COVID-19 and the Urban Poor

Addressing those in slums[1]

Summary

The COVID-19 crisis has presented global challenges of unprecedented proportions. This note outlines some of the key issues and risk factors facing the urban poor and offers operational approaches in the short, medium and longer term. The risks to this population will be among the highest given issues related to density, living conditions, limited access to basic infrastructure and health services, and informality in employment. Targeted outreach to these groups will be urgently needed to mitigate the impacts in such settlements.

Exposure to COVID-19 in Urban Areas and Risks to the Urban Poor

Today, over 4 billion people around the world—more than half the global population—live in cities. A key feature of urbanization is density, which has many benefits in terms of enabling agglomeration economies, access to basic services, and to health care. Yet without adequate investments in planning and infrastructure, density can have downsides, particularly contagion and congestion. The downsides of a city's density are often most visible in its slums; close to 1 billion people live in slums globally. These neighborhoods often lack access to drainage, roads street lighting, electricity, water, and sewerage, together with policing, waste disposal, and health care. With people tightly packed together, the resulting crowding increases exposure to communicable diseases. And, small, overcrowded and poorly constructed housing make sheltering place nearly impossible for many slum dwellers

There are several factors that put the urban poor, especially those living in slums, at high risk for contracting infectious diseases such as COVID-19. Tuberculosis, for example, has long been associated with urban congestion and poor living conditions in slums. Similar to the conditions in slums, those living in refugee camps are also at high risk. These risks are particularly linked to:

  i)   overcrowded living conditions (both within slums and within households),
  ii)   limited access to basic services particularly water, sanitation and health services,
  iii)   reliance on crowded transport services; and
  iv)   specific aspects of working in the informal sector (often in crowded places, no social protection to fall back on, etc.)

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[1] This note was prepared by Judy Baker, Dean Cira and Somik Lall in March and updated May 1, 2020.

Opportunities for containment and treatment will also be difficult given challenges of reaching and isolating COVID 19 affected people in slums and it will be even more difficult to trace contacts, leaving those who came in contact equally vulnerable and without treatment or isolation. Issues of social stigma, lack of awareness, fear of losing jobs or fear due to lack of access to treatment, some urban poor suffering from symptoms may be unwilling to come forward and take tests.

Other subgroups among the urban poor such as women and girls, migrants, refugees, internally displaced persons, and the homeless population are also at high risk and would benefit from the targeted interventions proposed. Children of poor families are among the most vulnerable. School closures for many young people can lead significant loss in years of learning and some children may not return. Girls in particular are at high risk to domestic violence and unwanted pregnancies that can lead to higher dropout rates.

Possible Approaches to addressing COVID-19

Despite encouraging news on possible vaccine development and the use of some therapeutics to speed recovery, managing contagion is currently the only proven strategy in the fight against COVID-19 spread in the short term and will be required in a swift and proactive way. Many developing countries still have the opportunity to learn from countries that are already facing severe crises to contain the spread from an early stage. This will require social distancing, and potentially severe restrictions on the movement of people. These strategies are, however, particularly difficult in slums.

In the medium to longer term the focus will be on economic recovery and increasing resilience. There are a number of interventions that can be prioritized to reach the urban poor to achieve these goals though they will require a scale up of activities in low income urban communities.

Short Term priorities

On the front lines, civil protection and local authorities are using the skills, knowledge and operational systems designed for catastrophic disasters and the provision of sustained urban services to contain and manage the COVID-19 outbreak. To ensure those that are living in low income urban communities are not left behind, a few short term measures can help provide assistance to those most in need. These can be prioritized through our lending in Development Policy Operations (DPOs), scale up of existing Investment Project Financing (IPFs) , activation of Contingent Emergency Response Components (CERCs), Programs for Results (PforRs) and diagnostic work.

- **Identification of high priority 'hot spots'.** Diagnostic work is being carried out to identify transmission hotspots within cities by GPURL. (*see example Annex 3*).
- **Short-term water provision.** A particular challenge in providing water through some of the existing methods in informal settlements during the COVID-19 crisis, is that it generally requires households to fill water containers from a central location for household use.

Community sanitation facilities pose the same challenges. To be effective, such delivery systems will require monitoring to ensure safe distances between users which would require community oversight and engagement, as well as community education campaigns.

- **Handwashing.** This will require awareness campaigns, with consumer-focused social marketing approaches are effective at stimulating and sustaining handwashing with soap behavior change. The distribution of hand sanitizer can also help for situations when handwashing is not feasible.

- **Community Engagement.** During the Ebola crisis in West Africa there were a number of lessons highlighting the importance of community engagement focused on Prevention, Response and Treatment and Aftermath.

- **Waste collection.** As households may be quarantined they may not have had access to waste disposal, such as taking waste to a central collection point. In slum environments where solid waste is already a major challenge, the pile up of waste can exacerbate conditions, creating a new set of health problems.

- **Access to health services**. In the short term, deploying community health workers or mobile health services for onsite testing and emergency treatment may provide assistance to those that otherwise may not be able to access services.

- **Targeted social protection schemes**. The use of targeted social protection schemes such as cash transfers in times of crisis has much precedence. For example, In the Democratic Republic of Congo, in addition to the public health response in Ebola-affected zones, US$50 million was quickly mobilized to support a cash-for-work program to increase the resilience of communities, support the local economy, and strengthen social cohesion, thus addressing key challenges impeding recovery (World Bank, 2019).

- **Vaccinations for slum populations when it becomes available.** Once a vaccine for COVID-19 becomes available, ensuring and prioritizing access to the vaccine in low income urban areas will be critical given the high risk factors for the urban poor. Based on previous experience, this will require outreach and awareness campaigns especially at the community level, text messaging as reminders and incentivized immunization services.

