocate for and pass legislation.
- ▶ Establish a single organization to manage and oversee the UHI/NPI system.
- ▶ Implement a UHI/NPI system

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	Multi-year		
For additional information see: Implementation Memorandum			

3. **Testing High-Risk Populations:** Governments should prioritize conducting tests among populations with a high probability of 1) contracting the virus; 2), spreading it to others; and 3) suffering serious consequences as a result of infection.

Key Strategies for Implementation

- ▶ Define high-risk populations who will receive prioritized testing.
- ▶ Partner with community and cultural leaders.
- ▶ Make testing free for low income or high-risk populations.
- ▶ Develop and use culturally and contextually relevant communication materials for testing resources.
- ▶ Rapidly conduct snapshot pooled testing among staff and residents in health and long-term care facilities, prisons, and other congregate housing facilities.
- ▶ Ensure adequate testing resources are available and accessible to high-risk communities.
- ▶ Reduce barriers to testing by conducting mobile testing units.



RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 6 months		

For additional information see: [Implementation Memorandum](#)

What follows is a discussion of these three recommendations, including considerations prior to implementation, recommended actions that governments can take, examples of success, and a list of experts curated by The GovLab and interviewed for this chapter and available for consultation.

TOPIC BACKGROUND AND PROBLEM DESCRIPTION

Testing Remains a Regional Challenge

A lack of testing has been a global issue since public health authorities first identified the COVID-19 in December of 2019. As SARS-CoV-2 had not appeared in humans before, public health authorities have had to rapidly develop, trial, and approve tests to detect this new virus.

The availability and administration of testing varies widely from country to country, especially in Latin America and the Caribbean, where it has been estimated that the actual number of cases may be up to [7 times the number of confirmed cases](#). Data from Latin America and the Caribbean is skewed by differences in reporting requirements and testing capacities in each country. In some countries, there is a lack of testing capacity for the symptomatic and especially the asymptomatic, and a considerable deficit in monitoring and tracking.



One metric to measure the prevalence of testing is testing per capita. According to statistics compiled by [OurWorldInData](#), as of May 30, 2020, many Latin America and the Caribbean countries had tested fewer than 5 people per 1,000 inhabitants, including Argentina, Bolivia, Costa Rica, Ecuador, Mexico, Paraguay, and Peru. A few countries have tested more residents - Chile, for instance, tested nearly 30 inhabitants per 1000 residents. Cuba, Paraguay, and Uruguay have done better. Each conducted more than 30 tests per confirmed case.²

By comparison, countries that have contained outbreaks -- even those that had a large number of cases per capita -- have tested far more per people. Spain conducts 47.5 tests per thousand residents and Italy conducted 63.26 tests per thousand residents.³ Those countries with a greater prevalence of COVID-19 must perform more tests to effectively monitor and control their outbreaks. Thus, the [total number of tests performed per confirmed case](#) of COVID-19 (see graph below) gives a more complete view of testing capacity in relation to each country's need for additional testing. If the percentage of confirmed cases per test is high, it suggests that testing levels are inadequate.

² Joe Hasell et al., "Total COVID-19 tests for each confirmed case, Jun 7, 2020", Our World in Data, accessed June 8, 2020. <https://ourworldindata.org/grapher/number-of-covid-19-tests-per-confirmed-case-bar-chart?country=IDN~ISL~CAN~CZE~DEU~SWE~TWN~USA~KOR~ITA~VNM~JPN~IND~ZAF~NZL~AUS~PHL~TUN~EST~GBR~SGP~ARG~SRB~CUB~PRY~URY~BOL~CHL~PAN>

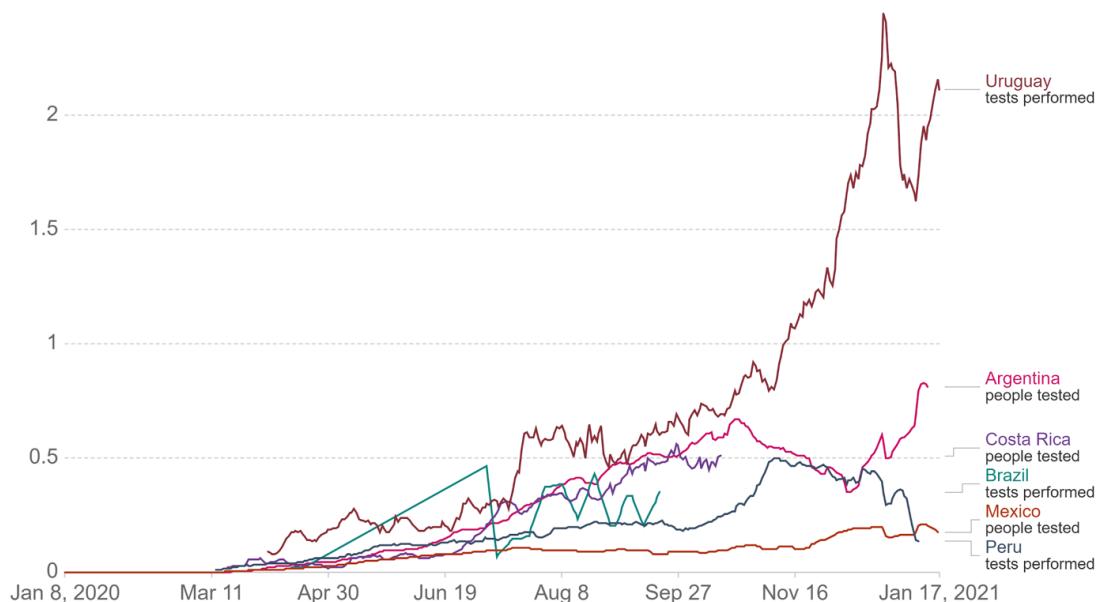
³ Joe Hasell et al., "Coronavirus (COVID-19) Testing - Statistics and Research", Our World in Data, accessed June 3, 2020. <https://ourworldindata.org/coronavirus-testing>.



Daily COVID-19 tests per thousand people

The figures are given as a rolling 7-day average.

Our World
in Data



Source: Official data collated by Our World in Data – Last updated 18 January, 13:40 (London time) OurWorldInData.org/coronavirus • CC BY

Note: Comparisons of testing data across countries are affected by differences in the way the data are reported. Daily data is interpolated for countries not reporting testing data on a daily basis. Details can be found at our Testing Dataset page.

Testing Challenges in LAC

According to our interviews with public health leaders in the region, the biggest challenges for Latin America and the Caribbean are sourcing materials for tests and decentralizing testing capacity.

Sourcing Materials

While internal production can account for a significant parcel of the demand, many Latin America and the Caribbean countries do not have the capacity to produce all tests they need and have had to import them. The *New York Times*, when referring to the global test shortage, stated that officials from Peru, Ecuador, and Brazil explained they were being outbid by richer nations. In this regard, the Pan-American Health Organization (PAHO) has been essential in helping countries source testing kits in an increasingly competitive market.



Even the region's scientific research powerhouse -- Brazil -- has taken until June 2020 to reach [2 million tests produced per month](#) for the public healthcare system; the Ministry of Health had to make plans to import [46 million tests](#) in April, leading to delays in the buildup of the country's own capacity. The importance of a country being able to produce its own tests is attested by Uruguay. Only after [developing its own test](#), the country has become the region's most intensive tester. Costa Rican scientists have also locally [developed](#) testing swabs.

Decentralizing Testing

A second obstacle to testing has been making sure citizens all over the country have access to testing. In rural areas, this presents a challenge as [the delivery of supplies is complicated by lack of roads](#) and fast access to certain remote areas. This is specifically a concern for countries with isolated indigenous and rural populations. The Brazilian state of Bahia, for instance, took two months between the first confirmed case in the country and being able to source equipment and train personnel so that diagnostic tests could be processed in multiple cities. Before this, all such tests had to be sent to the state's central lab for analysis, which meant they [could take up to 7 days](#) between the collection of samples and return of results. Peru has focused its strategy in decentralized testing, in order to allow regional labs and testing centers to carry out the diagnosis and analysis faster and without the need to send the samples to Lima. Since the beginning of the crisis, the health ministry has been [coordinating the weekly shipping of molecular tests](#) and supplies to different Peruvian regions.

Essential to decentralizing testing is cooperation with the private sector. Private healthcare providers often have greater resources than the public sector, meaning they can have greater capacity and a significant role in testing. As of July 2020, in the Brazilian state of Sao Paulo -- the country's most prolific tester -- the public network runs approximately 8,000 daily tests. Meanwhile, the private sector runs 20,000, mostly financed out of pocket by patients. To tap into the data being



produced, the state [passed an act](#) making it mandatory for all tests being run, no matter by whom or what the result is, to be reported. In addition, a mandatory protocol to format the data was created, to ease processing.

Prioritization

The inability to test the whole population has led to different strategies of prioritizing those receiving testing. In most cases, the first to be tested are suspected cases with severe symptoms, and healthcare professionals, followed by suspected cases with light symptoms and any confirmed patient's co-residents. However, as testing capacity increases, different regions have adopted different strategies for prioritizing.

São Paulo, for instance, has [prioritized vulnerable populations](#) and those under the state's care, such as residents of long term care facilities and the incarcerated population. This practice focuses on those particularly vulnerable due to inevitable close contact, as well as it aims to reduce the state's burden of care for those under its responsibility. Following a different strategy, Peru has taken to running tests on people in [public transportation and marketplaces](#), areas identified with the greatest potential for contagion. By attempting to curb the infected from using these facilities, the government hopes to reduce the spread of the disease. Similarly, to preserve their supplies of ventilators and other essential equipment, Uruguay is [isolating presumed positives before testing them](#), sheltering them in place for seven days before administering the test, in order to avoid re-testing and a false negative.

Types of Tests for COVID-19

As of July 2020, there were two types of tests for COVID-19 currently in widespread use.



Reverse transcription polymerase chain reaction (RT-PCR) tests are laboratory diagnostic tests used to detect COVID-19 in samples taken from a patient's respiratory tract. RT-PCR tests are administered by a professional in a healthcare facility or field clinic, who uses a nasopharyngeal swab to collect samples from a subject's nasal cavity. The samples are analyzed by a special laboratory machine. It can take several days to return results to patients, depending on the laboratory's capacity.⁴ There is also one antigen test, which detects viral proteins in the nasal cavity. These tests can only be run by high and moderate complexity laboratories and, although it can be completed in minutes, it is less sensitive than the PCR tests. Initially, the US Centers for Disease Control and Prevention (US CDC) recommended the use of nasopharyngeal swabs to collect samples, but it is also possible to use mid-turbinate, anterior nasal and oropharyngeal swabs. At the time of writing, there was not clear evidence on whether there is a difference in sensitivity among these collection methods. In addition to the nasal and oropharyngeal swab tests, the US Food and Drug Administration (FDA) issued an emergency use authorization (EUA) for a saliva test on May 8, 2020.

Serological, or antibody tests, detect proteins in the blood which indicate that COVID-19 has been present in the subject's body. The test involves taking a blood sample and analyzing it for the presence of antibodies, or proteins that the immune system develops 1 to 3 weeks after infection.⁵ The serological test does not tell a person whether they are immune from catching COVID-19, only that they have antibodies and therefore might have previously been infected. It should be noted

⁴ CDC, "CDC Diagnostic Test for COVID-19", Centers for Disease Control and Prevention, May 20, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/lab/testing.html> ; Abhishek Padhi et al., "Laboratory Diagnosis of Novel Coronavirus Disease 2019 (COVID-19) Infection." In *Coronavirus Disease 2019 (COVID-19)*, edited by Shailendra K. Saxena, 95–107. Singapore: Springer Singapore, 2020. https://doi.org/10.1007/978-981-15-4814-7_9 .

⁵ CDC, "Using Antibody Tests for COVID-19", Centers for Disease Control and Prevention, May 28, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/lab/resources/antibody-tests.html> ; WHO, ""Immunity passports" in the context of COVID-19", April 24, 2020. <https://www.who.int/news-room/commentaries/detail/immunity-passports-in-the-context-of-covid-19>



that medical researchers are unable to say for sure whether a patient who has antibodies for the coronavirus is immune and protected from reinfection. Researchers have raised concerns that antibody testing may endow patients who may still be infectious or susceptible to reinfection with a false sense of security.⁶

Neither type of test is perfect. Both RT-PCR tests and serological tests have yielded relatively high false negative rates, meaning that patients who had the coronavirus tested negative. One systematic review, which has not yet been peer reviewed, reported false negative rates up to 29% for RT-PCR tests for cases that later tested positive.⁷ The odds of a false negative depend on when the test occurs. One study found that the odds of false negative decrease from 100% on the first day a person is infected down to 20% by the eighth day after initial infection.⁸

PROBLEM OVERVIEW

Standing up an effective testing strategy goes far beyond designing and manufacturing functional testing kits. It is a multifaceted problem that touches upon issues of privacy, data governance, and logistics. Implementing an effective testing regime will require widespread cooperation and trust between citizens and the government. It will also require governments to work in new arrangements, including public-private partnerships, cooperation between multiple levels of government, between health authorities and universities, and coordination with community groups, to conduct tests and collect data. Governments will also need to

⁶ Stacey McKenna, "What COVID-19 Antibody Tests Can and Cannot Tell Us", *Scientific American*, Accessed May 5, 2020. <https://www.scientificamerican.com/article/what-covid-19-antibody-tests-can-and-cannot-tell-us/>.

⁷ Ingrid Arevalo-Rodriguez et al. "FALSE-NEGATIVE RESULTS OF INITIAL RT-PCR ASSAYS FOR COVID-19: A SYSTEMATIC REVIEW." Preprint, April 21, 2020. <https://doi.org/10.1101/2020.04.16.20066787>.

⁸ Lauren M. Kucirka, Stephen A. Lauer, Oliver Laeyendecker, Denali Boon, Justin Lessler. Variation in False-Negative Rate of Reverse Transcriptase Polymerase Chain Reaction-Based SARS-CoV-2 Tests by Time Since Exposure. *Annals of Internal Medicine*, 2020; DOI: 10.7326/M20-1495.



coordinate with industries such as manufacturing, air travel, cruise lines, and restaurants, to prevent crowded workplaces and public spaces from becoming COVID-19 hotspots.

However, the leaders of many countries facing COVID-19 outbreaks have politicized testing, intentionally limiting the collection or sharing of testing data out of fear that such information will indicate that their number of cases is higher than was previously believed.

The federal government of the United States has limited testing in order to suppress the number of confirmed cases, while the governments of Brazil and China have refused to release key testing data that would reveal the prevalence of the virus within their countries. Spain's Prime Minister incorrectly claimed that the country ranked fifth in the world in testing rates, citing statistics that do not exist. This lack of political will to test, and provide decision-makers with the accurate results of tests, has greatly hampered the ability of public institutions to effectively respond to COVID-19.⁹

Root Causes of the Problems with Testing

There are common challenges impeding the creation of effective testing strategies. These include:

Lack of Political Will: A range of problems that interfere with the availability of testing are driven by politics. In some countries, there has been a lack of emphasis on and investment in testing because political leaders do not want additional public information about the scope of the problem. Because they fear the economic, social

⁹ Michael D. Shear et al. "The Lost Month: How a Failure to Test Blinded the U.S. to Covid-19." *The New York Times*, March 28, 2020, sec. U.S. <https://www.nytimes.com/2020/03/28/us/testing-coronavirus-pandemic.html>.



and political consequences of a large infectious disease outbreak, they have limited the amount of testing that is available, primarily by failing to use their authority to increase the production of necessary supplies. The same concerns have led to inadequate investment in the production of Personal Protective Equipments (PPE). The combination of limited testing and an inadequate supply of PPE have led to additional problems that limit testing. First, because frontline health care workers are more likely to be exposed to the virus with inadequate protection, the health care system may not be working at full capacity because some of its employees are sick. Second, the global supply chain for test kits may be interrupted if essential workers do not have sufficient PPE. Finally, the cost of testing kits may be a barrier to increasing the availability of tests at scale. Biotech companies have listed prices from \$180 – 250 USD for a single test. Many other manufacturers fail to list the costs of their tests. There may not be political support for the level of investment in testing required to understand and contain the spread of the virus.

Regulatory Hurdles: There is a lack of standardized reporting of testing results and demographic information. Disparities in which indicators and demographic information are collected during testing have made it difficult to compare testing results across jurisdictions. Errors in data aggregation have led to an inaccurate “bigger picture” of the virus’s prevalence. In the US, for instance, states have reported figures that aggregate results from serological and RT-PCR tests, which are used for different purposes. As such, the reported prevalence of COVID-19 infection at the national level is erroneous.

Global and Local Supply Chain Problems: Testing has been limited by disruptions to the global supply chain. The global supply chain for testing supplies and PPE has been interrupted, in part, due to international political fights, but some of this is the result of government and corporate efforts to limit the spread of disease by issuing



stay-at-home orders and encouraging social distancing. This has worked to limit the availability of tests and PPE.

Technical Challenges: There are technical challenges associated with the development and production of new tests. At the time of writing, COVID-19 was relatively new, and researchers still have many unanswered questions about how it interacts with the human body. The desire to increase testing rapidly has led to a proliferation of tests for which accuracy was not verified through objective study. Similarly, the sensitivity of these tests is still evolving and widely-used tests for COVID-19 have a high false negative rate (up to 10% or higher), particularly among people who are pre-symptomatic. To date, it has been difficult to design at-home tests that the average person can administer correctly without the help of a medical professional. This could also lead to a higher false negative rate.

Organizational Blockers: Existing organizational silos can cause testing and reporting delays because government agencies with different capacities and responsibilities may not have mechanisms in place to facilitate routine information sharing. When samples must be sent to a centralized laboratory for testing, this can delay the process. There is also the logistical challenge of transporting specimens to a lab without contamination, and keeping track of which specimen corresponds to each patient. In the absence of access to government-administered tests, private companies (e.g. Google) have begun administering testing. As with at-home testing, there is no guarantee that such testing regimes will inform public health decisions unless companies go out of their way to share results with governments. Even when governments conduct testing, aggregate testing data may be siloed within individual agencies rather than shared across departments.

Information/Communication Limitation: People may be unaware that testing is available in their community, unsure of where to go to get tested, or unsure if they



are eligible for testing if the government is not providing timely, reliable and accessible information. The proliferation of misinformation about COVID-19 has made reliable public health information more difficult to find. This includes confusing messaging about the meaning of serological tests. The public health communication issues are compounded by the fact that many communities have a mistrust of government and the healthcare system rooted in past mistreatment and discrimination.



REGIONAL CONTEXT

Argentina

Context and Actions Taken:

- ▶ The administration opted for a strict quarantine rather than a strategy of massive testing and contact tracing. To improve the testing effort, scientists from Universidad de Buenos Aires developed a low-cost fast test using LAMP technology. Due to the structure of Argentinian government, testing is decentralized and concentrated at the provincial level, with orientations from the national Ministry of Health.

Challenges:

- ▶ The Argentine government's testing response has been largely characterized by a lack of resources required to perform large numbers of tests.

Ceara - Brazil

Context and Actions Taken:

- ▶ Ceara is one of the few territories in Latin America and the Caribbean that includes comprehensive testing data in its COVID-19 data dashboard.
- ▶ As of July 2020, the molecular testing capacity increased from 100 to 2,000 daily tests since the start of the pandemic.



Challenges:

- ▶ Quick antigen tests have been the majority of tests. The greater reliance on quick tests has been due to difficulties sourcing RT-PCR tests, however the administration is aware that this method is imperfect. Most tests have to be sent to the capital Fortaleza for processing. This presented a significant logistical issue as not only did it take several days to get the results, but the sample could also be compromised if transported improperly.

Examples:

- ▶ Ceara has created Saude Digital, a framework for public and private labs to log the results of tests. This has allowed private labs to directly log the data, which before this had to go through the facility treating the patient who was tested, thus gaining agility.

Costa Rica

Context and Actions Taken:

- Costa Rica's strong health system has been crucial to containing the spread of COVID-19. The Office for Comprehensive Healthcare (EBAIS for its Spanish acronym) is a key component of the country's health system and has been the first line of response to the virus. There are more than 1,000 EBAIS clinics, where health care workers are focused on treating COVID-19 cases at the detection stage. Once a case is



identified, health care workers maintain active surveillance and monitoring of symptoms. There is also sampling in places of high risk, and residual waters and sewage waste are being analyzed. The Social Security system in Costa Rica has a unique laboratory system and COVID-19 is promoting its broader integration across the healthcare sector. Every hospital has access to a centralized database and all positive cases are reported to Social Security.

Challenges:

- Investment needed to acquire the necessary technology and capacity to be able to process it. The labs in Costa Rica do not have a vast infrastructure to incorporate the technology and the equipment.

Examples:

- Costa Rican scientists have developed protective equipment and ventilator prototypes and have made progress in the production of swabs for testing, with the goal of being self-sufficient in medical equipment.

Honduras

Context and Actions Taken:

- Honduras is using its experience with medical brigades -- Rapid Response Teams (ERR) -- to test and deliver healthcare



on a house by house basis, both to reach isolated communities and to minimize strain on healthcare facilities.

Peru

Context and Actions Taken:

- Peru has decentralized testing, allowing regional labs/testing centers to carry out the diagnosis faster and without the need to send the samples to Lima. Since the beginning of the crisis the health ministry has been coordinating the weekly shipping of molecular tests and supplies to different Peruvian regions. The government strategically concentrated its COVID-19 testing in markets and public transportation, which had been identified as top sites for contagion.

Examples:

- The government created telemedicine initiatives called SISOL 40, a virtual space for medical consultations through telephone and WhatsApp messages. Patients over 60 years old are assigned a health advisor.



WHY TESTING STRATEGIES: THE CORNERSTONE OF AN EFFECTIVE COVID-19 RESPONSE.

To control the pandemic and move towards reopening its economies, governments in Latin American and the Caribbean must develop and implement strong and effective testing strategies. Testing is essential for all governments because it is the cornerstone to any successful and comprehensive national strategy to curb the COVID-19 pandemic:

- ▶ Testing leads to quick identification and confirmation of positive cases;
- ▶ Testing informs clinical treatment;
- ▶ Testing indicates the need to isolate and quarantine;
- ▶ Testing helps identify people who need to be contacted because they were in contact with a positive COVID-19 case;
- ▶ Testing helps public health officials and researchers understand characteristics of the pandemic by understanding prevalence, transmission, hotspots and other important surveillance elements.

The below recommendations are not intended to be all-encompassing of a national testing strategy. Rather they are specific areas that, if addressed and implemented, will yield considerable returns to Latin American and Caribbean populations and their efforts to control COVID-19 within their communities and populations.



POOLED TESTING

RECOMMENDATION

Governments and researchers should implement pooled testing strategies, innovating with pool design through ranking schemes or geographic schemes.

KEY ACTIONS

- ▶ Partner with academic institutions, researchers and private sector laboratories.
- ▶ Waive regulatory barriers.
- ▶ Iterate learning and share best practices.
- ▶ Rapidly pilot pooled testing schemes.

Pooled testing contributes to overall testing strategy by mitigating or addressing the following bottlenecks:

- ▶ *Increasing testing capacity:* Due to a variety of factors (supply chain bottlenecks, training/workforce shortages, logistics), many countries in Latin America and the Caribbean are not able to perform adequate numbers of tests for their population. Pooled testing addresses this issue where, depending on the prevalence of infection in a given population, governments that implement pooled testing strategies can expect to see their testing capacity increase by up to 300%.



- ▶ **Test kit and reagent shortages:** Test kits and reagents have been in short supply for the entirety of the pandemic, with current estimates putting overall capacity well below the needed thresholds for containing outbreaks and moving toward reopening. Pooled testing mitigates supply chain shortages and bottlenecks by increasing efficiency and stretching resource shortages, saving as much as 60% of the supplies needed.
- ▶ **Screening and surveillance:** Nations lack cost-effective ways to monitor community spread and detect hotspots; this is compounded by the fact that traditional tools like syndromic surveillance are not as effective given the high rate of asymptomatic positive cases and aversions to seeking treatment at clinics because of risk of exposure. Pooled testing yields advantages such as preserving testing reagents and resources, reducing the amount of time required to test large numbers of specimens, and lowering the overall cost of testing.

What is Pooled Testing

Pooled testing is a process where laboratories combine a predetermined number of samples and test them with a single test, often an **RT-PCR** test. Pooled testing can be an effective strategy for diagnostic, screening, and surveillance testing.¹⁰ If the test comes out negative, it is assumed that all samples are negative, if it comes out positive, there are a few different methods for retesting the pool, depending on the intended use of the strategy (e.g. diagnostic, screening, or surveillance).

¹⁰ “Diagnostic testing for SARS-CoV-2 is intended to identify occurrence at the individual level and is performed when there is a reason to suspect that an individual may be infected, such as having symptoms or suspected recent exposure, or to determine resolution of infection. Screening tests for SARS-CoV-2 are intended to identify occurrence at the individual level even if there is no reason to suspect infection—e.g., there is no known exposure. This includes, but is not limited to, screening of non-symptomatic individuals without known exposure with the intent of making decisions based on the test results. Surveillance for SARS-CoV-2 includes ongoing systematic activities, including collection, analysis, and interpretation of health-related data that are essential to planning, implementing, and evaluating public health practice.” https://www.cdc.gov/coronavirus/2019-ncov/lab/pooling-procedures.html#anchor_1595517996705



The simplest and most common method of pooled testing is Dorfman Testing, in which all individuals from a pool that flags positive are then individually tested.¹¹ Dorfman Testing's advantage is that it requires little coordination or planning and a maximum number of two stages. However, there are alternative methods which may be more economical for test reagents, especially when these resources are particularly scarce. Another technique is splitting, which involves splitting positive pools into smaller ones for retesting and progressively doing the same to the smaller pools which test positive.¹² While splitting can save reagents, it is administratively time consuming, due to the number of stages it requires. This may make it a better alternative for areas which are short on reagents, but have sufficient lab capacity and person-power. A third option, Sterret testing, is particularly effective when the viral prevalence in a community is very low (see [memorandum appendix for a table on prevalence and pooled testing](#)). Sterret testing relies on randomly testing the individuals of a positive pool until one tests positive. The individuals who remain untested are pooled and if that pool tests positive, the process is repeated.¹³ A fourth method is Matrix testing, which is performed by constructing a grid of specimens and grouping specimens within rows and columns. Specimens at the intersections of positive rows and positive columns of the matrix are tested individually to attempt to separate the positives from the negatives.¹⁴ Matrix testing can be particularly effective at very high throughput testing facilities, but requires significant coordination and analysis work, increasing administrative and labor costs.

¹¹ Dorfman R. The detection of defective members of large populations. *Annals of Mathematical Statistics* 1943; 14:436–440.

¹² Litvak E, Tu X, Pagano M. Screening for the presence of a disease by pooling sera samples. *Journal of the American Statistical Association* 1994; 89:424–434.

¹³ Sterrett A. On the detection of defective members of large populations. *Annals of Mathematical Statistics* 1957

¹⁴ Bilder, Christopher R., and Joshua M. Tebbs. "Pooled-testing procedures for screening high volume clinical specimens in heterogeneous populations." *Statistics in medicine* 31.27 (2012): 3261-3268.



Considerations for Pooled Testing

Optimal conditions

- Prevalence rates: Experts interviewed for this chapter¹⁵ indicated that rates must be lower than 10% in the target population for pooled testing to be an efficient scheme. As prevalence goes down, the efficiency of pooling increases. See memorandum appendix link for more information on optimal prevalence rates for conducting pooled testing.
- Specimen collection and logistics: Experts interviewed for this chapter¹⁶ indicated that adequate numbers of trained staff must be available to collect specimens safely and correctly. Once specimens are collected, the logistics of ensuring they are correctly labeled, shipped and delivered to a laboratory for pooled testing are very important.

Public–Private–People Partnerships

- ▶ *Private laboratories:* If the government does not have capacity to perform the testing of grouped samples at public laboratories, they must partner with private laboratories that have capacity to process large volumes of samples.
- ▶ *Expertise:* If governments do not have the capacity to coordinate sample collection or develop pooling methodologies they must be able to identify and partner with experts from universities or other sectors who can support pooled testing schemes. What are groups of experts that may have a particular valuable expertise that is underutilized? For instance, to help design pooled testing schemes, statisticians, engineers or mathematicians will have particularly useful skills that may not exist in the traditional laboratory or clinical setting.

¹⁵ Baha Abdalhamid, MD, PhD <https://www.unmc.edu/pathology/faculty/bios/abdalhamid.html>

¹⁶ Charles Thraves, PhD and Denis Sauré, PhD <https://isci.cl/wp-content/uploads/2020/06/MULTIPLYING-TESTING-CAPACITY-RT-PCR-POOL-TESTING.pdf>



- ▶ **Public partners:** If governments do not have the capacity to perform specimen collection or to access specific populations they must consider partnering with groups of health workers or other actors who can provide auxiliary support in collecting specimens.

Alternatives

- ▶ **Other ways to test:** What are alternative strategies that can be used for surveillance, diagnostic, or screening purposes if pooled testing is not feasible? Alternatives may include [randomized testing](#), [wastewater epidemiology](#), [serology testing](#) or [symptom trackers](#).

Actions Governments Can take to Capture the Opportunity

Partnerships

Partner with academic institutions, researchers and private sector laboratories. Governments should engage the academy, research firms, and private sector laboratories to develop algorithms, testing strategies, and innovative ways to design pooled testing schemes. Specific actions for governments include:

- ▶ Convene an [advisory panel](#) of experts with relevant skills and experience from research firms, [universities](#), and private sector laboratories
- ▶ Commission an advisory panel to develop pooled testing strategy
- ▶ Identify specific partners to support implementation of pooled testing strategy

Regulatory

Waive regulatory barriers. Governments should consider ways to adjust regulations that restrict innovation pertaining to pooled testing schemes. Specific actions for governments include:

- ▶ Identify key legal and regulatory bottlenecks restricting pooled testing
- ▶ [Review legislation and regulatory](#) statutes that may restrict innovation pertaining to implementing pooled testing schemes



- ▶ Consider policy actions, such as waivers or emergency use authorizations that will allow for temporary approvals to implement pooled testing schemes

Innovate and Pilot

Rapidly pilot pooled testing schemes. Governments should act quickly (<1 month) to pilot various pooled testing schemes such as Dorfman, Splitting, Sterret, and Matrix testing to gauge scalability and utility amongst different contexts and populations. Specific actions for governments include:

- ▶ Convene an advisory panel of experts with relevant skills and experience from research firms and universities
- ▶ Identify ideal populations to work with on pilot testing scheme such as nursing homes, congregate living residences, or groups of healthcare workers
- ▶ Secure partnerships with laboratories to manage the throughput of pooled tests

Investments and Improvement

Iterate learning and share best practices. Governments should contract with or perform their own evaluation of pooled testing schemes, improve on existing processes, and share best practices across jurisdictions and sectors. Specific actions for governments include:

- ▶ Document findings and lessons learned from pooled testing pilots
- ▶ Share findings publicly and with relevant national and international stakeholders
- ▶ Publish research and advocate for replication of successes within the country and in other comparator countries

Global Examples

Before the COVID-19 pandemic, pooled testing was mostly used for screening blood banking and was a strategy that helped combat the HIV/AIDS epidemic. However, in early March 2020 various countries started adapting the procedure to more effectively identify positive COVID-19 cases. The following is a list of countries who



have adapted pooled testing as part of their testing strategies; the list includes information about what these jurisdictions did and how they did it.



CHILE

Scientists at the Austral University in Chile (UACH) [created an innovative COVID-19 mass testing model](#); a [scientific report](#) has been published explaining the findings.

However, despite advocacy, this has not yet been adopted as a national strategy in Chile but it continues to be reported by [local newspapers](#) as an [effective strategy](#) that should be adopted. Researchers from the Complex Systems Engineering Institute (ISCI), Denis Sauré and Charles Thraves, are [adapting groups testing strategies for a national model](#).



CHINA

The government of Wuhan implemented a [citywide testing drive](#), leveraging massive resources and intensive campaigning, to test over six million people in 10 days. The aggressively high throughput in testing was only possible due to [pooling samples](#). This allowed the government to catch asymptomatic cases and prevent outbreaks, at a moment of [low prevalence](#). Wuhan's example shows pooled testing potential to facilitate periodic population-wide testing for a particular community.



GERMANY

Germany's Homburg procedure has been used since March at Saarland University Hospital in Homburg to successfully protect high-risk patients from infection by asymptomatic COVID-19 carriers. Pooled testing allows the university to regularly test residents and staff of nursing homes and care facilities. For even greater efficiency, the researchers have used large pools of up to 30 samples and 'splitting' methods to reduce the number of individual tests necessary.

INDIA

India established a pooled testing protocol for quarantined migrant workers and international travelers which combines 25 samples at a time. The country also uses pooled testing to monitor green zones where prevalence is low. Rather than monitoring specifically vulnerable populations, India is using pooling to test groups where prevalence is perceived as being low, thus maximizing the efficiency gains from pooled testing.

RWANDA

Rwanda has enrolled scholars from multiple disciplines to develop its pooling algorithm, based on matrix, or array testing to maximize its national pooled testing strategy and to better understand the spatial spread of COVID-19 at the national level and identify new infection hotspots. By making use of local experts, Rwanda has developed a protocol to further maximize the efficiency of pooling.



SINGAPORE

Singapore has adopted pooled testing for residents and staff of nursing homes and residential care facilities. The Singaporean method is designed to catch infections before they become outbreaks in some of the most vulnerable locations. The spatial concentration of those sampled also facilitates the logistical aspect of collecting and transporting samples.



UNITED
STATES

The United States has issued an emergency use authorization for Quest Diagnostics to conduct pooled testing in diagnostic testing, which will allow for pooled samples containing up to four individual swab specimens, thus bypassing normally slow regulatory procedures. Stanford University and the State of Nebraska have been conducting pooled testing since before July 2020.

Cost and Resource Offset

Cost: Cost for pooled testing varies depending on location and methodology. Because it is a new process for many laboratories, there will be startup costs associated with implementing the methodologies. Some laboratories may initially charge more for pooled tests, and some of the pooling schemes will require extra coordination work (labor and administrative costs may increase in the short term). One study on pooled testing for Chlamydia trachomatis found that depending on a specific factor, cost reductions had considerable variance compared to status quo



testing schemes (between 5–80% cost reductions in populations with prevalence rates up to 60%).¹⁷

Resource Offset: Pooled testing can reduce the cost in terms of reagents, test kits, and labor. As multiple samples can be tested with the reagents of a single test, the average quantity of reagents per sample decreases. According to Peter Iwen, director of the Nebraska Public Health Laboratory, 50% to 60% of the reagents can be saved and labor can be reduced by 25% to 30%. Similarly, sub-pools are being used to test large samples, in order to reduce the amount of individual testing that needs to be done, if a pool tests positive, thereby maximizing resources. In situations that allow more samples per pool, the cost reduction is bound to be more significant, not only in reagents, but in labor as well.

Experts to consult:

- ▶ Baha Abdalhamid, MD, PhD, University of Nebraska Medical Center (UNMC)
- ▶ Peter C. Iwen, MS, PhD, D(ABMM) University of Nebraska Medical Center (UNMC)
- ▶ Elza Erkip, PhD New York University Tandon School of Engineering
- ▶ Alex Greninger, MD, PhD, MS, MPhil University of Washington Medical Center
- ▶ Charles Thraves, PhD Assistant Professor, University of Chile
- ▶ Denis Sauré, PhD Assistant Professor, University of Chile
- ▶ Ravindra Kolhe, MD, PhD, Augusta University

¹⁷ Kathryn J. Ray, Zhaoxia Zhou, Vicky Cevallos, Stephanie Chin, Wayne Enanoria, Fengchen Lui, Thomas M. Lietman & Travis C. Porco (2014) Estimating Community Prevalence of Ocular Chlamydia trachomatis Infection using Pooled Polymerase Chain Reaction Testing, *Ophthalmic Epidemiology*, 21:2, 86-91, DOI: 10.3109/09286586.2014.884600



NATIONAL PATIENT IDENTIFIERS

RECOMMENDATION

Governments should take steps toward developing a unique health identifier/national patient identifier system (UHI/NPI) that unambiguously identifies each individual and links her to her health records, including test results.

KEY ACTIONS

- ▶ Conduct feasibility studies.
- ▶ Standardize data entry fields across existing systems.
- ▶ Adjust existing data collection processes.
- ▶ Develop, advocate for and pass legislation.
- ▶ Establish a single organization to manage and oversee the UHI/NPI system.
- ▶ Implement a UHI/NPI system.

Working towards a UHI/NPI system contributes to overall testing strategy by mitigating or addressing the following issues:

- ▶ *Isolating and quarantining:* a positive test result is often the trigger that encourages individuals to quarantine or isolate until they are no longer symptomatic or contagious. Due to a variety of human and non-human errors, patient test results and other records are mismatched or delayed because of issues connecting results and records to an individual. A UHI/NPI system would



allow records to be more accurately attached to individuals, allowing for speedier and more accurate isolating and quarantining.

- ▶ **Population level analytics and surveillance:** Different reporting standards, incomplete records, mismatched records, and data sharing between electronic health records all create inaccuracies and errors in aggregated population-level data sets. This results in demographers and public health officials not being able to accurately track COVID-19 in “real time,” especially amongst populations where it may matter most (see “high risk populations”). A UHI/NPI system would ensure that test results and patient records are accurately attached to demographic information, thus allowing for more accurate analyses from population-level databases.
- ▶ **Contact Tracing:** Contact tracing efforts are impeded when patients are incorrectly identified or are not connected to a test result. Health officials conduct contact tracing and are then not able to identify those infectious individuals nor are they able to warn that individual’s high-risk contacts.

What is a UHI/NPI System

In its most basic uses, a unique health identifier/national patient identifier system (UHI/NPI) effectively assigns each individual in a society a unique identifier (alphanumeric, biometric, or other) that connects that individual to her health records (including testing records) across the entire healthcare system. Connecting patient records (including diagnostic test results) accurately and precisely to the individuals is an essential precondition for 1) quarantine and isolation; 2) contact tracing; and 3) population-level analysis and predictive analytics. These above issues have become more acute during the COVID-19 pandemic, highlighting the need for Latin American and Caribbean governments to design, test and implement UHI/NPI systems in their countries.



The reasons that countries tend not to have UHI/NPI systems are generally threefold: 1) fragmented healthcare systems with various public and private providers and insurers who use different records systems and have different data standards; 2) technological barriers; and 3) public opinion and political willpower. While a UHI/NPI system will have considerable utility in the fight against COVID-19, it is an investment that will yield dividends beyond the lifetime of the pandemic, thus creating a long-term incentive for governments to invest in this solution.

Considerations for Working Towards a UHI/NPI System

Current systems

- ▶ ***Healthcare records format:*** How are health records managed in and across your country's health systems? Are they electronic health records or are they primarily paper records?
- ▶ ***Data entry and format:*** How is data entry standardized (or not) for demographic information on health records, including test results? Do individuals use a single identifier in all settings? Are entry formats standardized (such as date of birth, first name, last name)? Are identifiers entered manually in a way that entry errors can cause matching issues?
- ▶ ***Regional and population differences:*** Do regions within your country operate differently? Are there unique needs and systems for specific demographics or communities, such as indigenous populations, migrants, or undocumented individuals?
- ▶ ***Regulatory and legislative barriers:*** What are the laws and regulations that currently govern how health data is collected, stored and shared? Is the



mechanism by which health records are affiliated with a single individual addressed in legislation?

Stakeholders

- ▶ **Advocates and allies:** Who are the major stakeholders in your country who are in favor of implementing a UHI/NPI system? Are private healthcare providers likely to support steps to work towards a UHI/NPI system?
- ▶ **The public:** What does the public in your country think about the current system? Are there surveys that have captured public opinion on health identifiers? Are there political advocates or elites who are involved in shaping public opinion on health data?
- ▶ **Laggards and detractors:** Which stakeholders are likely to resist changes to the status quo? Who will be most burdened by changes to the current system as it is improved? Why might stakeholders resist changes, for instance is the cost of implementing new systems and data formats an issue?

Alternatives:

- ▶ **Patient matching:** How can the current system improve accuracy and precision of matching individuals to their health records, including test results? How can test results be better matched to individual demographics so population-level analyses can inform public health policies and priorities?
- ▶ **Interoperability and sharing health data:** How can the current system better share health records and test results across elements of the healthcare system, including delivering results to individuals, passing records between hospitals and providers, and aggregating health records and test results at the population level for trend analysis?



Actions Governments Can take to Capture the Opportunity

Analysis and Research

Conduct feasibility studies. Governments should appoint a group of government and external experts to conduct a feasibility study of jurisdictional and private/public context and document legislative opportunities or barriers to moving forward with a UHI/NPI system. Specific actions for governments include:

- ▶ Identify key stakeholders from government institutions, insurance companies, hospital/healthcare systems, provider networks, academic community and the public
- ▶ Establish study timeline as less than 3 months from first meeting
- ▶ Commission this group to develop a comprehensive assessment in the allotted time frame ensuring that the assessment includes analyses of: current system, regional differences, key stakeholders, regulatory opportunities, and recommendations for a path forward

Partnerships

Standardize data entry fields across existing systems. Governments should work with partners to standardize data elements across health IT systems so that data is easily shareable between systems. Specific actions for governments include:

- ▶ Convene stakeholders who manage Electronic Health Record systems in the country and encourage a cost benefit analysis of current system(s)
- ▶ Identify specific opportunities to make immediate improvements to interoperability (such as standardizing similar fields across systems)
- ▶ Identify specific opportunities to make long-term improvements to interoperability (such as inter-system identifiers)



Regulatory

Develop, advocate for and pass legislation. Governments should mandate adoption of standards providing for a standard national health identifier for each individual, employer, health plan, and health care provider for use in the healthcare system. Specifically, governments should:

- ▶ Identify key legal and regulatory bottlenecks restricting adjustments to patient identifier systems
- ▶ For regulatory barriers, consider updating regulations to better support interoperability, standardization, and the framework needed for a UHI/NPI system
- ▶ For existing legislation, develop proposed replacement legislation and advocate for this legislation through the appropriate legislative processes and procedures

Innovate and Pilot

Adjust existing data collection processes. Governments should advance the use of regularly collected demographic data elements for patient matching and identification such as phone numbers, mailing addresses, or email addresses. This will ensure that public health authorities have up-to-date contact information when receiving reports from laboratories, hospitals, and other testing sites. Specifically, governments should:

- ▶ Identify standardized demographic data fields in existing systems such as phone numbers, email addresses, home addresses, social security numbers or voting IDs
- ▶ Develop guidance for laboratories, hospitals, and healthcare providers on how to more consistently capture these important fields
- ▶ Rely on existing data structures where possible, such as those maintained by telecom providers, voting registries, or social security administrators



Long-term investments and Improvement

Establish a single organization to manage and oversee the UHI/NPI system. Governments should establish a single organization with the responsibility to oversee and advise on ways to improve patient matching and incorporate new technologies and approaches as they emerge. This organization would identify and encourage adoption of certain standards—such as on biometrics or use of smartphones—by health care organizations and technology developers. Specifically, governments should:

- ▶ Appoint a special advisor on health informatics to oversee the development of identifier projects for the interim until an organization is established and functioning
- ▶ Identify the preferred organizational affiliation of this group and how it will fit into existing government agencies and structures
- ▶ Coordinate with international partners to learn about best practices and key steps for development and implementation

Implement a UHI/NPI system.

Governments should roll out a comprehensive and single UHI/NPI system that integrates, delivers, and manages health information technology systems across all health care institutions, including the ability for individuals to access and control their own health records. Specifically, governments should:

- ▶ Actions listed above are all essential preconditions for this recommendation to be accomplished



Global Examples

Note: this is not an exclusive list. Many countries and regions use UHI/NPI systems.



AUSTRALIA

The digital health strategy in Australia is managed by the Australian Digital Health Agency. The country uses an individual healthcare identifier (IHI) - a unique 16 digit number - to identify an individual for health care purposes. The system uses an interoperable national e-health program based on personally controlled unique identifiers supporting prescription information, medical notes, referrals, and diagnostic imaging reports. This system helps health professionals access their patients' My Health Records to read their medical history and add new information.



BRAZIL

Brazil's Unified Health System (SUS) uses a National Healthcare Card, assigned to patients to keep track of medical records. The card, which has recently been digitized into an electronic National Health identification card system with a personal identification number, allows healthcare providers to access a patient's medical information anywhere in the country. This is possible due to a central database accessible from any public or private hospital within the Unified Health System network.



ENGLAND

England's national health system (NHS) assigns an NHS number to every registered patient. This number serves as a unique identifier that helps manage patients' health records. The number is assigned after someone is born or the first time they receive care. Healthcare providers are required to offer patients access to their own detailed coded record, including information about diagnoses, medications and treatments, immunizations, and test results.



ESTONIA

Estonia has one of the most highly-developed national ID-card systems in the world. Every citizen in Estonia has an online e-health record that can be tracked, and linked to a person's electronic ID-card. The health records are secured with KSI Blockchain technology and are used to ensure data integrity. The information is only accessible to authorized health personnel. 99% of health data, prescription information and electronic billing in healthcare are digitized. The Electronic Health Record is a nationwide system that integrates data from diverse healthcare providers into a common record accessible to patients and doctors as a single electronic file. The system functions as a centralized, national database that retrieves data from various providers with different systems and presents the information into a standard format via the e-patient portal.



SINGAPORE

Singapore's national electronic health record (EHR) is managed by the Integrated Health Information Services, which integrates, delivers, and manages information technology systems across all public health care institutions. Singaporeans can access their health records via a national health portal.



SLOVENIA

Slovenia uses both a unique identification number and universal health identifier. The two numbers are linked by the central population register (CPR). The government operates an online portal through which the insured can access their health information and manage a significant portion of their health care activities such as looking up their medical records and laboratory test results.



SOUTH
KOREA

South Korea's Resident Registration (RR) number is used as a UHI to access benefits through the national health insurance (NHI) system. In the area of disease prevention and health promotion programs, the RR number is used to manage vaccination programs which are linked via the RR number between the Korea Centers for Disease Control and Prevention (KCDC). The RR numbers are utilized for disease treatment and management and for controlling and limiting the spread of contagious diseases. During an epidemic/pandemic, medical facilities and other infectious disease surveillance actors are required by law to report the infected person's RR number to the KCDC.



THAILAND

Thailand assigns a personal identification number (PID) to each Thai citizen. Electronic medical records are used at all hospitals where patient identification numbers are linked to a patient's individual national PID. PIDs make electronic medical records sharable among health care providers and disease surveillance actors.

OTHER
COUNTRIES

Canada, Denmark, France, Germany, Italy, India, Ireland, Israel, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland, and Taiwan all use versions of a Universal Health Identifier system.

Cost and Resource Offset

Cost: Each action will bear different costs with the most expensive being the implementation and roll out of a UHI/NPI system nationally. In the United States, to transition to a UHI/NPI system, experts calculate the cost as over \$1 billion USD. Other recommendations will be much less expensive, with feasibility studies being the least expensive. Cost sharing is also an option that governments should consider given that providers, citizens, researchers and regulators will all benefit from the increased efficiency of a UHI/NPI system.

Resource Offset: UHI/NPI systems are designed to reduce medium to long term costs, as the data they generate can help optimize resource deployment, improve contact tracing results, reduce duplicative administrative work, and allow for interoperability between providers.



Experts to consult:

- ▶ Ben Moscovitch, Project Director, Pew Charitable Trusts
- ▶ Shaun Grannis, Vice President , Data and Analytics, Regenstrief Institute, Inc.
- ▶ John D. Halamka, President of Mayo Clinic Platform, Professor of Medicine, Harvard Medical School, Chief Information Officer, Beth Israel Deaconess Medical Center

HIGH-RISK POPULATIONS¹⁸

RECOMMENDATION

Governments should prioritize conducting tests among populations with a high probability of 1) contracting the virus; 2), spreading it to others; and 3) suffering serious consequences as a result of infection.

SPECIFIC ACTIONS INCLUDE

- ▶ Define high-risk populations who will receive prioritized testing.
- ▶ Partner with community and cultural leaders.
- ▶ Make testing free for low income or high-risk populations.
- ▶ Develop and use culturally and contextually relevant communication materials for testing resources.
- ▶ Rapidly conduct snapshot pooled testing among staff and residents in health and long-term care facilities prisons and other congregate housing facilities.
- ▶ Ensure adequate testing resources are available and accessible to high-risk communities.

