Social Science in Humanitarian Action

Key considerations: COVID-19 in informal urban settlements (March 2020)

This brief sets out key considerations for protecting informal urban settlements from the spread and impacts of COVID-19. There is heightened concern about these settings because of the combination of population density and limited infrastructure. This briefing discusses what is known about vulnerabilities and how to support local action. It can be viewed in conjunction with the Science in Humanitarian Action Platform (SSHAP) briefings on quarantine and social media. [1]

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Summary considerations

- Informal settlements face considerable challenges around the control of COVID-19 but locally developed strategies could mitigate the worst of the outbreak as long as action is taken fast. Preparedness and early action by local governments and communities is essential. Once an outbreak occurs escalation can be rapid, leaving little room for further planning.

- The principle approaches for reducing COVID-19 transmission are the same in any context; i.e. reducing physical contact and improved hygiene. The tactics used will differ in informal settlements where there are acute challenges around space, water, and sanitation, and where people have an increased risk of eviction and livelihoods are precarious. Financial and non-financial resources (e.g. information, equipment, supportive policy making) are urgently needed to enable local residents to develop and implement their own strategies.

- Informal settlements can be highly organised, with a range of local groups and community structures providing and advocating for services as well as collecting data on residential populations and facilities. These groups are well-placed to mount COVID-19 responses and many already are. They are particularly well-placed to consider options in their area for decentralised forms of care, isolation and physical distancing.

- Public health interventions must be balanced with social and economic interventions, especially in relation to the informal economy on which most people depend. Direct and indirect impacts throughout the informal economy must be considered. The vulnerabilities to COVID-19 are immense in informal settlements, but if control measures are poorly executed they could also have deep negative impacts.

- Clear information and advice is needed. People living in informal settlements already live alongside fatal infectious diseases. They should be informed about COVID-19, how it is different from other diseases and why the response asked of them for COVID-19 may be different. This is required to establish trust and mutual understanding given that extraordinary measures are not normally taken for the other fatal infectious diseases they live with. When people perceive undue attention being given to some diseases, especially for the apparent benefit of other people, it can hinder trust and collective action. Inconsistencies with prior action will need to be addressed.

- Historically, informal settlements and their residents have been stigmatised, blamed, and subject to rules and regulations which are unaffordable or unfeasible to adhere to. Responses to COVID-19 should not repeat these mistakes. Collaborating with local residents and trusting them as stewards of their community, with unsurpassed knowledge of relevant spatial and social infrastructures, will enable effective control measures.

- It is important to understand community power dynamics and political histories in a given settlement. In some urban settings, top-down control measures may be perceived as being used to oppress and further marginalise residents or to curtail political opposition.

Background and purpose

COVID-19 emerged in Wuhan, China, and at the time of writing (25 March 2020), most cases have been detected in high income countries such as the US, Spain, Germany, France, and the Republic of Korea, as well as in middle-income Iran. Most of the information about COVID-19 and who is at risk is based on data from these middle and high income contexts. Many of the recommendations (to wash hands, self-isolate and physically distance) assume basic living conditions and access to essential services (e.g. water, space etc). In wealthier countries, the public health response relies on a good baseline understanding of their populations and an ability to monitor changes. Much of the concern is centred on levels of critical care capacity in hospitals. As affected countries implement control measures which restrict social and economic life, their governments are providing economic support packages to mitigate effects on livelihoods. Many of these strategies will not be possible to the same degree in low and middle income countries (LMICs), and especially not in urban informal settlements. **With 1 billion people living in informal settlements – between 30-70% of inhabitants in some cities[2] – there is an urgent need to consider feasibility and develop locally appropriate approaches to protect these populations from the worst impacts of COVID-19.**

This briefing highlights the major challenges and considerations for addressing COVID-19 in informal settlements. Some are obvious: population density and inadequate access to water and sanitation makes advice social distancing and washing hands implausible. But there are less obvious challenges to do with the social, political, and economic contexts which will influence vulnerability and possibilities for action in each context.

A defining challenge of informal settlements and slums is the lack of data about them prior to, and during, emergencies. Due to their illegal or informal status there is often no reliable data about the number of people who live there or their health. The environment for policy making is therefore doubly uncertain: both the new disease and the context are poorly understood. This makes it difficult to prepare and could lead to inappropriate responses which are ineffective or could worsen the situation (e.g., as did initial attempts to quarantine regions and cities in West Africa during the 2014-2016 Ebola outbreak).[3] Currently many LMIC governments are applying restrictive control measures but these may not be sustainable and could cause serious additional harms if the socio-economic circumstances of the urban poor are not addressed.