- **Budget support to local governments.** As local governments are on the front line in many countries, they will be challenged with continuity through the crisis period and as Federal and State resources may be repurposed, fiscal transfers to local governments may be reduced or stopped. It will be essential to ensure that local governments (LGs) have the operating budgets to sustain salaries of municipal employees, which can continue operations and service provision including for poor areas. Second, that there are resources for basic maintenance of municipal infrastructure and equipment needed to provide services.

- **Policy actions.** As World Bank operations are preparing policies in the short term to respond to the crisis will include a mix of interventions to reduce the spread of the epidemic by flattening the curve and to care for impacted groups (health and economic impact) and reduce the risk exposure for vulnerable groups. Much of this will come through budget support, with opportunities for including prior actions that focus on urban responses that would be particularly impactful for the urban poor.

Box 1: Decision support tool to anticipate COVID-19 exposure hotspots within Cities

To help city leaders prioritize resources towards potential hotspots or places with the highest exposure and contagion risk, the World Bank has developed a methodology that can be rapidly deployed. In this methodology, exposure and vulnerability hotspots are identified based on:

-The practical inability for keeping people apart, based on a combination of population density and livable floor space that would not allow for 2m physical distancing

-Proximity to places where, even under lockdown, people might have little option but to cluster (e.g. to access public toilets and communal water pumps) in the absence of alternatives.

The methodology relies on three globally sources datasets: population, building heights, and location of key services. Because of the importance of deploying this analysis rapidly and since local data coverage may be scarce and difficult to access during the pandemic, this methodology primarily relies on global datasets. Population data are accessed from WorldPop and Facebook, and data on key services are being compiled from OpenStreetMap and the cities themselves. Data on building heights and floor space per person (at a 100m x 100m resolution) are being accessed through a partnership with the German Aerospace Center (DLR) for a range of low and lower-middle income cities. This is a central part of the puzzle as floor space per person makes the difference between density and crowding, or between Manhattan and Kibera in Kenya. Since the data structure of the algorithm is based on the grid cell, various types of spatial data can be easily brought on board.

To validate the 'hotspots' and improve accuracy of prediction, the team developing partnerships with the "Know Your City" global campaign of Slum Dwellers International (SDI), United Cities and Local Governments of Africa (UCLG-A), and Cities Alliance. Through this campaign, slum dwellers through community mapping have collected city-wide data and information on 7,712 informal settlements/slums in 224 cities.

To help city leaders and communities manage the pandemic, this decision support tool can provide an evidence-based approach to target emergency interventions that avoid a rapid spread of the virus in these hotspots.

And because there is a strong correlation between poverty and poor living conditions such as slums and informal settlements in many cities in the developing world, geographic targeting of such hotspots would provide a reliable proxy to means-based testing and help cities target emergency efforts to the vulnerable. Through geographic targeting, governments can provide the poor, irregular income earners and those whose livelihoods are affected by the lockdown with cash transfers, food distribution, and other support to reduce the pressure for them to choose between staying healthy and economic survival.

Box 2: Examples of World Bank Projects reaching the urban poor during the COVID response

Indonesia National Slum Upgrading Program. The Indonesia National Slum Upgrading Program targets 6,000 slums through primary infrastructure and community infrastructure grants. This project builds on three decades of engagement between the World Bank and urban upgrading programs in Indonesia, including a network of about 10,000 community facilitators on the ground. The project has a component for 'cash for works' community grants in 400 of the poorest urban communities, creating 1.2 million work-days of employment, and helping over 1 million beneficiaries. In response to COVID-19, remaining project resources are being reallocated to scale-up cash for works in 1,000 communities; generating an additional 2 million workdays (estimated) and expanding the WASH agenda. New ICT-based approaches will strengthen monitoring systems to better remotely track the effectiveness of cash for works programs; and assess COVID-19 social and economic impacts in urban areas. The existing project architecture can quickly scale and utilize the existing disbursement channels and networks. If additional resources are made available – the project has the potential (through increasing the geographic coverage and the size of grants) to rapidly disburse an estimated USD 2 billion in two years, through cash for works programs, targeting 10,000 of the poorest slums, while building new productive assets to strengthen economic recovery.

Ethiopia Urban Institutional and Infrastructure Development Program. The Ethiopia Urban Institutional and Infrastructure Development Program (UIIDP) is a $860 million PforR operation providing grant financing to 117 local governments across the country for municipal infrastructure and services, institutional strengthening and local economic development that benefits 9.4 million people. UIIDP contributes significantly to the livelihoods as well as service delivery for the urban poor by improving basic urban services in poor neighborhoods through labor-intensive works such as cobblestone roads, local drainage systems, community sanitation facilities and public parks, creating around 140,000-160,000 jobs per year for the urban poor especially unemployed youths, women and vulnerable people. Local governments are encouraged and incentivized through specific performance indicators to promote job creation, support to micro and small enterprises, and women's economic empowerment. In the face of the COVID-19, UIIDP is playing a critical role to support local government response and recovery efforts by providing (i) essential municipal services—water supply, sanitation, waste management, (ii) job opportunities to the urban poor, and (ii) financial resources for emergency response and recovery offsetting losses in local governments' own source revenues. The program is further scalable through the established system by increasing yearly budget allocations in the coming 3 years supporting an expansion of job creation focused on basic infrastructure delivery and the conversion of local governments' disaster risk management system into digital and geospatial forms. This could create an additional 60-70,000 jobs per year, thereby supporting livelihoods of the urban poor while strengthening urban

services in poor neighborhoods and economic recovery. Note that 50% of every dollar invested in labor intensive public works (e.g. cobblestones) accrues to poor community members.