¹⁸ Note: processes that consider testing for high-risk populations will be very useful for when a vaccine is eventually developed and distributed.



Prioritizing testing for high-risk populations contributes to overall testing strategy by mitigating or addressing the following issues:

- ▶ **Shielding those most at risk of and from COVID-19:** Individuals with comorbidities and underlying health conditions are at greater risk of contracting COVID-19 and getting seriously ill from COVID-19. Prioritizing testing for high-risk populations helps minimize the risk to these particularly vulnerable populations, reducing strain on the hospital system and overall severity of infections.
- ▶ **Shielding those most at risk of spreading COVID-19:** Individuals and populations who fall into certain risk categories such as the poor, homeless, and those living in congregate settings, are at higher risk of spreading COVID-19 and creating “superspread events.¹⁹ Prioritizing testing for these individuals can help prevent further spread of COVID-19.
- ▶ **Hospitalizations and intensive care:** There is considerable overlap between those at high risk for spreading and those at high risk for developing severe complications from COVID-19. When large numbers of very sick individuals are concentrated in specific communities, the healthcare system can become overwhelmed and ineffective. Aggressively and proactively testing high-risk populations offers direct and indirect benefits such as reducing mortality rates among high-risk populations and mitigating expected stresses on the healthcare system or limited testing kits and reagents.

¹⁹ Events where one person infects a disproportionate number of other individuals. <https://www.scientificamerican.com/article/how-superspreading-events-drive-most-covid-19-spread1/>



- ▶ **Equity and harm:** Specific populations are at disproportionately higher risk for contracting and having serious illness from COVID-19, often for systemic and prejudicial reasons. Implementing a testing scheme that prioritizes these populations will help reduce health disparities and systemic disadvantages.

What are High-risk Populations

At the time of writing, the rate of infection was relatively low in the general population, making it not very efficient to test everyone as a surveillance or screening strategy.²⁰ As a result, many countries will need to establish priorities for who will receive tests when resources are limited. Governments should identify those at highest risk for serious illness and mortality because of underlying health conditions, occupations, social determinants of health,²¹ or structural disadvantages such as racism or discrimination. These populations include health care and long-term care workers, people living in congregate housing (e.g. nursing homes, homeless shelters, prisons), older people living with comorbidities, including respiratory illness, hypertension, diabetes, or multiple comorbidities, homeless populations, populations with limited access to healthcare and underserved by healthcare institutions, and people with a known exposure to a person who has tested positive.

One goal of testing is to limit the spread of the virus by identifying people who are at high risk of contracting the disease and isolating them from the rest of the population. A second goal is to limit the spread of the virus among populations that are at high risk for experiencing serious illness or death. A third goal is to inform treatment of individuals who are confirmed positive. Governments can limit the

²⁰ Obermeyer, Ziad, Ned Augenblick and Jonathan Kolstad. 2020. Here's one way to make daily covid-19 testing feasible on a mass scale. MIT Technology Review. July 22. <https://www.technologyreview.com/2020/07/22/1005524/pooled-testing-covid-coronavirus-machine-learning-reopening/>.

²¹ This will include considering what social factors - such as education, housing, food security, economic well being, access to healthcare - are causally linked to health outcomes, especially during the COVID-19 pandemic.



spread of the virus, the strain on the healthcare system due to hospitalizations and staff attrition, and reduce overall deaths by identifying people who are at the highest risk of contracting and spreading the disease.

Considerations for Testing High-risk Populations

Identifying populations

- **Physical health:** What are the physical health conditions that put individuals at higher risk of contracting and having complications from COVID-19? For example, people with underlying conditions, those with long-term supportive needs, or elderly populations.
- **Behavioral health:** What are the behavioral health conditions that put individuals at higher risk of contracting and having complications from COVID-19? For example, individuals with substance abuse disorders may be at higher risk of contracting COVID-19 and having serious illness from the virus. Also, individuals with mental health disorders may be more likely to reside in congregate housing establishments where the risk of spread and infection is increased.
- **Social/economic factors:** What social or economic factors put individuals or populations at higher risk for contracting, spreading, and having complications from COVID-19? Minority and ethnic groups, due to systemic disadvantage, may be at higher risk for contracting and having complications from COVID-19. What occupations place individuals at higher risk for contracting, spreading, and having complications from COVID-19? Examples might include frontline health workers, flight attendants, cashiers, bus drivers, street grocers, or other jobs - particularly in the informal sector - where individuals are more likely to be exposed to large



numbers of individuals or riskier environments, some of whom may be ill with COVID-19.

Identifying barriers to testing

- ▶ *Infrastructure barriers:* what are the main infrastructure barriers inhibiting widespread testing in high-risk communities? These may include access to public transportation, or test site design. For example, countries that have implemented drive-through testing sites often locate them in areas far from urban centers and require that patients have their own vehicle to access the site, thus creating barriers for low-income urban populations.
- ▶ *Identifier barriers:* what are the main barriers that may inhibit connecting high-risk populations to their test results? For example, migrant populations, undocumented populations, or homeless populations may not have requisite identification or means to track their test results such as a computer or cellphone.
- ▶ *Access and trust barriers:* see below.

Access and trust

- ▶ *Community leaders:* For a variety of reasons, specific high risk populations - including ethnic and minority populations - may not trust government or health officials. Trust in government and systems is an indicator for places where the COVID-19 response has been successful. Which community leaders can be partnered with to help build trust with vulnerable populations? Are there similar leaders that would be relevant to high-risk professions or other at-risk groups?
- ▶ *Targeted communications:* What are communications tools or strategies that need to be considered for a successful information campaign targeted at high-risk populations? What languages do materials need to be written in? What are the literacy rates of target populations and how do materials need to be presented



(e.g. graphics, cultural examples, etc.)? Who needs to be delivering the key messages to specific populations.

Actions Governments Can take to Capture the Opportunity

Analysis and Research

Define high-risk populations who will receive prioritized testing. Governments should develop a working definition of which populations are high risk. Groups can be added to this list, but the list should identify populations that are at higher risk of contracting and having complications from COVID-19 due to physical health, behavioral health, or economic/social factors. Specifically, governments should:

- ▶ Review population-level data to identify high-risk groups by health-condition, profession, race/ethnicity, age, or other demographic or socio/economic factors
- ▶ Split identified groups into those needing immediate attention and those who will be at high risk in the future (e.g. food insecure populations)
- ▶ Ensure criteria for test allocation is transparent, explicit, simple, and consistently followed
- ▶ Post definitions publicly to ensure transparency and accountability

Partnerships

Partner with community and cultural leaders. Governments should conduct specific outreach and form partnerships with community and cultural leaders to 1) understand needs and concerns of specific communities and 2) amplify public health messaging encouraging surveillance, diagnostic, and screening testing. Specifically, governments should:

- ▶ Conduct outreach to specific community and cultural leaders to understand optimal strategies for increasing access to testing for high-risk populations in their community
- ▶ Encourage community and cultural leaders to proactively advocate for frequent testing in their communities



- ▶ Provide talking points or education materials to community or cultural leaders describing the benefits of testing and what actions to take depending on testing results

Regulatory

Make testing free for low income or high-risk populations. Governments should reduce barriers to testing by making testing free for specific populations, ideally for screening or surveillance purposes. Specifically, governments should:

- ▶ Investigate if testing fees can be waived by government health agencies mandated to provide health services to low income individuals
- ▶ Consider legislative or regulatory actions that could support low-cost or free testing for identified high-risk populations

Communications

Develop and use culturally and contextually relevant communication materials for testing resources. Governments and public health officials should make all communication materials targeted at high-risk or vulnerable populations accessible and culturally-relevant. Specifically, governments should:

- ▶ Publish a mythbusters pamphlet dispelling common rumors or misinformation about testing
- ▶ Translate all testing materials into relevant languages and ensure materials are at the appropriate literacy level to ensure accessibility
- ▶ Provide testing information materials at testing locations in various languages, including specific information on what steps to take after receiving a specific result and how to get test results.

Innovate and Pilot

Rapidly conduct snapshot pooled testing among staff and residents in health and long-term care facilities, prisons, and other congregate housing facilities. Governments should conduct snapshot pooled testing to provide a baseline that will



help establish subsequent testing strategies within these settings, including the frequency of testing. Specifically, governments should:

- ▶ Identify partners with the capacity of conducting pooled tests
- ▶ Develop a strategy for identifying an appropriate pool size in collaboration with the testing partner (see above section on [pooled testing](#))
- ▶ Develop a plan for what will happen to staff who test positive

Ensure adequate testing resources are available and accessible to high-risk communities. Governments should establish testing sites in communities with large numbers of high-risk individuals. Specifically, governments should:

- ▶ Locate testing sites in areas that allow for access to populations with transportation barriers
- ▶ Operate testing sites during specific times when populations that work non-traditional hours may have more availability, such as mornings, nights, or weekends
- ▶ Ensure testing site design accommodates populations that may have accessibility needs including language or physical disabilities

Reduce barriers to testing by conducting mobile testing units. To address transportation limitations, non-traditional work schedules, and lack of access that may keep some communities from getting tested, governments should strategically implement mobile testing units that travel to vulnerable communities. Specifically, governments should:

- ▶ Direct mobile testing sites to locations where high-risk populations are likely to congregate
- ▶ Operate testing sites during specific times when populations that work non-traditional hours may have more availability, such as mornings, nights, or weekends



- ▶ Ensure testing site design accommodates populations that may have accessibility needs including language or physical disabilities.

Global Examples



COLOMBIA

Colombia's Emergency Fund is identifying high-risk groups, including prison populations, people who have attended large gatherings, and people with known exposure to the virus, in order to test them and isolate them as needed to reduce the spread of the virus. This was done by leveraging the contact tracing methodology from Johns Hopkins University and adapting the strategies to Colombia's social context and implementing its own Testing, Tracing, Isolation – or Pruebas, Rastreo y Aislamiento Sostenible (PRASS) program,

The government of Colombia is assisting vulnerable migrants and refugee populations by allowing NGO's trained in working with vulnerable populations, such as the IRC, to set up triage medical care centers and to assemble team doctors and nurses at the border with Venezuela to test for COVID-19 amongst vulnerable refugee populations. They also provide them with hygiene kits, clean water and food.



ENGLAND

England limited the spread of the virus within health care and medical professional populations and ensured they could continue taking care of patients by conducting routine testing of frontline health care workers.



FRANCE

France is monitoring vulnerable populations in nursing homes by establishing a dedicated notification system for COVID-19 cases reported by long-term care facilities that includes frequent testing for residents and staff members.



GERMANY

Virologists at Saarland University Hospital in Homburg established the Homburg procedure to successfully protect vulnerable patients from infection by asymptomatic COVID-19 carriers. This was achieved by pooling samples from different healthcare workers to screen them before allowing them into residence homes and hospitals.



PERU

Partners In Health, a non profit organization, is working to scale testing capacity to provide faster and accurate results by establishing mobile molecular testing labs which are trucks equipped with lab technicians and testing equipment that can process 500 to 600 tests per day. They also revamped mobile clinics that were used for TB testing to provide medical assistance to people living in remote neighborhoods.



SINGAPORE

Singapore is screening health workers by implementing pooled testing for residents of nursing homes and residential care facilities. The government is also providing outpatient treatment to vulnerable populations by reactivating its Pandemic Preparedness Clinics which were used to provide outpatient treatment during the H1N1 flu, to administer tests and to provide follow up for ill individuals.



Stanford University Hospital in California was able to resume previously delayed surgeries, tests and other procedures after conducting a snapshot pooled test of employees and learning that the infection rate was 0.3% among asymptomatic employees.

In San Francisco, nursing homes that experienced fewer COVID-19 cases and deaths tested all staff and residents every few weeks and increased testing frequency if they start to see more positive results.

Seattle, Chicago, the state of Wisconsin, and other local and state governments have set up mobile testing centers to safely collect samples from healthcare workers and other high-risk or vulnerable populations.

Cost and Resource Offset

Cost: The total cost will depend on the total number of people who need to be tested and the frequency of tests that are required. These factors depend on 1) the number of people who fall into the high-risk categories within a country; 2) the use of pooled testing vs. individual testing; and 3) the infection rate that is found by the initial tests. If an initial round of testing discovers a high rate of infection at a facility, this will require more frequent individual tests.

Resource Offset: Testing high-risk populations is a cost effective strategy when compared to universal individual testing. This is a prevention strategy in that it



allows governments to direct limited resources to the areas that, if unattended, could contribute to 1) amplified spread of the virus; and 2) costly healthcare interventions like intubation or other critical care measures. There is a broad consensus among the experts with whom we met that focusing tests on vulnerable populations is an efficient strategy and is consistent with previous efforts to implement targeted testing strategies.²² If pooled testing is used, it should be possible to reduce the total number of tests that have to be processed by a lab by combining multiple samples into one test.

Experts to consult:

- ▶ Donna Orefice, MS Head Administrator Aetna Health Systems
- ▶ Anup Malani, PhD, JD, Professor at the University of Chicago Law School and Pritzker School of Medicine co-founder and Faculty Director of the International Innovation Corps
- ▶ Ziad Obermeyer, PhD, Acting Associate Professor of Health Policy and Management, University of California at Berkeley

²² Zulman, D. M., Vijan, S., Omenn, G. S., & Hayward, R. A. 2008. The relative merits of population-based and targeted prevention strategies. *The Milbank quarterly*, 86(4), 557–580. <https://doi.org/10.1111/j.1468-0009.2008.00534.x>



CONTACT TRACING

On July 17th, 2020, a group of 33 experts from across the world joined officials representing the Argentine, Barbadian, Brazilian, Colombian, Costa Rican, Honduran, Guatemalan, Mexican, Peruvian, and Trinidadian and Tobagonian governments in a two-hour advising session to identify novel solutions that leaders can use to implement successful contact tracing strategies in the fight against COVID-19.

The discussion focused on six topics around how to build a contact tracing strategy:

- 1) When to use contact tracing? What are the conditions that need to be in place for contact tracing to be effective?;
- 2) Metrics and Data Sharing: beyond who answers the phone, what should we be measuring and how do we capture that information?;
- 3) Improving efficiency: how do we improve the speed of tracing and reach contacts in time? How can we identify contacts quickly when we may have incomplete



information about their location and lack a means of contact?; 4) Staffing and training: what are effective strategies for scaling up? How do we improve training to safeguard equity?; 5) Building trust: how do we improve communication about contact tracing, especially with vulnerable populations?; and 6) Digital alerting: how to complement physical and digital strategies.

Following the advisory session, participants from the Latin American and Caribbean governments identified those solutions which they were most interested in implementing. The GovLab then conducted further research, interviewed various subject matter experts and potential partners, and developed this high-level action plan that Latin American governments can use to better incorporate contact tracing strategy innovations into their efforts to combat COVID-19.

EXECUTIVE SUMMARY

Problem Statement:

Contact tracing is a process to stop chains of transmission of communicable diseases, such as COVID-19. Case investigation and contact tracing of infected individuals and their contacts is a priority for all Latin American and Caribbean governments. Governments' ability to quickly identify, isolate, track, and alert potential exposures is a precondition for reopening economies, schools and societies. Contact tracing is a cornerstone to any successful and comprehensive national strategy to curb the COVID-19 pandemic. Contact tracing helps:

- ▶ Identify people who need to be contacted because they were in contact with a positive COVID-19 case;
- ▶ Indicate the need for individuals to isolate and quarantine;
- ▶ Provide important metrics that inform policy decisions;



- ▶ Provides an opportunity for government officials to be transparent and share information with the public, creating trust and accountability;
- ▶ Identify emerging outbreaks.

Recommendations and strategies to address the problem:

Implementing an effective contact tracing strategy requires widespread cooperation and trust between the public and the government. It also requires governments to work in new arrangements, including public-private partnerships, cooperation between multiple levels of government, between health authorities and universities, and coordination with community groups, to conduct contact tracing and collect data.

1. **Metrics:** Governments should establish and use metrics to (1) indicate thresholds where contact tracing is more or less effective as a containment and mitigation strategy; and (2) track progress and effectiveness of ongoing contact tracing programs.

Key Strategies for Implementation

- ▶ Make raw data available to researchers, public health professionals and epidemiologists.
- ▶ Incentivize adoption of standardized process and outcome measures within jurisdictions (vertical standardization) and across jurisdictions (horizontal standardization) through technical assistance and cost reimbursements or cost sharing.
- ▶ Create and publish data dashboards that are updated regularly and show progress on metrics.
- ▶ Commit to carefully selected metrics that can be reported on consistently and regularly (do not select too many metrics).



RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 2 months		
For additional information see: Implementation Memorandum			

2. **Interjurisdictional Coordination:** Governments should increase vertical and horizontal interjurisdictional coordination by (1) incentivizing the use of interoperable or the same contact tracing platform and data collection process and (2) creating opportunities for knowledge sharing.

Key Strategies for Implementation

- ▶ Collaborate with private and public-sector actors that have large membership across jurisdictions.
- ▶ Use executive orders or other regulatory or legislative authorities to incentivize centralized platforms for contact tracing.
- ▶ Use legislative or regulatory mechanisms or executive orders to enable data sharing across jurisdictions.
- ▶ Use legislative or regulatory mechanisms or executive orders to enable optimization of existing databases.
- ▶ Move towards a centralized communicable and reportable disease database and contact tracing capability.
- ▶ Offer informal peer learning opportunities.
- ▶ Offer formal peer learning opportunities.
- ▶ Create regional partnerships and coordinating bodies.



RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 2 months		

For additional information see: [Implementation Memorandum](#)

3. **Localization:** Governments should increase public trust in contact tracing programs by ensuring the programs incorporate local knowledge and experience.

Key Strategies for Implementation

- ▶ Conduct a community health assessment that identifies community assets.
- ▶ Partner with local community organizations to recruit and hire contact tracers with community-based knowledge and experience.
- ▶ Conduct a public health messaging campaign explaining contact tracing.
- ▶ Incorporate communication about contact tracing into the testing program.
- ▶ Incorporate information about the local community when training people for the contact tracing program.

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 6 months		

For additional information see: [Implementation Memorandum](#)



What follows is a discussion of these three recommendations, including considerations prior to implementation, recommended actions that governments can take, examples of success, and a list of experts curated by The GovLab and interviewed for this chapter and available for consultation.

TOPIC BACKGROUND AND PROBLEM DESCRIPTION

Contact Tracing Efforts in Latin America and the Caribbean

Latin America and the Caribbean countries that have successfully [flattened the curve](#), such as Uruguay and Costa Rica, have credited the containment of the virus to early detection. In these cases, specifically after quarantine measures proved insufficient at containing the spread of the virus, testing and tracing enabled government authorities to identify cases early on, track and notify contacts and isolate those that had tested positive.²³ Uruguay, for example, implemented early epidemiological surveillance as part of its rapid-response strategy and the government was quick to track patient zero and implement contact tracing to reduce the spread of the virus.²⁴

Efforts to implement contact tracing strategies range from official policy measures to a host of voluntary measures facilitated by smartphones or informal community relationships. For example, Peru first established epidemiological surveillance for COVID-19 on March 6, 2020, when it identified, tested and isolated patient zero and family members, which were all quarantined while the Ministry of Health

²³ <https://www.miamiherald.com/news/local/news-columns-blogs/andres-oppenheimer/article243024751.html>

²⁴ <https://www.theguardian.com/world/2020/mar/19/uruguay-coronavirus-party-guest-argentina>



conducted contact tracing to reduce transmission.²⁵²⁶ On March, 31, 2020 Peru's government officially established guidelines for epidemiological surveillance and contact tracing by passing the Health Directive for the epidemiological surveillance of COVID-19 in, through [Ministerial Resolution No. 145-2020-Minsa](#). Among its goals it sought to identify transmission chains in Peru, by first identifying the source of infection, second, identifying contacts and potential secondary cases and third following-up with contacts encouraging them to self isolate or seek care.²⁷

In Brazil, the city of Florianopolis implemented a [voluntary QR code system in buses](#). Passengers can choose to scan the code when boarding the bus. The system tracks people who took the same bus at a similar time and will notify other passengers if they have been on a bus with a later confirmed COVID-19 patient.

Despite some successes, the majority of Latin American and Caribbean governments are still struggling to implement robust contact tracing programs. In two of Brazil's largest states (Sao Paulo and Bahia), the governments have not set up major efforts to advance contact tracing. This is a huge lost opportunity for the country, as it has much of the institutional framework to effectively trace contacts already in place. The country's biggest asset in fighting COVID-19 is its public universal healthcare system (SUS). SUS functions as an integrated, yet decentralized system, reaching all parts of Brazil which would allow for effective contact tracing, as facilities in different regions of the country could effectively communicate and coordinate efforts to test and trace contacts of a confirmed case. The Brazilian Telecom Association proposed a data solution to monitor population mobility and agglomeration points to identify the concentration of people at risk of

²⁵<https://elcomercio.pe/lima/sucesos/coronavirus-en-peru-que-paso-con-el-necesario-seguimiento-de-contactos-de-pacientes-con-covid-19-y-en-que-consiste-coronavirus-pandemia-noticia/?ref=ecr>

²⁶ Ibid.

²⁷ Ibid.



contamination.²⁸ At the time of writing, there was not a national strategy and no common protocol had been published. Only a few resources have been dedicated to tracing with most tracing efforts being limited to observing and testing co-residents of COVID-19 patients.

The Brazilian state of Sao Paulo is partnering with mobile network providers to create a “Social Distancing Index” and tracking what percentage of the population is adherent to shelter in place orders daily. It is going further by using artificial intelligence to analyze this data. This is empowering the government to gauge the effects of policy on adherence to social distancing, as well as to predict large flows of people to key points in cities, such as hospitals²⁹. While this is a promising and important initiative, it raises several privacy concerns, and importantly does not integrate [best practices](#) from contact tracing programs elsewhere in the world.

Mobile Apps for Digital Alerting

Contact tracing efforts have resulted in the development of numerous mobile tracing apps, in order to leverage already built in features such as location sharing, of smartphones. The government of Peru developed the phone-based app [PeruEnTusManos](#) which utilizes probability models to conduct contact tracing.³⁰ The app has over one million users and it is able to trace an infected person’s travel pattern up to 14 days prior to infection through data gathered by mobile GPS positions; the app makes comparisons and risks assessments automatically. The information is submitted anonymously to the central database and notifies users

²⁸ <https://www.americasquarterly.org/article/latin-america-hopes-big-data-can-beat-the-virus-but-there-are-risks/>

²⁹ "Inteligência artificial contra o Covid-19 - IPT - Instituto de" 1 Apr. 2020, https://www.ipt.br/noticia/1607-inteligencia_artificial_contra_o_covid_19.htm. Accessed 18 Jun. 2020.

³⁰<https://www.santacruztechbeat.com/2020/04/08/covid-19-uc-santa-cruz-economist-helps-build-contact-tracing-app-for-peru/>



about the past location of known cases.³¹ The Guatemalan government also developed a contact tracking app called Alerta Guate that was development in partnership with Tenlot Group, a multinational company that operates the Guatemalan lottery.³² While promising, this app has come under scrutiny recently for security and privacy risks.

Private Sector and Civil Society Involvement

Both civil society organizations and the private sector are contributing to contact tracing efforts, specifically in countries where government leadership in contact tracing is lacking. In Loco, a Brazilian location intelligence platform, is working on a COVID-19 Tracker, which uses data from smartphones to assess adherence to social distancing policies and provides a “social distancing index” to showcase what percentage of the population is adhering to the recommendations.³³ Another Brazilian startup is using blockchain to crowdsource monitoring. Blockforce’s project Desviralize allows users to monitor the health status of people in their surroundings, as well as people they choose to connect with, thus allowing users to do their own contact tracing by themselves. The app relies on information fed by the users themselves and uses blockchain technology to guarantee privacy.³⁴ In Argentina civil society groups developed a contact tracing app called Cuidarnos which enables a geolocation symptom map created with input from citizens.³⁵ A group of Argentinian independent developers also developed CoTrack, an app that

³¹ <https://news.ucsc.edu/2020/04/vargas-pandemic.html>

³² <https://www.globalwitness.org/en/campaigns/covid-19-tracing-apps-must-not-interfere-human-rights/>

³³https://www.inloco.ai/covid-19?__hstc=214431048.ccdaa41f9feb5cd44a09f5ff26c389a0.1590718207497.1590718207497.1590718207497.1&__hssc=214431048.1.1590718207498&__hsfp=3901330155&hsCtaTracking=f0be6e1c-cfdb-4a99-bcdb-8de048835500%7Cbdd18bed-4478-4302-9d95-3b7211a58696

³⁴ "Desviralize.org." <https://desviralize.org/>. Accessed 18 Jun. 2020.

³⁵ <https://cuidarnos.com/>



crowdsources geolocation tracking to follow and slow the spread of COVID-19.³⁶ The application tracks users' movements and registers information on whether they have been close to people that tested positive for COVID-19. Users are then notified of the potential contact and asked to take precautionary measures.

Obstacles and Challenges to Contact Tracing in the Region

Despite the noble intent of providing location intelligence to organizations on the frontlines to minimize the spread of the pandemic data and privacy risks remain significant concerns. Additionally a robust and effective contact tracing program demands a large number of trained personnel with associated administrative and managerial operational demands.

Data and Privacy: In terms of data and privacy, mobile digital alerting applications manage sensitive data on individuals and must make sure the data is being used and stored in responsible and secure ways. [Global Witness](#), a human rights advocacy group, published a report on the Alerta Guate app which stated that the app collects users' exact location data when sending information on the pandemic.³⁷ Furthermore, the Colombian government issued a notice to cell phone service providers that they may be required to hand over customers' personal information to the National Department of Planning.³⁸ The mayor of São Paulo, also announced a partnership with telecom companies to use targeted SMS messages to profile and rank low-income neighborhoods that pose a risk for widespread contagion³⁹ All of these examples raise very real concerns of invasive digital surveillance and the

³⁶<https://privacyinternational.org/examples/3431/argentina-cotrack-app-crowdsources-geolocation-tracking#:~:text=A%20group%20of%20independent%20developers,been%20diagnosed%20with%20COVID%2D19.>

³⁷<https://gdpr.report/news/2020/05/18/can-contacting-tracing-be-effective-if-users-dont-trust-authorities-with-their-privacy/>

³⁸ <https://www.americasquarterly.org/article/latin-america-hopes-big-data-can-beat-the-virus-but-there-are-risks/>

³⁹ Ibid.



potential misuse of data, specifically in the hands of unaccountable organizations or individuals with little oversight in Latin America and the Caribbean.

The countries in Latin America and the Caribbean that have been able to curtail the virus, specifically Uruguay and Costa Rica, similarly report civil societies with high confidence and trust in their governments, which is necessary for a contact tracing program to successfully impact the spread of COVID-19. Accordingly, if governments in Latin America and the Caribbean expect citizens to utilize contact tracing applications they need to develop policies that emphasize transparency and responsible data usage. Human rights groups recommend governments to be transparent about the development of the apps and to clarify their scope, timeline and data processing,⁴⁰ specifically regarding contact tracing and location sharing. A good example of responsible data stewardship is Argentina's CoTrack app that does not require users to register personal data (name and email). Instead it stores GPS data locally in the smartphone and requires authorization and validation to store the GPS information of those who have tested positive to COVID-19.⁴¹

Personnel: Successful contact tracing programs demand large numbers of trained personnel, which poses several obstacles for member countries in Latin America and the Caribbean. In Peru, a report from *El Comercio* found that Peru does not have enough personnel to properly implement contact tracing. However, the Ministry of Health has since indicated that the epidemiological surveillance of COVID-19 currently has 900 rapid response teams and is being continuously strengthened, specifically with the approval of Emergency Decree No. 065-2020 on June 4, 2020.⁴² This decree provides for the financing and contracting of personnel for the prevention, control, diagnosis and treatment of COVID-19, and also for the

⁴⁰ <https://www.ibanet.org/Article/NewDetail.aspx?ArticleUid=3C3F71D4-4964-4329-B948-3679287E35CC>

⁴¹ Ibid..

⁴² <https://www.gob.pe/institucion/mef/normas-legales/616783-065-2020>



financing for the acquisition of medical supplies and instruments intended for the prevention, control, diagnosis and treatment of COVID-19. It also establishes the legal framework for the formation of rapid response teams, clinical follow-up equipment, and equipment for the humanitarian collection of corpses in regional governments.⁴³ Other than these scant examples, many countries in Latin America and the Caribbean are still struggling to recruit, train, equip and deploy contact tracers.

Problem Overview

Standing up an effective contact tracing strategy touches upon issues of privacy, data governance, and logistics. Implementing an effective contact tracing regime will require widespread cooperation and trust between citizens and the government. It will also require governments to work in new arrangements, including public-private partnerships, cooperation between multiple levels of government, between health authorities and universities, and in coordination with community groups. Governments will also need to coordinate with industries such as manufacturing, air travel, cruise lines, and restaurants, to prevent crowded workplaces and public spaces from becoming COVID-19 hotspots.

In addition to the administrative and privacy challenges, the political leaders and pundits in many countries facing COVID-19 outbreaks have politicized contact tracing, intentionally limiting these efforts and sowing distrust in the efficacy of the strategy. Additionally, political incentives can be misaligned with coordinating contact tracing with testing efforts out of fear that such information will indicate that their number of cases is higher than was previously believed.

⁴³ https://cdn.www.gob.pe/uploads/document/file/770426/DU065_2020.pdf



The [federal government](#) of the United States has failed to support a national strategy for contact tracing and has left responsibility for doing so largely to state governments. Brazil has also decentralized responsibility for contact tracing.

Root Causes of the Problems with Contact Tracing

There are common challenges impeding the creation of effective contact tracing strategies. These include:

Lack of Political Will: A range of problems that interfere with the availability of contact tracing are driven by politics. In some countries, there has been a lack of emphasis on and investment in contact tracing because political leaders do not want additional public information about the scope of the problem. Because they fear the economic, social and political consequences of a large infectious disease outbreak, they have limited the amount of contact tracing that is being conducted, primarily by failing to hire and train a sufficient number of contact tracers. Contact tracing efforts are also constrained by the lack of political support for expanded testing. Limited testing not only prevents the identification of index cases, but it also limits the effectiveness of contact tracing because people who may have been exposed to an infected individual are unable to receive a test. There may not be political support for the level of investment in contact tracing required to understand and contain the spread of the virus. In addition to hiring, training and supervising a large workforce to conduct contact tracing, it may be necessary to provide significant support for people who are asked to quarantine or self isolate.

A Lack of Trust: Low trust in government or private sector partners can significantly interfere with contact tracing efforts. People who test positive are not likely to share information about where they have been or contact information for the people they have encountered unless they believe that the people and organizations with whom they are sharing this information will protect their



privacy. When contact tracers attempt to reach people with whom the infected person has interacted, they may have difficulty getting people to answer the phone or comply with the necessary steps of the contact tracing program. The public may resist the use of smartphone apps, which can be used to track people's movements and identify other people with whom they have interacted, unless they trust the organizations that are collecting these data.⁴⁴ In some countries, there is concern that the pandemic is being used to implement or expand government surveillance in ways that violate human rights and may continue after the public health crisis. While some jurisdictions like South Korea and Israel have solved this problem through mandatory tracking using a person's mobile phone to monitor their contacts, such non-voluntary tracking is not legally or culturally acceptable in other jurisdictions and likely reinforces mistrust in government.

Information/Communication Limitation: People may be unaware of why contact tracing is important and why people are asking them for information about where they have traveled or whom they have contacted. Public health communication issues are compounded by the fact that many communities have a mistrust of government and the healthcare system rooted in past mistreatment and discrimination. Additionally, communications may be limited by language, education, or cultural barriers. These barriers can be mitigated through the use of technology (translation services, visuals, etc.) or they can be exacerbated by overly complex technologies with steep learning curves.

Accuracy and Human Bias: Once a person has tested positive for the virus, contract tracing requires figuring out where they went, and who else was there during the weeks prior to their likely infection. Traditional contact tracing can be hindered by the memory of the person being interviewed. Cognitive biases and the fallibility of

⁴⁴ Ashley Fuoco Antonelli. Weekly line: The biggest barrier to contact tracing? Americans' opposition. Advisory Board. May 22, 2020. <https://www.advisory.com/daily-briefing/2020/05/22/weekly-line>



individual's memories can result in inaccurate accounts of travel and contact histories. Cell phone-enabled tracing, while promising, does not account for the fact that many individuals do not have phones (highlighting racial and income disparities) and those that do don't always have perfect connections resulting in gaps of coverage.⁴⁵ In addition, the ability of bluetooth enabled devices to identify how closely and for how long people came into contact is imprecise.

Sociocultural Factors and Disparities: Non-random segments of the population, including racial and ethnic minorities, the impoverished, the homeless and the elderly, may face specific structural barriers to participating in and benefiting from a robust contact tracing program. First, a contact tracing program must consider language and education levels when developing the program ensuring that it is accessible in various formats and mediums to populations who may not be highly literate, may not speak a culturally dominant language, or may have other access and functional needs. Second, these populations may face technological barriers either in access to technologies (e.g. smartphones that can download apps) or how to use those technologies even if they do have them. Third, specific populations may reside in under resourced areas or that lack access to broadband/cell phone coverage, health services, and social support services that they may need if they are ill or forced to quarantine. Fourth, populations may have varying levels of housing security or may live in particularly susceptible environments to community spread like favelas/slums; the organization of these settlements/housing arrangements may impact the utility of contact tracing as an effective strategy. Lastly, and very importantly, these populations may experience significant distrust in government due to histories and experiences of discrimination, exploitation, oppression, and institutionalized violence. This may make their participation in a contact tracing strategy difficult.

⁴⁵ Laura Santhanam. How contact tracing can help the U.S. get control over coronavirus. PBS Newshour. May 5, 2020. <https://www.pbs.org/newshour/health/how-contact-tracing-can-help-the-u-s-get-control-over-coronavirus>.



Organizational Blockers: Existing organizational silos can interfere with effective contact tracing and its evaluation because government agencies and private sector partners with different capacities and responsibilities may not have mechanisms in place to facilitate routine information sharing. If data from those involved with contact tracing cannot be linked with data about testing, it will limit the capacity of public health officials to evaluate their contact tracing efforts. Furthermore, a robust contact tracing program may require anywhere from 1 to 6 contact tracers for every 1000 people, equaling between 1000–6000 contact tracers for a population of 1 million residents. This does not include the influx of individuals visiting or traveling through the jurisdiction. The administrative and managerial burden of this workforce is significant (recruiting, training, equipping, deploying, managing) and is matched with a significant financial cost.

Information management platforms: To adequately address COVID-19, a contact tracing program at scale, requires a usable and durable technological solution. Existing contact tracing technologies or epidemiological reporting databases will likely be unable to absorb the demands of a COVID-19 contact tracing program because it will be necessary to collect larger volumes of personal data, than are routinely collected and managed by existing health information systems. It will be important for countries to take steps to guard against inappropriate use of these data and adopt best practices for dealing with such data, including the adoption of new regulations and protocols for informed consent, data storage and identity protection.⁴⁶ Furthermore, traditional epidemiological reporting systems are not well suited to capture inter- and intra-jurisdictional contacts. For instance, platforms need to be interoperable within a jurisdiction (a state and a municipality

⁴⁶ The World Bank. COVID-19 Emergency Response Project. <http://documents.worldbank.org/curated/en/883211585094284320/text/Project-Information-Document-PY-COVID-19-Response-P173805.txt>



need to be able to communicate) and between jurisdictions (neighboring states need to be able to communicate).

Jurisdictional integration and population mobility: In a globalized and mobile world with porous national and state borders, decentralized strategies will insufficiently account for high levels of mobility in the Latin America and the Caribbean region. In 2018, the [World Bank reported](#) that Latin America and the Caribbean welcomed 114 million international tourists through ports of entry. Any contact tracing solution that does not adequately consider how populations move across national borders through ports of entry will undoubtedly fail in its mission to track and cut the chain of transmission of COVID-19. Jurisdictions must account for how neighboring jurisdictions in Latin America and the Caribbean and ports of entry will account for horizontal mobility of people. Additionally, jurisdictions must consider how vertical integration will function within their contact tracing program. Highly centralized regimes can build systems and programs that use single systems to address how people may move across borders within a jurisdiction (e.g. between states or municipalities). Decentralized regimes must ensure that municipalities or jurisdictions build interoperable systems and programs so that patients are not lost when they move horizontally across borders within a country (e.g. between states or municipalities).

REGIONAL CONTEXT

Argentina

Context and Actions Taken:

- ▶ Contact tracing efforts are concentrated at the provincial level. The national government recommends identifying all people who have spent more than 15 minutes at less than two meters from a confirmed case, and instructing them to quarantine for 14 days.



Contactants are monitored through home visits and telemedicine and only need to get tested only if they show symptoms. Some provinces have gone further than the federal guidelines. For example, Cordoba is testing all identified contactants regardless of their symptoms.

Challenges:

- ▶ Inter-jurisdictional coordination remains a challenge because provinces use different tracing systems. Limited access to technology means many vulnerable populations cannot self report or use contact tracing apps.

Examples:

- ▶ Epidemiologists at the national level are using a software called “Go. Data” that registers positive cases and carries out contact tracing. The city of Buenos Aires is conducting a method of testing and tracing that aims to make the best use of limited resources. “Plan DETeCTAr” consists of going into neighborhoods with high infection rates and testing people who show symptoms. Once a suspected case is identified, all of their contacts are traced and tested. This allows asymptomatic individuals to be identified more efficiently. A group of Argentinian independent developers created the CoTrack app to crowdsource geolocation tracking to track and slow the spread COVID-19. Similarly, an app called Cuidarnos uses geolocation to produce a symptom map created with input from citizens.



Ceará - Brazil

Context and Actions Taken:

- ▶ The state government uses a chatbot to interview those who test positive and to monitor people's symptoms and pass the information acquired to municipalities. Municipalities perform contact tracing by having healthcare providers interview confirmed patients, then having their health surveillance department or primary care staff monitor contacts. Community health agents are more effective at contact tracing, as they have more trust from communities.

Challenges:

- ▶ Many community health agents haven't yet received the appropriate training and equipment so that they can work in an integrated system.⁴⁷ The Secretariat of Health suffers from understaffing in nearly all levels of operation, from local IT personnel to fix technical problems at healthcare facilities to contact tracing staff. The scarcity of PCR tests during the first months of the pandemic made it difficult to test contacts. Additionally, because there is no enforcement of quarantine, the system relies on the good will of individuals, which are not always well informed about the risks of COVID-19.

⁴⁷ "Plano Estadual de Enfrentamento do Novo Coronavírus." 6 Feb. 2020, https://www.saude.ce.gov.br/wp-content/uploads/sites/9/2020/02/plano_estadual_contigencia_corona_virus_2020.pdf. Accessed 13 Jul. 2020.



Examples:

- ▶ State government officials have found that creating an official Whatsapp channel for the chatbot has helped nurture trust among the people being interviewed.⁴⁸ To combat understaffing and minimize training requirements, the capital city of Fortaleza has paired with an NGO which previously performed contact tracing for hanseniasis.⁴⁹ The state has also experimented with a Bluetooth enabled contact tracing app. However, technical difficulties have prevented it from going forward.⁵⁰

Costa Rica

Context and Actions Taken:

- ▶ Costa Rican public health officials have credited their success at initially flattening the COVID-19 curve not to the number of tests done but to effective contact tracing.⁵¹ Costa Rica has employed the Centinela method for early detection, where areas with high contagion are determined, and random testing is employed. The model allows officials to strategically know what is happening at a high level, even with limited availability of tests.⁵² The country is divided into health areas overseen by the Ministry of Health and by the Social Security system. The Ministry of health can issue

⁴⁸ Interview with government officials

⁴⁹Interview with government officials.

⁵⁰ Ibid.

⁵¹ "Tico Triumph? How Little Costa Rica Beat Back A ... - WLRN." 11 May. 2020, <https://www.wlrn.org/post/tico-triumph-how-little-costarica-beat-back-giant-coronavirus-pandemic>. Accessed 14 Jul. 2020.

⁵² Ibid.



recommendations, but contact tracing is mostly operated by local governments. In terms of technology, the country relies on phone calls, emails, and in-person visits. In-person visits are reserved for vulnerable populations, who cannot be reached remotely.

Challenges:

- ▶ One of the main challenges to contact tracing have been outbreaks along the northern border with Nicaragua. These outbreaks have at times overwhelmed local contact tracing capacity, thus creating delays in response and allowing the disease to spread further. Another obstacle has been containing the spread of the disease among vulnerable populations, specifically workers in the agricultural, packing, and construction sectors. A small percent of the population tends to violate health orders, and lie or omit information from contact tracers, which when compounded with informal and undocumented work, create a barrier for effective tracing.

Priorities/questions:

- ▶ Costa Rica's main concern is to not exceed processing and infrastructural capacity and to prevent the saturation of health services. It is also placing a special emphasis on the northern border given the high volume of vulnerable populations, and in the agricultural sector, where the second wave is concentrated, as these two areas are becoming high-risk zones.



Honduras

Context and Actions Taken:

- ▶ Epidemiological investigation is divided between healthcare units -- which are responsible for conducting investigations on the particular patients they treat -- and the provincial health secretariat, responsible for local and regional epidemiological studies.⁵³ Honduras is using Rapid Response Teams (ERR for its Spanish acronym) -- to deliver healthcare to isolated communities to fight COVID-19. The teams are also in charge of contact tracing and monitoring contactants.

Challenges:

- ▶ The main obstacles in Honduras are the high poverty rate, lack of technology for georeferencing and contact tracing efforts, and a lack of accurate information.
- ▶ Honduras's relatively large rural population percentage makes contact tracing efforts a challenge as the virus spreads.

Priorities/questions:

- ▶ Honduras's priorities include working to reach rural communities, and to expand its contact tracing capabilities and emergency response teams to achieve early detection, diagnosis and treatment.

⁵³ "NORMA DE MALARIA EN HONDURAS." <http://www.bvs.hn/Honduras/salud/norma.de.malaria.en.honduras.pdf>. Accessed 25 Jun. 2020.



Peru

Context and Actions Taken:

- ▶ In March of 2020 the government established guidelines for epidemiological surveillance and contact tracing to break transmission chains by identifying the source of infection, identifying contacts and potential secondary cases and following-up with contacts.⁵⁴ Peru has also implemented Rapid Response Teams to monitor suspected cases.⁵⁵

Challenges:

- ▶ One of the biggest obstacles to contact tracing is understaffing. In response to this, an emergency decree was approved in June to provide financing for the contracting and equipment of contact tracing personnel, and the formation of rapid response teams.⁵⁶

Examples:

- ▶ The government of Peru worked with economists and the tech sector to develop the app PeruEnTusManos which gathers GPS data and uses probability models to conduct contact tracing.⁵⁷ The app also allows citizens to conduct self-evaluation of COVID-19 and provides a map with the high risk areas.⁵⁸

⁵⁴ Ibid.

⁵⁵ "Aprueban Directiva Sanitaria N° 088 -MINSA ... - El Peruano." 31 Mar. 2020, <https://busquedas.elperuano.pe/normaslegales/aprueban-directiva-sanitaria-n-088-minsa2020cdc-direct-resolucion-ministerial-n-0141-2020-minsa-1865268-1/>. Accessed 14 Jul. 2020.

⁵⁶ "Decreto de Urgencia N° 065-2020 | Gobierno del Perú." 4 Jun. 2020, <https://www.gob.pe/institucion/mef/normas-legales/616783-065-2020>. Accessed 14 Jul. 2020.

⁵⁷ "COVID-19: UC Santa Cruz Economist helps build "contact" 8 Apr. 2020, <https://www.santacruztechbeat.com/2020/04/08/covid-19-uc-santa-cruz-economist-helps-build-contact-tracing-app-for-peru/>. Accessed 14 Jul. 2020.

⁵⁸ "Perú: Coronavirus Perú | COVID 19 Aplicación "Perú en tus ..." 14 Apr. 2020, <https://peru21.pe/peru/coronavirus-peru-i-covid-19-aplicacion-peru-en-tus-manos-permitira-hacer-seguimiento-mas-preciso-de-los-casos-noticia/>. Accessed 14 Jul. 2020.



WHY CONTACT TRACING

To control the pandemic and move towards reopening its economies, governments in Latin American and the Caribbean must develop and implement strong and effective contact tracing programs. Contact tracing is a proven public health tactic that has been effective at boxing in infectious diseases in societies across the world. Historically, public health officials have used contact tracing to break the chain of transmission of infectious diseases and limit the spread of infections such as influenza, ebola, tuberculosis, and HIV/AIDS.

Contact tracing, executed effectively, will prevent further transmission of the virus. In its most basic form, contact tracing consists of (1) investigating each individual laboratory confirmed positive case of COVID-19, interviewing them for their close contacts, and recommending a course of isolation; and (2) contacting the individuals identified by the confirmed case to inquire about their health status, recommend testing if necessary, and to follow up on quarantine if needed.⁵⁹

Case investigation and contact tracing of infected individuals and their contacts is a priority for all Latin American and Caribbean governments. Governments' ability to quickly identify, isolate, track, and alert potential exposures is a precondition for reopening economies, schools and societies. Contact tracing is a cornerstone to any successful and comprehensive national strategy to curb the COVID-19 pandemic. Contact tracing helps:

- ▶ Identify people who need to be contacted because they were in contact with a positive COVID-19 case;
- ▶ Indicate the need for individuals to isolate and quarantine;

⁵⁹ Isolation and Quarantine are important and different concepts central to contact tracing. According to the US CDC, “Isolation separates sick people with a contagious disease from people who are not sick. Quarantine separates and restricts the movement of people who were exposed to a contagious disease to see if they become sick.” <https://www.cdc.gov/quarantine/index.html>



- ▶ Provide important metrics that inform policy decisions;
- ▶ Provides an opportunity for government officials to be transparent and share information with the public, creating trust and accountability;
- ▶ Identify emerging outbreaks.

Despite its essentiality to a successful COVID-19 response, contact tracing is a costly endeavor due to both technology and administrative costs. On the technology side, governments must procure and maintain adequate contact tracing platforms, communicable disease databases, and telecommunications capacities to operationalize programs that serve their entire population. In terms of administrative and human resources, there is not a specific ratio of contact tracers to population, but, depending on the jurisdiction a government may need to employ between 1 and 200 contact tracers for every 100,000 people in the jurisdiction. Various models help calculate an estimated number of individuals that will be needed. These individuals will need to be trained, onboarded and remunerated.



METRICS

RECOMMENDATION

Governments should establish and use metrics to (1) indicate thresholds where contact tracing is more or less effective as a containment and mitigation strategy; and (2) track progress and effectiveness of ongoing contact tracing programs.

KEY ACTIONS

- ▶ Make raw data available to researchers, public health professionals and epidemiologists.
- ▶ Create incentives for the adoption of standardized process and outcome measures within jurisdictions (vertical standardization) and across jurisdictions (horizontal standardization) through technical assistance and cost reimbursements or cost sharing.
- ▶ Create and publish data dashboards that are updated regularly and show progress on metrics.
- ▶ Commit to carefully selected metrics that can be reported on consistently and regularly (do not select too many metrics).

A list of example process and outcome metrics are provided in [Appendix 1](#)

Developing, implementing, and monitoring a set of process and outcome metrics contributes to a contact tracing strategy by mitigating or addressing the following bottlenecks:



- ▶ **Accountability and trust:** As with many other aspects of the COVID-19 response, the effectiveness of contact tracing depends on how much the [public trusts the government](#). Recent reports of contact tracing program rollouts in major global cities, have cited lack of [transparency and accountability](#) as major impediments to effective program implementation. Metrics that are shared publicly for both process and outcomes related to COVID-19 and contact tracing are useful to help hold public officials accountable and to foster trust with the public.
- ▶ **Evidence-based decision making for epidemiology and public health:** Simple, measurable, and informative metrics or key performance indicators (KPIs) are essential for informing public health policy and epidemiological programmatic decisions. For contact tracing, a key set of measures that are collected and reported on consistently will greatly inform resource allocation decisions as well as [containment and mitigation](#) efforts. Simple metrics like daily disease incidence, incidence trends, or hospitalizations [inform policy decisions about which strategies of disease response are best for a jurisdiction](#), including at what levels to begin scaling and shifting resources to contact tracing programs.
- ▶ **Project management:** Process and outcome metrics are a key component of results-based management and show how effective specific interventions are for a given project or program. In contact tracing programs, for performance improvement and optimization, collecting key metrics will help shed light on (1) the effectiveness of case investigation and contact tracing processes; and (2) the impact or outcomes that those processes achieve (e.g. is contact tracing working).

