Health Care Resource Allocation
Decisionmaking During a Pandemic

Lori Frank, Thomas W. Concannon, Karishma Patel
Preface

Recognizing that challenges inherent to the fragmented nature of health care delivery in the United States threaten the quality of health care resource allocation decisions, we created a rapid response Core Guidance Checklist to support such decisionmaking during the Coronavirus Disease 2019 (COVID-19) crisis. The Core Guidance Checklist was created from a consensus discussion process with bioethicists, health system leaders, clinicians, patient advocates, and representatives of affected communities. It is intended for use primarily by decisionmakers within health systems to strengthen resource allocation policy development and implementation and improve the decisions that result. It is also intended to guide health care resource allocation policy development and implementation by state and regional policymakers, community health centers, and relevant postacute care settings, such as skilled nursing facilities. Finally, the core set of elements in the checklist can be used to guide evaluation of allocation guidance policy, both the content and the consequent decisionmaking, to spur improvements and to increase public trust.

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In the current Coronavirus Disease 2019 (COVID-19) pandemic, many policymakers are working with no established plan or methods for making decisions about admissions and discharges, or for determining allocation of scarce but lifesaving health care resources for patients and personal protective equipment for health care and long-term care workers. In many settings, decisions are being made ad hoc, with limited information and no input from patients and families. U.S. health systems, unlike those of many industrialized nations, are fragmented, further complicating any effort to identify and replicate successful responses to these ethical dilemmas across health care settings.

Criteria for allocation of scarce medical resources are not settled. Academic and public debates from the start of this pandemic have addressed issues such as how age and disability status of patients should affect allocation decisions; whether front-line workers, pregnant women, or single parents should receive preference; and how triage systems might address or exacerbate underlying racial, ethnic, geographic, and other health care disparities. Each of these conversations has called into question existing and proposed triage rules and allocation decisions. For instance, accumulating clinical information about COVID-19 suggests that commonly used indexes like the Sequential Organ Failure Assessment score—a mortality prediction score based on the degree of dysfunction of six organ systems—may yield flawed decisions related to the COVID-19 illness, which has novel clinical presentations that are still unfolding.

Recognizing that these challenges threaten the quality of health care resource allocation decisions, we created a rapid response Core Guidance Checklist to support health care resource allocation decisionmaking during the COVID-19 crisis. The Core Guidance Checklist was created from a consensus discussion process with bioethicists, health system leaders, clinicians, patient advocates, and representatives of affected communities. It is intended for use primarily by decisionmakers within health systems to strengthen resource allocation policy development and implementation and improve the decisions that result. It is also intended to guide health care resource allocation policy development and implementation by state and regional policymakers, community health centers, and relevant postacute care settings, such as skilled nursing facilities. Finally, the core set of elements in the checklist can be used to guide evaluation of allocation guidance policy, both the content and the consequent decisionmaking, to spur improvements and to increase public trust.
Health Care Resource Allocation—Core Guidance Checklist

This Core Guidance Checklist identifies a minimum set of ethical and clinical principles that are needed to support health systems as they develop and implement health care resource allocation policies during the current pandemic, to ensure that health care resource allocation decisions are clear, consistent, current, collaborative, and context sensitive.

Clear and Consistent Criteria and Goals

✓ Are clinical criteria for determining clinical prognosis clearly stated?
  o Is short-term survival included in prognosis determination?
✓ Are unnecessary variation minimized in the development and content of the guidance policy?
✓ Are the ethical principles that are used clearly identified?
✓ Are each of the following components addressed?
  o respect for autonomy, nonmaleficence, beneficence, and justice in accord with general biomedical ethical practice
  o responsible resource stewardship
  o achieving the most good at a population level, rather than the usual standard of addressing individual patient-level wellbeing
  o avoidance of bias in allocation decisions based on nonclinical patient characteristics, such as race/ethnicity, gender, age, presence or absence of disabilities, and presumed health-related quality of life before or after resource allocation.

Current and Collaborative Decision Processes

✓ Does the policy indicate frequency of collection of relevant information for informing ongoing allocation decisions? Is the information current? Is a process specified for vetting information to be used in decisions?
✓ Is the process collaborative? Are methods specified for incorporating relevant stakeholders into creation of resource allocation policy?
✓ Does the process take a systems view, considering regional rather than health system–specific triage and resource allocation?
  See Figure S.1, Responsibility Grid.

Evaluation

✓ Are clinical outcomes reviewed at intervals frequent enough to permit policy revision?
✓ Is a process specified for regularly auditing fidelity of the decisions to the allocation policy?

Context Sensitive

This Core Guidance Checklist includes elements that are applicable across all settings. It includes questions requiring some interpretation so that elements may be adapted by decisionmakers to their local context. For instance, the checklist asks decisionmakers to assess whether clinical and ethical criteria are clearly stated but doesn’t specify the exact criteria that should be used. It asks whether clinical outcomes are reviewed frequently enough without specifying an exact frequency.
✓ Is the policy tailored to meet local implementation needs?

Strength of Allocation Policy

The policy should be considered unacceptable if

- clinical and ethical criteria are not made explicit
- input is limited solely to clinical decisionmakers regarding scope of guidance.

Figure S.1, the Responsibility Grid, is intended to guide the process for inclusion of the core policy elements to ensure the policy is current and collaborative. The Responsibility Grid also provides guidance regarding the intensity of involvement of triage officers, other clinicians, ethicists, legal experts, and public stakeholders.

Triage officers have primary responsibility for implementing health care resource allocation policy, but they share responsibility with other health system clinicians, including the Triage Team, for collecting information to inform policy implementation and for evaluating whether the policy is working as intended. Ethicists and legal experts may be consulted about specific aspects of implementation in a way that public stakeholders are unlikely to be, but members of the public may be consulted about how implementation affects patients, consumers, and other community members. Other health system clinicians are responsible for evaluation of unintended consequences of the policy, such as widening survival gaps among different types of patients; this information must be conveyed to the triage officers as part of their shared responsibility regarding information used in policy implementation. Other health system clinicians and public stakeholders share responsibility for communicating with the public about content of the policy, how it was developed, how it is implemented, and what its results are over time.
Figure S.1. Responsibility Grid for Core Elements of Health Care Resource Allocation Guidance

<table>
<thead>
<tr>
<th></th>
<th>Triage Officers</th>
<th>Other Health System Clinicians</th>
<th>Ethicists</th>
<th>Legal Experts</th>
<th>Public(s)</th>
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<tbody>
<tr>
<td>Information collection and vetting</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>++</td>
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<tr>
<td>Systems view of policy implementation</td>
<td>0</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
<td>+++</td>
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<tr>
<td>Evaluation: Working as intended?</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>+</td>
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<tr>
<td>Evaluation: Unintended consequences?</td>
<td>+</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>+++</td>
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<tr>
<td>Communication to public</td>
<td>0</td>
<td>+++</td>
<td>+</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>Implementation</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>0</td>
</tr>
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NOTES: Ratings: ++++ = primary responsibility; +++ = shared responsibility; ++ = consulted; + = informed; 0 = no input. Other health system clinicians includes internists, hospitalists, specialists, respiratory and rehabilitation therapists, nurses, and other health professionals involved in providing primary prevention or care of patients with the condition. Public(s) includes patients, family members, informal caregivers, advocates and members of disproportionately affected communities, and individuals who are at risk of infection.
We would like to acknowledge the RAND-Initiated Research program and the dedication of Lisa Jaycox and Susan Marquis to this program. Lisa provided substantial guidance for the project. We would also like to acknowledge the review efforts coordinated by Lisa Turner and the ongoing review this work received from Susan Dentzer, Matthew Wynia, Sangeeta Ahluwalia, Jeanne Ringel, and Paul Koegel. We are also grateful to Samantha Bennett and Steve Oshiro for their excellent editorial and production work. Finally, we would like to acknowledge the attention to detail Libby May provided to the panel slides and to this report.
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>CDC</td>
<td>U.S. Centers for Disease Control and Prevention</td>
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<td>COVID-19</td>
<td>Coronavirus Disease 2019</td>
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<td>NASEM</td>
<td>National Academies of Sciences, Engineering, and Medicine</td>
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<tr>
<td>PPE</td>
<td>personal protective equipment</td>
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<tr>
<td>SOFA</td>
<td>Sequential Organ Failure Assessment</td>
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<td>WHO</td>
<td>World Health Organization</td>
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1. Introduction

The Coronavirus Disease 2019 (COVID-19) pandemic creates multiple challenges for managing health care resources. Rates of illness, hospitalization, and death related to Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection followed a dramatic growth curve in the United States, as well as in other countries, from February 2020 on (Wilson, 2020). Variation in—or the complete absence of—health care resource allocation policies across health care settings has led to situations in which some clinical staff became de facto decisionmakers about allocation, often with life or death consequences for their patients and even for themselves.

Moral distress for clinicians can be reduced and the quality of decisions can be improved with clear guidance. To that end, several groups around the country have created guidance documents for health care resource allocation decisionmaking. For example, new guidance created by White and colleagues at the University of Pittsburgh Medical Center based on past pandemic planning addresses ethical and clinical principles that are relevant for real-time allocation decisionmaking now (White and Halpern, 2020). Despite the existence of carefully crafted guidance such as this, uncertainty among providers is pervasive. COVID-19 presents differently, is treated differently, and responds to treatment differently than the influenza-type pandemics on which some of the preparedness literature is based. Given novel clinical presentation, treatment, and response of COVID-19, the suitability of the most widely recommended tool for establishing prognosis, the Sequential Organ Failure Assessment (SOFA), is questionable (National Academies of Sciences, Engineering, and Medicine [NASEM], 2020a).