Source: World Bank teams

Medium Term Priorities

In the medium term countries will need to respond to the aftermath of the pandemic, and in particular the fiscal and economic crisis that will immediately follow the health crisis. For the urban sector, and for the urban poor in particular, it will be critical to take an approach that allows people to safely return to their livelihoods and education and to restart the economy with income earning opportunities for those hardest hit by focusing on labor intensive works and small firms. No regrets and sustainable investments in critical infrastructure, such as water and sanitation, solid waste management, community health facilities and centers, housing and shouing improvement will help to increase long-term resilience and preparation for the next pandemic or emergency. This can be achieved through the range of world bank instruments. These approaches align with longer term multidimensional approaches to promote economic, spatial and social inclusion for the urban poor.

Prioritize investments that will stimulate economic activity and jobs for low income workers. Urban Community Based Projects and Labor-Intensive Works: can be scaled in urban areas and particularly slum settlements. Such programs can focus primarily on small-scale works, using community contracting and labor that can at once provide needed improvements in infrastructure, build community capital and support short-term jobs. These can be designed as fast disbursing block grants to community groups, either as new projects or restructuring of existing projects that currently focus on urban slums, or rural focused CDD operations and can expand geographic scope to poor urban neighborhoods.

Scale-up Slum Upgrading: in the longer-term the Bank can support scaling-up slum-upgrading which focuses on the improvement of infrastructure and services in informal and slum settlements. This is important for building longer term resilience to shocks such as COVID, and also to reducing the social disparity that exist in cities, building longer-term community resilience and reducing future impacts of health and other crises. In the short-term a focus should be on additional financing to existing scalable upgrading projects.

Invest in Housing Improvements: Building on existing slum-upgrading programs, or standalone housing sector programs, funding can be provided for grants and/or low-interest micro-loans (or a combination) for housing improvements. This would get cash quickly to households to make needed shelter improvements that would build resilience to future crises, and serve to stimulate the formal and informal construction industries, on which many informal, urban poor workers rely. Investing in homes can serve to reduce spatial inequalities that exist within cities between the formal and informal sector and would serve also to build longer-term household wealth.

Invest in Urban Agriculture: Urban Agriculture can be a very important source of additional income and food for households. It can reduce consumption of more expensive imported food

products, reduce transport costs, provide products that are highly perishable, generate income and employment, and have important impacts on environmental sustainability. Scaling existing programs would have the most immediate impact. It is estimated that some 15% of the world's food is produced in urban areas and this could be scaled up even further, with huge potential benefits for the poor. This could be done in partnership with the agriculture sector with not only short-term benefits but also longer-term scalable impacts for the food supply chain.

Ensure Social Safety Nets for the Urban Poor: Among the more popular safety net programs are Conditional Cash Transfers (CCTs), workfare programs, fee waivers, and targeted cash or in-kind transfer schemes (e.g. food distribution, food stamps, or vouchers) all of which could be scaled up in urban areas during times of crisis. It is naturally easier to scale up an existing safety net program than to design a new one, but some countries have been able to use a crisis as an opportunity to eliminate ineffective programs and replace them with better designed programs.

Box 3: **Examples of World Bank Projects to scale up outreach to the urban poor for COVID recovery**

Second Kenya Informal Settlements Improvement Project (KISIP2). KISIP2 aims to improve the living conditions of informal settlements and its residents through (i) tenure regularization; (ii) infrastructure upgrading for basic services (roads, drainage, water, sanitation, street lighting, community facilities); (iii) improve livelihoods by increasing linkages between residents of informal settlements and social safety nets and job opportunities. KISIP1 (IDA: US$100m) reached approximately 1.3 million residents in informal settlements providing them with tenure security (125,000 beneficiaries in 80 settlements) and improved infrastructure for basic services (1.15m residents in 35 settlements). With the current allocation of US$150m KISIP2 expects to benefit a similar number of beneficiaries. Changes to KISIP2 that would increase its reach and impact: (i) broaden its current scope of creating labor-intensive work by adding O&M jobs for youth within the informal settlements through a community-driven approach (has already been proposed by the Government of Kenya); (ii) lower transmission costs by collaborating with agencies that already have job-creation programs in place, for example the urban roads agencies, and use MPESA (mobile money) to directly pay the workers; (iii) introduce digital job opportunities given that Kenya has a strong foundation for digital work; (iv) with the current ratio of US$100m providing improved infrastructure to approximately 35 settlements, funding for KISIP2 will need to substantially increase to make an impact on the approx. 450 informal settlements in Kenya. With larger allocation, KISIP2 has the potential to draw similar or larger donor interest (KISIP1 attracted $48.2 million in AFD and SIDA funding).

Metropolitan Buenos Aires Urban Transformation Project. Under the Metropolitan Buenos Aires Urban Transformation Project and Additional Financing (P159843), the Bank is supporting communications and digital connectivity interventions in the most visible informal settlement in the City (Barrio 31). The Bank team will also use internal budget to support the communication campaigns and provide technical support for enhancing the behavior aspects of the materials. In

the Province, the government has requested the expansion of the current upgrading program (targeting 3 neighborhoods) to other informal settlements in order to promote local employment in the context of COVID-19 while addressing urgent basic infrastructure needs. The Province will submit a list of emergency-related actions that they would like to finance with the existing loan, including the Programa Agua Segura. The use of technology to develop a vulnerability assessment of slums in metropolitan area is also being explored. Under the Salado Integrated River Basin Management Support Project (P161798), the Province has requested a restructuring to use uncommitted funds to construct 3,200 units of social housing in urban areas for the dual purpose of job creation and providing safe housing to vulnerable populations. The restructuring will enable the Provincial Government of Buenos Aires to quickly take measures to respond to COVID-19 without canceling and starting all over again.