What are Metrics

Metrics systems are essential for any government interested in measuring successes toward achieving its mission and stated objectives, mobilizing resources, and evaluating programs or initiatives overall contribution to addressing the spread



of COVID-19. To ensure contact tracing remains a viable containment and mitigation strategy for whole populations, countries must develop data-driven metrics to evaluate and adapt their contact tracing programs. Metrics, a key part of a performance management system, are the mechanism by which health officials can understand its own contributions achieving programmatic- and health-outcomes. Performance management systems are the broader efforts to use data to improve public health through the “performance standards and measures, progress reports, and ongoing quality improvement.”⁶⁰ Generally, metrics should be (1) epidemiologically informed; (2) easy to communicate to policy makers and the public; (3) actionable; and (4) easy to collect data on.

As a country builds its contact tracing program, it must ensure the effort accomplishes what it aims to achieve. As indicated above contact tracing programs have several outcome objectives (what the public health/government authority wants or needs to achieve) as well as several output/process objectives (the actions or items that contribute to achieving an outcome). In terms of outcomes, contact tracing programs are ultimately aiming to reduce the incidence and prevalence of COVID-19 by (1) ensuring all confirmed positive cases are contacted and instructed to isolate; and (2) ensuring that all contacts of confirmed positives are contacted and instructed to get a test and quarantine if necessary.

In terms of outputs or processes, contact tracing programs should seek to ensure that their day to day activities are actually contributing to the stated objectives. This will include having the correct number of contact tracers and case investigators to adequately serve the intended population. Process measures also include analytics on how many cases are investigated within specific timeframes, what ratio of total

⁶⁰ DeAngelo JW, Beitsch LM, Beaudry ML, Corso LC, Estes LJ, and Bialek RG. Turning Point Revisited: Launching the Next Generation of Performance Management in Public Health. *J Public Health Management Practice*. 2014; 20(5).



new cases is found through contact tracing and the number of contacts assigned per tracer.

Standardization of metrics allows for the streamlining of data intake processes and eliminates the need for laborious data cleaning. The use of standardized metrics facilitates public understanding and cooperation. When organizations and jurisdictions are using different metrics, it creates confusion.

Considerations for Metrics

Data:

- ▶ **Existing databases and data collection processes:** What data are already collected by public health agencies or other state/government authorities? For example, does your jurisdiction already have a centralized reportable disease database that is sufficiently robust to be used for COVID-19? How are test results reported to state officials? Do test results go to a local health organization or are they shared with state, regional or national government agencies?
- ▶ **Regional and population differences:** Do regions within your country operate on different platforms or systems? Are you trying to implement a metrics system that is interoperable between jurisdictions with different platforms or databases? Are there unique needs and systems for specific demographics or communities, such as indigenous populations, migrants, or undocumented individuals potentially creating systemic opportunities for populations to not be captured by a metric system?
- ▶ **Regulatory and legislative barriers:** What are the laws and regulations that currently govern how health data is collected, stored and shared across jurisdictions? What are the regulations governing how aggregate data is shared publicly? Are there regulatory barriers governing how data is shared between



jurisdictions or government agencies? If one entity is authorized to collect data will it be difficult to have a different agency analyze that data or publish that data?

Reporting capabilities

- ▶ **Frequency of collecting and reporting data:** What is the frequency that your government would be able to commit to collecting data and sharing it internally? It is important to not overcommit and create expectations that cannot be met. The public expects real-time data and reporting; when data is not shared in the manner in which officials committed or if the data is inaccurate, it creates high levels of mistrust with the public and other constituents.
- ▶ **Systems for automatic collection:** Does your jurisdiction have platforms or health information technology that enables easy and accurate collection of data for reporting? For example, does your contact tracing platform already log key performance indicators about the number of individuals investigated or contacted? Are these data linked to contact tracers? Are they able to be disaggregated or analyzed by time periods (e.g. by day, week, etc.)?
- ▶ **Data disaggregation:** Can the data you collect be disaggregated by sex, gender, age, ethnicity/race, location, and other important demographic factors? Are the data time-stamped? The ability to disaggregate data is essential if health officials and program managers are going to use metrics to inform policy or programmatic decisions, such as resource assignment/expenditure or enforcing/relaxing various social distancing requirements.



Actions Governments Can take to Capture the Opportunity

Analysis and Research

Make raw data available to researchers, public health professionals and epidemiologists. Governments should make disaggregated and, where appropriate, raw data available for modeling and epidemiological analysis. Sharing key process and outcome data with demographic and geographic identifiers allows researchers and public health officials to better predict and respond to the spread of the virus and emerging outbreaks. Specific actions include:

- ▶ Establish data security protocols for sharing specific levels of de-identified or identifiable data.
- ▶ Create processes that allow individuals with the requisite credentials (e.g. researcher, clinician, public health official) to access data easily and consistently. These individuals should be able to download the data in near real-time for analytical and modeling purposes.

Regulatory

Incentivize adoption of standardized process and outcome measures within jurisdictions (vertical standardization) and across jurisdictions (horizontal standardization) through technical assistance and cost reimbursements or cost sharing. Governments should use legislative, regulatory, and budgetary means to incentivize and/or mandate the adoption of standardized metrics across jurisdictions. Specific actions include:

- ▶ Conduct an analysis of existing regulatory and legislative mechanisms that may hinder or inhibit collecting, standardizing or reporting on a set of shared process and outcome metrics.
- ▶ Issue temporary executive orders to enable collecting, standardizing and reporting on a set of shared process and outcome metrics while working toward a more durable and long term regulatory and legislative solution.



- ▶ Advocate for and develop new or replacement legislation and regulations that codify collecting, standardizing and reporting on a set of shared process and outcome metrics for communicable diseases, including COVID-19.

Communications

Create and publish data dashboards that are updated regularly and show progress on metrics. Governments should develop a dashboard aligned with both the contact tracing platform and surveillance/reportable disease databases. Specific actions include:

- ▶ Survey available data tools that integrate with communicable disease databases and contact tracing platforms. Examples include power BI, Esri, or Tableau.
- ▶ Fund and assign a data science team to specifically take charge of public-facing data communications, including the dashboard.
- ▶ Maintain consistent reporting and regular updating of the dashboard to build trust and confidence with the public.

Information and Knowledge Management

Commit to carefully selected metrics that can be reported on consistently and regularly (do not select too many metrics). Governments should be cautious to select a small number of useful and informative metrics that can be reported on consistently, precisely, and accurately. Committing to too many metrics may lead to the inability to accurately and precisely track the data. Specific actions include:

- ▶ Review existing databases and data collection processes and only select metrics that can be reported on consistently and regularly.



Global Examples



CEARA (BRAZIL)

Taking advantage of pre-existing data sharing frameworks and the integration of the Brazilian Unified Healthcare System (SUS), the state of Ceará has standardized and unified its health metrics and indicators in a single [portal](#). This makes it quick and easy to compare the evolution of different metrics and evaluate measures taken. The local collection of data also insures much of it can be disaggregated by sex, gender, age, ethnicity and location.



GERMANY

In [Germany](#), the national government worked to establish standards and baselines that local administration should follow – such as a minimum of contact tracers per thousand inhabitants, and a threshold for establishing lockdowns – while state health agencies were responsible for collecting and interpreting data, based on the standards set by the national government.



SINGAPORE

Singapore's [Disease Outbreak Response System Condition](#) (DORCSON) system, is a color-coded framework that depending on the severity and spread of the disease goes from green, yellow, orange and red. Each color shows the current disease situation and provides general measures on what needs to be done according to each alert/color. The framework provides data-driven metrics and guidelines on how to respond based on the current alert level and color. For example an orange level alert implies a specific set of guidelines for schools, workplaces and healthcare institutions such as temperature screenings, suspension of extracurricular activities.



SOUTH KOREA

South Korea formalized [legal frameworks](#) to leverage metrics for disease prevention, such as utilizing alert levels to inform decisions in their approach to COVID-19. The alert levels serve as metrics to track the emergency response and to guide policy decisions based on alert levels.



USA AND NON-GOVERNMENTAL ORGANIZATIONS

While the US has not implemented a standardized federal metrics reporting system, the US CDC has produced a recommended metrics catalogue that offers example process and outcome measures. Various non-governmental organizations, including Harvard University's Safra Center for Ethics, Resolve to Save Lives, and the [Johns Hopkins School of Public Health](#) have all created tools or metrics catalogues that can be implemented at the state or jurisdiction level. [Oregon](#) is the [only state](#) that publishes data publicly regarding contact tracing, however the data is not entirely focused on contact tracing nor does it adequately capture key dimensions of contact tracing that help inform the public.



TAIWAN

Taiwan took advantage of its pre-existing [National Notifiable Disease Surveillance System](#) to integrate epidemiological surveillance for COVID-19 starting in January 2020. The country built a robust contact tracing database with the information it collected from contactants, which allowed researchers to [analyze](#) the data and find correlations to estimate under which conditions contactants are more likely to contract the disease, which then could better inform contact tracing efforts.



Cost and Resource Offset

Cost: If a jurisdiction has existing data collection and monitoring infrastructure, installing or adjusting metrics systems can be very inexpensive. In a jurisdiction with existing reportable disease database infrastructure and contact tracing infrastructure, implementing a metrics system may cost as little as 1 Full Time Employee (FTE) and requisite data visualization software licenses. On the other side of the spectrum, standing up a metrics system in a jurisdiction with very little existing capacity will be a very expensive endeavor. To design, build and implement a metrics system from the ground up will entail procuring a data collection platform, integrating it across various healthcare and public health infrastructure, training individuals how to use the system, and employing full time staff to manage it and update it.

Resource Offset: A highly functional metrics system will present two main benefits for a jurisdiction. First, it is a very useful tool for increasing trust between the public and government. Increasing trust has spillover impacts that include higher compliance rates with social distancing, isolation, and quarantine which all lead to reduced transmission of the virus. Second, metrics systems present direct benefits for program management and process improvement. Metrics systems, when integrated with decision making processes, help inform policy makers and program managers how to most efficiently use human, financial and time resources.

Experts to consult:

- ▶ Mike Reid, MD, UCSF, Assistant Professor, Medicine
- ▶ George W. Rutherford, University of California, San Francisco, Salvatore Pablo Lucia Professor of Epidemiology, Preventive Medicine, Pediatrics and History
- ▶ Joshua Cohen, Apple University, Apple University Faculty and Distinguished Senior Fellow in Law, Philosophy, and Political Science, University of California, Berkeley



INTERJURISDICTIONAL COORDINATION

RECOMMENDATION

Governments should increase vertical and horizontal interjurisdictional coordination by (1) incentivizing the use of interoperable or the same contact tracing platform and data collection process and (2) creating opportunities for knowledge sharing.

SPECIFIC ACTIONS INCLUDE:

- ▶ Collaborate with private and public-sector actors that have large membership across jurisdictions.
- ▶ Use executive orders or other regulatory or legislative authorities to incentivize centralized platforms for contact tracing.
- ▶ Use legislative or regulatory mechanisms or executive orders to enable data sharing across jurisdictions.
- ▶ Use legislative or regulatory mechanisms or executive orders to enable optimization of existing databases.
- ▶ Move towards a centralized communicable and reportable disease database and contact tracing capability.
- ▶ Offer informal peer learning opportunities.
- ▶ Offer formal peer learning opportunities.
- ▶ Create regional partnerships and coordinating bodies.

Working towards interjurisdictional coordination contributes to an overall contact tracing strategy by mitigating or addressing the following issues:



- ▶ **Population Mobility:** Populations are highly mobile. While mobility has decreased slightly during the pandemic, the reality is that the world is still very mobile and populations continue to move within and between jurisdictions. As such, unenforced borders - such as those within a country between states or municipalities - present a very different challenge than borders between countries, which are by and large enforced. Enforceable borders, like national ones, in fact create a somewhat efficient barrier against the spread of COVID-19. On the other hand, unenforced borders, while important for political, public works, or other administrative or community functions, are inadequate for addressing the pandemic. In terms of Contact Tracing, individual jurisdictions must acknowledge and address the fact that neighboring jurisdictions like cities, towns, states or regions must all coordinate to ensure that contacts moving between borders and areas are accurately considered in disease registries or contact tracing systems.
- ▶ **Data sharing and record accuracy:** Given the highly mobile nature of populations across and within jurisdictions, governments of all levels (local, state, national) must coordinate to have data systems that can accurately and rapidly share records across jurisdictions. Strong coordination will allow for cases to be handed off between authorities and will help ensure interoperability of data systems and record systems. Contacts that are identified from a positive case may reside in jurisdictions other than where that positive individual resides. Contact tracers will need access to demographic information to reach those individuals in other jurisdictions or to hand them off to the appropriate authorities in other jurisdictions who will be responsible for monitoring and following up with the full contact tracing process.
- ▶ **Duplication of efforts:** Contacts identified in one jurisdiction's system may very likely be identified in other jurisdictions' systems; without adequate coordination



between jurisdictions this reality will very often result in duplicative work and tracing efforts. Given the considerable amount of human resources required to conduct contact tracing, coordination can be an important cost reducing investment if executed well.

- ▶ **Resource, experiential, and capacity variance:** Different jurisdictions may benefit from more robust, better established, better resourced, or better practiced public health infrastructure, including contact tracing expertise. However, contact tracing and COVID-19 spread are not jurisdiction specific as indicated above. An individual contact can move between unenforced borders freely, making contact tracing resources more of a public good than something that benefits one specific jurisdiction or population. Jurisdictions that have inadequate resources to implement a sufficient contact tracing program or do not have a functioning database or information platform do not only put their own jurisdictions at risk, but also put neighboring jurisdictions at risk. Many populations and individuals work and live in different communities. Creating systems that acknowledge this interdependence allows for higher probability of success when it comes to tracking individuals across various jurisdictions.
- ▶ **Economies of scale:** Coordination reduces redundancies and increases efficiency in locating and monitoring contacts. This is particularly true for coordinating the use of the same platform and for coordinating a similar or the same training and recruitment regimen. Centralized systems or highly coordinated systems require less work to maintain and are more cost effective.

What is Interjurisdictional Coordination

In a globalized and mobile world with porous national and state borders, decentralized strategies will insufficiently account for high levels of mobility in the Latin America and the Caribbean region. In 2018, the [World Bank reported](#) that



Latin America and the Caribbean welcomed 114 million international tourists through ports of entry. Any contact tracing solution that does not adequately consider how populations move across national borders through ports of entry and across jurisdictions within the country will undoubtedly fail in its mission to track and cut the chain of transmission of COVID-19. Jurisdictions must account for how neighboring jurisdictions will account for horizontal mobility of people. Additionally, jurisdictions must consider how vertical integration will function within their contact tracing program. Highly centralized regimes can build systems and programs that use single systems to address how people may move across borders within a jurisdiction (e.g. between states or municipalities). Decentralized regimes must ensure that municipalities or jurisdictions build interoperable systems and programs so that patients are not lost when they move horizontally across borders within a country (e.g. between states or municipalities).

COVID-19, unlike other types of crises, does not respect political or administrative borders. This is evidenced by the rapid global spread of the disease. One jurisdiction's restrictive social distancing measures will have little effect if the neighboring jurisdiction continues "business as usual." To effectively combat the pandemic, different national and local jurisdictions need to coordinate their efforts. This means effectively communicating the situation in each jurisdiction, setting common priorities, sharing resources and planning complementary actions for maximum effectiveness and efficiency.

Interjurisdictional coordination can usually be bifurcated into two key areas of focus: (1) horizontal coordination; and (2) vertical coordination. [Horizontal coordination](#) primarily focuses on how co-equal governments and bodies interact, share policy priorities, and implement programs. For example, neighboring states or regions may collaborate but neither has authority over the other's population.



Vertical coordination on the other hand, is concerned with linking national and sub-national levels of government to guarantee joined-up and sustainable implementation and management of policies and programs. Where horizontal coordination is concerned with co-equal structures, vertical coordination usually indicates structures of hierarchy where one level of government may have authority over other levels of government (e.g. national → state/region → municipality).

Depending on a country's public health infrastructure, interjurisdictional coordination may be more or less of a pressing issue. Jurisdictions with highly centralized public health infrastructure may experience fewer vertical challenges because a national government may be able to implement highly centralized and standardized systems throughout all jurisdictions. A strong centralized contact tracing program will also resolve many horizontal coordination issues because sub-national levels of government will all be working on the same system, as opposed to using subnational systems that need to be harmonized or integrated across states/regions.

Key Issues to Consider to Coordinate Interjurisdictional Efforts

Data and systems:

- ▶ **Current disease reporting systems and contact tracing platforms:** Do different states/provinces utilize different metrics and databases? If so, how can these be integrated and standardized to share them across jurisdictions?

- ▶ **Healthcare records and test results:** How are health records managed in and across your country's health systems? Are they electronic health records or are they primarily paper records? Can they be shared and are they accessible between jurisdictions? Do the majority of states/provinces have the technological capabilities to access digitized records, including rural hospitals?



- ▶ **Data entry and format:** How is data entry standardized (or not) for demographic information entered into the contact tracing platform? Can the platform replicate data structures used in other systems, such as those used for test results, postal service, or health records? Do individuals use a single identifier in all settings? Are entry formats standardized (such as date of birth, first name, last name)? Are identifiers entered manually in a way that entry errors can cause matching issues?
- ▶ **Regional management:** Do states/provinces within your country manage their public health infrastructure and public health operations differently? If so, how can data systems and platforms be standardized to allow the sharing of best practices and relevant information? Do different cities and provinces have different strategies for contact tracing efforts? If so how can the best practices and lessons learned be shared across jurisdictions? Are there unique needs and systems for specific demographics or communities, such as indigenous populations, migrants, or undocumented individuals?
- ▶ **Regulatory and legislative barriers:** What are the laws and regulations that currently govern how health data is collected, stored and shared? Are there technological limitations and legal and regulatory issues that limit information sharing between institutions or jurisdictions within the same country? Are other states/ provinces allowed access to different local databases? Is the mechanism by which health records are affiliated with a single individual addressed in legislation?

Stakeholders

- ▶ **Horizontal stakeholders:** Who are the major stakeholders that are “co-equals” who need to be engaged to ensure adequate coordination? For instance, governors or ministers of states or regions within your country or jurisdiction may have equal authority over their own constituents but do not have any



authority over other constituents in neighboring jurisdictions. These “co-equal” stakeholders will need to reconcile differences between their contact tracing strategies to ensure that shared borders or populations moving between their areas of authority are appropriately considered in each jurisdiction’s contact tracing strategy.

- ▶ **Vertically aligned stakeholders:** Who are the major stakeholders that are within a vertical system of authority where one stakeholder has oversight or ranking authority to coordinate the other governments within their jurisdiction? For example, a governor of a state or region may have the authority to centrally coordinate all of the municipalities or mayors within that state or region. At a national level, are there federal agencies or bodies that can nationally coordinate all states and jurisdictions? Ideally within a vertical alignment of authorities (local → state/region → federal), all jurisdictions would share a centralized contact tracing strategy and information management system, such as a communicable disease reporting system or contact tracing platform.
- ▶ **Businesses and larger organizations:** Who are the major stakeholders outside of government that could be useful or impactful to help coordinate contact tracing strategies between and within jurisdictions? For example, are there large companies or employers that may be already conducting contact tracing for their staff or employees? Can these employers or organizations coordinate or support government-led efforts? Under what conditions would it make sense for them to share information with the government? What additional privacy protections would these public-private partnerships require? Are there other types of organizations that governments should coordinate with, such as labor unions, transportation firms, etc.? Consider the privacy and ethics concerns that may arise during this partnership, including mistrust from the broader public.



Alternatives:

- ▶ **Self-reporting:** are there ways that, absent adequate coordination from government officials, individuals could self-report into other jurisdictions' contact tracing platforms or processes?

Actions Governments Can take to Capture the Opportunity

Partnerships

Collaborate with private and public-sector actors that have large membership across jurisdictions. Governments should actively seek partnerships with businesses and organizations (e.g. unions) that have large numbers of employees or members based in various regions/states within the country. These businesses and organizations may be able to support interjurisdictional coordination.

Specific actions include:

- ▶ Develop criterion for inclusion in the group of large businesses and organizations (e.g. number of employees - over 100K - disaggregated by location and geographic spread)
- ▶ Develop strict participation criteria, outlining privacy expectations and other security and ethics concerns.
- ▶ Enlist and train representatives from these organizations and businesses as contact tracers who can report into the existing contact tracing platforms, but who will work specifically with their affiliate organization or business and its employees or members.

Regulatory

Use executive orders or other regulatory or legislative authorities to incentivize centralized platforms for contact tracing. Governments, ideally at the federal level, should mandate a single platform for contact tracing. If it is not possible at the federal level, governors of states/regions should mandate the use of a single platform within their jurisdiction.



Specific actions include:

- ▶ Make the service free to all jurisdictions that adopt the centralized platform.
- ▶ Ensure adequate training resources are available for onboarding all participating jurisdictions.
- ▶ Where possible, ensure interoperability with existing communicable and reportable disease databases.

Use legislative or regulatory mechanisms or executive orders to enable data sharing across jurisdictions. Governments should reduce the regulatory burdens that hinder or inhibit data sharing between jurisdictions.

Specific actions include:

- ▶ Conduct an analysis of existing regulatory and legislative mechanisms that may hinder or inhibit data sharing between jurisdictions.
- ▶ Issue temporary waivers to enable data sharing agreements while working toward a more durable and long term regulatory and legislative solution.
- ▶ Advocate for and develop new or replacement legislation and regulations that enable data sharing between jurisdictions.

Use legislative or regulatory mechanisms or executive orders to enable agencies to share existing databases. Governments should capitalize on existing databases or registers maintained by specific government agencies (such as social security, post service, or census data) to bolster contact tracing efforts.

Specific actions include:

- ▶ Identify key databases that maintain demographic information, including address, phone numbers, and emails of individuals within a given jurisdiction.
- ▶ Consider risks associated with using these data for contact tracing purposes.
- ▶ Issue temporary waivers for specific legislation or regulations that inhibit the secure sharing of these data for contact tracing purposes.



- ▶ Develop and adopt legislation and regulations that provide a durable legal and regulatory framework surrounding the secure sharing of data for contact tracing purposes.
- ▶ Integrate these databases into the contact tracing platform to increase ability for contact tracers to reach individuals confirmed as COVID-19 positive or identified as contacts of COVID-19 positive cases.

Long-term investments and Improvement

Move towards a centralized communicable and reportable disease database and contact tracing capability. Governments should begin to invest in a federally centralized communicable and reportable disease database that will include contact tracing capabilities.

Specific actions include:

- ▶ Identify an organization that should be the administrator of this service, ideally a nationally established center for disease control and prevention (e.g. [US CDC](#), [Korean CDC](#), National Institutes of Public Health etc.)
- ▶ Survey existing state or regional databases for opportunities to integrate and merge records.
- ▶ Conduct extensive research to identify and procure the optimal contact tracing platform that can be offered to all jurisdictions within the country.
- ▶ Develop training program for database and contact tracing platform with options to localize training modules.

Information and Knowledge Management

Offer informal peer learning opportunities. Governments or representative associations should coordinate informal forums or opportunities for individuals designing, implementing, and managing contact tracing programs to share ideas, challenges and best practices. These opportunities should be extended to include researchers, epidemiologists, or non-governmental actors with contact tracing experience.



Specific actions include:

- ▶ Develop a database with personal contact information of individuals designing, implementing, and managing contact tracing programs.
- ▶ Create an email listserv where individuals designing, implementing, and managing contact tracing programs can crowdsource questions to the group.
- ▶ Create an online community or social media platform like a reddit thread or facebook group where individuals designing, implementing, and managing contact tracing programs can crowdsource questions and ideas.

Offer formal peer learning opportunities. Governments or representative associations should coordinate formal and structured forums or opportunities for those designing, implementing, and managing contact tracing programs to share ideas, challenges and best practices.

Specific actions include:

- ▶ Hold regular weekly or biweekly with individuals designing, implementing, and managing contact tracing programs.
- ▶ Ensure meetings have a set agenda where specific topics are addressed and individual members have the opportunity to share best practices or challenges.
- ▶ Task this group with developing recommendations and guidelines.
- ▶ Share external resources and guidance with this network.

Create regional partnerships and coordinating bodies. Governments or representative associations should establish formal and informal groups and coordinating bodies based on regional or geographic similarities, such as transportation corridors or shared geographic borders.

Specific actions include:

- ▶ Define regions based on geographic or regional factors.



- ▶ Attempt to match regions with existing regional structures used in government functions such as administrative regions, public health regions, or disaster response regions.
- ▶ Institute informal and formal opportunities for engagement as described in the recommendations above.



Global Examples



NEW YORK, NEW
JERSEY,
CONNECTICUT,
PENNSYLVANIA,
USA

Informal Networks: individuals appointed to lead contact tracing programs in New York, New Jersey, Connecticut and Pennsylvania have capitalized on informal networks and communications to improve interjurisdictional coordination. These informal communications and engagements were established through professional contacts and professional networking opportunities. One individual interviewed indicated that he was able to foster a connection between his jurisdiction and a neighboring jurisdiction because he had worked with his counterpart in a previous role. The benefits of informal networks, compared to formal networks, is that individuals were liberated to be more candid and open about experiences, successes and the challenges they faced. They were also able to strategize about the optimal ways to coordinate efforts without the restrictive environment of formal communications, meetings, or memorandums of understanding or agreements. The downside of the openness and informality of these communications is that they lacked the authority of official communications; on the other hand they influenced more formal agreements and arrangements that have made the region one of the most successful in terms of a coordinated approach to contact tracing.



ASSOCIATION OF
STATE AND
TERRITORIAL
HEALTH
OFFICIALS
(ASTHO), USA

Formal coordination: [ASTHO](#) is the national nonprofit organization representing public health agencies in the United States, the U.S. Territories, and the District of Columbia, and over 100,000 public health professionals these agencies employ. ASTHO offers various [opportunities for formal engagement and coordination](#) between jurisdictions (specifically states and US territories). These include, but are not limited to: (1) bi-weekly phone calls where state health officials have the opportunity to share best practices and challenges as well as learn from other invited experts from universities or federal agencies; (2) training opportunities where states can all use a coordinated curriculum, thus increasing standard operating procedures and processes; (3) [advocating for legislation](#) and regulations that enable coordination; and (4) writing [white papers](#) and issue briefs that are shared with policy makers in federal and state governments.



EUROPEAN
UNION

Interoperability: States of the European Union have agreed on common specifications and data sharing protocol to ensure that contact tracing apps from different countries can communicate. This ensures that as people travel within the Schengen area, the contact tracing app they use will communicate with others.



FLORIDA, USA

Florida's [contact tracing guidelines](#) establish that each jurisdiction is required to assign one person or team to the role of communicating with their equivalents in other jurisdictions. Other states in the USA have implemented various coordination schemes, including centralized, decentralized, or hybrid contact tracing programs. A comparison of state efforts can be found [here](#).



BRAZIL

The use of [telemedicine](#) has allowed Brazilian states to monitor the situation of contactants and suspected cases, and then pass the information down to municipal agencies for action and testing.



ARGENTINA

Argentina established a National Emergency Operating Committee that articulates actions between the federal government and the 24 national provinces. The National Emergency Operating Committee works with the Provincial Emergency Operating Committees, through working groups with the 24 provinces. Additionally, they have national representatives for each province, who maintain daily contact with the committees. The committees meet on Monday and Thursdays, to share best practices and talk about their local experience and how they enacted a specific strategy such as contact tracing. The federal government also created a multi-sectoral plan to address the pandemic with different departments including the health, education, transport, production, work, defense, interior departments. In addition to its coordination work with the Provincial Emergency Operating committees, the National Emergency Operating Committee also coordinates action between a council of experts, private sector industries (such as the pharmaceutical industry), and clinics.



NIGERIA

Through a [presidential COVID-19 task force](#), the states of Abuja, Kano and Lagos adopted a comprehensive multisectoral approach to coordinate actions to combat the spread of COVID-19.



CANADA

The Operational Framework for Mutual Aid Requests (OFMAR) is a mechanism that allows Provincial/Territorial (PT) governments to [identify and share healthcare assets](#) and professionals throughout jurisdictions. It has also established procedures to conduct emergency registration of healthcare professionals in other jurisdictions to ensure they are available to travel to the areas where they are most needed.



OAXACA, MEXICO

To strengthen the jurisdictional coordination between the cities in the State of Oaxaca, the state government delivered [computers](#) (for data reporting and process improvement) to six health jurisdictions in an effort to strengthen the Health Information System in the medical units of these six health jurisdictions. Oaxaca also operationalized the [Intersectoral Response Plan](#), which consists of expanding hospital operational capacity across the 14 different hospitals in the State's six different health jurisdictions.



SOUTH KOREA

In 2017, the government of South Korea, through an amendment to the [Infectious Disease Control and Prevention Act](#), [created a legislative foundation for cooperation](#) between local governments and the national government.



Cost and Resource Offset

Cost: If a country does not have centralized public health infrastructure such as databases or contact tracing platforms, developing centralized infrastructure will be very costly. That said, there are intermediary and low-cost options that a government can invest in that will help in a context absent of a deeply centralized and coordinated core infrastructure. For example, developing formal and informal opportunities for information sharing and collaboration is very inexpensive. Building the capability for existing systems to “talk to each other” - interoperability - requires moderate investment in technology support but does not necessarily require an overhaul of the existing infrastructure.

Resource Offset: A highly integrated and coordinated network of jurisdictions will present two main areas of cost savings. First, it will greatly reduce the overall expenditure on labor because it will virtually eliminate duplicative work that happens without a centralized system (for example when two jurisdictions are working on the same case). It will also present a progressive financing option where jurisdictions with more resources can support less resourced areas because of interoperability. This is particularly important if one jurisdiction is experiencing a surge of cases and needs support. Second, it will create cost-saving opportunities in the long-run because of the economies of scale created by using one technology, one training platform, and one overall process. While there are disruption risks associated with over dependence on single systems, centralizing the platform will allow for much greater efficiency and leverage to negotiate software and hardware deals with vendors.

Experts

- ▶ Mike Flowers, State of New Jersey, Senior Fellow
- ▶ Elizabeth Ruebush, ASTHO, Director, STD, HIV, and Viral Hepatitis
- ▶ Amelia Poulin, MPH, CPH, CAPM, ASTHO, Analyst, STD, HIV, and Viral Hepatitis



- ▶ Randall Thomas, Thunderbolt Labs, Founder
- ▶ Carlos Castillo-Salgado, MD, DrPH '88, MPH '81, JD, Professor, Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health

LOCALIZATION

RECOMMENDATION

Governments should increase public trust in contact tracing programs by ensuring the programs incorporate local knowledge and experience. Specifically, they should (1) conduct an assessment that identifies community assets; (2) partner with local community organizations to identify contact tracers; (3) conduct a public health messaging campaign to explain contact tracing; and (4) incorporate information about the local community when training the contact tracing workforce.

SPECIFIC ACTIONS INCLUDE

- ▶ Conduct a community health assessment that identifies community assets.
- ▶ Partner with local community organizations to recruit and hire contact tracers with community-based knowledge and experience.
- ▶ Conduct a public health messaging campaign explaining contact tracing.
- ▶ Incorporate communication about contact tracing into the testing program.
- ▶ Incorporate information about the local community when training people for the contact tracing program.



Addressing the local context contributes to a contact tracing strategy by mitigating or addressing the following bottlenecks:

- ▶ **Accountability and trust:** The effectiveness of contact tracing depends on how much the public trusts the government and the processes used to implement contact tracing. People may be reluctant to answer the telephone or a knock on the door unless they recognize the organization that is reaching out to them. Contact tracing programs are more effective when they engage local community leaders and local organizations in outreach efforts, and when people hired to conduct contact tracing are from, and have knowledge of the community in which they are conducting their work. Cultural sensitivity and specificity helps to build rapport with the people. When members of the contact tracing team understand local institutions and culture, they are more likely to get cooperation from the people they contact.
- ▶ **Coordination between local contact tracing and testing sites:** Getting the tests results back to individuals and public health officials is crucial for successful contact tracing. If testing results are not available to the contact tracing team within 24 hours, tracing efforts are far less effective because their contacts cannot be identified before they have potentially spread the virus to other individuals. Coordination between the local contact tracing organizations and the local testing sites helps facilitate the quick transfer of information and address these bottlenecks.
- ▶ **Knowledge of local resources:** People who are asked to isolate after testing positive may need support with housing, food, and health care services. When the organizations and individuals implementing contact tracing have knowledge of the local community, they are in a better position to put people in touch with the supportive services they need.



- ▶ **Facilitate relationships between public health and other agencies within the jurisdiction.** Because the successful implementation of contact tracing depends on the ability of public health officials to help those who test positive to isolate, it is helpful if the public health departments have relationships with community organizations that can offer this support.

What is Localization

The successful implementation of a contact tracing program depends on an approach that is tailored to the local context and facilitates trust between the contact tracing program and the public. One of the biggest challenges to overcome [in a contact tracing program] is getting people to answer the call from contact tracing team members.⁶¹ This means that it is necessary to put resources into public messaging that is accepted by the local community. The public health officials who are in charge of contact tracing need to provide information that is understandable to the public, and should also deliver the information in a way that facilitates trust. Often, this involves working with local individuals and organizations that are trusted by the community. This may include partnering with local religious institutions, cultural institutions, or community leaders that have positive relationships with their communities. This is particularly important for reaching migrants and other vulnerable populations who may not trust the government. Many successful contact tracing efforts around the world have placed an emphasis on localization.

⁶¹ Dr. Mitchell Rosen, Director of the Center for Public Health Workforce Development at Rutgers University, is responsible for training contact tracers in the state of New Jersey



Considerations for Localization

Access and trust

- ▶ **Community leaders:** For a variety of reasons, members of the public – including ethnic and minority populations and migrants – may not trust government or health officials. Trust in government and systems is an [indicator](#) for places where the COVID-19 response has been successful. Which community leaders can be partnered with to help build trust with vulnerable populations? Are there similar leaders that would be relevant to high-risk professions or other at-risk groups? Can these groups work with the government to recruit contact tracers? Can these groups work with the government to communicate with the public?

- ▶ **Targeted communications:** What are communications tools or strategies that need to be considered for a successful information campaign targeted at parts of the population so they will understand the goals of contact tracing? What languages do materials need to be written in? What are the literacy rates of target populations and how do materials need to be presented (e.g. graphics, cultural examples, etc.)? Who needs to be delivering the key messages to specific populations?

Identifying community assets

- ▶ **Social supports:** What are the social supports within your jurisdiction that can facilitate contact tracing? Can people in charge of contact tracing identify where residents can go for shelter and other basic needs while they are quarantining? Does the government have a relationship with local assistance organizations, shelters, transportation groups, hotels and other organizations that can support people who have tested positive for the coronavirus and need support to safely and effectively isolate or quarantine?



Actions Governments Can take to Capture the Opportunity

Analysis and Research

Conduct a community health assessment that identifies community assets. Public health agencies responsible for conducting contact tracing should conduct an assessment of community organizations and assets that can be mobilized to support the contact tracing effort.

Specific actions include:

- ▶ Establish formal relationships between the public health system and social service organizations.
- ▶ Identify resources that can support individuals who may need additional social support in order to isolate following a positive test result.

Partnerships

Partner with local community organizations to recruit and hire contact tracers with community-based knowledge and experience. Governments should partner with local community organizations to identify contact tracers with the trust and knowledge of the local community. Selecting the right messenger is an important step to building trust, allowing for the cases and contacts to reveal details about who they have been in contact with and when.

Specific actions include:

- ▶ Develop criteria that outlines profiles of organizations and people from the local community, that have the requisite knowledge of the community.
- ▶ Meet with local authorities and key stakeholders (women, youths, older people) and discuss the importance of the contact tracers.
- ▶ Establish a contract with local organizations to identify and recruit potential members of the contact tracing workforce.
- ▶ Provide financing and administrative support to allow the local community to make recruitment decisions.



- ▶ Partner with a local university or community based organization to hire, manage and/or train the contact tracing workforce.
- ▶ Develop plans for training and managing new contact tracing “employees” who are not full time employees of the public health system.

Communications

Conduct a public health messaging campaign explaining contact tracing. Governments should perform outreach to the public with messages about contact tracing before and while they implement telephone and in-person interviews and contact tracing. This will help the public understand why they are being contacted and what the goal of these efforts are.

Specific actions include:

- ▶ Identify local people and organizations that influence local opinions.
- ▶ Offer education opportunities to community leaders.
- ▶ Work with community groups to adapt messaging to the local culture and context.
- ▶ Contract with local influencers to develop and disseminate messages about contact tracing.
- ▶ Partner with trusted community sources to conduct regular press briefings to provide information about contact tracing.
- ▶ Develop key messages that focus on getting people to answer their phones and to engage honestly with contact tracers.

Incorporate communications about contact tracing into the testing program. Testing centers should inform those who are tested that they will be contacted by someone from the contact tracing program if they test positive. The testing site should provide the name of the contact tracing program and the phone number from which people will receive a call.

Specific actions include:



- ▶ Inform people who are being tested that they will be contacted by people from the contact tracing program if they test positive.
- ▶ Share information about the organization that is in charge of contact tracing and the telephone number from which they should expect a call.
- ▶ Develop communications materials, such as brochures and handouts, that explain the purpose of the contact tracing program and the questions that contactants will be asked.

Training

Incorporate information about the local community when training people for the contact tracing program. Governments and those designing contact tracing training programs should include specific modules that focus on the local community context, cultural practices, language considerations, and other specific considerations. The training program should also include information about how to conduct contact tracing, the workforce needs information about the local public health system, how it is organized and how it interacts with other agencies.

Specific actions include:

- ▶ Identify relevant features of the public health system that contact tracers need to understand.
- ▶ Identify cultural and institutional features of the community that may influence the response of the public to contact tracing, including information about any sources of distrust that may influence the community's response to the program.
- ▶ Develop training modules that provide information about the local public health system and the local community.
- ▶ Invite members of marginalized communities to [review the script](#) contact tracers will use to avoid the use of language that discourage cooperation.



Global Examples

HAITI

Partners in Health successfully employed a strategy of hiring and training community health workers to engage in contact tracing in response to a cholera outbreak in [Haiti](#). In addition to identifying index cases and contacts, community health workers supported families that had to quarantine by monitoring them for 14 days and, when necessary, providing food and water for people who were required to isolate at home.



SPAIN

Spain hired and trained community health workers to support [contact tracing efforts for tuberculosis](#), particularly in neighborhoods with a large number of immigrants. The government hired community health workers from countries in North Africa because they had the necessary language skills and the cultural knowledge to successfully engage with hard to reach immigrant groups. The use of these workers increased trust in the contact tracing system and improved outcomes.



To address the [Ebola outbreak in Sierra Leone](#), the government hired, trained, and deployed [community health workers](#). The country was able to take advantage of the fact that schools and universities were closed to engage a cadre of young, well-educated citizens to work on contact tracing efforts. The government was able to provide training that allowed the community health workers to make door-to-door assessments, collect information about symptoms, patient-reported outcomes, and contacts. The community health workers were also used to deliver test kits, transport samples to labs, distribute food and other essentials to those who were required to quarantine.



The Rutgers School of Public Health has partnered with the New Jersey Department of Health to hire and train a contact tracing workforce made up of students studying public health, social work and related fields in New Jersey. This workforce is being used to supplement the capacity of local health departments. According to Rutgers School of Public Health [Dean Perry Halkitis](#), the students being trained to supplement the contact tracing workforce will “serve the communities in which they live, work and play.” The curriculum developed by Rutgers uses national training platforms, “along with an understanding of New Jersey-specific cultural information.”



LIBERIA

During the 2014 – 2015 Ebola outbreak, [thousands of community health workers were trained to serve as contact tracers](#). The community health workers were a crucial supplement to the existing public health workforce and helped to link the community to testing and treatment centers. The community health workers were important to the success of the program, not only because they increased the number of workers, but because they were able to help overcome the fear and lack of trust in the country's health system during the outbreak. An important lesson from the Liberia experience is to train contact tracers to pay attention to the power dynamics within society and how the daily lives of people are structured. As Dr. Mosoka Fallah, Director General of the National Public Health Institute of Liberia, explained, “in Liberia we realized that the most ideal way to get contacts in the urban slums was to visit them very early in the morning by 5 AM, while those in the rural farming areas needed to be visited at night when they return from their farms. We also realized that it is difficult to do contact tracing via phone calls in illiterate and poor communities where compliance is difficult due to their daily need to go out for food. In developed countries houses are marked with addresses, but in some countries there are no known addresses. Hence, from our experiences in Liberia, the contact tracer would need to be present at the initiation of the case investigation so that they see the physical house. This will ensure that contact follow up is effectively done.” Also, the Liberian contact tracing program had success during the Ebola crisis by linking messages of hope with survivors to encourage people to seek early treatment thus increasing survival rates. The increased survival rates, in turn, led to increased trust in the response and treatment by the doctors and attracted more people to come to the treatment unit instead of hiding.



Cost and Resource Offset

Cost: Contact tracing is an expensive activity because, even when it is supplemented by technology, it is necessary to employ a large workforce to reach infected individuals and their contacts. In many cases, contact tracing programs must coordinate with other agencies to offer appropriate support to vulnerable populations who are required to quarantine or isolate. The marginal costs of working to localize these efforts will vary, but are likely to be substantial. The total cost will depend on several factors, including the extent to which the public health system has already established working relationships with community based organizations and has developed training about the local environment for its existing workforce. If these things do not already exist, there may be larger start-up costs involved. Even if the local public health departments have strong community relationships, there will be a need for a new, locally informed, public information campaign that is specific to COVID-19.

Resource Offset: If governments don't already have effective mediators with communities, localizing contact tracing efforts is a substantial investment. However, it is essential if the government plans to engage in contact tracing and there are any concerns about trust and public responsiveness to these efforts. Contact tracing is very costly, even without localization efforts. It is thus essential to ensure people will respond to calls or visits from contact tracers and to minimize any delays in reaching potentially infected people, to prevent further community spread. Localizing these efforts by working with local organizations on public messaging campaigns and recruiting local contact tracers -- while costly -- increases the responsiveness of the public to these efforts and allows public health officials to reach infected individuals and their potentially infected contacts in a timely manner, with a potentially tremendous increase in efficiency.



Experts to consult:

- ▶ Mitchell Rosen, Rutgers University School of Public health
- ▶ Mosoka P. Fallah, Director General (DG), National Public Health Institute of Liberia (NPHIL)
- ▶ Hala Madanat, PhD, Director & Distinguished Professor, School of Public Health, Core Investigator, Institute for Behavioral and Community Health, San Diego State University



BEHAVIORAL SCIENCE

On September 17th, 2020, a group of 30 experts from across the world joined officials representing the Argentine, Bahamian, Brazilian, Costa Rican, Honduran, Mexican, and Peruvian governments in a two-hour advising session to identify novel solutions for how leaders can integrate behavioral economics into their efforts to achieve broad national objectives in the fight against the pandemic. The objectives discussed as the framework for the conversation include: (1) Contain human-to-human transmission and the spread of COVID-19, (2) Decrease and limit morbidity and mortality, (3) Protect, assist, and advocate for populations particularly vulnerable to the pandemic, and (4) Ensure a safe and sustained reopening of the economy and society.

Following the advisory session, participants from the Latin American and Caribbean governments selected those proposed solutions which they were most interested in implementing. The GovLab then conducted further research,



consulted various subject matter experts and potential partners, and developed this high-level toolkit that Latin American governments can use to inform their efforts to combat COVID-19.

EXECUTIVE SUMMARY

Problem Statement:

The public, including organizations and individuals, especially vulnerable populations, are failing to change behavior in order to (1) prevent further spread of COVID-19, (2) encourage affected individuals to get proper access to healthcare, and (3) work towards a safe and sustained reopening of communities and economies.

Recommendations and strategies to address the problem:

Successfully addressing COVID-19 pandemic requires individuals, communities, government officials, and public- and private-sector leaders to overcome and address cognitive, cultural, behavioral, and psychological barriers that are impacting or have the potential to negatively impact a coordinated response. To do this governments can implement the following recommendations:

1. **Evidence and misinformation:** Combat misinformation through evidence-based, clear, and consistent messaging.

Key Strategies for Implementation

- ▶ Governments should keep messaging consistent and explain changes when they are made.
- ▶ Governments and policymakers should make sure the messages they are promoting are scientifically accurate and informed by evidence and base all



messaging on credible levels of evidence and review levels of evidence. The public is more likely to trust messages coming from credible sources.

- ▶ Governments should track rumors and misinformation campaigns to ensure that communities are not acting on incorrect public health guidance.

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 3 months, ongoing		

For additional information see: [Implementation Memorandum](#)

2. **Community and stakeholder engagement:** Engage communities and other stakeholders to make messaging strategies context specific and culturally relevant.

Key Strategies for Implementation

- ▶ National and state governments should work with local governments, universities, companies and community activists to focus on making differences at the local and community level. Where possible, messaging should be targeted to specific populations and groups to ensure it is relevant and resonates with those individuals.
- ▶ Engage the public and/or targeted groups in the design and development of public health messaging strategies. Ensure a transparent process of content development to increase trust with the public.
- ▶ Write and publish template pledges that businesses can adapt for their own needs. Include evidence based safety measures and encourage businesses to bring these pledges to discussion with their employees.



- ▶ Governments should enlist influencers like athletes, celebrities, or trusted politicians to deliver key messages to the broader public. Who is an influencer in a given community can be determined using sentiment analysis techniques that analyze who follows whom on Twitter.

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 3 months		

For additional information see: [Implementation Memorandum](#)

3. **Data and innovation:** Use data and innovations like crowdsourcing to optimize messaging development, reach, and uptake.

Key Strategies for Implementation

1. Governments should develop strategies for testing different messages and delivery methods to understand what is the best combination to deliver specific messages to specific groups.
2. Governments should understand the preferences of their constituencies and use tools that populations are most comfortable with. For example, live streams on social media platforms like Facebook — which people use regularly and have fewer barriers to access — tend to be more popular than webinars or conversations on platforms like Zoom or WebEx.
3. Governments should capitalize on local knowledge and talent through hackathons and other contests that bring together problem solvers from civil society to create innovative solutions to specific challenges.
4. Governments should analyze what physical barriers make it more difficult or increase the perceived effort of following preferred behaviors, and minimize or



remove these barriers. The fewer steps and the less thought a preferred behavior requires, the more likely people are to follow it.

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 3 months		
For additional information see: Implementation Memorandum			

RECOMMENDED COMPANION RESOURCE

IDB's Guide on How Behavioral Economics Can Help Fight
Coronavirus

[English](#), [Spanish](#), [Portuguese](#)

TOPIC BACKGROUND AND PROBLEM DESCRIPTION

Individuals, communities, and leaders struggle to make optimal decisions during the COVID-19 pandemic due to resource constraints (testing, economic downturns, etc.), information shortages, the rapidly developing nature of the pandemic, the novelty of the virus, and the overwhelming scope of the pandemic's impact on daily, community, and societal life. Cognitive biases and decision-making [heuristics](#) compound these shortcomings, in many cases making the outcomes more severe and less optimal.



