
TRIAGING CRITICAL CARE DURING COVID-19:

GLOBAL PREPAREDNESS, SOCIO-CULTURAL CONSIDERATIONS,
AND COMMUNICATION



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Acronyms

COVID-19	Corona virus disease 2019
DM	decision-making
HCP	healthcare providers
HIC	High-income countries
ICU	Intensive Care Unite
LIC	Low-income countries
LMIC	Low- and Middle-income countries
PPE	Personal Protective Equipment
RA	resource allocation
SDM	substitute decision-maker
WHO	World Health Organization

EXECUTIVE SUMMARY

As we publish this report, the possibility of COVID-19 related critical care needs outweighing resources in many parts of the world has been a concern and fact for several months. There is a lack of contextual data on how those already on, or positioned to be on, the front lines of this pandemic are experiencing the potential or actual need for triage of critical care resources in this pandemic. There is also a lack of contextual data on how patient, family, and public communications about such triage processes are being managed.

Fifty-two semi-structured interviews and 15 written responses form the basis of the study. Participants, eligible if positioned to treat or already treating patients with life-threatening COVID-19, were asked to describe for their context of healthcare delivery:

1. Their understanding and experiences of critical care triage decision-making
2. Care for COVID-19 patients with life-threatening disease triaged out of critical care pathways
3. Challenges and potential best practices for communication of critical care triage decision-making and related care plans for those triaged out of critical care to patients, families, and the wider public

COVID-19 is not over: a second and potentially additional waves are anticipated in the near future. It is important to plan for triage decision-making and associated patient care and communication should needs for life-saving interventions outweigh available resources. The results of this study, summarized below, support this planning objective.

Health Care Provider (HCP) perspectives on pandemic clinical care triage guidelines

- Many HCPs are unclear on who, if anyone, is developing critical care triage guidance or guidelines for their context of care delivery
- Triage decision committees are generally favored, though some express concern that were skeptical about their ability to support “real-time” decision-making
- HCPs displayed complex reasoning around resource allocation (RA): a majority acknowledged the relevance of utilitarian approaches (guided by assessments of who is most likely to benefit, and with a goal of maximizing benefit from limited resources), but also advocated for bedside decision-making based on in-person patient assessments and evolving pandemic conditions
- Age was a controversial consideration for critical care triage, for a number of reasons
- Economic and gender inequities, and distrust of public health information were expected to limit needs-based distribution of COVID resources in LMICs
- PPE shortages are perceived to be compromising standards of care as well as HCP safety

What is being done for patients who will not receive critical care?

- Descriptions of palliative care in many settings were limited to descriptions of symptom management.
- Psychosocial care to seriously ill and dying patients in isolation is lacking, and weighing heavily on providers
- Community-based home support for those triaged out of hospital care is limited, partly by PPE, and largely by more general resource allocation and planning. This is even in zones where part of the pandemic triage plan specifies certain individuals should receive “stay in place” home care rather than be transferred to hospital.

HCP reflections on communicating critical care triage to patients, families, and the public

- Transparent communication with patients, families, and the public about resource allocation plans and limits is valued, but many acknowledged the need for extra caution when describing these to the public, given risks higher risks for distress, anger, or panic.
- Disclosing triage criteria to the public early is perceived by some as an important strategy to help manage the flow of misinformation and dis-information, and prepare the public in case of greater strains on resources and the need for an escalation of triage. This was not seen as something being effectively done at the time of this study.
- Depending on the context, community and religious leaders as well as health and government authorities and experts can be helpful allies for building trust in triage plans

INTRODUCTION

Individuals infected by COVID-19 face varying risks of developing severe disease that can result in death. COVID-19 related complications leading to death include acute respiratory failure, shock, kidney and cardiac dysfunction, and other processes not yet fully understood (Phua et al., 2020). There are currently no proven treatments for COVID-19 patients at risk of dying (Phua et al., 2020). Current best practice to maintain or improve the likelihood of survival of such patients includes: the provision of oxygen through high-flow nasal cannula, mechanical ventilation, and corticosteroids (Phua et al., 2020). Such interventions are resource intensive. These require particular equipment, infrastructure, and anesthesia in the case of intubation. These depend on staff with the knowledge and expertise to assess the need for, apply, and monitor patient responses to interventions. The capacity to safely provide critical care to highly infectious COVID-19 patients also depends on measures to limit viral transmission to those providing care. Many settings lack the resources or political will to optimize needs-based access to critical care under non-pandemic conditions (Kavanagh, et al., 2020).

At this juncture, the possibility of COVID-19 related critical care needs outweighing resources in many parts of the world has been a concern and fact for several months. There is a lack of contextual data on how those already on, or positioned to be on, the front lines of this pandemic are experiencing the potential or actual need for triage of critical care resources in this pandemic. While significant peer-reviewed guidance exists for determining patient prioritization and optimizing survival of critically ill patients, there exists no equivalent guidance for the care of patients with life-limiting COVID-19 related disease triaged out of intensive care. There is also a lack of contextual data on how patient, family, and public communications about such triage processes are being managed.

This rapid study is organized around the following four questions:

1. For COVID-19 patients with life-threatening disease who do not receive critical care (e.g. a respirator) in the COVID-19 pandemic, what care and treatment is being provided or anticipated around the world?
2. What do those (positioned to be or already) on the front lines of this pandemic (e.g. nurses, physicians, hospital directors) hope and think can and should be done for these patients, in their context of care?
3. Will criteria and processes used to determine which patients should be prioritized for critical care, and any plans for the treatment and care of these patients, be shared with the affected population (patients, families, general population)? How so? When and by whom? What are the benefits and difficulties of doing so?

4. What social or cultural considerations need to be (or are being) taken into account for these communication strategies?

BACKGROUND AND STUDY SIGNIFICANCE

In early March 2020, the international media exploded with reports of hospital teams in Lombardy, Italy needing to make “tough choices” about which patients should be prioritized for beds and ventilation (Mounk, 2020; Privitera, 2020). New York City, France, and Spain were next to face this scenario, all despite being high-income country settings and activating surge capacity through increased beds, staff, and ICU units both inside and outside hospitals (Arie, 2020; Muoio & Eisenberg, 2020; Sills & Lombrana, 2020). The world was alerted to the importance of planning for critical care resource allocation (RA) in the face of this pandemic (Emanuel, et al., 2020).

Many national jurisdictions and clinical expert associations have developed critical care RA guidelines specific to COVID-19 (Maves et al., 2020; Vergano et al., 2020; White & Lo, 2020). A synthesis of European guidelines for pandemic triage for critical care (Joebgies & Biller-Andorno, 2020), published in early May 2020, indicates several areas of consensus including: prognosis-based prioritization; fair and transparent decision-making; regular re-evaluation of decisions; patient or legal representative involvement in treatment choice; futility as a basis to end treatment; palliative care provision to those who do not receive life-saving interventions; and psychological support to providers involved in decisions and at risk of moral distress (Joebgies & Biller-Andorno, 2020). These guidelines align with arguments and recommendations in the bioethics literature for this and other pandemics (Emanuel et al., 2020; World Health Organization [WHO], 2007).

While preparedness for pandemic critical care triage is further along in June 2020 than it was in early 2020, the feasibility and acceptability of implementing such processes remains uncertain. For instance, it is not known whether those on the front lines of the pandemic agree with guidelines or guidance in their context of practice. It is unclear who, in the eyes of healthcare providers (HCPs) positioned to implement critical RA plans, should be tasked with resource allocation decision-making, and at what level of distance from the bedside. Moreover, while there is consensus in COVID-19 triage guidelines that RA decision-making should be “transparent” (Joebgies & Biller-Andorno, 2020; WHO, 2007), these do not specify when, how, by whom, and with what considerations or cautions critical care RA might be communicated to patients, families, and the wider affected population in a region.

RA decision-making values, processes, and impacts are not universal

Although expressed as an ideal, RA decision-making is never about clinical facts or resources alone. Rather is it implicitly or explicitly values-based. It may involve consideration of a number of non-medical criteria, such as age, social status, and perceived vulnerability (however that gets defined) (Defaye et al., 2015; Kipiriri &

Norheim, 2004). These criteria have different meanings and impacts on patient assessment and prioritization in different socio-cultural, institutional, and healthcare system contexts (Hurst et al., 2006). Hence, the criteria, ethical considerations and the critical care rationing decision making processes for patients with life-threatening COVID-19 related illness in this pandemic can be expected to differ from context to context, and as cases and pressures fluctuate in specific settings.

Options and approaches depend on available resources

Massive differences in available critical care resources exist between high- and low- and middle-income countries. It is not known to what extent ethical considerations adopted to inform pandemic critical care resource allocation in HICs are relevant in settings that face chronic challenges in routine, let alone critical, healthcare. In some contexts, the pandemic creates an additional layer of difficulties faced by populations living with existing serious risks such as violence, conflict, and poverty. While primary prevention is identified as the best hope of containing morbidity rates in some regions, it is also important for any lessons that can be derived from the pandemic's initial presentation to be captured and shared to inform responses in other settings.

Palliative care

Where critical care must be rationed, some COVID-19 patients with life-threatening disease will die. Since the outset of the pandemic, many have called for increased palliative care preparedness in anticipation of higher than usual deaths (Arya et al., 2020; Costantini et al., 2020; Stern, 2020). The key message in these calls is that, while it makes sense for health systems to focus on limiting fatalities, we cannot forget to plan for those who will not survive, especially if they are triaged out of critical care. Palliative care is defined by the WHO as: “an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual” (WHO, 2020). It has been argued that this could benefit any patient, but it is central to the provision of patients in the absence of curative options.

Many countries have limited or no dedicated non-curative pathways for patient treatment (Maves et al., 2020). In many settings, limited healthcare system capacity, payment for hospitalization, clinical culture, and/or cultural preferences may normalize dying outside healthcare settings. Clinical preparedness and provision of palliative care remains at the margins even within countries, societies, and institutions where such resources do exist. Good end-of-life palliative care requires resources. A pandemic may pose new challenges to mobilizing resources for any healthcare needs, including palliative care.

Communicating triage decisions

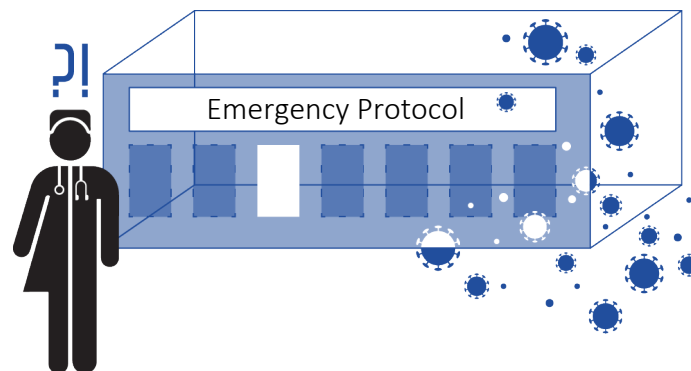
Adding to the challenges are questions of how patients, families, and the public should be informed about RA decisions. Given contextual differences, we cannot assume there exists a universal “best” approach. While transparent and inclusive decision making in RA are widely recommended, such communication is extremely delicate, especially in settings in which there is historical distrust of government or of the inter-governmental agencies leading the pandemic response, and/or historical distrust of healthcare and HCPs.

Learning from past experience

The world is not unprepared to manage pandemic ethical RA challenges. The WHO has published extensive guidance aimed at supporting ethical RA in outbreaks and pandemics (WHO, 2016; WHO, 2007). In many countries, HCPs in the public system navigate resource scarcity on a daily basis. Most countries have national outbreak and pandemic strategies that include sections on patient prioritization (see, e.g., Pandemic Influenza Working Group, 2005). All of these provide strong, thoughtfully developed frameworks that can inform decisions related to patient prioritization as a result of a COVID-19 related surge around the world. However, different outbreaks imply different clinical approaches and evidence-based risks to populations. Existing strategies and experience are invaluable, but they need to be adapted to the COVID-19 context. Furthermore, it is essential that we record and learn from the experiences of their implementation.

This study aimed to learn what individuals positioned to be on the front lines of healthcare delivery regard as ethically crucial to the care and treatment of patients who will not be prioritized for critical care during the COVID-19 pandemic. More specifically, it aims to deepen understanding of providers' perceptions about the benefits and potential difficulties of implementing patient prioritization (triage) and care plans, and the ideals and pitfalls of communicating this information with affected populations (patients, families, wider community) in specific contexts during this pandemic.

Ultimately, our objective with this rapid study is to inform discussion, debate, and strategies for the care and treatment of seriously ill patients who will not receive critical care during the pandemic, and triage communication of plans with affected populations.



STUDY OBJECTIVES

Objectives of the study are to:

- (1) To build evidence that can inform governments and healthcare organizations in their development and implementation of realistic and socially, culturally sensitive COVID-19 triage and triage communication strategies
- (2) To clarify what individuals positioned to be on the front lines of healthcare delivery regard as ethically crucial to the care and treatment of patients who will not be prioritized for critical care during the COVID-19 pandemic
- (3) To contribute to debate and discussion on the perceived benefits, difficulties, and contextual differences that need to be taken into account when sharing information about plans for the triage of seriously ill patients during the pandemic with affected populations

In-going hypotheses

- (1) Many countries have priority setting guidelines for critical healthcare allocation in the event of a pandemic public health emergency
- (2) What constitutes practically feasible and un/acceptable care and treatment for seriously ill patients that are triaged out of critical care varies from context to context
- (3) Transparent discussion and preparedness for managing patients who are triaged out of critical care in public health emergencies is limited
- (4) Unique pandemics require adjustments to pre-existing criteria for patient prioritization strategies, care and treatment plans for seriously ill patients who will not be prioritized for care, and the public communication strategies related to such plans
- (5) Best practices for communication with affected populations about critical care resource allocation in the event of a pandemic are not well established, and contingent on context
- (6) It is not yet well understood for this unique pandemic why or how transparent communication with populations about critical care triage criteria and care plans for seriously ill patients is or is not planned in specific locales, or what benefits and difficulties may be anticipated linked to such communication.

