RAPID REVIEW OF PHYSICAL DISTANCING AND ALTERNATIVE DISEASE CONTROL MEASURES IN SOUTH ASIA

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BACKGROUND

Note: This document is part of a package of materials, see Physical Distancing & Alternative Disease Control Mechanisms in South Asia policy brief

The COVID-19 pandemic continues to be the biggest threat globally with over 3 million cases worldwide and over 200,000 deaths by the end of April 2020.[i] The pandemic has resulted in severe economic and social consequences - with the global economy shrinking by 2.3 trillion dollars[ii] and twice as many people forecast to be food insecure by the end of 2020 (from 130 million to 250 million).[iii] The pandemic has also delayed and disrupted health services, which may lead to a rise in preventable maternal and child deaths, reversing decades of progress.[iv] Most governments have temporarily closed educational institutions thus impacting over 90% of the world's student population.[v]

The pandemic spares no one – virtually every country has experienced some kind of disruption and negative impact to its citizens' livelihoods. COVID-19 poses a particularly great threat for low and middle-income countries (LMICs) due to reduced health systems capacity, and large numbers of vulnerable people that are living below the poverty line.[vi] While the burden of disease is higher in higher income countries (given their older populations), their high functioning health care systems and larger social safety net programmes serve to protect their populations.

As of 1st May, 2020, South Asia only accounted for about 64,260[vii] reported cases. However, actions to prevent the spread of COVID-19 are some of the most extreme globally.[1] These early actions taken by South Asian governments have been effective at slowing the spread of the COVID-19, but are unsustainable**.** The unprecedented crisis posed by COVID-19 threatens South Asia with its worst economic performance in 40 years, with at least half its countries falling into a deep recession.[viii] The sudden disappearance of informal urban service sector jobs and a rise in food prices have created economic hardship, especially for poor and vulnerable people.[ix]

PHYSICAL DISTANCING MEASURES ADOPTED IN SOUTH ASIA

In the absence of an effective vaccine or treatment, non-pharmaceutical interventions are important ways to reduce the spread of COVID-19. In particular, numerous interventions that reduce contact between people (or "physical distancing") have been implemented by governments around the world. Physical distancing recommends that people stand at least 2 meters away from one another and avoid crowded spaces. South Asian countries have implemented a range of approaches to enforce physical distancing - from nationwide lockdowns in India to lighter touch approaches such school closures and restricted domestic movement in Bhutan.[x] By 1st May, Nepal and Bangladesh had

[1] The Oxford COVID-19 Government Response Tracker (OxCGRT) systematically collects information on several different common policy responses governments have taken, scores the stringency of such measures, and aggregates these scores into a common Stringency Index: https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker

extended their restrictions on movements which were set to end at in April for an additional 10 days.[xi] Pakistan has extended its lockdown to 9th May but has allowed communal prayers at the Mosque during Ramadan.[xii] India is demarcating areas into red, orange and green zones based on the number of cases.[xiii] These zones will have different containment measures and will be assessed every 21 days.[xiv]

However, the implementation of physical distancing has come at a heavy cost in South Asia. Physical distancing policies have suppressed economic activity, increased hunger, and disrupted the functioning of essential services like health care. Bluntly, physical distancing measures prevent the poor from generating income[xv]. As of 29th April 2020, it was estimated that 10 million informal workers in Bangladesh (including rickshaw drivers, day labourers, factory workers, maids and others) will likely lose their jobs due to the lockdown.[xvi] Between 12 to 18 million people are at-risk of losing their jobs because of lockdowns in Pakistan.[xvii] The Pakistan Workers' Federation estimates that, by the end of March, at least half a million textile and garment industry workers had been dismissed in Punjab province alone.[xviii]

Table 1 includes the strategies that have been employed in South Asian countries to implement physical distancing, and their respective risks and unintended consequences. Physical distancing measures comes with costs (e.g. loss of productive income, social isolation), which are outlined with the measures below.

Table 1: Risks and consequences of physical distancing measures

Risks and unintended consequences	Cost	Likelihood of public adherence
School closing *- Closing of all primary, secondary, and tertiary institutions*		
• Disrupting education, particularly for low-income students who cannot access remote learning while their schools are closed and are in danger of being left behind.[xix] • Lack of school meals due to school closures can cause short-term, acute malnutrition and potential long-term effects on vulnerable children's health and cognition. The World Food Programme (WFP) estimates that about 369 million children around the world are missing out on school meals because of COVID-19 school closures.[xx] • Children may be at greater risk of violence or other abuse while schools are closed. Half of Pakistanis surveyed think that parents beat their children more during lockdown.[xxi] • Reducing productivity of parents, who are forced to provide child-care	• **High**[2]	• **High -** Schools are likely to comply with government directives
Closing of non-essential businesses		
• Job losses for workers who cannot work remotely (including all informal workers, which make up 75.2% of the working population in South Asia)[xxii]	• **High**[3]	• **High** – businesses are likely to comply with government directives, though smaller,

[2] We consider this measure to have a high cost because students in low and middle-income countries often don't have access to distance learning, and hence their education is likely to be interrupted: https://www.cgdev.org/blog/more-our-database-school-closures-new-education-policies-may-be-increasing-educational

[3] We consider this measure to have a high cost because a large fraction of the workforce in LMICs have jobs where remote work is impossible (e.g. construction, manufacturing, factory workers, etc.). A study in the US finds that workers in low-work-from-home or high-physical proximity jobs are more economically vulnerable and are more adversely affected by stay-at-home orders (http://www.simonmongey.com/uploads/6/5/6/6/65665741/mongey_pilossoph_weinberg_work_from_home_april_2020.pdf); LMICs have a much higher fraction of workers in this category compared to the US.