It is imperative that action is taken now, before widespread transmission in LMIC cities takes hold. The organisational challenge of epidemic control is always intensive and dependent on meaningful local involvement. Community engagement is usually done painstakingly and in person. **The major challenge is how to do things fast and at scale while also ensuring control measures are contextually appropriate.**

Data shows that urban growth in the last decades is increasingly unplanned, with slums and informal settlements concentrating most of the urban poverty. Cities are often acutely segregated down wealth and social lines (including colonial and racial). Externally applied images of 'slums' depict them as chaotic, dirty and disease ridden, and as a social, environmental and developmental threat to the rest of the city. Such views have informed attempts to deny residents tenure, and to threaten and carry out evictions. These histories may also shape control measures and the reactions of residents to them (especially if enforced onto settlements from outside). In each context, there will be specific local circumstances at play (e.g., security anxieties, experiences of civil unrest and war, national and municipal styles of governance, ethnic and party political tension etc.) Together, these will influence the extent to which people living in informal settlements perceive control measures to be for their benefit or for the benefit of others. Where residents of informal settlements are used to having their lives and livelihoods curtailed in the 'public interest' there may be serious mistrust in government messaging and acute tensions about the ethics and impacts of control measures.

Vulnerability: what is known and what is not known

There are major concerns about the potential burden of COVID-19 in LMICs.[4] These can be categorised as 1) epidemiological vulnerability (e.g., fatality rates based on underlying conditions and age); 2) transmission vulnerability (e.g., social mixing and hygiene infrastructure); 3) health system vulnerability (e.g., availability of intensive care); and 4) vulnerability to control measures, including social protection failures. These are related and influence each other. Assessing acute and chronic vulnerability in LMICs is challenging due to the lack of data on informal settlements and the newness of the disease. The following outlines various forms of vulnerability and groups who may be more severely affected. **Many of these are based on a-priori understandings of risk, but a key aspect of vulnerability is that it is often not clear who is vulnerable until problems occur or support systems fail**. Thus, these suggestions must be complemented by local assessments of vulnerability.[5]

Epidemiological vulnerability to COVID-19

According to the emerging evidence from East Asia and Europe, the most vulnerable to severe disease and death are people over 70 years of age and those with cardiovascular disease, diabetes, chronic respiratory disease, hypertension or cancer. There is no evidence of difference in infection rates, but men appear to be almost twice as likely to die as women.

Age: Although the population of LMICs are young when compared to high income countries, in absolute terms LMICs account for 69% of the global population over 60 which represents a significant overall vulnerability.[6] Moreover, although there has been speculation that severe disease and death will be lower in LMICs due to the smaller proportion of their populations being over 80,[7] it is not clear if this will be the case. Cases in some LMIC countries (e.g. Indonesia) appear to follow different distributions of age-related mortality, with younger deaths. There is a perception that cities have younger populations than rural areas (e.g., with working age people migrating to cities in search of work, and older people returning to villages in later life), however age distributions between urban and rural populations in LMICs are similar.[8] Each city will have different age distributions but it would be unwise to discount the age-related risks in LMIC cities.

Gender: There is no clear explanation for the observed higher fatality rates among men from COVID-19. It has been tentatively linked to gendered lifestyle-related conditions, e.g., smoking which may also be a factor in informal settlements.

Comorbidities: Levels of hypertension, cardiovascular disease, diabetes, and cancer are poorly documented in informal settlements[9], though they are increasingly high in LMICs and sometimes higher than HICs.[10] Good evidence of disease burdens in informal settlements is limited by the residents' reliance on private often informal providers of drugs and services which mean their health conditions are not counted. Qualitative research in Sierra Leone revealed significant levels of chronic conditions which are treated informally and often not diagnosed.[11] Respiratory disease is a major concern with indoor and outdoor air pollution (e.g., traffic, cook stoves), poor housing quality, occupational exposures, and waste burning all linked to increased risk of respiratory disease in informal settlements.[12] A reliance on pre-cooked, often fried, street food in many settlements result in food environments which encourage non-communicable diseases such as diabetes and heart disease.[13] **It is plausible that there are many relevant chronic conditions, often undetected and poorly managed in communities, which would put large numbers of people at risk.** In addition to the high-risk co-morbidities identified so far, there may be other diseases which lead to worse outcomes, and which are disproportionately prevalent in LMICs and informal settlements. Major concerns have been raised around HIV[14], TB, and malnutrition.