METHODS

Overview

This rapid qualitative study consisted of **52 in-depth semi-structured interviews** and **15 written responses** to interview questions via an online Qualtrics platform, with individuals involved or positioned to be involved in the implementation of critical care resource allocation and related delivery of care to COVID-19 patients with life-threatening disease during the first wave of the COVID-19 pandemic. Data collection occurred over the course of 3.5 weeks, in April 2020.

Participants were asked the following key questions:

- Is there a pandemic-specific plan for the allocation of critical care to COVID-19 patients in their workplace?
- What care could and should be provided for patients triaged out of critical care?
- Who should have the authority to make critical care triage decisions when the system is overwhelmed?
- Should triage criteria and plans be shared transparently with patients and families as well as with the general population?
- What are potential difficulties of sharing such triage criteria guidelines and plans?

The interview guide and tool for the collection of written responses can be found in Appendix 1 & Appendix 2 respectively. Participants were provided with the consent form ahead of the interview, with some receiving the interview questions in advance of the interview upon request. Consent was embedded within the Qualtrics online written response platform for those opting to participate in the study through a written response.

Sampling and recruitment

For maximal efficiency and specificity, purposive and snowball techniques were employed to identify potential participants drawing from the study team's global networks in healthcare delivery. The primary inclusion criterion was actual or potential involvement in the implementation of triage guidelines during the current COVID-19 pandemic. Secondary inclusion criteria involved a willingness to reflect on care and treatment plans and on possible best practices in their clinical care setting for seriously ill patients who are ineligible for critical care due to healthcare resource shortages during the pandemic. Maximal diversity in participants' position and expertise was sought in order to gain perspectives from individuals

who routinely face resource shortages through to those for whom such experiences are less common. With diversity in mind, we simultaneously sought to gain balanced representation between WHO regions, gender, High-, Low- and Middle-Income countries, degrees of experience, and professional backgrounds of participants.

For those for whom scheduling an interview was difficult or not the preferred choice, an online option was made available through the Qualtrics online survey platform. Where relevant in this report, responses specific to interview data is identified as such. In all other instances, online data is incorporated and considered alongside interview data.

Interview procedure

Interviews were conducted in English, French and Italian, based on the participant's preference. These were conducted by phone or Zoom and led or supervised by two co-investigators (EN and PS), both experienced qualitative researchers with extensive interview-based research experience. **The interviews averaged 47 minutes in duration** and were audio-recorded with the participant's permission in all but two cases.

Interviewers produced detailed notes in English on the content of interviews. Trainees, fluent in the language of the interview, worked with the audio to produce interview summary tables in English (Appendix 3) capturing key information, including verbatim quotes. One co-investigator was assigned to each interview and verified the accuracy and completeness of the summary table's content, including the accuracy of translations, through comparison to the original interview audio.

Analysis

Findings presented in this report are based on a descriptive thematic analytic approach. Analysis drew on the content of interview summary tables, collated into a data extraction spreadsheet, and, for written responses, drew on a Qualtrics-generated organization of responses by question. Data collection and analysis were concurrent, and involved constant comparison of findings across sources, team-based, and took three weeks. The project lead worked in parallel with 1-2 co-investigators to analyze the content of each column in the interview data extraction table.

Consensus on the key findings from each column was established through weekly meetings with all co-investigators and trainees where any discrepancies in interpretation of participant statements and their significance were discussed and resolved. For written responses, two co-investigators (SdL and PS) worked in parallel to reach consensus on the key themes in this data. They observed no significant differences between the content and implications for practice of interview versus written responses, so that these findings were layered into the findings from the interviews. Finally, all co-investigators reviewed key findings, and discussed implications for practice.

Ethics

This study obtained ethics approval (approval number 115716) from the Western University Research Ethics Committee (London, Canada). Interview participants provided written or verbal consent to interviews. Survey participants consented to the use of their anonymized survey data at the outset and upon submission of the survey.

FINDINGS

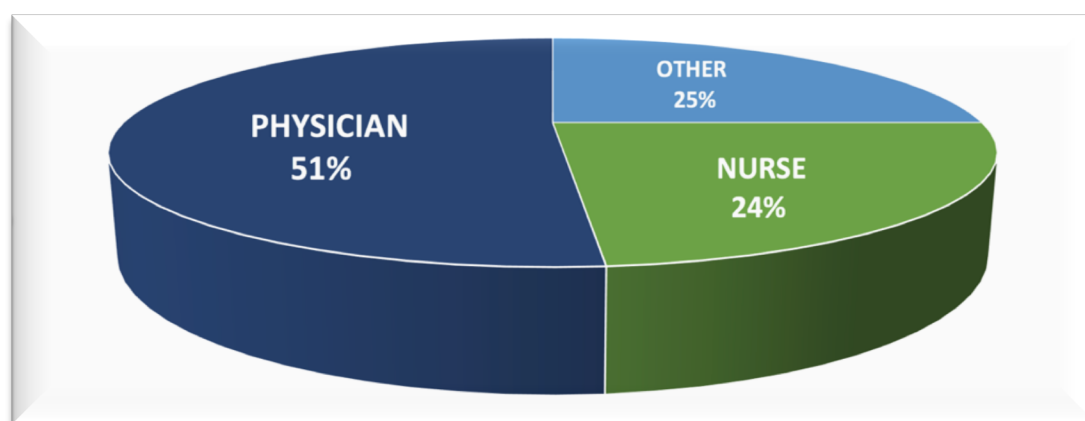
Sample description

A total of 67 participants contributed to study findings. These included 52 interview participants and 15 survey participants. Participants included physicians, nurses, mental health professionals, paramedics, an ethicist, a social worker, and an occupational therapist (see Figure 1). Several participants reported specializations in one or more areas, including palliative care (N=8), intensive care (N=1), family medicine (N=13), and infectious diseases (N=5). A breakdown of participants by WHO regions is found in Table 1.

Table 1: Distribution of participants by WHO region

WHO region	# of participants
Africa	15
Americas	25
South-East Asia	2
Europe	18
Eastern Mediterranean	3
Western Pacific	4
Total	67

Figure 1: Breakdown of Health Professions among respondents

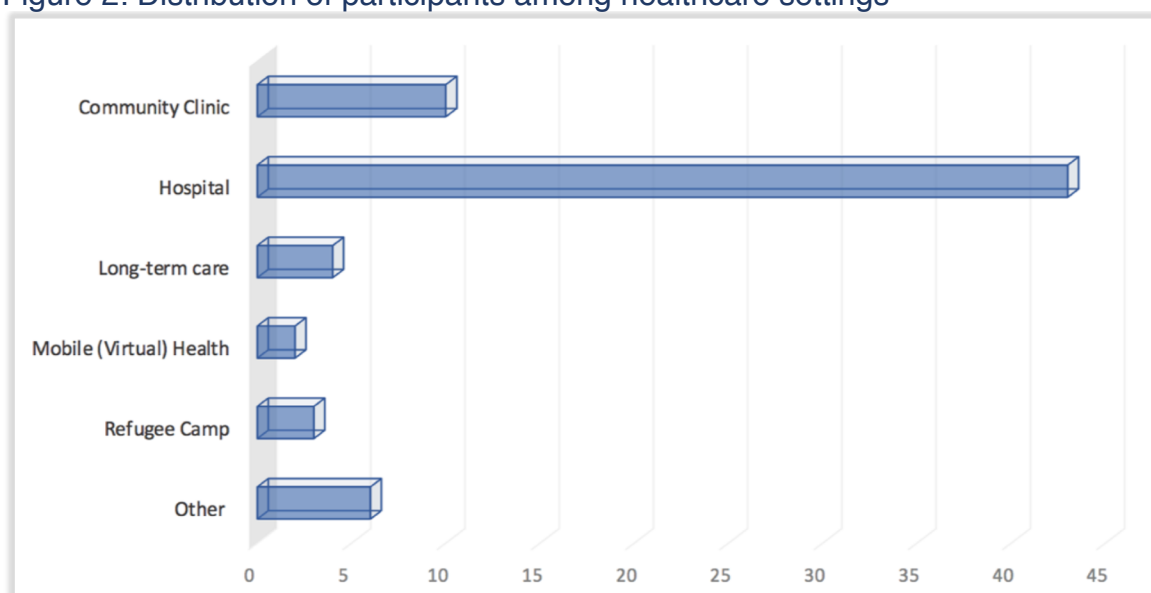


The majority (14 of 15) online respondents were from HICs, with the result that the sample combining interview and online responses includes an over-representation of individuals from HICs. Forty-five participants (67%) were from HICs, and 22 were from LMICs. The sample includes 25 women and 42 men. A majority of participants identified themselves as physicians (N=35) or nurses (N=16). The remaining participants included three paramedics, a hospital director, a clinical ethicist, a midwife, a psychologist and psychiatrist, two researchers, a social worker and a public health specialist in position to consult on COVID-19 RA. Participants reported a range of years of experience, with the majority (N=42) reporting their experience as being in the range of 11 to 20 years.

All participants reported having some experience with limited resource allocation decisions. Unsurprisingly, whereas respondents from HICs had “some” experience in scarce RA decision-making, all respondents from LMICs reported being “experienced” (N=1), “very experienced” (N=20), or “expert” (N=1) in scarce RA decision-making.

In total, 43 participants were working with COVID-19 patients in hospital or in a dedicated COVID-19 treatment center at the time of the interview. The remaining participants were delivering or in a position to deliver care to COVID-19 patients in a variety of settings, including: community clinics, refugee camps, long-term care homes, or through mobile (virtual) health.

Figure 2: Distribution of participants among healthcare settings



All 31 interview participants from HICs completed their interviews with the pandemic active in their country. Twenty-two of those HIC participants defined themselves as being in, or having just surpassed the peak of the pandemic, with the nine others reporting themselves as being in the preparedness stage for a potential rapid rise in cases. In LMICs, 12 of 21 participants were witnessing a rise of cases in their home

country at the time of the interview, with uncertainty about how close or far they might be from a peak. Two of the 21 LMIC participants believed the first wave of the pandemic had peaked for their context. Seven participants from LICs (in Africa and South-East Asia regions) expected cases in their respective countries but reported zero cases to date.

A note on key differences in healthcare systems and response capacity

Prior to outlining key findings from this rapid qualitative study, it is important to stress the vast differences between participants' settings of care provision. Key differences that form the backdrop to care of the critically ill in this pandemic worldwide include:

- Some countries have as few as four ICU beds, the highest intensity of care for respiratory distress will be the provision of oxygen. HICs in our sample have several hospitals with dozens and sometimes even hundreds of ICU beds, and infrastructure to transport patients to hospitals with capacity when one is full.
- The number of HCPs per capita varies enormously across the world. Some countries face dramatic healthcare human resources shortages. Others, such as France and Canada have the benefit of being able to call on reinforcements for human resources: part-time and retired staff, humanitarian aid organizations, or the military.
- While many HICs have struggled to outfit their HCPs with adequate PPE, especially in the first weeks of the pandemic, in many LICs the PPE situation is dire. Many HCPs at the time of the interview had zero PPE available to them for free and could not readily purchase quality PPE.
- In some LICs, there exist few if any guarantees for the families of HCPs if the provider perishes on the job. In contexts of limited PPE, this is exacerbating HCPs' fear of infection.

In the following section, key findings from LICs are at times described separately to capture vivid differences in resources available to manage COVID-19 critical care needs in those settings.



1. COVID triage of critical care: “Is there a plan in your workplace?”

1.1 “It is different”: The importance of being prepared

At the core of the present study is the question of what could and should be done for critically ill COVID-19 patients, should the need for critical care outweigh available resources. Such was the recent or current situation amongst some participants, at the time of their interview. For others, this was regarded as a possibility in the near future. While imagining critical care needs outweighing resources was disturbing, many recognized the importance of preparing for such a “worse-case” ethics scenario.

“Sometimes I like to sleep and [wish I could] wake up next November or December after this but it's impossible. I'm very concerned about this. It's like a life insurance; we made a life insurance and we are hoping not to use this. So, this kind of policy we are trying to establish ... I hope that we just write down this policy [and] put it in a drawer and never have to use it. But it's important to have this, to anticipate the cost. if the cost occurs, it's very important for us to anticipate this.” (P21, MIC)

“We're going to run out of space. We're going to not do things by moral practice, and we're going to just have to get through them. So, our standards of what we had before are not going to be our standards.” (P12, HIC)

“I think you also have to be practical. We have people that are in a pandemic; it is different. Obviously, you wouldn't put a 92-year-old on a ventilator if they are profoundly ill with COVID-19. So, there's got to be some kind of rules ... It's not a kind thing to do to a profoundly sick body and a profoundly sick person to prolong their death in intensive care ... I think you just have to make a practical decision. Because we all know the person is tremendously ill; they're not going to get better, and we have a publicly funded system. You can't just use an ICU bed for weeks on somebody who, you know, is going to die because the family wants it.” (P53, HIC)

Twenty-nine of 67 (43%) of participants reported their workplace had pandemic-specific guidelines in place to support critical care triage and care decision-making. Fifty-seven percent (57% or 38 of 67) participants, however, knew of no pandemic-specific guidelines in their workplace.

The majority of participants, regardless of the existence of pandemic-specific guidelines or not, reported that current practice mimicked pre-pandemic decision-making processes. Patients with potentially life-threatening illness are assessed for potential critical care needs. In HICs, this assessment is done in hospitals (medical wards,

emergency), but also outside hospital (by paramedics, and in long-term care facilities). In LICs, respondents indicated it is done in designated hospitals and temporary COVID-19 treatment centers.

1.2 Many agree with a limited utilitarian approach to resource allocation

Most participants in HICs did expect, and expressed agreement with application of utilitarian reasoning should needs overwhelm care resources. A utilitarian approach in healthcare aims to maximize benefits. It guides RA to those who are judged will benefit most, and is often equated with lives saved (WHO, 2007). A minority had heard this was the plan in their workplace, and others assumed this would be the plan. In their understanding, this plan involved two key changes to existing critical care triage: (1) more patients than under non-pandemic circumstances would be denied access to intensive care; (2) priority would be determined based on who was most likely to benefit, with age and co-morbidities being key—but not universally accepted/applied— criteria for assessing potential to benefit.