• Temporary or permanent closing of businesses • Increase in the likelihood of reverse migration which can spread COVID-19 to rural areas [xxiii]		informal businesses have stronger incentives to continue operating due to higher costs of closing
Cancel public events *- Cancel in-person meetings, entertainment, restrict gatherings[4], religious and social events.*		
• Loss in sense of community and increase in mental health issues. People are growing increasingly anxious about the physical distancing and need help dealing with the mental toll.[xxiv] In South Asia, people are sad and anxious because they will not be able to have communal prayers during Ramadan.[xxv]	• **Low[5]**	• **Medium-** Difficult to enforce and track, as people may still have meetings in their homes or religious leaders may alter orders in their communities
Closing public transport		
• Reduced mobility and ability to go to work, shop for essential supplies, or socialise. • Loss of ability to access health services.	• **Medium[6]**	• **High -** Easy to enforce on formal public transportation and buses
Restrict internal movement *- Implementation of curfews and travel between cities, states, etc*		
• Reduced mobility and ability to go to work, shop for essential supplies, or socialize • Loss of income for businesses operating after curfew hours • Increased physical violence at home[xxvi] • Loss of ability to access health services	• **High[7]**	• **Medium** - May be difficult to enforce, may require police and other officials to patrol to ensure people are complying with this
International travel control *- Closure of air spaces or restriction of flights from COVID-19 countries, restricted shipping*		
• Reduced ability to carry out events with international attendance (conferences, entertainment, etc.) • Reduced tourism • Disrupted imports and exports[xxvii]	• **Medium[8]**	• **High -** Easy to implement, easy to track airlines and trace people using this mode of travel

Table 2 shows the current adoption status of these measures in South Asia. Dark blue indicates that strict controls or restrictions have been put in place to enforce these measures, medium blue indicates partial controls or restrictions, and light blue indicates that we did not find data for the specific measure and country. All South Asian countries have closed schools, most have limited public gatherings and almost all have closed non-essential businesses or asked them to work from home. International travel has been banned and internal movement restricted within these countries.

[4] Restricted gatherings mechanisms differ from country to country, some countries are restricting gatherings by limiting the number of people while others have banned all gatherings. WHO provides risk assessment and guidelines on gatherings here: https://www.who.int/publications-detail/public-health-for-mass-gatherings-key-considerations?

[5] Large gatherings like religious events, weddings and funerals can foster a sense of community and connection with family and friends. Entertainment and sporting events provide diversion. While these are valuable, cancelling them seems relatively low cost compared to other measures here that directly impact livelihoods.

[6] Many people in LMICs lack private transportation options and rely on public transport, taxis or motorbike/bike taxis. Some would need transportation to carry out essential activities, e.g. buying essential supplies, seeking medical care, or going to work (for essential workers).

[7] We consider the cost to be high as this measure limits people's ability to obtain essential supplies and reduces demand for businesses (even if they are allowed to open). This also reduces the ability to socialize which leads to social isolation and negative impact on mental health. Being confined at home and having reduced ability to access help also increase the risk of abuse of women and children.

[8] We consider this a relatively low-cost measure as the activities it affects do not affect a large segment of the population. However, the cost would be higher in situations where 1) tourism or export is a major part of the economy, or 2) supply chains for food and essential products (e.g. medicine) are disrupted.

Table 2: COVID-19 physical distancing implementation in South Asian countries

Country	School closing	Closing non-essential business	Cancel public events	Closing public transport	Restrict internal movement	International travel control
Afghanistan						
Bangladesh						
India						
Pakistan						
Sri Lanka						
Nepal						
Maldives						
Bhutan						

Source: University of Oxford-government response tracker 2020, as of 1st May 2020[xxviii], IMF, Policy Responses to Covid-19, 27 April 2020[xxix]

While some of these measures make it easy to enforce physical distancing and limit the spread of COVID-19, they come at high economic and social costs, and in some cases are likely not to be followed.

Physical distancing will continue to be a part of the tool-kit that governments use to curb the spread of COVID-19 until more treatment and vaccine options are found. However, there is a need to focus on more sustainable physical distancing measures in the future, that balance both costs and implementation feasibility. We recommend exploring the actions below to help combat these disruptions, combined with alternative disease control measures (see the next section).

PHYSICAL DISTANCING MITIGATING ACTIONS

1. SAFELY MAINTAIN ECONOMIC ACTIVITY[xxx]

High ability to mitigate negative economic impacts of physical distancing measures

Supporting economic activity using 'safe' measures can help avoid dissolution of businesses that do not have the cash-flow to weather this crisis, including small businesses which employ a significant fraction of the population.[9,xxxi]

Keep businesses open with guidance on protecting the safety and health of employees and customers. This guidance includes maintaining physical distance, only allowing a certain number of employees and/or customers at a time, conducting temperature checks, requiring hand-washing upon entering a building, working outside where possible, staggered shifts/reduced office density, incentives for workers showing symptoms to stay at home, and disinfecting of environments. For example, restaurants may be allowed to operate in open air,[xxxii] as COVID-19 is more likely to be transmitted indoors, but with appropriate physical distancing norms.[xxxiii]

[9] In India there are 26 million small enterprises that qualify as Micro, Small and Medium Enterprise (MSMEs) and these contribute to India's GDP. Of these firms, 1.5 million are in the formal sector, with 24.6 million in the informal sector. MSMEs employ 59.7 million people, of which just 9.5 million are employed in small enterprises operating in the formal sector.[9]

2. DISTRIBUTE UNCONDITIONAL CASH / IN-KIND TRANSFERS[xxxiv]

High ability to mitigate negative economic impacts of physical distancing measures

Cash and in-kind transfers are crucial for the protection of low-income populations in LMICs during the current pandemic: they protect against income loss due to reduced business activities, and enable those who cannot work remotely to stay home. Even though many South Asian countries provide some form of COVID-19 related social protection, these programmes must be scaled-up significantly to support the millions impacted by lockdown measures. Key points for implementation include:

- Create maximal fiscal space by leveraging a mix of borrowing from domestic and international markets or development-financed institutions (DFIs), and postponing capital expenditures and other non-essential expenditures.[xxxv]
- Temporarily expand programmes to include vulnerable populations. For instance, in India, cash transfers are made via bank accounts, and populations without bank accounts tend to be more financially vulnerable. Governments can explore expanding the eligibility criteria for people who are not registered but need benefits through expanding acceptable forms of ID required to receive benefits, and partnering with local leaders and NGOs to identify potential recipients. In Pakistan, the government is allowing people to apply for benefits through mobile phones and cross-checking this with national ID systems, and facilitating disbursement at a physical touch point[xxxvi].
- Programmes can be temporarily expanded to at-risk populations (e.g. elderly, people with respiratory illnesses) and those less likely to stay at home (e.g. day labourers in densely populated areas).
- Implement transfers and assistance based on population preferences, since lockdown measures, stock outs, price hikes and store closures may hinder recipients' ability to purchase necessities using cash transfers.[10] For example, a post lockdown survey conducted in India showed that 53% of respondents preferred cash transfers, while 47% preferred in-kind transfers. In-kind transfers[11] can be delivered to homes or stores, and distributed contact-free. Free or subsidised cooked meals can be offered through community kitchens or existing public infrastructure like railway stations.