News media reports since March show that patients and communities have concerns about the fairness of allocation protocols (Baker and Fink, 2020; Pfeiffer, 2020; Kaste and Hersher, 2020; Guelzo, 2020). Ethical principles underlying decisions are unfamiliar and unclear to the public. Lack of clarity on how ethical principles are applied adds to the lack of public trust in allocation policies. For example, one such ethical principle is rejection of categorical exclusions that would deprioritize resource allocation to patients with specific diagnoses, such as physical or intellectual disabilities. The U.S. Department of Health and Human Services recommends against using categorical exclusions, but several states continue to endorse their use in guidance to health care providers (Godfrey, 2020) and these policies are now being challenged legally.

“The absence of a triage system, consistently applied within and between hospitals, may lead to unnecessary deaths, increased moral distress for front-line clinicians, and a lack of public confidence in the fairness of scarce resource allocation.”

Maves et al., 2020
While much research and clinical care is moving toward patient and community-centered models, few health care resource allocation guidances address preferences of the public and communities that are most widely affected by COVID-19. These voices have largely been absent in guidance development and postdecision audits across the health sector.

The focus of this work is on improving decisionmaking involving lifesaving health care resources for which a pandemic may cause resource scarcity.

Scope and Goals

Our observation of the current allocation decision challenges across the United States led us to ask this question:

*What procedural, ethical, and clinical inputs are required elements for high-quality decisions about allocation of scarce resources in a pandemic?*

To answer this question, we developed a rapid response Core Guidance Checklist. It identifies core elements for health care resource allocation decisionmaking, with input from a range of stakeholders and from the extensive research literature on resource allocation. The goal was to improve decisions about allocation of these resources by improving the guidance policies and decisionmaking process used within health systems. The RAND Corporation funded this work.

A pandemic can result in shortages of lifesaving resources, such as ventilators, personal protective equipment, space for delivering critical care, staffing, and testing reagents. We adopt the *space, supplies or stuff, and staff* framing of health care resources (Kelen and McCarthy, 2006; Carmona, 2006). See Appendix A for a list of definitions we used in this work.¹

The Core Guidance Checklist is intended to apply consistent decisional elements that support allocation of these and other vital health care resources. It is also intended to be used widely among health systems across the United States while still allowing for adaptation to local context. We seek to enhance the ethical orientation of the decisions through inclusion and consultation with others beyond the clinical team. The Core Guidance Checklist also provides a structure for assessing and revising health system resource allocation policy over time, based on the extent to which core elements are addressed.

The checklist is not intended to create specific, prescriptive allocation steps for health care providers and facilities. Rather, its standard core elements are meant to support real-time decisions with guidance policy and thereby reduce decisional stress for front-line clinicians. The

¹ We recognize that allocation of lifesaving health care resources is only one of several allocation challenges faced by health systems during the COVID-19 pandemic. Protecting health care workers and caring for people at the end of life are among the related challenges health systems face. While our work and this report are focused on lifesaving medical care, we do not minimize these related challenges. In several places throughout the report, therefore, we make reference to them and point to how they may be related to the present work.
core elements also account for the views of all stakeholders and meet a minimum set of ethical and clinical standards. The checklist is also not intended to revise the substantial prior work that addresses these needs, much of it coauthored by members of our panel (e.g., Zucker, Adler, and Berens, 2015; White and Halpern, 2020). If anything, the checklist builds on this important prior work.
2. Methods

To develop the Core Guidance Checklist, we completed the following steps:

1. reviewed the literature, including existing health care resource allocation guidance documents used within health systems
2. convened an initial panel to obtain relevant perspectives on allocation policies and ways to optimize both health-system policies and individual-level patient decisionmaking
3. queried panelists on specific potential core elements of allocation policies and processes for individual patient-level decisionmaking via a brief online survey
4. convened a second panel with the identified experts to further refine core elements and identify areas of consensus and disagreement.

We invited panelists to provide input on how decisions about health care resource allocation can be optimized in the pandemic. We fostered discussion among resource allocation decisionmakers, experts, and representatives of communities affected by resource allocation, such as clinicians and family members of patients (Concannon et al., 2012).

We shared two documents as preparation for the panel discussion: the University of Pittsburgh Guidance Model (White and Halpern, 2020) and recommendations on ethical principles by Emanuel et al. (2020). The Pittsburgh model was chosen to guide the discussion because it draws from a comprehensive combination of clinical and ethical criteria, from expertise of the authors over the past decade or more, and from public deliberation efforts (White and Lo, 2020; White and Halpern, 2020; White et al., 2009). The Emanuel et al. (2020) recommendations supplied a list of relevant ethical principles related to resource allocation decisionmaking, providing a way to discuss agreement and disagreement among the panelists.

This project was reviewed by the RAND Corporation’s Human Subjects Protection Committee and found to be exempt on April 24, 2020.

Panel Meeting Discussion Questions

The first panel meeting began with review of the main elements of the University of Pittsburgh Guidance Policy and the six ethical principle recommendations of Emanuel et al. (2020). Panel Meeting #1 discussion then focused on four issues: centralization, representative input, information, and longitudinal decisionmaking (see Table 2.1).

Following the first panel meeting, we identified the main themes from the discussion through thematic analysis of the discussion transcript. These themes formed the basis of a survey we sent to panelists after the first meeting. We used responses to the survey to formulate meeting discussion questions for the second panel (see Table 2.2). Panel Meeting #2 focused on the extent of agreement on an emerging set of elements that characterize good health care resource allocation decisionmaking, both in terms of the guidance documents developed for this purpose.
and in terms of specific individual-level patient decisionmaking. See Appendix B for additional details about the panel meetings, literature review, and development of the survey.

Table 2.1. Panel Meeting #1 Discussion Questions

| Questions | What are the benefits and drawbacks of central versus locality-specific guidance?  
|           |   • for clinical criteria?  
|           |   • for application of ethical principles?  
|           |   What are obstacles to guidance consistency across the United States? |

1. Centralization: Existing guidelines on allocation of scarce health care resources in an emergency exist, but they differ across states. Most combine clinical prognostic criteria with ethical principles, and some provide guidance for contingencies related to shortages (i.e., tie breakers).

| Questions | How should input from the public and from the patient community be incorporated into the decision process?  
|           |   What are methods beyond public deliberation for capture of public input?  
|           |   What is feasible in the crisis? |

2. Representative input: Existing guidelines place responsibility for triage decisions on a triage officer and Triage Team, involving clinical and administrative staff. Specific recommendations for bringing public input into health care crisis resource allocation decisions are lacking.

| Questions | Should real-time triage decisions include other inputs?  
|           |   Should Triage Teams reference local or other public deliberation exercises to review the outcomes of existing triage guidelines? |

3. Information: Existing triage guidelines incorporate indexes for survival and longer-term benefit.

| Questions | How does the likelihood of future waves affect the process for decisionmaking?  
|           |   Does addressing newly emerging scarcity change the process? |

4. Longitudinal decisionmaking: “In a prolonged event, such as a pandemic, the system may move in and out of a crisis standard of care model multiple times.” (Koenig, Lim, and Tsai, 2011, p. 160)
### Table 2.2. Panel Meeting #2 Discussion Questions

<table>
<thead>
<tr>
<th>Discussion question 1</th>
<th>What are required elements for a guidance?</th>
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<tbody>
<tr>
<td></td>
<td>• Criteria for clinical care</td>
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<td></td>
<td>• Ethical protections</td>
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<td></td>
<td>• Responsible resource stewardship</td>
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<td></td>
<td>• Attention to representation: guidance creation, specific decisions</td>
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<td></td>
<td>• Evaluation: decision quality, outcomes achieved</td>
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<td></td>
<td>• Auditing: fidelity of the decisions to the guidance</td>
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<td></td>
<td>• Pattern identification, information vetting</td>
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<td></td>
<td>• Impact on public trust</td>
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<td>• Durability of guidance</td>
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<tr>
<th>Discussion question 2</th>
<th>Should consistency and/or centralization be pursued?</th>
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<td></td>
<td>Existing guidelines on allocation of scarce health care resources in an emergency exist, but they differ among institutions and across states. Most combine clinical prognostic criteria with ethical principles, and some provide guidance for contingencies. For developing and disseminating guidance, who should be responsible, accountable, consulted, informed?</td>
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<tr>
<th>Discussion question 3</th>
<th>Who should be involved in specific treatment decisions? Discuss grid that includes providers/clinicians, ethicists, legal scholars, and public.</th>
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| Discussion question 4 | Who should be involved in creating and revising guidance? Discuss grid that includes providers/clinicians, ethicists, legal scholars, and public. |
3. Results

We met panel recruitment goals by involving representatives from all of the top-level categories that we identified as priorities except for pandemic-affected patients or their family members; we instead recruited the parent of a child with a disability in the limited time available. A total of 23 panelists joined this effort. Panel Meeting #1 involved 21 representatives of the stakeholder types or personae we identified. Panel Meeting #2 involved 20 panelists. See Appendix C for a list of panelists.

A total of 16 panelists (69.5 percent of the 23 panelists invited to Panel Meeting #1) completed the survey. Results are presented in Appendix D.

Findings are presented below, organized by major themes and combining information obtained through the two panel meetings, responses to closed-ended survey items, and input on free text survey items.

Discussion Themes

Thematic review of the discussion content from Panel Meeting #1 yielded five major themes that we use to organize the findings. An organizing point that emerged through the panel meetings was the distinction between (1) creating guidance and related policies, and (2) making individual patient-level treatment decisions. Specifically, the distinct ethical, clinical, and stakeholder involvement requirements of these two different aspects of resource allocation decisionmaking were contrasted throughout the discussions. Finally, discussion concluded with review of relevant ethical principles. In our discussion of these issues here, we note points of consensus and disagreement among panelists.