A number cited they were prepared for this to some extent, since in resource constrained systems it was something they did all the time:

“We’ve been making these ethical decisions every day, for years. So, I think it’s something we are used to. So [if it became necessary], it would consist in moving the cursor.” (P36, HIC)

1.3 Adapted practice: Limited patient and family involvement in goals of care decision-making

Patient and family involvement in goals of care decision-making was emphasized as crucial by some participants:

"We clearly have to have communication with the family, and family should be taken into this conversation" (P1, MIC)

“It is imperative that any decision-making involve the patient. Otherwise it is no longer medicine.” (P37, HIC)

“We are a small group of doctors and we all know the patients, we all know the cases ‘cause now it’s few, so we know the cases. We all have to make consensus about that decision to take in everything, in the ventilation, in the treatment, if they need antibiotics, which antibiotics we’re going to give them. It’s never a one single person decision... That decision is with the family and us. We never let the family outside this kind of decisions.” (P41, MIC)

Many participants, however, underlined the ideal of involving family in evolving goals of care discussion was just that under existing conditions: an ideal. Patients who arrive at hospital with COVID are sometimes alone. Unless there is some written record of their wishes (e.g. no intubation), teams are not able to consult with an accompanying substitute decision-maker (SDM) as they normally would. No participant cited this as being something that particularly concerned them, and at least one HIC participant felt families understood this situation.

“Everybody knew hospitals were making choices, so families knew what was going to happen. [...] ...The fact they had to be sent to the ER without their family or one of us nurses made it impossible to mediate the communication” (P18, HIC)

A few participants stated they did not anticipate or encourage much dialogue regarding treatment decisions with family or patients. Cited reasons for restricted dialogue included limited resources that affected options, and the likelihood patients would accept what the healthcare provider said:

“They have to take the decision that we made, whether they like it or not, which is unfair of course, but we have no other choice” (P9, LIC)

“People don’t know what is available. They’re happy to be taken in. They don’t say they want this and that. And those who need resuscitation are not in a position to ask for things. Families might threaten a lawsuit; but, when you are in distress, the few people around you who are taking care of you, they are your only and last ally” (P36, HIC)

1.4 Critical care to COVID-19 patients in low-income country settings

While access to healthcare in general is limited and highly unequal across the population in most LICs, almost all LIC settings were preparing for some provision of care to critically ill COVID-19 patients. Measures included setting up isolation centres, many of which included at least one ICU bed. One large refugee setting had set up a specialized COVID isolation centre that could accommodate up to 10 critically ill patients with oxygen masks and nursing care. The participant working in that setting anticipated being able to provide care with its existing staff to patients in case of need, though the main plan was for any patients with confirmed COVID-19 to be transferred to the capital and its better equipped isolation centre. One of the hospitals in another part of the world and also in a refugee camp, had set up a COVID-treatment centre in a large tent, but was still awaiting its first patients at the time of the interview. Its director worried about the lack of ventilators and thus limited ability to manage respiratory distress, but did hope to secure more oxygen, which was a resource their nursing staff used on a regular basis. Resources in general were reported to be limited and needed in all LIC settings. Needs mentioned included: adequately trained staff to manage critical care delivery, ventilators, PPE, and oxygen cylinders (in place of centralized oxygen distribution systems that are mainstays in HICs).

Healthcare providers were, at least in some countries, receiving information online, in preparation for the pandemic. Provision of online Zoom courses or webinars by organizations such as the WHO or other international organizations were important and welcomed. An advantage of such remote delivery of training materials noted by one clinician was that such an

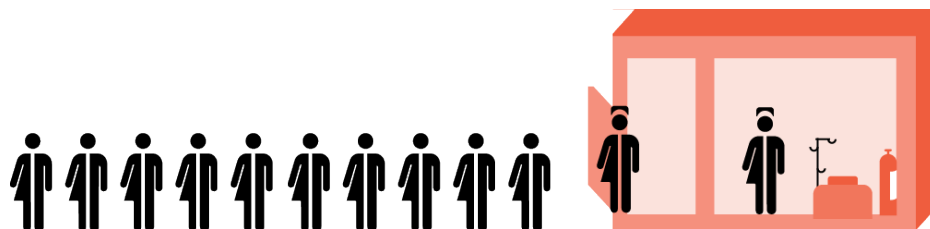
approach would support more standardization in the provision of care for what was a novel disease across their country.

Some LIC locations were beginning to receive international support in the form of equipment and personnel from China and Cuba to expand their COVID-19 testing and treatment capacity, including their critical care capacity. The hope was that such international aid would ensure that, at least in the capital, individuals could have access to the highest intensity of care, at no cost, if it was needed and appropriate.

In two settings, resources were completely lacking to provide critical care to COVID-19 patients. A hospital in a war-torn region had set up beds in an old house to isolate patients with COVID-19. There was no plan known to the participant beyond isolation of the patients. In another region affected by conflict, one healthcare facility had several individuals with critical care experience; it planned to remain restricted to treating only trauma patients. At least one participant expressed concern and frustration at the situation they faced in terms of having patients to treat but having neither the guidelines from their national government on what was acceptable and expected, nor equipment for treatment. In this participant's experience fighting past infectious disease outbreaks, clinicians would be held to account for deviations from government protocols. The problem was, no care guidelines were ready yet, and even when these were, the participant doubted they would arrive with the materials needed to put them into action.

Again and again, participants from LICs expressed their hope that cases would stay very low within their country's borders. Existing ICU beds, ranging from 4 in one country to 50 in another in our sample, were almost if not always fully occupied outside the pandemic, and participants felt it was unlikely existing ICU facilities could be prioritized for COVID-19 patients. Participants were acutely aware that their healthcare facilities would very quickly get overrun, should cases multiply. The only way many could see avoiding critical care shortages was to limit infections: through prevention, education, distancing, handwashing, and, for one, prayer.

“We are not really expecting a suspected case. So, pray. We ask the Muslims and also the Christians to pray at the same time.” (P6, LIC)



2. Critical care triage concerns and contestations

Concerns pertaining to the impacts of COVID-19 on access to scarce resources, PPE, and care provision were expressed globally. There was a diversity of concerns, many of which were connected to cultural perceptions and values and, in the case of LICs, systemic resource shortages and inequities that influenced the priorities expressed by participants.

2.1 Personal protective equipment shortages – Impacts on patients, family, and healthcare providers

"It's really difficult because we're being told conflicting things in terms of being extra cautious, and taking necessary precautions to protect ourselves...but at the same time we're being told to be very conservative in our use of equipment because we're obviously running a little bit low on some of the protective gear that we're being asked to use, so it's kind of a tough spot to be in. Like, are we going with 'Protect yourself at all costs as a provider of care'? Or, are we going with: 'Well, we need to protect our resources and not overuse them for useless calls'? So it's a little bit tough." (P10, HIC)

"We are officially given PPEs only if we are certain that we have a patient with suspect [COVID] symptoms. You understand that if I arrive at the patient's house and observe there the symptoms, I don't have the PPE. We are given surgical masks for us and for patients and families. N95 masks I have them because they were gifted to me from patients. But they are a few so we have to keep them because we don't know what will happen in the future." (P17, HIC)

Several participants from HICs emphasized the impacts of PPE shortages on standard care plans for critically ill COVID-19 patients. These impacts included: less frequent visits to patients by nurses and doctors; paramedics substituting acute life-saving interventions such as cardio-pulmonary resuscitation and advanced airway management with non-aerosolizing, less effective interventions for suspected COVID-19 positive patients; restrictions on family visits for the patient.

Limited PPE in any context of COVID-19 patient care implies risks to the safety of the HCPs. In LICs, participants expressed serious concerns about their own and colleagues' limited access to PPE. Uppermost in participants' minds seemed to be implications of those shortages for their own and colleagues' personal safety, as well as the risk of infection for family:

"I can't go back to my home. What about my family? What about my children? What about my mother, my father?" (P14, LIC)

One participant said they would sleep at the treatment centre, rather than risk contaminating their family and those on the public bus they used to go back and forth from the COVID-19 treatment centre. No sleeping accommodations existed for HCPs at this major centre in the country, but the participant did not see any other real option. The same participant explained their current strategy for PPE was to wear extra trousers over their uniform. Asked about the risk they ran for themselves, this healthcare provider with decades of experience said in a resigned but committed voice: *“I am a soldier. I am going to do anything for my country.”* (P14)

Several participants from LICs commented on what they regarded as inevitable impacts on patient care in their workplace, as a result of the lack of PPE for HCPs. One participant described a dilapidated COVID-19 isolation centre, where the patient was simply locked up and apparently not even provided food. In this same country context, HCPs were being asked to purchase their own PPE. The PPE available was not cheap, and the quality dubious: *“What the government gives you, if you use it you will be infected within 48 hours if you have been in contact.”* (P30) The participant was certain many colleagues would not show up for work under current conditions, with a lack of PPE, but also with knowledge based on prior outbreaks and government responses that there would be no compensation to families of healthcare workers if they died:

“The apathy level is so high among doctors. Nobody wants to take the risk. That's the truth.” (P30, LIC)

The participant did not necessarily see this as the government's fault, but rather the reality of a health system with limited resources:

“If you are from this side of the world, you know that the majority of the things people do, people do for themselves. The government doesn't provide anything for anybody. They don't. They can't.” (P30, LIC)

While this participant had a lot of experience working in tuberculosis outbreaks, they did not feel psychologically prepared for COVID-19, especially because of the lack of PPE: *“It's a fight we are going to have to fight without the basics.”* (P30, LIC)



In another LIC setting, a participant burst into laughter more than once when as they commented on plans for the care of COVID-19 patients at their hospital. There was yet to be a COVID-19 case in the country. The local hospital had prepared a small house, isolated from the hospital, with a handful of beds and nothing else so far, for potential COVID-19 patients. With not even protective masks, this healthcare provider noted that they would probably obtain oxygen for patients with respiratory distress, but as described what was possible, they kept saying “*But what **can** we do for patients without equipment?*” (P48, LIC) The only personal protective strategy to which they had access was hand washing.

Speaking from one protracted conflict context, a participant hypothesized that maybe they had not heard of a plan for the care of critically ill COVID-19 patients because there was such a total lack of critical resources to provide such care, including PPE.

In high-income countries, a number of the hospitals in which participants worked had placed complete bans on family visits to medical wards, and restrictions on family visits to the ICU. These limitations on what, under non-pandemic circumstances, might be 24/7 access to patients in many hospitals, were framed by several participants as linked to early and sometimes ongoing shortages in PPE.

“Some people suggested that if we're to get to such a situation, there should be some area, maybe for example, patients who have critical care where people could wear some kind of protective equipment, and at least just be able to, you know, provide some form of support. As I explained, one of our challenges is, we have shortage of some of that equipment, so definitely, the family support that we've always relied on may not be able to ... [be feasible] for patients that are very ill.” (P22, LIC)

Also noted were surplus human resources needed and lacking to guide family in the safe donning and doffing of protective equipment. In low-income countries, all of which faced staff and PPE equipment shortages, family visits were not allowed in COVID-19 treatment centres. Whether or not limited PPE informed such policies is unclear.

At least one participant expressed frustration that they, as a community-based provider going into the homes of individuals who had called emergency services for medical care, should ration their limited PPE:

“We are being told to ration our supplies of PPE, which is ridiculous especially considering, you know half of all cases are now community transmission, we have no idea who has it, who doesn't really, being told to ration our PPE, like our masks is ridiculous” (P8, HIC)

2.2 Age not a universally resonant criteria for scarce critical care RA

“Moving the cursor,” as one participant put it, and restricting a greater percentage of people for consideration for critical care based on such things as age and co-morbidities was regarded

by the majority in HICs as feasible, if unfortunate, and the fairest way to proceed in this public health emergency. Some participants in both high, and LICs, however, expressed reservations about age-based criteria. Underlying these reservations included cultural norms and values, concerns such practices would be discriminatory, and arguments such criteria were medically illogical.

2.2.1 “Old is gold”

“In my native country, they don't have that concept of somebody get old they don't have a chance. They don't have that concept yet like somebody here. We live in a family structure where we care for our parents or grandparents. We live in the same house, we don't send them to like a nursing home or anything like that. We don't separate them, we don't say that they have a lesser chance [at survival] than a young kid. That concept is not there so sometimes we care for them more than our own, even though we are younger... In fact, in our culture, younger people, for example kids, will have to be more willing to sacrifice their life to save their dads or grandparents.”

I: So, have you seen that happen?

P: All the time. All the time.” (P4, MIC)

This participant, head of a hospital in a LIC, intended to implement access to care on a first-come first-served basis, “without discrimination” and “no matter how old the person is.” They nevertheless expected age to play a role in prioritization, but in the opposite way it would in countries of Europe and North America: “if there is the son and dad, both are sick, [it] is very much possible that son will give the respirator to the dad, it is possible.” (P4, MIC)

Another participant from another LIC similarly highlighted the cultural and contextual specificity of framing age-based limitations to care in a public health emergency as logical and ethical. This participant had worked as a clinician in Europe. They had been struck by the number of people of advanced age in Europe, and understood that in that context, many elderly were ready to die and opted out of life-saving interventions in case of critical illness. This was not the case in the participant’s sub-Saharan African home context. All patients expected the maximum possible intensity of care, in their experience. While this could be a norm in itself, the participant stressed the low numbers of individuals over the age of 65 in their country. Making a rule excluding the

elderly from access to care was both unnecessary, and socially unacceptable: “*Old is gold*” (P15, LIC). Elders hold a high place of respect in this setting: “*People rely on them for blessings and advice.*”

Also, from sub-Saharan Africa, another participant said they understood and agreed with the moral logic of prioritizing those medically and clinically most likely to benefit from scarce resources. Still, they acknowledged while logical, such resource allocation would be “*very hard*” to implement in reality if, for example, one’s elderly teacher walked in needing critical care.

2.2.2 Allocation based on age or co-morbidities is too rigid

Some HIC participants raised concerns about age-based criteria or patient co-morbidities being used in lieu of case by case assessment. They worried these could very inaccurately assess which patient was more likely to benefit.