Transmission vulnerability

This encompasses social mixing, housing and infrastructure where conditions could foster increased transmission; however there is a paucity of evidence on social and environmental transmission dynamics.

Density: Given the population and housing density of many settlements there more opportunities for social mixing and more limited options for physical/social distancing. A modelling study of influenza in Delhi estimated contact rates based on density in slums and found that slum conditions were associated with larger and sharper epidemic peaks.[15] However, not all housing in informal settlements is dense. There are differences between peri-urban which tends to be lower density and inner city settlements (both formal and semi-formal) which tend to be denser.

Household and social structures: Disease transmission often occurs within households, but 'households' in informal settlements can be flexible with people moving between houses, sharing food or sleeping space. Control strategies and responses based on assumptions about household units may fail. Children are often cared for by grandparents or older family members and this poses an elevated risk for transmission.

Mobility: Mobility within and between cities is frequent and shared. Residents in cities maintain strong ties with home regions, sending revenue home[16] and travelling between urban and rural settings frequently for work and social reasons, but also when sick and to return the deceased to their natal home.[17] This might mean that residents of informal settlements risk spreading COVID-19 to rural areas and creating urban-rural 'pulse dynamics' similar to those observed with Ebola. The reasons for mobility and the implications of urban-rural linkages must be considered in control strategies.

Ventilation: Unventilated and confined spaces are understood to be riskier for transmission due to the circulation of air. House type and ventilation will vary by settlement but should be taken into consideration when developing local plans to keep people safe.

Water: Access to water is inadequate in most informal settlements and residents usually do not have their own water supply. Instead water is bought from private providers at high cost[18] and this can prohibit generous use and handwashing. Water points are also shared which poses risks for spatial distancing (e.g., when queuing and collecting) and isolation (e.g., the need to leave the house to collect).

Toilets: As with water, toilets are usually outside people's homes and in shared facilities. It is not clear how long the virus survives outside of the body and on which surfaces, but shared toilets conceivably pose additional risks, particularly when excreta is not well managed. Lack of access to water and toilets in the household make strict self-isolation all but impossible.

Sanitation: Waste disposal is often inadequate, and waste in the street poses a number of biohazard risks, including potentially COVID-19. Equally waste collectors are at risk from contaminated waste.

Health system vulnerability

While attention in the global North is on intensive care capacity, this can be severely limited in lower resource health systems. **Attention is needed to if and how people will access care, including when and by whom they are assessed as needing critical care**. Availability of formal health providers (e.g. government or NGO clinics) is low in most settlements, and numerous studies of health seeking behaviour identify cost and distance to be major barriers to good quality care.[19] There are a wide variety of informal, unregulated and private providers including private pharmacists, petty drug sellers, community health workers, travelling healthcare workers and those who live in the community and provide care. Although use of non-western medicine and providers can be frequent, it is often for particular kinds of diseases (e.g., distinguished by severity, suddenness or other locally relevant indicators) and not for generic symptoms such as fever and cough. For such common symptoms, self-medication is popular and is mostly obtained from private providers, with care only sought at larger clinics or hospitals when severity increases (and if the direct and indirect costs of getting to hospital allows).[20] Barriers to access and aversion to hospital care in informal settlements must be considered and imply sick people may remain in their community for some time where they would need advice on self-isolation. Private providers may be key to detecting spread, but also to facilitating spread and should be engaged in response. **These patterns of health seeking behaviour make it more likely that cases will, or are, going undetected and additional efforts should be made to identify cases in the community.**

On an individual level, when a person falls sick their response is dependent on competing priorities, especially the need to make a living. People describe not being able to afford to be sick, working through illness so as not to lose earnings, and using medicines as a 'quick fix'.[21,22] The early symptoms of COVID-19 are difficult to distinguish from other common illnesses, and may be unlikely to trigger new practices. Given the mild onset of COVID-19, infected **people may follow established norms that prioritise work and daily survival, and may include visiting multiple informal providers to buy treatments.**

Qualitative research shows that health seeking in the case of severe disease can be quite haphazard, with people negotiating many different providers and taking recommendations from friends and family (as well as relying on their assistance to access different forms of care).[23] It is not clear to what extent people go to hospitals even when symptoms are severe, especially in contexts where hospitals are perceived to offer inadequate or inappropriate care or where money is a prohibitive factor. People frequently report being treated rudely or poorly at formal government clinics. Doctors in India, for example, have admitted that rationing and denial of care is already a formative part of the heath care experience in LMICs.[24] Current messaging that there is no cure for COVID-19 may also deter severe cases from presenting at hospital. Response planners need to consider how to identify severe cases in the community and not to assume they will come to hospital. They also need to consider how to manage people's journeys to critical care facilities, if available.