Certain issues surfaced throughout the duration of the pandemic have policy, political, social, cultural, and psychological dimensions. These include, but are not limited to, the use of masks, social distancing, handwashing, and other actions that help improve outcomes, cut transmission and curb the spread of the virus. Specific to COVID-19, the suboptimal information and decision-making landscape for these and other critical issues are defined in part by the following root causes:

- ▶ **Governments lack access to behavioral science insights and approaches:** Without training in behavioral and cognitive sciences, policymakers lack the necessary tools to bring about behavior change in favor of COVID-19 preventive measures.
- ▶ **Information is new and changing given the novelty of the virus:** For example, as public health officials and researchers learn more about the virus, official guidelines for the COVID-19 response are constantly changing and being updated, potentially leading to confusion and mistrust in government.
- ▶ **Information is scientific and may be difficult to understand for a broad audience:** For example, the difference between virologic and serologic tests has created confusion about the value of testing, even among policy and public health officials.
- ▶ **Politicians are intentionally spreading misinformation:** For example, in the USA, political officials from opposing parties have endorsed conflicting guidance on the use of masks. This dissonance has fractured a public health issue along political lines and caused distrust in officials' pronouncements. In many cases, politicians are actively at odds with public officials in recommending behaviors that are dangerous (i.e. not wearing masks).



- ▶ **Non-political sources of misinformation:** In addition to taking cues from political elites, members of the public are also confronted with misinformation campaigns from a variety of online and cultural sources. These include conspiracy theories propagated from fringe groups online, deep-rooted mistrust in government amongst specific communities (often for good reason), or general ignorance/lack of information.
- ▶ **The perceived cost of a decision or action is not worth the benefit:** Across the world, young people are driving the further spread of COVID-19. Young people are generally healthier and at lower risk from developing serious complications from an infection. This perceived low risk has contributed to young populations engaging in riskier behavior and not practicing social distancing as much as older generations. Because young people aren't likely to be impacted by the virus, the cost of social distancing or other restrictive public health measures are perceived as high.
- ▶ **Structural and economic scarcity:** Populations living in very densely populated areas, poor populations, and populations with limited sanitation resources (e.g. water, soap, etc.) are among the populations who, for structural reasons, may be less likely to be able to adhere to social distancing, handwashing, or other public health and policy measures. Governments cannot enforce social distancing for populations living in slums nor can they encourage hand washing for populations without access to running water. Further examples include the homeless population who are not able to adhere to public health recommendations due to housing access issues and the many workers in the informal economy who, by the very nature of their jobs, are at higher risk of contracting COVID-19.
- ▶ **Social determinants of health, including the double burden of malnutrition:** More entrenched public health issues continue to be a major concern throughout



the pandemic given their [documented relationship with higher mortality rates](#) and COVID-19 infections. Communications strategies therefore must include messaging on [social determinants of health](#), such as [social and community context](#), [education](#), [economic stability](#), [neighborhood and built environment](#), and [food security and nutrition](#), which are all linked to higher COVID-19 morbidity. The many complicated and interrelated causes of poverty, poor diet and corporate food practices combine to produce higher rates of obesity and food insecurity among low-income populations. This “[double burden of malnutrition](#)” is the combination of undernutrition along with obesity and diet-related noncommunicable diseases (hypertension, etc.).

While the above root causes might be addressed through a variety of responses, including government programs and private sector investments, behavioral science is an essential tool to help address the underlying cognitive and informational challenges of the above problems. Below we present key cognitive and informational challenges that lend themselves specifically to “nudge”-based solutions. [Ideas42](#), a behavioral sciences consulting firm, offers an informative primer on the principles and key terms of behavior science that can be accessed by the link in each of the below bullets.

- ▶ [Choice and Information Overload](#): Too many choices or too much information can be overwhelming, and lead individuals to make suboptimal decisions. As is the case with COVID-19, the public is faced with an [overwhelming amount of information](#). This interacts negatively with the observation that optimal health decisions are linked to the “accurate perceptions of the costs and benefits of certain choices for oneself, and for society.”⁶² As individuals become

⁶² Van Bavel, J. J., Baicker, K., Boggio, P., Capraro, V., Cichocka, A., Crockett, M., ... Willer, R. (2020, March 24). Using social and science to support COVID-19 pandemic response. <https://doi.org/10.31234/osf.io/y38m9>



oversaturated with information about COVID-19 their ability to sort through the information and options diminishes; this links with decision fatigue (see below).

- ▶ **Cognitive depletion and decision fatigue:** Physical and emotional exhaustion impacts individual and community decision-making. Populations across the world have and continue to experience the burden of months of social distancing and the stress of the pandemic. Left unaddressed, this exhaustion will create fatigue, potentially leading to increased risk-taking behavior or other actions that may put individuals and communities at higher risk for contracting or spreading COVID-19.
- ▶ **Identity:** Individuals' choices and actions are often made in accordance with the identity that is most salient to that individual in her moment of choice. This means that policymakers and public health officials need to understand the multiple identities of their constituency or target audience and craft their messages, guidance, communications, and requests accordingly. In terms of the ongoing pandemic, messaging can effectively be tailored to achieve specific public health goals, such as prosocial framing or culturally-specific messaging, which will resonate with individuals who identify with their communities or culture group.
- ▶ **Social norms:** Individuals' actions are deeply informed by what those around them believe and do. In the pandemic, if an individual is told that many people in his or her community are performing a negative behavior, that individual may be convinced that because an action/behavior is already prevalent, it is ok for them to do it, even if that action/behavior is "bad." For example, publishing data on how many individuals don't wear masks may end up convincing some individuals that it is ok not to wear masks because so many other people don't wear masks. On the other hand, communicating descriptive norms for positive behaviors (e.g.



your neighbor wears a mask so you should too) is often linked with increased uptake of the preferred behavior, especially when compared to messaging that just tells individuals what to do. Another example is with hoarding and panic buying that occurred earlier in the pandemic. By highlighting the people who were panic buying and showing photos of decimated and empty shelves, governments and news outlets potentially normalized the bad behavior, therefore making it seem acceptable and the norm.

- ▶ **Availability heuristic:** Individuals are not very good at understanding probability and frequencies; as the pandemic becomes the “new normal,” individuals will increasingly base their decisions on their experiences and what examples first come to mind, instead of basing their decisions on true probabilities. In terms of the COVID-19 response, if an individual does not herself get sick or does not know many people who get infected she will increasingly understand her risks as low because those are the only examples she has available. In practice, this was very much true at the beginning of the pandemic when there was emerging documentation of the virus spreading from Wuhan, China, but because governments didn’t have cases identified within their own borders, they failed to take into account the probability of the virus impacting their societies.

REGIONAL CONTEXT

Argentina

Context and Actions Taken:

- ▶ Argentina’s communication strategy is jurisdiction-specific. This allows jurisdictions to be context and moment specific to reflect their own conditions at the time. In rural areas, there is a greater geographical



dispersion and the local governments don't not have the same response capacity as in densely populated areas.

Challenges:

- ▶ Public health messaging can't keep up with the pandemic. The time it takes to produce and disseminate messages often causes them to be outdated once they are widespread. Argentina does not use any indicators to measure the success of communication strategies. Compounding this all, there is a general consensus that there is a collective burnout among public health workers and government officials.

Priorities/questions:

- ▶ One of Argentina's priorities is to apply behavioral economics to influence citizens. The Ministry of Health is prioritizing communication strategies focused on specific populations, including essential workers, and those performing activities that are considered high risk.

Bahamas

Context and Actions Taken:

- ▶ In August 2020, the government formed a COVID-19 Enforcement Unit, consisting of police officers trained to enforce lockdown measures and monitor those following the 14-day quarantine.

Challenges:

- ▶ There is large scale disobedience of restrictive measures, either because people's work or living conditions don't allow, or because of poor



information. The Bahamas faces the additional challenge of managing tourists, who often disregard local laws and feel less accountable, compared to where they reside.

Ceara - Brazil

Context and Actions Taken:

- ▶ The Secretariat of Health has set up a library of online resources. Their main [COVID-19 website](#) holds the [open data dashboard](#) including a [transparency portal](#), which promotes trust with the press and general public.

Challenges:

- ▶ Lower-income communities and those with limited access to mainstream media, both urban and rural have proven hard to reach. Additionally, the fragmentation of information and politicization of the pandemic has meant that communicating factual information and motivating people to follow proven safety protocol has become a political issue. It is challenging to reach people in rural areas where the main vehicle of communications is the radio.

Examples:

- ▶ The [chatbot](#) “Plantão Coronavírus Online” allows people to find answers to their questions and seek guidance about medical care. It is available on [Whatsapp](#), which is the [main channel](#) of informal communications in Brazil and is essential for trust building. The Secretariat of Health has kept an active presence in social media like [Instagram](#) and [Facebook](#). By being



more interactive and responsive, the Secretariat of Health reports that they have improved trust with the public. To reach different strata of society, officials produced content in partnership with digital influencer “[Suricate Seboso](#)”.

Costa Rica

Context and Actions Taken:

- ▶ The Ministry of Health has been working to tailor communications campaigns to the current realities of the country and the specificities of many Costa Ricans. Officials are focusing on 3 specific external communication initiatives: (1) Audiovisual messaging that acknowledges the work of health officials; (2) Targeted messaging for reopening: How to prevent transmission in high-risk places and follow health protocols at the movies, public transit, at church, etc.; and (3) Messaging for communities by the communities: Officials are collecting testimonies from specific populations to help develop messages. These efforts aim to use the specific realities of agricultural workers, construction workers, and migrants, to develop messaging strategies that speak to how these specific groups can reduce risks. This campaign seeks to acknowledge the realities of those who can't “stay at home” or “social distance”.

Challenges:

- ▶ A concern for Costa Rica is creating incentives for behavioral change within its vulnerable populations. Specific groups include refugees,



agricultural workers, health workers, and construction workers, who can't effectively stay at home or socially distance.

Honduras

Context and Actions Taken:

- ▶ Honduras has set up a COVID-19 transparency website to keep the population informed about the government's efforts against the pandemic, including actions put in place by region, staffing of the response teams, resources allocated, and distributed. A separate transparency portal contains all government contracts and relevant documents in the fight against COVID-19 to nurture trust among the population. Most incentives to follow sanitary protocol have been punitive. Businesses have been forced to temporarily stop operations and vehicles confiscated for not following protocol.

Mexico

Context and Actions Taken:

- ▶ Mexico's [information portal](#) offers information about the virus, symptoms, medical guidance, [open data](#), etc. It also includes a [children's section](#), a simple [myth vs reality](#) page and [online courses](#) for dealing with specific scenarios.



Challenges:

- ▶ The informal sector is unaccountable to authorities about following safety protocols.

Examples:

- ▶ Mexico's National Institute of Social Security (IMSS) has developed a communication campaign to provide workers with structured and accessible information. The [CLIMSS platform](#), managed by the IMSS provides over 15 courses on the topic of reopening economic activity, which teaches companies how to manage their business. Companies must provide self-evaluations through the [New Normal Platform](#) about whether they are complying with federal guidelines.

Peru

Context and Actions Taken:

- ▶ At the time of writing, the country was working on a comprehensive communication plan led by the President. This will complement a comprehensive communication strategy already in place that is designed to change both citizen's perceptions and behavior.

Challenges:

- ▶ In Peru, there is a false expectation that if a person does not have direct contact with an infected person or if they do not have “proof” or a positive COVID-19 test result then they are not at high risk of infection. Messaging is being tailored to putting together a risk communication plan against COVID-19 and to focus on key prevention measures to achieve behavioral



changes in the population. Officials note that the public will not change their behavior unless they know someone that has COVID-19, or if they themselves have a positive result. The government therefore wants to strengthen its messaging around how testing works, and how not to depend on positive results to change behavior.

HOW TO USE THIS CHAPTER?

This chapter is designed to be a rapid toolkit that can support governments and public health officials as they develop and implement communications strategies for the duration of the pandemic. This toolkit is organized by strategies. It is not intended to be exhaustive, but is rather a selection of innovative strategies that reflects the articulated interest of national governments who are participating in the [Smarter Crowdsourcing in the Age of Coronavirus](#) project. Each strategy is structured with the same informational layout: (1) Challenge – defines the underlying problems that the strategy addresses, (2) Strategy to address the challenge, (3) Examples – positive examples of how the strategy can support the response to the pandemic and negative examples of what happens if the challenge is not addressed, and (4) Additional resources – lists of experts, articles, or relevant documents that can provide more information on operationalizing the strategy.

Key points for using this toolkit:

- ▶ This toolkit is designed to allow users to implement strategies either as stand alone tools or to use in conjunction with other strategies in the toolkit.
- ▶ Each strategy is designed to provide a high-level introduction to the issue and how to solve it. But governments interested in applying these strategies should consider them within the context of their operating environment. Furthermore,



they should be adapted to the relevant characteristics of the implementing entity and the target audience.

- ▶ We assigned strategies to the main challenge they tackle but many of these strategies address more than one challenge. As such, governments may consider implementing multiple strategies to address a single challenge. Alternatively, governments can expect individual strategies to be relevant to multiple challenges.
- ▶ These strategies are designed to be applied to factually and evidence-based public health guidance, such as the [World Health Organization](#)'s technical guidance.



KEY STRATEGIES FOR IMPLEMENTATION

Recommendation 1: Evidence and misinformation

1.1 KEEP MESSAGING CONSISTENT AND ACKNOWLEDGE CHANGES WHEN THEY OCCUR.

Challenge:

The novelty of this pandemic has made it difficult to keep messaging consistent; information changes quickly and public health officials are developing guidance and building the evidence base as the issues are affecting communities. Missteps with messaging can create long-term consequences and distrust if not addressed early on.

Strategy to address the challenge:

Governments should keep messaging consistent and explain changes when they are made.

Key steps for implementation:

- ▶ Review guidance at predictable and publicized intervals. If guidance needs to change, communicate why it needs to change.
- ▶ Prioritize communications from trusted leaders at a consistent time and in a consistent format.⁶³
- ▶ Use credible sources and use them consistently (see strategy on evidence and credibility).

⁶³ https://www.ideas42.org/wp-content/uploads/2020/05/I42-1226_uPennCOVID_Tipsheet_comms_4.pdf



- ▶ Be transparent and communicate openly about the frequency of when guidance is reviewed. This will prime the population that guidance may change based on the changing circumstances.
- ▶ Acknowledge that the message has been updated if the public health guidance changes.
- ▶ Designate a spokesperson to establish credibility, convey confidence and maintain consistency.⁶⁴

EXAMPLE: WITHOUT USE OF STRATEGY

In countries across the globe, political leaders, lead doctors and scientists from the government have different messages about public health issues like masks, testing, and social distancing. The public is confused and does not know which message to follow. For example, the President falsely claims that young people are not at high risk from the virus. He tells people not to wear masks. At the same time, public health officials and universities tell them to adhere to a variety of policies and practices to stem the spread of the virus.

EXAMPLE: WITH USE OF STRATEGY

In Ireland the prime minister appointed a communications expert to coordinate public messaging. The government also delivered a booklet with basic information on COVID-19 to every household thus ensuring everyone received the same consistent and reliable information on symptoms and instructions on how to self-isolate. The Irish Health Minister, serves as a

⁶⁴ https://emergency.cdc.gov/cerc/ppt/CERC_Spokesperson.pdf



consistent and reliable spokesperson, briefing the public every night at 7pm on relevant COVID-19 information and answers questions via facebook.

In British Columbia, the government developed a set of principles for safe socializing rather than explicitly telling the public what not to do. Using the positive frame has presented the public with examples of what to do, rather than only telling them what *not* to do.

Experts

- [Erez Yoeli](#), Massachusetts Institute of Technology, Director, Applied Coordination Team
- [Thespina \(Nina\) Yamanis](#), Professor of Global Health, American University School of International Service
- [Mitchel Rosen](#), Rutgers School of Public Health, Associate Professor, Department of Urban–Global Public Health
- [Liam Delaney](#), London School of Economics, Professor, Department of Psychological and Behavioural Science

KEY STRATEGIES FOR IMPLEMENTATION

Recommendation 1: Evidence and misinformation

1.2 CENTER MESSAGING AROUND EVIDENCE.

Challenge

There are too many sources of (mis)information and public health recommendations; people don't know what messaging to trust. In some cases,



individuals are actively promoting false information and conspiracy theories. While lack of evidence is not equivalent to conspiracy theories, it can open the door for them to develop.

Strategy to address the challenge:

Governments and policy makers should make sure the messages they are promoting are scientifically accurate and informed by evidence and base all messaging on credible levels of evidence and review levels of evidence. The public is more likely to trust messages coming from credible sources.

Key steps for implementation:

- ▶ Identify trusted sources such as public health authorities, clinicians, scientists or international sources (e.g. World Health Organization - WHO).⁶⁵
- ▶ Ensure messaging cites/acknowledges this credible source so the public is aware of where the information is coming from.
- ▶ Build credibility of specific sources by citing them consistently and correctly.
- ▶ Avoid politicizing evidence and scientific facts.

EXAMPLE: WITHOUT USE OF STRATEGY

Messages not based on evidence can result in violence, confusion, and dangerous situations. In England a baseless conspiracy theory claiming COVID-19 was the result of 5G cell phone towers, led to cell phone towers being destroyed.

⁶⁵ Briñol, P. & Petty, R. E. Source factors in persuasion: a self-validation approach. Eur. Rev. Soc. Psychol. 20, 49–96 (2009).



EXAMPLE: WITH USE OF STRATEGY

Germany's Chancellor [Angela Merkel](#) uses science and clear evidence-based explanations of disease modelling when she discusses the pandemic and pathways toward recovery.

[GermDefence](#) – an information strategy developed by three UK universities – explains the value of the tool for first time users by informing them that a study of the tool found GermDefence users to be less likely to catch and have serious symptoms from COVID-19. This framing of the message is factually helpful, rather than politically driven. The tool also explains that it was developed by healthcare and academic experts, increasing the credibility of its content.

A [July 2020 report](#) by the CDC cites the case of two hair stylists in Missouri, who had serviced 139 clients before testing positive for the coronavirus, however given that both clients and hair stylists wore masks, no COVID-19 symptoms were identified among the 139 clients. This case is being used as evidence that the use of face masks reduces droplet transmissions to encourage citizens to use face masks.

Experts

- [Ellen Peters](#), University of Oregon, Director, Center for Science Communication Research (SCR)
- [Mitchel Rosen](#), Rutgers School of Public Health, Associate Professor, Department of Urban–Global Public Health



KEY STRATEGIES FOR IMPLEMENTATION

Recommendation 1: Evidence and misinformation

1.3 COMBAT MISINFORMATION THROUGH IDENTIFYING AND TRACKING RUMORS.

Challenge:

Overwhelming amounts of misinformation, conspiracy theories, and lies are promoted as fact on the internet.

Strategy to address the challenge:

Governments should track rumors and misinformation campaigns to ensure that communities are not acting on incorrect public health guidance.

Key steps for implementation:

- ▶ Create [crowdsourced initiatives](#) to spot and debunk misinformation and promote advertised channels where citizens can report misinformation or false information. This can be through a mobile app, hotline, SMS or WhatsApp, or a website.
- ▶ Conduct targeted outreach to specific communities or community leaders to understand rumors that may be proliferating in their communities.
- ▶ Create a rumor management and [tracking tool](#).
- ▶ Engage groups providing similar services to [Public Editor](#) or [Politifact](#) to help flag false information in the news, online, and coming from politicians.
- ▶ Promote evidenced-based sources, like [Ask a Scientist](#), where people can seek independently verified and scientific information when they have questions about specific rumors.



- ▶ Work with tech companies to flag false information on social media platforms, including [twitter flags](#).
- ▶ Don't "[fan the flames](#)" by elevating misinformation as you address it.
- ▶ Engage [influencers](#), TV stations, radio stations or other trusted sources to advertise which rumors have been disproven.
- ▶ Track messages responding to rumors through the use of a engagement tool such as [bit.ly](#).
- ▶ Ensure officials are [transparent and accountable to the public](#) to increase credibility of official messaging.

EXAMPLE: WITHOUT USE OF STRATEGY

Erroneous statements like [falsely claiming that 85% of people wearing masks still got infected with the virus](#), may contribute to mistrust in government officials and encourage specific populations to flaunt public health guidelines

In England a [baseless conspiracy theory claiming COVID-19 was a result of 5G cell phone towers](#), resulting in cell phone towers being destroyed. .

EXAMPLE: WITH USE OF STRATEGY

Brazil's Ministry of Health is [crowdsourcing rumor tracking](#) through a Whatsapp channel. Users can send chain messages, images and videos which often circulate through the messaging app for the ministry of health to fact check and create a [database of rumors and fake news](#).



The UK government partnered with the WHO to create the “Stop the spread” campaign which aims to raise awareness about misinformation. The campaign is being featured on BBC World News and BBC.com and the UK government is providing partner governments with a toolkit of the campaign assets for use in their countries. The UK government also set up a rapid response team to crackdown on fake and misleading information circulating online on COVID-19 and has a don't feed the beast campaign which provides 5 steps on how to identify fake news

Experts:

- [Maria-Elena Figueroa](#), Johns Hopkins University, Director, Center for Communication Programs, Research and Evaluation
- [Karen M. Douglas](#), University of Kent, Professor of Social Psychology, School of Psychology
- [William Schaffner](#), Professor, Preventive Medicine Health Policy, Professor Division of Infectious Diseases
- [Ali Nouri](#), President, Federation of American Scientists
- [Nick Adams](#), Co-Director, Public Editor
- [Eric Feigl-Ding](#), Senior Fellow, Federation of American Scientists



KEY STRATEGIES FOR IMPLEMENTATION

Recommendation 2: Community and stakeholder engagement

2.1 THINK GLOBAL, ACT LOCAL.

Challenge:

A one size fits all will not be sufficient for the pandemic; what works one place doesn't work in others. National changes and advancements can only happen if they are supported at the local level.

Strategy to address the challenge:

While governments want to support national adoption of public health behavior change strategies, national and state governments should work with local governments, universities, companies and community activists to focus on making differences at the local and community level. Where possible, messaging should be targeted to specific populations and groups to ensure it is relevant and resonates with those individuals.

Key steps for implementation:

- ▶ Identify the target audience. Audiences can be specific ages, demographics, geographic communities, language groups, etc.
- ▶ Define the groups as specifically as possible (geographically, racially/ethnically, age breakdown, sex/gender, language groups, etc.).
- ▶ Identify communications tools that are most effective at reaching these target audiences. These may include social media, television, radio, paper pamphlets, SMS, etc. Online tools like google ads may be particularly effective at reaching multiple audiences with targeted messages.



- ▶ Study the effectiveness of messaging through monitoring and evaluation tools (see [testing messaging](#)).
- ▶ Work with other levels of government to coordinate with local actors.

EXAMPLE: WITHOUT USE OF STRATEGY

The universal message to “self- isolate” did not take into account the on the ground realities of specific sectors. In countries with a big informal labor sector like Peru, the orders to quarantine proved to be ineffective given that 70% of workers are employed in the informal sector. Some communities might also not have access to water sources to properly wash their hands, or follow proper guidance on handwashing.

EXAMPLE: WITH USE OF STRATEGY

The government of Costa Rica, is working with communities in the agricultural and construction sector that are unable to self-isolate, to create a messaging strategy that is curated by them and tailored to their unique situations.⁶⁶

The UN Global Pulse team in [Uganda](#) is using AI and radio monitoring technology to identify COVID-19 keywords spoken in the local dialect. This information is then used to tailor their COVID-19 response to the specific discourse happening at the local level. Applying this global tool to specific contents allowed them to monitor for outbreaks, manage misinformation, and report on social and economic impact.

⁶⁶ Interview with officials from Costa Rica on August 25, 2020.



The WHO worked with community and faith leaders to tailor hygiene guidance in places where soap and water sources are lacking.

Experts

- ▶ Michele Gelfand, University of Maryland, College Park, Professor of Psychology and Affiliate of the RH Smith School of Business
- ▶ Carlos Scartascini, IDB, Leader of the IDB Behavioral Economics Group and Principal Technical Leader at the Research Department of the IDB

KEY STRATEGIES FOR IMPLEMENTATION

Recommendation 2: Community and stakeholder engagement

2.2 BUILD SHARED IDENTITY WITH THE PUBLIC THROUGH PUBLIC ENGAGEMENT.

Challenge:

The public views experts and the government as having separate or divergent interests from them.

Strategy to address the challenge:

Engage the public and/or targeted groups in the design and development of public health messaging strategies. Ensure a transparent process of content development to increase trust with the public. Building shared identity with the public may support increased compliance with public health guidelines and may reduce mistrust in government.



Key steps for implementation:

- ▶ Recruit a public panel to help design the presentation of the messaging content ideas.
- ▶ Post information online or write articles describing the process by which messaging was developed and how the public was engaged in the development of the messaging strategy.
- ▶ Host a town hall where the public can ask questions to the experts or the government. The government can televise, live stream, or otherwise host this forum on a free and public platform to ensure it has broad reach to many segments of the population.
- ▶ Coordinate citizen-led messaging campaigns, where members of the public are the main spokespersons and public faces for public health messaging.
- ▶ Explain what is known and unknown about the disease and the steps necessary to control its spread to enhance public trust.⁶⁷
- ▶ Avoid over reassurance and fostering unrealistic expectations (e.g. “everything will be fine in 2 weeks”).

Experts:

- ▶ John Drury, Professor of Social Psychology, University of Sussex
- ▶ Naveen Rao, Senior Vice President & Senior Advisor to the President, Health Initiative, The Rockefeller Foundation

EXAMPLE: WITHOUT USE OF STRATEGY

In countries in the Americas and globally, failures in federal and national leadership have eroded the trust from the public so that the public no longer believes that the government has their interests at heart. A compendium of

⁶⁷ <https://theconversation.com/clear-consistent-health-messaging-critical-to-stemming-epidemics-and-limiting-coronavirus-deaths-134529>



the falsehoods and inaccuracies presented by national leadership shows the pervasiveness of this mistrust and lack of shared identity.

EXAMPLE: WITH USE OF STRATEGY

The International Association of Public Participation has developed a variety of toolkits for ways to increase public engagement and participation during the pandemic.

The government of the State of New York developed a contest to create a public service announcement communicating the importance of wearing a mask. They received over 600 submissions as part of the "Wear a Mask New York Ad Contest" and had New Yorkers vote on the videos. In total there were over 186,000 votes cast. New York will be using the 1st and 2nd place ads for public service announcements. Here is a link to the winning video.

In Germany and South Korea, the governments promoted public health messaging that highlighted themes of solidarity, public cooperation, and shared identity. These strategies help promote a larger group identity (national identity) over individual and community identities.

In New Zealand, the prime minister has televised and live streamed conversations with New Zealanders from a variety of backgrounds in a program titled "Conversations through COVID." This program shows the public how their representatives are listening to their stories, hearing their experiences, and acknowledging their advice and struggles.



KEY STRATEGIES FOR IMPLEMENTATION

Recommendation 2: Community and stakeholder engagement

2.3 COLLABORATE WITH EMPLOYERS, EMPLOYEES AND CUSTOMERS TO PROMOTE PLEDGES OF RESPONSIBILITY AND ACCOUNTABILITY.

Challenge:

Employees don't think their employers are advocating for them; businesses don't want to become hotspots because customers aren't taking precautions. Customers won't frequent businesses if they perceive businesses are not taking precautions.

Strategy to address the challenge:

Write and publish template pledges that businesses can adapt for their own needs. Include evidence based safety measures and encourage businesses to bring these pledges to discussion with their employees. Make a template for pledges between businesses and employees - to maximize workplace safety - and between businesses and customers, for a mutual commitment to safety.

Key steps for implementation:

- Identify the specific needs businesses have at the current stage of the pandemic.
- Write template pledges that are as accessible as possible using clear language offered in multiple languages pledges.
- Work with businesses to promote the message that pledges improve safety in the workplace, and they can also improve business by establishing trust with customers.



EXAMPLE: WITHOUT USE OF STRATEGY

Businesses in Rio de Janeiro and Campinas - Brazil are getting fines and being forced to close for not respecting safety protocols and contributing to the spread of the virus.

EXAMPLE: WITH USE OF STRATEGY

New Jersey has created templates that businesses and employees can adapt to their needs. The campaign is designed to help build trust and solidarity between employees and employers as well as between customers and businesses.

University of South Carolina has a student pledge to protect the health of their classmates and community. These pledges are intended to create accountability and trust between and among students.

Experts

- ▶ Mitchel Rosen, Rutgers School of Public Health, Associate Professor, Department of Urban-Global Public Health



KEY STRATEGIES FOR IMPLEMENTATION

Recommendation 2: Community and stakeholder engagement

2.4 ENLIST INFLUENCERS TO DELIVER MESSAGES.

Challenge:

People aren't actively listening to public health messages and/or aren't engaged when hearing messages. People are generally fatigued from the reporting about the pandemic and experience information overload.

Strategy to address the challenge:

Who delivers the message is oftentimes more important than what the message is. Governments should enlist influencers like athletes, celebrities, or trusted politicians to deliver key messages to the broader public. Success is contingent on having a trusted message delivered by trusted sources. Celebrities, sports figures, scientists are all good examples of who might be trusted sources, but who is deeply dependent on the where and the population segments governments are trying to reach. Who is an influencer in a given community can be determined using sentiment analysis techniques that analyze who follows whom on Twitter.

Key steps for implementation:

- ▶ Identify the target audience. Who delivers the message is deeply dependent on the where and the population segments governments are trying to reach. Audiences can be specific ages, demographics, geographic communities, language groups, etc.



- ▶ Identify influencers among the target audience or population. Celebrities, sports figures, scientists are all good examples of who might be trusted sources, but the specific influencer(s) will depend on the target audience.
- ▶ Consult the influencer on how to best reach their followers. These individuals will likely have their own strategies for messaging and outreach.
- ▶ Ensure that the content of the messaging that the influencer delivers is based on accurate, precise, scientific, and consistent information).

EXAMPLE: WITHOUT USE OF STRATEGY

The Irish government has not capitalized on social media to reach teenagers and younger demographics. The government is now considering using social media influencers to promote COVID-19 messaging to younger audiences to expand efficacy and reach of the public health guidance

EXAMPLE: WITH USE OF STRATEGY

The Secretariat of Health from Ceara-Brazil, partnered with digital creator Suricate Seboso, a humorous Instagram and Facebook account with over 6 million followers. The partnership produced content targeted at a young audience that communicated the risks of COVID-19 and how people can protect themselves from the virus.

The UK government is working with social media influencers to ensure its reaching larger audiences and providing them with information on the NHS's free COVID-19 tests and also encouraging citizens to get tested.



In the United States, celebrities 'passed the mic' to COVID-19 experts, giving them access to a huge platform, where they were able to debunk conspiracy theories and answer questions.

During the ebola crisis in 2014–2015, religious leaders across faiths in Sierra Leone and Liberia promoted public health practices such as handwashing and safe burials to their constituents. Engaging these community leaders was considered a turning point in the epidemic response because it allowed communities who were not adhering to public health guidance to hear it from trusted sources, thus encouraging them to uptake the preferred behaviors⁶⁸.

“Montanans wear face coverings all the time” campaign, shows photos of Montanans doing activities where they wear face coverings normally. This campaign takes a different view of “influencer” from celebrities or athletes and insteads thinks of influencers as everyday people from the community.

Experts

- [Jonathan Jackson](#), Dimagi, Co-Founder and Chief Executive Officer of Dimagi
- [Mauricio Barahona](#), Imperial College London, Chair in Biomathematics
- [Nicolás Ajzenman](#), Fundação Getulio Vargas, Assistant Professor, São Paulo School of Economics
- [Sophia Yaliraki](#), Imperial College London, Faculty, Language and Communication Intelligence

⁶⁸ Greyling, C. et al. Lessons from the faith-driven response to the West Africa Ebola epidemic. Rev. Faith Int. Aff. 14, 118–123 (2016).



KEY STRATEGIES FOR IMPLEMENTATION

Recommendation 3: Data and innovation

3.1 TEST DIFFERENT MESSAGING FRAMEWORKS.

Challenge:

Different messages resonate with different populations; some messages work better than others.

Strategy to address the challenge:

Develop strategies for testing different messages and delivery methods to understand what is the best combination to deliver specific messages to specific groups. In order for tests to be valuable, officials must base messaging on evidence from tests and use the data from testing to inform message content and delivery.

Key steps for implementation:

- ▶ Develop messages that use different informational frameworks but that communicate the same facts or public health guidance.
- ▶ Use online or digital tools, such as SMS, online advertising, or emails to experiment with messaging frameworks in a data-rich and cost-effective way.⁶⁹
- ▶ Test different messaging frameworks with focus groups of specific demographic and social groups.
- ▶ Partner with private sector firms who have expertise in randomized control trials or A/B testing in advertising or marketing, such as internet services companies or telecom companies. These firms can provide guidance and support for running

⁶⁹ Yom-Tov, E., Shembekar, J., Barclay, S. et al. The effectiveness of public health advertisements to promote health: a randomized-controlled trial on 794,000 participants. *npj Digital Med* 1, 24 (2018). <https://doi.org/10.1038/s41746-018-0031-7>



effective testing strategies and methodologies. [Google Ads](#) has offered support to the [WHO and various national](#) and local governments to support targeted messaging on the pandemic.

- ▶ Test frequently and in manageable or small sample sizes. This will save costs and increase efficiency of messaging expenditures as the government will be able to direct funds to scaling the most effective message for specific populations instead of a “one size fits all” approach.

EXAMPLE: WITHOUT USE OF STRATEGY

In the United States, the lack of a shared strategy for testing different messages has led to a [large discrepancy](#) not only in the messages being communicated, but also in their effectiveness in different parts of the country.

A [study](#) by the Federal University of Minas Gerais found that, despite implementing more policies to fight COVID-19 than its neighbors, Brazil has a high mortality rate for the region. This can be attributed to the fact that, as the study found, despite the many policies, the government failed to effectively test them and properly carry out the most successful strategies. This failure carries through to communication and transparency, which were an especially big government failure identified by the study.

EXAMPLE: WITHOUT USE OF STRATEGY

The IDB's Behavioral Economics Groups has designed a [series of simple experiments](#) to test the effectiveness of different messaging strategies and the conditions/framing these messages work better in.



The Behavioral Insights Team conducted an online experiment to test the efficacy of how different messages and infographics contribute to individuals wearing facemasks correctly. Their experiment randomly assigned participants to one of 4 groups, each receiving a different message or a control of no message. The experiment revealed that 82% of participants recalled the information from WHO/BIT infographics compared to 77% for people in the control groups.

Encouraging people to stay at home whenever possible, wear a mask and keep their distance has become a priority for many governments. That is why, carrying out experiments to test the impact of cell phone text messages inspired by behavioral science principles on people's behavior during the pandemic is so important in the current context. IDB and partner governments are evaluating the impact of different text messages asking people to follow the recommendations of staying at home and wearing masks. 5 behavioral frameworks have been tested so far (civic duty, normal social, reciprocity with health professionals, self-efficacy and risk perception) based on the current state of the literature, mentioning loved ones (civic duty) seems to be the best strategy to guarantee the adherence of preventive COVID19 behaviors, shows one study from a high incidence city in South America⁷⁰.

The Truth campaign in the US tested a variety of different messaging frameworks and ultimately chose one that tested best with youth. Evaluators found through a pre/post quasi-experimental design evaluation that the

⁷⁰ Contribution from Florencia Lopez Boo, Lead Economist IDB and Head of LACEA BRAIN



elected messages of the Truth campaign were associated with declines in teen smoking⁷¹.

Experts

- [Florencia Lopez Boo](#), IDB, Lead Economist IDB and Head of LACEA BRAIN
- [Hala Madanat](#), San Diego State University, Director, School of Public Health
- [Mónica Wills Silva](#), Behavioural Insights Team, Principal Advisor, International Programme
- [David Halpern](#), Chief Executive, Behavioral Insights Team
- [Peter Bragge](#), Associate Professor, BehaviorWorks Australia

KEY STRATEGIES FOR IMPLEMENTATION

Recommendation 3: Data and innovation

3.2 USE THE RIGHT DELIVERY TOOL.

Challenge:

Different populations use different channels to get their information. A “one size fits all” approach to delivering messages results in certain populations not hearing the message because they don’t get their information from that medium (e.g. newspapers vs. television vs. facebook vs. Zoom vs. posters)

⁷¹ Matthew C. Farrelly, Kevin C. Davis, M. Lyndon Haviland, Peter Messeri, and Cheryl G. Healton, 2005: [Evidence of a Dose—Response Relationship Between “truth” Antismoking Ads and Youth Smoking Prevalence](#) American Journal of Public Health 95, 425–431, <https://doi.org/10.2105/AJPH.2004.049692>



Strategy to address the challenge:

When considering which tools to use to transmit messages, governments should understand the preferences of their constituencies and use tools that populations are most comfortable with. For example, live streams on social media platforms like facebook- which people use regularly and have fewer barriers to access-- tend to be more popular then webinars or conversations on platforms like Zoom or WebEx.

Key steps for implementation:

- ▶ Produce content for open television networks, the radio, newspapers and magazines, as well as posters for local administration to post.
- ▶ Follow [Rockefeller Foundations](#) rules of thumb for clear language: 1) Create emotional reactions, 2) Sound familiar and easy to understand, 3) Evoke visual images in the mind, and 4) Be easy to retain and repeat (use word-of-mouth).
- ▶ Work with local artists, such as comedians and musicians, especially in smaller towns.
- ▶ Capitalize on the countless tech tools available to streamline and improve messaging and communications processes. Chatbots, APIs, data visualization, [better website design](#) can all help get the message across more effectively and efficiently, thus reducing the burden on valuable public servants.
- ▶ Measure and monitor the success of specific tools through collecting data on engagement, clicks ([bit.ly](#)), participation, etc.

EXAMPLE: WITHOUT USE OF STRATEGY

West Midlands in the United Kingdom is a hotspot for COVID-19 cases and deaths, attributed to lack of adherence to public health guidelines. This lack of adherence is believed to be due to the fact that public health communications are not reaching specific segments of the population due to the (1) language of the message and (2) platform that the message is



delivered via. In terms of language, many people in these communities do not speak English, yet the messaging is all in English. In terms of platform, youth and elderly populations both use specific platforms to get their information so a communications strategy must account for this fragmentation of the information consumption landscape..

EXAMPLE: WITH USE OF STRATEGY

To beat “covid fatigue” the government of Peru started using TikToks and new modern tools to transmit its messaging so that it's more interesting and less boring than traditional messaging tools . One of the young epidemiologists working with the government, made a TikTok to explain the findings of an evidence report on Chlorine dioxide and COVID-19⁷².

The Inter-Agency Standing Committee Reference Group on Mental Health and Psychosocial Support in Emergency Settings, with support from global, regional and country based experts, in addition to parents, caregivers, teachers and children in 104 countries, developed a children's book “My Hero is You” to help families and children understand and cope with COVID-19. This is an example of segmenting messaging to specific populations to increase the reach and specificity of the message.

The WHO has hosted live streams on its official social media pages including TikTok to reach younger audiences. During these live streams experts share tips on how to stay safe and prevent the spread of the virus and also answer questions from viewers.

⁷² Interview with officials from Peru on August 28, 2020.



Experts:

- ▶ [Alexandra De Filippo](#), Behavioural Insights Team, Principal Advisor, Behavioural Insights Team
- ▶ [Raylene Yung](#), US Digital Response, CEO

KEY STRATEGIES FOR IMPLEMENTATION

Recommendation 3: Data and innovation

3.3 USE COMPETITIONS, PRIZES, AND HACKATHONS TO SOLVE SPECIFIC PROBLEMS.

Challenge

Experience and expertise are dispersed and not taken advantage of. The best ideas may be unknown because of professional silos or limited reach of those developing messaging.

Strategy to address the challenge

Local knowledge and talent which is widely dispersed can be very valuable in solving local challenges. Hackathons and other contests can bring together problem solvers from civil society to create innovative solutions to specific challenges, which can then be scaled up.

Key steps for implementation:

- ▶ Create an online challenge where teams can submit innovative solutions or ideas to solve specific problems. Offer financial, reputational, or institutional support as incentives.



- ▶ Ensure problems that need to be solved are well defined and have a clear, articulated goal for participants to achieve
- ▶ Host the challenge or hackathon on an open and accessible forum, such as [Your Priorities](#).
- ▶ If offering a prize, ensure that the prize is commensurate with the intended goal/outcome. Make sure it is culturally or otherwise appropriate for the participants of the challenge.
- ▶ Recruit a diverse representation of participants through targeted advertising, recruitment, and outreach.

EXAMPLE: WITH USE OF STRATEGY

The Massachusetts Institute of Technology (MIT) hosted a series of challenges to empower the public to take action on the COVID-19 crisis. This “[MIT COVID-19 Challenge](#).” MIT has run these challenges for specific audiences and specific groups of innovators, including for Latin American, African and Indian contexts.

The Ministry of Human Resource Development in India engaged the technology and innovation in the country to participate in the fight for COVID-19 by launching a competition/hackathon titled “[Fight Corona IDEAthon](#).” Participants had the opportunity to win cash prizes and secure incubator grants.

Experts:

- ▶ [Tris Dyson](#), Managing Director of Nesta Challenges, [Nesta Challenges](#)
- ▶ [Constance Agyeman](#), Head of International Development and Communities, [Nesta Challenges](#)



- ▶ [Daniel Berman](#), Lead, Global Health Team, [Nesta Challenges](#)
- ▶ [Aisha Lysejko](#), Lead, Operations, [Nesta Challenges](#)

KEY STRATEGIES FOR IMPLEMENTATION

Recommendation 3: Data and innovation

3.4 REDUCE PHYSICAL BARRIERS FOR PREFERRED BEHAVIORS.

Challenge

Small real world hurdles tend to be greatly amplified in the form of mental hurdles. People will often not follow preferred behaviors simply because of the number of physical steps required or the need to make conscious decisions about them.

Strategy to address the challenge

Governments should analyze what physical barriers make it more difficult or increase the perceived effort of following preferred behaviors, and minimize or remove these barriers. The fewer steps and the less thought a preferred behavior requires, the more likely people are to follow it.

Key steps for implementation:

- ▶ Identify the problem that needs to be addressed or the behavior that is preferred.
- ▶ List the physical barriers that are preventing individuals or communities from solving that problem or performing the preferred behavior.
- ▶ Design interventions that specifically address individual barriers.
- ▶ Test alternative interventions through experimental design to validate optimal interventions.



- ▶ Scale interventions that are most effective.

EXAMPLE: WITHOUT USE OF STRATEGY

A hospital in Denmark sought to reduce hospital-acquired-infections by maximizing hand sanitization. It was observed that most sanitizer dispensers were placed above sinks inside the hospital ward, and only 3% of visitors used them⁷³.

In March, 2020 Bogota city hall sought to reduce the demand for public transportation, to minimize crowding and consequently infections. However, the millions of workers who could not stay at home did not have an alternative means of safe and affordable transportation⁷⁴.

EXAMPLE: WITH USE OF STRATEGY

In Denmark study placed hand sanitizing stations centrally at the entrance to the hospital wards, so that all visitors entering the ward would necessarily walk by them. By eliminating the need for visitors to walk to the sanitizing stations, even if it was only a few steps, the study increased hand sanitization rates to 20%⁷⁵.

⁷³ "Nudging Hospital Visitors' Hand Hygiene Compliance" <https://inudgeyou.com/en/nudging-hospital-visitors-hand-hygiene-compliance/>. Accessed 16 Oct. 2020.

⁷⁴ "Bogotá dispone de 117 kilómetros de Ciclovías temporales" https://www.movilidadbogota.gov.co/web/noticia/bogota_dispone_de_117_kilometros_de_ciclovias_temporales_0. Accessed 16 Oct. 2020.

⁷⁵ "Nudging Hospital Visitors' Hand Hygiene Compliance" <https://inudgeyou.com/en/nudging-hospital-visitors-hand-hygiene-compliance/>. Accessed 16 Oct. 2020.



Bogota implemented 80km of temporary bike lanes from 6:00am to 7:30pm to supplement the pre-existing 550km of bike routes, by closing off traffic lanes to cars. By removing one of the main barriers of urban cycling, which is contending with cars, Bogota offered its citizens a safer - both in terms of infection and from crashes - and affordable transportation alternative⁷⁶. In the first two months, over 920,000 cyclists had used these bike lanes⁷⁷.

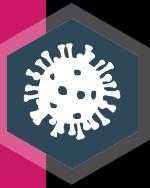
According to the [World Health Organization](#), the second most common cause of unintentional injury deaths is injuries related to falling. To address falls on stairs, researchers developed the “dead person silhouette” which was painted at the bottom of staircases in office buildings to nudge people to use the handrail on the staircase to avoid accidents. [A review of the intervention](#) showed that the nudge increased handrail usage by 9.2 percentage points.

Experts

- [Mónica Wills Silva](#), Behavioural Insights Team, Principal Advisor, International Programm
- [Florencia Lopez Boo](#), IDB, Lead Economist IDB and Head of LACEA BRAIN
- [Dan Brown](#), Senior Advisor, Behavioural Insights Team

⁷⁶ "Bogotá dispone de 117 kilómetros de Ciclovías temporales" https://www.movilidadbogota.gov.co/web/noticia/bogota_dispone_de_117_kilometros_de_ciclovias_temporales_0. Accessed 16 Oct. 2020.

⁷⁷ "Coronavirus en Bogotá: ciclovías temporales se quedarán" 20 May. 2020, <https://www.eltiempo.com/bogota/coronavirus-en-bogota-ciclovias-temporales-se-quedaran-despues-de-la-cuarentena-497782>. Accessed 16 Oct. 2020.



VULNERABLE POPULATIONS

On September 24, 2020, a group of 28 experts from across the world joined officials representing the Argentine, Bahaman, Ceará-Brazilian, Costa Rican, Honduran, Mexican and Peruvian governments in a two-hour advising session to identify novel solutions that leaders can use to better protect vulnerable and marginalized populations in their fight against COVID-19.

The discussion focused on five topics around how to support vulnerable populations during the pandemic, including:

1. Who are vulnerable and marginalized populations? What are ways to categorize or formalize these groups so that they can benefit from policies and programs? What data is needed to support these definitions?
2. What are the main categories of interventions that are needed by vulnerable populations?



3. What are the best strategies to address disparities caused or exacerbated by social and economic vulnerabilities?
4. What are the best strategies to address disparities caused or exacerbated by physical health vulnerabilities? How do race, ethnicity, socioeconomic status and other characteristics interact with physical health vulnerabilities to create disparities? and
5. What are the best strategies to address disparities caused or exacerbated by behavioral health vulnerabilities?

Following the advisory session, participants from the Latin American and Caribbean governments selected those proposed solutions which they were most interested in implementing. The GovLab then conducted further research, consulted various subject matter experts and potential partners, and developed this high-level toolkit that Latin American and Caribbean governments can use to inform their efforts to combat COVID-19. The recommendations presented in this chapter are not intended to be exhaustive but rather they reflect the articulated interest of national governments who are participating in the Smarter Crowdsourcing in the Age of Coronavirus project.

EXECUTIVE SUMMARY

Problem Statement:

The spread of COVID-19 has laid bare inequities and disparities across the world. The virus is not a “great equalizer” as some politicians had touted, but rather it has had disproportionate impacts across various social, age, ethnic, socioeconomic, and cultural groups. Social determinants of health have created inequities and disparities in infection rates and severity of the outbreak in specific populations



including among the elderly, indigenous, racial and ethnic minorities, the impoverished, sex workers, and other vulnerable or marginalized populations.

Recommendations and strategies to address the problem:

Supporting marginalized and vulnerable populations requires policies, programs, and investments that specifically consider those with (1) social and economic vulnerabilities, (2) physical health vulnerabilities, and (3) behavioral health vulnerabilities. The best strategies will both (1) reach the individuals who are identified as vulnerable and (2) address or attempt to remedy the conditions that are making them particularly vulnerable during the pandemic. The following 3 recommendations offer strategies for how governments in Latin America and the Caribbean can take concrete steps to support vulnerable and marginalized populations affected by the ongoing pandemic.

- 1. Improve Data Management:** Improve data management (collection, storage, and analysis) processes to support evidence-driven programs and policies that identify vulnerable populations and account for their needs.

Key Strategies for Implementation

- ▶ Review data collection processes and ensure all data systems adequately collect disaggregated data differentiating vulnerable populations.
- ▶ Build coalitions with “trust brokers” (e.g. NGOs, Civil Society Organizations, and community leaders) and affected populations to co-design data collection, analysis and use processes.
- ▶ Collect disaggregated data at strategic locations and service delivery touchpoints.
- ▶ Strengthen government capacity to interpret new and existing data, focusing on vulnerable populations and publish data and analysis publicly.



RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
Five small banknote icons representing financial resources.	< 9 months	Five heart symbols in circles representing positive community impact.	Five building icons representing institutional feasibility.

For additional information see: [Implementation Memorandum](#)

2. **Establish Public-Private Partnerships:** Establish Public-Private Partnerships that support vulnerable populations by filling service delivery gaps that community-based organizations, governments, and NGOs struggle to execute efficiently working on their own, while also benefiting the private institutions by providing them with financing and other resources.

Key Strategies for Implementation

- ▶ Establish and coordinate a committee of stakeholders whose businesses, non-profits, and foundations directly serve or impact vulnerable populations to identify and address the needs of vulnerable populations.
- ▶ Develop partnerships and engage in strategic contracts with companies who have comparative advantages or corners on specific markets like housing, transportation, diagnostic testing, and/or technology services.
- ▶ Create a public commission, specifically including intended beneficiaries of the services, tasked with holding public-private partnership contracts accountable for delivering services/results through a cost effective, timely, and transparent process.
- ▶ Partner with private sector firms to help them meet their human resource needs by developing and implementing retraining and reskilling programs that help vulnerable groups adapt to the new-normal post- COVID-19.



SMARTER CROWDSOURCING CORONAVIRUS

coronavirus.smartercrowdsourcing.org

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 3 months		
For additional information see: Implementation Memorandum			

- 3. Engage The Public And Civil Society Organizations:** Engage the public and civil society organizations to support vulnerable populations by capitalizing on existing knowledge and expertise, leveraging local assets and resources, building trust with intended beneficiaries, and strengthening the capacity of communities.

Key Strategies for Implementation

- ▶ Work with local community leaders to tailor policy decisions to the needs of the community.
- ▶ Partner with, fund, and support women and their families, women-owned businesses, and grassroots organizations specifically serving women.
- ▶ Detect, support and amplify existing community-led initiatives and solutions.
- ▶ Crowdsource solutions and expertise from the public and affected populations through prizes, competitions, or online innovation sessions.

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 3 months		
For additional information see: Implementation Memorandum			



This chapter discusses the above 3 recommendations and offers implementation plans for how governments in Latin America and the Caribbean can take concrete steps to support vulnerable and marginalized populations affected by the ongoing pandemic. The chapter includes the following sections:

- ▶ **Detailed recommendations:** Discussion of the above 3 recommendations including (1) strategies to achieve the intended results and (2) support for why the recommendation will help governments protect vulnerable populations;
- ▶ **Implementation plans for the recommendations:** The implementation plans take each of the recommendations and discuss the strategies needed to implement them. These sections are designed to be action guides for government workers who are looking for guidance on specific actions they can take to support vulnerable and marginalized populations.

TOPIC BACKGROUND AND PROBLEM DESCRIPTION

Issues of vulnerability and the disproportionate impact of the pandemic on specific communities have pushed governments to make hard decisions with regard to prioritizing testing resources or other resources in short supply. Across North America, Latin America and the Caribbean, and Europe, failures from public health officials to adequately protect elderly populations contributed to a tragically outsized impact on individuals living in nursing homes. In the USA, where the tragedy has been well documented and most pronounced, the elderly population accounted for only 8 percent of infections but over 40 percent of deaths. The pandemic also has an outsized impact along racial and socioeconomic lines where systemic exclusion and disenfranchisement resulted in depleted healthcare, education, and resiliency resources for poor or marginalized populations all of which compounded the impact of the virus. Furthermore, specific populations, due to systemic/structural factors, are more likely to be deemed essential workers



(those working in transportation, food service, frontline health workers or community health workers, or those working in the general service industries) which increases their exposure to the virus.

The identification of these vulnerable populations by governments creates the impetus to serve those populations with additional services. Supporting vulnerable and marginalized populations during the pandemic is an articulated priority of many national and subnational governments across the world.⁷⁸ As a high-level goal and expression of national values, this priority seems clear, but in practice countries struggle to deliver services and support to those populations once they are identified. Governments struggle to support vulnerable populations for a variety of reasons including lack of data, inadequate communication strategies, lack of buy in and support from the vulnerable populations, mistrust of government, political pressures and cultural biases, gender inequality, and racial or ethnic discrimination. The root problems in the below sections discuss these issues in further detail. Below, we present two useful frameworks for considering vulnerable populations in the context of the pandemic.

Pillar questions framework: The answers to the following questions frame how a given government may begin to develop programs, policies and other investments to address the needs of vulnerable populations.

1. **Identifying vulnerable and marginalized populations.** How will the government distinguish, for programmatic and policy reasons, who is a vulnerable population versus who is not a vulnerable population? This will necessarily be based on available clinical information, socio/economic factors, cultural factors, etc.

⁷⁸ <https://www.unrisd.org/covid-19-vulnerable-groups-report>



2. **How and why are they at higher risk from COVID-19?** Answering this question will get to the root causes of why a population may be vulnerable. Once a government understands why a population is vulnerable they can adequately tailor their programs and policies to address root causes or immediate needs.
3. **What are the best strategies to address disparities caused or exacerbated by the pandemic?** The answer to this question is necessarily based on the answer to the previous two questions. The best strategies will both (1) reach the individuals who are identified as vulnerable and (2) address or attempt to remedy the conditions that are making them particularly vulnerable during the pandemic.

Categorical framework: The below categories frame how a government may categorize different types of vulnerabilities that will need to be supported over the duration of the pandemic. These broad categories complement the answers to the pillar questions above.⁷⁹

1. **Social and economic vulnerability.** This category broadly captures populations and groups of people who are at higher risk of contracting, spreading, or developing serious complications from COVID-19 due to a set of social and economic conditions and may include such groups as: populations suffering from structural racism, ethnic or cultural minorities, poor populations with limited access to healthcare or other essentials, essential workers, women and children, migrant workers, populations living in congregate housing, the homeless or housing insecure, incarcerated populations, or the food insecure.
2. **Physical health vulnerability:** This category broadly captures populations and groups of people who are at higher risk of contracting, spreading, or developing

⁷⁹ <https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-implications-of-covid-19-for-vulnerable-populations>



serious complications from COVID-19 due to physical health conditions such as: cancer, chronic kidney disease, COPD (chronic obstructive pulmonary disease), immunocompromised state (weakened immune system), obesity (body mass index of 30 or higher), serious heart conditions (such as heart failure, coronary artery disease, or cardiomyopathies), sickle cell disease, type 2 diabetes, pregnancy, the elderly, elderly living in nursing homes, asthma, hypertension or high blood pressure, immune deficiencies, HIV/AIDS, those using immune weakening medicines, pulmonary fibrosis, or populations who smoke.

3. **Behavioral health vulnerability:** This category broadly captures populations and groups of people who are at higher risk of contracting, spreading, or developing serious complications from COVID-19 due to behavioral health conditions such as: mental illness, learning disorders, or substance use disorders. The immense emotional and mental health strain that the virus has put on populations because of policies like social distancing or closing institutions like schools has increased the number number of people experiencing psychosocial outcomes, including stress, depression, irritability, insomnia, fear, confusion, anger, frustration, boredom, and stigma associated with quarantine.⁸⁰ While many affected populations may recover after the pandemic subsides, certain psychopathologies, such as PTSD, depressive and anxiety disorders are likely to remain in the population.⁸¹

⁸⁰ Pfefferbaum B, North CS. Mental Health and the Covid-19 Pandemic. *N Engl J Med.* 2020;383(6):510-512. doi:10.1056/NEJMp2008017 <https://www.nejm.org/doi/full/10.1056/NEJMp2008017>

⁸¹ Pfefferbaum B, North CS. Mental Health and the Covid-19 Pandemic. *N Engl J Med.* 2020;383(6):510-512. doi:10.1056/NEJMp2008017 <https://www.nejm.org/doi/full/10.1056/NEJMp2008017>



Problem Overview

For non-random⁸² (ie. identifiable and specific) reasons, specific populations are at higher risk of contracting, spreading, and having serious complications from COVID-19. Specific populations, because of their health conditions, individual behaviors or structural factors in their lives and environments are at different risks for contracting and having complications from the virus. These non-random factors are the result of specific root causes and problems. Addressing these problems at their source, where possible, will aid governments in decreasing the outsized impact on specific populations. The frameworks above discuss ways of considering the identities and needs of these populations, but as discussed above, the identification of vulnerable populations is only the first step in supporting vulnerable and marginalized populations. The identification of vulnerable populations creates the impetus to serve those populations with additional and targeted programs, services, policies and investments. This section discusses the root causes contributing to a status of vulnerability and marginalization or compound existing vulnerabilities leading to increased risk and consequences during the pandemic. Addressing these problems at their root will enable governments to support vulnerable and marginalized populations more effectively.

Employment status and occupation: During the pandemic, when public health officials recommended stay at home orders and mandated closures as the preferred policy to stem the spread of the virus, governments across the world defined various sectors as “essential” in order to minimize the impact on the broader population. Essential services have included agriculture, food services, utilities, sanitation, healthcare, energy sectors, and transportation, among others. These “essential services” employ “essential workers” or populations who are exempt from the stringent and necessary control of businesses and the economy during the

⁸² If COVID-19 impacted populations randomly, scientists and public health experts would see similar infection rates, prevalence, and incidence among various populations.



pandemic. Because essential workers continue to work in high-risk occupations and locations during the pandemic, these populations are at higher risk for contracting and spreading the virus, both of which put them at higher risk for having complications from the virus. Essential workers as a population, compared to their nonessential counterparts, are on average poorer, racial and ethnic minorities, and less educated. In New York City for example, over 60% of COVID-19 deaths have been in black and Latino populations, who make up a large part of the essential workforce.⁸³ In addition to their work creating specific health vulnerabilities for these populations, there are spillover effects in other areas of their lives such as childcare and inability to access essential services due to the fact that they are working when other services remain open. Some governments or subnational governments have defined these sectors officially, and they generally include individuals working in energy, child care, water and wastewater, agriculture and food production, critical retail (i.e. grocery stores, hardware stores, mechanics), critical trades (construction workers, electricians, plumbers, etc.), transportation, nonprofits and social service organizations.⁸⁴

No clear agreement on who is vulnerable and marginalized and what vulnerability means: As indicated from other root causes discussed in this section, government officials, the public, and stakeholders in a society do not always agree on definitions of vulnerabilities. Having a clear definition of which populations are vulnerable is a precondition for providing any kind of support to these populations or developing any programs or policies where vulnerable populations are expected to be the beneficiary. The lack of clear definitions and qualifying criteria thus creates numerous administrative and operational barriers to providing support. The pandemic has intensified resource constraints already hampering government

⁸³ The Lancet. The plight of essential workers during the COVID-19 pandemic. *Lancet*. 2020;395(10237):1587. doi:10.1016/S0140-6736(20)31200-9

⁸⁴ [https://www.ncsl.org/research/labor-and-employment/covid-19-essential-workers-in-the-states.aspx#:~:text=Water%20and%20wastewater,%2C%20plumbers%2C%20etc.'\).](https://www.ncsl.org/research/labor-and-employment/covid-19-essential-workers-in-the-states.aspx#:~:text=Water%20and%20wastewater,%2C%20plumbers%2C%20etc.)



decision making; the lack of objective or agreed upon criterion for vulnerabilities makes transparent resource allocation incredibly difficult.

Gender Inequality: It is important to also consider the disproportionate impact and limitations that COVID-19 imposes on women and girls, specifically in societies with stark gender roles such as those in Latin America. The pandemic is deepening pre-existing inequalities and exposing vulnerabilities across all spheres, thus exacerbating the negative impact of COVID-19 on women and girls. Women are far more likely to bear the brunt of the economic and social consequences of a pandemic. Lockdown measures and school closures disproportionately affect women and girls; according to Plan International, adolescent girls are at a higher risk for long-term consequences when their education is interrupted. Violence against women has also intensified as a result of the pandemic. Specifically, there has been an uptick of domestic violence due to lockdowns that put women in vulnerable situations. The COVID-19 outbreak has also increased the caregiving duties of women and girls who must now care for sick family members. This is specifically true in rural communities where women are often the caregivers and must endure the burden of unpaid domestic work. It is also crucial to note that most care workers and nurses are women. According to the World Economic Forum, women make up 70% of all health and social services staff worldwide. The economic challenges brought about by the pandemic also put women and girls at a higher risk of exploitation. Job and economic insecurity increase the likelihood of women being exploited or taking on high-risk work for economic survival. Universally, women have limited access to social protections, earn less, hold less secure jobs, and in developing economies, 70% of women are employed in the informal sector. At the beginning of the pandemic, the UN Secretary-General warned that COVID-19 could reverse progress on gender equality. Thus, any policy response to address the economic fallout of the pandemic that seeks to protect vulnerable populations affected by COVID-19 must include a gender lens.



Lack of data on vulnerable and marginalized populations: A lack of data has generally hampered the government's ability to respond to the pandemic. In addition to the lack of agreed upon criteria defining vulnerable populations, governments often have scant data on these populations under consideration. This means that governments don't know who these people are, where they live, or how to reach them to offer support or specific services. The lack of data is particularly pronounced for racial and ethnic minorities, rural populations, the indigenous, or individuals living in slums or informal settlements. Without demographic data or other key geographic or census data, healthcare workers and government officials are not able to address inequities in health outcomes that result from the pandemic.⁸⁵

Mistrust in government authorities: Systemic socioeconomic, cultural, racial disenfranchisement correspond with a status of vulnerability. These statuses interact with other social determinants of health, such as education, housing, built environment and healthcare compounding the impacts of the virus. In addition to being more affected by the virus, these populations tend to have higher mistrust and distrust in government. In many, if not most cases, this mistrust is warranted because of historic government abuse and systemic oppression of specific populations. Mistrust in government may cause certain populations to refuse important public health guidance, be skeptical of lifesaving clinical interventions (ie. vaccines), or avoid interactions with government or healthcare authorities writ large.

Accessibility: While governments, public and private stakeholders have invested considerable resources in public health and economic infrastructure to supporting

⁸⁵ <https://www-propublica-org.cdn.ampproject.org/c/s/www.propublica.org/article/early-data-shows-african-americans-have-contracted-and-died-of-coronavirus-at-an-alarming-rate/amp>



the response (eg. testing sites, remote work opportunities, isolation and quarantine protocols, etc.) many times these investments overlook the specific needs and abilities of vulnerable and marginalized populations. For example, populations will have non-random differences in when they are available to seek testing, where they can get essential services, access to healthcare, literacy levels, and other important factors to consider when organizing a population-level pandemic response. While work from home is an effective strategy to minimize exposure to and spread of the virus in professional environments, workers in the service sector or manufacturing sector do not have the option to perform their work remotely. Additional examples of accessibility issues often overlooked by policy makers, employers or public health officials include:

- ▶ **Literacy and language barriers:** are populations adequately able to comprehend public health directives or information campaigns? Is information presented in a way that makes it comprehensible to illiterate or low-literate individuals? Is it available in multiple languages?
- ▶ **Locational barriers:** are services designed in a way that makes them easily accessible to all populations? What are the characteristics of specific vulnerable populations that need to be considered when implementing a program or a policy. For instance, how can testing sites be designed to accommodate individuals with limited access to transportation or with access and functional needs (AFN)?
- ▶ **Cost:** are certain programs, technologies, or public health policies simply cost prohibitive for certain vulnerable populations? For example, homeless populations or populations living in densely occupied areas (like informal settlements) are not able to quarantine or isolate themselves in their habitual residence nor can they afford to use a hotel. Furthermore, these individuals may



need additional support to secure food, healthcare services and other essentials during a course of isolation or quarantine.

Physical health conditions: Vulnerable individuals and groups of people who are at higher risk of contracting, spreading, or developing serious complications from COVID-19 due to physical health conditions such as: cancer, chronic kidney disease, COPD (chronic obstructive pulmonary disease), immunocompromised state (weakened immune system), obesity (body mass index of 30 or higher), serious heart conditions (such as heart failure, coronary artery disease, or cardiomyopathies), sickle cell disease, type 2 diabetes, pregnancy, the elderly, elderly living in nursing homes, asthma, hypertension or high blood pressure, immune deficiencies, HIV/AIDS, those using immune weakening medicines, pulmonary fibrosis, or individuals who smoke.

Systemic and structural racism, prejudice, and exclusion: Racism, xenophobia and discrimination have created systems that disadvantage minorities and other specific groups (gender, sexual orientation, religion, ethnicity) putting them in vulnerable economic and social situations. Discrimination, racism, prejudice and exclusions often interact and are frequently enforced through formal and informal systems, including legislative and regulatory frameworks.⁸⁶ In terms of physical health, this has resulted in specific populations being at higher risk of chronic conditions weaken their immune systems and make them more vulnerable to respiratory illnesses or chronic diseases such as asthma, heart disease, hypertension and diabetes.⁸⁷

⁸⁶ <https://www.unrisd.org/covid-19-vulnerable-groups-report>

⁸⁷ <https://www-propublica-org.cdn.ampproject.org/c/s/www.propublica.org/article/early-data-shows-african-americans-have-contracted-and-died-of-coronavirus-at-an-alarming-rate/amp>



Structural constraints in the built environment: Populations may be at increased risk from the pandemic making them more vulnerable due to a variety of factors in their built environment. The characteristics of a specific built environment overlaps with other root causes of vulnerability such as racism, poverty, essential worker status, and health conditions. As with other root causes discussed in this section, individuals who experience a built environment that makes them more vulnerable (eg. lack of transportation, poor housing stock, lack of access to clean water) are likely to experience other causes of vulnerability as well.

- ▶ **Housing stock:** People experiencing homelessness are uniquely vulnerable to contracting and to experiencing harsher effects of the virus.⁸⁸ Areas with depleted or informal housing such as slums and informal settlements are hotspots for COVID-19 transmission. These areas are often overcrowded and lack access to public services such as healthcare, water and sanitation, and public transportation. Public health measures like social distancing and hand washing are often not possible in these locations.⁸⁹
- ▶ **Public spaces:** Poor and under resourced communities often lack access to public spaces. Access to public spaces helps reduce risk of COVID-19, as an airborne disease, because the disease is less concentrated in open spaces.⁹⁰ In addition, positive externalities of access to public spaces include reduction of overcrowding and encouraging exercise and healthier lifestyles.⁹¹
- ▶ **Water, sanitation and hygiene:** As mentioned above for areas with subpar housing stock, water and sanitation are critical conditions for stemming the spread of COVID-19. Without adequate access to clean water or sanitation

⁸⁸ <https://endhomelessness.org/coronavirus-and-homelessness/>

⁸⁹ <https://www.worldbank.org/en/news/feature/2020/06/10/covid-19-turns-spotlight-on-slums>

⁹⁰ <https://www.worldbank.org/en/news/feature/2020/06/10/covid-19-turns-spotlight-on-slums>

⁹¹ <https://www.worldbank.org/en/news/feature/2020/06/10/covid-19-turns-spotlight-on-slums>



services, populations are not able to adequately wash their hands and clean high touch surfaces. This is an issue in both rural and urban areas.

REGIONAL CONTEXT

Argentina

Context and Actions Taken:

- ▶ The National Government has been working with provinces to carry out provincial operating plans, where one of the pillars is the increased support of vulnerable groups, such as the elderly population and indigenous communities. Provinces have also been working with local volunteers to ensure the needs of the vulnerable population are met, by helping in tasks such as going grocery shopping for them. A person/population is considered vulnerable based on their risk of contracting COVID-19 and measured against the health care system's ability to provide them with a timely response. In rural jurisdictions, where health systems tend to be less resourced, the response capacity is easily overburdened.

Challenges:

- ▶ In Argentina, low income and informal neighborhoods -- with limited access to infrastructure and resources -- have been particularly affected by COVID-19.



Bahamas

Context and Actions Taken:

- ▶ The Government released an [emergency relief fund](#) focusing on unemployed workers or those given reduced hours in the tourism sector. A specific plan was created for [self-employed Bahamians](#), who wouldn't typically qualify for benefits. The [National Food Committee](#) has been established to promote food security among vulnerable populations throughout the pandemic. The plan includes [incentives](#) to strengthen local sustainable food production, and make the country more self-sufficient.

Challenges:

- ▶ All of The Bahamas' hospitals are concentrated in the islands of New Providence and Grand Bahamas.⁹² While the majority of Bahamians live in these islands, for a significant part of the population reaching healthcare is a logistical challenge.⁹³ ⁹⁴ Large socioeconomic disparity which has made it challenging to offer access to healthcare services for low income populations.

⁹² "Bahamas - Pan American Health Organization." <https://www.paho.org/salud-en-las-americas-2017/?p=2291>. Accessed 29 Jul. 2020.

⁹³ "Bahamas - PAHO/WHO | Pan American Health Organization." <https://www.paho.org/en/bahamas>. Accessed 29 Jul. 2020.

⁹⁴ "Bahamas Population (2020) - Worldometer." <https://www.worldometers.info/world-population/bahamas-population/>. Accessed 29 Jul. 2020.



Ceará- Brazil

Context and Actions Taken:

- With the federal Government's monthly benefit of R\$600.00 (value in USD), the state Government has focused on lower income communities' basic needs. This includes the suspension of electricity and water bills for some, the distribution of cooking gas, and of food vouchers for public school students. Ceará hired small businesses to produce masks to distribute to vulnerable populations. In the capital, those who test positive and lack an environment to safely and effectively self isolate have the option of being accommodated in the CFO sports complex.

Challenges:

- The large informal economy has proven difficult to regulate. Messaging can be difficult with 22.2% of those older than 15 being functionally illiterate.⁹⁵ 20.4% of households lack adequate water supply.

Costa Rica

Context and Actions Taken:

- The second wave of COVID-19 is concentrated in the agricultural sector and is affecting migrant workers in the agricultural, packing, and construction sectors. From the beginning of the crisis, these vulnerable populations were unable to obey stay-at-home orders due to food insecurity and the need to feed and provide for their families. After a call

⁹⁵ "Indicadores Sociais do Ceará 2018 - Ipece." https://www.ipece.ce.gov.br/wp-content/uploads/sites/45/2020/03/Indicadores_Sociais_2018.pdf. Accessed 18 Aug. 2020.



for international support, Costa Rica received four million dollars to provide medical insurance from the Costa Rican Social Security Fund for approximately 3,600 Nicaraguan refugees and asylum seekers that test positive for COVID-19.

Challenges:

- ▶ Refugees and asylum seekers makeup a large portion of the vulnerable populations in Costa Rica. There are over 81,000 refugees in Costa Rica and COVID-19 has only worsened their situation given the high levels of unemployment and the fact that humanitarian aid is insufficient to support these populations for sustained periods of time. The majority of refugees also live in crowded conditions that increase their vulnerability.

Honduras

Context and Actions Taken:

- ▶ The Honduran government has deployed significant resource intensive logistical efforts with help from the armed forces, such [helicopter ambulances](#) and [emergency water and air supply](#) of medical equipment to hospitals. Honduras has experience with medical brigades -- Rapid Response Teams (ERR) -- to deliver care to isolated communities. The brigades are now being employed to reduce the strain on healthcare infrastructure, as well as to reach isolated communities. [ERRs](#) allow healthcare workers to reach people who wouldn't otherwise seek medical care for screening, testing, monitoring and to deliver medication or other forms of care. Honduras also created the [Solidary Honduras Operation](#), to



distribute basic goods to low-income families in partnership with private suppliers. With a focus on different groups identified to be financially vulnerable, such informal workers, street vendors, or those on welfare, the operation has reached millions of Hondurans at risk of food insecurity.^{96 97}

Challenges:

- ▶ Honduras lacks the appropriate infrastructure to serve all of its territory; many of the healthcare resources are centralized, yet transportation infrastructure is lacking.

Mexico

Context and Actions Taken:

- ▶ Mexico has been lauded for having an extensive and non-exhaustive list of who constitutes as vulnerable employees under COVID-19. The definition of vulnerability incorporates a gender approach to their policy response to COVID-19. Labeling women as vulnerable employees, is a protective mechanism to ensure their economic benefits and wages are protected, taking into account that women will most likely take care of children until nurseries and schools reopen. Mexico's Secretariat of Health in partnership with the National Institute for Indigenous People has created a guide for the care of indigenous and afromexican

⁹⁶ "Más de 1.4 millones de familias vulnerables fueron asistidas ..." 5 Jun. 2020, <https://sedena.gob.hn/2020/06/05/mas-de-1-4-millones-de-familias-vulnerables-fueron-asistidas-por-el-gobierno-durante-la-fase-ii-de-operacion-honduras-solidaria/>. Accessed 30 Jun. 2020.

⁹⁷ "En la tercera fase de la Operación Honduras Solidaria se han" 13 Aug. 2020, <https://sedena.gob.hn/2020/08/13/en-la-tercera-fase-de-la-operacion-honduras-solidaria-se-han-atendido-mas-de-554278-hogares-vulnerables-de-seis-municipios-priorizados/>. Accessed 20 Aug. 2020.



[communities facing COVID-19](#), which is available in 61 different indigenous languages and dialects.

Peru

Context and Actions Taken:

- ▶ Traditional vulnerable populations whose situation has worsened with COVID-19 include indigenous populations, those living in the Peruvian Amazon, and rural populations below the poverty line. The government also includes healthcare personnel and the elderly in the group of vulnerable populations. The multi-sectoral Operation Tayta was announced in July 2020 to identify and test vulnerable populations, then isolate and support those who test positive. The government of Peru also conducts humanitarian flights to provinces that are far away from the capital and that do not have adequate health or medical services.

Challenges:

- ▶ The living and working conditions of the country have impeded Peruvians from complying with distancing measures. The large informal economy makes stay at home orders infeasible. Citizens in the informal economy also do not have access to basic health services, education, nutrition, or to financial safety nets. A growing number of Peruvians face food insecurity due to the economic downturn.



Examples:

- ▶ The program “Te Cuido Peru” aims to bridge this gap between health orders and potential food insecurity by delivering food and basic necessities to those in vulnerable conditions.

RECOMMENDATIONS

The following sections of this chapter are implementation plans for each of the above recommendations. These implementation plans take each of the recommendations and discuss the strategies needed to implement them. These sections are designed to be action guides for government workers who are looking for guidance on specific actions they can take to support vulnerable and marginalized populations.

Each section is structured with the same informational layout: Detailed guides for each strategy that includes: Strategy summary; Key actions for implementation; Examples – positive examples of how the strategy can support vulnerable populations during pandemic; Context for how the strategy will support vulnerable populations; and Experts to consult.⁹⁸

RECOMMENDATION 1: IMPROVE DATA MANAGEMENT

Detailed Recommendation:

Improve data management (collection, storage, and analysis) processes to support evidence-driven programs and policies that identify vulnerable populations and account for their needs.

⁹⁸ If governments would like to contact these experts, please email henri.hp@thegovlab.org for an introduction/facilitated connection.



Key strategies for implementation:

- ▶ Review data collection processes and ensure all data systems adequately collect disaggregated data differentiating vulnerable populations.
- ▶ Build coalitions with “trust brokers” (e.g. NGOs, Civil Society Organizations, and community leaders) and affected populations to co-design data collection, analysis and use processes.
- ▶ Collect disaggregated data at strategic locations and service delivery touchpoints.
- ▶ Strengthen government capacity to interpret new and existing data, focusing on vulnerable populations and publish data and analysis publicly.

Why this recommendation supports vulnerable populations:

- ▶ Diverse communities have different health, language, economic and social needs, and those needs cannot be recognized or met if governments don’t collect the data that identifies different groups in their entirety.
- ▶ Partnering with groups that have established roots in specific vulnerable communities, such as NGOs and community organizations, can help governments institutionalize and capitalize on the extensive work these organizations have already done to build trust.
- ▶ Certain services have strategic value for the collection of sex, age, race/ethnicity, and other disaggregated data, and ensuring that data is collected at these locations in a systematic and standardized manner will help make vulnerable populations more “visible” to government programs and interventions.
- ▶ Once governments have better data on vulnerable populations, they need to build the capacity to use that data. This increased capacity should be used to (1) integrate data more consistently into decision making and policy making processes and (2) publish data and analyses publicly to increase transparency and trust.



Implementation Plan for Improving Data Management

Strategy to implement recommendation:

Review data collection processes and ensure all data systems adequately collect disaggregated data differentiating vulnerable populations.

Key actions:

- ▶ List existing data collection and storage systems the government controls. A thorough audit of these systems will look both at national, subnational, and local data sources.
- ▶ Identify opportunities to capitalize on existing data from across government ministries or agencies or health centers.
- ▶ Review existing data collection and storage systems to ensure they capture disaggregated data by sex, age, gender, ethnicity, race, education level, socioeconomic status, and other important demographic and social factors.
- ▶ Standardize data collection processes to ensure sex, age, race, and ethnicity are adequately captured across all systems.
- ▶ Review each analysis to consider which populations are missing from current data collection processes and how they can be captured by existing processes.
- ▶ Avoid missed uses of data.⁹⁹

Considerations for governments prior to implementing the strategy:

- ▶ Disaggregated data describing vulnerable populations may already be available at the national level (e.g., Ministry of Health) or sub-national level (e.g., district health).

⁹⁹ Missed use of data is when useful data exists (or could exist) but is not used. Missed use can be avoided by reviewing all available datasets and using them to solve problems when such use (or re-use) is appropriate and legitimate. At each stage of the data lifecycle, children's rights actors should assess the consequences if the information is not collected or put to use. These consequences could include a failure to deliver services, a failure to identify vulnerable populations, or denial of access to data in the future



- ▶ Few governments have truly centralized data systems, so for cases where systems are decentralized, governments must understand what data exists, where it is stored, how it is structured, and who owns the data.
- ▶ Diverse communities have different health, language, economic and social needs, and those needs cannot be recognized or met if we don't collect the data that identifies different groups in their entirety.
- ▶ Many governments already collect and archive data on vulnerable populations, much of which can go untouched after collection due to time constraints, technical knowhow constraints (ie. staff and trained experts), or lack of data sharing processes between offices and agencies.

EXAMPLE(S) OF STRATEGY IN ACTION

The [County of Los Angeles](#) was tasked with compiling a report on disaggregated data in order to ensure they are adequately protecting vulnerable populations and that they are considering racial and socio-economic issues in their response to COVID-19.

The [Inclusive Data Charter](#), is working with governments, including the Philippine Statistics Authority, the Government of Colombia's National Administrative Department of Statistics, the Office of the Chief Government Statistician Zanzibar and the Ministry of Labour and Social Protection of Kenya to ensure inclusive and disaggregated data. Through this collaboration the Colombia's National Administrative Department of Statistics developed an interactive tool that identifies zones that are more vulnerable to COVID-19 based on demographics.



The [COVID-19 Sex-Disaggregated Data Tracker](#) is a database that captures sex- and gender-disaggregated data on COVID-19 that highlights differences in COVID-19 infection, illness and death among women and men from across the entire world. The intention of the project is to create the evidence base to identify and address gender-disparities in health outcomes and to inform gender-responsive approaches to COVID-19. and to address gender-disparities in health outcomes.

Experts:

- ▶ Tara Cookson, Director, [Ladysmith](#)
- ▶ Lauren Harrison, Team Lead, Data Ecosystems, [PARIS21/OECD](#)
- ▶ Martin Oelz, Senior Specialist on Equality and Non-discrimination, [ILO](#)
- ▶ Dyan Mazurana, Research Director and Professor, [Fletcher School of Law & Diplomacy](#)

Strategy to implement recommendation

Build coalitions with “trust brokers” (e.g. NGOs, Civil Society Organizations, and community leaders) and affected populations to co-design data collection, analysis and use processes.

Key Actions:

- ▶ Identify the target stakeholders. Stakeholders can be specific ages, demographics, geographic communities, language groups, etc.
- ▶ Define the groups as specifically as possible (geographically, racially/ethnically, age breakdown, sex/gender, language groups, etc.).
- ▶ Work with other levels of government, including sub-national, to coordinate with local actors.
- ▶ Create a stakeholder group that includes individuals from a variety of disciplines and relevant sectors to review data management processes. These groups should



include, but not be limited to, hospitals, clinicians, statisticians, social service providers, frontline-health workers, academic researchers, and community based organizations.

- ▶ Have these stakeholders be amplifiers for helping make their constituencies more “seen” and visible to government programs through better data.
- ▶ Ask populations for their permission to use data.

Considerations for governments prior to implementing the strategy:

- ▶ Working with implementing partners and other relevant stakeholders (e.g. hospitals, clinics, testing sites, social service providers) to incorporate experts from different disciplines maximizes trust and validity when collecting and analyzing disaggregated data.
- ▶ Engaging communities and community leaders to provide opportunities for groups to self-identify and/or influence the process of data collection ensures buy-in.
- ▶ Formal and informal arrangements and institutions such as community listening sessions, community health workers outreach, and information campaigns can help establish trust.
- ▶ Partnering with groups that have established roots in specific vulnerable communities, such as NGOs and community organizations, can help governments institutionalize and capitalize on the extensive work these organizations have already done to build trust.

EXAMPLE(S) OF TOOL IN ACTION

Facing the insufficiency of national ethnically disaggregated data collection protocols, the Articulation of Indigenous Peoples of Brazil has leveraged its



network of smaller civil society organizations to collect [better quality data](#) from community sources.

Experts

- ▶ Tara Cookson, Director, [Ladysmith](#)
- ▶ Caitlin Kraft-Buchman, CEO / Founder, [Women at the Table](#)
- ▶ Dyan Mazurana, Research Director and Professor, [Fletcher School of Law & Diplomacy](#)

Strategy to Implement Recommendation:

Collect disaggregated data at strategic locations and service delivery touchpoints.

Key Actions:

- ▶ Identify are large-scale or high-volume sites serving vulnerable populations, including youth, racial minorities, women, and children.
- ▶ Identify partners that you will need to engage to get access to these locations.
- ▶ Identify key community leaders who can help you identify these sites or locations for collecting important information on vulnerable populations.
- ▶ Standardize data collection processes to ensure they capture disaggregated data by sex, age, gender, ethnicity, race, education level, socioeconomic status, and other important demographic and social factors.

Considerations for governments prior to implementing the strategy:

- ▶ Certain services have strategic value for the collection of sex, age, race/ethnicity, and other disaggregated data, including but not limited to, testing sites, healthcare facilities, contact tracing encounters, chatbots and chat channels, government websites, schools, workplaces, social service providers, etc.



- ▶ Data will not be standardized at different locations so governments will need to regulate and standardize disaggregated data fields and collection methods at these and other key locations.
- ▶ Hospitals and clinics are one of the main entry points for vulnerable populations into support systems.

EXAMPLE(S) OF STRATEGY IN ACTION

The city of Medellin, in Colombia, has created the [Medellin me Cuida](#) app to collect relevant data on its population. Citizens register as individuals or families, and businesses can also register. By collecting data such as address and the members of each household, and regularly screening users for symptoms, the app can give officials important contact tracing data and alert users when someone nearby has tested positive. By integrating services such as the city's financial assistance and workers' quarantine exemption programs into the app, Medellin has created incentives for people to register.

Experts

- ▶ Kieran Walsh, Senior Statistician, [ILO](#)
- ▶ Marcela Cabezas, Labor Statistics Specialist for the Region of Latin America and the Caribbean, ILO
- ▶ Martin Oelz, Senior Specialist on Equality and Non-discrimination, [ILO](#)

Strategy to Implement recommendation:

Strengthen government capacity to interpret new and existing data, focusing on vulnerable populations and publish data and analysis publicly.



Key Actions:

- ▶ Create and publish data dashboards that are updated regularly and show progress on metrics. Governments should develop a dashboard aligned with both the contact tracing platform and surveillance/reportable disease databases.
- ▶ Survey available data tools that integrate with communicable disease databases and contact tracing platforms. Examples include power BI, Esri, or Tableau.
- ▶ Fund and assign a data science team to specifically take charge of public-facing data communications, including the dashboard.
- ▶ Maintain consistent reporting and regular updating of the dashboard to build trust and confidence with the public.
- ▶ Ensure all data is disaggregated by sex, age, race, ethnicity, and other important demographic and social factors.

Considerations for governments prior to implementing the strategy:

- ▶ Governments may not have the human resources needed to use and analyze data on vulnerable populations. Governments may need to recruit, hire, and train data analysts and individuals who are proficient at using data visualization tools for communications purposes.
- ▶ Publishing datasets publicly can increase trust with the public, and importantly help build awareness about important disparities in community conditions.
- ▶ As with many other aspects of the COVID-19 response, the effectiveness of programs targeting vulnerable populations depends on how much the public trusts the government. For example, recent reports of contact tracing program rollouts in major global cities, have cited lack of transparency and accountability as major impediments to effective program implementation. This mistrust is even more pronounced among racial and ethnic minorities, the elderly, and other vulnerable populations.
- ▶ Publishing data publicly, and analyzing it in a way that highlights the needs of vulnerable populations, is useful to help hold public officials accountable and to foster trust with the public and specific vulnerable groups.



EXAMPLE(S) OF STRATEGY IN ACTION

In Vietnam, the government [partnered with PATH](#) to improve the system by which data already being collected is registered and analyzed. By using online tools, they not only decreased the lag for case notification, but also improved data visualization, thus making it easier and more accessible to analyze existing and new data.

Colombia's National Administrative Department of Statistics is collaborating with the Javeriana university and leveraging data to understand the pandemic's disproportionate impact on women by [disaggregating data by gender and occupation](#). They are also working with UN Women to understand how the uneven gender distribution of unpaid domestic work affects social isolation.

Taking advantage of pre-existing data sharing frameworks and the integration of the Brazilian Unified Healthcare System (SUS), the state of Ceara has standardized and unified its health metrics and indicators in a single portal. This makes it quick and easy to compare the evolution of different metrics and evaluate measures taken. The local collection of data also insures much of it can be disaggregated by sex, gender, age, ethnicity and location.

Experts:

- Mary Ann Cooney, Chief, Health Equity and the ASTHO Challenge, [ASTHO](#)
- Faisal Farooq, Head of Digital Health , Qatar Computing Research Institute



RECOMMENDATION 2: ESTABLISH PUBLIC-PRIVATE PARTNERSHIPS

Detailed Recommendation:

Establish Public-Private Partnerships that support vulnerable populations by filling service delivery gaps that community-based organizations, governments, and NGOs struggle to execute efficiently working on their own, while also benefiting the private institutions by providing them with financing and other resources.

Key strategies for implementation:

- ▶ Establish and coordinate a committee of stakeholders whose businesses, non-profits, and foundations directly serve or impact vulnerable populations to identify and address the needs of vulnerable populations.
- ▶ Develop partnerships and engage in strategic contracts with companies who have comparative advantages or corners on specific markets like housing, transportation, diagnostic testing, and/or technology services.
- ▶ Create a public commission, specifically including intended beneficiaries of the services, tasked with holding public-private partnership contracts accountable for delivering services/results through a cost effective, timely, and transparent process.
- ▶ Partner with private sector firms to help them meet their human resource needs by developing and implementing retraining and reskilling programs that help vulnerable groups adapt to the new-normal post- COVID-19.

Why this recommendation supports vulnerable populations:

- ▶ Coordinating a committee or task force of key private sector stakeholders whose businesses and services directly affect the livelihoods and wellbeing of vulnerable populations can help both identify the needs of specific vulnerable populations and also propose solutions for how to address these needs.



- ▶ If successful, the members of the committee will offer guidance, leadership, and operational support to fill gaps in government services and capability.
- ▶ Private institutions will be interested to partner with governments on these engagements if the business case is clearly articulated: private institutions benefit from partnering with governments because they can 1) count on the stability of the contract and financing, 2) the scale of the project tends to be larger, and 3) solving public issues increases positive perception and appreciation of the firm or private institution.
- ▶ Public-private partnerships can erode the trust of the public because of lack of transparency, exorbitant costs, presumed corruption, delayed or prolonged service deliveries, or otherwise perceived corruptions with these types of engagements, thereby increasing the importance of oversight and transparency.
- ▶ Working with large employers and specific sectors to develop programs to help train out of work populations, including those in the informal sector, those with compromised health conditions, domestic workers (particularly women), and the homeless on new skills and technologies can help these populations earn a livelihood and establish stability during the pandemic.

Implementation Plan for Establishing Public-Private Partnerships

Strategy to Implement recommendation:

Establish and coordinate a committee of stakeholders whose businesses, non-profits, and foundations directly serve or impact vulnerable populations to identify and address the needs of vulnerable populations.

Key Actions:

- ▶ Form either sectoral or multi-sectoral commissions with diverse representations of experts as well as representatives from the communities themselves.



- ▶ Task the committee to conduct a needs assessments and define the specific vulnerable groups needing support.
- ▶ Appoint high-level government representatives to participate in and/or lead the commission/task force.
- ▶ Identify specific opportunities to address immediate issues facing identified vulnerable populations.
- ▶ Identify specific opportunities to make long-term improvements to endemic issues facing specific vulnerable populations.
- ▶ Create formal and informal forums to connect different segments of government workers and public organizations who are working to protect the vulnerable.

Considerations for governments prior to implementing the strategy:

- ▶ Committees or task forces of key private sector stakeholders whose businesses and services directly affect the livelihoods and wellbeing of vulnerable populations should include stakeholders from such industries as housing/real estate, food service, hospitals, transportation, water and sanitation, etc.
- ▶ Needs assessments or other evidence-based assessments identify the gaps in government capacity and the needs of vulnerable groups.
- ▶ Successful committees will offer guidance, leadership, and operational support to fill gaps in government services and capability.
- ▶ Committees may focus on (1) short-term priorities for how partnerships can address immediate needs of vulnerable populations that governments are not able to meet or (2) opportunities to use partnerships to fill in gaps in government capacity to make long improvements to endemic issues.



EXAMPLE(S) OF TOOL IN ACTION

The [Private Sector Task Force \(PSTF\)](#) was formed by the World Health Organization and the Global Health Workforce Alliance with the goal of understanding how the private sector can better support and lead in healthcare human resource shortages (e.g. clinicians, and public health professionals) across the globe. The Task Force identified actionable insights and put forth concrete recommendations in a [report](#) that established a path towards increasing private-sector contributions to this specific public health and healthcare issue.

Experts

- ▶ Ralph Heinrich, Secretary of the Committee on Innovation, Competitiveness and Public–Private Partnerships (CICPPP), [UN Economic Commission for Europe](#)
- ▶ Imad N. Fakhoury, Director of Infrastructure Finance, [PPPs & Guarantees \(IPG\) Group, World Bank](#)

Strategy to Implement recommendation

Develop partnerships and engage in strategic contracts with companies who have comparative advantages or corners on specific markets like housing, transportation, diagnostic testing, and/or technology services.

Key Actions:

- ▶ Identify key gaps in government capacity to support vulnerable populations that can be supported with private sector partnerships.
- ▶ Conduct outreach to firms providing goods and services that fill identified gaps.
- ▶ Coordinate with government legal advisors and procurement teams to understand the protocols and guidelines governing public–private partnerships.
- ▶ Develop long-term retainer contracts to ensure consistent pricing consistently.



- ▶ Ensure partnerships specifically address the needs of identified vulnerable populations and hold the contracts accountable to agreed upon measures of success.

Considerations for governments prior to implementing the strategy:

- ▶ Partnerships are most effective when private sector stakeholders fill in specific government capacity gaps.
- ▶ Private institutions will be interested to partner with governments on these engagements if the business case is clearly articulated: private institutions benefit from partnering with governments because they can 1) count on the stability of the contract and financing, 2) the scale of the project tends to be larger, and 3) solving public issues increases positive perception and appreciation of the firm or private institution.
- ▶ Partnerships will need to focus on addressing food security, housing shelter, medical services, clothing, transportation, and employment opportunities for vulnerable populations.

EXAMPLE(S) OF TOOL IN ACTION

Many state governments in Brazil have partnered with software developing company InLoco to monitor the rates of social distancing. Before the first case was confirmed in Brazil, InLoco started using mobile carrier data to track what percentage of the population is staying at home during the day, creating a [social distancing index](#). Governments have partnered with InLoco to create solutions with this data and to analyze data at a finer spatial granularity than publicly available.



In the United States, many state governments partnered with hotel and motel chains to provide housing to [homeless populations](#), and essential healthcare workers. This service is attributed with keeping these vulnerable populations safe during the height of the pandemic.

Epidemiologists [working](#) to promote modern dental hygiene practices and offer treatments among Xavante indigenous communities in Brazil partnered with Colgate for funding and for supplies for the program.

Experts

- Barbara Magnoni, President, [EA Consultants](#)
- David Jácome-Polit, Chief Resilience Officer of Quito, Municipality of Quito / [Resilient Cities Network](#)

Strategy to Implement recommendation:

Create a public commission, specifically including intended beneficiaries of the services, tasked with holding public-private partnership contracts accountable for delivering services/results through a cost effective, timely, and transparent process.

Key Actions:

- Establish a public oversight commission to oversee all public-private partnerships supporting vulnerable populations.
- Ensure that vulnerable populations who are the target beneficiaries are key members of the oversight commission.
- Create a public commission website so that the public can see progress with the partnership.
- Publish all contracts, costs and results.



Considerations for governments prior to implementing the strategy:

- ▶ Public-private partnerships present considerable opportunities for innovation, optimization, and covering gaps in public services.
- ▶ Public-private partnerships can erode the trust of the public because of lack of transparency, exorbitant costs, presumed corruption, delayed or prolonged service deliveries, or otherwise perceived corruptions with these types of engagements. This is even more of a concern when the target populations are vulnerable, thereby increasing the importance of oversight and transparency.

EXAMPLE(S) OF TOOL IN ACTION

In Malawi, the national government developed the [Public Private Partnership Commission](#) in 2011 which is tasked with oversight and management of all Public Private Partnerships in the country. The commission has a website that publishes a variety of information publicly, including details of all projects, information about commission members, and a full list of [PPP ongoing projects](#).

In the United States, the state of Massachusetts established the [Public-Private Partnership Oversight Commission](#) whose mission is to be “responsible for reviewing and recommending public-private partnership opportunities for transportation infrastructure projects.” While the commission has a website and publishes its membership, it does not appear that the website is updated regularly nor does it publish information as regularly and in as much detail as the Malawi example.



Expert

- ▶ Viviane Lucia Fluck, Coordinator for Community Engagement and Accountability in the Asia Pacific Region, IFRC
- ▶ Ralph Heinrich, Secretary of the Committee on Innovation, Competitiveness and Public-Private Partnerships (CICPPP), [UN Economic Commission for Europe](#)
- ▶ Imad N. Fakhoury, Director of Infrastructure Finance, [PPPs & Guarantees \(IPG\) Group, World Bank](#)

Strategy to Implement recommendation:

Partner with private sector firms to help them meet their human resource needs by developing and implementing retraining and reskilling programs that help vulnerable groups adapt to the new-normal post- COVID-19.

Key Actions:

- ▶ Conduct a rapid study identifying the hardest hit sectors, including the informal economy, and also the sectors that have seen the most growth (home delivery, etc.).
- ▶ Engage private sector firms who have experienced large growth in their businesses and are in need of more employees.
- ▶ Create a digital job marketplace where employers can post jobs for essential workers, the unemployed, or specific vulnerable populations.
- ▶ Develop a training program that can be scaled and implemented to civil society organizations that focuses on how informal workers can adapt their services models to the pandemic.
- ▶ Invest in programs that capitalize on inexpensive, proven, and widespread technologies (like smart phones) that can be used to support work opportunities such as package and goods delivery, digital payments, or other relevant goods and services.
- ▶ Offer free online courses that teach new skills such as effective use of computer and cellphone technologies.



Considerations for governments prior to implementing the strategy:

- ▶ Small and medium sized enterprise as well as informal workers (eg. street vendors) have been particularly affected by the pandemic.
- ▶ Out of work populations may include those working in the informal sector, those with compromised health conditions, domestic workers (particularly women), and the homeless.
- ▶ Programs that equip groups with the technology, skills and training to adapt to a remote and more digitized working environment can help populations earn a livelihood in the new COVID-19 context.

EXAMPLE(S) OF TOOL IN ACTION

In Indonesia, informal workers have moved to a more digitized way of doing business with more and more SMEs registering for online marketplaces. The government also teamed up with digital companies to [re-skill employees](#) and boost their competitiveness.