“There’s a little bit of age, but there it’s very ... it’s not always a good criterion, because there are people at 60 who are already very limited in their lives and people at 80, 85 who are quite independent.” (P38, HIC)

“Age doesn’t tell you much unless they’re 95.” (P31, HIC)

“Obviously, a 60-year-old should give their spot up to a 20-year-old, but should they give it up to a 58-year-old who has other significant comorbidities? I think it’s got to be kind of an individual thing.” (P53, HIC)

For participant 26, age-based criteria made sense, as did ensuring resources were used as effectively as possible to benefit the highest number of people without prejudice. Their concern was that the use of pandemic critical triage guidelines would lead to some hospital teams failing to consider other factors. These factors, including a patient’s lifestyle, personality, and commitment to comorbidity management were as important as age and co-morbidities in predicting critical care outcomes.

“Often when somebody is extremely ill and they first meet the hospitalist, they don’t look anything like themselves ... if you just see [the] circumstances written on a piece of paper, and you don’t know that person, you can make a lot of assumptions about what their general health is like, because they look so profoundly ill. And on paper they sound like they’re never going to make it. So, I think it’s really important that the team at the hospital is able to talk to the team in the community to get a really good understanding of what the baseline health of this person is like, so that there can be a good decision about what the chances of this person surviving are, and not writing them off because they do have some comorbidities.” (P26, HIC)

Participant 26 further worried age-based criteria might reinforce ageism. If framed as obvious in all cases, such criteria could reinforce an idea that individuals above 65 or 70 are disposable. This same participant was adamant that older adults should not be denied *“their basic human right to critical care”*. They pointed out that many over that age are still very actively contributing to society, and that some older individuals have served the country in crucial ways, such as in major wars. The participant felt such past and current contributions must also be considered.

One participant was adamant he would refuse to follow critical care triage guidelines if these ask him to deny critical care to some based on “some kind of algorithm” that looked at age and co-morbidities, and did not leave space for clinicians to assess patients on a case-by-case basis:

“Nobody will tell me to, to put an 80-year old in good shape to a regular floor with morphine, because he is not in the observations of that government, or algorithm that should be followed. I am going to put a tube in his throat and try to save him even though he is not in the algorithm.”
(P31, HIC)

This participant was ready to go against guidelines if imposed: *“even though if he's not in the criteria, I will do it.”*

Another HIC participant questioned the logic of using age to exclude some from prioritization for ICU care, given it was older patients who faced higher risks of dying from COVID-19:

“With this disease, this virus, we're not seeing a huge group of younger people. You're seeing a huge group of younger people being affected with very mild to moderate symptoms as opposed to the people that are dying of comorbidities, diabetes, things like that coupled with their age. So I think it would be really hard to triage and say, you know, you're not as deserving because you're 70 and above as opposed to somebody that's like 40 and above because that's just not the group that we're seeing right now that's requiring more resources and dying.” (P12, HIC)

One participant critiqued the ethics of applying guidelines before they became absolutely necessary. That participant worried they might be asked to preventatively deny resources to patients above a certain age, on the basis that someone younger may need those resources soon. In this conceptualization of age-based triage criteria, the participant could not imagine themselves being compliant:

“If I have a ventilator left and I have a 74 year-old to intubate and to put some ventilators and he has no co-morbidities, I will do it, even though if

he's not on the criteria, I will do it, and I am pretty sure about it, we will find a way, there's always a way" (P31, HIC)

Such responses do complicate assumptions that age-based triage criteria are medically logical and universally ethical.

2.3 No such thing as fair resource allocation or access in LICs

As noted in 1.3, in most LICs, access to critical care is extremely limited. No one working in a low- or middle- income context thought all patients who needed it would be able to access critical care. Universal access to critical care was not the norm in underfunded health systems before the pandemic, and it would not change because of the pandemic.

Three factors beyond limitations inherent to underfunded health systems were identified by participants from LICs as likely to limit needs-based distribution of COVID-19 related critical care: economic inequalities, gender inequalities, and distrust of public health information.

2.3.1 Economic inequities

Several participants offered reflections on the way economic inequalities would likely be reflected in access to critical care during the pandemic. Most people in LICs do not have universal health coverage, and cannot afford the costs of normal hospitalization, let alone intensive care. Several participants from LICs expressed their conviction that little, if any, ICU care would be available to COVID-19 patients, unless they belonged to a socially and economically privileged minority. If there was a ventilator in the country, and a government minister needed it, they would get it. If someone important needed to be airlifted to the capital for care, the government would provide a plan. The same would not be done for the ordinary citizen. With lockdown measures including halts to public transit, only the wealthy could get themselves to hospitals potentially. Individuals living outside the capital would face serious challenges accessing critical care only available in hospitals in the capital, or in some cases, in a few urban centres.

It should be noted that a couple of participants in HICs lacking universal healthcare also expected patients in socially privileged positions to demand and receive privileged access to limited critical care resources based on ability to pay and connections.

2.3.2 Gender

One participant commented that women would likely be harder hit by COVID-19, and be in a more advanced stage of disease, if they presented to hospital at all. In this participant's context of care, a refugee camp, gender inequalities were entrenched. Women had more responsibilities in the home than men, which limited their time and sense of urgency to seek care for ailments as compared to men in the same neighborhoods. Women tended to live with discomfort longer according to this participant, which could mean they would not think to get

tested for COVID-19 or present to hospital until they were far advanced in the disease. This would reduce their outcomes, most likely.

“They will not make any decision about it you know it just happened that somehow or some way the woman will be more vulnerable...Sicker because she's not probably telling about her problem, she would be feeling shy or she's feeling she's busy, or while sick she's trying to take care of the kids or making food for husband who is probably less sick. It's just automatic, there is no explanation for it. She would say that I'm fine, don't worry about me, take care of your dad or something like that. She'll probably put everybody in front of her.” (P4, MIC)

Also, in this context of care, the participant noted men would be prioritized over women for limited critical care resources in the hospital:

“Nobody will choose the man, it will just happen somehow. Somehow, it'll happen, even the woman will probably say, ‘I don't need it I'm doing fine.’” (P4, MIC)

The participant felt such prioritization of men over women was inevitable, entrenched in millennia of naturalized gender inequities:

“It's not a conscious decision they will make, it will just happen.... it is the history of mankind isn't it? People don't usually question this thing because it's been thousands of years going on and it's not going to change honestly. Even in the US it's not changing, in Canada it's not changing. I don't want to go into politics, but this is the fact of life.” (P4, MIC)

2.3.3. Distrust

Several participants from sub-Saharan Africa commented that distrust related to COVID-19 could limit health-seeking, and in this way limit a rational distribution of critical care to those who need it most.

“Sometimes people are afraid to go to the hospital, so they decide to take the patient home...some people try to say because of this virus, if you go to a city centre you will die.” (P5, LIC)

“This was seen with Ebola, the people sometimes thought we were political accomplices, with whites, with this and that, and so this leads to a breach of trust between the ill and the doctor. Today, even if there is someone who becomes ill in the neighbourhood, in the community, you would still see the hospitals have a shortage of patients because they, they avoid [the hospitals], so yes, there is a breach of trust.” (P15, LIC)

This distrust is contextual. It connects to landscapes of historical, social and political tension that exceed the pandemic landscape. Distrust of public health communications about COVID-19 and local governments, combined with suspicion of research led by foreigners, enabled rumors in at least one LIC that COVID-19 was a disease of the rich only, and that healthcare workers in COVID-19 centres were wearing infected masks or even actively aiming to infect and kill those who came to stay in treatment centres. In countries that had survived Ebola outbreaks, people may have witnessed or lived first-hand the social and economic impacts of being taken into an isolation centre, and sometimes death. Participants from separate sides of the African continent expressed concerns individuals afraid of being isolated or dying away from family would avoid presenting to healthcare centres with symptoms. Social media is a powerful force for feeding distrust and countering it in many LMICs. Some sub-Saharan African countries are working hard with national media to share with the wide public what is hoped to be reassuring images and information about treatment centres, so as to reduce fears and rumors related to isolation.

2.4 Avoiding shortages (in HICs)

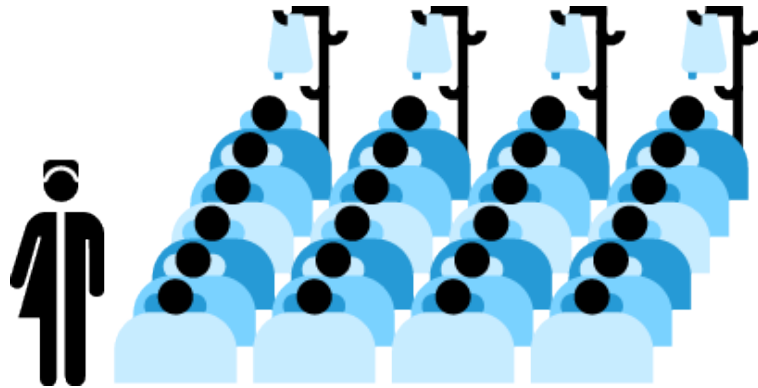
A few participants in HICs appeared to reject the possibility that some critically ill patients might need to be denied critical care because of a lack of resources. These individuals found the idea of triaging patients out of active treatment unacceptable even as a *last resort*. ICU beds could and had been doubled or increased even further. Many hospitals had successfully reorganized their units so that almost every bed became a COVID-19 bed. Students and retired staff had been recruited to sometimes nearly double the staff available for work. Unused former hospitals were reconverted to COVID-19 treatment centres, or such centres built from scratch. Collaborations with other health sectors (public/private) were created to take on overflow and attend to patients who tested negative for COVID-19 but needed immediate healthcare. Medically equipped TGV trains in Europe were used for the safe transfer of some stable but critically ill patients to hospitals with ICU space in other regions of countries, and even across national borders in some cases. The message from those who described such measures was that there existed no logical or ethical reason to refuse hospital admission to critically ill patients who sought hospitalization and might benefit. They questioned the assumed 'good' of planning for critical care RA. Indeed, the very discussion of 'how to' plan for resource shortages in HICs was critiqued by some as potentially more political and normative than inevitable.



2.4.1 Two HIC strategies to avoid shortages

In HIC settings where participants had experienced dramatically expanded demands for critical care due to the pandemic, two approaches were described as successful responses to this pressure. Neither involved denying critical care to patients. HCPs acknowledged triage was occurring for ICU beds, but this triage was not resulting in denied admission to ICU. Instead, what they were experiencing and described as unique to COVID-19 was the need to sometimes transfer a recently stabilized ICU patient to a step-down unit a day or two before such a transfer would normally happen, to make room for another patient who was in urgent need of intensive care. In some cases, ‘early departures’ patients from the ICU would end up back in ICU. This possibly was because they had been transferred out too early, in participants’ perspective, but this was regarded as worthwhile to save an additional life.

The second approach hinged on planning for the possibility that every COVID-19 patient in need of hospitalization could eventually need ICU. Admissions of non-critical COVID patients to particular hospitals were stopped when the hospital reached a point where they could not provide an ICU bed to the patient should they deteriorate. The exception to this “rule” was if a patient was one who clearly would not survive ICU and would benefit from palliative care. Hospitals unable to “back up” their admission of non-critical patients with an ICU bed in case of deterioration would refuse the patient and help identify another hospital in the city or country that could provide this back up. Such planning and coordination with other hospitals was cited as a successful strategy that, at least in one region of one European country, had helped avoid the terrible scenario of having two or more patients in need of the same critical care resources even at the pandemic’s peak.



3. Reflections on guidelines and committees

At the time of the interviews, many had not faced a need to allocate limited critical care resources. Many regarded national, sub-national, and hospital committees—whether imagined or already in place—as useful. Others did not. Below is a summary of participants’ understandings and perceptions of the value and limitations of committees that might support limited critical care resource allocation decision-making during this pandemic.

3.1 Range of committees and ideal composition

Several participants described emerging or existing committees positioned to guide critical care resource allocation decisions, should the need arise. These included National Scientific Committees composed of interdisciplinary senior experts, national and regional pandemic-specific advisory groups charged with developing guidelines, hospital-based ethics committees that pre-existed the pandemic and provided case by case consultations, and hospital-based committees struck for the purposes of the pandemic. In the case of the latter, the most appreciated format was that found in some European contexts, where the committee was mobile, inter-professional, and actually moved through wards to ascertain a shifting situation and appraise individual cases in consultation with treating physicians and nurses.

3.1.1 Who should have the authority to decide how to allocate limited critical care resources in a pandemic?

Across interviews, participants noted the importance of committees having multiple individuals representing multiple perspectives to deliberate on the tough question of scarce resource allocation: ICU doctors, nurses, infectious disease specialists, individuals with ethics training, and where possible community and patient representatives.

Two participants expressed a preference for national legalized guidelines (P20, LIC; P23, HIC), and expressed a wish to see allocation in such guidelines based on clinical need rather than on availability of ‘a bed’. This implies that regardless of the level of shortage or availability of resources, in a pandemic there could be pandemic-specific guidelines on what critical care to make available to whom. The preference for legalized guidelines also suggests a preference for strict instructions. Guidelines are not legally binding: they are consensus documents. Legal frameworks for the allocation of critical care resources would evacuate the possibility of discretionary decision-making at the hospital and bedside levels, presumably.

Only one participant felt reassured by the presence of an ethical framework and local ethics resources:

“As frontline care providers, ... in terms of those deep ethical questions, we very much appreciate when the hospital ethicist tells us what to do. So, in case where 30 people need a vent and we've got 20 vents, who gets on

the vent? Those types of ethical questions, I speak for myself, but I think I speak for the profession when I say, we like direction on those types of ethical questions. It is a bit of a privilege that the nursing profession can sometimes defer some of those decisions to the medical team or the ethics officers.” (P2, HIC)

3.2 Noted advantages of guidelines and committee-based decision-making

Many participants were unsure who should have the authority for decision-making linked to the allocation of limited critical care resources. Several participants did, however, express support for such decisions being guideline- and committee-based. Arguments in favor of guidelines and committees were numerous and echoed those in the literature.