Vulnerability to control measures

Lessons from numerous disease outbreaks, including Ebola in West Africa, show disease control measures can result in harm beyond the direct health threats. Failing to address these concerns can cause control measures to backfire. In many cases the most severe shocks will be from control measures, not the disease. Control measures considered here are those being widely implemented in the context of COVID-19 e.g., quarantine, lock downs, self-isolation, advise on 'working from home', travel bans, and the closure of schools, markets, churches, mass gatherings, food outlets and social spaces.

Impacts on livelihoods: A clear and immediate impact is on livelihoods. In most informal settlements people live hand-to-mouth with very limited savings or capacity to save. Whatever the sector, or whether it is formal or informal, anything which interferes with travelling

for work, demand for work, salaries or employment status will have disastrous impacts. Loss of income has further effects in the absence of any safety nets, in that people may be less able to purchase vital water and sanitation or return to their areas of origin. Serious thought should be given to how to avoid curtailing people's livelihoods, or compensating them if this becomes necessary. This must include people working in the informal sector, which can be the majority of residents living in informal settlements. Assessments should be made of how those who have lost livelihoods could be re-deployed (and paid) to response efforts.

Impacts on mobility: Enforcing travel restrictions suddenly can lead to populations fleeing (as in northern Italy) or travelling under the radar (e.g., as during the 2018-2020 Ebola outbreak in DRC) due to fear, loss of livelihoods and ongoing needs to travel (e.g., care for family members, funerals). This can accelerate the spread of the virus and requires careful management. Restrictions on mobility may be important but are difficult to manage comprehensively and have historically proved ineffective unless mobility needs (e.g., livelihoods) are considered and addressed.[25] During Ebola in West Africa, rural populations set up their own village or chiefdom task-forces which controlled movement into their locales. It will be important to advise and support rural populations to control in-movement to complement advice and restrictions on urban populations not to move. Urban transport hubs and travel modes for the urban poor require specific focus.

Access to food: In poor settlements, households have no capacity to store food for several days and source most of their food from informal markets and street food vendors. If movement is restricted, people's ability to access food will be severely reduced. Furthermore, if markets or food vendors are closed, this will mean people are not able to buy food they need.

Systemic vulnerabilities

Risks in informal settlements are multidimensional including overlapping health issues (e.g., both chronic and acute including TB, dengue, cholera etc.); social (violence, persecution, criminalisation, intimidation); natural (e.g., floods, rain, heat); and technological and infrastructural (e.g., accidents, fires, building collapse).[26] COVID-19 will be experienced alongside these risks, interact with them, and potentially diminish resilience to them. Impacts will intersect with people's identities and social roles, including:

- **Care networks:** Older people may provide important care to extended family (e.g., grandchildren and orphans). If they are unable to fulfil these role, both in the short and long term, it may contribute to vulnerability among those they care for, or restrict other's capacity (e.g., parent's ability to work).

- **Disabilities:** People with disabilities rely on care from others. They are exposed to contracting the virus (as they are less able to self-isolate) and to the threat of losing key relationships that allow them to perform basic day-to-day functions. People with mobility impairments may be more exposed to the environment around them. For example, wheelchair users may find it challenging to not touch surfaces and are constantly having to touch chair wheels for mobility purposes.

- **Displaced people:** An increasing number of displaced people live in informal settlements rather than camps. These populations may be less well connected to local support structures and evidence suggests that they face significant challenges accessing services and information.

