CHEST

Behind the Scenes

Facilitators and Barriers to Developing State Scarce Resource Allocation Plans for the COVID-19 Pandemic

Kirsten A. Riggan, MA, MS; Nicholas V. Nguyen, BA; Jackson S. Ennis, BA; Debra A. DeBruin, PhD; Richard R. Sharp, PhD; Jon C. Tilburt, MD; Susan M. Wolf, JD; and Erin S. DeMartino, MD

BACKGROUND: In response to COVID-19, many states revised, developed, or attempted to develop plans to allocate scarce critical care resources in the event that crisis standards of care were triggered. To our knowledge, no prior analysis has assessed this plan development process, including whether plans were successfully adopted.

RESEARCH QUESTION: How did states develop or revise scarce resource allocation plans during the COVID-19 pandemic, and what were the barriers and facilitators to their development and adoption at the state level?

STUDY DESIGN AND METHODS: Plan authors and state leaders completed a semistructured interview February to September 2022. Interview transcripts were qualitatively analyzed for themes related to plan development and adoption according to the principles of grounded theory.

RESULTS: Thirty-six participants from 34 states completed an interview, from states distributed across all US regions. Among participants' states with plans that existed prior to 2020 ($n = 24$), 17 were revised and adopted in response to COVID-19. Six states wrote a plan *de novo*, with the remaining states failing to develop or adopt a plan. Thirteen states continued to revise their plans in response to disability or aging bias complaints or to respond to evolving needs. Many participants expressed that urgency in the early days of the pandemic prevented an ideal development process. Facilitators of successful plan development and adoption include: coordination or support from the state department of health and existing relationships with key community partners, including aging and disability rights groups and minoritized communities. Barriers include: lack of perceived political will to adopt a plan and development during a public health emergency.

INTERPRETATION: To avoid repeating mistakes from the early days of the COVID-19 response, states should develop or revise plans with community engagement and consider maintaining a standing committee with diverse membership and content expertise to periodically review plans and advise state officials on pandemic preparedness.

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FOR EDITORIAL COMMENT, SEE PAGE 423

ABBREVIATIONS: OCR = Office for Civil Rights

AFFILIATIONS: From the Biomedical Ethics Research Program (K. A. R., N. V. N., J. S. E., R. R. S., J. C. T., and E. S. D.) and Division of Pulmonary and Critical Care Medicine (E. S. D.), Mayo Clinic, Rochester; Center for Bioethics (D. A. D.), University of Minnesota, Minneapolis, MN; Division of General Internal Medicine (J. C. T.), Mayo Clinic, Scottsdale, AZ; University of Minnesota Medical School (S. M. W.) the University of Minnesota Law School (S. M. W.) and University of Minnesota Consortium on Law and Values in Health, Environment, and the Life Sciences (S. M. W.), Minneapolis, MN.

CORRESPONDENCE TO: Erin S. DeMartino, MD; email: DeMartino.Erin@mayo.edu

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Take-home Points

Study Question: How did states develop or revise scarce resource allocation plans during the COVID-19 pandemic, and what were the barriers and facilitators to their development and adoption at the state level?

Results: Thirty-six participants from 34 states completed an interview describing their states' experiences, including failure to develop a pandemic preparedness plan, thematic analysis-identified facilitators, and barriers to plan development and adoption.

Interpretation: States should develop or revisit prior efforts to develop a scarce resource allocation plan, considering strategies identified by participants for successful plan development and adoption, with special attention to diverse membership and engagement with community partners.

In 2009, the Institute of Medicine (now the National Academy of Medicine) recommended that states develop plans for scarce resource allocation in the event that crisis standards of care are triggered in response to a public health emergency.[1] Many states subsequently developed such plans.[2] In early 2020, pandemic planning took on new urgency, with reports of ventilator shortages in New York City and other jurisdictions due to COVID-19.[3,4]

As state plans were developed, there was renewed interest in understanding their ethical justification, especially any criteria used to exclude or deprioritize patients from access to lifesaving interventions.[5,6] Studies have analyzed state resource allocation plans with respect to how triage affects individuals on the basis of age, disability, and race/ethnicity.[7-10] Advocacy groups have also raised concerns about potentially biased and discriminatory content in state plans.[11,12] The Office for Civil Rights (OCR) in the US Department of Health and Human Services worked with at least five states to revise aspects of their triage protocols that conflicted with federal antidiscrimination laws.[13]

Although some public reports exist on the development process,[14-16] including documentation in some state materials,[10] it is not well understood what led some states to develop plans while others did not and how state plans were developed (eg, writing group composition, public engagement), including when states developed but did not ultimately adopt a plan. To inform future preparedness planning,[17,18] we interviewed leaders of state plans to understand how plans were developed and revised in response to the COVID-19 pandemic and barriers and facilitators to creation and adoption of plans as official state documents.

