

Considerations and principles for shielding people at high risk of severe outcomes from COVID-19 (April 2020)

This brief considers the rationale for shielding individuals at high risk of severe disease or death from COVID-19 in low- and middle-income countries. It provides an overview of proposed approaches to shielding, discusses the categories of individuals who may be identified for shielding, and outlines the likely difficulties of these measures and ways to mitigate them. It should be noted that the authors are not aware of any precedent for targeted shielding of specific groups in low- and middle-income countries during this or any other outbreak. As such, shielding as an approach is untested. We have attempted to provide considerations regarding the feasibility and challenges of this approach, particularly in low- and middle-income settings. Decisions regarding shielding will need to pay particular attention to the local socio-economic context, be made in collaboration with local actors, and be continually adapted in light of emerging evidence about the approach's effectiveness, the characteristics of COVID-19 and the trajectories of the outbreaks.

This brief was developed for the Social Science in Humanitarian Action Platform (SSHAP) by Anthrologica (Nadia Butler) with advice from Hana Rohan (London School of Hygiene and Tropical Medicine, LSHTM). It aims to provide practical considerations for governments and response partners working on COVID-19 in the context of low and middle-income countries (LMICs). The brief was reviewed by colleagues at the (LSHTM), the Institute of Development Studies (IDS), IFRC, UNICEF CASS and Resolve to Save Lives. It is the responsibility of SSHAP.

Summary considerations

- **Shielding is the principle of limiting contact between high-risk and lower-risk individuals.** The aim is to reduce the number of severe cases of COVID-19 within a population and to reduce pressure on the public health system. It involves housing high-risk individuals in 'green zones', such as in the household or at the community level.
- **Full-scale physical distancing measures and movement restrictions are having significant negative economic and social consequences** for many low and middle-income countries and their citizens and will not be sustainable over a prolonged period. 'Shielding' has been proposed as a way of protecting those who are at high risk of severe outcomes from COVID-19, whilst allowing the wider population to continue or resume some level of economic and social activity. In the absence of a vaccine, relaxing physical distancing measures while protecting those most at risk may also enable population-wide immunity to be achieved, although at the time of writing, there is insufficient evidence on lasting immunity to COVID-19.
- **A policy package that includes shielding alongside other public health measures such as isolation of sick people, handwashing and some physical distancing measures, could offer an alternative approach.** It should be considered for some LMICs that have not yet introduced lockdown, or for any country seeking an exit strategy from complete lockdowns.
- **The specific shielding approach taken should reflect the context of the country or locality,** taking into account the relative feasibility and likely effectiveness of its implementation, and the ways people are likely to react to the measures. Appropriate strategies may differ between rural and urban areas or different sub-regions within a country.
- **Those considered to be at high risk of poor health outcomes from COVID-19** include the elderly and those with underlying health conditions, including cardiovascular disease, diabetes, chronic respiratory disease and cancer. The list of those most at risk needs to be adapted as new evidence emerges. The prevalence of these groups will vary according to different geographic and social settings. Low-income populations in some countries tend to have more underlying health conditions, and at a younger age, meaning that age thresholds for shielding may need to vary to capture undiagnosed conditions.
- **Clear and transparent communication should occur with communities through trusted local authorities or interlocutors.** From the outset, the principles of shielding and the potential options must be transparent. Community representatives should be involved in the design and implementation of shielding measures from beginning to end, including identifying residents for shielding, selecting green zone locations, providing support to residents and monitoring adherence and effectiveness.
- **Shielding has not yet been tried or tested. If implemented, it will involve trade-offs that need to be carefully weighed.** Challenges are likely to include: the lack of space available to provide appropriate designated areas for high-risk people; the need for high-risk individuals to continue working to earn an income or to continue to carry out domestic tasks or care for children, particularly where multigenerational households are prevalent; the lack of water, sanitation and hygiene supplies to facilitate effective infection prevention and control (IPC); the risk of high-scale transmission among vulnerable people resulting in numerous severe cases and deaths if the disease is introduced to a green zone; the psychosocial impacts of being separated from loved ones; mistrust of public health measures and fear of what will happen in a green zone; stigmatisation of the shielded populations; and difficulties around monitoring adherence and effectiveness of the measures.
- **Shielding will only be feasible and effective if an appropriate model is chosen in consultation with recognised community representatives.** It will need to provide: the greatest possibility for adequate physical distancing; effective community engagement and communication throughout the process; handwashing and hygiene facilities; cash or in-kind essential items, healthcare and psychosocial support. Implementation will need to be monitored by communities and adapted where appropriate.