The five major themes that emerged through panel discussion were as follows:

1. The centralization or consistency of policy guidance at the federal, state, and/or health system levels in the United States.
2. The structure needed for ongoing monitoring of clinical information and supply, space, and staffing capacity during a longitudinal crisis.
3. The potential for a “systems” view—including health system, regional public health, and national public health—to influence policy development, individual patient-level decisions, and evaluations of decisions in aggregate.
4. Possibilities for broad and representative input in both policy development and evaluations of decisions in aggregate.
5. Evaluation of both fidelity of decisions to guidance, termed audit here, and review of decision quality using outcomes as a metric. Evaluations would permit identification of unintended consequences of decisions, for example de facto overrepresentation of one type of patient in prioritization decisions with resulting underrepresentation of other patient types, as well as intended consequences such as maximizing benefits in accordance with planned criteria.
Theme 1: Centralization and Consistency

Panelists expressed a variety of views about centralizing resource allocation policy. While there was some disagreement on the feasibility and advisability of centralization, many panelists expressed support for centralizing some elements of resource allocation guidance policy. Some sample comments:

- “It is a theoretical good to have a single national framework.”
- “We are in a situation right now where I think we need to rely on the states, but I would hope that we think about it more generally as something that at least could be standardized and recognizes the rights of people across states.”
- “There might be some states who haven’t done their own thinking about these allocation issues, and it would be good if they had something well-crafted to rely on. That’s one possible argument for something central.”
- “Ethical principles do not vary simply based on which state one happens to reside in. . . . Therefore, I support consistency in guidelines across the U.S., which will necessarily require much work to make this happen. Another reason for centralized guidance is that resources (such as ventilators and PPE [personal protective equipment]) are frequently shifted [among] states, so having different resource allocation policies across states creates confusion. From a practical perspective, overarching national guidance would help resolve these problems.”

On the survey, 13 of the 16 panelists agreed with this statement: “Guidance should be centralized nationally for adaptation by states and localities.” See Appendix D for specific survey responses.

In discussion of content of centralized policy, several panelists pointed to attention to equity. One panelist suggested including in the guidance reference to race equity laws existing in many jurisdictions and the possibility of expanding the definition of equity to include other statuses and identities (e.g., ability status).

Panelists also identified challenges to centralizing allocation policy. One of these was concern that such a policy might be overly general and vague. One panelist stated, “My worry is that central guidance is either going to be incredibly vague and leave ethical questions that are key unanswered and, more importantly, room for schemes that are ethically unacceptable.” Several panelists also noted political challenges to centralizing allocation policy.

Some panelists were concerned that standardization might limit state innovation. In both meetings, panelists reflected on the interaction between federal leadership and state decisionmaking, with many expressing their belief in the primacy of local or state-level decisions and the value of state-level experimentation. One panelist remarked, “If you look at some other questions that are hot-button ethics issues in medicine, like access to physician aid in dying, clearly it’s something that [is] worked out through the states and is still being worked out.”

State-level experimentation was seen as especially important in longitudinal crises, such as COVID-19, because clinical understanding and resource needs are changing over time. While
many panelists supported identification of core elements for a policy that could be widely applicable, several panelists agreed that some specific policy points should be locally developed. As one panelist stated, “We’re in such an uncertain period about what is the best way forward that the laboratory of the states may end up proving to be a really valuable thing . . . until we have some coalescence around best practices, I would be reluctant to centrally or federally advocate one particular strategy.”

One survey respondent pointed to the centralization provided by the U.S. Centers for Disease Control and Prevention (CDC)—and its limitations—as a guide to communicating broadly about centralized policy elements: “Arguably, the CDC already provided some high-level guidance, but I think it was too general and not operationally oriented, such that there was still a long way to go for anyone who wanted to get across the finish line of an actual hospital policy. We’d also want to make sure that there was a clear explanation that the national-level guidance was a model that other states could use as is or adapt based on the values of its citizens.”

In general, panelists were optimistic about the potential to identify core elements for a centralized national guidance while preserving states’ roles as laboratories for policy experimentation and the role of individual health care systems to adapt content. All levels of policy, pointed out one respondent, depend on public trust: “It may make a big difference if the policy is a ‘government’ policy or a ‘professional’ policy. One that comes from ‘expert doctors’ may be seen as preferable to one developed by government officials—even if based on medical and ethical opinions.”

**Theme 2: Information Collection, Vetting, and Use**

Both panel meetings addressed the types of information required to inform allocation guidance policy generally, as well as the types of information needed for individual patient-level treatment allocation decisions. Panelists agreed that the decision process requires constant monitoring of clinical information, as it may evolve during a pandemic, and vetting of the completeness, credibility, and accuracy of such clinical information.

While there are widely accepted standards for assessing the strength of clinical evidence, understanding the credibility of information sources and content is more nuanced. The source may be highly credible, but the information may be incomplete (e.g., early and anecdotal signal of favorable drug response), or the source may have questionable credibility but offer potentially useful information (e.g., data on differential risk of mortality by sex provided by an official Chinese government channel).

A panelist in Meeting #1 suggested that constant monitoring is both useful and feasible in the midst of a rapidly changing pandemic while recognizing the logistical challenges of such monitoring: “There is room, at some point or in some fashion, to integrate new data that’s coming out day-by-day into the way in which we operationalize those principles. I’ve marveled
to see that [Douglas White] and others have updated the [University of Pittsburgh Medical Center] guidelines.”

The importance of reviewing information frequently recurred as a theme. One panelist expressed it this way: “Because we know so little about the actual accuracy and effectiveness of the tools that we’re using, there’s a real risk that we will implement something thinking that we’re going to get one outcome or one population-level outcome, and the evidence that we collect might show us that we’re actually not at all achieving what we intended to. And I think that those kinds of data would be normatively important to circle back and alter the criteria.”

The discussion of information collection, review, and use in individual patient-level allocation decisions included reference to the way examining outcomes across these decisions can improve allocation guidance policy. As one panelist put it: “If we started to see that truly there seemed to be really disproportionately poor outcomes in certain populations, that might be the kind of information that we should use to change the allocation framework.” This discussion also referred to the link between information review and identification of inequity: “Are there patterns that come out from the triage decisions over time? And that can actually, I think, serve to operate as a mirror, so to speak, to whether or not certain implicit biases are coming across in decisionmaking by the triage.”

Another panelist referred to the value of a feedback mechanism between review of patient-level outcomes and policy structure, with the potential for policy improvement: “There [are] ways in which we could start with outcomes, but then that could reciprocally be woven back with thinking about the process of the way in which these decisions are made and potentially improve the process.” Panelists agreed on the potential for ongoing information review to aid with identification of important patterns related to patient need and impact of decisions.

Several panelists advocated context-specific schedules for information review, given differences in how individual health facilities can address modifications. One panelist said, “I think each organization, based on the clinical situation, is going to have their own cadence of needing to update their information and revise their decisionmaking process around that. It’s a function of patient need . . . and, frankly, the stuff in the space, and how those interact, which will really produce the cadence with which you have to revise your thinking and decisionmaking.” When asked whether frequency of information review should be part of centralized policy elements, another panelist responded, “I don't think so. I think the organizations will do it based on the circumstances in which they find themselves. I think a guidance could simply be that you have to pay attention to having adequate updates of the information and use them in a feedback loop for learning of what’s going on.”

On the survey, all but one panelist endorsed including a general recommendation for collecting and using information regularly in the core set of guidance elements, and all but one also endorsed including a specific recommendation regarding who should be involved in information review (for example, include researchers or patient representatives). See Appendix D for survey results.
Theme 3: Systems View

Two related issues of connections across the health ecosystem emerged during the first panel discussion: using regional rather than health system–specific triage and resource allocation, and addressing pandemic and nonpandemic health needs from a perspective beyond that of individual health care facilities. Both are examples of a systems view, and both were endorsed by panelists as important for improving decisionmaking related to resource allocation.

The benefits of regional rather than system-specific resource allocation were endorsed by all respondents to the survey, who agreed with this statement: “An ideal triage and allocation guidance document should reference coordination of need and resources regionally.”

In open-ended survey comments, a panelist noted such regional coordination “is not novel, though, and is embedded in almost every state guidance document I’ve seen.”

Other panelists indicated that allocation decisionmaking was generally health system–specific, introducing inefficiencies and amplifying resource inequalities. As one panelist stated, “Sharing of resources and information regionally is crucial, given our pattern of health inequities. Resource-poor institutions serve the poor in many major cities and are easily overmatched by a disaster, while well-resourced and more powerful institutions have capacity to spare. There needs to be a way of sending patients and/or staff and stuff from an area of plenty to one of need.”

Panelists agreed with the value of a broad view of health care as a corrective for narrow within-facility focus and its attendant inefficiencies in terms of meeting public health goals. This idea was expressed in terms of the need for connections among different health care sectors. “I think we need a systems approach, and, just from working in the long-term care sector, I can tell you that it’s very clear that with a serious investment in the long-term care sector, we would have kept people out of the hospitals. And this is just a disaster that I’m hoping we will learn serious systemic change from.”

Another panelist agreed that a facility-only view of resources in a pandemic could lead to significant harm elsewhere in the health care ecosystem, if broader impacts of the use of scarce resources are not considered: “[M]y worry is that we need to be thoughtful about, what do we really mean by maximizing surge capacity? At what point do we say the harms of doing so outweigh the benefits?”

Another comment on the survey included endorsement of a comprehensive systems view and a recommendation for implementing it: “Health care systems exist to serve the public. In times of crisis, it is imperative that serving the public will cross the boundaries of organizations. Hospitals need to think not as ‘hospitals’ but rather as a point of care and expertise among others. In this way of thinking, for example, the problems of a nursing home are the issues of the hospital. Both are responsible together for solving them. How to operationalize this? A crisis command structure set up by the regional/state government would seem to be the best route.”
Theme 4: Representation

Both Panel Meeting discussions addressed which perspectives and whose views should be included in each step—resource allocation policy development, policy evaluation, and individual-level patient treatment decisionmaking. Next, we distinguish a need for broadly representative input in policy development and evaluation from the need for a focused selection of individuals who can make specific allocation decisions for an individual patient. Panelists emphasized the connection between the two, particularly when discussing “pattern finding” across individual decisions to inform policy. Panelists observed that nonclinicians are seldom included in allocation policy. Active inclusion of different stakeholders is not the cultural norm for much decisionmaking within health systems in the United States. Crisis guidelines are mostly silent on the inclusion of some stakeholder viewpoints, particularly those of members of the public, such as patient and consumer advocates.