The most common reason front line HCPs supported the existence of guidelines and committees was because they viewed these as practical. The ‘logic’ of guidelines and committees was defended on a number of bases that echoed the bioethics literature on the subject.

In the chaos of a pandemic and surge of patients, those in charge of critical care would benefit from what was understood to be thoughtful and objective advice on where to expend limited energy, material, and human resources:

“Because I think it should be out of the hands of individual care providers that are doing it. One, it's really difficult for anybody, even the ICU doctors or the people on the front line, to be able to say ‘Okay, this is where resources should go, this is where, these are where the lives are that we should be concentrating on. I think it's Infectious Disease to really give us that... Infectious Disease and the ICU chair that can say, “These are... these are the same, this is what we need to do to keep the most amount of people alive here through this. And take anything else out of it.” (P12, HIC)

The bedside clinician may not be able to think of the big picture in the face of limited resource allocations: *“They will want to do what is best for their patient” (P43, HIC).*

The notion of fairness emerges in many participants’ support for committees. Fairness was evoked in relation to burdens of decision-making in the absence of committees, in one case:

“I think it's good that the principles come down [a the sub-national level] and then implementation is left a little bit hospital to hospital...when you're the one taking care of the patients, I think it's unfair to ask you to be the one that's primarily involved in the decision-making.” (P23, HIC)

Three participants were explicit about the value of guidelines as a means to support consistency across treatment centres in a region or country and avoid inequities. One of those participants spelled out in detail the range of problems that could arise in the absence of guidelines, or, for that matter respect for these: competition between rather than a concerted effort amongst hospitals; frustration and annoyance of staff leading to a disregard for guidelines; families seeking out the hospital with more advanced care options. The participant saw the importance of a concerted approach to the triage of critically ill patients but was not sure how respect for guidelines might be upheld. Moreover, while providing strong arguments in favor of a consistent application of thoughtful guidelines, this participant still advocated for some flexibility: *“Overall, there should be some discretionary capacity on the ground but also clear boundaries.”* (P43, HIC)

In both HIC and LMIC, participants noted guidelines and committee-based decision-making could provide important support to those on the front lines as a means of explaining and justifying their decisions to families.

“I think there’s safety in numbers, I mean, none of us want to get there, but, you know, when you’re doing things at are inconsistent to current practice and potentially open yourself up to criticism in the long run. Although, I don’t know, there’s an alternative, it’s reassuring that the whole province is acting in the same way. And I think that provides ethical and legal cover for us as an institution as physicians.” (P23, HIC)

Others viewed guidelines and committees as means of ensuring greater objectivity and limiting bias or conflicts of interest in the allocation of resources. There always existed a risk of staff or family of treating teams being prioritized over other citizens, on the basis of those relationships, some acknowledged, which is decisions about resource allocation do benefit from external controls.

3.2.1 Guidelines and discrimination

Two participants noted the risk of patients being denied care on the basis of social biases, in the absence of guidelines. Those participants’ concern was for individuals who were economically marginalized, homeless, sex workers or engaged in other activities their society regarded as risky and wrong. A couple of participants, one from a LIC, the other from a HIC, inadvertently revealed the bias they would bring into these decisions. Both described as logical, the triaging of patients out of critical care in the case of a strain on resources, on the basis of the patient’s functional status.

“Only case [of not providing a chance to a patient] may be if the person is like, really, you know, there is no hope, you know, paralyzed and, you know, like, already been very sick, yeah, but if they are in a like, you know, they are both, are breathing and walking normally and things like that, I

think that very much, they will get that, everybody will have the same chance". (P4, MIC)

"The question is quite simple, what is the autonomy of the patient? Does he walk alone, does he dress himself, does he drink alone, does he come out of his house, does he walk alone or not? But if these things are already undermined before resuscitation, they will be more after, and therefore, and therefore there is a moment when it is not worth it, it has no interest." (P38, HIC)

Lack of guidelines on whether and how cognitive and physical disabilities and autonomy should play into resource allocation during a pandemic would leave such decisions vulnerable to embedded social biases.

3.2.2 Non-bedside decision-making to reduce risks of moral distress

Many participants, aligned with the dominant perspective in pandemic scholarly and inter-governmental and government guidance (Emanuel et al., 2020), favored committees as a strategy to help buffer those on the front lines from the moral weight of triage decision-making.

"Makes me think about also protecting those clinicians from the moral distress of 'I am the sole proprietor of this decision', and whether or not it is the right decision to be made, whereas if you are working together as a group to make those decisions, there is a bit of a moral peace with potentially that you landed at the right decision for that particular person". (P3, HIC)

"I would like to emphasize on that, there is an unmeasurable impact on the healthcare provider themselves who are in a position to make such decisions. If we leave it to them without guidelines, there is a psychological, actually, catastrophic psychological impact will be on them in the long run. I don't know how it can be compared." (P20, LIC)

"I strongly believe guidelines from 'higher up' reduce moral distress." (P56, HIC)

Removal of responsibility from the front-line provider was deemed particularly crucial in the context of younger staff being part of the RA response:

"More and more young physicians will be called to front line, and they don't have the emotional burden to take care of their self...it is important not to fall on them this responsibility." (P21, MIC)



For participant 21, situations that involved determining who amongst patients in need should receive scarce resources represented: an “unbearable aspect of the medical profession”.

The psychological distress associated with being on the front lines of critical care triage during this pandemic is not limited to resource allocation decision-making. It emerges in connection to several other psychological stressors: for one’s personal safety, for the safety of one’s family, and in relation to the task of communicating limits on care available to patients and families. These are discussed in further detail below.

3.3 Guidelines and committee caveats, critiques, and confusion

Several participants discussed the use of committees and task forces for decision making amidst the challenges and scarcity brought about by the pandemic. While many were supportive, many expressed concerns for the black-and-white or linear thinking that may arise in the process of creating strict guidelines or having those outside of the frontline making decisions on their behalf.

3.3.1. Medicine is “not black and white”

A number of participants agreed with the idea of a committee, but only on the condition these would support personalized patient care and existing norms of family and treating physician decision-making:

“I think there definitely needs to be more than one person making the decisions. So, therefore, I guess it should be a committee with both people who know the person before they got ill. So that there's input as to what the potential is, because people are different in real life than what they are on paper.” (P53, HIC)

This idea that patients and decision-making cannot be reduced to facts on paper connects to another concern: that committees and guidelines might limit, in the name of developing some rules of inclusion/exclusion for critical care, nuanced analysis of the patient’s condition:

“The more people you put around a table, the more you will need to simplify. So, if you put 100 people around a table, age will be the determinant. We’ll say: ‘Ok. At 90, it’s finished. At 85: finished.’ If pressure mounts, at a certain moment, we will say: ‘Well, at 60: finished.’ Because the rest is just too complicated: ‘But he has a cancer!’ ‘But the cancer is treatable!’ But maybe he has tried things: it’s over. All those things. The more it gets subjective and complicated, the more the discussion gets complicated, so that you end up evacuating everything that is complicated. The risk is that decisions become more uniform.” (P36, HIC)

One participant was confident in their critical care teams’ abilities to make tough resource allocation decisions:

“I think that treating some patients, being around them, talking to families, I think we should take those decisions and we have some experience to take them, and that doesn't have to change.” (P31, HIC)

3.3.2 Committees and guidelines perceived by some as too idealistic

Some participants raised concerns that committees and guidelines would be unable to support critical care decision-making in ‘real time’. Drawing on their past experience with ethics committees at their hospital, one participant noted:

“In intensive care, it’s a matter of intubate now or don’t; however, committees do not work during the night or on weekends” (P36, HIC)

Another participant doubted guidelines would be applied in the same way for everyone:

“The people who are making those decisions, it’s alright, but if it’s their father, or their mother, or their brother that’s coming in the intensive care, and I say to them, ‘He cannot receive the ventilator, because I don’t have anymore, so uh, well that’s it, so if I think with the elder, your father should probably die.’ Everyone will tell me, ‘Try it, try it, it’s my father’ you know, so we have to think [realistically]” (P31, HIC)

3.3.3 Ethics-based guidelines will not trump entrenched social inequalities

Several participants noted guidelines would have uneven impacts based on entrenched class and gender inequalities. Participants in both high- and low-income countries noted this possibility, as a key reason to question the utility of any guidelines aiming to clarify who should and should not be prioritized for critical care in a pandemic. Participants in four of the 14 LMICs were positive the elite in their countries would get what they needed, as they always do, while the majority would not.

In all country settings, it seemed that should there be serious resource limitations, many of those we interviewed believed the wealthy and better connected would be able to challenge and circumvent barriers to accessing care they sought. This was all the more reason, in the eyes of some participants, to avoid getting to a point where critical care is being denied to some that would normally be considered candidates for such care.

3.3.4 We have the restrictions but not the materials

Many of the participants from LICs implied restricted utility of guidelines in contexts where resources were limited. One participant did explicitly state concern based on the mismatch between guidelines provided for the triage and treatment of critically ill COVID-19 patients, and resources to enact these:

“We have a document, but then do we have the materials? No. But the restrictions? Yes.” (P47, LIC)

This person had witnessed colleagues being reprimanded in past infectious disease outbreaks for deviating from official guidelines and worried they too might be singled out and shamed professionally if they failed to uphold guidelines that were impossible to uphold, given the lack of resources to do so.

3.4 Poor guideline and committee communication to front line providers

In several contexts, participants had heard criteria for critical care triage were being developed, but they did not know who was developing these or what they looked like. Likewise, a number of participants said they had believed or had heard there was a hospital or sub-national committee in development, but they were uncertain where the process was at, who exactly was invited, how such a committee would operate or even what it would imply for their practice or place of work.

Several participants commented on the “overwhelming” amount of information relevant to patient care circulating in their workplace. Memos and the barrage of constantly changing “rules”, as one participant called them, were not always easy to understand. The volume of information, its constantly changing nature, combined with this lack of clarity left some uncertain about their own or colleagues’ preparedness:

“It feels like we're getting quite a lot of information, but it felt like there was a slow start in terms of the information that was being disseminated from management... I still feel that I'm a little bit in the dark about who's doing what within the hospital, who's making the decisions. And yet in other ways, there's lots of information pouring out in terms of guidelines that are being put together, plans and things like that. So, those can always be a little bit overwhelming in terms of the volume. And so, one of the challenges personally to me is sifting out what it is that I need to know... So, there is a bit of a sense of having a lot of information in some ways and being in the dark in other ways.” (P32, HIC)

“The PPE, when it started running, out you know we put out the 50-page memo. And I'm reading through this, I'm like, ‘I don't know what the hell you're saying in this. This one says wear mask, this one doesn't say wear mask.” (P12, HIC)

“This whole situation has been kind of crazy because we're getting memos and updates every single week. There's a new memo that will address a new protocol that we're doing pertaining to COVID-19, or a new set of rules for the protective equipment that we're required to wear, and that is I think that the hardest part is that things are changing so quickly and that people are, will be who they are, and people who are really adamant about reading their emails or looking up that information will be well educated about it but the ones that don't are kind of missing out on a lot of the updates, which is an issue.” (P10, HIC)

One participant reported with evident frustration that they had found out “by accident” about the sub-national plan being shared with hospitals to limit access to hospitalization and intensive care for certain populations. As a community-based provider responsible for coordinating community-based pandemic healthcare, this lack of communication and consultation was unacceptable:

“It's unfair to bring a document like that that's ethical, political and morally distressing. For it to come through the ministry of health and then for it to be worked on at the hospital. Now, you got to remember I only found out about this by mistake and realized that this was what was going to be happening, got a copy of it and said: “wait a minute, our community's not going to be ready for this. They're not going to be ready, there's a huge gap.” (P27, HIC)

3.5 Perceived lack of appropriate and inclusive guideline development committees

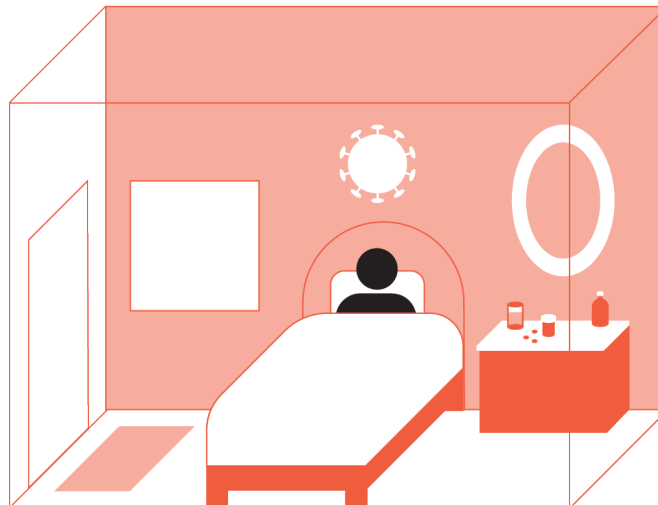
The exclusion of certain people from the decision-making table for the development of critical care triage criteria and care plans was a concern for a number of participants. In one case, the participant understood that the committee responsible for this work was composed of hospital administrators exclusively. The participant acknowledged this non-inclusive committee most likely arose as a continuation and sign of existing distrust between hospital administrators and front-line staff.

Another participant (27) expressed frustration that provincial criteria and guidelines for pandemic triage of the critically ill had been developed without input from community-based HCPs. Community-based HCPs would be hard hit by any guidelines to limit admission to hospital and implement “stay in place” care protocols for patients deemed too advanced in age or with too many co-morbidities to be prioritized for transfer to

hospital under those pandemic triage plans. Not inviting those on the front lines of implementing pandemic triage in the community at decision-making tables was not acceptable, to this participant:

"Why does our society say that unless you're prepared to put your loved one in a brown, brick-and-mortar building, that you don't get nursing? Why can't we say if you decide to keep them in your home that you get support and nursing? We have a home care program. Why are we treating that almost like it's second class?" (P27, HIC)

Such exclusion was, in this participant's eyes, disrespectful of community-based healthcare, but also unsurprising given their country's "hospital-centric" healthcare system.