What is shielding?

Shielding or protecting those at high risk of poor outcomes from COVID-19 aims to reduce the number of severe cases and deaths in the population by limiting contact between high-risk and lower-risk individuals. Shielding aims to alleviate pressure in the healthcare system. This is particularly important for LMICs.¹ It may also protect those who are at high risk of severe outcomes from COVID-19, whilst allowing the wider population to continue or resume some level of economic and social activity. In this scenario, some level of immunity may be achieved in the general population prior to a vaccine being rolled out.^{2,3} High-risk individuals would be housed apart from the general population in 'green zones', whether at the household, "block" or at community level.^{4,3} In order to be effective, shielding should be widely accepted and practiced, with low contact between shielded and unshielded people, and with no increase in contact among shielded people.²

It should be noted that while some shielding is being practiced in high-income countries such as the UK,⁵ where it formed part of the pre-lockdown approach, has continued during lockdown and may be considered as part an exit strategy, it has not been tested in LMICs.³ A LSHTM modelling study on Mauritius, Nigeria and Niger suggested lower effects of general distancing and higher effects of shielding, but noted that the findings may not be representative of other parts of Africa. The study found that 80% contact reduction between high- and low-risk people for 80% of high-risk people was needed for the measure to be effective. It is not known whether this is feasible.² Nonetheless, if adequately implemented, shielding in conjunction with other public health measures would save lives. Its appropriateness and feasibility should be considered by governments. It is likely to be more effective and gain greater acceptance in some contexts than others. Some LMICs are already practicing what might be described as a limited form of shielding, where high risk groups are being asked to stay at home in conjunction with varying levels of movement restrictions for the wider population (e.g. Bolivia⁶, Turkey⁷), but without stringent IPC and distancing guidance within green zones, as proposed by the models outlined in this brief.

The rationale for shielding high-risk people in LMICs

Governments in some low and middle-income countries (LMICs) are seeking alternatives to the full-scale physical distancing measures or lockdowns being implemented in many countries across the globe.^{8,9} Tight restrictions on movement and gathering, together with widespread testing and increasing hospital capacity, appear to have slowed the spread of the virus in countries attempting outright suppression of COVID-19 (although the extent of long-term effects are unclear).¹⁰ Modelling suggests many lives can be saved through effective physical distancing measures implemented together with other public health measures.¹¹ However, there is increasing recognition that the costs of full lockdowns in low and middle-income countries throughout Africa, Asia and Latin America may outweigh the benefits, for a number of reasons.^{12,13,14,15}

Why might full-scale physical distancing measures be unfeasible and counterproductive in LMICs?

- Most of the disease modelling to date has been based on data and assumptions relevant to high-income countries. Factors such as age distribution, population density, rates of intergenerational mingling and the prevalence of underlying health conditions, as well as testing capacity and the ability to provide critical care and social support, differ widely between high-, middle- and low-income countries as well as between LMICs.¹⁶ Demography, health system capacity and socio-economic conditions will determine whether a full lockdown or an alternative strategy is most feasible or appropriate in each setting.¹⁷ As such, **policies deemed appropriate by higher-income countries may not be appropriate for many LMICs.**
- One of the aims of physical distancing is to reduce the number of people requiring treatment at any given time, so as not to overwhelm the healthcare system.¹⁸ In countries where **the healthcare system is already overstretched**, or where rapid upscaling of critical care capacity is not feasible, widespread restrictions on movement may not be useful.^{12,19} Although not proven, the younger populations of LMICs may further negate the benefits of lockdowns, since there is an association between severity of COVID-19 and age.^{17,19} Lockdowns may, however, buy time to improve public health capacity such as improved IPC measures at facilities to protect health workers, to build testing and contact tracing capacity if still in the early stages of the outbreak, or to develop a vaccine or therapeutics (long-term goals).
- As physical distancing measures limit transmission and reduce the speed at which disease moves through the population, they could also slow the rate of which a population may develop a degree of immunity. Long-term immunity from COVID-19 has yet to be demonstrated and it must be emphasised that **a suite of public health measures must be sustained to lower or halt transmission.** Modelling for the UK and USA suggests that a minimum policy for effective suppression would include population-wide physical distancing measures, isolation of cases and quarantine of their family members, and school and university closure.¹⁰ If measures are lifted too early, subsequent outbreaks may occur.^{20,11,10} While it is hoped that high-income countries will be able to withstand the consequences of a sustained lockdown, the short- and long-term socio-economic costs are likely to be too great for most, if not all, LMICs.
- The impact of strong restrictions on movement on the economies of LMICs as well as the **negative socio-economic and health consequences** on individuals will be significant. Poorer populations and those who survive day-to-day in the informal economy will suffer the most. Distancing measures can lead to impoverishment and hunger, social disorder and resistance against measures, oppressive enforcement tactics and detentions, and more deaths from non-COVID-19 related illnesses.^{12,21,3} They can also have the opposite effect to that intended, for example, as migrant workers rendered jobless leave urban centres en masse to return to their rural homes.¹⁶
- In overcrowded communities or camp settings with poor sanitation, the transmission rate of COVID-19 is likely to be much higher than that documented in high-income settings.²² This means that **physical distancing measures would need to achieve very high levels of adherence** in order to meaningfully lower transmission.^{12,3} Sufficient modelling data to inform such distancing measures are not currently available.²³ The numerous factors that influence adherence to distancing measures in LMICs, with particular reference to Eastern and Southern Africa are discussed in a [previous SSHAP brief](#).²¹