3. TARGETED RESTRICTIONS ON INTERNAL MOVEMENT

High ability to mitigate negative economic impacts of physical distancing measures

Lift restrictions based on WHO guidance on transitioning to and maintaining a steady state of low-level or no transmission. Consider what the appropriate geographic units for these restrictions should be and provide local authorities appropriate autonomy to manage disease spread.

Some South Asian countries are starting to ease lockdown measures in specific areas of the countries. India for instance, has developed a zone system, where areas are classified as red, orange and green zones depending on COVID-19 caseloads.[xxxvii] The WHO has released six criteria that countries should meet to start lifting lockdown restrictions:[xxxviii] 1) Disease transmission is under control, 2) Health systems are able to "detect, test, isolate and treat every case and trace every contact, 3) Hot spot risks are minimized in vulnerable places, such as nursing homes, 4) Schools, workplaces and other essential places have established preventive measures, 5) The risk of importing new cases "can be managed", and 6) Communities are fully educated, engaged and empowered to live under a new normal.

[10] This recommendation is based on an unpublished report by Dalberg on India which finds that recipients sometimes have challenges obtaining supplies even after receiving cash due to reasons listed here.
[11] Including nutritionally-balanced baskets of food stables and hygienic products like soap.

As per WHO guidance, South Asian countries should consider methods to meet these criteria as they relax lockdown criteria. For example, they could implement 14-day quarantines for migrant workers returning to their homes, to minimize imported cases in rural communities. Successfully implementing these measures is also contingent on having an accurate picture of the case numbers in locations, which requires large-scale testing to be in place, and accurate and real-time data to be available, which are explored in our *Learning from Past and Current Pandemics* section. With respect to India's current strategy for lifting lockdowns, the country has started to ease lockdown restrictions, using a zone-based system. As India lockdown is lifted, 1) the above mitigating actions should continue to be explored within areas that are deemed as high-risk, and 2) the WHO criteria should continue to be evaluated, in order to judge whether it is the right time to start easing up lockdown measures.

4. FIND EQUITABLE METHODS OF REMOTE LEARNING

Medium ability to address consequences of school closures

Policymakers should consider implementing alternative approaches to delivering education, that account for differences in wealth and access to resources. School closures are particularly costly in LMICs due to disrupted education and school lunch programmes.[xxxix] While some schools have shifted to online classes, these methods exclude a large number of school children who don't have access to tablets or laptops to participate in distance learning methods. Globally, 43% of students have no access to the internet, and e-learning options leave these vulnerable students behind. Before schools re-open, policymakers are encouraged to:

- Partner with broadcasting networks to use non-internet-based technologies like television and radio to provide education programmes for students who do not have access to the internet.[xl] In India and Pakistan, it is estimated that more than 60% of households have televisions [xli]. In April, Pakistan launched an education channel , which televises content from grade 1 to 12 every day.[xlii]
- Provide meals to students who rely on school-based lunch programmes using centralized distribution points that maintain physical distancing. In India, various states have come up with ways to continue providing mid-day meals to children. In Haryana, mid-day meal rations are delivered to students at their homes, while some other states have opted to transfer money to accounts of eligible children.[xliii]

As schools reopen, new guidelines will have to be developed to maintain physical distance between people (student to student, student to teacher, etc.) and a hygienic environment. These must be complemented with clear communication and training. We encourage educators to start devising these guidelines now to enable schools to safely re-open in the future.[12] See UNESCO distance learning solutions for more guidance.

ALTERNATIVE DISEASE CONTROL MEASURES

[12] More guidelines on education and re-opening of schools can be found here: https://www.idinsight.org/reports-2/limiting-the-spread-of-covid-19-amongst-ghanaian-students

Physical distancing policies must be implemented in tandem with robust public health measures to control COVID-19. Because there is ample evidence that the economic costs of distancing are a lot higher (particularly on the poor), policymakers must urgently assess what other measures could effectively save lives while minimizing losses in aggregate welfare.[xliv] Alternative public health and disease control measures are recommended that are feasible in low-resource settings and offer additional protection for the public.

1. ACTIVE CONTACT TRACING

Feasibility: High, however improvements need to be made to existing contact tracing systems and combined with scaled-up testing and isolation measures
Impact on disease spread: High, limits the impact of the disease for a given level of infection[xlv]

Contact tracing is a WHO recommended[xlvi] **tool that should be used by policymakers to contain the spread of the COVID-19 pandemic as part of a comprehensive test-trace-isolate strategy.** When carried out effectively, contact tracing can identify potentially infected individuals before symptoms appear; alert them; offer testing and counselling; and prevent COVID-19 transmission by minimizing contact with others. Contact tracing done right can enable governments to ease movement restrictions earlier or in a more targeted manner. Further, the data collected can help to learn more about the virus and its consequences. Contact tracing is used in relation to a variety of communicable diseases including measles, tuberculosis, STIs, and most recently COVID-19.

In South Asia, several countries have started to implement contact tracing using different approaches:

- Door-to-door contact tracing - India launched an early system for door-to-door contact tracing through public health workers via the Integrated Disease Surveillance Programme, which already monitors people for communicable diseases, and was used to track H1N1 influenza and measles[xlvii].
- Government released digital apps – South Asian governments have released contact tracing mobile applications (e.g. India's *Aarogya Setu*, Pakistan's track and trace system developed by the Inter-Services Intelligence agency)[xlviii]. However, these have been met with controversy around data privacy and issues of government surveillance.[xlix] This strategy also relies on smartphone ownership, and potentially excludes vulnerable populations.

In general, widespread contact tracing should be continued – **however tailored based on individual risk (e.g. underlying health comorbidities and exposure levels) and country COVID-19 disease burden and spread.** While contact tracing is important and should be continued, the scale with which it is implemented should be context specific to ensure efficient use of resources. We recommend the following measures to supplement contact-tracing initiatives, which have been employed for previous infectious diseases (e.g. TB, Ebola):

- Draft clear operational guidelines, adequate training, and links to quarantine / isolation measures

- Classify and isolate contacts based on risk level (e.g. for TB, a contact is considered high risk if either they share meals or the same bed or live in the same house with someone who has TB)[l], and link them to testing services.
- Use trusted community members or health workers to support with contact tracing. Contact tracers do not have to be professional health workers but can be overseen by health professionals. For example, India is currently contact tracing via phone, and contact tracers do not need specific health training. The contact tracers have a questionnaire on a tablet and ask a potential contact a series of questions to determine if that person should be referred to a clinic for testing.[li]
- Carefully plan for the number of contact tracers required. This is likely to be country specific as driven by the number of cases.
- Use digital tools to support with aggregation of data and information - For additional details on digital contact tracing see here: *Using digital contact tracing tools to reduce the spread of COVID-19.* Digital contact tracing methods should be complemented with clear communication on how information will be used and not infringe on citizen's rights and privacy.
- Countries should also be able to manage the data they collect, to be able to follow-up with contacts, and understand progress of this initiative.

