



# Guidance for the prevention of COVID-19 infections among high-risk individuals in camps and camp-like settings

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## List of abbreviations

COPD	Chronic obstructive pulmonary disease
COVID-19	Coronavirus disease 2019
IPC	Infection prevention and control
HIV/AIDS	Human immunodeficiency virus infection / acquired immune deficiency syndrome
LMIC	Low- and middle-income countries
NCDs	Non-communicable diseases
NFIs	Non-food items
SARS-Cov-2	Severe acute respiratory syndrome coronavirus 2
TB	Tuberculosis
WASH	Water, sanitation and hygiene
WHO	World Health Organisation

## 1 Background

Forcibly displaced populations residing in camps or camp-like settings<sup>1</sup> may be particularly vulnerable to COVID-19 epidemics due to overcrowding, poor access to safe water and sanitation and limited access to health services (1,2). In the absence of control measures, camps and camp-like settings could experience very high attack rates and mortality. This would translate into an extremely large number of patients requiring intensive care over a short period of time (a few months), as suggested by modelling predictions for refugee camps in Cox Bazar, Bangladesh (3).

Resource-intensive containment measures imposing severe movement and contact restrictions on the entire population, such as mass 'stay-at-home' orders, social distancing, self-isolation and quarantine might not be appropriate for some camp or camp-like settings where such measures are unfeasible or would threaten livelihoods if applied over a long period (4). More generally, these population-wide measures would have to achieve very high levels of compliance in order to lower COVID-19 transmission to an appreciable extent: this is because the baseline transmissibility of the virus in overcrowded communities with poor sanitation is likely to be considerably higher than hitherto observed in high-resource settings. A more targeted approach of specifically preventing infections among groups at high risk of COVID-19 mortality within the displaced population may thus be a useful strategy to reduce mortality and pressure on health services: we refer to this approach as 'shielding' to denote it from more generic distancing measures.

This document provides guidance on the implementation of the shielding approach in camps and camp-like settings for refugees and internally displaced persons. It is intended for the displaced community itself, humanitarian actors and camp coordination / management authorities.

## 2 General principles

The targeted shielding approach aims to protect those most vulnerable from SARS-CoV-2 infection by helping them to live in dignity, safely and separately from the general population for an extended period of time, until one of the following circumstances arises: (i) sufficient hospitalisation capacity at the appropriate level is established; (ii) effective vaccine or therapeutic options become widely available; or (iii) the COVID-19 epidemic affecting the camp population subsides due to control or depletion of susceptible people in the unshielded population.

The main feature of this approach is to create 'green zones' – dedicated areas at either the household, neighbourhood or camp sector level, in which high-risk individuals are relocated temporarily, and have minimal contact with family members and other camp residents at lower risk of severe disease. The actual configuration of these green zones will depend on local cultural and physical settlement characteristics: broad options are outlined below. In its most basic design, shielding mainly attempts to prevent introduction of infection within green zones; if locally possible, rapid testing and referral of residents may be added as a desirable but not strictly necessary component.

In epidemiological terms, the approach attempts to limit, if not completely eliminate, contacts that may result in transmission ('effective contacts') between high-risk and low-risk people, as well as between high-risk people and food, water and fomites contaminated by the virus. Its effect on mortality directly attributable to COVID-19 is linearly proportional to the fraction of shielded green zones that remain transmission-free during the COVID-19 epidemic: as such, the approach does not need to attain a specific threshold adherence to have any

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<sup>1</sup> Broad definition of camps or camp-like settings: forcibly displaced population, including refugees and internally displaced living in high-density formal or informal settlements, under collective or individual shelters.

effectiveness. Because high-risk individuals are a numerically small proportion of the population, the build-up of herd immunity (i.e. progression of the epidemic) is relatively unaffected by the intervention.

While the implementation of the approach is as yet undocumented, two key conditions are likely to be indispensable for its effectiveness:

- i. Community acceptance and involvement. This will require appropriate communication of accurate and consistent information, as well as community engagement and participation in the design and local implementation of the shielding approach (5). Conversely, it is likely that the approach will not be successful if it is perceived as coercive, misunderstood or used by authorities as a pretext for forms of oppression;
- ii. Sufficient support to shielded residents as well as their families and caregivers. As outlined below, this will likely include nutrition, medical care and water and sanitation services at a minimum.