What alternatives are available?

Where it is not feasible to sustain physical distancing measures until a vaccine becomes available, countries can opt for interventions that reduce mortality by protecting high-risk individuals while allowing those at low-risk to continue their usual activities. This could potentially allow population-level immunity to be achieved while reducing the dire socio-economic consequences of prolonged distancing measures.² It may be the most effective approach where transmission rates for infectious diseases (the number of people infected per case) are higher.²⁰ This approach could also be considered as part of exit strategies for countries currently implementing full lockdowns. A range of measures can be promoted by governments and, ideally, these should accommodate local social, political and economic realities. The relative feasibility and likely effectiveness of their implementation should be taken into account, including the ways in which people are likely to react to measures.¹⁰ The Africa CDC calls on countries to answer a number of questions before implementing policies. These include: Are the measures appropriate for the country's outbreak stage? How will the measures impact the overall wellbeing of the country? Is the country prepared for the social and economic consequences of the measures? Will the measures hinder support from preparedness and response partners? What criteria will be used to end the measures?

The combination of measures adopted could include proven public health response measures such as isolation of symptomatic individuals, contact tracing, testing and quarantine of contacts (where feasible), as well as physical distancing policies of varying degree (measures include the use of non-contact greetings; maintaining a given distance between individuals; staying at home; closure of schools, workplaces and places of worship; cancellation of mass gatherings such as festivals and sporting events; and prohibition of public transport) and alternative prevention strategies such as mask wearing by infected or potentially infected people, improved hygiene and sanitation, information campaigns, and targeted protection of people most at risk of serious illness or death if they contract COVID-19.^{2,4,26,16} At the same time, other essential healthcare services such as vaccination, malaria control and reproductive, maternal and child health should be protected, and emergency provisions of food and cash provided to those required to stay at home.^{12,16} A modelling study by the LSHTM suggests that a three-tiered approach involving isolation of symptomatic people, moderate physical distancing, and shielding will achieve substantial reductions in mortality in African countries.² With regard to the African continent, it has also been suggested that shielding could form one (demographic) aspect of a reopening strategy, alongside a geographic dimension (lifting measures in regions or cities with low transmission rates first) and an economic dimension (opening sectors with lowest risk of contagion first).¹ Another modelling study has suggested that, where feasible and effective, countrywide lockdowns of two months could temporarily suppress and delay the epidemic, enabling countries to plan and mobilise resources.¹

Who should be shielded from COVID-19 in LMICs?

Those considered to be at highest risk of poor outcomes from COVID-19 are the elderly and those with underlying health conditions.²⁷ Criteria for shielding are likely to differ based on the demographics and presence of underlying health conditions in populations.¹ However, deaths from COVID-19 have occurred across all age-groups, including among those who appeared to have had no other health conditions. As such, the inclusion criteria will represent a trade-off between feasibility and coverage of all those who may be at risk.³ Researchers from the LSHTM CMMID COVID-19 working group have developed a tool that can be used to rapidly assess the estimated number of people to be targeted under different shielding policies, which allows the inclusion and exclusion of different health conditions and age groups.²⁸ Once a policy is in place, individuals who meet the selected criteria can be identified through a community-led process and existing programmes.^{3,1}