Public Inclusion in Policy Development and Evaluation

On the survey, panelists were asked specifically about stakeholder inclusion: “For decisions about specific patient resource allocation, rate the importance of including input from the following stakeholders.” Among the 16 panelists who completed the survey, most agreed that clinical staff were very important to individual patient-level decisions, but opinion was divided on the importance of including various public representatives, such as patient and consumer advocates. Reflecting one of these perspectives, one respondent commented, “The overarching principle is that those communities that are disproportionately impacted by a public health emergency should have an opportunity to be heard.” That current policies and procedures are mostly silent on the inclusion of public members may be a matter of benign neglect, but our panel recommended that policy take this issue up. See Figure 3.1.
Related questions included how cultural views of leadership and hierarchical decisionmaking—rather than consensus-based decisionmaking or participatory decisionmaking—inform triage and allocation decisions. Panelists agreed that the perspectives to be included in vetting information may vary by decision type and context-specific factors, such as the size of a facility. There was agreement that final arbitration of decisions at the point of care needs to be managed by a single triage officer, and that this person should be a clinician who is not engaged in direct care of the patients for whom decisions are being made. But final arbitration of decisions by this officer should be bounded by broadly representative policy development and information monitoring on the one side of a decision, and evaluation of the fidelity and quality of decisions on the other.

Panelists agreed on the value of obtaining input from public representatives, although they noted the feasibility challenges of doing so, particularly when there is little time to make decisions. One said, “I totally agree about deliberative democratic techniques being crucial to ascertain considered judgments from people rather than kind of reflexive responses. . . . I guess I’m a little more sanguine on the idea that we could still do this now. You know that the deliberative democratic
work we did in [state name redacted] was in person, and it was a half day in person. But I don’t know that it would necessarily have to be in person. I think you could still gather a representative sample and do this via Zoom or Skype.”

Educating the public was raised as another potential outcome of public input: “This would serve somewhat of an educational purpose as well . . . the public may not have a solid understanding of . . . what really goes into making these decisions.” This panel, therefore, identified additional rationales and potential outcomes of public involvement, underscoring its value. Panelists generally concurred with the conclusion from public deliberative work expressed by Daugherty Biddison et al. (2014b) that members of the public “felt strongly that no single principle could adequately balance the competing aims and values triggered by allocation decisions.”

The specifics of whom to involve was the topic of a fair bit of discussion. One panelist provided feedback that “The overarching principle is that those communities that are disproportionately impacted by a public health emergency should have an opportunity to be heard. Who[m] we choose to incorporate within the deliberative process (if not all voices can be heard at once) will depend on emerging evidence about the disease and which communities are most at risk.”

**Stakeholder Input in Specific Patient Decisions**

Involving the public in individual patient-level resource allocation decisions was widely seen as a logistical barrier. One panelist said, “A committee cannot easily make real-time decisions for any specific patient . . . . Oversight can come in community engagement before, during, and after the pandemic, in planning allocation processes, in the incorporation of community values and preferences and in post-hoc review. The whole point of using SOFA scores and other triage systems is to make the decisions objective. You need a researcher, not a community member, to monitor and see that those systems do, in fact, allocate fairly.”

The role of a Triage Team, as described by the University of Pittsburgh model, was endorsed by panelists, but some expressed concern about limiting team composition to clinicians. To be clear, a Triage Team is a group of individuals who work with the triage officer on the collection and assessment of newly released clinical information and with the collection and assessment of recent triage decisions to ensure adherence to current policy. Our panelists saw an important role for representatives of the public and especially of affected communities on the Triage Team, agreeing largely on the value of expanding Triage Team input beyond clinicians: “Sometimes that person-centered perspective of the real people will key us into something that we in our bubble might not have thought of. And so it is very valuable, and it is possible to do in a variety of channels.” However, there was debate on the logistics of involving others.

One panelist spoke to the need for triage officers to be trained, citing “the critical importance of recognizing implicit bias, disability rights considerations, and all of the other things that would, in the broadest sense, represent practical wisdom that they need to have to make these decisions well.”
Another panelist countered that this training might not be effective, necessitating bringing specific perspectives in directly, not indirectly via training. “[T]he research has shown that we haven’t done a good job of training out implicit bias, and, to be quite honest, we haven’t done a good job of training out explicit bias. There’s research that even shows [that] as African American physicians, as they’re going through medical school, actually they have an increased bias against black patients. So I think it’s just important to know that it’s in the room. So how can we offset that when we’re trying to collect a team together?” Still another panelist suggested that including “diversity, equity, and inclusion staff on the Triage Team” could bring in the specific training and perspectives and avoid the problems of limited effectiveness of training others.

As part of the discussion on representation, panelists discussed a recently published critique of the Emanuel et al. (2020) recommendations and White and Lo statement (2020). The authors of the critique claim that recent guidance might exacerbate existing racial and ethnic disparities in health care: “[U]nfortunately, neither article acknowledged the structural racial inequities that inherently bias its proposals, nor did either piece adequately acknowledge how its care rationing plan might worsen already racially disparate health outcomes” (Chomilo et al., 2020). In discussion, Dr. White expressed concern that the blog post by Chomilo and colleagues did not accurately characterize the Pitt model policy, stating that “in the longer protocol that was attached to the Journal of the American Medical Association “Viewpoint” article, we very explicitly laid out the affirmative steps that we built into the protocol to try to redress social inequalities that negatively impact patients’ long-term life expectancy.”

There was broad agreement that individual patient-level treatment decisions, while grounded in ethical and clinical principles, could have stronger grounding in policy that is informed by involvement of the public. During panel discussion, we reviewed existing literature related to the role of public involvement in resource allocation, noting that the rationale for public involvement is framed as ensuring “legitimacy of the process and the standards” and obtaining “the public’s trust” (NASEM, 2020b). One panelist noted that respect for persons was another rationale for obtaining public input. Another panelist noted the potential for public input to improve decisions: “The goals go beyond legitimacy and public trust to extend to substantive input that could refine the framework.”

**Theme 5: Evaluation**

Panelists supported two forms of evaluation: (1) an audit addressing the extent to which guidance policies are adhered to—that is, fidelity of specific decisions to the requirements of the policy; and (2) a more general evaluation concept, to review the quality of the decisions that result from a guidance policy, looking at patterns that might emerge across all decisions.

As one panelist remarked, “I liked the thought of an auditor, somebody who really is tasked with, from the appropriate perspective of understanding about structural inequality and social determinants of health, to look at what’s going on, retrospectively, as needed and come out with
an audit that says, ‘Gee, this is what we did because we had no choice. We made the best decisions we could at the time. But given the following principles, we’ve looked at the way this fared and we have the following recommendations.’”

Panelists expressed concerns about predicing evaluations on the outcomes of the decisions, however. One panelist remarked, “One could have a high-quality resource allocation strategy with outcomes that were not ideal, based on local factors outside the control of the strategy. Also, outcomes-based approaches could raise concerns about utilitarianism, and there may be difficulty in achieving consensus on what an ideal outcome would look like.” This panelist suggested instead to state that “an ideal guidance document should include recommendations for evaluating the quality of the decisions’ This [approach] would seem similar to how root-cause analysis for medical errors [is] conducted, in which the outcome is not necessarily the most important part of the analysis process.”

Discussion of Recommendations for Ethical Principles to Address

Panelists discussed overall recommendations for principles to reference in any core set of guidance checklist elements. In some cases, consensus was achieved about specific principles—e.g., avoiding categorical exclusions as a criterion used in allocation decisionmaking, treating patients equivalently in terms of resource allocation whether they have a diagnosis of COVID-19 or not, and the need for incorporating relevant information into decisions.

There was a consensus of opposition to the recommendation of Emanuel et al. (2020) to prioritize health care workers. Panelists’ concerns centered on how health care workers are defined, especially if it is by the extent of workers’ education and training. In Panel Meeting #1, one panelist said, “They [say] the longer [that you’ve trained], the more important you are. Nothing could be a worse recommendation. So the hand surgeon who has no role in the pandemic comes out ahead of the respiratory therapist.”

Panelists turned to a potential alternative formulation of the recommendation to prioritize essential health care workers, in which health care workers is replaced by the term essential workers. In this formulation of the recommendation, supply chain workers, including food workers, are rightfully considered essential. Extent of training of medical personnel, while acknowledged as important, was rejected as the reason to prioritize medical personnel over other essential workers. The group also acknowledged that definition of essential varies by stakeholder perspective. While the concept of essential workers was accepted, use of essential workers as a generalizable recommendation for prioritization for health care resource allocation was rejected.

Another recommendation of Emanuel et al. (2020) and others is to base allocation decisions on a lottery system over first-come, first-served as the allocation scheme. This found partial agreement but not a consensus endorsement among all panelists. There was agreement that first-come, first-served should be rejected because of its potential to disadvantage groups with limited
health care access relative to other groups. The lottery was not endorsed by all, however, as a definitive allocation scheme.

Emanuel et al. (2020) and others recommend prioritizing research participants for resource allocation. Some panelists voiced concerns that this recommendation is potentially coercive and a violation of ethical principles guiding research. In addition, some panelists expressed concern that such a priority might end up excluding individuals unable to provide informed consent for research owing to incapacitation, or who lacked health care proxies or advocates on scene in the COVID-19 pandemic who could authorize their research participation.