- **Gendered Impacts:** Gendered impacts are beginning to be identified and are relevant in informal settlements. These include: the potential for increased caring burdens for women and girls; uneven impacts on men and women's earning potentials (e.g., for migrant workers); the higher proportion of female health workers in many contexts put them at increased exposure risk; diversion of resources from gender protection programmes. There have also been reports of increased rates of gender-based violence under quarantine (e.g., in South Korea, China and the UK), and following patterns from previous outbreaks including Ebola.[27]

- **Safety and security:** In some cases informal settlements have high levels of violence, including the prevalence of criminal networks. Social tensions, linked to strained socio-economic conditions, could be exacerbated at household and community levels. Both can have a major impacts on potential responses.

- **Mental health:** People with mental ill-health problems may have both short and long term trauma as a result of the pandemic and its control. People who have been under quarantine have been found to have long term mental health challenges.[28]

- **Evictions:** Tenancy is often insecure with threats of eviction from landlords and from the state. Crises have been used as opportunities to evict vulnerable or unwanted tenants/populations and there is a chance this will occur with COVID-19 unless protective measures are agreed.

Breakdown or absence of social protection: Impacts which impinge on people's protective capacity and networks will also produce vulnerabilities. For example, schools play a role in social protection, if they are closed then children who rely on them for meals may experience hunger and suffer detrimental nutritional effects, and it may increase household expenditure. After a year of school closure during the West African Ebola epidemic it was reported that teenage pregnancy rose although there does not seem to be clear data on this. There are other population groups who may already be without social protection. Ongoing research in Sierra Leone has identified isolated elderly populations in informal settlements who have no children or who are suffering abandonment.

Stigma: As with many infectious diseases, people or groups who have contracted COVID-19 or who become associated with it may suffer from stigma. Messages about 'social distancing' could exacerbate this. Stigma often follows existing forms of social marginalisation and can have serious impacts (e.g., being asked to leave accommodation, losing jobs) and long term consequences for integration and participation in social and economic life. This could occur within informal settlements but also to the settlement as a whole if the area and people within it become associated with disease spread.

Local action and how to support it

Lessons from previous humanitarian and health crises[29,30] in informal urban settlements, as well as non-urban settings[31] highlight that locally led and adapted responses that take into account the diversity and complexity of urban settings are key to effectiveness and reducing harm. States of emergency and 'emergency thinking' can sometime preclude bottom-up approaches but ultimately they will depend on them. In China's unprecedented quarantine of Wuhan, neighbourhood-based groups were involved in ensuring movement control.[32] Community-led initiatives are spreading across the world. Partnerships with local authorities and support for local action will be essential. This section discusses approaches to local action, local data, partnerships and support.

Local organisation: There can be a high level of local organisation within informal settlements including for the provision of basic services (e.g., water maintenance and supply, sanitation and cleaning groups, security patrols and neighbourhood watch); social protection (e.g., savings groups, after school clubs or educational syndicates); livelihoods (e.g., unions and professional associations, particularly in informal sectors); spiritual needs (e.g., mosques, churches); and for socialising (e.g., social or sports clubs); health (e.g,. peer support groups, community health worker networks, community health management committees); disaster relief (e.g., disaster management teams and committees); advocacy (e.g., women's rights, LGBQT rights); and many more – often filling gaps in state provision or welfare, and participating in development processes. In addition, many settlements will also have traditional leadership structures that overlap with these groups. It is crucial that responses to COVID-19 are organised through these groups and leaders who know their settings best and have existing links to residents. Solidarity and crowdfunding groups and networks are also emerging in response to COVID-19.

Adaptations for COVID-19: While many of these groups are well versed in community-led development or disaster relief, including responding to previous outbreaks, adaptations for COVID-19 are required. The West African Ebola outbreak offers precedents for the power of urban organisation to address an acute infectious threat where neighbourhood task forces were formed, bylaws implemented movement restrictions, local groups carried out 'house to house' checks and surveillance, and in some cases home care. However, these are not appropriate wholesale for COVID-19 as they may facilitate spread. Community organisation processes which usually happen in-person and with the involvement of community elders may not be safe as they involve contact with high risk groups. The physical distancing imperative requires adaptation of established methods. Many communities have vibrant WhatsApp or Facebook groups (e.g., neighborhood based, identity or topic specific) which can be a channel for mobilisation. Already social media is being used to advocate for greater support for residents including for supplies of hand sanitizer (e.g., #sanitizersforslums on Twitter) and handwashing stations.[33] Radio is also an important tool for communication. Key will be to manage misinformation and rumors which foster confusion, distrust or panic. [34]