The elderly

Data from China and the Diamond Princess cruise ship show that the risk of severity of COVID-19 increases rapidly with age, yet vulnerability can occur in young populations, as shown in data from Indonesia.²⁹ Those aged above 70 years are most at risk, although in LMICs, it may be more appropriate to assign the high-risk age as over 60 as a meaningful proxy of old age, or at 50 in order to capture a larger number of the many people with undiagnosed non-communicable diseases (NCDs).^{1,2} The appropriate age to begin shielding will depend on the country and may vary within countries; for example, a lower age threshold may be more appropriate within a refugee camp or crisis setting than in a high-income urban setting within the same country.^{3,4} Tiered shielding approaches may be appropriate in some settings. For example, middle-aged, moderate-risk people could be supported to carry out partial distancing measures, such as working from home.²

Those with underlying health conditions

It has been estimated that one in five individuals globally has a health condition that makes them more vulnerable to serious outcomes from COVID-19. In many of these cases, particularly in LMICs, the condition will go undiagnosed and untreated.²⁸ The WHO lists those at higher risk from severe COVID-19 as people with cardiovascular disease, diabetes, chronic respiratory disease and cancer.²⁷ In addition to these groups, the UK government has advised shielding for recipients of solid organ transplants, people with rare diseases and inborn errors of metabolism that significantly increase the risk of infections, people on immunosuppression therapies sufficient to significantly increase risk of infection, and women who are pregnant with significant heart disease.⁵ In their guidance on shielding in camp settings, the LSHTM advocate for shielding people with hypertension, diabetes, cardiovascular disease, chronic respiratory diseases (e.g. COPD, asthma), chronic kidney disease, cancer (leukaemia, lymphoma, myeloma or people who are currently or have recently been on chemotherapy treatment for any cancer type), untreated HIV, tuberculosis (TB),³⁰ severe immune-deficiency diseases, sickle cell disease (excluding sickle cell trait), or on immunosuppressive treatment for any other reason, Hepatitis B and Hepatitis C.³ Although there is little evidence to date, it is thought that people living with HIV and receiving effective treatment are not a greater risk of severe outcomes, though this may not be the case for those not receiving treatment.³¹ Since there is no evidence that pregnancy is associated with an increased risk of severe outcomes from COVID-19, it is suggested that only those pregnant women who have underlying health conditions or acute malnutrition should be shielded in camp settings.³ There is no evidence that acute malnutrition alone increases risk of severe outcomes,³ although in some cases it may be advisable to include malnourished adults.^{14,4}

It should be noted that evidence on outcomes from COVID-19 in people with comorbidities is still emerging, such that any list of high-risk conditions is precautionary and should be adapted in light of new evidence. Lists will need to be context-specific. There may be differences in the age-specific prevalence of underlying health conditions across and within countries.² For example, TB and HIV are far more prevalent in Africa than in China, and these conditions affect relatively young age groups. While it has been argued that the younger population in Africa overall could lead to less severe national outcomes from COVID-19,²⁶ the difference in comorbidity prevalence could in fact result in greater severity overall of the disease and more severe cases among younger people.² There is as

yet very little data on how the risks associated with comorbidities might vary in different population groups or settings.³² It is likely that there will be differences between populations in high- and low-resource settings, and between rural, urban and camp or informal settings. In designing shielding policies, governments will need to assess their own populations carefully and tailor approaches to specific settings.

How might high-risk groups be shielded in LMICs?

A number of options have been suggested for shielding high-risk individuals, as outlined below. It is important to reiterate that to the authors' knowledge, these specific approaches have not been documented in any low-income setting. This analysis is not intended to be comprehensive. There may be alternative shielding models that have not been considered here and that are more appropriate in certain settings.

Ideally, once a shared understanding of the principles of shielding are established, local authorities and community members would be supported through participatory learning and action to design creative, innovative and locally feasible shielding models that built on existing local practices. In any case, no single intervention is likely to be appropriate for all low or middle-income settings.⁴ The choice of intervention should be made based on the likely feasibility, effectiveness and community acceptance of the measures.¹⁰ The appropriate choice will vary according to the specific socio-cultural and geographical context, and should be made in collaboration with the community. Factors to take into account include local cultural considerations and relevant practices, social organisation, physical settlement characteristics, and safety and security risks, whilst paying attention to key infection control requirements.³ Shielding should be undertaken as part of a larger strategy that also includes other feasible and locally appropriate interventions, such as self-isolation for symptomatic individuals, limiting public transport use, reducing mass gatherings, and at a minimum promoting and enabling handwashing and maintaining treatment for other health conditions.⁴ Once implemented, measures should be monitored for effectiveness, their ongoing appropriateness evaluated under realistic modelling assumptions, and course correction implemented where appropriate.⁴ The following steps should be considered.