Sweden also worked to [retrain laid-off staff](#) in the airline industry, providing them with a short medical licence so that they could work in hospitals as administrative staff.

France's Skill Investment Plan, is offering [150 free online training courses](#) to assist in equipping the public with new skills for employment transition.

In New Jersey, the government created the [State of New Jersey COVID-19 Jobs and Hiring Portal](#) where over 57,240 jobs have been posted by 1,184 unique companies.



Experts

- ▶ Haroldo Montealegre, VP of Product, SIMA
- ▶ Barbara Magnoni, President, [EA Consultants](#)
- ▶ David Jácome-Polit, Chief Resilience Officer of Quito, Municipality of Quito /
[Resilient Cities Network](#)



RECOMMENDATION 3: ENGAGE THE PUBLIC AND CIVIL SOCIETY ORGANIZATIONS

Detailed Recommendation:

Engage the public and civil society organizations to support vulnerable populations by capitalizing on existing knowledge and expertise, leveraging local assets and resources, building trust with intended beneficiaries, and strengthening the capacity of communities.

Key strategies for implementation:

- ▶ Work with local community leaders to tailor policy decisions to the needs of the community.
- ▶ Partner with, fund, and support women and their families, women-owned businesses, and grassroots organizations specifically serving women.
- ▶ Detect, support and amplify existing community-led initiatives and solutions.
- ▶ Crowdsource solutions and expertise from the public and affected populations through prizes, competitions, or online innovation sessions.

Why this recommendation supports vulnerable populations:

- ▶ Ensuring a transparent process that is open to the intended beneficiaries of the policy will increase trust with those specific groups and the public more broadly. Building this shared identity with the public may support increased compliance with public health guidelines and may reduce mistrust in government, ultimately improving the public health of the target population and the broader population.
- ▶ Organizations that specifically support women are critical in bridging the service provision gap that has impacted women and their families during the pandemic because they have established trust and networks with these groups and understand their specific needs and vulnerabilities.



- ▶ Community leaders across different populations have already implemented solutions that need to be supported and scaled so a very effective strategy is to simply increase support and amplify their existing work. Governments should not create new initiatives and invest in new solutions if a good program is already in place.
- ▶ Hackathons and other contests can bring together problem solvers from civil society to create innovative solutions to specific challenges, which can then be scaled up.

Implementation Plan for Engaging the Public and Civil Society Organizations

Strategy to Implement recommendation:

Work with local community leaders to tailor policy decisions to the needs of the community.

Key Actions:

- ▶ Form multi-sectoral commissions with diverse representations of experts as well as representatives from the communities themselves to conduct needs assessments and define the specific vulnerable groups needing support.
- ▶ Post information online or write articles describing the process by which policies and programs are developed and how the public and specific vulnerable groups were engaged throughout the engagement.
- ▶ Host a town hall where the public can ask questions to the experts or the government. The government can televise, live stream, or otherwise host this forum on a free and public platform to ensure it has broad reach to many segments of the population.
- ▶ To engage specific vulnerable populations, the government should conduct targeted listening sessions and outreach to identified populations to meet them in locations where they are located and most comfortable.



- ▶ Coordinate citizen-led messaging campaigns, where members of the target audience are the main spokespersons and public faces for that specific information campaign.

Considerations for governments prior to implementing the strategy:

- ▶ Partnering with local leaders and representatives of the populations they are trying to serve in the policy- and decision-making process will ensure a two-way communication channel where governments listen to the needs of the community and communities can understand how government works and the way they make decisions and articulate priorities.
- ▶ Ensuring a transparent process that is open to the intended beneficiaries of the policy will increase trust with those specific groups and the public more broadly.
- ▶ Building this shared identity with the public may support increased compliance with public health guidelines and may reduce mistrust in government, ultimately improving the public health of the target population and the broader population.

EXAMPLE(S) OF TOOL IN ACTION

The United Nations High Commissioner for Refugees (UNHCR) organized a [conversation with representatives of refugee-led organizations](#) to discuss their needs and priorities as they relate to COVID-19 and how they can best be supported.

Experts

- ▶ Ana Lucia Pontes, Researcher, [Oswaldo Cruz Foundation](#)
- ▶ Jay Patel, Researcher, London School of Hygiene and Tropical Medicine
- ▶ Ashni Badiani, Researcher, UCL



Strategy to Implement recommendation:

Partner with, fund, and support women and their families, women-owned businesses, and grassroots organizations specifically serving women.

Key Actions:

- ▶ Where possible, provide economic support including cash, unemployment benefits, and expanded child support for vulnerable women and their families.
- ▶ Support small and medium-sized women-owned businesses through specific government support including grants, tax-breaks, loans and funding, as well as subsidized and state-backed loans. Economic Sectors and industries where women are a large proportion of workers, including childcare, domestic work, and the food service industry.
- ▶ Ensure that women who are informal workers are covered under economic support (e.g. don't only issue them through established formal sectors and industries).
- ▶ Specifically engage women-led and women-focused organizations and advocacy groups to be members of stakeholder committees and task forces.

Considerations for governments prior to implementing the strategy:

- ▶ Organizations that specifically support women are critical in bridging the service provision gap that has impacted women and their families during the pandemic.
- ▶ Women have been disproportionately impacted by the virus due to the double burden of care work and economic activity that they are expected to perform.
- ▶ Examples of added burdens to women include but are not limited to: loss of child care due to school closures, increased reports of domestic and gender-based violence, lack of access to critical reproductive health services, and general loss of income due to overrepresentation of women as frontline health workers and other essential workers.



EXAMPLE(S) OF TOOL IN ACTION

The Asociación de Trabajadoras del Hogar, a Domicilio y Maquila (ATRAHDOM) is an organization in [Guatemala](#) that promotes labor and civil rights of women. During the pandemic, ATRAHDOM has coordinated efforts to bring relief to women domestic workers and other sectors where women are the majority of the labor force.

In Morocco, the [Ministry of Solidarity, Social Development, Equality and Family](#), developed an online marketplace, called ADS [Coopsclub](#), to sell a variety of goods and services. This platform was designed to include all women's cooperatives in the country.

Experts to consult:

- Caitlin Kraft-Buchman, CEO / Founder, [Women at the Table](#)
- Tara Cookson, Director, [Ladysmith](#)

Strategy to Implement recommendation:

Detect, support and amplify existing community-led initiatives and solutions.

Key Actions:

- Identify community leaders and community groups in a given jurisdiction.
- Conduct a community needs assessment that identifies community assets, including community organizations and assets that can be mobilized to support the response effort.
- Establish formal relationships between the public health system and social service organizations.



- ▶ Develop criteria that outlines profiles of organizations and people from the local community, that have the requisite knowledge of the community .
- ▶ Meet with local authorities and key stakeholders (women, youths, older people) and discuss the importance of community-led initiatives.

Considerations for governments prior to implementing the strategy:

- ▶ Community leaders across different populations have already implemented solutions that need to be supported and scaled.
- ▶ Governments should not create new initiatives and invest in new solutions if a good program is already in place.
- ▶ Local organizations work with communities to meet their identified, articulated and prioritized needs. These organizations may include social service agencies, nonprofit organizations, and formal and informal community groups, like neighborhood groups or recreational groups.
- ▶ According to the [World Bank](#), “partnerships among communities, healthcare systems, local governments, and the private sector can play a critical role in slowing the spread, mitigating impacts, and supporting local recovery.”

EXAMPLE(S) OF TOOL IN ACTION

During the 2014 – 2015 Ebola outbreak, [thousands of community health workers were trained to serve as contact tracers](#). The community health workers were a crucial supplement to the existing public health workforce and helped to link the community to testing and treatment centers. The community health workers were important to the success of the program, not only because they increased the number of workers, but because they were able to help overcome the fear and lack of trust in the country’s health system during the outbreak An important lesson from the Liberia experience



is to train contact tracers to pay attention to the power dynamics within society and how the daily lives of people are structured.

Experts

- ▶ Betilde Munoz-Pogossian, Director of the Department of Social Inclusion, Secretariat for Access to Rights and Equity, [Organization of American States](#)
- ▶ Corinne McDaniels-Davidson, Director, [SDSU Institute for Public Health](#)

Strategy to Implement recommendation:

Crowdsource solutions and expertise from the public and affected populations through prizes, competitions, or online innovation sessions.

Key Actions:

- ▶ Carry out an assessment, including a community mapping, to understand community structures, power dynamics, beliefs, capacities, and trusted and preferred channels of communication and sources of information.
- ▶ Create an online challenge where teams can submit innovative solutions or ideas to solve specific problems. Offer financial, reputational, or institutional support as incentives.
- ▶ Ensure problems that need to be solved are well defined and have a clear, articulated goal for participants to achieve
- ▶ Host the challenge or hackathon on an open and accessible forum, such as Your Priorities.
- ▶ If offering a prize, ensure that the prize is commensurate with the intended goal/outcome. Make sure it is culturally or otherwise appropriate for the participants of the challenge.
- ▶ Recruit a diverse representation of participants through targeted advertising, recruitment, and outreach.



Considerations for governments prior to implementing the strategy:

- ▶ Local knowledge and talent which is widely dispersed can be very valuable in solving local challenges.
- ▶ Hackathons and other contests can bring together problem solvers from civil society to create innovative solutions to specific challenges, which can then be scaled up.

EXAMPLE(S) OF STRATEGY IN ACTION

The Ministry of Human Resource Development in India engaged the technology and innovation in the country to participate in the fight for COVID-19 by launching a competition/hackathon titled "[Fight Corona IDEathon](#)." Participants had the opportunity to win cash prizes and secure incubator grants.

The Massachusetts Institute of Technology (MIT) hosted a series of challenges to empower the public to take action on the COVID-19 crisis. This "[MIT COVID-19 Challenge](#)." MIT has run these challenges for specific audiences and specific groups of innovators, including for Latin American, African and Indian contexts.

The Govlab worked with five municipal governments from northern Mexico as part of the [Multi City Challenge Mexico 2020](#) project, to organize an open challenge where citizens designed solutions and submitted proposals to address various urban problems. These problems ranged from bridging the educational digital divide exacerbated by COVID-19 to finding ways to reactivate the local economy , as well as reducing the daily rate of COVID-19 infections. The winning solutions will be developed into action plans to be piloted by the municipalities. A total of 237 proposals were received.



Experts

- ▶ Tris Dyson, Managing Director of Nesta Challenges, [Nesta Challenges](#)
- ▶ Constance Agyeman, Head of International Development and Communities, [Nesta Challenges](#)
- ▶ Daniel Berman, Lead, Global Health Team, [Nesta Challenges](#)
- ▶ Aisha Lysejko, Lead, Operations, [Nesta Challenges](#)



MONITORING AND SURVEILLANCE

On November 5, 2020, a group of 22 leading experts from across the world joined officials representing the Argentine, Bahaman, Ceará-Brazilian, Costa Rican, Mexican and Peruvian governments in a two-hour advising session to identify novel solutions that leaders can use to enhance public health monitoring and surveillance strategies in their fight against COVID-19.

The discussion focused on four topics that broadly capture issues related to public health monitoring and surveillance and the pandemic:

1. **Technology infrastructure** - What innovative technologies can governments use to strengthen their public health monitoring and surveillance strategies, while at the same time protecting the rights and privacy of their citizens?



2. **Data sharing** - How can governments facilitate the sharing and use of large quantities of public health monitoring and surveillance data from different sources and jurisdictions?
3. **Leading indicators and early warning systems** - How can the government identify tipping points or inflection points of infection spread with early warning systems and leading indicators, including with crowdsourced intelligence?
4. **Jurisdictional and coordination issues** - How can governments support vertical integration of surveillance programs within jurisdictions and horizontal integration across jurisdictions?

Following the advisory session, participants from the Latin American and Caribbean governments selected those proposed solutions which they were most interested in implementing. The GovLab then conducted further research, consulted various subject matter experts and potential partners, and developed a high-level memo and implementation plan that Latin American governments can use to inform their efforts to combat COVID-19. The recommendations presented in this chapter are not intended to be exhaustive but rather they reflect the articulated interest of national governments who are participating in the Smarter Crowdsourcing in the Age of Coronavirus project.

EXECUTIVE SUMMARY

Problem Statement:

Policymakers, healthcare workers, businesses and the general public lack effective, accurate, and precise ways to monitor the status of COVID-19 in their jurisdictions and communities. This problem exists up and down the crisis management continuum, from prevention, to response, to recovery. Governments lack the ability to detect emerging outbreaks, monitor and surveil existing outbreaks, collaborate



with other governments and stakeholders to address and surveil outbreaks, and make evidence informed decisions about when outbreaks are no longer a threat.

Recommendations and strategies to address the problem:

To (1) prevent future outbreaks, (2) control ongoing outbreaks, and (3) allow for a sustained recovery and reopening of society once the virus has been controlled, Latin American and Caribbean governments must enhance their public health monitoring and surveillance strategies and infrastructures. The following three recommendations provide strategies to achieve the intended results and support government's public health monitoring and surveillance plans.

- 1. Enhance Data Collection:** Enhance data collection capabilities through innovations in technologies, crowdsourcing, symptom-trackers, and partnerships.

Key Strategies for Implementation

- Collect epidemiological surveillance data with a symptom tracker or triage tool that leverages crowdsourcing and participatory surveillance.
- Invest in and promote the use of technological and digital innovations that can help collect accurate and timely data.
- Partner with institutions with high levels of social engagement, trust, and access to populations to collect information and implement public health monitoring and surveillance systems.

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 3 months, ongoing		

For additional information see: [Implementation Memorandum](#)



2. **Improve Information Infrastructure:** Improve public health monitoring and surveillance information infrastructure by standardizing data formats and definitions, sharing data, and developing regulations and legislation that support public health monitoring and surveillance.

Key Strategies for Implementation

- ▶ Develop standard definitions, structures, and variables for key public health monitoring and surveillance health data.
- ▶ Promote and use open source and simple tools for data sharing between and among stakeholders.
- ▶ Develop and advocate for a legislative framework for public health monitoring and surveillance health data.

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 6 months		
For additional information see: Implementation Memorandum			

3. **Increase Government Capacity:** Increase government capacity to use public health monitoring and surveillance information to make policy and programmatic decisions



Key Strategies for Implementation

- ▶ Increase government capacity to use public health monitoring and surveillance data by training government workers in data science and partnering with data scientists.
- ▶ Develop, use, and refine multiple predictive models to help with pandemic planning, preparedness, and response.
- ▶ Create a COVID-19 “war room”, emergency operation center, or nerve center that centralizes data and decision making.

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	Ongoing		
For additional information see: Implementation Memorandum			

This chapter discusses the above three recommendations and offers implementation plans for how governments in Latin America and the Caribbean can take concrete steps to enhance their public health monitoring and surveillance strategies. The document offers both detailed recommendations and implementation plans for those recommendations.

TOPIC BACKGROUND AND PROBLEM DESCRIPTION

Public health surveillance and monitoring are not new processes for most governments, however, traditional systems and processes are no-longer sufficient for the “new normal” of a COVID-19 landscape. This and the below section outline how traditional public health surveillance systems may not be adequate for the current public health crisis at hand and what specific root causes are impacting this inefficiency. Traditional methods must be supplemented with or complemented



with new strategies and technologies in order to meet the needs of a surveillance and monitoring system fit to address the demands of the COVID-19 pandemic as it extends into the months and years to come.

Public health surveillance, according to the [World Health Organization](#) (WHO), 1) serves as an early warning system, 2) is used to inform public health strategies and responses, 3) provides the evidence base for ongoing interventions or progress towards identified public health goals, and 4) monitor the condition of disease prevalence to help guide policy and interventions.¹⁰⁰ According to the Pan American Health Organization (PAHO), public health surveillance is “the continuous, systematic collection, analysis, interpretation and dissemination of health-related data needed for the planning, implementation, and evaluation of public health practice (...) to allow public health priorities to be set, and to inform public policy and strategies.”¹⁰¹

Governments have built public health surveillance and monitoring systems around the foundational guidelines of 1) active surveillance, 2) passive surveillance, 3) sentinel surveillance, and 4) syndromic surveillance.¹⁰² Despite the long-standing history of these methods, governments still suffer many problems with using these systems to support public health action, especially during the current pandemic, which has produced both an overwhelming amount of data and also an overwhelming amount of need for timely, accurate, precise, and up-to-date information.

¹⁰⁰ https://www.who.int/immunization/monitoring_surveillance/burden/vpd/en/

¹⁰¹ <https://www.paho.org/en/topics/hivsti-surveillance-and-monitoring>

¹⁰² <https://www.cdc.gov/publichealth101/surveillance.html>



To successfully build systems that will support the control of current outbreaks and prevent future outbreaks governments need to develop monitoring and surveillance systems that integrate into the following parts of the crisis management cycle:

1. Preparedness and early warning
2. Response and containment
3. Recovery and reopening
4. Prevention and ongoing investments

Problem Overview

There are many specific root causes of this systemic failure, but each root cause contributes to the overall result of inadequate and out-of-date information informing policy decisions and programmatic priorities.

Risk aversion: Governments are slow to adopt new technologies and processes due to bureaucratic processes and political calculations that are worried about potential failures of an investment. This means that governments don't take many high-risk, high-reward opportunities. Risk-aversion or comfort with *status quo* processes and technologies is a legacy of governments that were designed to address specific problems at specific points in history; these historical use cases have changed and so the existing processes and systems are no longer the most efficient or effective at solving current problems.¹⁰³

Historic underinvestment: Legacy monitoring and surveillance systems are often built upon dated technologies that are not able to adapt to current needs. In addition to state-managed systems, key stakeholders like hospitals, healthcare facilities, and other highly relevant actors who interact with considerable amounts of surveillance data have not maintained investments in their systems or worked to

¹⁰³ <https://www.nesta.org.uk/blog/innovation-in-the-public-sector-is-risk-aversion-a-cause-or-a-symptom/>



integrate them with adjacent sectors and systems. This is increasingly important when it comes to syndromic surveillance systems and ensuring that hospitals and clinics have adequate processes to feed data into a more centralized database.¹⁰⁴

Future discounting and present bias: Governments are biased to respond to immediate threats and priorities and aren't able to adequately appreciate the value of investments that solve forthcoming problems. This translates into underinvesting in infrastructures and programs that focus on long-term or potential threats, and "over investing" on threats and issues that are present at any given moment.¹⁰⁵ Governments therefore are better positioned to address immediate issues facing the public, but do not always have the ability to shift resources toward building capacity for future threats or disruptions. Surveillance systems are important infrastructures that need to be in place before and while an incident happens; as such governments who are justifiably focused on addressing current issues, will fail to spend time considering present or future issues and what needs to be done to build resilience against those threats.

Jurisdictional authority and population mobility: Governments don't have authority over neighboring jurisdictions, thereby making them unable to monitor or surveil those populations. At the same time, at the world's stage of globalization, national and state borders are porous and large numbers of people regularly move between jurisdictions. This incongruence - the fact that people move freely between jurisdictions, but governments' authority doesn't - means that governments cannot always address root causes of issues. Jurisdictions must account for how

¹⁰⁴ <https://www.wsj.com/articles/trump-administration-to-penalize-hospitals-for-pandemic-data-gaps-11602032369>

¹⁰⁵ See the Stern Report on the Economics of Climate Change: <https://www.theguardian.com/politics/2006/oct/30/economy.uk> and https://webarchive.nationalarchives.gov.uk/+/http://www.hm-treasury.gov.uk/sternreview_index.htm



their neighbors and ports of entry will account for horizontal mobility of people. Highly centralized regimes can build systems and programs that use single systems to address how people may move across borders within a jurisdiction (e.g. between states or municipalities). Decentralized regimes must ensure that municipalities or jurisdictions build interoperable systems and programs so that patients are not lost when they move horizontally across borders within a country (e.g. between states or municipalities).

Information management platforms and data sharing frameworks: To adequately address COVID-19, governments need to have underlying usable and durable technological solutions. Existing data management technologies or epidemiological reporting databases will likely be unable to absorb the demands of a COVID-19 monitoring and surveillance program because it will be necessary to collect larger volumes of data than are routinely collected and managed by existing health information systems. Additionally, any technological solutions will need to be accompanied by regulatory, legislative, and/or other types of frameworks that establish data sharing protocols, standards, and agreements. It will be important for countries to take steps to guard against inappropriate use of these data and adopt best practices for dealing with such data, including the adoption of new regulations and protocols for informed consent, data storage and protection.¹⁰⁶ Furthermore, traditional epidemiological reporting systems are not well suited to capture inter- and intra-jurisdictional data. For instance, underlying systems need to be interoperable within a jurisdiction (a state and a municipality need to be able to communicate) and between jurisdictions (neighboring states need to be able to communicate). In addition to lacking the technological and information management infrastructure, governments also lack adequate epidemiological staff to do predictive modeling or sophisticated analyses of the collected data.

¹⁰⁶ The World Bank. COVID-19 Emergency Response Project. <http://documents.worldbank.org/curated/en/883211585094284320/text/Project-Information-Document-PY-COVID-19-Response-P173805.txt>



Specific populations remain invisible to governments: A lack of data collection or the policies to support the collection of data based on race, ethnicity, or other demographics has generally hampered the government's ability to respond to the pandemic. In addition to the lack of data for the general populations, governments have a particular shortage of information on specific populations, including vulnerable populations, the poor, minorities, rural populations, indigenous groups, migrants and immigrants, and those living in informal housing. This means that governments don't know who these people are, where they live, or how to reach them to offer support or specific services. Without demographic data or other key geographic or census data, healthcare workers and government officials are not able to address inequities in health outcomes that result from the pandemic.¹⁰⁷ These “ invisible” populations are disproportionately impacted by existing outbreaks as evidenced by correlations between poverty, minority status and health outcomes. Additionally, these populations tend to be disproportionately located in high-risk areas for future outbreaks due to structural factors like lack of access to sanitation and hygiene and/or cramped/densely populated living areas.

Mistrust in government authorities: Systemic socioeconomic, cultural, racial disenfranchisement interact with other social determinants of health, such as education, housing, built environment and healthcare compounding the impacts of the virus. In addition to being more affected by the virus, these populations tend to have higher mistrust and distrust in government. In many, if not most cases, this mistrust is warranted because of historic government abuse and systemic oppression of specific populations. Mistrust in government may cause certain populations to refuse important public health guidance, be skeptical of lifesaving clinical interventions (ie. vaccines), or avoid interactions with government or healthcare authorities writ large. This means that many surveillance activities may

¹⁰⁷ <https://www.propublica.org.cdn.ampproject.org/c/s/www.propublica.org/article/early-data-shows-african-americans-have-contracted-and-died-of-coronavirus-at-an-alarming-rate/amp>



not include key populations and/or individuals may not be willing to give information to authorities about their actions, conditions, or statuses.

Siloed sectors and territorialism: Public health officials and workers, like all other professional areas, suffer from professional myopia and siloed workflows. The set of solutions that public health officials deem as “relevant” or “reasonable” are often ones that have been tried and tested from global or national public health authorities such as the WHO, PAHO, or national health ministries. Health authorities are reluctant to embrace strategies, technologies, or processes developed for other use cases because 1) they either are unaware of them, or 2) they are not comfortable adapting these tools or processes to new uses. Sectoral territorialism flows both ways, however, and sectors that have developed useful processes and tools may be unwilling to share them with others or are unaware of the applicability of those tools to a epidemiological surveillance and monitoring use case.

Governments and the private sector don't collaborate: Governments do not have effective means of collaborating with the private sector, where many data scientists, technologists, and innovators are based. This barrier often exists for a number of reasons, including contracting and procurement hurdles, prohibitive costs, oversight and management, and risk aversion. To capitalize on technological advances available from the private sector, governments need to develop ways to engage these innovations more easily and integrate them into their processes. This is particularly important for monitoring and surveillance where ideas from the private sector, including biomedical technologies (wearables) and the tech sectors, can radically address inefficiencies or deficiencies in existing government systems and processes.



REGIONAL CONTEXT

Argentina

Context and Actions Taken:

- ▶ Argentina relies on a national public surveillance system that all private, public, and social employers/employees report into. Different surveillance and reporting systems are set up at the provincial level, and not all are interoperable. In some provinces, there are delays in loading data. There is not a precedent for sophisticated data sharing, but there have been significant efforts between provincial authorities and the Ministry of Health to ensure transparency and interoperability.

Challenges:

- ▶ The biggest challenge is creating institutional capacity to use data/information to inform more efficient policies and programs.

Priorities/questions:

- ▶ Improving the coordination between systems and decreasing the lag time to load information into the system.

Examples:

- ▶ The SUMARE program, which is run by the Ministry of Health and aims to promote the strategic purchase of data softwares linked to the national surveillance system.
- ▶ Interdisciplinary primary healthcare teams including doctors, nurses, social workers, psychologists, and health agents, have been trained on knowledge management.



Bahamas

Context and Actions Taken:

- ▶ For epidemiological monitoring, the Bahamas relies mostly on individual testing and analogic contact tracing.

Challenges:

- ▶ The process of contact tracing is very labor intensive and the Ministry of Health relies on volunteer workers. The public healthcare system relies entirely on PCR tests. A policy or framework for the sharing of anonymized data with the public and the private sector has yet to be established. Because of this, the Bahamian public and private healthcare systems work almost entirely independently in terms of outbreak prevention and response, testing, and communication efforts. Monitoring in informal settlements, with large undocumented populations, who lack access to healthcare, remains a constant challenge.

Ceara- Brazil

Context and Actions Taken:

- ▶ States develop their own data reporting procedures, however, the lack of a single national protocol has created a series of inefficiencies, namely the



duplication of entries.¹⁰⁸ ¹⁰⁹ Ceara has created Saude Digital, a framework for public and private labs to log the results of tests. Saúde Digital allows for real-time data notification for internal use and to be published on the [Integrasus](#) dashboard.¹¹⁰

Challenges:

- ▶ 4 key bottlenecks include: understaffed data entry teams, centralization of reporting, with many healthcare facilities being digitally non-functional, lack of PCR testing, and a lack of adhesion to national data notification systems.¹¹¹ Testing infrastructure is mostly concentrated in the capital city of Fortaleza, thus creating lags to surveillance and potentially compromising testing samples. ¹¹²

Costa Rica

Context and Actions Taken:

- ▶ The Ministry of Labor and Occupational Health monitors cases in private companies. Costa Rica established a command center that integrates information from different agencies, including the social security

¹⁰⁸ "Covid-19 cases may take up to seven weeks to be made public." 25 Aug. 2020, <https://portal.fiocruz.br/en/news/covid-19-cases-may-take-seven-weeks-be-made-public>. Accessed 20 Oct. 2020.

¹⁰⁹ From interviews with state officials.

¹¹⁰ Ibid.

¹¹¹ "Carta aberta - MonitoraCovid-19 - Fiocruz.", <https://bigdata-covid19a.icict.fiocruz.br/>. Accessed 20 Oct. 2020.

¹¹² Ibid.



department and the private sector, to track cases. Through the “I was here” initiative Costa Rica is working to enable QR codes for contactless payments.

Challenges:

- ▶ Costa Rica is concerned with exceeding and surpassing its operating capacity. One of the main obstacles to long-term surveillance measures is laboratory capacity. Often, strategies need to be developed to deal with test shortages and delays in test analysis.

Mexico

Context and Actions Taken:

- ▶ The Mexican Social Security Institute (IMSS) has a “New Normal” office which provides advice to businesses in implementing health protocols. They have also been using digital questionnaires to screen people for symptoms. The IMSS is also working with the Institute of Genomic Medicine to start using saliva tests for surveillance purposes.

Examples:

- ▶ The IMSS is tracking sick days registered by businesses as an early prevention system. Because businesses must report their employees sick days to the IMSS, they have found that this database can be used as an early warning system.



Peru

Context and Actions Taken:

- ▶ The Ministry of Health established regulations in relation to the implementation and operation of rapid response teams, dedicated to monitoring suspected cases. The Health Ministry publishes epidemiological alerts and bulletins and is preparing seroprevalence studies.

Challenges:

- ▶ Coordination is lacking between rapid response teams and the teams responsible for clinical surveillance and following up with patients. Managing growing databases and large amounts of data proves challenging. The Ministry of Health lacks the infrastructure to manage such large volumes and a lack of data formatting standardization has impeded data sharing. An early warning system has been hard to establish. Peru has tested several indicators, such as syndromic surveillance, monitoring suspect cases, and high-resolution heat maps, but they lack the resources and technological knowhow to implement these strategies at scale.

The content below offers a discussion of 3 recommendations that includes (1) strategies to achieve the intended results and (2) support for why the recommendation will help governments' public health monitoring and surveillance strategies;



The implementation plans take each of the recommendations and discuss the strategies needed to implement them. These sections are designed to be action guides for government officials who are looking for guidance on specific actions they can take to strengthen their public health monitoring and surveillance strategies. Each implementation plan has the following structure:

- ▶ Strategy summary;
- ▶ Key actions for implementation;
- ▶ Considerations for governments prior to implementing the strategy;
- ▶ Examples – positive examples of how the strategy can support public health monitoring and surveillance strategies; and
- ▶ Experts to consult.¹¹³Recommendation 1: Enhance Data Collection

Detailed Recommendation:

Enhance data collection capabilities through innovations in technologies, crowdsourcing, symptom-trackers, and partnerships.

Key strategies for implementation:

- ▶ Collect epidemiological surveillance data with a symptom tracker or triage tool that leverages crowdsourcing and participatory surveillance.
- ▶ Invest in and promote the use of technological and digital innovations that can help collect accurate and timely data.
- ▶ Partner with institutions with high levels of social engagement, trust, and access to populations to collect information and implement public health monitoring and surveillance systems.

¹¹³ If governments would like to contact these experts, please email henri.hp@thegovlab.org for an introduction/facilitated connection.



Why this recommendation supports public health monitoring and surveillance strategies:

- ▶ Traditional data sources (e.g. hospital data, syndromic surveillance, testing data) may not be sufficient to capture the impact and spread of the virus. New and innovative data collection methods are needed to help expand the reach, specificity, and timeliness of public health surveillance strategies.
- ▶ Public health surveillance can be used not only as an opportunity to collect information, but also as an opportunity to provide important public health guidance to specific populations. For example symptom trackers collect important population level data about emerging infections but also provide a means to offer guidance to individuals depending on the symptoms they report.
- ▶ Governments have limited capacity to collect data for a variety of reasons, including (1) access to populations, (2) technological know-how, and (3) person-power and number of staff. Partnering with institutions that already have access to large swathes of the target population reduces this burden on government and capitalizes on existing capacity elsewhere.

Strategy to Implement recommendation:

Collect epidemiological surveillance data with a symptom tracker or triage tool that leverages crowdsourcing and participatory surveillance.

Key Actions:

- ▶ Review Covid-19 symptoms and guidance from verified public health authorities like the [PAHO](#), [WHO](#) or national Centers for Disease Control.
- ▶ Identify a technology platform for participatory surveillance. For example, adapting existing smartphone-based apps and SMS platforms may be the fastest and most affordable option.
- ▶ Conduct a review of available technologies and platforms that may already be licensed to government agencies. Survey tools like [qualtrics](#), or [jotform](#),



guarantee safety and security of the information and allow data to be exported and easily analyzed.

- ▶ Develop a socialization plan that covers how the tool will be promoted and shared to encourage widespread and frequent use.
- ▶ Consider ways to make the tool more accessible including by the graphic design, literacy level of the information, and languages that the tool is translated into.
- ▶ Make sure that the tool offers an opt-in function to capture geographic location or approximation (e.g. zip code, census tract, etc.)
- ▶ Consider ways to host the tool across different platforms like a website, a smartphone app, SMS, telephone hotlines or smart paper forms.
- ▶ Consider ways to allow individuals to report symptoms at regular intervals (e.g. every day, week, etc.), by setting alerts or reminders.
- ▶ Ensure that the tool offers concrete guidance, resources, and advice for what an individual should do given her/his personal results (e.g. if you are sick do “X”)
- ▶ Establish mechanisms to “push” or publicize the tool to increase use among specific and general populations. Tools like Twilio allow governments to mass message contact links via SMS.

Considerations for governments prior to implementing the strategy:

- ▶ What does the public in your country think about sharing their health data? Are there surveys that have captured public opinion on health identifiers? Are there political advocates or elites who are involved in shaping public opinion on health data?
- ▶ Are there unique needs and systems for specific demographics or communities, such as indigenous populations, migrants, or undocumented individuals potentially creating systemic opportunities for populations to not be captured by a symptom tracker or triage tool?
- ▶ Can the data you collect be disaggregated by sex, gender, age, ethnicity/race, location, and other important demographic factors? Is the data time-stamped?



- ▶ Which community leaders can be partnered with to help build trust with specific communities? Are there similar leaders that would be relevant to high-risk professions or at-risk groups? Can these groups work with the government to communicate with the public?
- ▶ What are communications tools or strategies that need to be considered for a successful information campaign targeted at parts of the population? What languages do materials need to be written in? What are the literacy rates of target populations and how do materials need to be presented (e.g. graphics, cultural examples, etc.)? Who needs to be delivering the key messages to specific populations?

EXAMPLE(S) OF STRATEGY IN ACTION

In Arizona, the University of Arizona created [AZCOVIDTXT](#), a “two-way texting system designed to allow [residents] to report on the health status of [their] households. This information helps [public health officials] see how the virus is spreading [so they] can make the best decisions to stop it.”

Pre-primary care screening tools, like chatbots or symptom trackers, can serve as effective early warning systems. In Rwanda, a chatbot from [Babylon](#) Health helps with early detection of case finding by helping Rwandans get pre-primary care advice. It also acts as a triage tool for those who do need more acute clinical care.

Governments can create an online symptom tracker that allows individuals to check and see if they are developing or have symptoms that are consistent with a COVID-19 infection. These tools create value for the person taking the assessment but also for the government who collects the data because it



allows them to monitor population-level trends of infection. In New Jersey, the state's [symptom tracker](#) predicted zip code level warnings based off of ~5 percent of the population's responses. These trackers can be promoted through SMS, targeted advertising, or other types of promotion. Additionally, they are very inexpensive to develop and maintain. The New Jersey symptom tracker was based on a similar tool in [Alberta, Canada](#).

In [Singapore](#) people have their temperature measured before they can enter offices, schools, and public transport. The data from the thermometers is tracked and used to identify emerging hot spots and clusters of infection where diagnostic or confirmatory testing could be initiated.

During the pandemic many countries created websites and apps for health appointments and to check COVID-19 symptoms such as the UK NHS's [online symptom tracker](#). France also has a website with an [algorithm for screening and determining care plans](#) based on up-to-date government information. The city of Medellin in Colombia created the app Medellin me Cuida, which grants people access to services such as in kind help, financial assistance and directions to medical care. The app also regularly screens people for COVID-19 symptoms and if they flag positive it collects relevant information such as who they live with for contact tracing purposes. Similarly, The Brazilian state of Ceara is using a chatbot to track people's symptoms, how they are feeling in the pandemic and to realize contact tracing. Aggregated data is [openly available](#).

Experts:

- ▶ Tolbert Nyenswah, Johns Hopkins University
- ▶ Lakshminarayanan Subramanian, Courant Institute, NYU



- ▶ Kacey C. Ernst, University of Arizona
- ▶ Henri Hammond-Paul, The GovLab

Strategy to Implement recommendation:

Invest in and promote the use of technological and digital innovations that can help collect accurate and timely data.

Key Actions:

- ▶ Promote the use of wearables (smart watches, bio stickers, etc.) and portable health technology (eg. smart thermometers) that allow individuals to report symptoms, health conditions, or comorbidities.¹¹⁴
- ▶ Invest in and promote the use of technologies like [smart paper](#), phone apps, SMS surveys, that can be used by minimally trained/skilled workers to collect data and report it into open source or centralized platforms.
- ▶ Develop a smartphone app that collects opt-in geo-spatial information that can be used for contact tracing.
- ▶ Pilot [rapid paper-based tests](#) when the technology is available.
- ▶ Ensure technologies can integrate their data into national or centralized data systems, or open source platforms.
- ▶ Review all tools and technologies to ensure the highest level of data security, privacy, and anonymity where relevant.

Considerations for governments prior to implementing the strategy:

- ▶ What are the barriers to using new technologies, such as cost, knowledge, know-how, etc.? What are ways that governments or communities can overcome these barriers?
- ▶ How is data entry standardized (or not) for demographic information entered into the centralized data platforms? Can the platforms replicate data structures

¹¹⁴ Quer, G., Radin, J.M., Gadaleta, M. et al. Wearable sensor data and self-reported symptoms for COVID-19 detection. Nat Med (2020). <https://doi.org/10.1038/s41591-020-1123-x>



used in other systems, such as those used for test results, postal service, or health records?

- ▶ Which stakeholders are likely to resist changes to the status quo? Who will be most burdened by changes to the current system as it is improved? Why might stakeholders resist these changes?

EXAMPLE(S) OF STRATEGY IN ACTION

Public health authorities, companies, and governments have begun to use wearable technologies and smart thermometers to surveil and monitor populations and constituencies for potential outbreaks. Kinsa has developed [a smart thermometer](#) that collects and individual health data and aggregates it to the population level making it possible for public health authorities or governments to detect outbreaks in real time. Their [HealthWeather](#) map predicts where COVID-19 cases are likely to accelerate in the US. BioIntellisense has developed wearable technology that similarly collects vital data and has marketed this tech as a means of medical-grade screening that can allow safe reopening of schools and other parts of social and economic life.

Delaware, New York, [New Jersey](#), and Pennsylvania have developed interoperable apps, based on technologies from [Google and Apple](#), that allow individuals to report if they test positive for COVID-19 and digitally alert individuals who have been in proximity to an individual who is confirmed positive.

The Netherlands is [tracking mobile phone data to detect where individuals are forming groups](#), and is also [using a tracking app to track those who test positive and alert those who were exposed](#) to the virus. Similarly, the



Brazilian tech company Inloco is using mobile carrier data to openly provide a “[social distancing index](#)”. The state of Sao Paulo in Brazil is partnering with data providers to create a similar [index](#).

“Smart paper” forms are being used in East Africa to help digitize manually collected information. “Smart Paper” are printed paper that can be filled out by hand but scanned into a computer or phone, allowing them to be digitized quickly and with great accuracy. [SHIFO](#) - a Swedish company - has developed healthcare specific forms that are being used across East Africa ([Kenya](#), [Uganda](#), [Tanzania](#)). This technology allows for the collection of reliable data in hard to reach areas that may not have access to digital healthcare technologies. Importantly it is very low cost.

Experts

- ▶ Prashant Yadav, Center for Global Development & INSEAD
- ▶ James R. Mault, BioIntelliSense
- ▶ Nick Donowitz, THINKMD
- ▶ Mike Flowers, New Jersey Office of Innovation

Strategy to Implement recommendation:

Partner with institutions with high levels of social engagement, trust, and access to populations to collect information and implement public health monitoring and surveillance systems.

Key Actions:

- ▶ Identify institutions with high levels of social engagement and/or community trust to potentially partner with on surveillance systems. These may include institutions like elementary or secondary schools, religious institutions, sports



organizations, large employers like factories, and importantly primary care and public health facilities.

- ▶ Build relationships with key individuals in these institutions who will be leading the work internally to that institution. Make sure that this point of contact is empowered to make decisions and provide internal leadership to the partnership.
- ▶ Where possible, invest in capacity building and training for data collection amongst the staff persons in these institutions.
- ▶ Conduct training of trainers (TOT).
- ▶ Create an online course or asynchronous learning module that explains the fundamentals of the requested collaboration, including instructions on how to use the appropriate softwares, apps, or other data collection technologies.

Considerations for governments prior to implementing the strategy:

- ▶ Who are the major stakeholders outside of government that could be useful or impactful to help coordinate data collection? For example, are there large companies or employers that may be already conducting public health surveillance for their staff or employees? Can these employers or organizations coordinate or support government-led efforts? Under what conditions would it make sense for them to share information with the government? What additional privacy protections would these public-private partnerships require? Are there other types of organizations that governments should coordinate with, such as labor unions, transportation firms, etc.?
- ▶ Which community leaders can be partnered with to help build trust with identified institutions? Are there similar leaders that would be relevant to high-risk professions or other at-risk groups? Can these groups work with the government to communicate with the public?
- ▶ What are communications tools or strategies that need to be considered for a successful information campaign targeted at members of these institutions? What languages do materials need to be written in? What are the literacy rates of target populations and how do materials need to be presented (e.g. graphics,



cultural examples, etc.)? Who needs to be delivering the key messages to specific populations?

- ▶ What training is necessary to have workers competently and accurately collect data?
- ▶ Will the institutions require remuneration for their participation or will they do it for free or on a volunteer basis?

EXAMPLE(S) OF TOOL IN ACTION

Public health officials should use social surveillance systems that capitalize on institutions that populations already trust (e.g. schools, churches/religious institutions, community centers, etc.). In Mexico, the Directorate of Economic and Social Benefits at the [Mexican Institute of Social Security \(IMSS\)](#) is using data from employers across the country that indicates when workers are out sick or absent. This data is used to forecast where outbreaks may occur.

The Texas American Federation of Teachers has created an [online tool](#) that allows teachers and other community members to report cases in specific campuses and other education facilities. They can also report unsafe conditions in schools. The reports are displayed in a map which allows individuals and communities to track the specific schools most affected by COVID-19 at specific moments.

Experts

- ▶ Lee Rainie, Pew Research Center
- ▶ Nick Donowitz, THINKMD
- ▶ Anton Z. Ilarionov, RECAINSA



- ▶ David Barros Sierra Cordera, Directorate of Economic and Social Benefits at the Mexican Institute of Social Security
- ▶ Kacey C. Ernst, University of Arizona



RECOMMENDATION 2: IMPROVE INFORMATION INFRASTRUCTURE

Detailed Recommendation:

Improve public health monitoring and surveillance information infrastructure by standardizing data formats and definitions, sharing data, and developing regulations and legislation that support public health monitoring and surveillance.

Key strategies for implementation:

- ▶ Develop standard definitions, structures, and variables for key public health monitoring and surveillance health data.
- ▶ Promote and use open source and simple tools for data sharing between and among stakeholders.
- ▶ Develop and advocate for a legislative framework for public health monitoring and surveillance health data.

Why this recommendation supports public health monitoring and surveillance strategies:

- ▶ Improved information infrastructure will create cost-saving opportunities in the long-run because of the economies of scale created by using interoperable and streamlined technologies and data structures. Interoperability will allow for reduced costs in terms of labor and software expenditures.
- ▶ Legislative frameworks will help concretize improvements to information infrastructure, and will provide a pathway for standardizations and interoperability to be scaled across government and the private and social sectors.
- ▶ Open data initiatives and data sharing help operationalize public health monitoring and surveillance strategies by fostering collaboration and multiplying the capacity of those managing and implementing the strategies. Open data



initiatives encourage experts from different disciplines to work together, often leading to more expeditious results and improved program outcomes.

Strategy to Implement recommendation:

Develop standard definitions, structures, and variables for key public health monitoring and surveillance health data.

Key Actions:

- ▶ Convene stakeholders who manage Electronic Health Record (EHR) systems and other epidemiological data systems across the country and encourage a crosswalk of the current system(s) to identify potentials for standardizations.
- ▶ Identify specific opportunities to make immediate improvements to interoperability (such as standardizing similar fields across systems) and long-term improvements to interoperability (such as inter-system identifiers).
- ▶ Identify standardizable demographic data fields in existing systems such as phone numbers, email addresses, home addresses, social security numbers or voting IDs. Rely on existing data structures where possible, such as those maintained by telecom providers, voting registries, or social security administrators.
- ▶ Develop guidance for laboratories, hospitals, and healthcare providers on how to more consistently capture these important fields.
- ▶ Hold a workshop with key stakeholders to develop standard definitions, structures and variables.
- ▶ Develop a parallel system to collect the data that fixes the data infrastructure issues and that is compatible with existing instruments of data collection. This system should be opt-in and voluntary but it can be promoted through incentives.
- ▶ Incentivize adoption of standardized process and outcome measures within jurisdictions (vertical standardization) and across jurisdictions (horizontal



standardization) through technical assistance and cost reimbursements or cost sharing.

Considerations for governments prior to implementing the strategy:

- ▶ Who are the major stakeholders in your country who are in favor of standardized health data and surveillance data? Are private healthcare providers likely to support steps to work towards a standard set of definitions and data structures?
- ▶ Do different states/provinces utilize different metrics and databases? If so, how can these be integrated and standardized to share them across jurisdictions?
- ▶ How is data entry standardized (or not) for demographic information entered into various data platforms? Can centralized platforms replicate data structures used in other systems, such as those used for test results, postal service, or health records? Do individuals use a single identifier in all settings? Are entry formats standardized (such as date of birth, first name, last name)? Are identifiers entered manually in a way that entry errors can cause matching issues?
- ▶ How are health records managed in and across your country's health systems? Are they electronic health records or are they primarily paper records?
- ▶ Which stakeholders are likely to resist changes to the status quo? Who will be most burdened by changes to the current system as it is improved? Why might stakeholders resist changes, for instance is the cost of implementing new systems and data formats an issue?

EXAMPLE(S) OF TOOL IN ACTION



The [Greater New York Hospital Association](#) created a standard for hospital bed definitions that allows all hospitals in the area to transfer patients more easily during a disaster. The association accomplished this through a consultative process that engaged hospitals, clinics, nursing homes and other healthcare facilities.

Brazil's Unified Health System (SUS) uses a [National Healthcare Card](#), assigned to patients to keep track of medical records. The card, which has recently been digitized into an [electronic National Health identification card system](#) with a personal identification number, allows healthcare providers to access a patient's medical information anywhere in the country. This is possible due to a central database accessible from any public or private hospital within the Unified Health System network.

Estonia has one of the most [highly-developed national ID-card systems](#) in the world. Every citizen in Estonia has an online e-health record that can be tracked, and linked to a person's electronic ID-card. The health records are secured with KSI Blockchain technology and are used to ensure data integrity. The information is only accessible to authorized health personnel. 99% of health data, prescription information and electronic billing in healthcare are digitized. The [Electronic Health Record](#) is a nationwide system that integrates data from diverse healthcare providers into a common record accessible to patients and doctors as a single electronic file. The system functions as a centralized, national database that retrieves data from various providers with different systems and presents the information into a standard format via the e-patient portal.



Experts

- ▶ Claudio Struchiner, Fundação Getúlio Vargas
- ▶ Flávio Codeço Coelho, Getulio Vargas Foundation
- ▶ Randall Thomas, Thunderbolt Labs
- ▶ Ed Hammond, Duke University

Strategy to Implement recommendation:

Promote and use open source and simple tools for data sharing between and among stakeholders.

Key Actions:

- ▶ Review policies that govern and restrict the storage and sharing of health information.
- ▶ Set up an online, open repository for national surveillance data that provides timely reports in machine-readable format.
- ▶ Offer informal peer learning opportunities where governments or representative associations coordinate informal forums or opportunities for individuals designing, implementing, and managing public health monitoring and surveillance programs to share ideas, challenges and best practices. These opportunities should be extended to include researchers, epidemiologists, or non-governmental actors.
- ▶ Offer formal peer learning opportunities where governments or representative associations coordinate formal and structured forums or opportunities for those designing, implementing, and managing public health monitoring and surveillance programs to share ideas, challenges and best practices.
- ▶ Publish open datasets to encourage participation of multiple research groups; use scientific peer-review as a system of checks and balances ensuring research quality.
- ▶ Establish a code of conduct for research using public surveillance datasets.



- ▶ Establish a single organization with the responsibility to oversee and advise on ways to improve data sharing and incorporate new technologies and approaches as they emerge.
- ▶ Capitalize on existing databases or registers maintained by specific government agencies (such as social security, post service, or census data) to bolster existing public health monitoring and surveillance data systems.
- ▶ Integrate these databases into the public health monitoring and surveillance data systems or contact tracing platform to increase ability for contact tracers to reach individuals confirmed as COVID-19 positive or identified as contacts of COVID-19 positive cases.
- ▶ Develop and use a data governance playbook for epidemic response and building broad commitment to it (see [GovLab Zika/Mosquito Born Disease Report](#))

Considerations for governments prior to implementing the strategy:

- ▶ What are the laws and regulations that currently govern how health data is collected, stored and shared across governments? If one entity is authorized to collect data will it be difficult to have a different agency analyze that data or publish that data?
- ▶ What are the regulations governing how aggregate data is shared publicly?
- ▶ What are the barriers to openness, decentralization, and participation at each stage of the data life cycle?
- ▶ What public and private partners have data that will be important for government officials to access? How can these stakeholders be encouraged to participate in data sharing?
- ▶ What data are already collected by public health agencies or other state/government authorities? For example, does your jurisdiction already have a centralized reportable disease database that is sufficiently accessible to people across government? How are these data shared with state officials? Can they be accessed by the public?