Study Design and Methods

Recruitment

This study was determined to be exempt from review by Mayo Clinic's Institutional Review Board (#21-005509). Participants were recruited by email using publicly available lists of scarce resource allocation plan committee members to identify an individual who led statewide plan development or discussions, including when no plan was developed or ultimately adopted. If no such list was available or if a leader could not be identified, the study team performed email outreach using professional networks to identify another individual with the closest involvement. In some cases, these contacts facilitated introductions to leaders. Identified individuals were invited to complete an interview. Dyad interviews were conducted when participants recommended inviting a second individual for additional perspective. All participants provided oral consent to have their deidentified results used for research. Interviews were conducted from February to September 2022.

This study was conducted in accordance with the amended Declaration of Helsinki. Local institutional review boards or independent ethics committees approved the protocol, and oral consent was obtained from all patients.

Data Collection

An interview guide (e-Appendix 1) was developed by members of the study team with expertise in bioethics, critical care, policy development, and qualitative methods[19] to explore multiple domains of development and approval of state scarce resource allocation plans. Interviews were semistructured to enable additional probing of participant reflections and to respond to unanticipated content. The interviews were conducted over video conference or by telephone by one or more members of the research team for comprehensive exploration of participant experiences and viewpoints. Although data saturation was not a primary end point due to purposive sampling, thematic saturation was reached. Interviews were audio recorded, transcribed verbatim, and deidentified.

Data Analysis

Interview transcripts were analyzed for iterative and inductively identified thematic content, based on the principles of grounded theory.[20] This methodologic approach was chosen due to the novelty of the COVID-19 pandemic and limited reporting on the development of scarce resource allocation plans. Four transcripts (11.8%) were randomly selected for codebook development[21] by the empirical research team. The codebook was further refined following consensus coding of four additional transcripts (11.8%). The final codebook was applied to all transcripts. The remaining 26 transcripts were divided and independently coded by two researchers (J. S. E., n = 11 [32.4%]; N. V. N., n = 15 [44.1%]). For additional rigor, four of these transcripts were randomly selected to be coded to consensus by three researchers at weekly intervals during the analysis period.