### 3 Who should be shielded?

The population targeted by the shielding approach consists of the individuals at high risk of death from SARS-CoV-2 infection, mainly defined by age or presence of co-morbidities. Table 1 suggests inclusion criteria for shielding. The criteria reflect current evidence and plausible risk-mitigating assumptions where evidence is yet unavailable. Criteria relating to presence of existing morbidities are to be applied only if disease status is known.

COVID-19 fatalities can occur across all age groups, including in apparently healthy patients, and as such no set of shielding inclusion criteria can completely capture all attributable mortality risk. Rather, the suggested criteria represent a trade-off between coverage and feasibility: shielding a large proportion of the population would likely negate the approach's potential advantages.

There is no evidence available to date that acute malnutrition increases the risk of severe outcomes from COVID-19 (6). In addition, clinical manifestations of COVID-19 among children seem to be less severe than in adults, and case-fatality ratio seems to decrease with age (7,8). While severe acute malnutrition in children may worsen COVID-19 outcomes, shielding a potentially large population of malnourished children and their caregivers (who moreover would not be able to care for other children) is unlikely to be feasible. However, to minimise risk to this group, strengthening food security and early identification and treatment of severe acute malnutrition, along with proactive follow-up of children being followed-up as part of nutritional therapy are warranted. Although acute malnutrition is associated with a higher risk of infections (9), screening adults would entail additional risks of transmission (inherent to the screening activity itself) for limited benefits.

Pregnancy seems not to be associated with an increased risk of severe outcomes from COVID-19 (6). However, until evidence becomes available, we suggest considering acutely malnourished pregnant women in the inclusion criteria for shielding (see Table 1 below), as their pregnancy status combined with acute malnutrition may make them particularly vulnerable to severe COVID-19 disease.

Identification of high-risk community members should be a community-led process, which supports and promotes community ownership of the approach. The purpose of the shielding approach and the inclusion criteria should be clearly communicated and explained to the community, so that each household can identify who among them is at risk and should be shielded, on a voluntary basis. The process can be facilitated by community health workers / Red Cross or Red Crescent volunteers, or by the social care committees established to support the implementation of the approach (see below).

**Table 1:** Recommended inclusion criteria for shielding.

Category	Inclusion criteria	Current evidence and risk-mitigating assumptions
Age	60 years old and above	Risk of death from COVID-19 seems to increase with age, particularly among people aged 70 years and above (8,10). We suggest extending the age criterion to 60 years or above (a more meaningful proxy of biological age in most camp settings) until evidence becomes available.
NCDs	Hypertension; diabetes; cardiovascular disease; Chronic respiratory diseases (e.g. COPD, asthma); chronic kidney disease; cancer (leukaemia, lymphoma, myeloma OR currently or recently on chemotherapy treatment for any cancer type)	Hypertension, diabetes and cardiovascular disease appear to be associated with a higher risk of severe COVID-19 disease and death (8,10). Current recommendations from high-income countries also include chronic respiratory diseases such as COPD and asthma, and chronic kidney disease, as well as people with specific cancers (leukaemia, lymphoma, myeloma) or those who have recently undergone or are currently undergoing chemotherapy treatment.
HIV/AIDS	Known HIV-positive status	There is no evidence suggesting a higher risk of COVID-19 among people living with HIV. However, HIV+ patients are at increased risk of infections (11,12). Until evidence becomes available, we suggest including all people with known HIV+ status (differentiating stages of HIV infection among people might be challenging for the community).
TB	Recent diagnosis of tuberculosis disease AND/OR currently undergoing treatment for tuberculosis	Active or latent tuberculosis may increase susceptibility to COVID-19 and disease severity (13). However, TB patients will need dedicated isolation arrangements (see below).
Pregnancy	Pregnant women identified as acutely malnourished Pregnant women with any of the other conditions listed in this table	To date, there is no evidence that pregnancy increases the risk of severe outcomes from COVID-19 (6). However, pregnant women suffering from acute malnutrition may be particularly vulnerable to severe COVID-19 disease. Screening for acute malnutrition is included as part of the minimum package of services to be provided during antenatal care visits, thus should not imply additional workload. Therefore, we suggest including acutely malnourished pregnant women, until evidence becomes available.
Other immuno-deficiency conditions	Severe immuno-deficiency diseases Sickle cell disease (excluding sickle cell trait) On immunosuppressive treatment for any other reason	To date, there is no evidence of association between immuno-deficiency and severe outcomes from COVID-19. However, people having immuno-deficiency conditions or on immunosuppressive treatment (e.g. high dose steroids) are known to be more susceptible to infections. Therefore, we suggest including people having immune-deficiency conditions, until evidence becomes available.
Other chronic infections	Hepatitis B infection Hepatitis C infection	To date, there is no evidence of association between chronic infectious diseases such as hepatitis B or hepatitis C and severe outcomes from COVID-19. However, these diseases impair organ function and may thus complicate COVID-19 progression. Therefore, we suggest including people with Hepatitis B or Hepatitis C, until evidence becomes available.