EXAMPLE(S) OF STRATEGY IN ACTION

Taking advantage of pre-existing data sharing frameworks and the integration of the Brazilian Unified Healthcare System (SUS), the state of Ceara has standardized and unified its health metrics and indicators in a single [portal](#). This makes it quick and easy to compare the evolution of different metrics and evaluate measures taken. The local collection of data also insures much of it can be disaggregated by sex, gender, age, ethnicity and location.

In Ghana, the government's Statistical Service department entered into a [data sharing agreement](#) with Vodafone Ghana that allowed the government to use mobile data for health monitoring purposes and to plan public health policies. The [agreement](#) specified how the data was going to be aggregated and analyzed and specified data use and limitations. This data is now being used to document the impact of restriction measures during the COVID-19 pandemic.

The European Bioinformatics Institute launched the [Covid-19 Data Portal](#) in collaboration with multiple European partners. The portal is funded by the European Union to allow researchers and healthcare professionals to [submit, share, and access publicly available data on COVID-19](#) in order to assist in developing diagnostic tools, treatment and a vaccine.

Experts:

- ▶ Randall Thomas, Thunderbolt Labs
- ▶ Ed Hammond, Duke University



- ▶ Prashant Yadav, Center for Global Development & INSEAD
- ▶ Stefaan Verhulst, The GovLab
- ▶ Andrew Young, The GovLab

Strategy to Implement recommendation:

Develop and advocate for a legislative framework for public health monitoring and surveillance health data.

Key Actions:

- ▶ Conduct an analysis of existing regulatory and legislative mechanisms that may hinder or inhibit collecting, standardizing or sharing data.
- ▶ Issue temporary executive orders to enable data sharing while working toward a more durable and long-term regulatory and legislative solution. Use executive orders or other regulatory or legislative authorities to incentivize data sharing.
- ▶ Advocate for and develop new or replacement legislation and regulations that codify processes and mechanisms for open data sharing and interoperability of data structures and systems.
- ▶ Pass legislation or regulations that allows for controlled access to clinical data and the secondary use of that data.
- ▶ Use an executive order to direct all agencies to open the data they have related to measuring the impact of COVID, including both public health and economic data and data relevant to measuring impact on minority and vulnerable populations.
- ▶ issue a statistical policy directive establishing any needed public health data standards to improve national, local and non-governmental reporting of information necessary to respond to the coronavirus pandemic. Any new data standard or directive should apply consensus, voluntary standards to the extent practicable.
- ▶ Adopt a standard that is used to transport the data when you don't know who the recipient is. Examples of data sharing models include [HL7 - FHIR](#) and [N3C](#) (N3C



Data Enclave is a secure platform through which the harmonized clinical data provided by our contributing members is stored).

- ▶ For existing legislation, develop proposed replacement legislation and advocate for this legislation through the appropriate legislative processes and procedures.
- ▶ Reduce the regulatory burdens that hinder or inhibit data sharing between jurisdictions.

Considerations for governments prior to implementing the strategy:

- ▶ What are the current challenges you face in surveillance data collection, storage, sharing, and use, and what is the vision for an improved system? How can these challenges be addressed through regulations and legislation?
- ▶ What are the laws and regulations that currently govern how health data is collected, stored and shared across jurisdictions? What are the regulations governing how aggregate data is shared publicly? Are there regulatory barriers governing how data is shared between jurisdictions or government agencies?
- ▶ Who are the major stakeholders in your country who are in favor of heavily regulated health data and surveillance data? Are private healthcare providers likely to support steps to work towards a new set of data structures and sharing standards?
- ▶ Which stakeholders are likely to resist changes to the status quo? Who will be most burdened by changes to the current system as it is improved? Why might stakeholders resist changes? For instance is the cost of implementing new systems and data formats an issue?



EXAMPLE(S) OF STRATEGY IN ACTION

The Operational Framework for Mutual Aid Requests (OFMAR) is a mechanism that allows Provincial/Territorial (PT) governments to identify and share healthcare assets and professionals throughout jurisdictions. It has also established procedures to conduct emergency registration of healthcare professionals in other jurisdictions to ensure they are available to travel to the areas where they are most needed.

South Korea formalized legal frameworks to leverage metrics for disease prevention, such as utilizing alert levels to inform decisions in their approach to COVID-19. The alert levels serve as metrics to track the emergency response and to guide policy decisions based on alert levels.

Experts

- ▶ Ed Hammond, Duke University
- ▶ Javier Carnicero, In2
- ▶ Prashant Yadav, Center for Global Development & INSEAD
- ▶ Elizabeth Ruebush, ASTHO
- ▶ Amelia Poulin, ASTHO
- ▶ Randall Thomas, Thunderbolt Labs



RECOMMENDATION 3: INCREASE GOVERNMENT CAPACITY

Detailed Recommendation:

Increase government capacity to use public health monitoring and surveillance information to make policy and programmatic decisions.

Key strategies for implementation:

- ▶ Increase government capacity to use public health monitoring and surveillance data by training government workers in data science and partnering with data scientists.
- ▶ Develop, use, and refine multiple predictive models to help with pandemic planning, preparedness, and response.
- ▶ Create a COVID-19 “war room”, emergency operation center, or nerve center that centralizes data and decision making.

Why this recommendation supports public health monitoring and surveillance strategies:

- ▶ Governments have limited capacity to analyze and use data that they have collected or have access to. Providing training opportunities and/or partnering with academic institutions or private sector firms who have data expertise will (1) increase the long-term capacity of governments to build in-house expertise and (2) will provide immediate benefits of using collected data and information to inform public health strategy.
- ▶ “War rooms” or “emergency operations centers” help centralize decision making and allow governments to respond more quickly to pressing needs during a crisis. They provide structure and order to the complex system of stakeholders, information, data, and needs that can often overwhelm governments during a crisis. They are essential organizational infrastructure to be able to adequately



use public health surveillance data for planning, response, and recovery purposes.

Strategy to Implement recommendation:

Increase government capacity to use public health monitoring and surveillance data by training government workers in data science and partnering with data scientists.

Key Actions:

- ▶ Allocate funds from current training budgets to fully or partially fund employees to attend existing data science programs offered by local or international universities.
- ▶ Partner with universities or research institutions to develop training programs for government staff and workers.
- ▶ Partner with universities or research institutions for secondments of subject matter experts who can fill capacity gaps while training programs are being established.
- ▶ Identify cultural and institutional features of the community that may influence the quality of monitoring data, including information about any sources of distrust that may influence the community's response to the program. Include specific modules or materials on accounting for these biases in the data.
- ▶ Ensure that the partnership is led by a government counterpart that is passionate to get things done and who has access to resources and technical knowledge of data analysis.
- ▶ Partner with a data science company by carrying out a bidding process to contract an external provider. In-house data expertise is necessary to define the scope of the project, evaluate the proposals and manage the project.
- ▶ Include modules that teach government workers to design, maintain, and publish data dashboards that are updated regularly and show progress on metrics. Fund and assign a data science team to specifically take charge of public-facing data communications, including data dashboards.



- ▶ Conduct training at the local level and/or support the hiring of health IT specialists and health informatics specialists.

Considerations for governments prior to implementing the strategy:

- ▶ If governments do not have the capacity to coordinate data analysis they must be able to identify and partner with experts from universities or other sectors who can support data analytics. What are groups of experts that may have a particular valuable expertise that is underutilized?
- ▶ What are the regulatory and legislative structures for partnerships with academic institutions? Are the national or public universities that government agencies already have partnerships with?
- ▶ Do other ministries in government have expertise that can be seconded to support public health data analysis? For example, are there government officials in IT departments, treasury, social security services, etc. that have the requisite data expertise or technological know-how?
- ▶ What are available online resources that can provide learning opportunities for government workers?

EXAMPLE(S) OF STRATEGY IN ACTION

Capacity limitations among public officials is one of the barriers for developing predictive analytics projects. To carry out big data projects, public servants “will need the capability to (1) manage and process large accumulations of unstructured, semistructured, and structured data; (2) analyze that data into meaningful insights for public operations; and (3) interpret that data in ways that support evidence-based decision making.” According to the McKinsey Global Institute, talent with data analytic skills will face relevant shortages. This shortage will have a disparate impact in



the public sector, “as private sector employers will pay more to attract skilled professionals in big data analytics.”

In Central America, the RECAINSA is working very closely with COMISCA (<https://www.sica.int/comisca/>) to provide training for epidemiologists and to strengthen the Government's capacity to collect and use data efficiently.

The Vietnamese Ministry of Health [partnered with PATH](#) -- a non-profit focused on innovations in public health -- to develop digital tools to improve the effectiveness and efficiency of daily data analytics for monitoring the spread of COVID-19.

The Chinese technology company Huawei sponsored a digital skills training for [Kenyan civil servants](#) and government officials that was designed to improve their data and IT skills. The press releases from the partnership stated that the training was designed to “boost [Kenyan civil servants’] knowledge in emerging technologies including Artificial Intelligence (AI), Internet of Things (IOT), smart city, cybersecurity and e-government.” Over 700 Kenyan civil servants completed the training.

Experts

- ▶ Lakshminarayanan Subramanian, Courant Institute, NYU

Strategy to Implement recommendation:

Develop, use, and refine multiple predictive models to help with pandemic planning, preparedness, and response.

Key Actions:

- ▶ Estimate preparedness of and potential impact on healthcare infrastructure.



- ▶ Use open-source data to predict and model viral spread.
- ▶ Be creative in finding new data sources such as government hotline data.
- ▶ Get the public to collect and contribute data. Citizen participation can be leveraged in data collection. When the community's contribution is built on trust, data collection can be increased and improved, especially if the community can see a correlation to useful public services provided as a result.
- ▶ Establish public-private data partnerships (data collaboratives) with the private sector. Data sources that illustrate human movement are especially valuable and those can be sourced from telephone companies. Data sources that illustrate behavior are also valuable and these can be sourced from search engine companies.
- ▶ Incentivize engagement with the data-science community through prize-backed challenges. Use challenges to rapidly develop alternative predictive models and leverage outside expertise.
- ▶ Assess the risks and biases inherent in the data in order to plan for and mitigate unintended consequences.
- ▶ Increase data analytics capacity of public health officials in partnership with research institutions and universities through training and other knowledge transfer opportunities.

Considerations for governments prior to implementing the strategy:

- ▶ What are available sources of data that could be used for predictive modeling? For example, is there hotline data, syndromic surveillance data, social media data, or mobility data that can be used?
- ▶ What levels of expertise does the government have in-house to develop and use predictive models? How can the government get access to external expertise such as academics, or private sector experts?
- ▶ How will the government use the models? Will they be used for internal planning and preparedness activities? Will they be used for external or public-facing



communications? How will the government communicate or manage the accuracy, precision, and potential error of the models?

EXAMPLE(S) OF STRATEGY IN ACTION

The IDB and Institute for Clinical Effectiveness and Health Policy have developed an [open source model](#) to estimate the impact of the spread of COVID-19 on the health systems of the countries in Latin America and the Caribbean. The project, which uses a “SEIR” – (S) susceptible, (E) exposed, (I) infected and (R) resistant – transmission model, includes the compilation of key indicators of health system readiness in terms of resources to face the epidemic, and takes into account critical parameters of the healthcare system.

Facebook's [Data for Good](#) initiative has helped jurisdictions across the USA predict county-level spread. The free and open source tool provides AI-powered forecasts that predict the spread of COVID-19 across the entire United States at the county level.

Open source models like [Facebook AI](#) model or the [UPenn Chime Model](#) can be used to predict impacts on specific populations, such as elderly populations or those living in [long term care facilities](#). They have also been used to 1) predict cases and deaths, 2) predict hospital level demand, 3) support bed capacity planning, 4) predict peak estimation, 5) support PPE estimation, and 6) estimate second wave modeling.



Experts

- ▶ Adolfo L Rubinstein, Instituto de Efectividad Clínica y Sanitaria
- ▶ Flávio Codeço Coelho, Getulio Vargas Foundation
- ▶ Lakshminarayanan Subramanian, Courant Institute, NYU
- ▶ Pablo Oliva, Professor of Medicine at Universidad Autónoma Metropolitana

Strategy to Implement recommendation:

Create a COVID-19 “war room”, emergency operation center, or nerve center that centralizes data and decision making.

Key Actions:

- ▶ Ensure that the nerve center follows an established management system such as the National Incident Management System (NIMS) in the USA¹¹⁵ or the Incident Coordination System in Australia.
- ▶ Develop a data linkage environment or platform that rapidly and confidentially supports data matching, de-identification, and use. This platform/environment should integrate data from different sources and allow officials to access it for decision making through a user-friendly interfaces.
- ▶ Establish clear and written responsibilities and expectations for nerve center staff based on their experience and expertise. Functions should include leadership and management, operations, information management, logistics, media, security, administration, and technology.
- ▶ Standardize an organizational structure based on clear top-down command and control with all the commanding positions arranged hierarchically.
- ▶ Continually update and manage contact information for all officials and staff so that no gaps in service occur.
- ▶ Conduct exercises to evaluate the nerve center ability to respond to specific and general public health emergencies.

¹¹⁵ For additional information and resources on ICS, visit the [FEMA ICS Resource Center](#).



- ▶ Maintain situational awareness by integrating multiple data streams from government databases, healthcare surveillance systems, mass media, online social media, hotlines, and other data sources.
- ▶ Strengthen information management by developing methods for risk detection and assessment.

Considerations for governments prior to implementing the strategy:

- ▶ What data sources exist that can be integrated into the nerve center? How often are these data sources updated? How easily can they be integrated?
- ▶ Will the nerve center need to operate in-person or can it operate remotely via teleconferences and web-enabled management platforms?
- ▶ Who are the key leaders from various sectors that will need to be present for decision making? These may include law enforcement, public health officials, public utilities officials, elected officials, lawyers, representatives of the private sector, etc.

EXAMPLE(S) OF STRATEGY IN ACTION

The [Federal Emergency Management Agency \(FEMA\)](#) in the USA offers training modules online and in-person for how to run an Emergency Operations Center (EOC) and how to implement the National Incident Management System. Resources are free to the public online.

[Mckinsey & Company](#) has developed resources for setting up a “minimum viable nerve center” that is designed to solve (1) inadequate discovery – or the “depths, extent and velocity of the crisis”; (2) poor decision making; (3) constrained solution design; and (4) delivery failure. Their model is applicable to individual organizations and also to governments.



The Indian State of Karnataka established the [Karnataka State COVID-19 War Room](#) for better data management and to centralize information. The war room has a unified online portal which provides a depth of information including daily reports and analysis, contact tracing information, a quarantine watch, and much more. As part of their duties they have overseen the implementation of an [automated bed management system](#) and also [developed eight COVID-19 applications](#) as part of their pandemic management plan. Other states and cities in India, have also implemented COVID-19 war rooms to streamline operations and improve patient management, including the city of [Mysuru](#). The war room in Mysuru has been credited with [containing the surge of cases in October](#) and is being implemented in other districts.

Experts

- ▶ Anita M McGahan, University of Toronto
- ▶ Lakshminarayanan Subramanian, Courant Institute, NYU



MENTAL HEALTH AND EMOTIONAL WELLBEING

On November 18, 2020, a group of 27 leading experts from across the world joined officials representing the Argentine, Bahaman, Ceará-Brazilian, Costa Rican, Mexican, Uruguayan, Peruvian, Paraguayan and Surinamer governments in a two-hour advising session to identify novel solutions that leaders can use to support mental health services and the emotional wellbeing of national populations during their fight against COVID-19.

The discussion focused on three topics that broadly capture issues related to mental health, emotional wellbeing, and the pandemic:



1. **Improving mental health outcomes through technological innovations:** How can technologies can be used to meet the increased demand for mental health services including suicide prevention, substance abuse, anxiety, and depression?
2. **Improving mental health outcomes through community-based and social innovations:** How can community institutions such as schools, churches/religious institutions, patient groups, and athletics organizations support the mental health and wellbeing of their communities?
3. **Promoting and socializing mental health services:** How can we make sure these tools and strategies actually lead to uptake in services and improved outcomes? What are public information strategies to promote available mental health resources and supports?

Following the advisory session, participants from the Latin American and Caribbean governments selected those proposed solutions which they were most interested in implementing. The GovLab then conducted further research, consulted various subject matter experts and potential partners, and developed a high-level memo and implementation plan that Latin American governments can use to inform their efforts to combat COVID-19. The recommendations presented in this chapter are not intended to be exhaustive but rather they reflect the articulated interest of national governments who are participating in the Smarter Crowdsourcing in the Age of Coronavirus project.

EXECUTIVE SUMMARY

Problem Statement

Large-scale disasters are frequently accompanied by spikes in mental health issues and ripple effects such as post-traumatic stress disorder, substance abuse, anxiety, depression, behavioral disorders, child abuse, and domestic violence. These issues affect specific members of society including frontline health workers, ill



individuals, families of ill individuals, essential workers, the unemployed and underemployed, and the general population who are isolated and/or quarantined. Governments are ill-equipped to respond to the mental-health consequences catalyzed by the pandemic: the large numbers of **deaths**, the toll of quarantine and social isolation, and the psychosocial consequences of economic recession and loss.

Recommendations and strategies to address the problem:

Governments must (1) expand access to mental health services, (2) minimize long term mental health trauma caused by the pandemic, and (3) address the current mental health crises. Latin American and Caribbean governments can accomplish this by embracing innovation, data, and legislative processes to strengthen their mental health strategies. The following three recommendations provide strategies to achieve the intended results to help governments' support the mental health and emotional wellbeing of their populations during the pandemic.

- 1. Government capacity and regulatory environment:** Improve legislative and regulatory frameworks for mental health services.

Key Strategies for Implementation

- ▶ Create a legal framework to regulate and fund mental health priorities.
- ▶ Create a national mental health plan to implement the resulting legislation and regulations.
- ▶ Promote specific public policies and interventions that prioritize mental health services for healthcare workers and frontline personnel.



RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	6+ months		
For additional information see: Implementation Memorandum			

2. **Data and Technology:** Use digital technologies and data to expand access to mental health services and improve service delivery.

Key Strategies for Implementation

- ▶ Use technology to bridge access gaps and reach individuals who cannot access treatment due to cost, location, language, or other barriers.
- ▶ Improve the data collection and use for mental health providers.

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	< 6 months		
For additional information see: Implementation Memorandum			

3. **Increase provider capacity:** Increase provider capacity through innovations in training opportunities and strategies to expand the workforce supply.



Key Strategies for Implementation

- ▶ Use technology and resource repositories to train community health workers and other healthcare providers who may have limited experience in mental healthcare and mental first aid.
- ▶ Engage cross-sectoral partners to expand the supply of mental health workers.

RESOURCES	TIME	COMMUNITY IMPACT	INSTITUTIONAL FEASIBILITY
	Ongoing		

For additional information see: [Implementation Memorandum](#)

This chapter discusses the above three recommendations and offers implementation plans for how governments in Latin America and the Caribbean can take concrete steps to the mental health and emotional wellbeing of their populations. The document offers both detailed recommendations and implementation plans for those recommendations.

The detailed recommendations offer a discussion on of the above 3 recommendations including (1) strategies to achieve the intended results and (2) support for why the recommendation will help governments' support the mental health and emotional wellbeing of their populations during the pandemic.

The implementation plans take each of the recommendations and discuss the strategies needed to implement them. These sections are designed to be action guides for government officials who are looking for guidance on specific actions they can take to support mental health and emotional wellbeing of populations during the pandemic. Each implementation plan has the following structure:



- ▶ Strategy summary;
- ▶ Key actions for implementation;
- ▶ Considerations for governments prior to implementing the strategy;
- ▶ Examples – positive examples of how the strategy can support mental health outcomes; and
- ▶ Experts to consult.¹¹⁶

TOPIC BACKGROUND AND PROBLEM DESCRIPTION

Background

This section outlines the current situation of the emerging mental health crisis that has resulted due to the pandemic. It also analyzes the policies that governments have put in place to address the spread of the virus have contributed to a heightened mental health crisis.

From the people who have contracted the virus, to the children whose schools have been closed, to the millions of jobs lost, to the hundreds of thousands of lives lost the pandemic has interrupted nearly every facet of public, private and professional life. Mental health, aside from the clinical treatment of those infected with COVID-19, is one of the most pressing yet underaddressed aspects of the pandemic. According to the WHO, “Psychological distress in populations is widespread. Many people are distressed due to the immediate health impacts of the virus and the consequences of physical isolation.”¹¹⁷

Prior to the pandemic, mental health services across the world were underfunded and in short supply; in fact, mental health and substance use disorders continue to

¹¹⁶ If governments would like to contact these experts, please email henri.hp@thegovlab.org for an introduction/facilitated connection.

¹¹⁷ https://www.un.org/sites/un2.un.org/files/un_policy_brief-covid_and_mental_health_final.pdf



be the leading cause of disability worldwide.¹¹⁸ According to the Pan American Health Organization, the median public health spending on mental health in the Latin American region is less than 2.0% of countries' health budget.¹¹⁹ Compounding the pre-COVID underinvestment in mental health services, the pandemic 1) impacted many of these services that are traditionally delivered in person or face-to-face and 2) dramatically increased the number of people needing mental health support services.

The magnitude of this overwhelming need is not fully clear as the data is still being collected, however, what is clear is that suicides, domestic abuse, alcohol and drug abuse, and reports of anxiety and depression are on the rise. Signals of the looming global and regional mental health crisis include:

- ▶ Over 60% of countries reported to the WHO disruptions to mental health services for vulnerable people, including children and adolescents (72%), older adults (70%), and women requiring antenatal or postnatal services (61%).¹²⁰
- ▶ In Brazil, 89% of psychiatrists reported a worsening of their patients' symptoms since the start of the pandemic; 69% of psychiatrists reported relapses of patients who had been previously discharged.¹²¹
- ▶ A Google Trends Analysis shows that since COVID-19 reached Latin America, searches for the terms "anxiety" have grown over 50% in Ecuador, Mexico and Peru, "panic attack", by over 30% in Brazil, Colombia, Ecuador, Mexico and Peru

¹¹⁸ Global burden of disease attributable to mental and substance use disorders: findings from the Global Burden of Disease Study 2010. Whiteford HA, Degenhardt L, Rehm J, Baxter AJ, Ferrari AJ, Erskine HE, Charlson FJ, Norman RE, Flaxman AD, Johns N, Burstein R, Murray CJ, Vos T. Lancet. 2013 Nov 9; 382(9904):1575-86. DOI: [10.1016/S0140-6736\(13\)61611-6](https://doi.org/10.1016/S0140-6736(13)61611-6)

¹¹⁹ <https://www.paho.org/es/temas/salud-mental>

¹²⁰<https://www.who.int/news-room/detail/05-10-2020-covid-19-disrupting-mental-health-services-in-most-countries-who-survey>

¹²¹ "Atendimentos psiquiátricos no Brasil sofrem impacto da" 11 May. 2020, <https://www.abp.org.br/post/atendimentos-psiquiatricos-no-brasil-sofrem-impacto-da-pandemia-de-covid-19>. Accessed 13 Oct. 2020.



and “insomnia” by over 50% in Chile, Ecuador and Mexico relative to 2019.¹²² These trends are a proxy for the emerging mental health crisis in the region.

- ▶ A survey by Oswaldo Cruz Institute in Brazil found that nearly 18% of people reported an increase in alcoholic beverage consumption, with a correlation with feeling sad or depressed.¹²³
- ▶ The number of suicides nearly doubled in Japan from August last year.¹²⁴
- ▶ Over 65% of therapists in India report increases in self-harm and suicidal ideation.¹²⁵
- ▶ Modeling for the US, estimates that the Pandemic could lead to an additional 75,000 deaths of despair (alcohol, drug, and suicide).¹²⁶

Recent studies have sought to quantify the impacts of mental health disorders on physical health and economic outcomes. In research conducted on the 2008 global financial recession, economists and physicians estimated that a 1% rise in unemployment was associated with a .99% rise in the suicide rate in the US; this finding was also seen in Europe and in Asian countries during the economic recession of '97-98.¹²⁷ Mental health disorders, when left unaddressed, have considerable economic consequences as well. Global lost economic productivity due

¹²² "Durante pandemia, cresce interesse por saúde mental em" 14 Aug. 2020, <https://www.covidradar.org.br/analises/durante-pandemia-cresce-interesse-por-saude-mental-em-paises-da-america-latina/>. Accessed 13 Oct. 2020.

¹²³ "ConVid Pesquisa de Comportamentos." https://convid.fiocruz.br/index.php?pag=bebiba_alcoolica. Accessed 13 Oct. 2020.

¹²⁴<https://www.bloomberg.com/news/articles/2020-10-08/suicide-spike-in-japan-shows-mental-health-toll-of-covid-19>

¹²⁵<https://www.bloomberg.com/news/articles/2020-10-08/suicide-spike-in-japan-shows-mental-health-toll-of-covid-19>

¹²⁶<https://wellbeingtrust.org/areas-of-focus/policy-and-advocacy/reports/projected-deaths-of-despair-during-covid-19/>

¹²⁷ McIntyre, R.S. and Lee, Y. (2020), Preventing suicide in the context of the COVID-19 pandemic. *World Psychiatry*, 19: 250-251. doi:[10.1002/wps.20767](https://doi.org/10.1002/wps.20767)



to depression and anxiety is estimated to be over \$1 trillion (USD). Other research shows the flip side of the economic burden of mental health disorders, with a 500% return on investment for every \$1 (USD) spent on evidence-based treatments.¹²⁸

A variety of factors have caused this mental health epidemic, including many of the prevention and response policies that governments have (justifiably) imposed to combat the transmission of COVID-19. Policies like social distancing, isolation and quarantine, school closures, businesses closures, and social and cultural lockdowns have contributed to increased anxiety, depression, economic hardship, stress, distress, and uncertainty. In addition to these policies, social media, news media, and the near-constant coverage of the virus have amplified the levels of fear, unrest, and uncertainty about the future.

As with all issues, while the pandemic has impacted the lives of virtually everyone, it has not impacted all equally. Specific populations, including frontline health workers, women, children, and the elderly are all experiencing surges of mental health issues, especially when compared to other parts of the population.

To address the mental health crisis, governments must develop specific plans and hold themselves accountable to supporting their constituencies. Key areas of consideration for organizing a systemic approach to addressing the mental health crisis include:

1. **Improving mental health outcomes through in-person care innovations:** traditional mental health services have experienced significant disruption due to closure of in-person services and facilities. How can traditional face-to-face services be provided in a time of social distancing? How can governments

¹²⁸<https://www.who.int/news-room/detail/05-10-2020-covid-19-disrupting-mental-health-services-in-most-countries-who-survey>



support closing the gap in treatment and reconnecting people to the mental health services they need?

2. **Improving mental health outcomes through technology and remote innovations:** how can digital technologies and “COVID-safe” activities be adapted to expand access and coverage for mental health services? Are there population-specific interventions that can benefit from new technologies? What innovations can be used to meet the increased demand for mental health services?
3. **Improving mental health outcomes through community-based and social innovations:** how can communities and social institutions adapt to a “social distanced” reality and still provide opportunities for people to interact, socialize, and be less isolated?
4. **Promoting and socializing mental health services:** what are ways to integrate mental health services into key in-person touchpoints of the care continuum (e.g. primary care, community health centers, clinics)? What are public information strategies to promote available mental health resources and supports? How can governments use social media to promote services?
5. **Destigmatizing and creating an open dialogue:** stigma remains one of the most deep-rooted barriers to uptake of mental health services. How can governments 1) address culturally rooted prejudices and stigmas about mental health disorders, and 2) create a more open dialogue about treatments, care, and population needs?



Problem Overview

This section discusses the root causes and core problems determining the endemic lack of attention and priority given to mental health treatments.

- ▶ **Systemic underfunding:** Governments and healthcare systems systemically underinvest and underfund mental health services. In terms of the pandemic, the [World Health Organization](#) (WHO) reported that while 89% of countries have included mental health and psychosocial support as part of their pandemic response plans, only 17% of these countries have funded these services.¹²⁹ This dearth of funding at a national level underscores the more cultural underinvestment and undervaluation of mental health services. The [WHO](#) also found that only 2% of their most countries' health budgets go to mental health; in terms of international assistance funding, support has never exceeded 1% of all development assistance for health. More than 70% of persons who need mental health services lack access to care causing what experts now call the "mental health treatment gap."¹³⁰ Nearly 90% of individuals requiring treatment for schizophrenia in low-income countries do not receive treatment.¹³¹

- ▶ **Economic hardship and loss of livelihoods:** Loss of livelihoods and economic change are two of the most evident factors that are linked to increases in suicide and other mental health disorders.¹³² Globally, the pandemic has decimated entire

¹²⁹<https://www.who.int/news-room/detail/05-10-2020-covid-19-disrupting-mental-health-services-in-most-countries-who-survey>

¹³⁰ The treatment gap in mental health care. Kohn R, Saxena S, Levav I, Saraceno B. Bull. World Health Organ. 2004 Nov; 82(11):858-66.

¹³¹ Service availability and utilization and treatment gap for schizophrenic disorders: a survey in 50 low- and middle-income countries. Lora A, Kohn R, Levav I, McBain R, Morris J, Saxena S Bull. World Health Organ. 2012 Jan 1; 90(1):47-54, 54A-54B.

¹³²<https://www.npr.org/sections/health-shots/2020/05/13/850665769/act-now-to-get-ahead-of-a-mental-health-crisis-specialists-advise-u-s>



economies. Within countries, specific sectors, including the informal sector and tourism sectors have been especially affected by travel restrictions and social isolation and distancing orders.

- ▶ **Social isolation and disconnection:** Social isolation is well established as a factor that is associated with suicide and other less severe mental health conditions.¹³³ Preventative and response measures taken by many governments to enforce social distancing and encourage social and physical isolation have contributed to increased feelings of isolation and loneliness among the population.
- ▶ **Inadequate insurance coverage and cost of care:** The PAHO reports that the burden of mental, neurological, substance use disorders and self-harm is on average 31.5 times greater than public expenditure in the Americas.¹³⁴ With this chronic underfunding of public mental healthcare, the private sector has filled the gap in providing mental healthcare in the Latin America and the Caribbean region. However, insurance providers seldom prioritize mental health, leading to high out-of-pocket expenses for individuals seeking treatment; this cost burden grows for individuals in the long term, given that treatment for mental health disorders often takes sustained engagement with a provider. This leads to inadequate access to mental health treatment and resources for low income populations. This market failure has made getting mental health care from a clinician or otherwise licensed provider cost prohibitive for many people who need care. The intersection of lack of coverage and increased need among low income individuals compounds the impact of many mental health disorders, making them go untreated.

¹³³ McIntyre, R.S. and Lee, Y. (2020), Preventing suicide in the context of the COVID-19 pandemic. *World Psychiatry*, 19: 250-251. doi:[10.1002/wps.20767](https://doi.org/10.1002/wps.20767)

¹³⁴ "The Burden of Mental Disorders in the Region of the Americas" 6 Dec. 2018, <https://iris.paho.org/handle/10665.2/49578>. Accessed 13 Oct. 2020.



- ▶ **Supply shortages of mental health providers:** Latin America and the Caribbean have 23 times fewer mental health workers per 100,00 inhabitants than the US and Canada.¹³⁵ However, mental health care workforce size varies greatly between countries in the region. From Argentina at a world leading 222 psychologists per 100,000 inhabitants, to Suriname, with 0.54, the mental health care workforce is very unevenly distributed across the region.¹³⁶ Many countries in Latin America and the Caribbean -- especially lower income ones -- face a shortage of mental health care providers, even more so in the public sector.¹³⁷
- ▶ **Fragmented care:** Mental health services are treated as secondary or tertiary or even outside the scope of many areas of clinical care. As such, they are not given due consideration and attention when developing courses of treatment for affected individuals. Furthermore, mental health services are not integrated into other areas of social services meaning that when individuals touch other parts of the care continuum (e.g. seeing a doctor, going to a hospital, getting food assistance, etc.) they are not immediately connected to pathways that will lead them to mental health support.
- ▶ **Stigma and discrimination:** Mental health disorders, within many cultures and especially in Latin America and the Caribbean, are deeply stigmatized issues. They are often associated with marginalized and demonized groups such as the homeless, so-called “crazy” people, and those in late stages of substance abuse.. Compared to physical health conditions, mental health conditions go undertreated and undiagnosed in large swaths of the population. Individuals are

¹³⁵ "Atlas de salud mental de las Américas 2017 - IRIS PAHO Home." <https://iris.paho.org/handle/10665.2/49664>. Accessed 13 Oct. 2020.

¹³⁶ "GHO | By category | Mental health governance - Data by country." <https://apps.who.int/gho/data/node.main.MHPOLFIN?lang=en>. Accessed 13 Oct. 2020.

¹³⁷ "Atlas de salud mental de las Américas 2017 - IRIS PAHO Home." <https://iris.paho.org/handle/10665.2/49664>. Accessed 13 Oct. 2020.



hesitant to seek treatment and services because of fear of stigmatization or discrimination. In the US, 57 percent of adults in [2017](#) with a mental health condition did not receive mental health treatment in the last year; this undertreatment is attributed to both lack of access care but also unwillingness to seek care because of perceptions of weakness and other sociocultural factors. Stigma is often the result of low levels of knowledge and information about mental illness; lack of information leads to discrimination and other forms of prejudice against those experiencing mental health disorders.

- ▶ **Integration into other clinical care settings:** Historically, mental health disorders have been treated in specialized settings such as psychiatric hospitals or in-patient clinics. Basic mental health services have not been adequately integrated into primary care practices and other care settings. This makes accessing care, especially for people who do not live near specialized facilities (e.g. rural populations) increasingly difficult.¹³⁸
- ▶ **Sociocultural Factors and Disparities:** Non-random segments of the population, including racial and ethnic minorities, the impoverished, the homeless and the elderly, may face specific structural barriers to participating in and benefiting from digitized mental health services. First, mental health services must consider language and education levels when developing the program ensuring that it is accessible in various formats and mediums to populations who may not be highly literate, may not speak a culturally dominant language, or may have other access and functional needs. Second, these populations may face technological barriers either in access to technologies (e.g. smartphones that can download apps) or how to use those technologies even if they do have them. Third, specific populations may reside in under resourced areas or that lack access to

¹³⁸ Wainberg ML, Scorza P, Shultz JM, et al. Challenges and Opportunities in Global Mental Health: a Research-to-Practice Perspective. *Curr Psychiatry Rep.* 2017;19(5):28. doi:10.1007/s11920-017-0780-z



broadband/cell phone coverage, health services, and social support services. Lastly, and very importantly, these populations may experience significant distrust in government due to histories and experiences of discrimination, exploitation, weakness of community mental health programs, oppression, and institutionalized violence.

REGIONAL CONTEXT

Argentina

Context and Actions Taken:

- ▶ Argentina's Action Plan for the Construction of a National Response Network in Mental Health and Psychosocial Support in the face of Emergencies and Disasters has provided primary healthcare workers with the tools to support mental health during the COVID-19 emergency. The government manages a repository of [open educational resources](#), with extensive materials on mental health during emergencies, including information on psychological first aid, mental health and psychosocial in emergencies and disasters, and stigma and mental health. To support the continuity of care during the lockdown, many provinces set up phone lines for mental health services and are working on developing phone apps. In addition, telecare and telehealth have also allowed for the continuity of care.

Challenges:

- ▶ Argentina issued a lockdown for over 100 days which has increased the incidence of anxiety and panic as well as contributed to an increase in domestic violence and self-harm. Some citizens have reported a five-fold increase in depression as a result of the quarantine and diagnoses of



depression are five times higher than before COVID-19.¹³⁹ A study conducted by the University of Buenos Aires reports that two-in-three Argentines are having difficulty sleeping¹⁴⁰ and six in ten report gaining weight and increasing their consumption of cigarettes, alcohol, illegal drugs and psychiatric drugs.¹⁴¹ Main obstacles to telemedicine and telecare have been (1) internet connectivity and (2) cultural barriers that do not support the uptake of digitized healthcare services.

Bahamas

Context and Actions Taken:

- ▶ The Bahamas has a mental healthcare system focused primarily on community-based and outpatient mental health, with hospitalization as a last resort.¹⁴² The private sector is responsible for a significant portion of mental healthcare, especially for outpatient care.¹⁴³ The Ministry of Health, established telephone and WhatsApp hotlines for Mental Health and Psychosocial Services. While the hotline offers aid for acute cases, there hasn't been a significant implementation of telemedicine for patients requiring sustained care. In the private sector, video calls have

¹³⁹<https://www.telegraph.co.uk/news/2020/10/20/psychological-trauma-longest-lockdown-mounts-buenos-aires-argentina/>

¹⁴⁰<https://www.dw.com/en/coronavirus-argentinas-never-ending-quarantine/a-54721129#:~:text=160%20days%20of%20quarantine%20and%20counting&text=Four%20days%20later%2C%20Argentina's%20Ministry,national%20lockdown%20went%20into%20effect.>

¹⁴¹ Ibid.

¹⁴² "Bahamas - World Health Organization." https://www.who.int/mental_health/evidence/atlas/profiles-2017/BHS.pdf?ua=1. Accessed 2 Nov. 2020.

¹⁴³ From interview with government officials.



been largely adopted, particularly by psychologists and psychiatrists.¹⁴⁴ Civil society actors have been offered education about mental health treatment and resources, through online seminars, the radio, and television with the goal of helping individuals and communities recognize the signs of mental health, normalize seeking help, and direct the public to resources available in the public and private sector.

Challenges:

- ▶ The mental healthcare system is not equipped to collect data to quantify the demand for treatment or the incidence of specific disorders. The Ministry of Health has little capacity to objectively measure how the pandemic has affected the demand for mental healthcare services. Stigma around mental health hinders the state's capacity to accurately assess the situation on the ground.¹⁴⁵

Ceará- Brazil

Context and Actions Taken:

- ▶ The state Secretariat of Health's Coordination for Mental Health, Alcohol and other Drugs Policies (COPOM) created its own set of guidelines for mental healthcare facilities to continue offering care, with greater safety, even through periods of lockdown. COPOM is working to use this moment of low demand, to better integrate its systems, to offer more services remotely, and to strengthen the mental healthcare system as a whole. The

¹⁴⁴ Ibid.

¹⁴⁵ Ibid.



government is working to strengthen its capacity to collect data. It has made use of the moment to narrow its relationship with care providers, both as a way to gather information for better policy, as well as to give these professionals a sense of being heard and taken care of.¹⁴⁶

Challenges:

- ▶ People avoid seeking all kinds of medical care, including for mental health, out of fear of infection. This vacuum of care due to people's fear of becoming infected has added to increased mental strain on citizens. Health officials expect to see a significantly higher than average need for mental healthcare in the coming months and years.¹⁴⁷

Examples:

- ▶ COPOM created the [COVIDA](#) program, to offer telemedicine in mental health to the general population. Citizens can access it through a chatbot, either online or on WhatsApp.¹⁴⁸

Costa Rica

Context and Actions Taken:

- ▶ Costa Rica's mental healthcare system is part of the national public health system and mental health services are covered by national health

¹⁴⁶ Ibid.

¹⁴⁷ Interview with health officials.

¹⁴⁸ Ibid.



insurance. These services rely on community-based facilities and prioritize outpatient care.¹⁴⁹

- ▶ The Ministry of Health launched a set of three studies in partnership with universities which aimed to investigate the state of mental health among frontline health workers, the general population, and elderly citizens, in the context of the pandemic.¹⁵⁰

Challenges:

- ▶ A survey by the National Institute of Women (INAMU) found that the biggest source of strain for women during the pandemic has been the loss of economic opportunities. In fact, of the women who sought aid in INAMU's regional units, over 90% had lost at least some of their livelihoods.¹⁵¹ Domestic violence remains one of the most urgent and under addressed issues of the pandemic.¹⁵² Costa Rica has a high influx of refugees and migrants who are in need of mental health care. A published report the Inter-American Commission of Human Rights, highlighted the importance of guaranteeing mental health services to refugees in Costa Rica¹⁵³, who experience symptoms of depression, anxiety due to their conditions as asylum seekers and whose both physical and mental states have been worsened with the pandemic.

¹⁴⁹ "Costa Rica - World Health Organization." https://www.who.int/mental_health/evidence/atlas/profiles-2017/CRI.pdf?ua=1. Accessed 11 Nov. 2020.

¹⁵⁰ Interview with government officials.

¹⁵¹ "INAMU consulta directamente a las mujeres para conocer sus" <https://www.inamu.go.cr/inamu-consulta-directamente-a-las-mujeres-para-conocer-sus-verdaderas-necesidades>. Accessed 12 Nov. 2020.

¹⁵² "Informe Afectaciones por COVID-19 que reportan las ... - Cepal." 21 May. 2020, http://www.cepal.org/sites/default/files/document/files/cri_inamu_medidas_para_proteger_a_las_mujeres_anter el_impacto_del_covid-19_200623.pdf. Accessed 12 Nov. 2020.

¹⁵³ <http://www.oas.org/en/iachr/reports/pdfs/ForcedMigration-Nicaragua-CostaRica.pdf>



Mexico

Context and Actions Taken:

- ▶ Mental healthcare is covered by national health insurance. The mental healthcare system relies mostly on community-based outpatient care. The Mexican Social Security Institute (IMSS) and the Secretariat of Health have been working on training for psychological first aid and wellbeing in the workplace, to better support healthcare workers and most importantly, those on the frontlines.^{154; 155} The Ministry of Health published a series of materials and guidelines for self-care, as well as guidelines to care for specific vulnerable groups such as children and those with special needs. Additionally, it established a hotline for emotional support and a series of other resources and support services that are designed for the general population.¹⁵⁶ The Ministry created an online questionnaire to identify acute mental health disorders, and to direct people to relevant resources such as care facilities, if necessary.

Challenges:

- ▶ An estimated 50.3% of the Mexican population suffers from psychological distress brought about by the COVID-19 pandemic.¹⁵⁷ The main reported source of these symptoms include fear of contracting COVID-19, and fear of loss of income. The Universidad Iberoamericana, conducted the

¹⁵⁴ "CLIMSS." <https://climss.imss.gob.mx/>. Accessed 12 Nov. 2020.

¹⁵⁵ "Lineamientos Salud Mental COVID-19 - Coronavirus – gob.mx." https://coronavirus.gob.mx/uploads/2020/05/Lineamientos_Salud_Mental. Accessed 12 Nov. 2020.

¹⁵⁶ "Salud mental - Coronavirus" <https://coronavirus.gob.mx/salud-mental/>. Accessed 12 Nov. 2020.

¹⁵⁷<https://www.intechopen.com/online-first/the-social-isolation-triggered-by-covid-19-effects-on-mental-health-and-education-in-mexico>



Monitoring Survey of the Effects of COVID-19 on the Well-being of Mexican Households found that 8.4 million Mexicans had lost their jobs as of May 2020 and 31.4% presented severe symptoms of anxiety.¹⁵⁸ Substance abuse and addiction are two of the biggest challenges in mental health that the Ministry of Health is working to address. It has worked to adapt the [Juntos por la Paz](#) (together for peace) campaign -- which seeks to build community sensitivity and empathy against addiction and crime -- to the context of the pandemic.¹⁵⁹

Peru

Context and Actions Taken:

- ▶ Peru passed a mental health law to guarantee mental health services to all Peruvians. The mental health budget has more than tripled in the past 5 years. Similarly, a mental health reform bill was passed eight years shifting the focus to community based care. Treatment for mental health disorders has shifted from inpatient care in psychiatric hospitals to community mental health centers (currently there are 3 in Lima). During the pandemic, these centers provided services virtually. In person services had to be closed at times of lockdown. The Ministry of Health conducted a study on health personnel and the preliminary results indicate that 58% of health personnel had experienced emotional distress, 52% had depressive symptoms, and 18% of health workers also claimed to have relatives that were diagnosed with or died of COVID-19.¹⁶⁰

¹⁵⁸<https://www.intechopen.com/online-first/the-social-isolation-triggered-by-covid-19-effects-on-mental-health-and-education-in-mexico>

¹⁵⁹ "Salud mental – Coronavirus" <https://coronavirus.gob.mx/salud-mental/>. Accessed 12 Nov. 2020.



Challenges:

- ▶ In Peru, the Institute of Peruvian Studies conducted a survey on the subject of the impact of the pandemic on mental health which found out that 7 out of 10 Peruvians claimed to have felt anxious or distressed during quarantine. In addition, the Ministry of Health, in coordination with the PAHO, conducted a survey of 5,800 people across the country. The preliminary data indicates that: 28.5% of all surveyed presented a depressive pathology; of this group 41% indicated severe depression and 12.8% reported having suicidal thoughts.

Examples:

- ▶ The current administration has created the National Mental Health Council, made up of 10 ministries. This has allowed for mental health to be mainstreamed into different services and social sectors. There are joint strategies with the Ministry of Education to inform both a physical and mental health plan in schools. Similarly, there are efforts to connect local commissioners working on neighborhood safety with community health centers, so that they are informed of any call or incident that requires their attention. The Ministry of Health is working with the Ministry of Women and Vulnerable Populations to coordinate Women's Emergency Centers that serve victims of violence.

GOVERNMENT CAPACITY AND REGULATORY ENVIRONMENT

Detailed Recommendation:

Improve legislative and regulatory frameworks for mental health services.

Key strategies for implementation:

- ▶ Create a legal framework to regulate and fund mental health priorities.



- ▶ Create a national mental health plan to implement the resulting legislation and regulations.
- ▶ Promote specific public policies and interventions that prioritize mental health services for healthcare workers and frontline personnel.

Why this recommendation supports mental health and emotional wellbeing:

- ▶ Most countries in the world and in the Latin American and Caribbean region do not have legal frameworks, specific legislation, or regulations that are responsible for (1) funding, (2) overseeing, (3) improving, and (4) integrating mental health and behavioral health services into healthcare systems and treatment protocols.
- ▶ Legislation can secure funding streams for mental health services. Governments and healthcare systems systemically underinvest and underfund mental health services. In terms of the pandemic, the World Health Organization (WHO) reported that while 89% of countries have included mental health and psychosocial support as part of their pandemic response plans, only 17% of these countries have funded these services.¹⁶⁰ This dearth of funding at a national level underscores the more cultural underinvestment and undervaluation of mental health services.
- ▶ Responsibility to implement legislation is often the charge of specified agencies, ministries or subnational entities, thus having a significant influence over how policies function in practice. Creating a national plan/strategy can help align implementing agencies to national goals and objectives and remove risk for misinterpretation and duplicative efforts.
- ▶ Frontline personnel and health workers are often overlooked and undertreated groups when it comes to mental health services. During the pandemic this group

¹⁶⁰<https://www.who.int/news-room/detail/05-10-2020-covid-19-disrupting-mental-health-services-in-most-countries-who-survey>



has been under considerable duress and have experienced significant trauma from being overworked, underappreciated, and burned out. In addition to the importance of supporting these individuals as they struggle with mental health and substance use disorders, they, by the nature of their work, have the potential to negatively impact the health and well being of others if they themselves are not supported.

Strategy to Implement recommendation:

Create a legal framework to regulate and fund mental health priorities

Actions governments can take to capture the opportunity:

- ▶ Review existing provisions regulating and legislating mental health services in the jurisdiction.
- ▶ Advocate for economic stimuli to include appropriations for mental health services and providers.
- ▶ Reduce regulatory requirements for face to face service provision, thus allowing service provision to capitalize on remote technologies like telemedicine or hotlines.
- ▶ Reduce regulatory requirements for licensure or credentialing across jurisdictions thus allowing providers to practice via technologies in jurisdictions where they are not licensed.
- ▶ Review legal regulations for controlled substances like methadone, antidepressants, or other key medications used to treat depression, substance abuse, and other mental health issues.
- ▶ Consider means of reducing barriers for patients to access these essential medications while minimizing risks for in-person visits and risks of transmission of the virus.