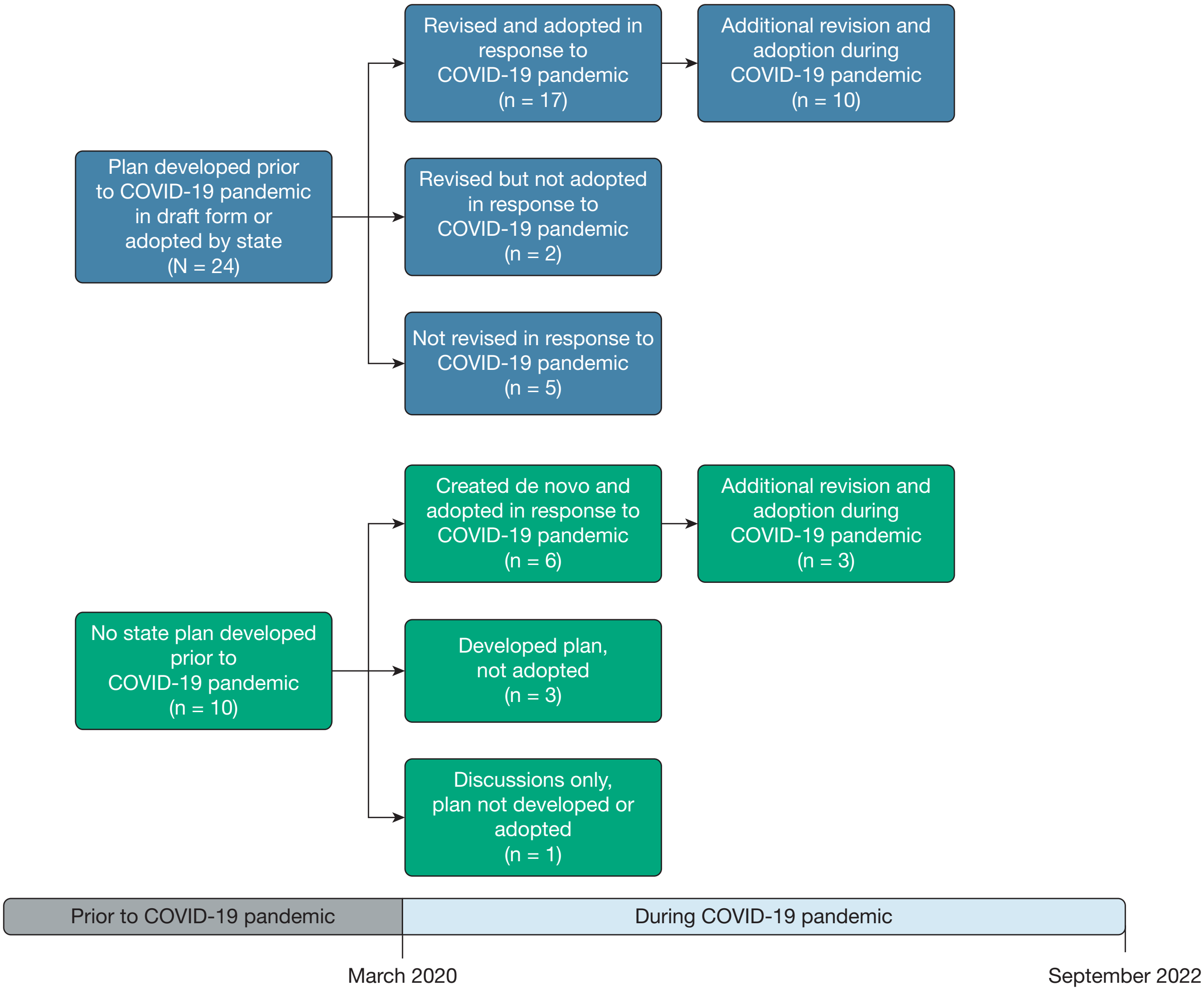

Figure 1 – *Presence, absence, and disposition of state pandemic preparedness plans prior to and following the onset of the COVID-19 pandemic (N = 34 states). Participants from 34 states described whether state plans existed prior to the COVID-19 pandemic, whether existing plans were revised or developed de novo in response to the pandemic, and the status of state plan adoption at the time of the interview. Twenty-four states worked on plans prior to the pandemic (blue box; left column). Seventeen of the 24 were revised during the COVID-19 pandemic, two were revised but not adopted, and five, to our knowledge, were not revised further during the pandemic (blue boxes; middle column). Ten of the states that revised their pre-existing plans in the early days of the pandemic described ongoing revision and eventual adoption of these revised plans as the pandemic continued (blue box; right column). We also interviewed participants from 10 states that did not develop a pandemic preparedness plan prior to the COVID-19 pandemic (green box; left column). Six of these states created and adopted plans in the early days of the pandemic; three developed a plan early in the pandemic but never adopted this plan; and in one state there were discussions at a state public health level, but these discussions never materialized into a plan (green boxes; middle column). Of the states that developed de novo plans in the early days of the COVID-19 pandemic, three states described additional revision and adoption of the plan as the pandemic continued (green box; right column). In total, 13 states continued to revise their plans from the start of the pandemic (blue box, green box; right column). State pandemic plan discussions, development, or revision may have occurred outside of the participant's recollections or following interview completion.*

Here we present a thematic analysis[22] of content coded under the categories of "Development" and "Collaboration" to explore the development process of scarce resource allocation plans within US states, including initiation, drafting, revision, and approval. Figure 1 depicts state plans along a continuum of development and approval. Plans were considered "developed" if an initial draft (ie, written guidance on scarce resource allocation) had been created by the writing group, "revised" if textual edits were described subsequent to developing the original plan, and "adopted" if the leaders within the state department of health or the governor eventually approved scarce resource allocation guidance. Themes related to the success or failure to develop or adopt a state plan were developed with respect to the categorization portrayed in Figure 1 using a constant comparative method. Representative quotes are presented with minimal editing in accordance with published standards on reporting qualitative research.[23] To protect anonymity, identifying details, including corresponding state, are redacted. Descriptive statistics were used to aggregate participant demographic characteristics.