## 4 Creating shielding green zones

Three broad typologies of shielded housing arrangements may be considered:

1. Household-level
2. Block or neighbourhood-level
3. Sector<sup>2</sup>-level

Each of these options entails benefits and challenges/risks that need to be carefully considered when designing the approach with the community. Depending on the context and community preferences, a single shielding option or a combination can be implemented. Generally, the chosen arrangement(s) should be tailored to the socio-cultural context, taking into consideration safety and security risks (for example, single-gender green zones or gender-segregated areas may be appropriate). However, any local adaptation should not compromise key infection control requirements (see below). An outline of the key characteristics of each option is summarised in the Figure 1. Table 2 presents an options appraisal.

Features common to each option are:

- Unless rapidly feasible, the approach does not require construction of new shelters<sup>3</sup>; rather, shielding arrangements should be implemented by communities swapping / vacating specific shelters;
- To avoid the perception and experience of enforced isolation, green zones need not have physical barriers around them;
- The green zone and living areas for high-risk residents should be aligned with minimum standards (14); specifically, they should be considerably less crowded than general camp housing, allowing for separate sleeping corners and aiming to have the smallest feasible number of people living within a single green zone shelter; furthermore, dedicated latrines / toilets and shower facilities should be available;
- Residents should, as much as possible, be familiar with one another or come from the same extended family;
- Other than for household-level arrangements, each green zone should include some able-bodied high-risk individuals who are able to care for disabled or less mobile residents: in order to minimise contact with people from outside the green zone, it is essential that residents are supported to take care of themselves;
- If absolutely necessary, one or more low-risk 'carers' (e.g. 1 per 5-10 residents) can be isolated in the green zone with the high-risk residents. Carers should be family members or familiar, trusted individuals; if possible, they should already have confirmed COVID-19, as these individuals may be assumed to have at least temporary immunity.
- If possible, one of the shelters in the 'green zone' should be reserved for self-isolation of any residents who have symptoms consistent with COVID-19 (see below).

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<sup>2</sup> A sector in a camp or camp-like setting comprises several blocks. A block is a group of shelters or a single shelter housing several households.

<sup>3</sup> Shelter in this document refers to any type of dwelling where the displaced population in the camp lives (e.g. plastic sheeting, prefab houses etc...)