Source: World Bank teams

Longer Term priorities

Though the COVID-19 crisis is acute and will potentially have devastating impacts in the short term, it is important to not lose sight of the daily challenges that the urban poor face and opportunities for investments that will have impacts over time to increase resilience and improve living conditions for the longer term. These priorities can be considered as multidimensional, focusing on promoting economic, spatial and social inclusion for the urban poor.

Promote Economic Inclusion and Resilience: This includes investments in connectivity for the urban poor to job markets through education, and better transport infrastructure and services. Investing in policies and programs to improve conditions and the rights of informal workers can have important impacts on livelihoods. To build resilience for future shocks, national and local governments have a critical role in investing in prevention and preparedness for all disaster types, including epidemics. Investments in strengthening infrastructure, risk assessments, early warning systems, linkages across agencies (e.g. emergency management and public health) and ensuring that services are designed to reach vulnerable groups such as those living in informal settlements who typically bare a disproportionate burden of impact.

Promote Spatial Inclusion and Affordable Housing. Spatial planning that is well integrated with transport can help to reduce inequality in access to services and amenities can help to build resilience in high risk areas where many of the urban poor live. Ensuring that policies are in place to open access to land, protect property rights and improve tenure security are important to fostering affordable housing markets, including options for low cost housing. And within low income communities, investments in clean water, sanitation, and solid waste collection have tremendous impacts on health, productivity, and welfare. Slum upgrading programs can bring an integrated package of services, improve access to affordable housing, and play an important role in building social cohesion at the community level through participatory approaches.

Promote Social Inclusion. An essential part of promoting opportunities for the urban poor includes ensuring equitable access and engendering a sense of belonging to the urban environment. Some subgroups among the urban poor are especially vulnerable such as women, the elderly, and urban migrants. For such groups, targeted social programs such as conditional cash transfers and cash for work opportunities can boost poverty reduction and inclusion. Finally, building inclusion relies on good local governance through transparent and fair decision making.

Annex 1: Risks to the urban poor from COVID-19

High population densities in slums may accelerate transmission. Urban areas with their higher densities, may contribute to a more rapid and broader spread of some infectious diseases. This may well be exacerbated in slum areas. While not all slums settlements have higher densities than their surrounding cities, much of the time they do and slum populations are typically denser than formal urban areas. In Nairobi, for example, an estimated 60% or the population live in slums, but slums occupy only roughly 6% of the urban area (Kenya Urbanization Review). Density of population does not of itself determine the ease with which infection spreads through a population. Problems tend to arise primarily when populations become so dense as to cause overcrowding, which is characteristic of slum settlements. Overcrowding is often associated with decreases in quality of living conditions and sanitation, and hence the rate of agent transmission is typically very high in such areas. Thus, overcrowded cities or densely populated areas of cities can potentially serve as breeding grounds for infectious agents, which may <u>facilitate</u> their evolution, particularly in the case of viruses and bacteria.

For example, poorer neighborhoods in Liberia's capital were linked to more intense, widespread transmission of Ebola virus disease, compared to more well-off parts of Monrovia, a pattern seen with other infectious diseases. Research shows that patients from less developed, poorer areas of the city had more contacts, with infections leading to more widespread transmission than illnesses linked to higher income areas. Middle and low-income areas had 1.5 and 3.5 times as many secondary cases, respectively, than higher income areas. Overcrowding and lack of education about how Ebola spreads and how to prevent the disease may have been contributing factors. Also, people from poorer areas were more likely to export cases to higher economic-level communities as people living in slums regularly move back and forth across the city from their jobs to their homes (Website: Center for Infectious Disease Research and Policy).

Household overcrowding in urban slums also make behaviors such as social distancing particularly difficult. Studies have shown significant associations between overcrowded housing and, for example, tuberculosis, hospitalization for influenza, pneumonia and other acute respiratory infections, meningococcal disease and rheumatic fever (Nkosi, V., Haman, T., Naicker, N. *et al.* Overcrowding and health in two impoverished suburbs of Johannesburg, South Africa. *BMC Public Health* **19,** 1358 (2019). Overcrowding is a particular problem for slum populations. According to a survey done by UN Habitat, the average room occupancy of slum households globally is four persons, one more than the recommended maximum of three persons per typical room size of 9 square meters (UN Habitat Slum Almanac 2015/16

Poor living conditions in slum settlements may exacerbate transmission slowing behavior. The lack of water and sanitation, in particular, has hampered efforts to slow the spread of SARS-CoV-2 and similar viruses where hand washing with soap is advised as one of the primary defenses against transmission. In countries like Kenya, access to clean piped water has actually decreased in recent years. The problem is not limited to large cities, in many countries access to water and sanitation services is much lower in secondary cities and towns, where poverty rates are often higher (Kenya Urbanization Review).

The health impacts of lack of water and sanitation are clear: One study by the Africa Population HRC (2002) found that under 5 infant mortality rates were higher in slums than in rural areas in Kenya. In cases where households have to fetch water from centralized locations such as standpipes or water kiosks, the risk of transmission of infectious diseases transmitted by person-to-person contact or proximity can also increase. Such water delivery methods are common in slums throughout the world.

Access to health services is limited. Though urban health services are generally better in urban areas than rural, within slums this can be quite limited and distances to public facilities may be long. Besides public services, private and NGOs provide services with no quality controls on the services provided. In Maputo, Mozambique for example, in areas of high poverty distance to the nearest health facility is a common problem, and the poorest are less likely than the rich to seek medical attention. Twenty-one percent of low income neighborhoods have no health facility within 2 km of the center; 39 percent have only one health facility; and 20 percent have two. The number of poor households with no access to a health facility within 2 15 km is three times as high as for nonpoor households. This may explain why traditional medicine is still commonplace at the neighborhood level as it is the only health service available.[2]

Accessing hospital services can be prohibitive, in some countries requiring proof of residency, fees, or bribes that are unaffordable for the urban poor. For populations particularly vulnerable to COVID-19 such as the elderly, the lack of access to health services will have a significant impact on mortality rates.