TABLE 1] Demographic Characteristics of Interviewees

Characteristic	No. (%)
Age, y	
35-44	8 (22.2)
45-54	11 (30.6)
55-64	11 (30.6)
≥ 65	5 (13.9)
Not reported	1 (2.8)
Sex[a]	
Male	21 (58.3)
Female	14 (38.9)
Not reported	1 (2.8)
Race/ethnicity[a]	
White	30 (83.3)
Asian	5 (13.9)
More than one race	1 (2.8)
Professional role[b]	
Ethicist	12 (33.3)
Clinician	11 (30.6)
Public health official	5 (13.9)
Attorney	3 (8.3)
State hospital association	2 (5.6)
Other[c]	3 (8.3)
US Census region (n = 34 states)	
Midwest	10 (20.6)
Northeast	7 (29.4)
South	9 (26.5)
West	8 (23.5)

Data are presented as No. (%) unless otherwise indicated.

[a] Self-identified by participants; no other sex or racial/ethnic categories were reported.

[b] Participants may have had more than one role in state writing groups (eg, clinician-ethicist).

[c] "Other" includes policy writer employed by state, external advisory group leader, disability advocate.

Results

A total of 36 participants from 34 states were interviewed. Two interviews were conducted in participant dyads. Average interview length was 46.4 min (range, 27-68 min). Demographic characteristics are reported in Table 1. Most participants identified as male (58.3%) and White (83.3%), and mean age was 53.7 ± 10.7 years. The sample was distributed throughout the United States. Participants included ethicists, clinicians, and public health officials.

Initiation and Challenges With Development

Prior to 2020, participants in most states (n = 24) described the existence of a state scarce resource allocation plan, either adopted by the state or in draft form (Fig 1). Upon review of these pre-existing plans, several (n = 10) were revised in response to the COVID-19 pandemic. In some cases, extensive revisions were required to align with civil rights protections or to enhance the clarity of triage procedures.

Several participants indicated planning was initiated by their state public health department or emergency management leadership. This often resulted in the establishment of an *ad hoc* committee or asking an existing committee to lead the drafting of a plan ("writing group"). In a few cases, the state medical or hospital association, private contractors, or public policy groups coordinated development of the plan on behalf of the state. In some states, a group of concerned medical or ethics professionals initiated pandemic planning efforts without the explicit support of state officials, which proved a challenging undertaking:

> *I think we knew we were on [politically] thin ice, and that it could be shut down at any moment . . . at any moment, a wrong move, a not helpful move, could be perceived as enough for it to be completely nixed altogether. . . . This was essentially a volunteer gig for us, so I think we were just having that in mind was something we were always kind of recognizing and trying to continue a path for this. We knew it was important. We knew it was important for providers. It was important for patients, but it was a delicate dance.* –Interview 18

> *You just need to do it, and sometimes it's better to ask for forgiveness rather than permission in a lotta these things. I was actually thankful we had a tight timeline. Then let's get something out there and then let's refine it but get the tools there for the teams.* –Interview 24

Some state writing groups incorporated language and clinical triage algorithms developed prior to the pandemic in other states (eg, New York,[24] Minnesota[25]) or other models (eg, "Pittsburgh"[26]), especially when attempting to quickly develop a plan in early 2020. These models were often reviewed at the beginning of the drafting process to determine whether they were applicable to their own state context or as a launching point for discussion and consensus building on differing approaches to patient triage.

> *We try to take the best of what other people had done. Then adapt it to our specific needs based on our specific patient populations. That's what we ended up with. Ours is more closely related to the Pitt[sburgh] model than the New York model.* –Interview 13

> *They [the writing committee] looked through a previous document that was really based on a Minnesota*

> *document. Essentially that team finalized the Minnesota document with some changes to accept as [state's] crisis standards of care document.* –Interview 21

Composition of State Writing Groups

Established or *ad hoc* writing groups in states ranged from relatively small (approximately 15 members) to large ($\geq$ 50 members). Large groups were sometimes divided into subcommittees based on specialty (eg, medical, legal, ethics) or specific areas of the plan (eg, ventilator or COVID-19 therapeutics, pediatrics). Most groups had majority clinician membership, followed by hospital or department of health administrators or representatives, ethics and legal members, with some also including members to represent certain faith or racial/ethnic communities, or aging and disability advocates.