Local strategies for isolation and physical distancing: During Ebola in West Africa, quarantines were widespread, and to an extent social distancing. However this was on a much smaller scale than what may be needed for COVID-19 and even then it was an incredibly complex logistical feat (ensuring that quarantined homes had their health, food, and psychosocial and security needs adequately addressed to ensure they did not break quarantine). Attempts at settlement-wide quarantines caused violence and were ultimately abandoned as ineffective. Aside from the welfare concerns, each settlement will have physical characteristics that make population movement (within and externally) more or less feasible (e.g., number of entry points, physical barriers, road networks, housing density) and actions will need to be determined by local residents. There may be tough choices between strategies aiming for absolute containment or mitigation strategies. Although externally imposed restrictions are now common for COVID-19 across the world, they are likely to curtail survival in informal settlements more acutely and so run the risk of resistance and unrest unless developed with local participation, or allowing for local adaptation. Potential options, based on actions emerging in response to COVID-19 internationally and from previous epidemics, include:

- **Local taskforces/committees:** Comprised of local leaders and community representatives to determine strategies for home care, self-isolation, movement controls (within and outside the settlement), closure of high risk public spaces, support to vulnerable people and communication.

- **Spatial planning and support**: Develop local strategies and guidance for home isolation or group isolation of the sick or vulnerable (not in the same place). Local groups could develop simple signage systems for homes which are self-isolating and/or require support (e.g., help with collecting water, food etc.) that would reduce physical contact and ensure basic welfare. For sick or vulnerable groups, existing facilities could be re-purposed or temporary low-cost structures built (as with Ebola Community Care centres, holding centres etc.) to separate larger numbers of people safely and in line with food and security considerations.

- **Communication:** Good use of communication technology (e.g., radio and social media), will enable physical distancing. It must include opportunities for two-way dialogue, such as Q&A sessions with experts. Special efforts are required to communicate with vulnerable groups including the elderly and disabled who may be less well connected/online. Publicise (on TV, radio, social media, in print media, flyers) different communication channels and groups and give information on how to join them, seek advice or request help including for local groups, local government and humanitarian agencies and NGOs. Consider establishing focal points for case identification and reporting, social protection, general information etc.

- **Livelihoods and protection:** Specific guidance is needed for people who cannot stop working, and who provide essential services for the rest of the city (e.g. garbage collectors). Provide protective equipment for these groups. Local unions (formal and informal) could be influential here. Some professional associations and networks have already begun to re-direct their work to support the response to COVID-19 (e.g., garment factories sewing protective masks and equipment).

- **Spiritual adaptations:** Engage religious leaders to create alternatives to mass religious gatherings, and for the safe provision of spiritual assistance, to ensure religious needs are also cared for e.g. over radio or social media

Response fatigue and empowerment: As residents face continued emergencies, crises and shocks they may be fatigued by the need to be self-organising and resilient again. If they have not been adequately engaged by external agencies they may also be wary or government and humanitarian actors, especially of broken promises about benefits once the disaster is over. The response has to allow local groups a real sense of control, and if possible resources, otherwise it runs the risk of damaging existing relationships and demobilising or undermining local community structures. Areas in need of support include:

- **Extending basic services:** Local government, utilities and private companies should be encouraged to rapidly scale up affordable provision of water and safe sanitation in settlements. This is happening already in some places, for example in Kibera in Kenya[35], Rwanda[36] and in Freetown with the provision of handwashing stations.

- **Financial resources:** Financial support may be required to help consolidate informal networks and for communities to self-organise, access resources and information during the outbreak. Cash transfer systems and the use of mobile money offer potential mechanisms to make resources directly available quickly and safely.

- **Social protection:** Interventions are needed which address informal livelihoods and protect low-paid insecure workers to both keep them in (safe) work and to fund hospitalisation when needed for vulnerable groups, child care support, and for food distribution.

- **Protective equipment:** Provide protective equipment such as masks and gloves to at risk workers including community health volunteers and garbage collectors.