1. Engaging communities

Shielding will only be feasible and effective if communities accept the measures. Two things should happen for this to occur: 1) Communities should be clearly informed about the purposes and principles of shielding, the suggested inclusion criteria and possible options, as well as the level of urgency and risk and the likely outcomes if infection occurs.³ General risk communication principles should be followed.^{33,34} It may be appropriate to discuss shielding as a concept with trusted community actors or leaders in the first instance rather than with the wider community. Local leaders and influencers should be identified and proactively engaged to communicate these messages to their communities.^{1,13} It is important to note that communities are not necessarily homogeneous, bounded or socially cohesive, and that formal and informal authorities may compete for legitimacy.^{35,36,37} As such, careful and locally informed stakeholder mapping is required in order to engage appropriately and meaningfully with communities. 2) Communities should be supported to design, plan, implement and monitor shielding measures that are locally feasible and acceptable. Governments and response partners should then provide ongoing implementation support.^{2,3}

Communication with communities should be ongoing through all phases of shielding, with recognised community members involved in all decisions around implementation as well as design.³ Efforts should be made to work through existing community or neighbourhood organisations, civil society actors, community health worker networks or Red Cross / Red Crescent volunteers. If appropriate, specific social care committees could be established for the purpose of communicating information about shielding, facilitating decisions around implementation, coordinating provision of basic supplies, registering green zone residents, and monitoring adherence and effectiveness.^{3,4} Members of such committees should be well recognised and respected within their communities, and provided with support to carry out this role, including adequate information and supplies.³

Part of the process of engaging with communities about shielding should be to understand existing community-led protection interventions. Previous Ebola outbreaks in Africa have thrown light on community-led, often pre-existing, strategies for quarantining or isolating community members in the face of infectious disease outbreaks.^{39,40,37} Although there is little documented precedent for shielding high-risk populations specifically, such community-led interventions could be built upon and adapted to accommodate shielding. There are also established practices in many socio-cultural settings for giving special respect and care to the elderly, and for allotting care responsibilities in instances of infectious disease to known survivors. Relevant existing practices should be identified and built on as part of participatory learning and action approaches. Examples where this has occurred in other health contexts include the Community-Led Ebola Action (CLEA)⁴¹ approaches developed in West Africa and the Community-Led Total Sanitation (CLTS)⁴² approaches used in many countries.

Conversely, there are examples of instances in which governments or response partners have failed to work with locally recognised figures of authority or acknowledge existing coping strategies. This has led to public health measures being misunderstood or perceived to be coercive, and thus rejected. One example during the Ebola outbreak in Liberia led to the circulation of misinformation, deepened mistrust of the response, and undermined social mobilisation and response measures.⁴³

2. Identifying people to be shielded

Once the idea of shielding has been discussed and met with general acceptance, community members could lead the process of identifying high-risk individuals who should be shielded. The process could be facilitated by existing community organisations or specially formed committees, and households could be supported to identify members who meet the criteria. Individuals could also self-identify or choose to shield confidentially, due to sensitivities around privacy of health status. Individuals should be shielded on a voluntary basis,^{1,3} and information about their health status disclosed only with their consent.

3. Selecting the approach

Three levels of shielding have been proposed: household; street or extended family; and community or neighbourhood.⁴ Similar levels apply for refugee or IDP camps or camp-like settings: household; block; and sector.³ The appropriate level would depend on the context, as discussed, and a combination of levels could be used simultaneously. At each level, there should be discussion with

community members to establish shared understanding of the principles. A participatory learning and action process could then follow to develop and implement these in ways that are feasible and appropriate in local circumstances.