New writing groups working under compressed timelines (eg, completion by spring 2020 or within days to weeks of an expected surge) often reached out to professionals who expressed an interest in the work or reconvened previously established ethics workgroups. As a result, several participants described relatively homogeneous writing groups with respect to age and race/ethnicity, although they remarked that this was not intentional.

> *The group itself definitely skewed a little on the White side, but was fairly balanced by sex and age distribution at least. It skewed more toward mid and late career. . . . It was a combination of ethicist[s] from different clinical backgrounds, and intensivists mostly. The ethicists that were on the writing group all of them were physicians except for one.* –Interview 13

> *I think we succeeded in achieving some diversity, but maybe not as much as I would have hoped, I guess. . . . [P]eople were so overwhelmed with the COVID response that a bunch of our potential members that we reached out to just didn't have the bandwidth or the time to participate.* –Interview 22

When established prior to the pandemic, participants described greater attention to member diversity and building relationships with advocacy groups, minoritized populations, and state medical and hospital associations; these groups were able to call upon pre-existing relationships when revising their plan during the pandemic.

> *We had a broad spectrum—that's what the [pre-COVID writing group]* is . . . *we had two disability advocates on the [writing group] at the time, different religions, people of color, specifically Black Americans. . . . I would say it was pretty diverse in terms of trying to get different viewpoints.* –Interview 1

In some states, participants noted that other factors, such as ensuring representation from all major hospitals in the state or balancing urban/rural concerns, informed writing group composition.

In hindsight, some participants expressed concern that membership diversity was lacking.

> *We had one, two—we had two people in a committee of 25, two out of 25 who would probably identify as non-White. That was a very disheartening thing for me. Partly because I certainly recognize my own Whiteness, and affluency, and influence in a committee like that. Also, the recognition that it needs to be more diverse. That my voice can't be the loudest one in the room.* –Interview 5

> *The pushback we got a lot from, specifically within our health system, was . . . 'How are our unrepresented communities and persons being represented in the formation of this document?,' and the answer is, they weren't. . . . [W]e just didn't have anybody with the expertise to draw on who was able to represent, specifically communities of color or—probably the populations of disabled persons as well.* –Interview 9

As COVID-19 continued, some states then expanded these writing groups to include more diverse membership or for additional expertise. Others reported their states intended to do so as part of future planning efforts.

State Writing Group Collaboration

Most participants expressed that the writing groups convened to respond to the COVID-19 pandemic were collegial and united in their goal to rapidly develop a plan. When disagreements on specific elements of the document or triage criteria were raised, members worked toward an effective compromise, so their state was prepared to potentially triage patients.

> *Now, the reason in my opinion one of the biggest reasons that it worked, of course, the eight of us got together and started talking about should we include this? Should we include that? There's differences, and it's not just the eight of us. It's also the institutions behind the eight for us. . . . I spent a lot of time late nights on the phone talkin' to different—"Can you live with this? Can you live with this? What if we put this in? What if we put that in?" Because we're on such a short timeline.* –Interview 2

> *I mean, when you get a bunch of medical specialists on the phone and they had really great conversation about that algorithm and the scoring and the importance of all of that. It was amazing how they all came together. I think that's just how we handled COVID as well as a state.* –Interview 31

Only one participant described contention in plan development; however, it was ultimately the state legislature and department of health that prevented a plan from approval within their state.

> *Apparently, so I've been told as the narrative goes, that it was a fairly contentious group in their working environment. They came up with a protocol [for COVID-19]. It was ultimately rejected by state legislators. What ended up as a result of that set of conversations was the department of health was not going to create or implement a state-level crisis standards of care.* –Interview 5

Factors Involved in States' Adoption of Plans

In states where plans were initiated by or in collaboration with public health departments, drafts were provided to the department of health's leadership for review and approval, typically, but not always, followed by approval by the governor.

In states where discussions stalled, participants perceived or were explicitly told that state health, legislative, or executive branch leaders would not approve a statewide plan.