2. SCALE-UP COVID-19 TESTING

Feasibility: Low, this is difficult to do with current resources
Impact on disease spread: High, ability to isolate and treat positive cases

As COVID-19 cases grow steadily in most South Asian countries, governments are chronically behind on testing. Testing is an important tool to slow and reduce the spread and impact of the virus. Testing allows us to identify infected individuals, and tailor their medical treatment. Mass testing allow us to isolate the infected, and trace and quarantine their contacts. Testing can also help allocate medical resources and staff more efficiently.

Several studies suggest that thousands of infections may be undetected in South Asia due to the low testing rate.[lii] Countries that have scaled up testing have managed to control the spread of COVID-19.[liii] Governments can improve testing capacity by increasing the number of testing centres to include private laboratories, and by making tests cheap and accessible. In addition, governments can look into developing WHO approved testing kits in factories that have been shut down due to COVID-19.[liv] Quality of testing can be improved through improving testing capacity — for instance, training on how to take swabs and handle samples. Countries should continue using laboratory tests, rather than rapid test kits which are not currently WHO approved.[lv]

3. HEALTH-SYSTEMS ADAPTATIONS

Feasibility: Medium, may be difficult to do with current resources
Impact on disease spread: Medium, however prevents against a resurgence in other health conditions

During epidemics, health systems typically struggle to maintain routine services and utilization of services decreases. COVID-19 has already had an impact on disrupting health services in rural India, where vaccinations, maternal services, inpatient and outpatient services have all declined relative to

last year.[lvi] Vaccination campaigns against polio have been postponed, which is risky given that Afghanistan and Pakistan are two of the last three countries with endemic polio.[lvii]

Governments need to find ways to ensure that essential health services are accessible. Below, we include a subset of measures policymakers should prioritize:

- Providing all front-line workers (e.g. health care and sanitation workers) with PPE
- Set up health facilities to allow for physical distancing and improved infection control, and alternative service delivery models - ranging from vaccinating in clinical areas segregated from those treating people with suspected COVID-19, through to community outreach clinics[lviii]
- Check temperatures before entering facilities
- Leverage community health workers to deliver some services directly within the community[lix]
- Explore private-public partnerships to allow for care to be accessed closest to home

For more specific guidance, we suggest visiting PATH's resources to support COVID-19 responses in LMICs.

4. HYGIENE AND PROTECTIVE MEASURES

Feasibility: Medium, requires infrastructure changes in some cases
Impact on disease spread: Low-Medium, no conclusive evidence on how effective mask wearing is, however handwashing is more effective at prevention of transmission

Handwashing is an individual protective measure recommended by the WHO[lx]. Policymakers can explore mask-wearing in combination with scaling up access to handwashing.

- **Scale-up up short-term and low-cost solutions to facilitate handwashing.** Handwashing is a WHO recommended prevention strategy to stop the spread of respiratory diseases. However, many communities (like low-income households) in South Asia lack the necessary infrastructure to practice routine handwashing. Rapid measures to facilitate handwashing should be employed such as providing discounts on soaps and hand-sanitizers and installing low-tech handwashing[13] facilities in all public places (markets, public squares, churches, schools, clinics).
- **Mask wearing may be a relatively low-cost solution to preventing the spread of respiratory diseases, when combined with frequent hand-washing.[14]** While there is no strong evidence on the effectiveness of masks in preventing the spread of COVID19, there are a number of studies on the effectiveness of various types of masks in reducing the spread of flu or other respiratory infections.[lxi] Evidence suggests that masks are beneficial but governments will need to communicate clear guidelines and potential trade-offs (see WHO, Royal Society), and how to put on and take off masks. Practical guidelines on local production and use of cloth masks should be followed. Evidence is still emerging on the most effective materials and design. There are risks that cloth masks may provide a false security that reduces compliance with other, effective measures such as handwashing, and could result in self-contamination during removal (e.g. touching eyes). Given supply shortages, medical grade N95 masks should be should be reserved for healthcare workers, vulnerable populations, and essential workers. Many South Asian

[13] Low tech handwashing mechanisms refers to easy to make facilities like hanging up a container with water flowing out, or tippy tap style where water flows out of a tipping container: https://sswm.info/humanitarian-crises/rural-settings/hygiene-promotion-community-mobilisation/important/simple-handwashing-devices
[14] https://www.idinsight.org/reports-2/covid-19-mask-use-evidence-based-recommendations.

countries have factories where masks can be quickly produced at scale, providing a critical source of employment in these times.[lxii] In general, communication that emphasizes that masks must be used together with frequent hand-washing is critical for implementation [lxiii], and that mask wearing alone is not sufficient to provide an adequate level of protection[15].

5. LARGE-SCALE SOCIAL AND BEHAVIOURAL CHANGE COMMUNICATION AND INFORMATION CAMPAIGNS

Feasibility: High, relatively low-cost solution
Impact on disease spread: Hard to quantify, however key in achieving public buy-in to continue to practice prevention mechanisms

Policy makers should educate the public using all possible platforms (e.g. television, frontline workers, mobile platforms) on key aspects of prevention, testing, and treatment.[16] Messages should be clearly communicated to a diverse public, including those who are illiterate or speak minority languages. There is a large amount of misinformation on COVID-19, which has disrupted effective public health response and created confusion and distrust in South Asia.[lxiv] Communication strategies should consider the following:

- Regular, concise, consistent, and transparent communication from all levels of government and community leaders. Policymakers should also inform citizens about the existence of unverified information to encourage skepticism.[lxvlxvi] For example, developing consistently formatted information materials with the official government stamp will help individuals determine the authenticity of the information.
- Install a free hotline/phone-based information service[17] to help the public access correct information easily.
- Develop messages for a diverse audience, including those who are illiterate or speak minority languages. Messages should be widely understood across different groups.
- Use simple and practical messaging with explicit instructions for how people should change their behaviors.[lxvii] They should emphasize the consequences of failing to follow instructions. Information should be shared in practical terms, for instance, rather than disseminating messaging on "avoiding large crowds," break down the action into specific sub-behaviors that pose the highest risk, and then encourage an alternative action for each.[lxviii]
- Ensure vulnerable populations are aware of relief-related information by using trusted government officials, community leaders, and media channels to share on-going relief announcements (e.g. pre-recorded videos and phone calls, community radio, etc.).[18]

[15] Masks do not protect the wearer, but reduces the risk of the wearer spreading the disease to others. See WHO Q&A on masks for additional guidance.
[16] [16] As treatment options become available
[17] For example, 3-2-1 service provides information about agricultural practices, financial services, gender equality and WASH http://321service.org/countries/malawi/
[18] This recommendation is based on an unpublished report by Dalberg on India which finds that potential recipients may not always know what benefits they are eligible for.