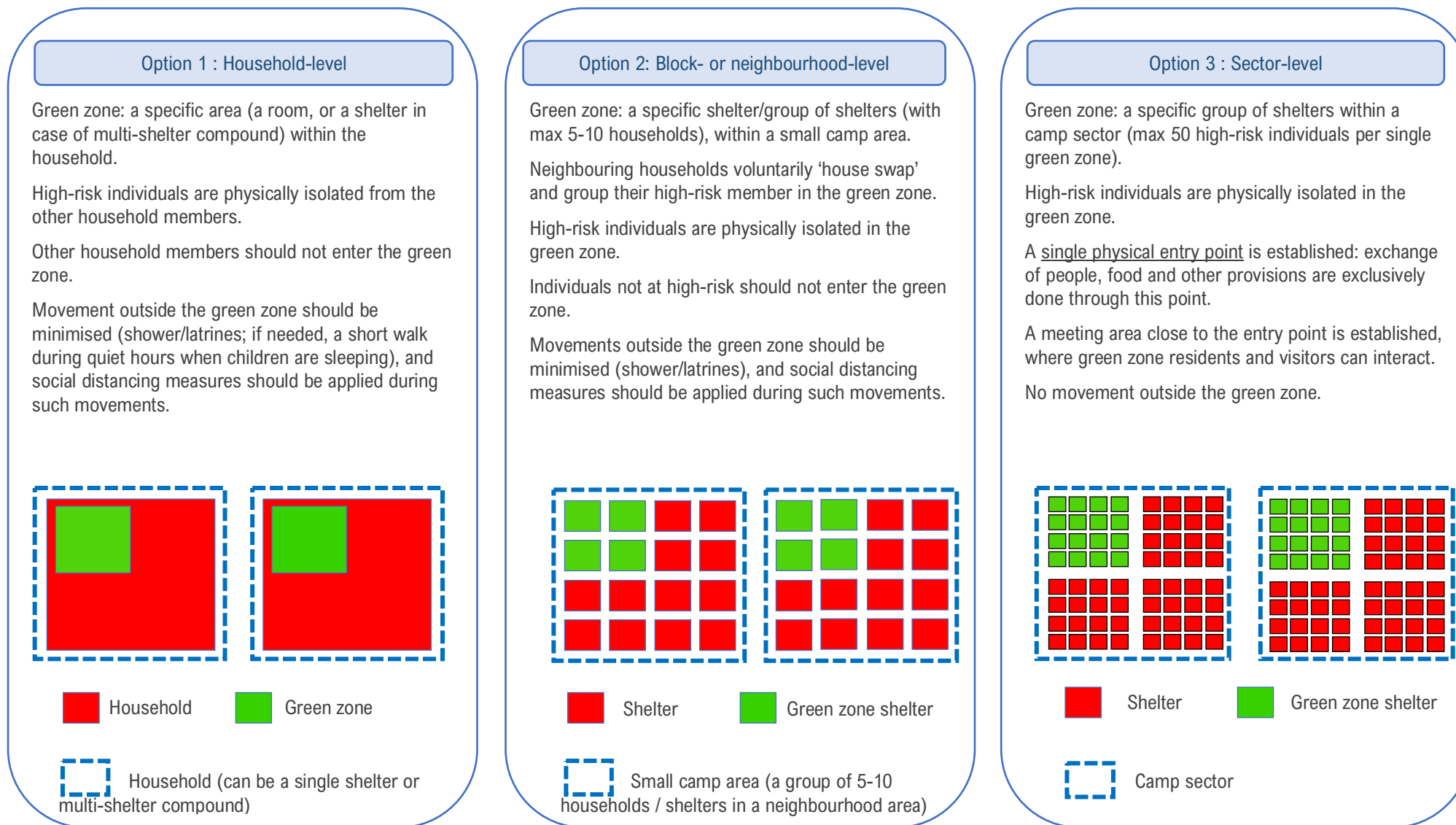


Figure 1: Representation of housing arrangements for each shielding option.