Reliance on crowded transport services increases contagion risk. While many of the urban poor particularly in Sub-Saharan Africa and South Asia rely on walking as their primary source of transport, many others rely on informal transport for access to employment and services. Throughout the developing world Tuk Tuks, jeepneys, matatus, minibuses, taxis and other shared vehicles are common modes of transport for many of the urban poor who cannot afford their own source of private transport such as motorbike or automobile. These shared services move frequently from location to location in a given city, and are often overcrowded. This mobility creates another risk factor, not only within slums, but also across different areas of the city.

Working in the informal sector poses risks. The vast majority of the urban poor work in the informal sector. An estimated 85 percent of all new employment opportunities around the world occur in the informal economy (UN Habitat, 2015). Urban informal workers are typically engaged

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[2] World Bank, 2017, Maputo Urban Poverty and Inclusive Growth

in the following broad categories of work; domestic work (maids, housekeepers, nannies, care providers); home-based work (subcontractors for factories (garment makers), artisan or craft makers, mechanics/repairmen); street vending (food stalls, retail kiosks), construction work, and waste picking (ILO, 2013). Informal works might also be employed illegally in formal enterprises such as restaurants, offices or factories.

Conditions for informal workers come with a lack of labor regulations and social protections, possible exposure to environmental and health hazards, lower wages, and an increased vulnerability to shocks and exploitation.

With the spread of COVID-19, workers in the informal sector will be especially vulnerable to rapid disease spread for working in close contact, even those who do home-based work given crowded living conditions in slums. As economic activity in countries will slow down dramatically, the loss of income to the urban poor will have detrimental impacts on households given the lack of social protections, savings, or safety nets. Such impacts may be greater than on poor rural households given the heavier reliance on the cash economy by the urban poor.

Women and children are at higher social risk as a dire consequence of COVID-19. A recent study points out that there are direct and indirect linkages between epidemics and increased gender biased violence (GBV).[3] In particular, enforced isolation with violent family members could give rise to increased risk of domestic violence not only against women and but also children. The economic impact on the urban poor will have a further compounding gender effect; when schools are closed and gender norms force them to discontinue working, women may face potential difficulties to re-enter the labor market. There will likely to be also a negative educational and health impact on poor children for whom schools are not only a source of education but also of a healthy meal.

Demographic dividend. While a large share of urban populations in Sub Saharan Africa and South Asia live in slums, their vulnerability to COVID19 may be somewhat mitigated given the youth bulge in these regions. With a median age of 18.3, 43% of its population under 15, and less than 5% of elderly (population aged 65 or over), sub-Saharan Africa is by far the youngest region in the world). The combination of reduced infant mortality and falling fertility rates has created the conditions for a "youth bulge" in South Asia. However, in Europe and Central Asia, population is aging despite only limited improvement—and in some cases, deterioration—in life expectancy. The median age rose from 26 in 1960 to 34 in 2010 and is expected to reach 44 in 2050, driven by declines in fertility. The particular vulnerabilities in the region are clearly visible in Italy and Spain.

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[3] This includes: (1) economic insecurity and poverty-related stress; (2) quarantines and social isolation; (3) disaster and conflict-related unrest and instability; (4) exposure to exploitative relationships due to changing demographics; (5) reduced health service availability and access to first responders; (6) inability of women to temporarily escape abusive partners; (7) virus-specific sources of violence; (8) exposure to violence and coercion in response efforts; and (9) violence perpetrated against health care workers. (Peterman et al. 2020. Pandemics and Violence Against Women and Children)

Annex 2: Short Term Interventions and Operational Responses

Short-term water provision. In the medium to long-term, investment in networked water delivery systems with household connections will need to be stepped up. In slums, household connections to a water network are often impeded by the informal occupancy of the housing and by laws that often prohibit such investments in informal settlements. Other options can be pursued. This includes, for example, point source vendors, mobile water vendors, and value-added water vendors. All of these options are often found in slum settlements. However, a challenge in providing water through these means in times of outbreaks like COVID-19, is that it generally requires households to fill water containers from a central location for household use. Community sanitation facilities such sanitation block, pose the same challenges. To be effective, such delivery systems will require monitoring to ensure safe distances between users which would require community oversight and engagement, as well as community education campaigns.

Handwashing. Acute respiratory infections, such as pneumonia, and diarrhea are the top worldwide leading causes of childhood mortality, accounting for about two-thirds of deaths among children under age five. Research shows that, if widely practiced, handwashing with soap could reduce diarrhea by almost 50 percent and respiratory infections by nearly 25 percent. According to the World Bank's now defunct Water and Sanitation Program, handwashing with soap, promoted through intensive and small-scale interventions, can stimulate handwashing with soap behavior change and prevent certain diseases. There has, however, been limited experience with scaled programs, with some exceptions. The greatest impediments to scale are a lack of investment in sanitation infrastructure, especially in low-income settlements. Lessons also suggest that medicalized, didactic education approaches alone are not adequate to change behavior and that consumer-focused social marketing approaches may be more effective at stimulating and sustaining handwashing with soap behavior change. Some lessons from national scale handwashing program, such as those in Vietnam and Indonesia, suggest that:

- Behavior change messages must be based on research and developed by professionals
- Consistent messages and information about the critical times for washing hands will improve implementation efficiency
- Implementers need to be trained in behavior change promotion techniques
- Building on earlier handwashing works to jumpstart partnerships
- A national logo is valuable to unite all stakeholders around the common message and campaign.