All these alternative disease control measures contribute to reducing the chance of disease transmission, and do not necessarily substitute for one another.[19] When implemented together, active contact tracing, widespread testing, robust isolation systems, preventative hygiene, and large-scale social and behavioural communication change campaigns can reduce the spread of the virus.[20] These must be pursued rapidly in parallel to the implementation of physical distancing enablers.

TAILORING PHYSICAL DISTANCING TO ADDRESS VULNERABLE POPULATIONS

Measures that have been implemented to curb the COVID-19 pandemic pose serious challenges to the health and well-being of vulnerable populations. Sustainable mitigation policies need to account for the realities that these populations face. Below, we consider solutions to the challenges facing vulnerable populations:

1. URBAN INFORMAL SETTLEMENTS

- A large proportion of South Asians live in informal settlements – e.g. In India and Bangladesh, it is estimated that 40% of the urban population currently reside in informal urban settlements.
- Residents of urban informal settlements are unlikely to be able to physical distance due to space constraints.[lxix]
- People living in informal settlements tend to be precariously employed in the informal economy, as either employees or micro-entrepreneurs (e.g. vegetable vendors), and thus face large economic risks as lockdowns continue.[lxx]

2. INFORMAL WORKERS

- Informal workers typically reside in informal settlements, where options for physical distancing are constrained.
- Interviews with informal sector workers tell a story of impending poverty, evictions, and hunger, as their incomes and work opportunities have been curtailed.[lxxi]

3. MIGRANT WORKERS

- South Asia has over 100 million migrant workers, many of whom no longer work in urban centres. Following the nationwide lockdown in India, migrants sought to return home, only to be quarantined in camps, with no money or food.[lxxii]
- Most migrants also worry that they will not find work after the lockdown lifts. It is estimated that ~4 million migrant workers in Pakistan are facing direct threat of layoffs.[lxxiii]
- Migrant workers returning home could act as COVID-19 vectors.[lxxiv]

[19] For instance, even when people practice social distancing, they may still interact with others to carry out essential economic activities (e.g. grocery shopping). Maintaining a safe distance and wearing masks when doing so, and practicing hand hygiene after reaching home, are important for reducing the chance of disease transmission.

4. REFUGEES

- South Asia is home to over 2.5 million refugees, the majority of whom reside in Bangladesh.[lxxv]
- Refugees live in challenging conditions and have limited access to services and factual information (given their restricted networks).[lxxvi] In addition, refugees often face discrimination and human rights violations.[lxxvii]
- Physical distancing and frequent hand-washing is difficult to implement in refugee camps as they are typically overcrowded with poor hygiene and sanitation facilities. [lxxviii]
- Health care and food distribution to camps may be affected as movement has been restricted,[lxxix] potentially leading to hunger and short-term malnutrition.
- Programmes that support a large number of refugees, including education and mental-health counselling sessions, have been stopped or reduced in size.[lxxx]

5. ELDERLY PEOPLE

- Multi-generational households are common in South Asia, which makes it harder to practically separate and protect elders within households.

6. DISABLED PEOPLE

- Many persons with disabilities who rely on others for daily living (through formal support by service providers or informal support by relatives/friends) find themselves without support due to movement restrictions and physical distancing measures. This may leave them at high risk without access to food, essential goods and medicine, and prevented from carrying out basic daily activities such as bathing, cooking, or eating.[lxxxi]
- Access to information is difficult for people with visual and hearing impairments**.**
- Children with learning disabilities may have difficulty accessing e-learning platforms.[lxxxii]
- Some persons with disabilities, such as persons with psychosocial disabilities and autistic persons, might not be able to cope with strict confinement at home.[lxxxiii]

7. PATIENTS WITH UNDERLYING CONDITIONS

- As of 2015, South Asia had almost 40% of the global TB burden with approximately 4 million cases.[lxxxiv]. Physical distancing measures can disrupt access to health services such that patients with underlying conditions such as TB are not able to access their usual health care. Reduced access to care, medicines and diagnostics for people with life-threatening conditions can lead to an increase of deaths from these underlying conditions, and spikes in MDR-TB .[lxxxv]
- Based on currently available information and clinical expertise, older adults and people with serious underlying medical conditions which include cardiovascular disease, diabetes, chronic respiratory diseases and cancer might be at higher risk of severe illness from COVID-19.[lxxxvi]

8. WOMEN

- During other outbreaks and pandemics, school closures increased girls' dropout rates and led to a rise in teenage pregnancies.[lxxxvii] More women also died in childbirth because resources were diverted elsewhere.[lxxxviii]
- In both rich and poor countries, it is expected that domestic-violence rates will rise during lockdown periods.[lxxxix] Stress, alcohol consumption, and financial difficulties are all considered triggers for violence in the home, which are likely to increase during lockdowns.

- Continued disruptions of programmes supporting women because of COVID-19 response could leave 47 million women in low and middle-income countries unable to use modern contraceptives, leading to a projected 7 million additional unintended pregnancies. These disruptions will also cause a delay in programmes to end female genital mutilation and early child marriages.[xc]

9. PRISONERS

- People in prisons and other places of detention, are vulnerable to the COVID-19 outbreak because they live in close proximity to one another and thus may act as a source of infection, amplification and spread of infectious diseases within and beyond prisons. This a problem particularly for South Asia where prisons are overcrowded.[xci] Because of the overcrowded nature of prisons, physical distancing is not possible.[xcii]
- Some South Asian countries have implemented measures to prevent COVID-19 outbreaks in prisons. In Bangladesh, the government banned visitors to prisons and infected inmates are being treated in hospitals outside the prison.[xciii] To decongest jails, India implemented an early release for 3,500 prisoners on 5th May.[xciv]
- In South Asia, prisoners have a greater underlying burden of disease and worse health conditions than the general population, and frequently face greater exposure to risks such as smoking, poor hygiene and weak immune defense due to stress, poor nutrition or existing diseases. All these factors make people living in prison more susceptible to infections.[xcv]

The table below presents options for tailoring physical distancing enablers and alternative disease control mechanisms to vulnerable populations