The longest and most difficult discussion was about maximization of benefits. While there was agreement that the principle of maximum benefit must be referenced, there was no consensus on specific implementation. The maximizing benefits principle is a general one (Emanuel et al., 2020) and the specifics of implementation depend heavily on the choice of ethical principles guiding benefit maximization. Is the benefit to maximize number of lives saved? Should reference be made to healthy life years, quality-adjusted life years, or life years without further specification? Panelists presented some pros and cons of different ways in which benefit could be maximized at the societal level. The recommendation is therefore to leave implementation to the local context.

The panelists discussed but also did not find consensus on the merits of using short-term or long-term survival to estimate benefit. “In moving away from really considering long-term life expectancy in this incremental way, we know [that] we were leaving ‘life years’ on the table,” one panelist said. “But we also felt it was critically important to make some affirmative steps to overcome the social inequity issues that can really limit long-term life expectancy, and that’s how we came out on it, saying ‘whether you have six years or 70, we’re going to treat you equally.’”

Another panelist pointed to ways in which the principles guiding benefit maximization and allocation criteria may change according to the resource being allocated. “It might also be really important to point out that the allocation criteria might well look very different depending on the resource in question. We may well get to a point where the elderly do have less priority because the data show that they have near uniform[ly] poor outcomes,” said one panelist. “But we might take a very different approach to how we allocate scarce vaccines. If it turns out that as we think the elderly are most at risk and vaccines might be most likely to benefit them, then it may be that for the vaccine that the elderly are at the [head] of the line.”

Reflecting the importance of legal touchstones, another panelist offered the following: “The U.S. Office of Civil Rights . . . has evaluated Pennsylvania’s model guidance through the disability rights lens and the social equity lens, and all of the complaints that were initially there have been resolved with the current framework. So that gives states some guidance that near-term prognosis and immediate-term prognosis are permissible from a legal perspective.”
Opportunities to Improve Health Care Resource Allocation Decisionmaking in a Pandemic

The review of the results of the themes from the initial panel discussion, discussion of ethical principles recommended for inclusion in allocation policy, and the survey results led us to three dimensions by which health system–level resource allocation guidance policy and individual patient-level treatment decisions could be guided: ethical principles, clinical and supply information, and engagement of stakeholders. These dimensions also guide evaluation of both policy in general and individual patient-level treatment decisions specifically.

Based on this idea, we constructed the following grids to help guide the discussion in Panel Meeting #2 (see Figure 3.2). The first focuses on individual patient-level treatment decisions—the bedside resource allocation decisions. The second focuses on development and revision of allocation guidance policies. Both are intended to demonstrate that specific types of evidence or information and ethical principles require consideration, along with consideration of who is represented in decisionmaking (the final column). Discussion of these checklists informed the final Core Guidance Checklist format.
Panel Meeting #2 concluded with a discussion of target audiences for dissemination. The group agreed that state departments of health would be good targets, and a suggestion was made to include the National Governor’s Association. Another suggestion was made to work through major medical health systems to speed dissemination. Concern was voiced about political will to enable rational allocation decisions: “How do you push political entities who don’t like the sound of any kind of rationing to do what must be done in the setting of a pandemic?”

Based on this work, we developed the following Health Care Resource Allocation—Core Guidance Checklist as a support for developing and revising resource allocation policies for use during periods of expected scarcity. The checklist includes a list of elements recommended for inclusion in high-quality guidance and a guide for rating quality of guidance based on adherence to these recommendations. The checklist concludes with a Responsibility Grid to guide inclusion of relevant perspectives.
Health Care Resource Allocation—Core Guidance Checklist

This Core Guidance Checklist identifies a minimum set of ethical and clinical principles that are needed to support health systems as they develop and implement health care resource allocation policies during the current pandemic, to ensure that health care resource allocation decisions are clear, consistent, current, collaborative, and context sensitive.

Clear and Consistent Criteria and Goals

- Are clinical criteria for determining clinical prognosis clearly stated?
  - Is short-term survival included in prognosis determination?
- Are the ethical principles that are used clearly identified?
- Are each of the following components addressed?
  - respect for autonomy, nonmaleficence, beneficence, and justice in accord with general biomedical ethical practice
  - responsible resource stewardship
  - achieving the most good at a population level, rather than the usual standard of addressing individual patient-level wellbeing
  - avoidance of bias in allocation decisions based on nonclinical patient characteristics, such as race/ethnicity, gender, age, presence or absence of disabilities, and presumed health-related quality of life before or after resource allocation.

Current and Collaborative Decision Processes

- Does the policy indicate frequency of collection of relevant information for informing ongoing allocation decisions? Is the information current? Is a process specified for vetting information to be used in decisions?
- Is the process collaborative? Are methods specified for incorporating relevant stakeholders into creation of resource allocation policy?
- Does the process take a systems view, considering regional rather than health system–specific triage and resource allocation?
  
  See Figure 3.3, Responsibility Grid.

Evaluation

- Are clinical outcomes reviewed at intervals frequent enough to permit policy revision?
- Is a process specified for regularly auditing fidelity of the decisions to the allocation policy?

Context Sensitive

This Core Guidance Checklist includes elements that are applicable across all settings. It includes questions requiring some interpretation so that elements may be adapted by decisionmakers to their local context. For instance, the checklist asks decisionmakers to assess whether clinical and ethical criteria are clearly stated but doesn’t specify the exact criteria that should be used. It asks whether clinical outcomes are reviewed frequently enough without specifying an exact frequency.
✓ Is the policy tailored to meet local implementation needs?

**Strength of Allocation Policy**

The policy should be considered unacceptable if

- clinical and ethical criteria are not made explicit
- input is limited solely to clinical decisionmakers regarding scope of guidance.

Figure 3.3, the Responsibility Grid, is intended to guide the process for inclusion of the core policy elements to ensure the policy is **current** and **collaborative**. The Responsibility Grid also provides guidance regarding the intensity of involvement of triage officers, other clinicians, ethicists, legal experts, and public stakeholders.

*Triage officers* have primary responsibility for implementing health care resource allocation policy, but they share responsibility with other health system clinicians, including the Triage Team, for collecting information to inform policy implementation and for evaluating whether the policy is working as intended. *Ethicists and legal experts* may be consulted about specific aspects of implementation in a way that public stakeholders are unlikely to be, but members of the *public* may be consulted about how implementation affects patients, consumers, and other community members. *Other health system clinicians* are responsible for evaluation of unintended consequences of the policy, such as widening survival gaps among different types of patients; this information must be conveyed to the triage officers as part of their shared responsibility regarding information used in policy implementation. Other health system clinicians and public stakeholders share responsibility for communicating with the public about content of the policy, how it was developed, how it is implemented, and what its results are over time.
### Figure 3.3. Responsibility Grid for Core Elements of Health Care Resource Allocation Guidance

<table>
<thead>
<tr>
<th></th>
<th>Triage Officers</th>
<th>Other Health System Clinicians</th>
<th>Ethicists</th>
<th>Legal Experts</th>
<th>Public(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information collection and vetting</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Systems view of policy implementation</td>
<td>0</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Evaluation: Working as intended?</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Evaluation: Unintended consequences?</td>
<td>+</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>Communication to public</td>
<td>0</td>
<td>+++</td>
<td>+</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>Implementation</td>
<td>+++</td>
<td>+++</td>
<td>++</td>
<td>++</td>
<td>0</td>
</tr>
</tbody>
</table>

**NOTES:** Ratings: ++++ = primary responsibility; +++ = shared responsibility; ++ = consulted; + = informed; 0 = no input. *Other health system clinicians* includes internists, hospitalists, specialists, respiratory and rehabilitation therapists, nurses, and other health professionals involved in providing primary prevention or care of patients with the condition. *Public(s)* includes patients, family members, informal caregivers, advocates and members of disproportionately affected communities, and individuals who are at risk of infection.
4. Discussion

We conclude that a core set of process and content elements can be identified to guide health care resource allocation decisionmaking during this pandemic, and that distribution of that core set to state departments of health, to other state-level policymakers, and to specific large health systems could support improvement in decisions about allocation of scarce health care resources. This core set of process and content elements comprises the Core Guidance Checklist presented in Chapter 3.

The focus of the Core Guidance Checklist is on improving decisionmaking to achieve better decisions. This goal is addressed by attending to the policy content, the clinical and ethical criteria selected for inclusion in health care resource allocation policy, and the implementation process—specifically, how relevant perspectives are represented in implementation of the policy and in evaluation of the results. Improved decisionmaking may result in some harms, particularly in terms of trade-offs among clinical and ethical criteria. For example, improved fidelity to a policy prioritizing patients with the potential for short-term survival may result in equity harms, if the likelihood of short-term survival varies systematically within the treated population according to factors such as race. This sort of trade-off “highlights the fundamental flaws we are facing in our guidelines,” as noted by Sederstrom (2020). The checklist can address some of these flaws.

Study Limitations

Our approach to developing a consensus approach has several limitations.

First, no COVID-19 patients or family members were included in these panels. As a crisis develops, input from those directly affected is needed. Second, we recruited participants through our knowledge of individuals working in relevant fields. A public search with an independent committee review of applicants would, in all likelihood, yield a different panel. Third, this effort is somewhat simplistic in its approach to stakeholder input. We identified the stakeholder “types” to include a priori and recruited according to those types. However, there is no agreed-upon consensus on who has “standing” to make these triage and allocation decisions. We present our recommendations based on expert input, but there are additional stakeholders who could be included, and there are myriad ways in which stakeholder types overlap and interact.

Stakeholder representatives in a small sample bring their own viewpoints, which may be idiosyncratic and nonrepresentative of their stakeholder type—and, therefore, potentially bias the work. Furthermore, different stakeholders have different competencies, which would ideally affect the weighting applied to input—for example, when the importance of physician input
should exceed that of input from patients, and vice versa. We have not addressed these issues and have left them unresolved.

Areas for Future Research

The rich exchanges during the actual panel discussions, along with additional input provided by panelists, help to identify additional areas for inquiry. Some of these topics are relevant to a range of disciplines, while others are specific to triage allocation in a pandemic.