Community Engagement. Slums are prone to disease outbreaks like HIV, Cholera and, as most recently demonstrated, Ebola. There is no reason to believe they would less impacted from potential outbreaks of highly contagious disease like COVID-19. Slum populations are vulnerable for many reasons, including those articulated above. But effective community engagement may help to blunt the impact of outbreaks in environments where these marginalized communities remain particularly at-risk often within a context of poorly functioning health systems generally.

The recent Ebola outbreak in West Africa provides some guidance on the importance of rapid community engagement in the face of health crises. Lessons from Liberia suggest that community engagement support needs to focus on Prevention, Response and Treatment and Aftermath. Prevention includes training and awareness, hygiene, infrastructure, surveillance, and mobility restriction. Response and Treatment include referrals, quarantine management, care provision and body burial and disposal. Aftermath include taking care of orphans, survivors and memorializing the impacted. Some takeaways from community engagement strategies from Liberia during the Ebola suggest that to some extend locally affected populations can, in effect, govern themselves by engaging in medical self-surveillance, self-management, and self-triage. In the short-term, risk can be moderated, in part, by ensuring that required daily resources and that informational demands meet local populations "where they are." In the long term, efforts need to focus on equipping local communities with the material and knowledge resources to respond effectively and to help build a surveillance infrastructure that can inform a stronger post-epidemic local and state governance architecture. Effective community engagement and responses must build on existing social and community structures and needs to delegate leading roles in overall community-based measures to women. In the long-term, however, governments must continue to build effective health systems that are inclusive.[4]

Ensure waste collection. During the Ebola Crisis, as households were quarantined that may not have had access to waste disposal, such as taking waste to a central collection point. In slum environments where solid waste is already a major challenge, the pile up of waste can exacerbate conditions, creating a new set of health problems. Beyond ensuring that waste is collected in slum areas, one innovation during the Ebola crisis was the use of Pee-Poo bags,[5] which can be used where other sanitation options are not possible. The challenge with Pee-Poo bags, however, is that they must be disposed of, and for quarantined populations unable to leave their residence for several weeks this, along with general daily household rubbish, meant a large volume of waste produced in a small area with few options for disposal. One response some humanitarians used was to provide large plastic bags and drive to collect waste, which was collected and burned (Oxfam, 2016).

Expand access to health services. Given limited health services in slums, ensuring access to medical services to those that are at high risk will be necessary. In the short term, deploying community health workers or mobile health services for onsite testing and emergency treatment may provide assistance to those that otherwise may not be able to access services. In Liberia during the Ebola crisis, the Ministry of Health developed the Infection Prevention and Control Program, which facilitated quarantines, triaging, and risk communication, including provision of hand pumps, latrines, and sanitation protocols as well as hand wash stations and buckets to

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[4]Community-Centered Responses to Ebola in Urban Liberia: The View from Below Sharon Alane Abramowitz, Kristen E. McLean, Sarah Lindley McKune, Kevin Louis Bardosh, Mosoka Fallah, Josephine Monger, Kodjo Tehoungue, Patricia A. Omidian, PLoS Negl Trop Dis. 2015 Apr; 9(4): e0003706. Published online 2015 Apr 9. doi: 10.1371/journal.pntd.0003706

[5] Pee-Poo bags are an emergency response option that can be used before latrines can be constructed. They are distributed to reduce high-risk defecation practices following an event and the transmission of faecal-oral disease in areas of high population density (Oxfam, 2016, available at http:// www.urban-response.org/resource/23745).

communities. Mental health support workers, while not available to all affected individuals, travelled to communities to support victims and survivors. [6]

Targeted social protection schemes. The use of targeted social protection schemes such as cash transfers in times of crisis has much precedence. For example, In the Democratic Republic of Congo, in addition to the public health response in Ebola-affected zones, US$50 million was quickly mobilized to support a cash-for-work program to increase the resilience of communities, support the local economy, and strengthen social cohesion, thus addressing key challenges impeding recovery (World Bank, 2019)[7]. A successful pilot of 10,000 beneficiaries, half of whom are women, in Ebola hotspots is being progressively expanded to create 100,000 temporary jobs and social infrastructure across all 22 Ebola-affected areas. This program is a prime example of the role social protection plays in the humanitarian-development nexus, and it has been integrated into the government's Ebola Integrated Response Plan (2019), with the DRC Social Fund (FSRDC) leading the "community work" sub-pillar in collaboration with UN partners.

Other countries have been able to adaptive social protection programs to scale up during times of crisis and meet the needs of the most vulnerable. For example, in response to the acute food crisis in North-East Nigeria, Somalia, South Sudan, and Yemen in 2017, through a number of World Bank projects, cash was delivered to the affected population to enable purchase of food, strengthen community resilience, and maintain service delivery to the most vulnerable in those countries.

Thus far under the COVID-19 crisis, the most widely used measures include cash transfers (30 programs), followed by wage subsidies (11), subsidized sick leave (10), and various forms of subsidized social security contributions and unemployment insurance (World Bank Social Protection Review (March 20, 2020).[8] Many of these programs are in OECD countries, and eligible beneficiaries work in the formal sector.

Given the importance of social distancing, the identification of those in need and the delivery of such assistance will require new approaches to avoid the use of delivery points. A few countries are using delivery innovations, for example Jordan (new cash program using same registration form of existing schemes), Japan (uploading transfers on phones), and Romania (enhanced electronic processes for benefits). For those living in slums, there is precedence with the use of mobile phones for money transfers such as M-PESA, which has been used in Kenya and elsewhere for the transfer of safety net programs. Such programs could be quickly adapted for the transfer of safety net resources to those most in need.

Identification of the poorest, particularly in the absence of an existing registry of low income beneficiaries, will also provide challenges under conditions of social distancing. Approaches such as self-targeting (in keeping benefits low), geographic or demographic targeting, or proxy-means testing will need to be adapted.