Table 4: Physical distancing recommendations for vulnerable groups

Solutions	Informal Settlements	Informal workers	Migrant workers	Refugees	Elderly	Disabled people	Patients w/ comorbidities	Women	Prisoners
Physical Distancing Enablers									
Provide micro incentives such as phone credit to encourage continuous social connection via mobile platforms.[xcvi]	✓	✓	✓	✓	✓	✓		✓	
Encourage social distancing for community 'units' (or social isolation circles) rather than individuals for vulnerable populations[xcvii].	✓	✓	✓	✓				✓	
Stop evictions as they force people to travel, thus making sticking to internal restriction of movement procedures virtually impossible.	✓	✓	✓						
Use administrative data to identify areas that have concentrations of vulnerable groups to target transfers and build risk profiles for regions, to target populations most in need.	✓	✓	✓	✓	✓	✓	✓	✓	
Support returning migrant workers to find quarantine options in home district if they choose to travel	✓		✓						
Accommodate stranded migrant workers in current district of employment to reduce movement from employment districts to homes,[xcviii] consider using closed schools as potential housing centres, if they choose to stay	✓		✓						

Solutions	Informal Settlements	Informal workers	Migrant workers	Refugees	Elderly	Disabled people	Patients w/ comorbidities	Women	Prisoners
Build temporary structures in refugee camps and informal settlements for isolation in case of COVID-19 infections and to promote decongestion.				✓					
Direct and contactless delivery of cash, in-kind transfers, food and medicines for elderly and disabled people.					✓	✓			
Large-scale social and behavioural communication change and information campaigns									
Create community-led emergency planning committees in urban informal settlements and refugee camps to share information.	✓	✓	✓	✓					
Make sure information is available centrally, accessible, and understandable by all populations (e.g. braille messages for people with visual impairments[xcix], paper-based forms for migrants, etc	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ensure services are available to help women experiencing increased abuse and violence such as hotlines.								✓	
Include and share information in community outreach and media on the risk of increased domestic violence, risk of sexual exploitation against children, and what services are available.[c]								✓	
Cleaning and disinfection of environment and encouraging handwashing and general hygiene and ensuring prisons have adequate soap and running water.									✓
Providing infrastructure or materials for hand washing									
Provide hygiene and sanitation solutions to accommodate space constraints, (e.g. restrict the number of people who can be at a water source).[ci]	✓	✓	✓	✓					✓
Handwashing facilities should be made easily accessible to people with physical disabilities. [cii]						✓			
Health-system adaptations									
Ensure availability of sexual and reproductive health services at facilities or within community mobile clinics								✓	
Consider home based delivery of TB or essential medications or centralised community pick up points. Studies show that community-based management improve treatment outcomes and ensures patients receive medicines.[ciii]							✓		
Increase remote capacity of psychosocial support and counseling services, protection services, and shelters.[civ]				✓	✓	✓	✓	✓	
All new prisoners, staff and visitors should be screened and contact details noted to facilitate contact tracing. Number of visitations can also be limited.									✓

LEARNING FROM PAST AND CURRENT PANDEMICS

Donors and partners are encouraged to find ways to support the implementation of physical distancing enablers and alternative disease control mechanisms, along with cross-cutting support activities that allow for health system strengthening, data-driven decision making, and technical expertise.

1. HEALTH SYSTEM READINESS FOR PANDEMICS

Policymakers need to use the experience from COVID-19 to plan for future pandemics. Given past experiences with H1N1 and SARS, countries in South East Asia were quickly able to implement physical distancing, quarantining, isolation, testing and screening. Singapore, a country that has managed to keep death toll from COVID-19 low, spent years building a public health system that includes designated clinics for epidemics and official messaging urging the public to wash their hands or sneeze into tissues during flu season. Asian countries like Cambodia, Indonesia, Lao PDR, Taiwan, Thailand, and Vietnam developed national response plans for various kinds of epidemics. Pandemic preparation in many Asian countries contributed to overall improvements in health system surveillance, laboratory capacity, monitoring and evaluation, and public communications.[cv]

2. SETTING UP REAL-TIME DATA FOR DECISION-MAKING SYSTEMS

Data-driven decision-making is crucial for getting the pandemic under control, given the uncertain and fast-moving nature of the pandemic. Beyond critical information on outbreaks of the virus and infected populations, data can provide a real-time snapshot on the state of disease burden (e.g. number of tests, positive and suspected cases, recoveries), the behavior of specific groups, and knowledge or attitudes on COVID-19.[cvi] This data can be immediately analysed to derive insights to improve the effectiveness of the government's response. For instance, in Singapore, government data has enabled detailed mapping of the outbreak, and authorities are able to use the data to track potential carriers.[cvii] At the same time, policymakers can use rapid assessments to target initiatives. For example, a rapid assessment could be done to understand the preferences of likely beneficiaries, and how safe distribution of cash and in-kind transfers can be applied within these populations. This data can also be used to quickly generate lessons learned to be shared nationally, and across South Asian contexts.

CASE EXAMPLE - VIETNAM

Despite limited resources, a shared border with China, a large population of 97 million, Vietnam has been able to successfully control COVID-19. Vietnam's early response and preparedness to control COVID-19 is in part due to lessons learned from the past SARS outbreak. The three strategies below are noted as the main reasons for controlling the pandemic.

1. SCALED UP TEMPERATURE SCREENING, TESTING, AND INTENSIFIED CONTACT TRACING

Vietnam began screening and contact tracing of everyone arriving at their airports in February. [cviii] These measures were made mandatory for everyone entering major cities, provinces, government buildings and hospitals.[cix] These measures were coupled with intensive testing across cities, communities, and villages that might have been exposed to COVID-19.[cx] To facilitate this level of intensive testing, Vietnam developed cheap, domestically-produced, WHO-approved testing kits.[cxi] All people who test positive for COVID-19 in Vietnam are isolated, and their close contacts are quarantined and monitored.[cxiicxiii] The names of COVID-19 infected people and their contacts are publicised to ensure that they comply with quarantines measures.[cxiv] People who refuse to release their contacts or lie on their self-declarations face criminal charges.[cxv] While this may not be in line with civil liberties of citizens in each country, less stringent measures like the Quarantine Act of Canada could be explored in South Asian countries.[cxvi] The Vietnamese government has established social protection measures of those who are quarantined because they are infected with COVID-19 or have been exposed. Infected individuals quarantined outside of the home are entitled to a daily food allowance of US$2.59, while those quarantined at home receive US$1.72.[cxvii]