Managing deaths: Urgent consideration is needed for the management of the deceased, including deaths occurring in the community and in hospitals potentially far from family. The treatment of dead bodies was a major source of tension during the Ebola response in West Africa when bodes were not treated and buried according to local norms of love and respect. This produced resistance among local populations and was a motivating factor for people not to report cases. Plans should be made with local communities about how an increase in the number of deaths will be managed to ensure there is either safe burial locally (if space allows) or respectful and timely retrieval of bodies from communities. In both scenarios, local populations must be consulted to devise approaches which enable a chance to say goodbye and allow social and spiritual rites to be performed (or safe adaptations of these e.g., not touching but viewing the body). Not doing this will increase individual and collective trauma.[37]

Identifying the vulnerable: Vulnerability will often be a function of support structures breaking down, with the most vulnerable being those who fall through the gaps. While transmission is low, steps should be taken to understand which supportive social networks and institutions exist, and how they may be put under strain. These may vary widely from context to context and may not be replicable across informal settlements. By identifying them and representatives of key groups it will be possible to better understand how COVID-19 may debilitate them, or strengthened their relevance/role. This should inform how to invest scarce resources. Pre-defined protocols about vulnerability may not be helpful as a shock can shift priorities and vulnerabilities.

Kinds of data needed for planning COVID-19 responses in informal settlements

- **Basic demographic data** of the numbers of people living in an area, (including settlement density and household overcrowding), disaggregated by age, gender, and social characteristics. This information is relevant to understanding disease impact and spread, and to targeting responses and relief.

- **Health status of populations**, especially the prevalence of non-communicable disease risk factors and potential risk factors, e.g., communicable diseases such as HIV and TB, or nutritional status. Also, population wide rates of morbidity and mortality to detect unexpected rises in sickness and deaths, and plan for surge capacity.

- **Economic data** on livelihoods (type and distance), savings schemes, supply chains, and cost of living and basic goods and services (including water, sanitation but also hand sanitizer, soap etc.)

- **Health and social services** including the existence, distance to and utilisation of formal and informal health providers, to assess capacity and also likely health seeking practices, also education and care services.

- **Spatial data** including maps and GIS data on settlements and points of interest including schools, water points, sanitation, markets, transport hubs, religious buildings, etc.

- **Social data and knowledge** analysing social networks, behaviour and culture including kinship, mobility, availability and use of space, social roles and status and how such factors may influence transmission; also 'social infrastructure' e.g., what kinds of social support structures exist, who the trusted people/channels are for different population groups, and how threats have been dealt with in the past.

- **Citizen-generated data**. With the wider coverage of mobile phones in many urban areas, electronic and social media data can support community responses. Tools such as Facebook and Twitter can capture crisis alerts from communities and facilitate timely response during emergencies.

Local data and knowledge: Local data is essential for the response, especially if this data can be translated into knowledge that helps response strategies in close to real-time**.** Although much of the above data is typically missing on informal settlements, at least from formal data sources, there are locally led alternatives. Networked savings and community-based groups such as SDI (Slum/Shack Dwellers International) have collected their own socio-demographic data about their settlements (e.g., counts of households, who lives there, income, access to services, physical infrastructure and space etc.) Such networks have the advantage that these groups are residents and so have in-depth social knowledge about their communities. Open source tools exist to allow communities to map themselves, complemented by online crowd-sourced mapping. Increasingly, there are online networks (e.g., bike riders, delivery drivers etc.) who have good local knowledge and who generate smartphone based data. National and Local Urban Observatories affiliated to the Global Urban Observatory managed by UN-Habitat is another local and global network of local data producers. Urban Observatories include trained urban data practitioners with a mandate and knowledge of where essential urban data can be sourced and where it should be channeled and reported to support response planning.

Partnerships: It is crucial that local efforts are connected and supported. The approaches of SDI and Urban Observatories have been used to engage with local community structures, leaders and authorities to support emergencies. In some urban areas or cities, these relationships are now well established and groups have regular dialogue with city authorities. Given the urgency of the COVID-19 situation, and without time to collect or synthesise data, potentially the most impactful thing to do would be to engage with these groups. A number of international networks exist which connect governments and agencies with local and community based groups. There are many, for example WIEGO (Women in Informal Employment Globalizing and Organizing), the Huairou Commission, the Asian Coalition of Housing Rights (ACHR), Global Platform for Rights to the City (GPR2C), UN-Habitat's Participatory Slum Upgrading Programme in 40 countries and GWOPA (Global Water Operators Partnership Alliance) which have already begun to organise and develop messages and solutions for their constituencies (e.g., waste pickers, water operators). Links to these resources are provided below.

Local government: Access to basic services and implementation of public health interventions will depend on the involvement and capacity of city authorities and municipalities. There are differences in access to resources in different cities, and the extent to which power and control of resources has been decentralised to cities. Nevertheless, mayors and local government have an important role to play in tailoring the response to their city contexts and connecting key stakeholders by building on experience in co-production for urban development issues such as water and sanitation, and citywide planning.