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[6] https://www.tandfonline.com/doi/full/10.1080/16549716.2019.1662682

[7] https://blogs.worldbank.org/voices/getting-funds-workers-front-line-critical-ending-ebola-outbreak

[8] Weekly note sent by Ugo Gentilini, March 20, 2020

At the same time, disruptions to livelihoods of the urban poor need to be minimized through adequate social support. For example, it is important to address issues such as tenant evictions and repossession of collateral for those unable to pay back their loans due to loss of income, and to ensure continuous provision of basic public services, such as water, electricity, and gas, with non-paying customers.

Ensuring vaccination for slum populations when it becomes available. Once a vaccine for COVID-19 becomes available, ensuring and prioritizing access to the vaccine in low income urban areas will be critical given the high risk factors for the urban poor. Based on previous experience, this will require outreach and awareness campaigns especially at the community level, text messaging as reminders and incentivized immunization services.

Annex 3: Identification of Transmission hotspots in cities[9]

Risk Exposure.

To help city leaders prioritize resources towards places with the highest exposure and contagion risk, the World Bank has developed a methodology that can be rapidly deployed.

However the COVID 19 pandemic calls for seriously limiting social interactions. As no vaccine is currently available, prevention and containment currently appear to be the only viable strategy in the fight against the virus; health systems are unlikely to cope once containment is breached. Maintaining social distance and frequent hand washing appear to be potent mitigation strategies. Social distancing measures, especially large-scale legally enforced lockdowns are being applied in many countries.

However, there is major risk of exposure and community contagion when social distancing is challenging. In rich and dense neighborhoods, people can isolate and be socially distant while having amenities and groceries delivered to them and being able to connect remotely to work. However, situation gets quite dire in low income neighborhoods of developing country cities – communities with whom we at the World Bank work with. Many residents live in small shacks and share communal taps and toilets. These neighborhoods will face a great challenge, given their weak infrastructure and limited medical and financial resources. To stave off this crisis, emerging hotspots must be anticipated so that medical and civil resources can be targeted to limit diffusion into surrounding areas. Vulnerable groups need to be identified in advance, so that they can be supported to weather the storm.

To help city leaders prioritize resources towards places with the highest exposure and contagion risk, the World Bank has developed a simple methodology that can be rapidly deployed. This methodology identifies hotspots for contagion and vulnerability, based on:

- The practical inability for keeping people apart, based on a combination of population density and livable floor space that does not allow for 2 meters of physical distancing.
- Conditions where, even under lockdown, people might have little option but to cluster (e.g., to access public toilets and water pumps).

The working paper can be accessed here.

Consider the following three cities where we apply the hotspots methodology: Mumbai, Kinshasa,[10] and Greater Cairo (Figure 2). The red areas correspond to potential hotspots: areas where the population concentration is higher than a maximum threshold to maintain social distance. In Mumbai, these cover 104.5 km^2 that account for approximately 4.5 million people. In a city with an estimated total population of 20 million, we find about 20% of the population will not be able to maintain social distance and be at risk of rapid contagion, just because the built
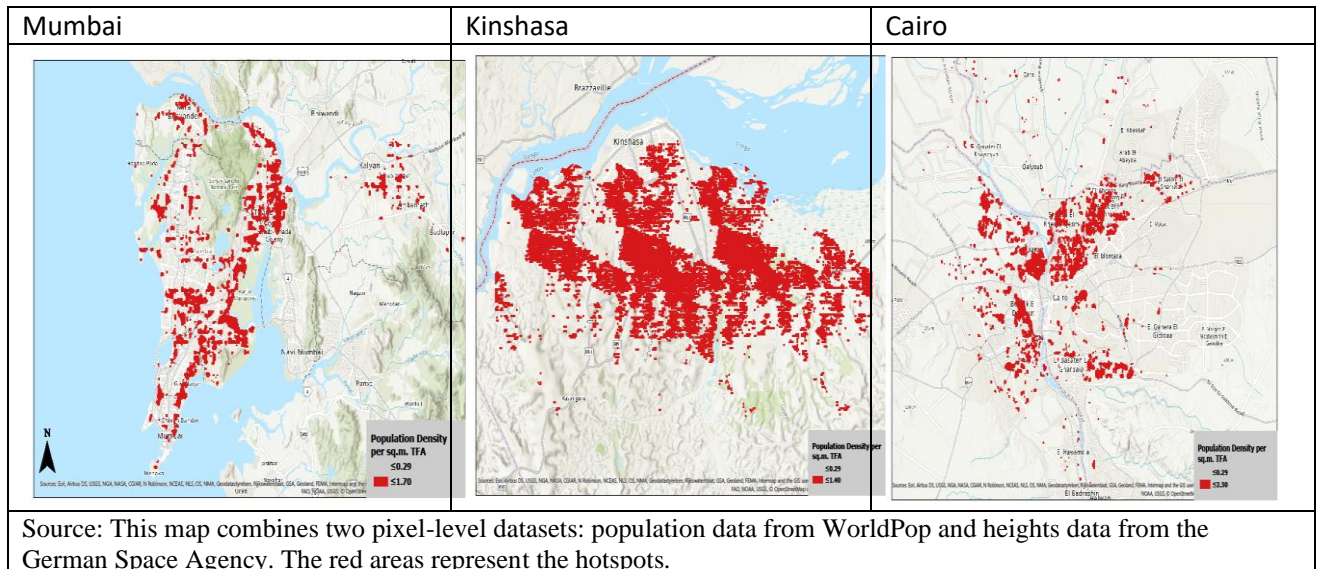
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[9]This work was prepared by Somik Lall.