2. ENFORCED AND TARGETED LOCKDOWNS

In addition to quarantine measures, Vietnam implemented lockdowns in different parts of the country and restricted domestic travel.[cxviii] The lockdowns are strict, such that villages of 10,000 people or entire hospitals have been fenced-off on account of single COVID-19 cases.[cxix] Similar to South Asia, lockdown measures have led to the closure of businesses, schools and universities.[cxx] To support businesses during lockdowns, Vietnam suspended the payment of social insurance premiums into the retirement and survivorship fund for a maximum of 12 months and without late payment interest charges for businesses facing difficulties cause by the COVID-19 epidemic.[cxxi] As of March 31st, the government announced an income support package of US$1.2 billion.[cxxii] This package is meant to provide support to the poor, near-poor households and social assistance beneficiaries. The package will also support employees who are not qualified for unemployment insurance benefits, including those from the informal sector such as small and household businesses, part-time workers and those on unpaid leave or who have reduced income as a result of the Covid-19 pandemic's impacts on the country.[cxxiii]

3. TAILORED COMMUNICATION APPROACHES THAT REACH ALL CITIZENS

Vietnam has used early and constant communication from the start of the pandemic, that is tailored and reachable to all citizens. Each day, different parts of the Vietnamese government – e.g. the Prime

Minister, Ministry of Health, Ministry of Information and Communications, and provincial governments - text citizens with information.[cxxiv] Details on symptoms and protection measures are communicated to mobile phones all over the country.[cxxv] The government is revealing details of those who have COVID-19 or, in rare cases, have escaped quarantine - though the person's name is not made public.[cxxvi] The government also passed a law which allows them to fine people who spread false information.[cxxvii]

CASE EXAMPLE – INDIA

India has reported 56,351 cases and 1,889 deaths as of May 8, 2020.[cxxviii] While case fatality rates remain relatively low, growth rates have increased steadily over the past week. India's early success was widely attributed to its early restrictions on international travel and its two-month-long national lockdown, provisions of which have been described as the most stringent in the world. While these actions have successfully plateaued the initial transmission of COVID-19, the government faces the challenge of finding a more long-term, sustainable solution to the pandemic.

COVID-19 hotspots in India have emerged in large urban centres, where access to quality care is greater than in rural areas. Three states - Maharashtra, Delhi and Gujarat - account for nearly half of all cases in India. As the disease transmits to rural areas, the Indian healthcare system will face even greater strain on its scarce resources, raising concerns that overwhelmed systems may trigger future outbreaks. India's ability to bolster its healthcare system including outside large metropolitan areas will be critical to its COVID-19 response.

INDIA AND COVID-19: CHALLENGES

It is difficult to paint a precise picture of the challenges Indian policy-makers face in the months ahead, given the lack of sophisticated epidemiological models and India's unique age and co-morbidity distribution. Given this, we provide a qualitative description of the factors that traditionally serve as model inputs. We specifically touch on demographic characteristics, sectoral constraints and administrative capacity which are likely to influence effectiveness of different policy options:

1. Youthful population but significant chronic problems

While India's youthful population (with ~90% of the population under 60) is a source of optimism, the relatively high prevalence of respiratory co-morbidities - including tuberculosis (27% of all TB patients are Indian), chronic obstructive pulmonary disease (COPD) and asthma - still leave a large proportion of Indians highly susceptible to the disease. It is estimated that almost a quarter of Indians over the age of 60 (around 33 million individuals) have a chronic respiratory disorder, compared to about a fifth globally[cxxix]; a fifth of all Indians over 60 are diabetic, and a third of Indians over 60 have cardiovascular disease (compared to a global average of ~23%). Finally, it is unknown how COVID19 will interact with undernutrition even among younger populations.[cxxxcxxxi]

2. Sectoral constraints to rapid scale up

India's healthcare system is underfunded, and access to quality healthcare is inequitably distributed. Although India spends only ~3.6% of its GDP on healthcare, nearly two-thirds of all expenditure is borne out-of-pocket. Given these structural constraints, India's existing capacity to respond to COVID-19 is inadequate, with large differences between regions. India had approximately 1.9 million hospital beds, 95,000 ICU beds, and 48,000 ventilators available at the beginning of the pandemic- alarmingly low numbers for a population of ~1.3 billion people.[cxxxii] Human resources are similarly limited and regionally disparate with one physician for every 11,082 Indians.

The Indian government has attempted to rapidly expand the healthcare system's capacity. Daily testing rates have improved nearly ten-fold over the past month (from ~7,000 a day in early April to ~80,000 a day in May). Personal protective equipment stockpiles, ventilator inventory and ICU bed capacity are also rising significantly. The Indian pharmaceutical industry is also a global leader drug provision around the world.

3. Variable administrative capacity

India's anemic public health expenditure and fragmented administrative structures raise concerns about the state's ability to grapple with a long-term, regionally heterogeneous, multi-dimensional public health crisis. Health is a state subject under the Indian Constitution. Given India's vast geographic size and variation in state-level administrative capacity and resources, states are likely to require different responses to the pandemic. Thus, the central government in India will need to provide additional support on for the pandemic response to states with lower capacity. Furthermore, nearly half of all Indian health care providers are private, across both urban and rural areas. While some states have commandeered private health services at this time, it is unclear if the state has either the enforcement capacity or the resources to effectively oversee health operations in the country.

INDIA: PHYSICAL DISTANCING MEASURES AND EFFECTS

India responded swiftly to the pandemic, and implemented some of the most stringent physical distancing measures globally, including:

- **School closings:** All tiers of the Indian education system have been suspended since the middle of March, with suspensions expected to last till July (at the earliest).
- **Closing non-essential businesses:** All non-essential businesses have been prohibited from physically operating since the middle of March.
- **Cancelling public events:** All public gatherings of five or more individuals, including religious congregations, have been prohibited since the middle of March.
- **Closing transport:** All public transport and non-essential private transport has been prohibited since the middle of March. Individuals must apply for travel passes, which are provided to those travelling for essential reasons.
- **International travel restrictions:** All international travel has been prohibited since the middle of March.

It is unlikely that India will be able to sustain the levels of stringency it has endured for the past two months – the country is in the process of easing movement by zoning. India will have to develop protocols to adopt alternative disease control mechanisms. Additionally, India must also deal with the economic and non-COVID-19 health effects of its strict physical distancing policies.