The above critiques accord with literature that suggests many resist committees and guidelines if these are not developed through participatory processes, and experienced as imposed from the outside. Lack of understanding of the role, composition, and guideline development process of committees potentially or already charged with developing guidelines for triage of the critically ill emerges in several interviews as a source of anxiety, frustration, and potential resistance to any eventual guidelines.

Most participants wary of committees were not convinced the solution was for decisions to rest with individual clinicians or teams:

"That doesn't mean that when one makes a decision alone, it's better. No. But it's not because we take it as a group that it is better. I don't believe that" (P36, HIC)

Checks and balances, controls on potential conflicts of interest, guidance rather than rules under pressure, could all be helpful. That said, committees and guidelines could definitely be obscure, perceived as flawed, and meet with resistance if not developed with input from context specific appropriate stakeholders.

4. Care and treatment to those triaged out of critical care: what does it look like and what is needed?

Participants were asked to consider what could be done for patients with life-threatening disease triaged out of critical care. Twenty-nine (N=29) respondents across 15 countries indicated they had not been given guidance or treatment plans for such scenarios. “*We are doing the best with what we have*” (P3). However, another interviewee from the same country and region, indicated that they *do* have plans in place. In line with unclear guideline communication findings described in section 3, such differences in responses amongst participants from the same country and region indicate that if guidelines do exist for the care of patients triaged out of critical care, communication surrounding these guidelines may be lacking.

Participants in three LICs, two of which were protracted conflict settings, felt critically ill and dying patients were at risk of receiving no care. All other participants said their workplace was committed, if facing challenges, to ensuring all patients, including critically ill and dying patients outside ICU units if available, receive the best possible care with resources available.

In terms of symptom management for patients with life-threatening disease triaged out of critical care, respondents listed a number of resources needed for this work: in-patient beds or alternatives such as hotel rooms to accommodate patients in the shelter system; nasal cannulas and oxygen tanks; opioids to relieve breathlessness; high-flow oxygen, continuous positive airway pressure (CPAP), non-invasive ventilation, antiretroviral therapy. Even in HIC settings, symptom relief via medications posed challenges in crowded COVID hospitals where emergency measures for rapid access to opioids was lacking.

“We could have done better with people who have died without receiving palliation. There was a problem with palliative care, in the sense that we could access opioids, but we had to use midazolam and so palliative care could have been better. The problem was bureaucratic, we could not access opioids because we needed to follow the normal procedure to request them, but it was an emergency moment and so they become unreachable.” (P18, HIC)

Provision of this symptom control involves staff. Only two participants from HICs acknowledged a need for more staff to be redeployed or brought in to provide palliative and supportive care, should the number of critically ill patients reach a point where more were likely to die.

While detailed information on participants’ settings was not gathered through the survey, amongst interview participants’ settings, fourteen of these (N=14) did have

pathways in place that participants described as palliative care pathways. The existence of pathways was no guarantee of activation in the face of the pandemic.

“Palliative care [during COVID emergency] is something left out. Even with people without therapeutic hope, palliative care was not activated, which is something that always happened in acute care wards. Palliative cares are managed by anesthesiologists and they were all busy” (P45, HIC)

“In the hospital there was total chaos. According to beds availability they would send home both the patient who was a little better, and the patient who was 95 years old and with a certain prognosis so that it was not possible to cure them in the hospital. Those were the criteria. It was at discretion of the single health professional [who was in charge of deciding bed allocation] and based on the reality at the moment. What is certain is that many people were left at home without any form of care” (17, HIC)

Eight participants mentioned the need for palliative care pathways as recommendations but who did not already have them in place. Hospices specialized in palliative care and functioning to delivery high quality end of life care in some settings were not accepting COVID-19 patients in at least one country. Only one respondent referred to palliative care specialists, who would be asked to aid other specialist clinicians who might be redeployed to offer supportive medical care for patients who do not meet ICU criteria.

Several participants used the term ‘palliative care’ to describe the plan for dying COVID-19 patients in hospital, but in doing so made no mention of spiritual or psychosocial care. This usage of the term palliative care as a short-hand for symptom management may be based on a lack of familiarity with the holistic intentions and definition of the term. It may reflect challenges being experienced in getting psychosocial supports to patients, discussed below. Either way, it raises the question: what is included, and what may be getting lost, in (so called) pandemic palliative care in actual practice? One participant suggested that there would be a greater emphasis on psychosocial support if resources for symptom management were not available. This response did frame such support as more of a second line intervention, if medical relief of symptoms cannot be met for dying patients.

4.1 Beyond symptom management: Addressing dying COVID-19 patients’ psychosocial needs

Reported limitations and challenges to the provision of care to Covid-19 patients triaged out of critical care revolved around unmet psychosocial needs.

“If the patient is not eligible for intensive care unit, so to offer him palliative care is to offer him dignity. Taking care with dignity, to alleviate his suffering, to follow his desires, and alleviate his discomfort. To offer him dignity is the most important thing for this patient.” (P21, MIC)

Two national health systems in LICs had on Covid-19 treatment teams individuals with training in a palliative approach. Provision of care beyond symptom relief to seriously ill patients at risk of dying by these staff was not clear, however. Many LIC interviews did include emphasis on limited PPE and human resources for COVID-19 treatment centres in general. In short, it is unclear and there seems to be a lack of preparedness for management and care to patients dying in COVID-19 centres in LICs.

Challenges of providing psychosocial support for patients and their families under COVID-19 conditions were widely recognized. Restricted family visits weighed heavily on many HCPs interviewed. Family bedside involvement in care and/or presence was regarded as key to good care by many, even when not seen as integral to decision-making about resource use. The current situation of COVID-19 patients being critically ill, sometimes very scared, and isolated was painful for many HCPs to witness. HCPs often expressed concern for the well-being of the family as well as that of the patient as a result of this isolation:

“You know, they can’t enter. It’s very hard for the patient and the family not to see each other. It’s very hard and in [country] and this is provoking many conflicts. When the patients die, for example, this gap between the patient and his family is provoking conflict. Because they can’t see them, they don’t know. They’re very anxious about it.” (P41, MIC)



At the time of the interviews, some hospital and treatment centres had maintained complete bans on family visits. Others had experienced these initially but then adapted to allow 1-2 family members in for 1-3 hours.

In one HIC hospital, after an initial complete ban, the administration had finally agreed to allow one visitor for one hour to patients in the ICU, on the condition the visitor agreed to a (non-enforceable) self-quarantine for 14 days after. These rules had resulted in at least one case already of a patient being kept alive on ventilator an extra day, to allow an extra family member to visit. In addition to potentially extending the

suffering of the patient, this did not make sense to the provider at a time when ICU resources are in such high demand. In that same hospital, patients outside the ICU on the medical wards were still unable to receive any visitors at the time of the interview. That included patients who were dying. The participant assured the interviewer the patient was “not alone. We don’t leave dying patients alone.” (P31). In a practice that was described for other LIC and HIC settings, nurses would be present with a patient on the medical ward when death was imminent. This practice to limit and exclude family was far from ideal in situations where family might have and normally would have been present.

Regular and sometimes daily phone calls to the family had become protocol in some treatment centres at the time of the interviews. This contact was regarded as a means of assuaging distress the HCPs assumed would be evoked in many family members as a result of their limited ability to visit and see their loved one. Tablet-mediated goodbyes to families in ICUs were being introduced in HIC settings to allow them some form of presence with a dying family member.

One physician with expertise in palliative care saw potential for the use of ‘Alexa’ voice-activated electronic devices to counter the isolation of COVID-19 patients and increase their ability to connect with family. This palliative care physician was aware that use of such devices in a non COVID palliative care ward helped patients connect with family and friends. While no LIC foresaw introducing such technology at the time of the interviews, some LIC isolation centres, had charging stations for phones and televisions, to support patients staying connected to their family and the outside world.

Death from COVID-19 in hospital may represent a more dramatic departure from socio-cultural norms in certain contexts. For example, in many LIC contexts with limited health care facilities and resources, it is common practice for patients unable to benefit from or afford critical care in hospital to be transported home to die. Patients with more resources in LICs may arrange for symptom control at home at the end of life, surrounded by family. With a key strategy in LICs for infection control being the confinement of individuals with suspected and confirmed COVID-19, returning home to die is not an option in this pandemic. Only one LIC had made provisions for a psychologist to be present in COVID-19 treatment centres. This resource was identified by the two participants interviewed from that country (N=2) as a part of the care that would be provided to patients at risk of dying or dying.

In some care contexts, it would be common outside the pandemic for a family to bring in a traditional healer, use traditional medicines, recite prayers with or for the sick in their presence, or simply gather in large numbers at the bedside of the sick. No provisions were in place at the time of the interviews for such personalized and often culturally important psychosocial support.

Seven participants were primarily community-based HCPs. Amongst these, only the two HIC HCPs who worked primarily with individuals in the shelter system for the homeless felt they would be able to provide high quality end of life care to COVID-19 patients out of hospital: “We do it all the time” (P2). Two others in the same country setting worried about the lack of resources for home-based palliative care.

4.2 The importance and lack of spiritual support in isolation

Several participants recognized the importance of spiritual support for patients in treatment centres. One HIC location was working hard to troubleshoot what they perceived as a lack of access to spiritual care for their patients. They hoped clergy (whom they believed were afraid of infection) might respond to a call for tablet-mediated spiritual care provision. In LICs the presence of spiritual leaders in COVID-19 treatment centres was seen as important on all sorts of levels. Such a presence in contexts of high religiosity would potentially increase public trust in treatment centres, decrease distress of family on the outside, support patients inside treatment centres, and benefit the mental well-being of staff. One participant proposed the presence of spiritual leaders in COVID-19 centres might improve patient outcomes. The importance of spiritual support was emphasized by several individuals:

"If a priest goes forth, if a priest goes forth to see, if he has the courage to do it, it would be so important. It would be much more calming to communities, to family members in the community, and it would provide comfort to patients who are conscious and just entering, people in quarantine, whether confirmed, presumed, or confirmed. The suspects confirmed and presumed. First it will reduce their stress a lot more, and it will help them cope with fighting the illness. It will give them a lot of vital energy. (P7, LIC)"

4.3 Symptom management or nothing for the dying in humanitarian crises

Three respondents worked in refugee camps (in Africa and Southeast Asia). With no intensive care available in these camps, care to the dying in the camp would be limited to symptom management. One of the respondents working in a refugee camp setting described the usual approach to care for the dying in this setting as home-based. Services, offered through an NGO dedicated to palliative care, included free home-based nursing, counselling, and symptom relief (morphine) to refugee patients unable to access critical care and at risk of dying. At the end of March when we conducted the interview, there was limited PPE and no expectation of providing palliative care for COVID-19 patients in the camp.

In one protracted conflict setting, the participant was quite certain there existed no plan for those who would not have access to hospital due to a lack of financial means to access private hospitals, and there being no other facility equipped at the time of the interview to provide care to COVID-19 patients. The participant had heard of the public

hospital refusing admission to suspected cases. Their outlook for the sick and dying was bleak:

“Kalashnikovs are used for everything. They could be the answer [for a frightened population with no options for care].” (P39, LIC)

4.4 Caring for the carers: Addressing HCP’s psychosocial needs

The psychological well-being of HCPs involved in the pandemic was a primary concern expressed by participants both from LICs and HICs. Stress resulted from the lack of HCP-related pandemic preparedness and the emotional burden of helping separated patients and families to deal with the situation. HCPs perceived their distress as triggered by the difficulty of dealing with so much suffering and death. In this regard, their RA responsibilities had psychological consequences described as real traumas.

“Mental well-being is affected massively by social responsibility of allocating resources, and the trauma associated with triage decision making.” (P3, HIC)

“I think that having to decide who gets triaged, who gets care is a huge emotional and ethical consideration for any practitioner. Nobody wants to decide who should be helped and who shouldn’t be helped” (P25, HIC)

“I’m not sure if I have [the] emotional capacity to sit and establish who will [be prioritized]. When it’s not personal, it’s easier. But we have to try to ... when we know their names, and narratives of this person, it’s very difficult.” (P21, MIC)

In some HICs, one source of HCP stress was their role in explaining to families the limitations of the care available:

“I mean, I think a lot of the hesitation amongst doctors, is that ‘are we going to be the ones to tell patients or make decisions’ and I know a lot of hospitals have set up triage teams that are going to sort of try and take decision making away from the bedside practitioners as much as possible, maybe even helping with communication back to the patients and family members. I think maybe a little bit more work around those sorts of pathways would be important” (P23, HIC)

An unintended reality of the pandemic has been massive deployment of newly trained HCPs, and HCPs in training, with limited experience and psychological resources to cope with potentially, highly emotional situations. Participants expressed strong concern about the emotional toll this situation may exact on the future professional life of novice HCPs.

Especially in LICs, and as outlined in the above section on PPE, participants described how fear related to lack of resources could generate fear in others.

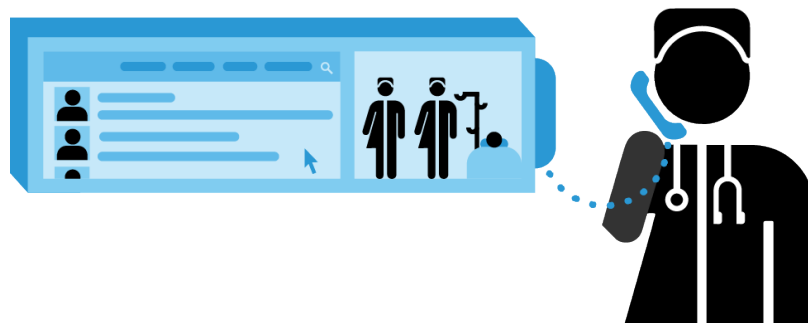
“One of the anesthetists have talked about the end of the world - and thought about circulating his thoughts to his co-workers.” (P39, LIC)

Many HCPs recognized the uniquely intense psychological burden of having patients dying under conditions of isolation. These participants were troubled by the limited human resource capacity to provide the level of in-person accompaniment they deemed essential to dignified dying.

4.4.1 Recommendations to limit HCP psychological problems

Participants described potential strategies or approaches implemented in their own contexts to limit psychological problems. The most common strategy was the provision of psychological support via telephone. Another recommended solution was structured follow-up sessions one on one with HCPs involved in COVID-19 patient care, especially for those who worked in isolation centers.