**Table 2:** Appraisal of shielding options.

Option	Applicability	Advantages / benefits	Challenges / risks
1. Household-level shielding	Settings with multi-shelter compounds or multi-room houses (discouraged if multiple households share the same shelter) Enough living space available to create dedicated areas to accommodate high-risk individuals	Increased adherence due to proximity of family members who can provide basic necessities and emotional support Less stigma Less change to lifestyle Little need for extra resources	Monitoring of implementation and performance, especially in case of larger-scale camps, due to the large number of green zones Implementation of infection prevention measures More likely to be 'leaky' (necessary movements outside the green zone – e.g. for access to shower / latrines)
2. Block- or neighbourhood-level shielding	All camp settings, especially if single room shelters are common (i.e. option 1 not feasible) Community acceptance to move persons in grouped living conditions and swap shelters	Less stigma Can rely on neighbourly or extended family trust networks; green zone residents likely to be relatives or familiar people Relatively flexible in terms of actual arrangements as long as infection control and social distancing measures can be enforced	Infection control and social distancing measures would also have to be strictly observed within each green zone More likely to be leaky (necessary movements outside the green zone – e.g. if no designated showers / latrines in the green zone) Less proximity with family members
3. Sector level isolation	Larger-scale camps (e.g more than 15,000 people) or Smaller-scale isolation (option 2) not feasible / accepted by the community Enough space in the camp to set up green zones	More controlled environment than options 1 and 2 Easier to monitor implementation and performance (as high-risk individuals are concentrated in few dedicated areas) Specific health services could be delivered on site (via mobile clinics for example). Potential better coverage	Needs stringent IPC and social distancing measures, which should be strictly observed within each green zone, due to high risk of high-scale transmission and severe disease if a case is introduced Risk of stigmatization Risk of poor adherence due to isolation and separation from family members

## 5 Implementation

### 5.1 Community engagement and risk communication

Unless local camp conditions (e.g. pre-existing community tensions) dictate a top-down approach, implementation of the selected shielding arrangements should be community-led: this includes deciding which household members meet the inclusion criteria for shielding, whom to allocate to each green zone, which shelters to vacate / swap, and what provisions (e.g. beds, household supplies) to transfer across shelters.

More fundamentally, humanitarian actors should, as a requisite first step to be implemented in anticipation of local transmission or very early into an epidemic, proactively engage camp residents to:

- Raise awareness of the likely level and urgency of risk (e.g. expected COVID-19 burden, time window for action, likely unavailability of treatment), through culturally appropriate and mediated risk communication, if useful providing experience from other settings;
- Present the broad shielding options, while also communicating the key infection prevention requirements;
- Facilitate a sense of agency among community members: they can adopt *voluntary* changes and solutions to mitigate the risk: as long as the epidemiological foundation of shielding is maintained, they, as opposed to camp management agencies, can design the most locally appropriate solution – humanitarian actors will then support them to implement it.

### 5.2 Establishment of green zone social care committees

The creation of social care committees could facilitate acceptance of and adherence to the shielding measures. One social care committee per green zone (or group of green zones in the same camp area for options 1 and 2) could be established. Its composition would vary according to context but should be representative of the families with high-risk individuals being shielded. The functions, ways of working and roles within the committee would be defined by its members.

The main responsibilities of social care committees could comprise:

- Helping households to identify high-risk community members;
- Facilitating a decision on which green zone arrangement works best for the community;
- Registration of high-risk individuals that are shielded in the green zones;
- Dissemination of culturally appropriate information on behaviour change, IPC measures and other relevant information;
- Enforcement of use of the single-entry point, hand washing on entry and exit of the meeting area or green zone, and maintenance of distance and disinfection of items in the meeting area;
- Coordination of provision of food and supplies from non-residents;
- Liaison with camp health services if a resident needs medical care or has symptoms consistent with COVID-19;
- Collection of feedback and complaints.

An alternative or complementary option could be to use existing community health worker networks, under the conditions that they are functioning well, the community workers are well recognized in their communities and it does not represent an unmanageable additional workload. Red Cross Red Crescent volunteers could also play a key role.

Social care committee members (or alternatively, community health workers) should be provided with adequate information and supplies (e.g. notebook, pen, phone credit) to perform their functions appropriately.

### 5.3 Prior to setting up the green zones

Shelters, latrines / toilets, showers and other fomites (e.g. beds, tables, household supplies etc.) assigned to a given green zone should be thoroughly cleaned.

Any high-risk individuals who are ill (fever and persistent cough), or whose household members are ill, should wait until they and their household members are all symptom-free before joining their allocated green zone.

Social care committees or other designated supporting bodies (e.g. Red Cross Red Crescent volunteers, NGOs) should inspect the green zones as they are being created, and provide constructive advice or material support whenever they do not comply with the essential criteria for infection control outlined below.