> *We were completely ignored [at request for a plan], and people refused to give a response. This includes daily huddles for leadership within the health department. . . . There would be no response. It's my understanding that that was not their choice [to have no plan]. That was what was directed by their leadership.* –Interview 29

> *My state, despite a lot of people working on crisis standards, was officially and utterly indifferent to them . . . the state came up with [H1N1 guidelines] and they never used them and then as COVID was evolving, they took the draft version . . . off the website.* –Interview 23

In all five states where a plan was developed but not adopted, political factors were postulated as a potential reason. One participant suspected that larger political conversations around health care rationing even prior to COVID-19 were a factor in preventing their state's governor from signing the plan they developed. In another state, turnover of political administrations was thought to be a factor as to why the state did not approve their plan, even following an extensive process of development and public engagement.

> *The state accepted the [pre-COVID-19] plan, and drum roll please: did nothing with it. . . . It was left with—it was ready to be signed if it was needed. I have this vision of it sitting in the corner of [governor's] desk. . . . What was said was that it was, people would panic, those types of arguments . . . [at the time] there were all these conversations about Obamacare and pushing Granny off the cliff, people were supersensitized to appearing to be signing off on death panels, which is totally exasperating.* –Interview 30

> *As far as I know, the state never—I'm not sure that plan [pre-COVID-19] became law or official policy . . . I think the grant that resulted in that plan was done under a Democratic governor. The plan and the grant itself was completed during a Republican governor. . . . I did not hear anything about the plan or its use after the grant ended and there was a report given.* –Interview 14

Similarly, when a plan was ultimately not approved, participants felt that it was due to a lack of political will. Inquiries as to the reasons why a plan was not adopted often were left unanswered.

> *We reached out to the governor's office and to the lieutenant governor and to the legislature, and we made recommendations that there be statewide guidelines adopted [for COVID-19]. When that failed, we said, "Well, we recommend that maybe these guidelines exist, be endorsed by the state," and we couldn't get anywhere. We just hit political dead-ends.* –Interview 26

> *I don't know [why department of health declined to approve COVID-19 plan] if it was because they hadn't put together the work group themselves, they didn't have any persons on it. We talked to the leadership. We talked to the head of our public health department. We talked to the CMO [chief medical officer] of the public health department. It was kind of like they listened but never really gave us any feedback as to why they weren't doing it or if they just didn't have any the ability.* –Interview 9

Revisions to State Plans

Thirteen state writing groups continued to revise their plans during the pandemic or participants indicated they had immediate plans to do so at the time of the interview (Fig 1). In some states, groups added protocols for the allocation of scarce resources other than ventilators (eg, COVID-19 vaccines or therapeutics). States that continued to iterate and build out their plan had established standing working groups for public health emergencies or specific to the COVID-19 pandemic that continued to meet over months and even years of the pandemic.

> *It's been an iterative process over the years with the [triage protocols] since 2005 and certainly revised pretty significantly, 2009, and then during COVID here as well. . . . Of course, this had occurred [met and revised plan] a couple of times during COVID-19 to make sure that were keeping pace with the evidence and making sure that we were very clear.* –Interview 8

> *It [first approved version] sat there for quite a while until, I think, end of last year in 2021, when we got contacted by the department again to consider updating the document to be more in line with ASPR [Assistant Secretary for Preparedness and Response] and federal requirements for a state crisis standards of care document, and also to make it all hazards instead of just COVID focused.* –Interview 34

In five of the 13 states, plans were revised in collaboration with OCR. A few others proactively revised their plans to comply with OCR guidance during the drafting or revision process. In these states, writing group members were aware of OCR complaints raised against other state plans and sought to avoid similar issues.

> *I met with the OCR directly, as did a few committee members. We talked through their concerns. I learned a lot about my own biases. They understood that we—the whole point of this is to have something that's clinically relevant.* –Interview 12

> *Those Office of Civil Rights notices that were going out . . . I think [observing] what was playing out in other states was [considered in their state's plan development]—I think the administration had a very—they were very focused on equity during the administration, during that time period.* –Interview 19

In other cases, triage protocols were revised and antidiscriminatory language and other statements protective of certain patients (eg, older adults, people with disabilities) were added to the plan in response to concerns from local aging and disability rights advocates.