*Patient, consumer, and resident engagement in allocation policy decisionmaking:* There has been no apparent effort to collect patient or long-term care resident and staff input about COVID-related decisions proactively. As a result, well-intentioned policies of excluding in-person family and informal caregiver visits with acutely ill hospitalized patients have been put in place and have proved devastating in multiple ways. Notably, the patient and long-term care resident communities have also been excluded from development and implementation of triage and allocation policies. Instead, the “unengaged” or “disengaged” model has played out as decisions are made primarily on the basis of epidemiology and/or decisions by the Centers of Medicare and Medicaid Services.

Nonetheless, could there be a way to include acute care patients, long-term care residents, family members, and staff in allocation policy and other related decisions now? How can these relevant perspectives be incorporated into policy development and evaluation, to mitigate negative consequences while recognizing the primacy of acute care goals like infection control in pandemic conditions?

*Guidance for policymakers—especially in health care—and the public on balancing responsibilities to self, family, community, and society.* There are challenging ethical dilemmas to be considered now, particularly given the differential impact of the pandemic on vulnerable populations. Are there reasonable exceptions to visitation policies for patients who are young minors, frail elderly, or cognitively impaired adults? How can urgent but nonpandemic medical needs be identified and addressed to avoid additional harm to public health? How might use of existing measures, such as a comorbidity index to predict benefit, end up “baking in” systematic disadvantages of underinsured and underserved populations to guidance for prioritizing lifesaving medical interventions?

*Authority and credibility of sources and information is a theme that underlies this work and is deserving of particularly close attention for its implications for appropriate pandemic management of health care resources and for pandemic-based public health decisionmaking more generally.* How does authority accorded by the public and political leaders to content experts like epidemiologists and immunology researchers affect the acceptance and use of pandemic-related information? Do local leaders have more credibility for some people than national leaders? How is the public determining who is a credible source of pandemic-related information and who is not? What role do various communication channels (e.g., peer-reviewed
journals, public channels like Twitter) have in establishing information credibility and authority of the sources?

*What are the longer-term implications of decisions related to disability rights regarding public distribution of health care resources?* Some states have continued to use diagnoses like dementia or disability status as reasons to exclude patients from priority in resource allocation. Will these categorical exclusions be used as reasons to limit access to other health care resources? Will this reasoning be used in decisions regarding reimbursement of health care interventions? The contention that discussion of *maximum benefit* yielded within our panel suggests that consensus on valuation of life is not near.

**Telehealth expansion** during the pandemic has been widely documented (Keesara, Jonas, and Schulman, 2020). We are not focused here on telehealth between patients in the community and physicians, although some critical triage has been taking place outside of the hospital, attributable both to space and staffing restrictions for outpatient and some emergency department consultations and to patient fear of infection on onsite visits. Technology-enabled clinician-to-clinician consultation is also not considered here, although support for resources required as well as reimbursement models to ensure viability of such consultation are both important topics to address. Telehealth strategies may support the goal of efficiency through system-level, rather than individual health system, focus for allocation decisions.

We recommend examination of possibilities for shared decisionmaking, including involvement of a patient’s family, when that involvement is remote for infection control concerns. “Telecare” for critical care decisions and end of life decisions requires recognition as a separate category of telehealth. The potential for miscommunication, including deadly miscommunication, is documented elsewhere (e.g., Kulish, 2020). We do not address this issue here, however, because it is related less to issues of scarcity and triage and more to patient-clinician communication and provision of patient-centered care.

**Downstream allocation:** Health care resources relevant to pandemic care expand beyond the proximal to more medial and distal. Specifically, dialysis supply chain has emerged as a critical “downstream” need, one with scarcity elements that affect patient care and mortality (e.g., Goldfarb et al., 2020). Resource allocation decisionmaking will need to expand to include all resources for which scarcity is affecting or may affect care.

**Conclusion**

We sought to develop a method for improving the quality and credibility of decisions that health providers and health systems are currently making about allocating scarce health care resources during this pandemic. Through a consensus discussion process with clinicians, health system leaders, bioethicists, disability rights advocates, legal scholars, and others, we identified core elements of sound resource allocation decisionmaking under conditions of scarcity.
The core elements include use of clinical criteria to establish short-term prognosis, and they include reference to basic issues of distributive justice and fairness within society. Specific process points were emphasized as supporting overall goals of fair and useful health care allocation policy. Two main elements related to collaborative representation: ensuring representation of perspectives beyond those of health system clinicians in the development of allocation policy, and creating a mechanism for ongoing review of the outcomes of implementation of the policy, with that evaluation conducted by a stakeholder group broader than health system clinicians and administrators.

Consistent application of the clinical and ethical criteria are core elements for improving decisionmaking, and ensuring that the public is involved in communication about the policy addresses the need to establish and maintain public trust. While specific elements of clinical and ethical criteria can be standardized across health systems, context-sensitive requirements will shape local adaptation. Finally, health care resource allocation policies require inputs of current information, at regular intervals, to be responsive to changing clinical knowledge and evolving knowledge of the impact of the pandemic across different populations.

This Core Guidance Checklist is designed to ensure that health system policy and allocation decisions are clear, consistent, current, collaborative, and context-sensitive. The Core Guidance Checklist may also be used by regional, state, and national policymakers to support policymakers and decisionmakers in local settings. Finally, the core elements also provide a structure for assessing and revising health system resource allocation policy.
Appendix A. Definitions

There are several concepts discussed throughout this report, and here we provide our working definitions.

Health care resources: While the initial focus early in the pandemic in the United States has been on ventilators, PPE, and intensive care unit bed space, the focus for this work is on health care resources more broadly, recognizing the interactions and dependencies among types of resources. We adopted the framing used by Abir et al. (2020) in their report on surge capacity in disaster response (see also Kelen and McCarthy, 2006; Carmona, 2006). Koenig et al. (2011) conceptualize resources similarly as “stuff, staff, and structure.”

Within a facility, the stuff to be managed ranges from complex medical equipment related to patient survival, such as ventilators, to more basic supplies of commodities such as drugs and PPE. Staff refers to measures of on-duty personnel, such as full-time equivalents per unit of population, service, or space. In the COVID-19 pandemic, staff has become a critical element of patient care to manage proactively and actively, given changes in staffing availability. To meet surge capacity needs, some regions have supplemented local staffing with those from other parts of the country. Space considerations were believed to necessitate rapid deployment of auxiliary spaces, like the USNS Comfort and refitting of the Javits Center in New York to accommodate patient care, as well as within-facility redeployment of space to expand critical care and intensive care bed capacity. Within long-term care, reallocation of space has been required to meet postacute discharge demand for skilled nursing facility beds. To ensure adequate infection control, it has also been necessary to keep COVID-19–positive and suspected positive residents separated from other residents, actions that have often required movement of residents and staff.

Additional definitions relevant to this work are for stakeholder involvement and stakeholder engagement. With stakeholder engagement, we reference active inclusion of stakeholders in the work, as partners in creation of a work product and not just as “subjects” of research (Frank, Basch, and Selby, 2014). With stakeholder involvement, we reference bidirectional communication, in which stakeholder input is included in the work product but stakeholders are not coauthors of the work product. Reference to stakeholder or public engagement in allocation literature meets the definition here of stakeholder involvement but does not indicate coproduction.

Finally, triage refers to the decisions regarding whom to treat, and in what priority, described here. We are referencing proactive triage as defined by the National Academy of Medicine (formerly the Institute of Medicine): “systematic decisions made by clinical or administrative personnel to a situation requiring resource triage where situational awareness is available and the decision making is accountable to the incident management process” (Stroud et al., 2010, p. 85). The distinction from reactive triage, defined as “ad hoc decisions made by clinical or
administrative personnel that do not follow a structured, systematic process” (Stroud et al., 2010, p. 85), is important. Health systems that are defaulting to reactive triage account for some of the confusion evident in health care resource allocation decisionmaking, underscoring the value of a proactive stance.
Appendix B. Methods

Review of Literature and Existing Guidance Documents

Sources reviewed:

1. Existing pandemic preparedness documents: We began our review by examining the 2009 Institute of Medicine report on pandemic preparedness (Altevogt et al., 2009), the New York State work on respirator allocation (Zucker, Adler, and Berens, 2015), the World Health Organization (WHO) pandemic guidance (2016), and related health care allocation policies from the United Kingdom (British Medical Association, 2020), Canada (Government of Canada, 2020), and Italy (Vergano et al., 2020).
2. New pandemic response publications related to the current pandemic, included as they became available (e.g., Maves et al., 2020; Chopra et al., 2020).
3. Select hospital-level resource allocation guidance policies.
4. Relevant bioethics literature. A full set of the references used can be found in the bibliography.

Identification of Panelists

We began by identifying the personae or stakeholder types to represent each of the major decisionmakers, experts, and affected communities. The initial categories were very broad: patients and consumers, providers, policymakers, and researchers. We further refined those categories into subcategories: bioethicists, disability rights advocates, family members of disabled individuals, types of clinicians—nurses, emergency or critical care physicians. In recruiting panelists, we were also mindful of creating an end product with relevance and usefulness in a range of settings, from low- to high-resource settings, rural and urban, large and small. See Table B.1.
Our initial goal was to collect input from all panelists, recognizing that time limitations could affect the number able to join one or both scheduled discussions on April 24 and May 1, 2020. We had a goal of synchronous meeting participation from at least nine individuals and developed a survey to collect asynchronous input.

To strike a balance between wide representation and the need for optimal group discussion, we decided to involve a maximum of 25 individuals as panelists. We used convenience-based snowball recruiting to fill out our purposively designed panel, beginning with individuals within our own professional networks and soliciting and accepting nominations of additional members.