Coordination for area-based responses: Health and non-health urban stakeholders are not always well connected, with poor coordination between health authorities and sectors dealing with land, local government, environment, water or sanitation. Epidemic response units (e.g. the Emergency Operation Centres and Centres for Disease Control which have been set up in many African countries post the West African Ebola outbreaks) have strengthened expertise in disease surveillance, case management, and risk communication. These units, and national level coordinating structures will likely be leading responses in LMICs but may be less used to urban governance

and complexity. They need to be connected to mayors and local governments who are familiar with urban contexts and have established relationships with community leaders and experience in participatory and community based processes led by groups like SDI described above.

Inequality, contested governance and collective action: Residents of informal settlements tend to be the poorest and most vulnerable sections of society, but within this there is variation including pockets of wealth and deeper pockets of marginalisation. This means there will be varied vulnerability profiles, and when wealth and poverty are side-by-side (within informal settlements, and between the settlement and the rest of the city) perceptions of injustice can be palpable and could hinder collective action to fight a pandemic. Governance structures within informal settlements are often contested and plural. Traditional leadership structures exist alongside (or in competition) with criminal, militia or other groups. The in-flow of resources during a crises can exacerbate these tensions. It may be that semi-criminal groups provide 'security' during the crisis, indeed during Ebola local gangs often took on the neighbourhood searches and movement control, and this has also been reported in the context of COVID-19.[38]

Historical and continued marginalisation: In settings where rationing and ill-equipped health services are the norm, people are not used to their health being considered a priority. Sudden interest in particular diseases or standards of public health can arouse suspicion. Already, waste pickers in India, who come from the bottom of the Indian caste system, have noted the irony that they are only being provided with protective equipment now that the health threat of their work extends to people beyond them.[39] Many cities impose unrealistically high regulatory standards – about public health, building standards, trading etc. – which informal settlements (and other parts of the city) cannot comply with. In practice, these rules are ignored and can become the focus of sporadic and sometimes repressive enforcement by authorities. If COVID-19 control regulations are impractical and out of sync with people's realities, they risk repeating these patterns of avoidance and crackdowns.

Useful urban resources (illustrative, not comprehensive)

Urban platforms and research centres

- SDI 'Know Your City' https://knowyourcity.info/
- United Cities and Local Government https://www.uclg-cisdp.org/en/committee/our-mission
- African Centre for Cities https://www.africancentreforcities.net/
- African Population and Health Research Center (https://aphrc.org/runit/urbanization-and-wellbeing-in-africa/
- Sierra Leone Urban Research Centre https://www.slurc.org/
- Asian Coalition for Housing Rights http://www.achr.net/
- IIED https://www.iied.org/environment-urbanization-local-organisation-profiles
- UN-habitat (www.unhabitat.org)
- Cities for Global Health https://www.citiesforglobalhealth.org

Mapping initiatives:

- https://www.globalmapaid.org/maps/
- https://www.openstreetmap.org/
- Icddr,b's 'Urban Health Atlas' (Bangladesh) (http://urbanhealthatlas.com/)

COVID-19 urban resource lists

- GWOPA https://gwopa.org/what-water-and-sanitation-operators-can-do-in-the-fight-against-covid-19/
- WIEGO https://www.wiego.org/waste-pickers-essential-service-providers-high-risk
- https://www.sanitationandwaterforall.org/about/about-us/water-sanitation-hygiene/covid-19-and-wash
- ARISE hub: http://www.ariseconsortium.org/
- Ushahidi https://www.ushahidi.com/covid

Contact

If you have a direct request concerning the response to COVID-19, regarding a brief, tools, additional technical expertise or remote analysis, or should you like to be considered for the network of advisers, please contact the Social Science in Humanitarian Action Platform by emailing Annie Wilkinson (a.wilkinson@ids.ac.uk), Olivia Tulloch (oliviatulloch@anthrologica.com) or Santiago Ripoll (s.ripoll@ids.ac.uk). Key Platform liaison points include: UNICEF (nnaqvi@unicef.org); WHO (falerom@who.int); IFRC (ombretta.baggio@ifrc.org); and GOARN Research Social Science Group (nina.gobat@phc.ox.ac.uk).

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