- ▶ Include provisions for paid sick leave for people who have COVID-19 symptoms, need to quarantine, or are caring for children or ill family to reduce stress and financial burdens of the illness.¹⁶¹
- ▶ Include provisions that mandate the coverage of mental health and behavioral health services at the same level as other physical health services or treatments.
- ▶ Include provisions that provide financing for mental health services, including specific details on how services that support marginalized or poor populations will be funded and prioritized.

Considerations for governments prior to implementing the strategy:

- ▶ What is the estimated cost/financing that needs to be identified in the legislation? Are there ranges that can be determined to estimate tiers of impact? Will legislation stipulate funding indefinitely or for a specific time period?
- ▶ Who are anticipated supporters and/or detractors of this initiative? How can you engage them to secure their support and buy in?
- ▶ Will the traditional legislative and regulatory development process fit into the timeframe/urgency of the pandemic? Are there alternatives that can be considered to expedite the desired outcomes such as using emergency waivers or executive orders?

¹⁶¹ Goldman ML, Druss BG, Horvitz-Lennon M, Norquist GS, Kroeger Ptakowski K, Brinkley A, et al. Mental health policy in the era of COVID-19. Psychiatr Serv. 2020. <https://doi.org/10.1176/appi.ps.202000219>.



EXAMPLE(S) OF STRATEGY IN ACTION

Government policy and regulations ensure quality of digital mental health, especially in the direct to user marketplace. Pre-pandemic the quality of digital mental health apps and other platforms was suspect with concerns related to safety/privacy. Now is an opportunity to implement policies to advance the field and improve quality.

In Uruguay, a mental health law was passed by parliament and the executive branch in 2017.

In Colombia, the government has had a mental health law since 2013 and the national mental health policy since 2018. Since 2019, they have had a drug consumption policy.

Ireland established the Mental Health Act in 2001 sets out legal procedures for the admissions and treatment of mental health patients, it also established a [Mental health commission](#) which is in charge of ensuring and promoting good practices in the delivery of mental health services. Currently, the Commission was tasked with developing a [risk assessment framework](#) as part of enhanced public health measures to ensure the proper disease management of COVID-19 and to work with national and regional governance to assess and support their mental health services. Given that a legal framework already existed it allowed for the [Emergency Measures in the Public Interest Covid-19](#) Act to be passed in 2020.

In Scotland, the [Mental Health Care and Treatment Act](#) passed in 2005 which protects the rights of mental health patients.



Experts

- ▶ Gloria Nieto, Colombian Association of Families and People with Schizophrenia
- ▶ Horatio Porciúncula, Director of Mental Health, Uruguayan Ministry of Health

Strategy to Implement recommendation:

Create a national mental health plan to guide the implementation of the resulting legislation and regulations

Actions governments can take to capture the opportunity:

- ▶ Identify national or subnational priorities, goals, and/or objectives pertaining to prevention, screening, assessment, and treatment of mental disorders and behavioral conditions.
- ▶ Articulate them clearly in the plan, with specific timelines and indicators to measure these outcomes and objectives.
- ▶ Consider the needs of populations that may be experiencing disparities in access, treatment and mental health outcomes. For example, racial/ethnic minority populations, poor populations, and rural communities may be less likely to have access to care and more likely to receive lower-quality care.
- ▶ Ensure that implementation plans integrate monitoring, evaluation and learning opportunities into all aspects of new work.
- ▶ Take advantage of natural experiments that have resulted from responses to the COVID-19 crisis, such as quasi-experimental studies of mental health outcomes based on changes in use of telehealth, hotlines, apps, or other innovations that have become prevalent during the pandemic.
- ▶ Ensure the plan outlines such areas as reimbursement rules, patient eligibility criteria for programs, rules regarding what types of services are permitted in certain settings, accreditation requirements, and what types of waivers may be appropriate in certain situations.



Considerations for governments prior to implementing the strategy:

- ▶ Which government agencies or ministries who should have responsibilities and accountabilities for implementing regulations and legislation?
- ▶ What role can subnational governments and agencies play in implementing the national mental health plan?
- ▶ What planning assumptions are reasonable for funding and staff capacity?
- ▶ Who are anticipated supporters and/or detractors of this initiative? How can you engage them to secure their support and buy in?

EXAMPLE(S) OF STRATEGY IN ACTION

In Uruguay, a mental health law enforcement and care plan has been implemented since 2019. This framework helped set the foundation for actionable and enforceable mental health policy.

Chile established [the National Mental Health Plan 2017-2025](#) that sets out guidelines for the implementation of a community model of mental health care and that also considers the establishment of a legal framework in order to establish a Mental Health law in the upcoming years,

Experts

- ▶ Luis Alfonzo, Pan American Health Organization (PAHO)
- ▶ Olga Toro Devia, University of Chile, Faculty of Medicine, Public Health School
- ▶ Elizabeth Ruebush, Association of State and Territorial Health Officials (ASTHO)



Strategy to Implement recommendation:

Promote public policies and interventions that prioritize mental health services for healthcare workers and frontline personnel

Actions governments can take to capture the opportunity:

- ▶ Develop, fund, and implement specific hotlines and telehealth services that provide expedited services for healthcare workers and frontline personnel.
- ▶ Conduct studies and research that specifically consider the impacts of COVID-19 on the mental health and emotional wellbeing of healthcare workers and essential workers.
- ▶ Establish government programs to support the mental health needs of healthcare workers and essential workers, prioritizing them as a vulnerable or high risk group.
- ▶ Encourage hospitals and healthcare organizations to conduct regular screenings for mental health problems in frontline and healthcare workers.
- ▶ Train workers peer to identify burnout and offer informal support and counseling to their peers.
- ▶ Encourage hospitals and healthcare organizations to provide mental health resource materials for their staff and offer training in stress management.

Considerations for governments prior to implementing the strategy:

- ▶ What are the provisions and definitions of healthcare workers and frontline personnel that these policies will target? For example, will they include essential workers in the food service industry or domestic workers?
- ▶ Will these policies subsidize or promote subsidized services or will they simply advocate for and regulate the provision of services but not pay for them?
- ▶ How long will these policies be in effect? What is the timeframe that they should operate under or should they be indefinite?
- ▶ How will they engage private healthcare providers and facilities, if at all? Will they only cover or address public facilities and providers?



EXAMPLE(S) OF STRATEGY IN ACTION

The Covid-19 [HEalth caRe wOrkErS \(HEROES\) Study \(HEROES\)](#), is an ongoing study that is looking at the impact of the Covid-19 Pandemic on the mental health of workers in health services. According to the researchers coordinating the effort, the “study aims to describe, examine, and evaluate the impact of the Covid-19 pandemic on mental health and psycho/social factors among workers at health services from Latin America and the Caribbean (Chile, Argentina, Ecuador, Peru, Colombia, Guatemala, Mexico, Bolivia, and Puerto Rico), Europe and neighboring countries (Spain, Italy, the Netherlands, Germany, Armenia, Poland, Macedonia, and Turkey), the Middle East and North Africa (Lebanon and Tunisia), as well as Sub-Saharan Africa (Nigeria, Ghana) and Asia (China). Additionally, a team from the United States of America will also participate in this collaborative effort providing expertise on psychiatric epidemiology and supporting coordination across countries.”

To address the large numbers of healthcare workers suffering mental health disorders, Penn Medicine (Penn), in collaboration with UnitedHealth Group, created [COBALT](#)— “a digital platform that offers immediate access to mental health support for health care workers during this critical time.” The system connects employees in need to mental health and wellness content, live groups, and individual virtual support all online. The platform employs targeted assessments to direct specific content to individuals presenting specific conditions and to triage users to specific types and modalities of support. The platform makes available resources including “resilience



coaches, psychotherapists, and psychiatrists, as well as podcasts, articles, mindfulness sessions, and other group support.”

Experts

- ▶ Jaime Sapag Muñoz de la Peña, Universidad Católica de Chile
- ▶ Kana Enomoto, McKinsey & Company



2. DATA AND TECHNOLOGY

Detailed Recommendation:

Use digital technologies and data to expand access to mental health services and improve service delivery.

Key strategies for implementation:

- ▶ Use technology to bridge access gaps and reach individuals who cannot access treatment due to cost, location, language, or other barriers.
- ▶ Improve the data collection and use for mental health providers.

Why this recommendation supports mental health and emotional wellbeing:

- ▶ Strategies that put technologies first, instead of leading with the service that the tech is supposed to enable, run the risk of drawing too many resources and too much attention to high-cost and high-risk “shiny” innovations rather than thinking about how to best solve the actual problem at hand. Focusing instead on existing and proven technologies that amplify and enhance service delivery is less risky and can be implemented at a quicker rate.
- ▶ Populations that may be experiencing disparities in access, treatment and mental health outcomes can be supported through enabling technology and data systems. For example, technology can help overcome geographic, language, or other access barriers.
- ▶ Data can also identify where these barriers exist and help direct targeted resources to where they may have the most impact. This can include better surveillance data to identify specific mental health needs of a given population, improved data collection processes that digitize dispersed and decentralized status quo paper or analog systems, and tools that allow communities and individuals to self report and crowdsource data collection.



Strategy to Implement recommendation:

Use technology to bridge access gaps and reach individuals who cannot access treatment due to cost, location, language, or other barriers.

Actions governments can take to capture the opportunity:

- ▶ Use technology to augment existing processes and procedures, rather than creating digital first replacements from scratch.
- ▶ Analyze what processes and tools already exist and how they can be adapted and strengthened with technology. Use the existing technology, equipment and tools specifically in the Latin America and the Caribbean context, and reinforce them with technology.
- ▶ Adapt existing telemedicine or other medical care practices for mental health, with an approach that mental health disorders --- especially the more common ones -- can be for a large part approached as most other medical conditions and have evidence based treatments that work for a large part of patients.
- ▶ Ensure that investments in technology to provide better mental health services focus on the care providers offer, not only on the tech they use to do so. Focusing on particular platforms or software may result in suboptimal tech that doesn't fit the use case. Focus on the goals providers want to achieve, and then identify the technologies that can best achieve them.
- ▶ Ensure that investments in new technologies to support mental health services are accompanied with underlying investments in the service provision itself, including governance, training, operations, funding, and workforce development. Technologies are useless unless people know how to use them both as providers and users.
- ▶ Create and staff a mental health telephone hotline. Ensure that the telephone hotline is offered in various languages and is staffed by providers trained on cultural competencies and contexts of the targeted populations.
- ▶ Promote the widespread use of video sessions and telemedicine to allow providers to work with patients remotely.



- ▶ Consider waivers that would enable the use of video conferencing or video chat technologies for mental health care services.
- ▶ Create cost sharing arrangements for proprietary technologies or endorse open source technologies, apps, or platforms that providers can use with existing or new patients without having to themselves invest heavily in new capital costs.
- ▶ Partner with 3rd party vendors (like digital mental health apps such as [headspace](#) and [calm](#)) to distribute reduced cost or free apps and digitized services that patients and individuals can use asynchronously and independently.
- ▶ Create specific interventions for rural populations by providing facilitative technologies like phone lines, broadband connections, smartphones and telehealth services. Couple technology provision with training on how to use those technologies.
- ▶ Monitor for inequities in engagement with new technologies across groups with limited access to smartphones or the internet.
- ▶ Invest in and promote the use of technologies like [smart paper](#), phone apps, SMS surveys, that can be used by minimally trained/skilled workers to collect data and report it into open source or centralized platforms.
- ▶ Invest in technologies that help reduce wait times and scheduling issues.

Considerations for governments prior to implementing the strategy:

- What are the barriers to using new technologies, such as cost, knowledge, know-how, etc.? What are ways that governments or communities can overcome these barriers?
- Which stakeholders are likely to resist changes to the status quo? Who will be most burdened by changes to the current system as it is improved? Why might stakeholders resist these changes?
- Are there unique needs and systems for specific demographics or communities, such as indigenous populations, migrants, or undocumented individuals potentially creating systemic opportunities for populations to not be captured by a symptom tracker or triage tool?



EXAMPLE(S) OF STRATEGY IN ACTION

“Smart paper” forms are being used in East Africa to help digitize manually collected information. “Smart Paper” are printed paper that can be filled out by hand but scanned into a computer or phone, allowing them to be digitized quickly and with great accuracy. [SHIFO](#) - a Swedish company - has developed healthcare specific forms that are being used across East Africa (Kenya, Uganda, Tanzania). This technology allows for the collection of reliable data in hard to reach areas that may not have access to digital healthcare technologies. Importantly it is very low cost.

The Peruvian government worked with organizations like Partners in Health (PIH) to create the [ChatBot App](#) to support Peruvians. The chatbot asks a set of mental health screening questions which are sent to government employed psychologists and PIH employees so that they can follow up with additional resources. In addition to making resources available to citizens, they must also be accessible. For example, the chatbot can communicate in both Spanish and Quechua, which is extremely important given that according to the World Bank, Peruvians who are most likely to lack access to health services are Quechua speakers.

[AI for Good](#) - a company that uses ethical technology and AI-powered solutions to address social issues - released rAInbow in 2018. rAInbow is a chatbot that helps users understand their relationships, what is healthy and what is not. It also provides resources that users can access to get more support. Nearly 20,000 unique users have interacted with this chatbot.



The Faculties of Medicine, Psychology and Nursing of the Pontificia Universidad Javeriana have created [a platform and strategy](#) that offers support and mental health counseling to Colombians of legal age. The [platform](#) allows individuals seeking support to select their preferred form of communication which include chat services, email, or phone calls. A group of student volunteers, trained in mental health issues, then reach out and speak with the individuals to listen and also recommend tools that can support an individual's well-being. Pontificia Universidad Javeriana has also created [an information hub](#) with tips and resources for individuals to proactively protect their mental health.

As governments move toward recovery it is important to continue to integrate telemedicine and other digital technologies into behavioral health services to help expand access to populations. [McKinsey and Company](#) has conducted several analyses to this effect.

Sweden has a [mental health ambulance](#) which responds to mental health services. The ambulance has an emergency response therapy room and a team of trained counselors ready to offer counseling. This allows providers to reach users, as well, as expands accessibility of mental health services.

Experts

- ▶ Prashant Yadav, Center for Global Development & INSEAD
- ▶ Milton Wainberg, Columbia University
- ▶ Fernando Torrente, Institute of Neuroscience and Public Policy, INECO Foundation
- ▶ Leonardo Cubillos, Dartmouth College
- ▶ Jose Miguel Uribe, Pontificia Universidad Javeriana



- ▶ Laura Ospina Pinillos, Pontificia Universidad Javeriana

Strategy to Implement recommendation:

Improve mental health data collection and use through technologies

Actions governments can take to capture the opportunity:

- ▶ Invest in and promote the use of technologies like [smart paper](#), phone apps, SMS surveys, that can be used by minimally trained/skilled workers to collect data and report it into open source or centralized platforms.
- ▶ Digitize mental health screenings by transitioning paper process to digital formats on tablets or smartphones
- ▶ Develop an app for managing and tracking patients exercise, habits, and use of prescribed medications.
- ▶ Consider how different digital platforms like websites, smartphone apps, SMS, telephone hotlines or [smart paper](#) forms can be used to support data collection for mental health or behavioral health conditions.
- ▶ Consider ways to allow patients to report symptoms or conditions at regular intervals (e.g. every day, week, etc.), by setting alerts or reminders.
- ▶ Consider ways to crowdsource data collection through the internet or smartphones, for example, by creating a means where individuals can flag associates that may be suffering from depression, suicidal ideation or who may be victims of domestic abuse.
- ▶ Ensure that platforms that collect patient data offers concrete guidance, resources, and advice for what an individual should do given her/his reported symptoms (e.g. if you are thinking of hurting yourself call “XXX-XXXX”)

Considerations for governments prior to implementing the strategy:

- ▶ How is data entry standardized (or not) for demographic information entered into the centralized data platforms? Can the platforms replicate data structures



used in other systems, such as those used for test results, postal service, or health records to help make sure there aren't duplications or mismatched data?

- ▶ Can the data you collect be disaggregated by sex, gender, age, ethnicity/race, location, and other important demographic factors? Is the data time-stamped?
- ▶ Who needs to be involved in the process of identifying the essential data fields
- ▶ Which community leaders can be partnered with to help build trust with specific communities? Are there similar leaders that would be relevant to high-risk professions or at-risk groups? Can these groups work with the government to communicate with the public?



EXAMPLE(S) OF STRATEGY IN ACTION

The US Department of Veteran's Affairs National Center for PTSD developed a free app "[COVID Coach](#)" that is created to "support self-care and overall mental health during the...pandemic." This app offers educational resources on coping with the pandemic, tools for self-care and emotional well-being, mood and emotional health trackers, and suggestions for how to improve the users' mental health.

A smartphone application called [MONARCA](#), allows the collection of data on bipolar disorder by allowing patients to self-monitor symptoms of bipolar disorder and to connect through an interactive feedback loop with clinicians.

McKinsey & Company has developed a [dashboard](#) to understand and monitor the impact of the pandemic on vulnerable populations (including behavioral health risks, chronic disease, etc). The dashboard is open access and provides an example for which data fields to collect and how that data

Experts :

- ▶ Robin Roark, McKinsey & Company
- ▶ Kana Enomoto, McKinsey & Company
- ▶ Laura Ospina Pinillos, Pontificia Universidad Javeriana
- ▶ Carlos Arbel Bromley Coloma, Ministerio de Salud, Peru
- ▶ Liam Delaney, London School of Economics



3. INCREASE PROVIDER CAPACITY

Detailed Recommendation:

Increase provider capacity through innovations in training opportunities and strategies to expand the workforce supply.

Key strategies for implementation:

- ▶ Use technology and resource repositories to train community health workers and other healthcare providers who may have limited experience in mental healthcare and mental first aid.
- ▶ Engage cross-sectoral partners to expand the supply of mental health workers.

Why this recommendation supports mental health and emotional wellbeing:

- ▶ Latin America and the Caribbean have 23 times fewer mental health workers per 100,00 inhabitants than the US and Canada.¹⁶² Many countries in Latin America and the Caribbean -- especially lower income ones -- face a shortage of mental health care providers, meaning that many people in these countries do not have access to care because of supply shortages. Increasing the number of providers, and the number of non-specialized providers who can provide care will help address this gap in service provision.
- ▶ Shortages of providers can be overcome by training non-specialists in the basics of social support services and psychological first aid. This can dramatically reduce the strain on the specialized providers.
- ▶ Open source resources and training courses can allow individuals to take care of their own communities and reduce strains on specialized providers who must focus their limited resources on acute cases.

¹⁶² "Atlas de salud mental de las Américas 2017 - IRIS PAHO Home." <https://iris.paho.org/handle/10665.2/49664>. Accessed 13 Oct. 2020.



- ▶ Engaging partners in schools, community centers, religious institutions and other cultural institutions can expand access to populations in need and can also create a supply of non-specialized professionals who can become implementers of community-level care.

Strategy to Implement recommendation:

Use technology to train community health workers and other healthcare providers who may have no experience in mental healthcare and mental first aid

Actions governments can take to capture the opportunity:

- ▶ Shortages of specialists in the settings that need support can be addressed by guiding non-specialists in a step-by-step way to deliver an evidence based intervention. Step-by-step guidelines ensure adherence to guidelines and also reduces stress on the provider.
- ▶ Create repositories of existing mental health educational resources for people to use.
- ▶ Translating resources from other languages is less resource and time intensive than creating them from scratch. Many resources are written in English but have not been translated into Spanish or other languages.
- ▶ Identify cost effective means of translating existing resources from English or other languages into Spanish or Portuguese. Examples can include using students or bilingual individuals.
- ▶ Adapt available open source manuals on how to adapt digital technology to train community health workers on psychological assessments, such as those provided by the digital training website of the Healthy Activity Program (HAP).

Considerations for governments prior to implementing the strategy:

- ▶ What are the technological barriers that communities or providers might face to accessing training and educational resources? Are there alternatives to online resources that can expand access to low-tech locations/demographics?



- ▶ What are the major sources of international guidance that can be translated into Spanish or Portuguese or other local languages?

EXAMPLE(S) OF STRATEGY IN ACTION

In the US, the federal government has established a specific federal agency to address mental health disorders. The [Substance Abuse and Mental Health Services Administration](#) (SAMHSA) offers a centralized information hub where people can find information about where and how to access services for a variety of mental health and substance use disorders.

The Faculties of Medicine, Psychology and Nursing of the Pontificia Universidad Javeriana have created [a platform and strategy](#) that offers support and mental health counseling to Colombians of legal age. The platform allows individuals seeking support to select their preferred form of communication which include chat services, email, or phone calls. A group of student volunteers, [trained in mental health issues](#), then reach out and speak with the individuals to listen and also recommend tools that can support an individual's well-being. Pontificia Universidad Javeriana has also created an information hub with tips and resources for individuals to proactively protect their mental health.

In May of 2020, the President of Chile announced the creation of a mental health plan to support citizen's mental health during the pandemic. An [online platform](#) offering professional services was enabled which has serviced 75,000 citizens, and has received over 123,000 visitors.



Johns Hopkins University offers a [free online course via Corsera](#) that teaches individuals how to provide psychological first aid to people in an emergency by employing the RAPID model: Reflective listening, Assessment of needs, Prioritization, Intervention, and Disposition. Individuals who take the course learn how to: “listen reflectively; differentiate benign, non-incapacitating psychological/ behavioral crisis reactions from more severe, potentially incapacitating, crisis reactions; prioritize (triage) psychological/ behavioral crisis reactions; mitigate acute distress and dysfunction, as appropriate; recognize when to facilitate access to further mental health support; and practice self-care.” The course is offered in english but has subtitles in Spanish and Brazilian Portugese.

In India, prototypes of digital training for mental health were adapted from the digital training website of the Healthy Activity Program (HAP) to [train community health workers to deliver brief psychological treatment for depression in rural India](#). The training had modules on an introduction to depression, how to screen for symptoms and how to provide counselling. The prototype was successfully tested and utilized in Goa, India, where the prototype proved its clinical effectiveness at reducing depressive symptoms and was also deemed a cost effective prototype to deliver mental health services in rural settings. The HAP model was also adapted in Nepal where it was used to treat depression in primary care settings. The information is available in Moodle, an open source online management system and the information can be adapted for mobile phones and tablets.

The Harvard Review of Psychiatry published an article titled Digital Technology for Building Capacity of Nonspecialist Health Workers for Task Sharing and Scaling Up Mental Health Care Globally, which provides examples on how to train and support non health workers in the support and



delivery of mental health services in low income settings. Two of these examples include: the Atmiyata Intervention where Atmiyata were trained on mental health through smart phone access that had mobile apps with videos that provided available government resources and information on mental health training. In Nigeria a mobile technology platform used to allow midwives to monitor and supervise pregnant women who screen positive for depression as well as to connect them with mental health specialists through voice messages and text messages.

Experts

- ▶ John Naslund, Harvard Medical School
- ▶ Luis Alfonzo, Pan American Health Organization (PAHO)
- ▶ Maia Melina Steinman, Ministerio de Salud de la Nación (Ministry of Health), Argentina
- ▶ Laura Ospina Pinillos, Pontificia Universidad Javeriana
- ▶ Jose Miguel Uribe, Pontificia Universidad Javeriana

Strategy to Implement recommendation:

Engage cross-sectoral partners to utilize available mental health resources and increase the supply of providers

Actions governments can take to capture the opportunity:

- ▶ Work with local community leaders to identify mental health gaps and needs of their community.
- ▶ Form multi-sectoral commissions with diverse representations of experts to conduct needs assessments and define the mental health needs of specific groups and to identify the best strategies to reach those needing support.
- ▶ Partner with universities and colleges to recruit psychology, psychiatry and nursing students to offer care via telehealth and other technologies.



- ▶ Partner with schools, workplaces, community centers, religious institutions and other cultural institutions to offer training opportunities to build the capacity of non-specialist staff persons in these institutions.
- ▶ Engage these institutions to socialize available resources and direct their constituents, members, students, employees etc. to those available resources.
- ▶ Conduct training of trainers (TOT) for basic psychological first aid courses and make training available to non-specialists and laypersons in communities and community institutions.
- ▶ Ensure that schools, community centers, religious institutions and other cultural centers are aware of and provide support resources to their constituent members.
- ▶ Create an online course or asynchronous learning module that explains the fundamentals of the requested collaboration, including instructions on how to use the appropriate softwares, apps, or other data collection technologies.
- ▶ Identify neighboring jurisdictions or external supplies of providers that have capacity to support provision of services via tech-enabled services (e.g. phone lines, telemedicine, etc.).

Considerations for governments prior to implementing the strategy:

- ▶ What are available online resources that can provide learning opportunities for government workers?
- ▶ Who are community level partners that can help identify and provide access to populations that might be overlooked or not aware of available mental health services?
- ▶ What institutions are already working to support the mental health needs of communities or specific populations?
- ▶ How can the government support and amplify these efforts?
- ▶ What are available groups of providers that can be incentivized to provide care in your jurisdiction? For example, can internationally licensed practitioners practice in your jurisdiction via telemedicine or telephone?



EXAMPLE(S) OF STRATEGY IN ACTION

In Chile, as part of their Regime of Explicit Health Guarantees, officials have developed the National Depression Treatment Program where patients diagnosed with diabetes, hypertension and depression are provided psychopharmacological therapy and psychosocial interventions in a coordinated treatment plan. In this program psychologists and general practitioners/physicians work together to provide coordinated care to these individuals.

In Colombia, health workers from Pontificia Universidad Javeriana have created [repositories](#) of existing mental health educational resources for people to use. Translating resources from other languages (English tends to be the richest) is less resource and time intensive than creating these resources from scratch.

Peru established the National Mental Health Council, made up of ten ministries and other institutions, including the Ministry of Vulnerable Populations, the Ministry of Defense, the Justice Ministry, and the Ministry of Education. The goal is to work across sectors and ministries to support mental health services. There are joint strategies with the Ministry of Education to support mental health in schools as well as with the Ministry of Women and Vulnerable populations to coordinate services for victims of violences, and even to provide mental health services to inmates.

The mental health and wellness campus called [Be Well OC](#), is a mental health initiative public private cooperation in Orange County, California to offer



mental health and substance abuse treatment programs to county residents, as well as to tackle homelessness, addiction, and other related mental health challenges.

Experts

- ▶ Laura Ospina Pinillos, Pontificia Universidad Javeriana
- ▶ Fernando Torrente, Institute of Neuroscience and Public Policy, INECO Foundation
- ▶ Francisco Golcher Valverde, Ministerio de Salud (Ministry of Health), Costa Rica



ABOUT THE PROJECT

ABOUT THE GOVLAB

www.thegovlab.org

The GovLab is an action research center based at the Tandon School of Engineering at New York University. Our mission is to improve people's lives by changing the way we govern. Our goal is to strengthen the ability of institutions – including but not limited to governments – and people to work more openly, collaboratively, effectively and legitimately to make better decisions and solve public problems. We believe that increased availability and use of data, new ways to leverage the capacity, intelligence, and expertise of people in the problem-solving process, combined with new advances in technology and science can transform governance. We approach each challenge and opportunity in an interdisciplinary, collaborative way, irrespective of the problem, sector, geography and level of government.

ABOUT THE INTER-AMERICAN DEVELOPMENT BANK

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The Inter-American Development Bank is an international financial institution whose goal is to improve the quality of life of people in Latin America and the Caribbean by financing economic, social and institutional development projects and promoting regional economic integration.



ABOUT SMARTER CROWDSOURCING

In the case of a serious and time sensitive challenge such as coronavirus, what's needed is to marry the agility and diversity of crowdsourcing with curation to target those with relevant know-how and bring them together in a format designed to produce effective and implementable outcomes. This more targeted form of crowdsourcing, which quickly matches the demand for expertise to the supply of it, is what we call "smarter crowdsourcing."

The [GovLab](#) has deep expertise with designing [smarter crowdsourcing projects](#). We designed the first crowdsourcing program for the United States Government when we convened scientific and technical experts to help the United States Patent and Trademark Office get the information it needs to make a more informed determination about pending patent applications. More recently, the GovLab designed and ran a smarter crowdsourcing project to help government officials in Quito, Ecuador prepare for the imminent eruption of the [Cotopaxi Volcano](#), which is spewing ash for the first time in over a century.

In 2020 The GovLab curated series of Smarter Crowdsourcing projects called the [100 Questions initiative](#). The 100 Questions Initiative seeks to map the world's 100 most pressing, high-impact questions that could be answered if relevant datasets were leveraged in a responsible manner. The 100 Questions is an Initiative from [The GovLab](#), in partnership with [Schmidt Futures](#). Finally, we are running [Smarter Crowdsourcing: Education](#), focusing on innovative strategies for measuring 21st century skills and promoting workforce readiness and complementing that expert engagement with a parallel project ([youreducationyourvoice.org](#)) to bring in the voices of communities, students and educators, combining "expert" engagement with "citizen" engagement.



TEAM BIOS AND ROLES

Diana Pinto, IADB Project Coordinator

Diana Pinto is a Health Lead Specialist in the IDB's office in Washington DC. She has worked in the design and supervision of project loans and technical cooperations to strengthen health systems and improve the efficiency of public health financing and quality of healthcare provision in IADB member countries. Before joining the IADB she was Health Policy Advisor to the Ministry of Social Protection. Diana, of Colombian nationality, is a medical doctor and holds a Master of Science in Health Administration from Pontificia Universidad Javeriana in Bogotá and a Doctor of Science in Population and International Health (International Health Policy and Economics Program) from Harvard School of Public Health.

Professor Beth Noveck, Project Director

Beth Simone Noveck directs the Governance Lab (GovLab) and its MacArthur Research Network on Opening Governance. She is a Professor in Technology, Culture, and Society and affiliated faculty at the Center for Urban Science and Progress at New York University's Tandon School of Engineering and a Fellow at NYU's Institute for Public Knowledge. New Jersey governor Phil Murphy appointed her as the state's first Chief Innovation Officer in 2018. She is also Visiting Senior Faculty Fellow at the John J. Heldrich Center for Workforce Development at Rutgers University. Previously, Beth served in the White House as the first United States Deputy Chief Technology Officer and director of the White House Open Government Initiative under President Obama. UK Prime Minister David Cameron appointed her senior advisor for Open Government. At the GovLab, she directs better governance programs, including work with public institutions on public engagement in lawmaking (CrowdLaw), expert-sourcing innovative solutions to hard problems (Smarter Crowdsourcing), co-creation between cities and citizens (City



Challenges). She also coaches "public entrepreneurs," working with passionate individuals to take their public interest projects from idea to implementation.

Professor Victoria Alsina, GovLab Project Coordinator

Victoria Alsina is an Industry Assistant Professor and Academic Director at the NYU Center for Urban Science and Progress and Senior Fellow at The GovLab. Alsina's current research and teaching focus on finding innovative solutions to rethink public institutions, exploring how collaborative governance and civic engagement can change the way we govern. She advises numerous governments, organizations and private institutions on issues related to public sector reform and democratic innovation. At the Harvard Kennedy School, she is a Fellow at the Mossavar-Rahmani Center for Business and Government, a Democracy Fellow at the Ash Center for Democratic Governance and Innovation, and an Associate at the Belfer Center for Science and International Affairs. She holds a B.A. in Political Science and Public Administration from Universitat Pompeu Fabra; an MPA from Universitat Autònoma de Barcelona; an M.A. in Public Leadership from ESADE Business School; and a Ph.D. in Political and Social Sciences from Universitat Pompeu Fabra.

Henri Hammond-Paul, GovLab Fellow and Health Research Advisor

Henri is a Fellow and a Health Research Advisor at the GovLab. Most recently, Henri Hammond-Paul was a senior advisor with the N.J. Department of Health, managing various elements of the State's ongoing response to COVID-19. Prior to that, Hammond-Paul worked in crisis management at New York University's Langone Medical Center, focusing on increasing the enterprise's resiliency to manmade and natural shocks and stresses. He has also held various positions overseas with the U.N. World Food Programme, where he focused on humanitarian assistance and food security concerns in countries affected by natural disasters and conflicts. He began his career as a Peace Corps Volunteer in Paraguay. He holds a masters in public affairs from Princeton University's Woodrow Wilson School and a BA from Washington and Lee University.



Anirudh Dinesh, GovLab Research Fellow

Anirudh Dinesh conducts research on governance innovation. He is a member of the team designing and piloting experiments for new models of public engagement, what the GovLab calls people-led innovation, to improve the legitimacy and effectiveness of policy making and solve urgent problems. In addition, Anirudh is a member of the CrowdLaw research team looking at how governments around the world are using technology to involve the public in legislative drafting and decision-making. He has authored multiple case studies documenting how institutions are using online crowdsourcing methods to improve their lawmaking processes through better community engagement. He was also part of the team which produced the CrowdLaw for Congress playbook and website comprising in-depth case studies, lecture videos and interviews with politicians and congressional staff offering vivid detail of how and why their parliaments are turning to online engagement to improve lawmaking. Whether in connection with events or research projects, Anirudh applies his background in computer science to help create high impact websites. He is a part of GovLab's civic tech efforts and assists in the design and development of all of GovLab's original tools and platforms.

Valeria Gomez Palacios, GovLab Research Assistant

Valeria Gomez Palacios holds a Master in Economic and Political Development with a specialization in Management and a regional focus on Latin America from Columbia University School of International and Public Affairs. She has worked for different multilateral organizations, including the Organization of American States and the European Union Delegation to Nicaragua, where she worked on projects that promoted human rights and socio-economic development. During her graduate studies, she was a Consultant for the Inter-American Development Bank and served as a Research Assistant for both the Women, Peace, and Security Program at the Earth Institute and Amnesty International Regional Director for



East Africa, the Horn, and the Great Lakes. She is a Civil Society Representative to the United Nations and a European Commission Peace Ambassador.

Frederico Levy, GovLab Research Assistant

Fred Levy is a rising senior in the Technology, Culture and Society department at NYU Tandon School of Engineering. Fred is working on the Smarter Crowdsourcing for COVID-19 project at the GovLab.



EXPERTS

NAME	ORGANIZATION	SESSION
Alexandra De Filippo	Behavioural Insights Team	Behavioral Science and COVID
Ana Martinez	Mexican National Public Policy Laboratory	Behavioral Science and COVID
Beatriz Merino	Peru	Behavioral Science and COVID
Carlos Scartascini	Inter-American Development Bank	Behavioral Science and COVID
Cynthia Gabriela Boruchowicz	University of Maryland	Behavioral Science and COVID
Dominic J. Packer	Lehigh University	Behavioral Science and COVID
Ellen Peters	University of Oregon	Behavioral Science and COVID
Erez Yoeli	Massachusetts Institute of Technology	Behavioral Science and COVID
Este Geraghty	Esri	Behavioral Science and COVID
Florencia Lopez Boo	IDB	Behavioral Science and COVID
George Rutherford	University of California	Behavioral Science and COVID
Hala Madanat	San Diego State University	Behavioral Science and COVID



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NAME	ORGANIZATION	SESSION
John Drury	University of Sussex	Behavioral Science and COVID
Jolanda Jetten	University of Queensland	Behavioral Science and COVID
Jonathan Jackson	Dimagi	Behavioral Science and COVID
Karen M. Douglas	University of Kent	Behavioral Science and COVID
Liam Delaney	London School of Economics	Behavioral Science and COVID
Maria-Elena Figueroa	Johns Hopkins University	Behavioral Science and COVID
Michael Reid	University of California San Francisco	Behavioral Science and COVID
Michele Gelfand	University of Maryland College Park	Behavioral Science and COVID
Mike Flowers	State of New Jersey	Behavioral Science and COVID
Mitchel Rosen	Rutgers School of Public Health	Behavioral Science and COVID
Mónica Wills Silva	Behavioural Insights Team	Behavioral Science and COVID
Nicolás Ajzenman	Fundação Getulio Vargas	Behavioral Science and COVID



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NAME	ORGANIZATION	SESSION
Paulo S. Boggio	Center for Health and Biological Sciences Mackenzie Presbyterian University	Behavioral Science and COVID
Peter Bragge	Monash University	Behavioral Science and COVID
Raylene Yung	US Digital Response	Behavioral Science and COVID
Simone Schnall	Cambridge University	Behavioral Science and COVID
Stanislao Maldonado	Universidad del Rosario	Behavioral Science and COVID
Valerio Capraro	Middlesex University London	Behavioral Science and COVID
Adam Conner	Center for American Progress	Contact Tracing
Andras Szakal	IBM	Contact Tracing
Arindam Basu	University of Canterbury	Contact Tracing
Dave Parry	Auckland University of Technology	Contact Tracing
Elza Erkip	New York University Tandon School of Engineering	Contact Tracing
Este Geraghty	Esri	Contact Tracing



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NAME	ORGANIZATION	SESSION
George W. Rutherford	University of California, San Francisco	Contact Tracing
Gregory Peck	Robert Wood Johnson Medical School, Rutgers Global Health Institute	Contact Tracing
Hala Madanat	School of Public Health at San Diego State University	Contact Tracing
Jack Lewin	Lewin and Associates	Contact Tracing
Joaquin Barnoya	Universidad Rafael Landivar, Guatemala	Contact Tracing
Johannes Ernst	Indie Computing Corp.	Contact Tracing
Jonathan Jackson	Dimagi	Contact Tracing
Joshua Cohen	Apple University	Contact Tracing
Kristian Lopez Vargas	University of California, Santa Cruz	Contact Tracing
Marc Lipsitch	Harvard School of Public Health	Contact Tracing
Maria Soledad Martínez Gutiérrez	Public Health Faculty, University of Chile	Contact Tracing
Michael Kleeman	UC San Diego	Contact Tracing



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NAME	ORGANIZATION	SESSION
Miguel Lago	Columbia University School of International and Public Affairs	Contact Tracing
Mike Flowers	State of New Jersey	Contact Tracing
Mitchel Rosen	Rutgers School of Public Health	Contact Tracing
Mosoka P. Fallah	National Public Health Institute of Liberia (NPHIL)	Contact Tracing
Nathaniel Hupert	Cornell University's Weill Medical College	Contact Tracing
Neera Tanden	Center for American Progress	Contact Tracing
Patricia Priest	University of Otago	Contact Tracing
Perry Halkitis	School of Public Health at Rutgers University	Contact Tracing
Rafael Perez Figueroa	College of Public Health, University of Kentucky	Contact Tracing
Randall Thomas	Thunderbolt Labs	Contact Tracing
Saul Alamilla	Kennesaw State University	Contact Tracing
Stacey Gillett	Bloomberg Philanthropies	Contact Tracing
Thomas Samba	Government of Sierra Leone	Contact Tracing



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NAME	ORGANIZATION	SESSION
Tim Wood	Bill and Melinda Gates Foundation	Contact Tracing
Tolbert Nyenswah	Johns Hopkins University, Bloomberg School of Public Health	Contact Tracing
Amit Suneja	University of Maryland Medical Center	Mental health and emotional wellbeing
Annika Sweetland	Columbia University	Mental health and emotional wellbeing
Claire Greene	Columbia University Mailman School of Public Health	Mental health and emotional wellbeing
Enrique Baca-Garcia	Fundacion Jimenez Diaz	Mental health and emotional wellbeing
Fernando Torrente	Institute of Neuroscience and Public Policy, INECO Foundation	Mental health and emotional wellbeing
Gloria Nieto	Colombian Association of Families and People with Schizophrenia	Mental health and emotional wellbeing
Jaime Sapag Muñoz de la Peña	Universidad Católica de Chile	Mental health and emotional wellbeing
Jesus Peinado	Partners in Health Peru	Mental health and emotional wellbeing
John Naslund	Harvard Medical School	Mental health and emotional wellbeing
Jorge Torres	McKinsey & Co.	Mental health and emotional wellbeing



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NAME	ORGANIZATION	SESSION
Jose Ayuso Mateos	Universidad Autónoma de Madrid and Hospital Universitario de la Princesa	Mental health and emotional wellbeing
Jose Miguel Uribe	Pontificia Universidad Javeriana	Mental health and emotional wellbeing
Kana Enomoto	McKinsey & Co.	Mental health and emotional wellbeing
Laura Ospina Pinillos	Pontificia Universidad Javeriana	Mental health and emotional wellbeing
Leonardo Cubillos	Dartmouth College	Mental health and emotional wellbeing
Liam Delaney	London School of Economics	Mental health and emotional wellbeing
Luana Marques	Harvard Medical School (HMS), Massachusetts General Hospital (MGH)	Mental health and emotional wellbeing
Luis Alfonzo	Pan American Health Organization (PAHO)	Mental health and emotional wellbeing
Marcelo Mello	Albert Einstein Israeli Hospital Medical School	Mental health and emotional wellbeing
Michael Burge	World Federation for Mental Health	Mental health and emotional wellbeing
Milton Wainberg	Columbia University	Mental health and emotional wellbeing
Nicolás Bagattini	Society for Psychotherapy Research	Mental health and emotional wellbeing



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NAME	ORGANIZATION	SESSION
Olga Toro Devia	University of Chile, Faculty of Medicine, Public Health School	Mental health and emotional wellbeing
Reginald Williams II	The Commonwealth Fund	Mental health and emotional wellbeing
Ricardo Bernardi	School of Medicine, Udelar	Mental health and emotional wellbeing
Robin Roark	McKinsey & Company	Mental health and emotional wellbeing
Adolfo L Rubinstein	Instituto de Efectividad Clínica y Sanitaria	Epidemiological monitoring and surveillance
Anita M McGahan	University of Toronto	Epidemiological monitoring and surveillance
Anton Z. Ilarionov	RECAINSA	Epidemiological monitoring and surveillance
Claire Quiner	RTI International	Epidemiological monitoring and surveillance
Claudia Patricia Vaca Gonzalez	Universidad Nacional de Colombia	Epidemiological monitoring and surveillance
Claudio Struchiner	Fundação Getúlio Vargas	Epidemiological monitoring and surveillance
David Hamer	Boston University Schools of Public Health and Medicine	Epidemiological monitoring and surveillance
Duane J Gubler	Duke-NUS Medical School	Epidemiological monitoring and surveillance
Ed Hammond	Duke University	Epidemiological monitoring and surveillance



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NAME	ORGANIZATION	SESSION
Eric J. Alm	Massachusetts Institute of Technology	Epidemiological monitoring and surveillance
Flávio Codeço Coelho	Getulio Vargas Foundation	Epidemiological monitoring and surveillance
Gavin Yamey	Center for Policy Impact in Global Health	Epidemiological monitoring and surveillance
Jairo Mendez-Rico	PAHO Health Emergencies	Epidemiological monitoring and surveillance
James R. Mault	BioIntelliSense	Epidemiological monitoring and surveillance
Javier Carnicero	In2	Epidemiological monitoring and surveillance
Joao Bosco Siqueira Junior	Federal University of Goias - Brazil	Epidemiological monitoring and surveillance
Kacey C. Ernst	University of Arizona	Epidemiological monitoring and surveillance
Lakshmi Subramanian	NYU	Epidemiological monitoring and surveillance
Laura Hecht-Felella	Brennan Center for Justice at NYU School of Law	Epidemiological monitoring and surveillance
Lee Rainie	Pew Research Center	Epidemiological monitoring and surveillance
Nick Donowitz	THINKMD	Epidemiological monitoring and surveillance
Prashant Yadav	Center for Global Development & INSEAD	Epidemiological monitoring and surveillance



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NAME	ORGANIZATION	SESSION
Randall Thomas	Thunderbolt Labs	Epidemiological monitoring and surveillance
Tolbert Nyenswah	Johns Hopkins University	Epidemiological monitoring and surveillance
Alex Greninger, MD, PhD, MS, MPhil	University of Washington Medical Center	Testing Strategy
Anup Malani, PhD, JD	University of Chicago Law School, Pritzker School of Medicine	Testing Strategy
Christina Kong, MD, PhD	Stanford University	Testing Strategy
Claire Wathen	Skoll Foundation	Testing Strategy
Elza Erkip, PhD	New York University Tandon School of Engineering	Testing Strategy
Erez Lieberman Aiden, Ph.D.	Baylor College of Medicine and Rice University	Testing Strategy
Felipe Peixoto	Safetest	Testing Strategy
Gonzalo Moratorio, PhD.	Institut Pasteur Montevideo	Testing Strategy
José F. Rodríguez Orengo, Ph.D.	School of Medicine, University of Puerto Rico	Testing Strategy
Kristian Lopez Vargas, PhD	University of California, Santa Cruz	Testing Strategy
Larry De Koning, PhD	University of Calgary	Testing Strategy



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NAME	ORGANIZATION	SESSION
Manoel Barral Netto, MD, PhD	Institute Gonçalo Moniz - Fiocruz BA	Testing Strategy
Marcos Lopez Casillas	University of Puerto Rico	Testing Strategy
Maria Cecilia Goi Porto Alves	Sao Paulo Institute of Health	Testing Strategy
Mark Smolinski, MD, MPH	Ending Pandemics	Testing Strategy
Peter C. Iwen, MS, PhD, D(ABMM), F(AAM)	University of Nebraska Medical Center (UNMC)	Testing Strategy
Ravindra Kolhe, MD, PhD	Augusta University	Testing Strategy
Van Dinh Trang, MD, PhD	National Hospital for Tropical Diseases	Testing Strategy
Ziad Obermeyer, MD	UC Berkeley School of Public Health	Testing Strategy
Ana Lorena Ruano	Center for International Health, University of Bergen	Supporting Marginalized and Vulnerable Populations
Ana Lucia Pontes	Oswaldo Cruz Foundation	Supporting Marginalized and Vulnerable Populations
Ashni Badiani	UCL	Supporting Marginalized and Vulnerable Populations
Barbara Magnoni	EA Consultants	Supporting Marginalized and Vulnerable Populations



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NAME	ORGANIZATION	SESSION
Betilde Munoz-Pogossian	Organization of American States	Supporting Marginalized and Vulnerable Populations
Caitlin Kraft-Buchman	Women at the Table	Supporting Marginalized and Vulnerable Populations
Caroline McGregor	Sustainable Energy for All	Supporting Marginalized and Vulnerable Populations
Corinne McDaniels-Davidson	SDSU Institute for Public Health	Supporting Marginalized and Vulnerable Populations
David Jácome-Polit	Municipality of Quito / Resilient Cities Network	Supporting Marginalized and Vulnerable Populations
Emma Day		Supporting Marginalized and Vulnerable Populations
Esther Leah Achandi	International Livestock Research Institute (ILRI)	Supporting Marginalized and Vulnerable Populations
Esther Muna	Commonwealth Healthcare Corporation, the health agency for the Commonwealth of the Northern Mariana Islands	Supporting Marginalized and Vulnerable Populations
Faisal Farooq	Qatar Computing Research Institute	Supporting Marginalized and Vulnerable Populations



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NAME	ORGANIZATION	SESSION
Haroldo Montealegre	SIMA	Supporting Marginalized and Vulnerable Populations
Jay Patel	London School of Hygiene and Tropical Medicine	Supporting Marginalized and Vulnerable Populations
Jillian Du	WRI	Supporting Marginalized and Vulnerable Populations
Johannes Ernst	Indie Computing Corp.	Supporting Marginalized and Vulnerable Populations
Kieran Walsh	ILO	Supporting Marginalized and Vulnerable Populations
Lauren Harrison	PARIS21/OECD	Supporting Marginalized and Vulnerable Populations
Marcela Cabezas	ILO	Supporting Marginalized and Vulnerable Populations
Martin Oelz	ILO	Supporting Marginalized and Vulnerable Populations
Mary Ann Cooney	ASTHO	Supporting Marginalized and Vulnerable Populations
Obasesam Okoi	University of St Thomas, Minnesota	Supporting Marginalized and Vulnerable Populations



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NAME	ORGANIZATION	SESSION
Peter Hangoma	University of Zambia	Supporting Marginalized and Vulnerable Populations
Saul Alamilla	Kennesaw State University	Supporting Marginalized and Vulnerable Populations
Seri Wendoh	International Planned Parenthood Federation	Supporting Marginalized and Vulnerable Populations
Tara Cookson	Ladysmith	Supporting Marginalized and Vulnerable Populations
Viviane Lucia Fluck	IFRC	Supporting Marginalized and Vulnerable Populations