### 5.4 Registration of green zone residents

Registration of high-risk individuals isolated within the green zones as well as a mapping of the shielding housing arrangements should be done and continuously updated in order to:

- Identify the adequate level and type of supportive services to be delivered to them;
- Provide the residents with the hygiene supplies as well as the hygiene and sanitation facilities required to apply the IPC measures (see next chapter);
- Design an appropriate alert mechanism to report and immediately isolate residents with symptoms consistent with COVID-19;
- Monitor and evaluate the implementation of the shielding approach.

Registration need not entail collection of confidential medical data, unless this is strictly relevant for provision of ongoing care for pre-existing conditions.

### 5.5 Specific considerations

Any children identified as high-risk must be accompanied into isolation by a single caregiver who will also be considered a green zone resident in terms of movements and contacts with those outside the green zone.

Individuals with TB should be isolated separately from other shielded individuals through either individual isolation (option 1) or a dedicated, separate green zone. The latter should be established with due attention to stigma and given sufficient protection (e.g. be placed under the stewardship of a health facility, NGO or religious institution).

Specific consideration should be given to the isolation arrangements of individuals with severe immunodeficiency conditions, as well as elderly individuals with dementia or people with severe mental disorders. Individual shielding might be more appropriate in these specific cases.

People who report sexual, physical or other forms of abuse and discrimination by co-residents should be immediately offered alternative arrangements, e.g. individual isolation or residence in another green zone. Generally, *no one should be forced to remain within a green zone against his or her will.*

## 6 Infection prevention and control

Stringent but realistic infection control measures should accompany any of the options, as should some social distancing within the green zones. This is of particular importance under option 3, due to the risk of high-scale transmission if infection is seeded within such concentrated green zones.

Below we refer to high-risk individuals and carers living in the green zones as 'residents' and any other community members as 'non-residents'.

### 6.1 Between green zones and the rest of the camp

It is crucial to minimise contacts between residents and non-residents as well as movements of non-residents inside green zones in order to limit the risk of transmission. However, social interaction with and support from family and friends should be maintained for the well-being of the residents, while applying strict infection prevention and control measures.

Under option 1 and 2, non-residents should not enter the room(s) / shelter(s) designated as the green zone, unless it is absolutely necessary and only after washing their hands. Interactions between residents and non-residents should be done at a safe distance (approximately 2 meters).

Under option 3, green zones' boundaries should probably remain virtual to facilitate acceptability and minimise stigmatisation. However, a single physical entry point should be established: exchange of people and supplies should exclusively be done through this point. A meeting area, close to the entry point, should be established for non-residents visiting residents. Depending on its size, a maximum number of visitors at any given time should be stipulated. A safe distance between residents and non-residents should be maintained in the meeting area (approximately 2 meters), and physical contact should be avoided. Residents and non-residents should wash their hands before entering the meeting area. If any physical items, such as plastic chairs, are kept in the meeting area, these should not be moved outside the meeting area and should be cleaned with soap and water, or equivalent available cleaning solution, after each use. An alternative option could be to designate specific chairs and other physical items to be used by residents only, and others by non-residents only. Non-residents should not go into the green zones, other than the meeting area, unless it is absolutely necessary, and only after washing their hands.

Foods and other supplies provided to residents should be left at the entrance of the green zone (option 1 & 2) or in the meeting area (option 3). Non-residents should wash their hands before handling foods and other supplies provided to residents. Where appropriate, items should be cleaned with soap and water before being collected from the entry point by the residents.

Residents should only leave the green zone for essential medical care. If for any reason a resident goes out of the green zone, the resident should apply social distancing measures (i.e. keep a safe distance of approximately 2 meters). When entering back into the green zone, the resident should wash their hands at the entry point.

### 6.2 Within green zones

Frequent and proper hand hygiene is one of the most important measures that can be used to prevent spread/transmission of infection (15). Uninterrupted access to water and soap for handwashing should therefore be ensured for the residents, as well as non-residents living under the same shelter under option 1. Dissemination of key messages about handwashing (how to wash and key moments) to residents (and non-residents) should be reinforced.

As discussed under key principles, green zones should be, to the extent possible, more spacious than the surrounding camp: side-by-side sleeping and concentration of many residents within the same shelter should be avoided, even at the cost of greater crowding of low-risk people.