Non-COVID-19 effects of physical distancing

Economic effects - Restrictions to movement and business operations have significantly impacted India's economy. Estimates suggest that over 70% of all Indians have seen their earnings decrease since the beginning of the lockdown, with ~30% reporting no earnings at all.[cxxxiii] A disproportionate burden has been borne by the informal economy – e.g. daily wage laborers, and the self-employed. A sustained lockdown also hinders the economic recovery, as workers' ability to return to employment will be constrained by both material and behavioral barriers, while losses in incomes and savings will reduce investment in productive activities - e.g: farmers reducing input costs, firms scaling down production etc.

Food security effects - As inter-state and inter-district movement of goods has been restricted, there are reports of increased food insecurity across India. Recent surveys have shown nearly half of all individuals report limiting their portion sizes or reducing their meals since the beginning of the lockdown. Given the wide-ranging nature of the lockdown, even traditionally privileged populations report food insecurity - suggesting that food provisions must be made readily available across the country.

INDIA: ALTERNATIVE DISEASE CONTROL MEASURES

Active contact tracing: India has developed contact tracing protocols for areas designated as Containment Zones - i.e: locations that report a large and rapidly growing number of COVID-19 cases. These protocols include:

- App-based surveillance of all individuals falling within the Containment Zone
- Home and institutional quarantining of individuals deemed to be at high-risk
- Complete restriction on any kind of travel
- In-person surveillance by special team

While contact tracing has been successful at halting the spread of COVID-19 in some areas (e.g: in Kasaragod district in Kerala), limited smartphone penetration (~36%, with women 26% less likely to own a mobile phone), scarce healthcare resources, and varied levels of enforcement capacity are likely to affect the implementation fidelity of these policies. States and districts that do not have the ability to enforce these policies will have to develop feasible versions of the same - an exercise that is yet to be carried out.

Scaling up COVID-19 testing: While testing rates have improved, India's large population size limits its ability to achieve the high per capita rates seen in places like South Korea and Vietnam. To that end, India has prioritised testing resources in areas and populations that are the most likely to be at risk.

Health-systems adaptations - While unavoidable, the reallocation of frontline health workers and facilities in the fight against COVID-19 is likely to have significant, unequally distributed opportunity costs. New mothers and their babies are likely to bear the largest costs of this as reports show declining immunization rates, a decrease in antenatal care and limited access to essential nutritional supplies. India has also seen an increase in violence against health care workers[cxxxiv].

Hygiene and protective measures: 1) Mask wearing - Many states in India have imposed mandatory mask wearing requirements for their residents. As with other PPE, India's mask stockpiles were low in March, but have risen rapidly in the past few months. States have promoted mask-making at homes, and by small businesses around the country, such as women's self-help groups.[cxxxv] It is unclear if the current rates of manufacture are adequate, both in terms of quality and quantity. 2) **Access to hand-washing equipment:** Primary surveys conducted across India over the past two months suggest that over 80% of the population has access to adequate water and soap to wash their hands every 2-3 hours. However, water shortages are likely to increase in summer months. This indicator must be closely tracked over the next few months.

Social and behaviour change communication: While knowledge around basic COVID-19 symptoms and preventative behaviour has improved, knowledge of key information (such as the existence of asymptomatic carriers) is low. This can affect the willingness to adhere to public health directives. Furthermore, there is concern that patients and healthcare workers are facing stigma and social discrimination, which may discourage at-risk individuals from seeking care.[cxxxvi]

INDIA AND COVID-19: RECOMMENDATIONS

The recommendations above for physical distancing mitigation actions, alternative disease control mechanisms, and vulnerable populations will need to be carefully tailored to the India context.

In addition, we recommend three priority areas to focus on for the way forward:

1. **Stimulate economic activity and protect lower-income populations**

- **Expand safety net protections:** The initial stimulus package issued by the Indian government accounted for 1% of the GDP - falling in the middle of the pack when compared with other countries with similar per capita GDPs (larger than countries like Ghana and Nigeria, but less than Vietnam, which has announced packages worth 3% of the GDP). While the Indian government has expanded its social welfare programmes to cover last swathes of the population, only around a third of the population reports access to relief, with rates varying significantly across states. Given the widespread status of food insecurity and economic distress, the Indian state must prioritize minimizing exclusion error by universalising access to relief programmes. For instance, Uttar Pradesh has made food ration delivery unconditional over the past few weeks. Furthermore, support must be provided in both cash and kind, as recent evidence suggests that the population has no clear preference for either method, with rates varying significantly across states and districts.
- **Support the agricultural sector:** India has allowed certain forms of economic activity to reopen in a limited fashion. Private offices are allowed to operate at 33% physical capacity, and in-situ

construction work has been permitted. Additionally, the Indian state must also develop programmes to support economic activity —particularly in the agricultural sector that employs two-thirds of India's population. This includes expanding input and wage subsidies to ensure that future agricultural seasons are not affected by the current lockdown.

2. Active contact tracing and scaled-up testing

- **Background:** India is mobilising its 800,000 strong cadre of frontline workers to conduct door-to-door contact tracing across the country. It has launched app-based surveillance mechanisms, opting into which has been made mandatory in some regions of the country.
- Swiftly develop high-intensity testing and contact tracing protocols
- Improve the utility of Aarogya Setu through supplementing with clear follow-up protocols for exposed individuals. Privacy and data security concerns have been raised about the COVID-19 app
- Improve data management systems (E.g. ensure data can be linked across multiple districts and hospitals)
- Explore replicating Kerala's Kasaragod model which had GPS-tracked quarantine, delivery of essential services, increased social welfare, and scaled-up testing.

3. Protect essential workers

- Health care workers have been continued to be attacked in India across multiple geographies. Moreover, due to supply chain and manufacturing shortages, health care workers have been using make-shift PPE (e.g. raincoats) which are not adequate for protection.[cxxxvii]
- The government should continue to enforce strict guidelines to protect health care and sanitation workers from violence.
- Government should explore ways to scale-up access and production of PPE using existing manufacturing capacity

4. Cross-cutting theme – decentralization is key

The Indian state has divided districts into different 'zones' on the basis of COVID-19 prevalence; with more restrictive provisions in higher-prevalence districts. Given the restriction on inter-district travel, this provides a feasible way to gradually ease the lockdown, and develop methods of contact tracing and testing that can be implemented in low-state capacity rural areas. The Indian state must decentralize decision-making authority for these transfers at the state and local level, to ensure that aid is tailored to the specific concerns of each geography. Given the size of Indian districts, experts believe that lockdowns decisions must be made at more granular levels (e.g. sub-district level 'blocks' in rural areas and municipal wards in urban areas).

Note: This document is part of a package of materials, see Physical Distancing & Alternative Disease Control Mechanisms in South Asia policy brief

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