> *We wanted to have a tool and resource for clinicians to use to make impossible decisions in hard times, but not to be overly biased based on one disease vs another. We actually felt like that was fair feedback from the disability law center in that space, so we took that stuff out.* –Interview 21

> *The [disability advocacy group], the aging advocacy people, and the people that criticized the original guideline, I think what we learned is that they needed very specific language . . . we've [now] got this long preamble about all the discriminations that we don't do. . . . They [disability advocacy group] wanted to know that if somebody came to the hospital on their own mechanical ventilator, we wouldn't steal their ventilator. . . . It was eye opening to us. It was like, "Okay. We clearly have not walked in your shoes, right?"*–Interview 26

Some states took down or replaced plans that had previously been posted on government websites, leading to delays in the availability of a working statewide plan. One state took down a plan and replaced it with a version written more than 10 years earlier.

> *Those guidelines were taken down, and then a much more generic kind of guideline was put up. . . . That was written long before the pandemic just as general crisis guidelines for the state without any knowledge that—they were really written more towards things that we're more accustomed to, like natural disasters.* –Interview 25

Public Engagement and Dissemination

Participants whose state plans were developed pre-COVID-19 described a more extensive process to engage medical communities and the public on their values and concerns related to triage. Participants described public forums that took place in multiple settings across their state, often intentionally including specific underrepresented groups (eg, racial/ethnic minority populations, rural populations).

> *Right before the pandemic in 2018 or 2017, the state got additional funding to do a community engagement project, where we went out and solicited members of the community. This was for the whole state and not just for [largest county].* –Interview 32

> *We had a pretty extensive public engagement process in 2009 . . . we had well over 100 participants representing different racial, disability, other groups. There was always the opportunity to provide input.* –Interview 8

Participants described limited or no opportunity for extensive public engagement for new plans developed or revised during COVID-19 as a result of efforts to quickly draft and approve a plan during stay-at-home orders and when departments of health were already overwhelmed; some states prioritized educating only hospitals and medical staff rather than the larger public.

> *We've also done a lot of—we put together some training materials, we've done a lot of presentations, and we've met with every single one of the regional health care coalitions in the state and gave them briefings on these guidelines and answered their questions. We've done a lot of outreach to local public health officers. We've presented a bunch of conferences.* –Interview 22

> *Our hospital association had a rural health leaders conference, which brings together our rural health leaders across the state, and we did a little 2-hour table talk discussion on the crisis standards of care education, as you know will never be over. . . . Then we also shared this with our nursing homes.* –Interview 31

Many participants expressed concern about this lack of public feedback. A few indicated that public forums were in development or scheduled in the coming months.

> *We did not feel good about that we had to do this in such a short period of time because we did discuss, "Look. We don't have time for public comment."* –Interview 2

> *I would say that we probably had very little, if any, quote/unquote true public participation in that conversation . . . one of the works that's underway is doing community conversations about the crisis standards of care document. That's happening in the next couple of months.* –Interview 34

Discussion

In this in-depth interview study of individuals who led development or discussion of scarce resource allocation plans for 34 US states, several major themes emerged related to a state's success or failure to develop or adopt a statewide plan in response to COVID-19. Facilitators included the state department of health initiating or leading the writing process; existence of a pre-COVID-19 working group that could pivot to rapidly develop or revise a plan; an extant statewide plan that could be tailored in response to COVID-19; and established relationships with key community partners (eg, hospitals and health systems, patient advocates, specific community groups) that could be used to ensure inclusive and diverse membership in plan development, even when working under a compressed pandemic timeline. In addition, writing groups that consciously worked to incorporate diverse perspectives were able to anticipate their plan's potential impact on communities at heightened risk of experiencing discrimination. Barriers to plan development and approval included lack of political will among state officials and minimal or no collaboration with the state department of health, further supporting the importance of establishing working relationships with key community partners outside of periods of crisis. A summary of these facilitators and barriers is presented in Table 2.

The urgency felt during the early weeks of the COVID-19 pandemic presented many obstacles to development of state plans. Writing groups developing a plan *de novo* typically relied upon ethical guidance in the literature[27-29] or adopted key elements of other states' triage algorithms.[24,25] Although this strategy may lend legitimacy to and hasten consensus on newly developed plans, it also carries the risk that outmoded triage strategies (eg, lists of vaguely defined comorbidities[19]) are perpetuated rather than challenged to align with civil rights protections. It also prevents consideration of new models or approaches that may better reflect the values of community partners. Participant experiences suggest that scarce resource allocation plans are best considered living documents to be periodically revised in response to clinical and ethics scholarship, legal review, and feedback from community partners.

