ASPR TRACIE Webinar Transcript
Crisis Standards of Care: Insights from COVID-19 and Recent Pharmaceutical Shortages
January 15, 2025

PowerPoint Presentation: https://files.asprtracie.hhs.gov/documents/crisis-standards-of-care-insights-from-covid-19-and-pharmaceutical-supply-challenges-ppt.pdf

Link to recording: https://attendee.gotowebinar.com/recording/3769186777818918575

Rachel Lehman (RL): On behalf of the U.S. Department of Health and Human Services Administration for Strategic Preparedness and Response, I'd like to welcome you to the Crisis Stands of Care, Insights from COVID-19, and Pharmaceutical Supply Challenges, which is hosted by ASPR's Technical Resources, Assistance Center, and Information Exchange, or ASPR TRACIE.

Before we begin, just a few housekeeping items to note. First, the webinar is being recorded. To ensure a clear recording, everyone has been muted. However, we encourage you to ask questions throughout the webinar. If you have a question, please type it into the question section of the GoToWebinar console. And during the question-and-answer portion of the webinar, we will ask the questions we receive through the console. Questions we are unable to answer due to time constraints will be followed up directly via email after the webinar.

To help you see the presentation better, you can minimize the GoToWebinar console by clicking on the orange arrow. Lastly, today's slides and speaker bios are provided in the handouts section of the GoToWebinar console and will be posted along with the recording of this webinar within 24 hours on the ASPR TRACIE website.

Next slide.

The opinions expressed in this presentation on the following slides by non-federal government employees are solely those of the presenter and not necessarily those of the U.S. government. The accuracy or reliability of the information provided is the opinion of the individual organization or presenter represented.

Next slide.

My name is Rachel Lehman and I'm the Acting Director of ASPR TRACIE.

And I want to start by saying thank you so much for joining today's webinar. I also want to thank you for what you do on the daily to enhance the preparedness, response and recovery activities of your healthcare entities and communities. Your role is vital to addressing the daily and arduous challenges being presented. So your willingness to spend the next hour with us to further advance your knowledge is noteworthy. I also want to convey my heartfelt thanks to our moderator and presenters today, who are national leaders and some of our nation's premier experts on crisis standards of care. Your willingness to lend your precious time and share your substantive expertise so others might benefit is commendable. And lastly, many thanks to the amazing ASPR TRACIE team for coordinating this session.

Next slide.

To ensure ASPR is meeting the nation's medical and public health needs before, during, and after a disaster or public health emergency, we are focusing on four key areas, preparedness, response, partnerships, and workforce readiness.

Next slide.

And for any new friends to ASPR TRACIE on the webinar today, this slide depicts the three domains of ASPR TRACIE, technical resources, assistance center, and information exchange. If you need technical assistance or you cannot find the resources you're looking for in the ASPR TRACIE website, please do not hesitate to reach out. Simply email, call, or complete an online form and we will promptly respond to your inquiry.

Next slide.

It is now my pleasure to turn it over to ASPR TRACIE Senior Editor, Dr. John Hick.

Over to you, Dr. Hick.

John Hick (JH): Thank you, Rachel.

And just adding to the disclaimer that Rachel had up front, the rest of our panelists and myself included, our discussions today will reflect on our personal opinions rather than those of our employing organizations. So we'll just get that out of the way with everybody up front here but looking forward to a robust dialogue.

Next slide, please.

Just an example of how TRACIE responds to, you know, your identified needs is how we've added to our crisis standards of care (CSC) resources and our Topic Collection over the past few years.

So there's a lot of things that you can find on the CSC consideration page that will really help, I think, not only for organizations but for frontline providers to really delve into some of the topics we're talking about today through the use of very short one- or two-page synopsis of some of these common topics and crisis standards of care.

So also what we've added is a crisis standards of care template for hospitals to add to their emergency operations plan.

We feel that's critically important to make sure that regardless of what the shortages or regardless of what the resource issues are that there is a common approach that's planned ahead of time that's identified in the response plan, and that really focuses on the processes rather than the specifics of any triage system or scores or things like that.

We also have a speaker series that features Matt, and we also have some other topics as well that you can listen to, the archived audio, but we really feel that these resources can offer the state's facilities, healthcare providers, a lot of perspective on what goes into an effective crisis standards of care response. We hope you will find those helpful. And with that, let's dive into our panel.

Next slide, please.

It's my pleasure to introduce Jeff Dichter, who is affiliated with the University of Minnesota and is a critical care physician there, as well as leading the Task Force on Mass Critical Care, which is a great national organization that really helps us to organize thoughts around how we effectively and safely expand care in crisis.

So Jeff, thanks so much for being with us today.

Jeff Dichter (JD): Thank you, John. It's an honor to be with all of you here today this afternoon. Next slide, please. How do you know you're in crisis conditions?

One thing I would share with everyone is the last slide, I only have four slides, and the last slide are references, and the references will be from our experience in Minnesota that have been published in CHEST, three references from our critical care working group during the two years of the pandemic, and what the other reference is from the Task Force for Mass Critical Care, and I'll speak to all of them today. The data on organizational duress is probably the best indicator of when you're getting into crisis conditions. This may evolve over time. It may be crisis specific, but there are the four basic fundamental building blocks, looking at your staffing, your space, especially critical care ICU space that you may be using, accessory space, equipment, if there's a disaster that requires specific equipment, and your systems of operation.

The data sources needed to ascertain your crisis conditions, again, are data from your hospital or health system. If it's a regional crisis or a statewide crisis such as pandemic during COVID-19, hopefully you're organized with your departments of health, able to work with your sister organizations throughout the region and the state.

And for some states, especially for instance, during the pandemic, they've been able to set up statewide medical operations coordination center, which predominantly were able to identify open ICU beds and hospital beds, and being able to transfer patients amongst the institutions when other resources or other mechanisms had been exhausted.