“Even though I mentioned mental health support, we need to deliver that area very carefully. Because obviously people can infect other people. So, we cannot really stay close to them for a long time. So maybe only can we deliver through, the best way is to deliver through telephone or maybe with a screen. SO that could be difficult if we do it with the distance. But it is better than not letting them...not giving counselling. Because some of them might feel very scared of maybe they feel depressed or maybe they feel hopeless about their future. So, it would be important to have somebody just to maybe through a telephone system to ask them or triage their mental health over the phone. and if they find that he has suicidal risk, or he has a major mood problem, then early intervention can be given to those people.” (P52, HIC)



Participants described the burden related to triage decision-making as the most potentially destabilizing element for the mental health of HCPs. In the absence of shared guidelines or a structured committee, participants stated that they wanted to dilute

responsibilities to alleviate the burden of one individual having to make such triage decisions.

“I would like to emphasize on that, there is an unmeasurable impact on the healthcare provider themselves who are in a position to make such decisions. If we leave it to them without guidelines, there is a psychological, actually, catastrophic psychological impact will be on them in the long-run. I don’t know how it can be compared.” (P20, LIC)

Some non-physician participants in HICs highlighted that communicating their views about which patients should be prioritized for limited critical care within the care team was not expected of them as non-physicians, and this was made even more challenging by limited resources and the complexity of patients. Concerns and recommendations on communication are discussed in further detail in the next section.

Further to this, participants from HICs emphasized that the pandemic has led to an increased workload for HCPs. Specifically, it was reported that, especially in general wards, the ratio of patients to nurses had increased considerably. In addition, the restriction of access to complementary personnel, such as volunteers, has further charged HCPs with their tasks.

Participants reported social problems, such as scarce social recognition or the impossibility of living with their families, arose from the pandemic. The preservation of HCPs as a human resource, so crucial in a time of crisis and scarcity of available personnel, was described as necessary. In this regard, one participant reported how HCPs had been potentially exposed to criticism and humiliation on social media. Thus, the need for social support for HCPs involved in the pandemic was considered fundamental. Social workers were identified as the most critical resource in solving this challenge, and in high-income settings, although they are in short supply, were employed to provide support to HCPs and their families.

“Healthcare workers are often blamed for poor treatment at the hospital (although the poor treatment options are because of a lack of resources from the state). There are some people who take legal action against doctors. Most commonly, on social media, people write insults about the healthcare personnel every day.” (P47, LIC)

An additional area of concern was the expressed risk of an HCP becoming infected and transmitting the virus to families. These concerns were mostly related to the lack of PPE and swabs and poor management of available resources. A further concern was the lack of adequate training in the prevention of virus transmission in HCPs.

5. Communication of Triage Guidelines/Protocols

Differences were found with regards to preferences for and approaches to the communication of triage guidelines linked to critical care. Even with the benefit of experience, in a HIC where the surge had peaked, these differences persisted. Participants had recommendations for communication that should occur at a population level, across and within levels and layers of government and healthcare organizations and, to the community/patient/family who could or did require triage to be enacted.

5.1 The concept of transparency

“Transparency is just as important as confidentiality, especially when it means life or death” (P10, HIC)

A common and important theme that extended across regions sampled was the concept of transparency in communication about triage guidelines and protocols. While this was a generally held value, there were significant variations with regards to its interpretation. It is best described as *relative* transparency in that there were concerns expressed about the depth of the triage information that should be offered, its timing, the authority from which it came, the communication strategies and medium used for dissemination. The concept of transparency was held implicit more often than defined.

Participants also discussed transparency in relation to the science of the disease, and some expressed feeling challenged in the face of constant demands to integrate new information and change habits, as this participant explains:

“When it just first popped up, we knew it to be droplet, but within three days it was escalated to airborne. And then after we started running out of protective gear, all of a sudden, it's droplet again. As an educated person, I can read the literature. I understand that it's not trying to convince anybody else, that it's not just newly made up propaganda to lessen the effect of it because we don't have the supplies now to keep us safe. Has been really difficult, even with the nurses and even the physicians that are all educated in this, trying to get them to change their mind now back because of the rapidly changing communications that have gone out.” (P12, HIC)

5.2 Communication to communities and the general public

Many believed that critical care triage criteria should be made available at a population level, despite or especially because of the intrinsic tragic nature of the situation in which resources were or may be scarce.

“I think it's an awful situation, but it also helps people understand the severity of the global situation. So... I'm all for transparency even if it's a very tragic thing” (P33)

“I am for transparency because I think that it is everyone's responsibility to respect confinement, to understand the gravity of the situation...I think it's important that people are informed of the seriousness of the situation because I think that doubts create conspiracy theories, creates uncertainty, and creates anger, and actually prevents people from fully integrating and getting involved in this pandemic” (P35, HIC)

“My gut instinct is that we should be trying to be as honest as we can but maybe there some consequences that I haven't thought through yet about ... I would hope that it would allow people to feel that things are being carefully thought about by the hospital and the clinicians that they may encounter if they get ill, and that there is fairness in play in the decisions that we are trying to make as equitably and as appropriately as possible. So, there's sort of an integrity to the process and I would hope that that would give people some degree of confidence. My fear is that it would also leave some people very fearful because it spells out the starkness potentially of triage decisions if we were to get to that point.” (P32, HIC)

“Information fluidity in this era makes it obvious that this will eventually be known and, if learned after the fact may generate anger. Better to be transparent up front.” (P59, HIC)

The idea that sharing information about triage criteria and care plans could help members of the general public better prepare for a possible Covid-19 related hospitalization was expressed by some:

“The general population must be engaged and onboard. The priming may be useful and when their relative or they themselves get sick. Some people may find this a prompt to discuss end-of-life decision-making with family members, and it is helpful overall, not just for COVID. Some chronic disease patients have spontaneously stated they do not want to be intubated, go to ICU in case they get to that stage.” (P56, HIC)

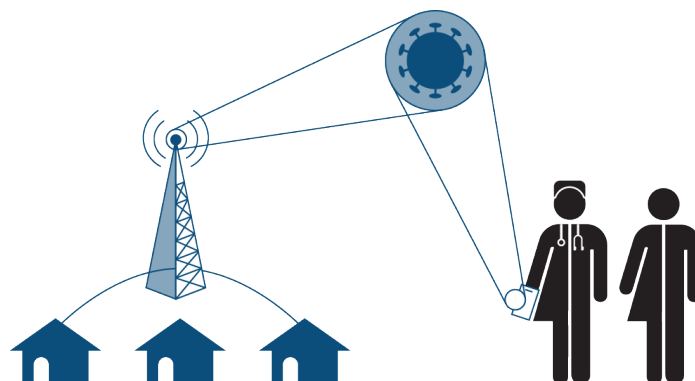
“I believe clear and honest communication is the best approach. In the absence of such documents, some patients and families are certain to suspect some collusion or inequity in application. Transparency can improve trust and help to promote the challenging discussions BEFORE the decision must be made.” (P64, HIC)

In one LMIC country, a participant noted that because triage guidelines existed pre-COVID-19, it was not necessary to explicate triage information because, as this participant said:

“Families and patients understand that those who were > 85 years of age with some advanced disease like Cardiac, Heart failure, COPD, Dementia, Cancer, would not go to ICU, but to another floor where symptom care [e.g. for breathlessness] and palliative care would be provided.” (P41, MIC)

However, it would be possible within this same country that a patient with private insurance could challenge these criteria, and this made for “difficult conversations” that were not comfortable for the participant.

Several participants expressed concerns about the way populations would interpret triage plans for individuals with life-threatening illness, particularly in settings where it was generally believed that under normal conditions, everyone had access to all services. One distressed participant said, *“The community is not ready for a document which is ethically, politically, and morally distressing.”* (P27, HIC). The notion of protecting the public was reflected by one HIC participant, saying that, *“Protocols should not be given to the public but rather given to community health-based organisations for them to prepare themselves for future scenarios”* (P13, HIC).



Triaging out of critical care was considered to be less of an issue where critical care resources were relatively non-existent and unequal access to care was an entrenched norm. In LMICs it was generally thought that the most people (unless of a higher class) were unlikely to have expectations for “critical care.”

In both HIC and LMIC contexts there were concerns that triage information would instill fear and chaos in the population by exposing resource inequities. One participant encouraged that a “legal opinion” be sought to guide communication of triage protocols (P20, LIC). Another HIC referred to the need for timing transparent messages: *“It’s a good thing to share with the patient when the moment is right and in a certain way to share with the general population.”* (P49, HIC). This was a ‘voice of experience’ in a HIC where consensus sought to have those older than 80 to be denied ventilators was taken out of context, quickly escalating fears. Alternatively, some thought that

transparency of information could also decrease fear and diminish rumors, particularly when the messaging from various authorities was consistent. People, it was said, should understand that belonging to a specific tribe or religious group would not impede their access (P22, LIC). Transparency was also deemed necessary to prevent corruption that would result in equitable application of the triage protocols (P36, HIC).

While some were concerned that the amount of information could be overwhelming to the public, there were also concerns that social media and rumors would fill in gaps with “fake news” if it was too limited. A central concern across the globe was managing misinformation. Respondents described stories propagated on social media as particularly problematic. In conditions of war, citizens of a LIC relied heavily and uncritically on social media, particularly Facebook as a main source of COVID-19 information.

“Social media is the main source of information for people and the government. [...] They [citizens and medical staff] believe everything they see on Facebook and the news on TV. There is no reflection about it. COVID is just ICU and dead people because that is what they see on social media. I don’t know who has credibility. [...] All they [citizens and medical staff] believe what they see on social media. It is difficult to change their minds” (P39, LIC).

Echoing earlier mention of distrust (2.3.3), some LMIC and HIC participants highlighted that trust in the government influenced what the general population considered to be accurate information.

Who had the authority to communicate triage guidelines was highlighted. For many, it was not enough that messages came from government and medical authorities, but that it also came from trusted community and religious leaders, as this participant explained:

“So, and that’s why I felt that a religious person, it’s always good to get religious people involved early, even in drafting those protocols and those triage systems so that they could also act as people who could reach across the community and explain to them. So that is why I think that the community leaders would have to be involved, and the religious leaders. So that of course they could be made to understand, and their word is actually very powerful. Once some of them give information people are ready to forego medical advice and ready forego government advice and go with what they are saying.” (P22, LIC)

It was deemed imperative that COVID-19 messaging in and between levels of healthcare organizations and society must be consistent for populations (HCP included) to trust what they hear and read. The crucial role of community was also stressed so that triage was not only aimed at acute care institutions: *“I do think it’s extremely*

important that the protocols are given out to the community health-based organizations” (P13, HIC).

Concerns existed about how people would interpret the triage message. It was feared that for various reasons, including historical context, ill people might self-triage, assume that they could not access any acute care services, and subsequently would not seek care when ill. Thus, it would be considered essential that if a triage guideline was disseminated to the public, people would need to understand how and where everyone could access care.

Transparent communication at a level and language that could be understood by the general population and that respected the local socio-cultural practices, was identified as essential for HCPs to be able to transmit critical care plans or options. One HIC participant pondered:

“What is the best way to communicate the triage criteria, need for Advance Care Planning conversations and planning [for acute care]? Booklets in ICU or Emergency Room? They won’t get read. Message updates on the web? I mean, I don’t even get to read them. People seem to be getting most information from live media sources.” (P40, HIC)

In countries where critical care resources were extremely limited there was concern that talking about COVID would result in more fear and even panic. WhatsApp and other media were considered for messaging the public particularly because of what could be rapidly changing conditions.

“I would say I’d want to present it [the plan] to the public, but I don’t know how you would do that without causing chaos, havoc.” (P12, HIC)

“Criteria cannot be shared, because communicating everything and immediately in a transparent way to a population that does not have the ability to understand may create panic.” (P44, HIC)

“I think by sharing this kind of information with the public, it definitely will cause anxiety and fear among public. I think in the very bad situation where hospitals are overwhelmed with these patients, I think the community are already very scared and in a very anxious state. So, if we give them this information, I think they will just get even more scared. That’s why I think there is no need to announce it in a high profile, just not to further disturb their emotions, to stir up more anxiety with them.” (P52, HIC)

Alternatively, the idea was floated that by sharing information that resources were limited even in HIC, and that the threat of COVID-19 was a global threat, this could increase tolerance for pandemic-specific critical care resource allocation.

“To the most part, people do get logical things. So, if you tell someone there's a thousand other people in the exact same situation as you, and this is the way it is, the vast majority of people will be angry or cry or swear, but even people in really critical or with complex needs, still tend to understand the basic logic of things. You just explain it to people.” (P2, HIC)

5.3 Communication to patients and their families

Participants agreed that in some way and at some point, a clinician should share information about the decision making and resources allocation with the patient and family. It was clear that the ethics of sharing was weighed against the fear of inciting anger or a social movement uprising against the government (P19, LIC).

“Try to tell families up front. Try to give them as much time as possible in advance as they may never see this person again... being able to give people a chance to say goodbye if you can is obviously helpful.” (P8, HIC)

“it's better we share all truth with the people. [...] It's a hard time for the medical personnel because it's hard to say to a family that in your case we need the ventilator and we don't have it; but, you know in the all around the world they have the same situation... We have to communicate with them and assure that we do the best for cases at that time.” (P28, MIC)

“I think you need to be clear about the decisions that you make and talk it through with people ... There's lots of times when you're sitting on the edge of something and you talk it over with a person, and they actually don't want further intervention. So, I'm a firm believer in honoring their wishes to avoid intervention if that's what they choose. I want them to make an informed decision but, I mean, I don't see in our country where everybody matters why they shouldn't know what the rules are and how people are making their decisions.” (P53, HIC)

“We need to own our decisions. Families and clients have huge capacity to understand, to participate and support. At times we assume a parental role which created dependency. People are resilient and deserving of respect.” (P65, HIC)

Communicating triage criteria on an individual basis to patients and their families was valued but also a concern for HCPs. Providing the defined triage criteria clearly to patients and family members required relational skills for HCPs that could be uncomfortable; this

was coupled with a perceived risk of being misunderstood. Misunderstanding could generate anger, thus one LMIC participant determined that in relation to triage:

“Physicians have to make the decision, [it] is not about the family, and whether you receive a ventilator or not is not something we necessarily need to communicate to the family.” (P28, MIC)

KEY TAKEAWAYS

The following provides a summary of key findings. Implications for practice are provided alongside key takeaways, with the proviso that these stem from findings that may not be generalizable across all settings.