As expected, some individuals represented multiple stakeholder perspectives. A major concern with recruitment was the availability of front-line health care providers, given current demands on providers during the pandemic. We targeted a minimum count of five clinicians with direct care experience, although not all were involved in treatment of patients with COVID-19. We also prioritized the inclusion of individuals with experience developing guidance documents (e.g., White and Halpern, 2020; Zucker, Adler, and Berens, 2015) and representatives of affected communities, including communities that have historically been underrepresented in policy development and for whom ethical protections would be critical in a pandemic affecting the same populations.

**Engagement Model**

We worked from an engaged model of research for this project, bringing together people with perspectives that are not often shared together. We sought to “set a big table.”

There is a challenge inherent in bringing together people with very different backgrounds and training. For some, the points discussed have been a focus of their careers. Others would be considering some of the issues for the first time. This disparity is a fundamental challenge

---

**Table B.1. Initial Stakeholder Categories Identified as Relevant for Panelist Invitation**

<table>
<thead>
<tr>
<th>Patients and consumers</th>
<th>Policymakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term care resident, over 65</td>
<td>State policy</td>
</tr>
<tr>
<td>Disability advocate</td>
<td>Federal policy</td>
</tr>
<tr>
<td>Consumer advocate</td>
<td></td>
</tr>
<tr>
<td>Working-age adult</td>
<td></td>
</tr>
<tr>
<td>Recent COVID inpatient, under 65</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Providers</th>
<th>Researchers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health system leader</td>
<td>Legal scholar</td>
</tr>
<tr>
<td>Long-term care leader</td>
<td>Health services or policy</td>
</tr>
<tr>
<td>ICU clinician</td>
<td>Philosopher/bioethicist</td>
</tr>
<tr>
<td>Palliative care clinician</td>
<td>Clinician/bioethicist</td>
</tr>
<tr>
<td>Hospitalist</td>
<td></td>
</tr>
<tr>
<td>ICU nurse</td>
<td></td>
</tr>
<tr>
<td>Other nurse</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: ICU = intensive care unit.
common to most stakeholder engaged research (Frank, Basch, and Selby, 2014). How much “training” or teaching is appropriate for those with less content background in the area under discussion? To what extent is that naivete the desirable perspective, such that training alters it to the detriment of engagement? We included basic reference material in the background information we provided to all panelists as one way to fill in potential gaps in training for some and to enable discussion of the key points.

Structure of Panel Meetings

The panel meeting format for information collection, analysis, and output drew on a consensus panel model (Fink et al., 1984). We sought to identify areas of consensus for this group of individuals and areas in which the lack of consensus indicated points of disagreement to examine in future research.

Due to pandemic restrictions on in-person meetings, we held a virtual meeting. We introduced the goal of the meetings and of the larger effort to invitees as the following: to understand through discussion, in addition to reference to relevant literature, how decisions about health care resource allocation can be optimized in the pandemic. Both panel meetings lasted for two hours.

Discussion in both meetings began with brief background about the concepts of usual, contingency, and crisis standards of care as summarized in the National Academies of Sciences’ Rapid Expert Consultation on Crisis Standards of Care for the COVID-19 Pandemic (2020a) and in N. Berlinger et al. (2020), and with review of basic clinical and ethical criteria that prior research suggested was relevant to allocation decisionmaking. The concepts of “staff, stuff, and structure” (Koenig et al., 2011) were also introduced to help guide the discussion of specific health care resources under consideration.

In advance of the first meeting, panelists were asked to read Emanuel et al. (2020) as the basis for discussion of ethical principle recommendations, and the most recent (April 15) version of the University of Pittsburgh guidance (White and Halpern, 2020) as an example of guidance policy. Discussion referenced the positions represented by Emanuel and colleagues:

1. Guidance for allocating scarce medical resources requires application of clinical criteria to maximize benefits. Under pandemic conditions, benefits are viewed at a societal level rather than at the level of individual patient benefit.
2. Prioritize essential workers for resources, given the risk they accept in performing their duties and given their prime role in clinical care for others.
3. A lottery approach to distributing scarce health care resources is preferable, ethically, to a first-come, first-served approach.
4. Accommodate evidence as it becomes available.
5. In allocation decisions, prioritize individuals willing to serve as research subjects, given the risk they are taking on.
6. Treat COVID-19 and non-COVID cases equivalently in terms of resource allocation decisionmaking.
Scope of Work for Panelists

Setting panelist expectations about the scope of the discussion was important to ensure efficient and fruitful discussion. As mentioned previously, panelists were invited with reference to the project goals of understanding how decisions about health care resource allocation can be optimized in the pandemic. Each panel meeting therefore began with a review of the scope of the project, clarifying that we would not be reviewing specifics of use of cut points on the SOFA, for example.

We used chapter topics from the WHO framework for pandemic response, along with categories from a recent systematic review to indicate what health care resource allocation topics were and were not within scope for our deliberations. We identified the following elements from those sources as within scope for our discussion: involving the local community; situations of particular vulnerability; allocating scarce resources; obligations related to medical interventions for the diagnosis, treatment, and prevention of infectious disease; rapid data sharing; and addressing sex- and gender-based differences.

We indicated that other WHO areas of pandemic focus would not be discussed, particularly public health surveillance; restrictions on freedom of movement; research during infectious disease outbreaks; emergency use of unproven interventions outside of research; ethical justifications for implementing crisis standards of care; and long-term storage of biological specimens collected during infectious disease outbreaks. We explained that our focus is on U.S.-based policy, and that we were excluding legal ramifications to health care workers of triage, triage appeal process, and the duty to plan.

The meetings were recorded through the Microsoft Teams application and transcribed by Rev.com, an external transcription service. Results were thematically reviewed by the study staff (this report’s authors) (Beebe, 2001; Hamilton and Finley, 2019). We identified the main themes that emerged from the first panel meeting and used them to guide the second panel meeting. Illustrative quotes were extracted from both meeting transcripts.

Survey

Based on our review of relevant literature, discussion with panelists at Panel Meeting #1, and input from quality assurance reviewers, we constructed a follow-up survey for Panelists to complete prior to the second panel meeting the following week, using the SurveyMonkey platform (SurveyMonkey, undated). Panelists were sent the link to the survey four days after Panel Meeting #1 and asked to complete it by the evening before Panel Meeting #2. The survey was intended to capture further panelist comments through open-ended input but included closed-ended questions as well, as a way to identify whether consensus was emerging on any of the five points. The questions were also developed to yield discussion points for Panel Meeting #2.
The RAND team reviewed the closed- and open-ended survey responses in preparation for Panel Meeting #2. Selected survey results were chosen for presentation in Panel Meeting #2 to guide the discussion.

The link between the discussion during Panel Meeting #1 and the agenda for Panel Meeting #2 is described in more detail in the Results section. Discussion questions focused on feasibility and appropriateness of centralizing guidance, as follow-up to Panel Meeting #1, and the discussion of representation was further developed to address specific perspectives to include and methods for their inclusion. The value of identifying the core elements common to high-quality and effective guidance was a particular focus for Panel Meeting #2.

There were seven closed-ended items: (1) endorsement of different scenarios regarding guidance consistency; (2) endorsement of scenarios for information surveillance and review; (3) endorsement with different options for taking a systems view; (4) importance rating (five-point scale with a neutral point) for representation in decisionmaking, regarding inclusion of specific perspectives; (5) agreement with two options for evaluation of decision outcomes and process; (6) endorsement of different elements to include in an ideal triage and allocation guidance document; and (7) indication of the primary stakeholder perspective that each panelist represented, with open text to collect additional perspectives each person represented. We also asked whether each panelist had attended Panel Meeting #1 and how many years of professional experience they had. Survey responses not reported in text are reported in Appendix D.
# Appendix C. Panelists

## Table C.1. Names and Affiliations of Panelists

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sergio Aguilar-Gaxiola</td>
<td>University of California, Davis, Center for Reducing Health Disparities</td>
</tr>
<tr>
<td>Madeleine Biondolillo</td>
<td>Premier, Inc.</td>
</tr>
<tr>
<td>Karl Cooper</td>
<td>American Association on Health and Disability</td>
</tr>
<tr>
<td>Denise Dudzinski</td>
<td>Department of Bioethics and Humanities, University of Washington</td>
</tr>
<tr>
<td>Timothy Farrell</td>
<td>University of Utah School of Medicine and Veterans Affairs Salt Lake City</td>
</tr>
<tr>
<td></td>
<td>Geriatric Research, Education, and Clinical Center</td>
</tr>
<tr>
<td>Charlene A. Galarneau</td>
<td>Harvard Medical School, Wellesley College</td>
</tr>
<tr>
<td>James Hodge</td>
<td>Sandra Day O'Connor College of Law, Arizona State University</td>
</tr>
<tr>
<td>Jason Karlawish</td>
<td>Penn Memory Center, University of Pennsylvania</td>
</tr>
<tr>
<td>Sam Kerstein</td>
<td>University of Maryland Department of Philosophy</td>
</tr>
<tr>
<td>Rebecca Kirch</td>
<td>National Patient Advocate Foundation</td>
</tr>
<tr>
<td>Robert J. Laskowski</td>
<td>(Formerly) Christiana Care Health System</td>
</tr>
<tr>
<td>Mindy Leffler</td>
<td>Casimir Trials</td>
</tr>
<tr>
<td>Lewis A. Lipsitz</td>
<td>Hinda and Arthur Marcus Institute for Aging Research, Harvard Medical School</td>
</tr>
<tr>
<td></td>
<td>Beth Israel Deaconess Medical Center</td>
</tr>
<tr>
<td>Andrew Marshall</td>
<td>Beth Israel Deaconess Medical Center, Harvard</td>
</tr>
<tr>
<td>Debra Oto-Kent</td>
<td>Health Education Council</td>
</tr>
<tr>
<td>Andrew H. Peterson</td>
<td>George Mason University</td>
</tr>
<tr>
<td>Khadija Robin Pierce</td>
<td>Tilburg Institute of Law, Technology, and Society, Tilburg Law School</td>
</tr>
<tr>
<td>Tia Powell</td>
<td>Montefiore Health Systems, Albert Einstein College of Medicine</td>
</tr>
<tr>
<td>Tiffany Riser</td>
<td>Advanced Practice Nurse</td>
</tr>
<tr>
<td>Debra Saliba</td>
<td>University of California Los Angeles Borun Center, Los Angeles Affairs, and</td>
</tr>
<tr>
<td></td>
<td>RAND Corporation</td>
</tr>
<tr>
<td>Robyn Stone</td>
<td>LeadingAge</td>
</tr>
<tr>
<td>Douglas White</td>
<td>University of Pittsburgh School of Medicine</td>
</tr>
<tr>
<td>Ruqaijah Yearby</td>
<td>Saint Louis University School of Law</td>
</tr>
</tbody>
</table>
Appendix D. Panelist Survey and Results

Figure D.1. Representation of Stakeholder Groups Among Panelists Completing Survey (n = 16)

Figure D.2 shows results from the survey item on the theme of guidance centralization. Eighty percent of the 16 participants agreed guidance should be centralized nationally for adaptation by states and localities.