Under option 1, because residents will probably not have handwashing facilities in their green zones, water and soap should be provided by the non-residents sharing the shelter, following the measures described in the above section.

Under option 2 and 3, handwashing facilities should be established in the green zones and easily accessible: the minimum required would be one at the entry point. In addition, and to the extent possible, sanitation facilities (shower/latrines) and a water point should be made available for the residents, in order to limit movements outside the green zone.

Shelters within the green zones should be kept clean at all times. Residents should be provided with the necessary cleaning products<sup>4</sup> and materials to clean their living spaces.

## 7 Managing symptomatic residents of the green zone

An alert mechanism should be established to immediately report any resident who develops symptoms consistent with COVID-19 (i.e. fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath (16)). Any resident reported with such symptoms should be immediately isolated and – if resources allow – tested for COVID-19. Isolation modalities can vary depending on context and housing arrangements, and should be decided during the design stage of the shielding approach.

The alert mechanism and its modalities should be defined with the community, so that it is tailored to the local context, constraints (e.g. no phone network) and community preferences. One option could be that a member of each social care committee, community health workers or Red Cross Red Crescent volunteers if applicable, are designated as focal points and are alerted verbally, by phone or SMS, or any other appropriate method in case of COVID-19-like illness in a green zone. They should then ensure self-isolation procedures are followed and liaise with camp health services.

## 8 Supportive services

Multisectoral coordination among humanitarian actors operating in the camp is essential to ensure appropriate living conditions and access to basic services and social care for shielded residents.

### 8.1 Commodity distribution

Shielded residents should benefit from the commodity distributions (non-food items, food) organised within the camp as per standards (17). A designated individual or team should be identified to collect and deliver these items and deposit them at the green zone entry point. This may be a member of the household (option 1), a member of the social care committee or community health worker (options 2 and 3).

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<sup>4</sup> If possible, regular household soap or detergent should be used for cleaning first and then, after rinsing, regular household disinfectant containing 0.5% sodium hypochlorite (that is, equivalent to 5000 ppm or 1-part household bleach with 5% sodium hypochlorite to 9 parts water) should be applied (15). If needed, cleaning materials and water storage items should also be provided (buckets, mops, broom, jerrycans, etc...).

## 8.2 Health services

To the extent possible, primary health care services should be brought as close as possible to the green zones in order to limit residents moving outside the green zone. Several delivery modalities are possible depending on contexts and available resources.

One option is to deploy mobile clinics, which would visit the green zones on a regular basis or on demand and provide primary care to the residents. The number of health staff should be limited to the minimum necessary to provide quality services, and these staff should follow the IPC rules for health care described in the WHO guidance for COVID-19 (18). In order to minimise contacts, residents who require long-term drug therapy (e.g. hypertensives or antiretrovirals) should be provided with the longest-lasting prescriptions considered medically safe.

When mobile clinics or other options are absolutely not possible, primary health care should be provided at health facility level: this is however discouraged as it may negate some of the benefits of shielding. Health workers should wear appropriate protective equipment and follow the IPC rules for health care described in the WHO guidance for COVID-19 (18). To the extent possible, specific measures should be taken including separate waiting areas for residents, strict observance of social distancing at health facilities, a specific time in the day dedicated only for residents or a specific consultation room allocated at the health facility only for residents.

Secondary health care services should be accessible to residents. Residents must be separated from other patients as much as possible, for example through the implementation of separate waiting and clinical assessment areas. Inpatient admission should be avoided whenever possible and home-based treatment considered to avoid hospital exposure to COVID-19 patients. If admission is necessary, residents must not be admitted to a ward where exposure to COVID-19 patients is possible. A separate bay, ward or isolation room/s should be identified for residents with strict IPC measures enforced as per WHO guidance for COVID-19. Residents admitted with suspected COVID-19 should not be mixed with other COVID-19 patients until the diagnosis can be confirmed.

Green zone residents might be at considerable risk of mental health problems due isolation, high-risk of severe outcomes from COVID-19 etc. They should thus be offered specific mental health and psychosocial support. One possibility is to integrate these services with the provision of primary health care by the mobile clinics. Other innovative ways of delivering these services should be taken into consideration.

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