Community engagement was limited or absent in many states, with several participants expressing concern that there was limited opportunity or effort to strategize on inclusive membership of their writing group when it was first convened. This led to conceptual oversights in multiple state plans that needed to be redressed in response to criticism by local advocacy groups and OCR for potential violations of federal antidiscrimination laws. These oversights included potentially discriminatory triage criteria and missing language protecting the rights of people with disabilities or older adults. When writing groups extended membership to maximize inclusivity, they were attuned to specific concerns across diverse communities, avoiding revisions that other states were required to make. Specifically, members with lived experience of disability or discrimination or those with specific clinical or legal expertise (eg, geriatricians, disability rights lawyers) were able to proactively address concerns prior to when the plan became publicly available.

Nearly all participants believed their revised plan promoted greater fairness. In addition, the failure to include representatives from marginalized communities (eg, specific minoritized racial and ethnic groups, lower

TABLE 2] Facilitators and Barriers to the Development and Adoption of Scarce Resource Allocation Plans

Facilitator	Barrier
• Initiation or leadership by state department of health or emergency planning • Active collaboration with diverse community partners, including: health systems and hospitals, aging and disability advocates, minoritized groups • Standing ethics/triage/emergency planning group that can address and revise guidance for a public health emergency • Intentional process to engage the public and communities that may be disproportionately affected for their feedback and education on triage and crisis standards of care • Intentional recruitment of writing group members with respect to diversity and inclusiveness • Awareness of prior OCR guidance and incorporation into the scarce resource allocation plan	• Lack of political interest among state leaders to have a scarce resource allocation plan for their state • Limited support or leadership from state department of health or emergency planning departments • Not having an established process of development and approval • Limited recruitment of diverse writing group members by clinical specialty, race/ethnicity, disability • Developing scarce resource allocation plans under the duress of a public health emergency

OCR = Office for Civil Rights.

socioeconomic status, rural communities, older adults, persons with disabilities) in discussions of triage[30,31] is a critical finding confirmed for the first time by these interviews. Because these communities were disproportionately burdened by COVID-19 and are likely to be significantly affected by any future public health crises, it is essential that writing committees have diverse and inclusive membership to enhance equity and trust among at-risk groups. States with sufficient public health infrastructure should consider maintaining a standing writing group with diverse membership, to be mobilized in response to public health emergencies and adapt existing guidance.

Although it is understandable that some states without a pre-existing plan or those tasked with significant revision to a plan within days to weeks were unable to mobilize a rapid public engagement process, statewide engagement should be prioritized in all future plan development and revision. States should also consider the experiences of states that incorporated community feedback prior to COVID-19,[32-34] as well as those that sought feedback from the general public or at-risk populations as the COVID-19 pandemic developed.[35-37] Redoubling efforts to engage the public may help to reestablish trust in and increase fairness of the triage plan.

Finally, for statewide scarce resource allocation plans to meaningfully address public health emergencies, it is critical that states leaders are willing to implement them when conditions of scarcity are met. An Assistant Secretary for Preparedness and Response Technical Resources, Assistance Center, and Information Exchange review found that crisis conditions existed within almost every US state during the COVID-19 pandemic,[38] although only nine states declared crisis standards of care for patient triage, including three states within our data set. At present, the impact and management of scarce resources during COVID-19 are poorly characterized. Analysis of whether scarce resource allocation plans were implemented or if *ad hoc* triage occurred would help states refine their scarce resource allocation plans to enhance fairness and transparency.

This study had several strengths and limitations. To our knowledge, this is the first study to interview state leaders across the United States to gain insights about the development and adoption of statewide scarce resource allocation plans. Participants were not formally authorized by their state governments to speak on their behalf; individual recollections and awareness of planning efforts may vary. Additional discussions or plan development may have occurred prior to or following interview completion. Outreach was unsuccessful in 16 states; however, statewide planning may have occurred. Participant insights on the process of developing scarce resource allocation plans may also have been influenced by perceptions of scarcity within their state and whether developed plans were implemented.

Interpretation

States should be ready to respond to future crises by developing plans outside of periods of crisis so they can be rapidly revised and deployed to meet potential scarcity. Proactive strategies, such as creating a diverse standing committee, may facilitate readiness. Public engagement and outreach to at-risk communities is essential for acceptance of state plans and should be prioritized. Longitudinal relationship building with all community partners (eg, patients, hospitals, government officials) may also coalesce support and approval of a state scarce resource allocation plan.

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