Household level: Householders could identify a part of the house that would be exclusively reserved for the high-risk individual(s). Strict measures would need to be applied to maintain distance between high-risk and low-risk members of the household. This approach would be most feasible for dwellings with multiple rooms, and is only a small step from home quarantine or 'stay-at-home' measures already being implemented in many countries. It is most likely to be feasible for families with higher incomes than for those living in overcrowded conditions or informal settlements. There may also be little incentive to maintain strict adherence in the absence of external or community enforcement.⁴

Street, extended family or block level: Neighbouring households or extended family members could voluntarily 'swap' houses, grouping high-risk people into a designated green zone.⁴ Each green zone could include a number of able-bodied high-risk people to provide care and support for other residents who need assistance; or if necessary, low-risk carers could stay in the green zone to assist, with no movement outside the green zone.^{3,4} This option is most likely to work where the arrangements are made within families, and where green zone residents and carers are from the same extended family, or at the very least familiar, trusted individuals.^{3,4} It is an option for those who do not have multi-room dwellings. Physical distancing measures would need to be strictly enforced within the green zone to avoid transmission among the high-risk group.⁴

Community, neighbourhood or camp sector level: sections of a settlement could be designated for groups of high-risk individuals. All services in the designated green zone could be provided by people living in that facility, whether high-risk able-bodied people, or low-risk carers who stay in and do not leave the green zone.³ This option may be most feasible for camp settings, where humanitarian actors can provide support services. An important limitation of this option is the high risk of severe outcomes if someone inside the green zone were to become infected. Strict IPC and physical distancing measures would need to be followed within the green zone, as well as ensuring no or limited contact with those outside the green zone.⁴

4. Identifying green zones

Shielding locations at all levels should be identified that can be adequately equipped and supported by relevant local authorities or the community, government or humanitarian actors. The approach would not necessarily require the construction of new shelters, but would make use of existing facilities.³ Ideally, green zones should not have dedicated physical barriers around them, as this may create a perception of enforced isolation and increase stigma. To facilitate physical distancing within the green zone, these areas would need to provide as much space per person as possible, and ideally allow for separate sleeping spaces and have dedicated toilets and bathing facilities.³ Consideration should be given to where residents who begin to show symptoms consistent with COVID-19 will be placed, particularly if resources do not allow for immediate testing. Ideally, a designated space could be reserved for symptomatic individuals within the green zone, with no contact possible with other green zone residents. In identifying appropriate spaces for shielding, special considerations will need to be made for socially vulnerable individuals, such as children with underlying health conditions, people with dementia or other mental disorders, and victims of sexual, physical or other abuse, and ensure that their protection is upheld.³ Gender-segregated green zones may be appropriate, or zones specifically for children and their carers.³ People with active TB would need to be shielded separately to avoid transmission to other residents.⁴

5. Preparing 'green zones' and the community

Community members, carers and people identified as high-risk should be provided with adequate information and support on how to uphold IPC measures and hygiene in green zones and how to care for someone who is shielding. Prior to admitting residents to a green zone, living areas, toilets, showers, furniture and household supplies should ideally be thoroughly cleaned. High-risk individuals could be registered and housing arrangements mapped and continually updated to enable adequate supply of basic items, hygiene supplies and supportive services, as well as to facilitate disease surveillance and immediate isolation of residents with COVID-19-like symptoms and to monitor the effectiveness and ongoing feasibility of the approach. If any high-risk individuals or their household members show symptoms consistent with COVID-19, they should wait until they and their household are symptom-free before moving to the green zone.³

6. Managing IPC and hygiene

Every effort should be made to minimise contact between people at high risk and people at lower risk. For household and street level shielding, people who are not shielding should not enter the green zone unless absolutely necessary (e.g. in the case of an emergency), and then handwashing and distancing guidelines should be adhered to. Interactions could take place through doorways or windows at a safe distance, and essential items left at the door. For community-level shielding, while the green zone's boundary should not be physical, a single entry point with handwashing facilities could be designated. Provisions could be exchanged through this point. A meeting area could be set up close to the entry point, where visitors and residents could interact at a safe distance of at least two metres, and where outpatient healthcare could be provided.⁴ A maximum number of visitors at any one time could be stipulated, and visitors should wash their hands before entering the meeting area. Items in the meeting area, such as chairs, should be cleaned after each use. Residents should not leave the green zone, except for essential medical care, and should then follow physical distancing measures whilst outside, and wash their hands upon re-entering.