Figure D.2. Centralization Options: Percentage Agreement, by Option
Table D.1. Percentage of Participants Who Agree on Inclusion of Information-Related Recommendations

<table>
<thead>
<tr>
<th>Recommendation Type</th>
<th>Yes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A general recommendation for regular information</td>
<td>93.75</td>
</tr>
<tr>
<td>A recommendation specifying frequency of information review</td>
<td>81.25</td>
</tr>
<tr>
<td>A specific recommendation regarding who should be involved in information review (for example, include researchers or patient representatives)</td>
<td>93.75</td>
</tr>
</tbody>
</table>

Table D.2. Percentage of Participants Who Agree: Systems View

<table>
<thead>
<tr>
<th>Recommendation Type</th>
<th>Yes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information on resource capacity beyond a single health care facility may improve triage and allocation decisions within that health care facility.</td>
<td>87.5</td>
</tr>
<tr>
<td>An ideal triage and allocation guidance document should reference coordination of need and resources regionally.</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure D.3. What Elements Should Be Included in an Ideal Triage and Allocation Guidance Document?
Health Care Resource Allocation Panel Survey

Instructions
Thank you for your contributions to our Panel Meeting #1 on Friday, April 24, during which we discussed decision making related to allocation of scarce health care resources in a pandemic.

This work would benefit from your additional input prior to the final Panel Meeting this week on Friday, May 1.

We would like your input on the items we discussed during the first Panel Meeting. Responses will be aggregated and anonymized. Please note that no individual names will be associated with responses, and use of any quotes will not identify the participant.

We heard some agreement that it may be possible to generate a guidance focusing on the quality of decision making. The guidance would seek to:

- Limit unnecessary variation/heterogeneity in policy construction, content, dissemination, and implementation.
- Improve consistency of methods and principles across triage and allocation decisions in a range of health care settings.
- Indicate which specific elements are intended to apply across settings and which elements can be tailored to meet local and context-specific needs.

Based on our conversation and our discussion of good examples of resource allocation guidance, we identified five elements that could contribute to good decision making for pandemic-based health care resource allocation when conditions are scarce:

1. Increasing consistency across guidance used within the U.S.;
2. Monitoring a wide range of information, both within and outside of the healthcare facility, at frequent intervals.
3. Taking a systems view by considering healthcare facility-specific decisions within the broader public health landscape;
4. Ensuring that a broad and representative range of community perspectives are incorporated into specific decisions;
5. Establishing regular evaluation of allocation decisions over time.

Please provide your input on these five elements below. Additional thoughts are welcome through the open text fields in this survey or via email (LFrank@RAND.org) or by phone (571-527-9417). Thank you.
Health Care Resource Allocation Panel Survey

Element 1: Guidance Consistency

There are a number of existing guidance documents for allocation of scarce health care resources in an emergency, but they differ across states and health systems. Most combine clinical prognostic criteria with ethical principles.

1. Should guidance policies, or elements of those policies, be centralized across the U.S.? Please select the statement below that represents your view. (Select one.)

- ○ Guidance for clinical decisions should be consistent across the U.S.
- ○ Guidance should be centralized nationally for adaptation by states and localities.
- ○ There should be no centralized guidance for resource allocation decision making.
- ○ None of these choices represents my view.

Please add any other comments you wish to share:
### Health Care Resource Allocation Panel Survey

**Element 2: Information Surveillance and Review**

*We discussed opportunities to improve the quality of information incorporated into allocation decisions.*

2. Would you recommend that guidance require the following?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>A general recommendation for regular information review.</td>
<td>[ ]</td>
</tr>
<tr>
<td>A recommendation specifying frequency of information review.</td>
<td>[ ]</td>
</tr>
<tr>
<td>A specific recommendation regarding who should be involved in information review (for example, include researchers or patient representatives).</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Please add any other comments you wish to share:

---
Health Care Resource Allocation Panel Survey

Element 3: Systems View

We discussed the potential value of taking a systems view of public health and health care when considering triage and allocation guidance, to improve data inputs (e.g., ability to discern clinical patterns) and to improve resource use and patient outcomes. We also discussed the obstacles to implementing information sharing and resource sharing across facilities and jurisdictions.

3. Please indicate whether you agree or disagree with the following statements:

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information on resource capacity beyond a single healthcare facility may improve triage and allocation decisions within that healthcare facility.</td>
<td>○</td>
</tr>
</tbody>
</table>

An ideal triage and allocation guidance document should reference coordination of need and resources regionally.

○ ○

Please add any other comments you wish to share:


40
**Health Care Resource Allocation Panel Survey**

**Element 4: Representation in Decision Making**

We discussed possibilities for expanding representation of different viewpoints in allocation decisions.

4. For decisions about specific patient resource allocation decision making, please rate the importance of including input from the following stakeholders:

<table>
<thead>
<tr>
<th>Clinical staff - physicians with relevant training and experience (e.g., emergency medicine)</th>
<th>Very unimportant</th>
<th>Unimportant</th>
<th>Neutral</th>
<th>Important</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical staff - nursing staff with relevant training and experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical staff - palliative care and hospice clinicians</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional clinical staff with relevant expertise (e.g., respiratory therapists for ventilator decisions)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health care logistics, supply chain, and operations management experts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital administration representatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital and/or community clergy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient and family representatives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Representatives from general public - older adults</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Representatives from general public - working age adults</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Representatives from</td>
<td>Very unimportant</td>
<td>Unimportant</td>
<td>Neutral</td>
<td>Important</td>
<td>Very important</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------------</td>
<td>------------</td>
<td>---------</td>
<td>-----------</td>
<td>----------------</td>
</tr>
<tr>
<td>general public - non-white racial/ethnic groups</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Representatives from general public - physical disability community</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Representatives from general public - mental/intellectual disability community</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Representatives from general public - faith communities</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Other (please specify in comments)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Please add any other comments you wish to share:
Health Care Resource Allocation Panel Survey

Element 5: Evaluation of Decision Outcomes and Process

We discussed the potential for periodic evaluation of treatment allocation decisions by patient type, including prognostic factors, both to determine if the decisions follow established guidance and to determine whether the guidance requires revision.

5. Please indicate whether you agree or disagree with the following statements:

<table>
<thead>
<tr>
<th>Agree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>An ideal guidance document should include recommendations for evaluating the quality of the decisions in terms of outcomes achieved.</td>
<td></td>
</tr>
<tr>
<td>An ideal guidance document should include recommendations for evaluating the fidelity of the decisions to the guidance.</td>
<td></td>
</tr>
</tbody>
</table>

Please add any other comments you wish to share:


6. What elements should be included in an ideal triage and allocation guidance document? Check all that apply:

- [ ] Appeals process to address fidelity to policy
- [ ] Appeals process to address fairness/appropriateness of policy.
- [ ] Protocol for determining clinical prognosis for short term survival
- [ ] Requirement to consider impact of specific resource use on longer term survival (e.g., impact of use of a ventilator):
- [ ] Reference the general principle of Maximum Benefit but leave specific implementation to discretion of local decision makers (e.g., Triage Team)
- [ ] Reference to the principle of Maximum Benefit, specifying decision rules to determine.
- [ ] No reference to Maximum Benefit should be included.
7. Please add any other comments you wish to share:


Health Care Resource Allocation Panel Survey

8. Did you attend the Panel Meeting #1 on Friday, April 24, 2020
   - Yes
   - No

9. Please indicate which primary stakeholder perspective you represent. You can use the text box below to provide information about additional perspectives you represent.
   - Acute Care Health System Representative
   - Bioethicists
   - Consumer Advocacy Representative
   - Nursing Staff
   - Health Researcher
   - ICU Clinician
   - Legal Scholars
   - Long Term Care Health System Representative
   - Palliative Care Clinician
   - Patient and Family Representative
   - Professional Organization Representative
   - State/ Federal Policymaker

Additional perspectives I represent (feel free to include other categories like older adults, non-white communities):


10. Please indicate your years of professional experience:
   - [ ] No experience
   - [ ] 1 to 5 years
   - [ ] 6 to 10 years
   - [ ] More than 11 years

Health Care Resource Allocation Panel Survey

Thank you again for your input!

The final call will take place on Friday, May 1, from 3pm to 5pm ET. Meeting details will be emailed to you.


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NASEM—See National Academies of Sciences, Engineering, and Medicine.


www.nice.org.uk/guidance/ng159


White, D., and S. Halpern, *Allocation of Scarce Critical Care Resources During a Public Health Emergency*, Pittsburgh, Pa.: University of Pittsburgh School of Medicine, Department of Critical Care Medicine, April 15, 2020. As of May 4, 2020: https://ccm.pitt.edu/?q=content/model-hospital-policy-allocating-scarce-critical-care-resources-available-online