[10] Facebook population raster for Kinshasa shows a total of 5.7 people. However, current population in Kinshasa is approximately 11 million. We adjusted Facebook population estimates to reach this number, assuming the extra population follows the same distribution shown in the Facebook population raster.

environment doesn't allow it. In Kinshasa, the hotspots cover approximately 138 $km,^2$ placing some 5.88 million people – about 53% of the total population – at risk. In Cairo, hotspots cover almost 84 $km,^2$ accounting for 5.5 million people or about 25% of the total population.
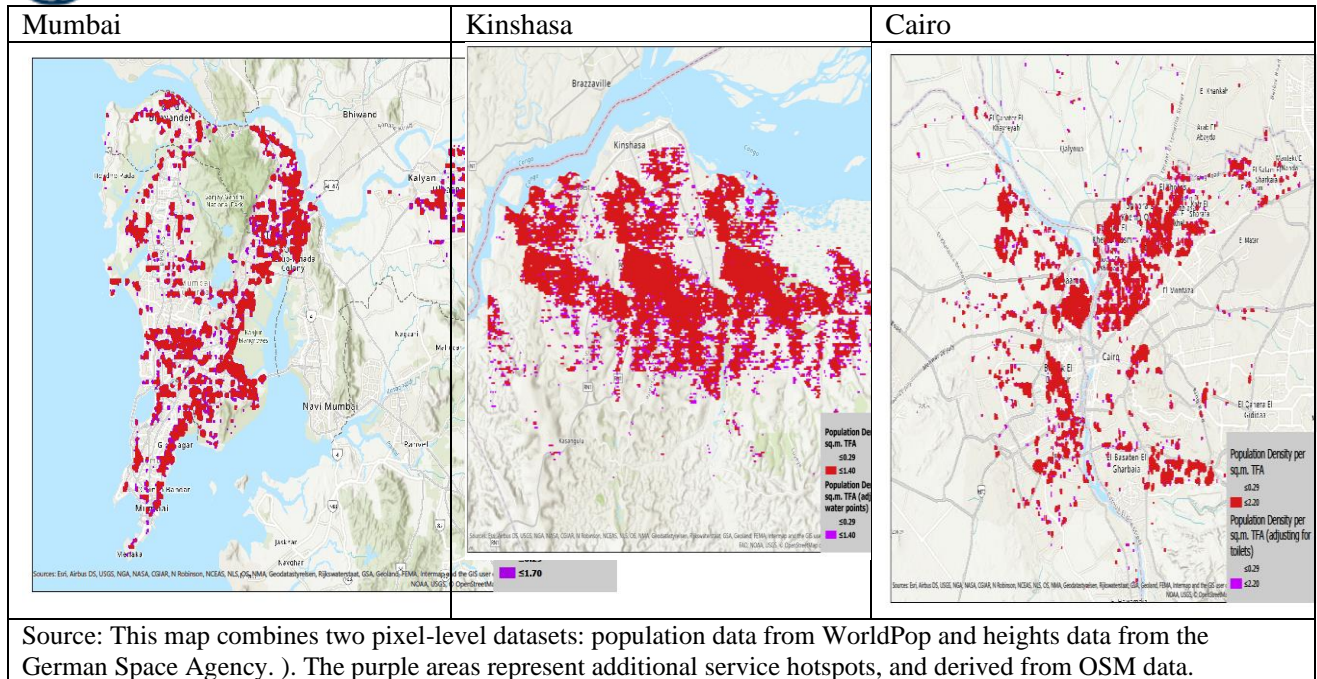
The reality that most of the at-risk population may live in informal settlements with poor living conditions poses additional concerns. For example, people in these hotspots may not have individual water and sanitation connections, which not only limits their ability to practice proper hygiene but also forces them to use crowded public facilities, increasing the chances of contagion and viral spread. Some areas may also have high levels of air pollution due to the type of cooking fuel used by households or illegal dumping and burning in the area. Since air pollution can cause lung and heart disease, these people are more likely to be at risk of complications from the coronavirus.

Figure 2: Potential Exposure Hotspots

Mumbai	Kinshasa	Cairo
Source: This map combines two pixel-level datasets: population data from WorldPop and heights data from the German Space Agency. The red areas represent the hotspots.		

We identify a second set of hotspots, incorporating the location of key services and mobility towards them (Figure 3, in purple). For Mumbai, we use the location of public toilets as a key service that people will still use even under lockdown. We find that additional hotspots cover an extra 15 $km,^2$ often near the previous set of hotspots, and with a few new areas affected as well. These additional hotspots account for more than 600,000 people, bringing the total affected population to 5.2 million (an increase of 15% in people at risk). In Kinshasa, we use the location of water kiosks as the key service of interest. We find that additional hotspots cover an additional 32 $km,^2$ corresponding to a 13 percentage point increase in people at risk. This brings the total number affected to 6.6 million, or two-thirds of Kinshasa's population. In Cairo, we use the location of public toilets to find additional hotspots. These add 15 km^2 (to a total of almost 100 km^2), and the total number of affected people increases by about 11 percentage points (to 36% of the total population).

Figure 3: Potential Exposure Hotspots , accounting for access to basic services

Mumbai	Kinshasa	Cairo

Source: This map combines two pixel-level datasets: population data from WorldPop and heights data from the German Space Agency.). The purple areas represent additional service hotspots, and derived from OSM data.

To help city leaders and communities manage the pandemic, this decision support tool can provide an evidence-based approach to target emergency interventions that avoid a rapid spread of the virus in these hotspots. These include investments to improve infrastructure services on a temporary basis (e.g., additional water distribution points, portable hand washing sites, or distribution of pee-poo bags, among others) as well as long-term investments in slum upgrading that would focus on infrastructure and service delivery, land tenure security, and housing improvements. Similarly, cities can develop awareness campaigns targeted at residents of the hotspots.