Contact within the shielded population should also be minimised as much as possible. Green zones should be as spacious as possible to enable adequate physical distance. Frequent and thorough handwashing should be enabled, by providing uninterrupted access to water and soap, and encouraged through appropriate communication. Sanitation facilities should ideally be made available within the green zone at the community level. At the household or street level, high-risk individuals should be given the opportunity to access sanitation facilities alone or with a carer, and facilities should ideally be cleaned prior to their accessing it. Necessary cleaning products, such as bleach, should be made available to ensure residents can keep green zones clean at all times.³ An alert mechanism should be established to immediately report any green zone resident who begins to show symptoms consistent with COVID-19. Symptomatic residents should either leave the green zone or be isolated in a designated space identified during the design phase and, if possible, tested for COVID-19 and referred where appropriate. The community should be involved in designing the alert and response mechanism, which could involve reporting to a community health worker or social care committee member verbally, by phone or SMS.³

7. Ensuring provision of basic items, healthcare and psychosocial support

Governments, with the support of response and humanitarian partners, should ensure residents required to shield have access to income support, food, water, soap, cleaning materials including bleach for surfaces in common areas, healthcare and other essential services.^{44,4} Community groups, local leaders and health workers could have central roles in providing this support.¹ Healthcare could be provided through mobile clinics, along with psychosocial support. If residents must visit a healthcare facility outside of the green zone, all efforts should be made to minimise contact with unshielded people, and strict IPC and distancing measures followed. Home-based care should be provided wherever possible, rather than hospital admission.³ To ensure the psychosocial wellbeing of residents, social interaction with family members and friends should be maintained, whilst applying strict IPC measures.³ Turkey is an example of a country that is providing essential services to its elderly population (over 65), who are required to stay at home. Volunteers and police officers are going door-to-door to ensure residents have access to the services they need. Call centres have been set up in every district, which elderly people can call to request deliveries of groceries, pharmacy items or their monthly pension. Volunteers provide the service of withdrawing people's retirement funds and delivering them to their doors. Police are provisioning the population with free face masks and hand sanitiser.⁴⁵

8. Developing an exit strategy

High-risk individuals will need to be shielded for an extended period of time, until: 1) an effective vaccine or treatment becomes widely available; 2) hospital capacity is scaled up to required levels; and/or 3) the local outbreak subsides due to infection control or herd immunity being reached in the unshielded population.³ As shielding will be hard to maintain in the long-term, a plan should be in place to discontinue the measure as soon as it is safe to do so. Monitoring for the end of the outbreak will be difficult if widespread testing is not possible. Serological surveys may provide information on the evolution of an epidemic, but only when tests are highly specific and sensitive. Otherwise, symptoms can be monitored among the wider population, and thresholds put in place for discontinuing shielding, such as a certain period without suspected cases within a given geographical radius.⁴ Focusing on symptoms may be problematic however, due to the prevalence of other respiratory infections in many communities, often coupled with persistent cough from, for example, indoor charcoal cooking.⁴⁶

What are the challenges of shielding in LMICs and how can these be mitigated?

Many of the challenges of shielding high-risk individuals in low-income settings will be similar to those outlined for physical distancing (see [previous SSHAP brief](#)).²¹ In low- and high-income countries, it is the poorest who are most at risk of serious outcomes from COVID-19, as they carry the greatest burden of underlying health conditions and have the least access to good healthcare.⁴⁸ In many cases, these groups are also ethnic minorities or indigenous peoples, who often have less resources and are more likely to have underlying health conditions than their majority populations.^{49,50,51,52} For example, in the UK, people of African or Asian descent and minority ethnic groups have been found to account for a disproportionate number of deaths from COVID-19.⁴⁹ These populations will also find it the hardest to practice shielding for the following reasons:

Lack of space: At the household level, many families will not be able to designate a separate room for high-risk individuals. The average number of people sharing a room for sleeping in LMICs is 2.4.⁵³ Up to one billion people around the world are estimated to live in informal, often high density settlements, where the number is estimated to be higher, at between three and five.⁴⁶ In camp settings, lack of space is also likely to be an issue, making it difficult for residents to maintain physical distance from one another within green zones. **A shielding model should be chosen that provides the greatest possibility for adequate physical distancing in the specific circumstances. Where adequate distancing within green zones cannot be maintained, additional emphasis should be placed on facilitating handwashing and hygiene.**

Lack of income: Elderly people and those with underlying health conditions may be important breadwinners for themselves and their families, often working in the informal sector. Their ability to remain at home in a scenario in which restrictions on economic activity have been lifted will depend on the economic and social support they are able to receive from other family members, and on whether other support is available to alleviate hardship. **The provision of either cash or in-kind essential supplies by governments, donors, private benefactors or communities will be essential to enable high-risk individuals to stay at home and practice shielding.**⁵³