Key takeaways: existing critical care RA plans and criteria

1. A majority of HCPs interviewed value advance system-level pandemic planning for scenarios where critical care needs outweigh resources.
2. HCPs displayed complex reasoning around resource allocation (RA): a majority acknowledged the relevance of utilitarian approaches for supporting fair and consistent resource allocation, but also advocated for some autonomy to deviate from guidance based on in-person patient assessments and evolving pandemic conditions.
3. Some suggested utilitarian approaches could discriminate against certain groups (e.g. older adults), and deepen inequalities if rejected and circumvented by some patients and families with money, connections, or determination to do so.
4. Some HCPs in HICs believe critical care resource allocation in a pandemic is avoidable, with proper investment, planning, and political will.
5. Age was a controversial consideration for critical care triage, especially in settings where a high value is placed on the role of the elderly in society
6. Pandemic critical care resource allocation is not expected to be fair, where access to healthcare is usually unequal. Pandemic critical care allocation in these settings has the potential to reinforce deeply entrenched inequalities.
7. Many expressed concerns for their own and their family's safety linked to PPE shortages.

Implications for practice

- Any national and international guidance on critical care resource allocation during a pandemic must avoid assuming there exist universally resonant logics, culturally acceptable approaches, or criteria for such allocation.
- If fairness is a goal and expectation of critical care triage plans, those need to take into account pre-existing inequities.
- Addressing PPE shortages is key to supporting optimal care.

Key take-aways: care for those with life-threatening disease triaged out of critical care

8. Psychosocial needs of patients and families are currently not being met in many settings, according to front line HCPs.
9. Psychosocial care to seriously ill and dying patients in isolation is lacking, and weighing heavily on providers

10. Descriptions of palliative care were often limited to symptom management (not holistic, and as such not aligned with WHO definitions of palliative care)
11. There exists uncertainty, concern and a lack of preparedness in HIC for the possibility that some seriously ill patients at risk of dying will be triaged out of access to hospitals, and without adequate community-based resources to support their care at home.

Implications for practice

- There is a need for further troubleshooting of challenges to the provision of psychosocial supports to patients in COVID-19 dedicated hospital units and centres.
- Many settings may want to further develop more detailed realistic strategies to support patients who are dying, and their families.
- If some patients with life-threatening disease are to be cared for outside hospital, resources must be in place to ensure safe and decent community-based care.
- The socio-cultural and economic conditions of affected populations must be considered in the public communication of COVID treatment, to alleviate concerns payment will be required that could lead to healthcare seeking avoidance, and uncontrolled infection and spread.

Key take-away: critical care resource allocation guidance and guidelines

12. There exists widespread support for guidelines, as a means to: (1) alleviate the burden of resource allocation decision-making on HCPs; (2) consolidate appropriate expertise to inform difficult choices; and, (3) support the fair and consistent application of guidelines across regions.
13. In many settings, there is a reported lack of clarity about the role, content, origin, justification, and implications for practice of critical care resource allocation committees and guidelines. This lack of clarity, combined with a sense that those developing guidelines may lack bedside expertise and first-hand knowledge of affected patients and families, is compromising support and, potentially, implementation of consistent and context-appropriate fair resource allocation.
14. Strict allocation of resources based on predetermined criteria, understood as a hypothetical possibility at this point, was considered too rigid. Many felt critical care resource allocation should be determined on a case by case basis using sound clinical judgement and taking into account constantly changing needs and resource availability.

Implications for practice

- HCP risks of moral distress may be alleviated by the existence of critical care resource allocation guidance or guidelines, but this does depend on HCP understanding of those plans as realistic, and in the patient's best interest
- There is a need for greater transparency and inclusivity in the development and communication of guidelines to HCPs, as well as more explicit discussion around whether or not there is an expectation and allowance in specific settings for HCPs to use their discretion in applying these.
- If allowances exist for HCP discretion in the application of guidelines, it may be helpful to spell out what allowances exist in what sorts of circumstances, justification for these, as well as which are not ethically acceptable.
- Population based criteria (i.e., state, national) must be applicable at the local level. Given variability in what is possible based on available human and non-human resources within and across settings, guidelines intended for multiple healthcare facilities should include options for different capacities and scenarios.

Key takeaway: communication about critical care resource allocation to patients, families, and affected populations

15. Participants felt patients and families should be informed of, and would generally accept, critical care RA decisions and rationales impacting their options for care.
16. Rumors regarding access to critical care propagated by social media and traditional media (e.g. television) were a central concern across all regions.
17. While many participants believed critical care triage criteria should be made available at the population level, in part to increase public preparedness and acceptance for these, some participants believed such sharing could lead to fear, anger, and an avoidance of healthcare facilities potentially (with potential negative impact on infection control).
18. Many participants recommended public communications be developed in collaboration with local community leaders and communication experts to reduce risks of public misunderstanding or panic

Implications for practice

- COVID-19 messages and updates from governments and medical authorities benefit from development and dissemination in partnership with trusted community and religious leaders.
- It is important to disseminate at a level and language that can be understood by the general population and through platforms (e.g., social media, religious spaces) that will be trusted by the target audience.
- If triage guidelines are disseminated to the public, it is essential that people understand how and where to access care, to avoid people who should receive care self-triaging

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Appendix A: Semi-Structured Interview Guide

Semi-structured Interview Guide

Project Title: Triage and COVID-19: global preparedness, socio-cultural considerations, and communication

Total participant time required: 30 minutes (approximately)

Introduction

1. Tell me a little bit about where you work, your responsibilities.
Probe, if necessary: Does your workplace serve a certain population (for ex. in terms of age or condition)?
2. Is this acceptable, in your eyes?
Probe: Is there anything (else) you think could or should be done for these individuals in your context of care?
3. Do you think triage criteria, and the plan for those who will be triaged out of critical care they might normally have access to outside this pandemic, can and should be shared transparently with patients and families? Why or why not?
Probe to clarify if and how their views might be informed by past experience.
4. Do you think triage criteria, and the plan for those who will be triaged out of critical care they might normally have access to outside this pandemic, can and should be shared transparently with the general population? Why or why not?
Probe to clarify if and how their views might be informed by past experience.
5. What difficulties might arise, related to the communication with patients, families, or the wider community with respect to triage criteria and care plans for those triaged out of critical care?
Can anything be done to reduce the risk of such difficulties, or help manage these?
6. Is there anything else you would like to add?

Conclusion

Thank you. I have learnt so much.

Time permitting: [Clarification of demographic information – ask about anything that is unclear in the participant's response to the demographic questionnaire.]

Appendix B: Tool for the collection of written responses

Qualtrics Survey Part I: Demographic Questionnaire

Gender

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Prefer not to disclose

Age

- ☐ 18-24
- ☐ 25-34
- ☐ 35-44
- ☐ 45-54
- ☐ 55-64
- ☐ 65 or more

Employment Information

What is your current work title? _____

What setting do you currently work in primarily?

- ☐ Hospital
- ☐ Community clinic
- ☐ Long-term care (e.g. retirement home)
- ☐ Mobile or virtual health
- ☐ Refugee camp
- ☐ Other (Please Specify): _____

What is the length of your healthcare work experience?

- ☐ < 5 years
- ☐ 5 -10 years
- ☐ 11-20
- ☐ > 20 years

Do you have a specialization in any of the following ? (check all that apply)

- ☐ Family or Community Healthcare

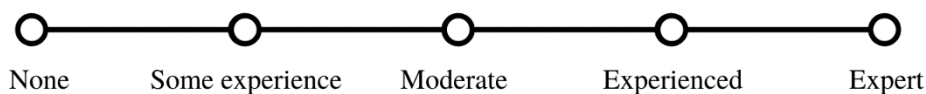
- ☐ Emergency Medicine
- ☐ Oncology
- ☐ Palliative Care
- ☐ Infectious Disease
- ☐ Geriatrics or elder care
- ☐ Anesthesiology
- ☐ Internal Medicine (or subspecialties)
- ☐ Neurology
- ☐ Psychiatry
- ☐ Paediatrics
- ☐ Other (Please Specify): _____

In which country do you primarily work? _____

Which of the following best describes your work?

- ☐ Private sector
- ☐ Public Sector
- ☐ Other _____

How would you characterize your experience managing health care resource scarcity?



Religious and Spiritual Beliefs

Which of the following is the most prevalent religion amongst the patients and families you serve?

- ☐ Atheist
- ☐ Agnostic
- ☐ Buddhist
- ☐ Hindu
- ☐ Indigenous Spirituality
- ☐ Jewish
- ☐ Muslim
- ☐ an Orthodox church such as the Greek or Russian Orthodox Church

- ☐ Protestant
- ☐ Roman Catholic
- ☐ Sikh
- ☐ Other _____

How spiritual would you consider yourself?

☐ ————— ☐ ————— ☐ ————— ☐ ————— ☐

Not Somewhat Moderately Very Extremely

If you identify yourself as having a particular religious identity, which of the following best describes this?

- ☐ Agnostic
- ☐ Buddhist
- ☐ Christian
- ☐ Hindu
- ☐ Indigenous Spirituality
- ☐ Jewish
- ☐ Mormon
- ☐ Muslim
- ☐ an Orthodox church such as the Greek or Russian Orthodox Church
- ☐ Protestant
- ☐ Roman Catholic
- ☐ Sikh
- ☐ Other _____

Please list any additional ethnicities, memberships in an indigenous nation, or other ways in which you may identify yourself socially and culturally: _____

The following section will ask you to reflect on a series of questions, related to the care and treatment of seriously ill patients not prioritized for care, in the event of a pandemic, as well as communication with affected populations in your context of care with respect to the plan for such patients. You can interrupt your participation at any time. You do not need to answer every question. PROCEED with REFLECTION QUESTIONS

Qualtrics Survey Part II: Reflection Questions

1. Has your workplace defined criteria to support decision-making around which seriously ill patients should be prioritized for critical care, should resources become too scarce for all patients to receive this care during this COVID-19 pandemic ?
If no: skip to 5
2. Will any care and treatment be provided (in your workplace) to those patients who will not be eligible for critical care?
If yes, Please describe.
If no, skip to next.
3. Is this acceptable, in your eyes? *Is there anything (else) you think could or should be done for these individuals in your context of care?*
4. Do you think triage criteria, and the plan for those who will be triaged out of critical care they might normally have access to outside this pandemic, can and should be shared transparently with patients and families? Why or why not?
5. Do you think triage criteria, and the plan for those who will be triaged out of critical care they might normally have access to outside this pandemic, can and should be shared transparently with the general population? Why or why not?
6. What difficulties might arise, related to the communication with patients, families, or the wider community with respect to triage criteria and care plans for those triaged out of critical care? Can anything be done to reduce the risk of such difficulties, or help manage these?
7. Is there anything else you would like to add?

Appendix C: Interview Summary Tables

INTERVIEWER SUMMARY DATA TABLE

Completed by:

Participant ID & Country	
Workplace setting during pandemic (COVID-19 only, mixed hospital, mixed community).	<input type="checkbox"/> Covid-19 treatment centre / hospital <input type="checkbox"/> Healthcare centre caring for seriously ill covid-19 patients amongst others <input type="checkbox"/> No location - Expert / consultant for development of guidelines re: triage and care <input type="checkbox"/> Other:

1. What is the population this individual normally serves? (cancer patients, homeless, migrants, general)	
2. Is there a plan for the triage of critically ill patients (who will be prioritized for intensive care) in that context?	<input type="checkbox"/> Yes <input type="checkbox"/> No or not yet
3. What care is currently available to patients who are seriously ill with COVID-19 symptoms in the participant's work context?	<input type="checkbox"/> ICU if needed <input type="checkbox"/> Limited ICU / vent (describe) : <input type="checkbox"/> Other:
4. Does the participant think about prioritizing some patients over others based on pre-determined criteria such as age will work?	<input type="checkbox"/> Age based criteria in place or makes sense <input type="checkbox"/> Age based criteria will not work <input type="checkbox"/> Other:
<i>Any Quotes?</i>	
5. What other than age could inform which patients gets priority for critical care in this context?	<input type="checkbox"/> Gender <input type="checkbox"/> Money <input type="checkbox"/> Social role / connections <input type="checkbox"/> Other: Summarize point made on those factors (2-4 sentences)
6. Is there a plan for patients who will not (as a result of resource shortages) receive intensive/critical medical attention?	<input type="checkbox"/> No, not at present <input type="checkbox"/> Yes (If yes describe plan briefly)
<i>Any Quotes?</i>	
7. Recommendation for care of the critically ill triaged out of life-saving/intensive care in worse case scenario. What can or should be done for these patients or their families, in the participant's view? What would help and why?	
8. Do they express concern for the mental well-being of the frontline workers?	<input type="checkbox"/> No <input type="checkbox"/> Yes (If yes, please summarize concerns in 1-2 sentences)
<i>Any Quotes?</i>	
9. What other concerns do they mention?	1. 2. 3.
10. Who do they feel should decide which patients are prioritized? Explain briefly.	<input type="checkbox"/> Hospital-based committee <input type="checkbox"/> Hospital teams on case by case basis <input type="checkbox"/> Community <input type="checkbox"/> Other: _____

	Explain their view (3-5 sentences):
<i>Any Quotes?</i>	
11. What are the participant's recommendations <i>with respect to communication</i> about COVID-19 triage and care plans, in summary? Maximum 3 sentences.	
12. What needs to be taken into account, when engaging in these communications, (with patients, families, communities), in summary?	1. 2. 3.
13. Do any past experiences or overarching concerns seem to be informing the participant's responses in this interview in general, or to particular questions? Maximum 4 sentences.	
<i>Any Quotes?</i>	