Responsibility to perform domestic tasks and provide care: Elderly family members and those with underlying health conditions may play important roles within the family in terms of cooking, cleaning, and caring for children and other family members. Data show that people aged 70 years or over in LMICs live with an average of four individuals below the age of 70.⁵³ Whether high-risk individuals will be able to remain confined to their room and cease physical contact with other family members will depend on the structure of their household and the support available to alleviate their responsibility for these everyday tasks. This may be particularly relevant to women. **Novel types of support will be required from the community, civil society, response partners and government to ensure high-risk individuals required to shield are practically able to do so. The importance of shielding will need to be effectively communicated to the community, and families provided with support to adapt their domestic roles and responsibilities.**

Lack of water, sanitation and hygiene supplies: The majority of households in LMICs do not have a toilet or water source within their dwelling,⁵³ so high-risk individuals would need to leave the green zone to access these facilities. This also makes following IPC measures such as handwashing and cleaning surfaces problematic. In refugee and IDP camp-settings, clean water, sanitation and soap are often scarce, with many families sharing a limited number of facilities.⁵⁴ **Governments and partners should ensure adequate supplies of water and soap and cleaning products such as bleach, and communicate with communities on the importance of using these. Partners should work with communities to identify ways high-risk individuals can reach sanitation facilities safely.**

Risk of high-scale transmission with community/sector-level shielding and in institutional settings: The community or sector-level model represents a significant risk of high mortality rates if the disease is introduced to a green zone where a number of vulnerable people reside. This has been evidenced by fatalities in aged care facilities in the UK and other countries.⁵⁵ These events could be said to represent an example of shielding executed poorly, and countries considering shielding strategies should learn from these mistakes. **Strict protocols for minimising contact with non-shielding populations and for physical distancing within the**

green zone should be followed, and IPC measures facilitated to minimise the risks.³ Symptomatic individuals should be immediately isolated in a designated area and, where possible, tested for COVID-19.

Psychosocial impacts of shielding: Research has shown that quarantine, particularly for long periods, can cause high levels of psychological distress.⁵⁶ This is also likely to be the case for shielding, as individuals are separated from their family members and friends, potentially compounded by concerns about contracting the disease. This distress and feelings of loneliness may also affect adherence.³ **To mitigate this, green zone residents should be given the opportunity to interact with family members at a safe distance and observing IPC measures. Residents should also be encouraged to exercise, seek sunlight, and if possible, use technologies to communicate with family and friends.**

Mistrust and fear: Particularly in the case of community or sector-level shielding, historical contextual factors including prior negative experience with outbreaks and conflict and mistrust of authorities may cause reluctance to allow a vulnerable family member to move to separate living quarters where it may be perceived they will be at greater risk. Reluctance to allow family members to be taken to Ebola treatment centres during Ebola outbreaks due to fear that they would die are a case in point,⁵⁷ and shielding interventions may elicit similar concerns, or be confused with such measures. **To mitigate these factors, the design and implementation of shielding processes should be led by communities through participatory approaches, with an emphasis on identifying locally-feasible solutions, and information about the reasons for shielding and the practicalities of how it will work should be clearly communicated.**

Stigma: Particularly given recent examples of groups of sick individuals being placed together in designated areas (for example, Ebola Treatment Centres in DRC and leprosy colonies in India),⁵⁸ there may be confusion among the community between isolation of sick individuals, and shielding of people who are not infected as a way to protect them. People assigned to green zones may become associated with the disease and stigmatised as a result.³ This can have psychosocial effects on individuals, as well as causing them to hide infection if it does occur. **Efforts should be made to address stigma through effective communication strategies about the need for shielding, and about the disease itself.⁵⁹ There may also be opportunities to build on positive sentiments and attitudes, such as of honour and respect for the elderly.**

Difficulties monitoring implementation and effectiveness: At all shielding levels, there can be difficulties related to monitoring adherence and evaluating performance of the shielding model.³ This is necessary to know whether the measure is working or requires adaptation. **Monitoring and surveillance strategies should be built into the design of the shielding approach by communities, such that they are locally feasible and community-owned.**

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 Olivia Tulloch (oliviattulloch@anthrologica.com) and Santiago Ripoll (s.ripoll@ids.ac.uk). Key Platform liaison points include: UNICEF (nnaqvi@unicef.org); IFRC (ombretta.baggio@ifrc.org); and GOARN Research Social Science Group (nina.gobat@phc.ox.ac.uk).



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