The most important priority is avoiding crisis conditions and trying to use all the resources you have to keep yourself in contingency-level care, meaning it may not be perfectly equivalent, but you maintain the same high-quality level of care rather than getting into crisis conditions where we may not be able to provide the same level of care.

Next slide, please.

This is from one of the Critical Care Working Group papers, and it's a ladder of different strategies that are used to try and maintain that we found to use to maintain your contingency levels of care.

Again, they're in a specific order on this slide, and they reflect our experience, but these arrows may be different in different states based on local resources, but the basics building blocks, the basic steps are likely the same, and they're looking at your surge ICU spaces, adapted staffing plans, whether you're using other units such as a post-anesthesia care unit, whether using other staff such as anesthesia or surgeons to provide procedures or CRNAs or intubation services or others to fill in the holes in an ICU, whether you're canceling or postponing non-emergent surgeries, a very powerful way of increasing capacity but also fraught with risk for those who are having their surgeries postponed, their procedures postponed versus those who are benefiting from that resource.

Are you able to have enough staff for the services? Are you using your tele-ICU services? During the pandemic, we found that we had a certain number of PICU beds as children were far less affected that we had available to us.

Excuse me.

And finally, a term which we used in the task force, Mass Critical Care, critical clinical prioritization, which means extraordinary adaptations to search, such as sharing continuous renal replacement therapy with two or three patients for eight or twelve hours at time throughout a cycle, choosing a ventilator type based on severity of lung disease, and really providing respiratory care, for instance, in intermediate care unit settings.

During Minnesota, there was a time where if you only got into an ICU, believe it or not, if you were on a ventilator, everybody else was being managed on CPAP or BiPAP in intermediate care settings.

Next slide, please.

So, what are those crisis condition indicators?

If you have a state, if you're in a crisis and you have a statewide medical operations coordination center, the ideal is to be able to place everybody with that.

The ability to place them may be overwhelmed and you may start to see your placement percentage, for instance, declining.

That was one of those powerful indicators of stress for us in Minnesota during the second year of the pandemic.

We were able to seemingly place everybody during the first year, the 2020 year.

Being able to work together as a consensus across organizations throughout a region or state is incredibly important.

The data may be qualitative, more qualitative if you don't have numbers, but knowing how everyone else is doing is incredibly important to having a sense of where your state's resources are.

Severely ED crowding we found to be one of the most powerful indicators of stress.

The numbers of patients, the escalating numbers of patients, and the wait times, for instance.

There were times tertiary care hospitals were not accepting transfers.

That was both an action as well as a barometer of stress, and just asking organizations how their healthcare professionals are doing.

Under the worst parts of stress, we have heard loud and clear from many providers, many experiences, just how difficult it was and how there was likely implicit rationing going on.

This is all published in one of the references that you have, the Critical Care Working Group 2 paper.

Escalation of inflammation of staffing tactics, again, how many different things are you doing to try and meet that demand?

Increasing delay of time-sensitive elective procedures, again, a very powerful way to increase capacity but fraught with risk for those who are being postponed as well as benefit for those who are receiving it.

And that is one of the things we learned from the pandemic was those two have to be balanced together.

There were times where organizations set up triage teams for the sake of trying to determine who would come into those ICU resources.

That way the clinical teams were taking care of patients.

And finally, hospital and ICU admissions during COVID-19 seemed to inversely correlate.

I'll show you this on the next slide.

Next slide, please.

The top line is total hospital admissions. The second, the green line right below it, is non-COVID admissions. The third line is COVID hospitalizations and the fourth line at the bottom, the brown line is ICU admissions.

And the important thing to realize is that during the surge that we encountered is that the number of non-COVID admissions were declining commensurate with the number of COVID admissions.

It's not well seen in the ICU here, but the ICU slide using a different scale mirrored this.

And the important thing was that these were patients that were changing based on the dynamic of how severe the surge was at that time.

It may be that non-COVID admissions were being released early.

They may not have been being admitted.

Elective surgeries may be canceled.

It's not necessarily clear what was actually happening, but this was happening.

If you look to the left, this was 2020, the fall 2020, in that there was a governor's stay-at-home order in place, which was not present a year later, which is to the right end of the slide, and the peaks looked differently.

Next slide please.

This completes my presentation and again the references will be here and if anybody's interested, I encourage you to look at it and happy to take answers to questions later on. Thank you, John.

JH: Thank you, Jeff and the slides will be available, and the website is a separate file as well as you'll be able to view the audio archive including the slides about 24 hours after the presentation.

Jeff lots to follow up on here during the panel discussion, but I just wanted to ask a quick question.

You know, you mentioned some of the results coming back from the providers relative to what conditions they're operating under, which is really qualitative data rather than the quantitative data about ventilators and the use and beds available.

I think we usually think of when we're trying to measure crisis.

Can you talk a little bit about just the importance of that qualitative impressions of the inside providers, particularly in the smaller hospitals and how their experiences day-to-day really help us understand the degree of crisis?

JD: It was really important because one of the things I didn't mention was there was really a limited amount of quantitative data that we have available to us, even to this day.

So a lot of the qualitative data within the consensus working group was important.

And getting out to the prior, we had sent a survey out to providers and had 60 responses And it was overwhelming how much duress we felt from those responses to what was happening to them.

So it was really important, and there was no other way to get to it aside from this.

And it really helped us understand the nature of the duress people were feeling.

And I'll go ahead and pause there, John.

JH: No, thanks.

I think it's just so important for people to remember that we really need to be considering data from both qualitative and quantitative sources when we're assessing the impact and assessing the degree of crisis. So a lot of times the bedside reflections don't get carried up.

So let's move a little further west here from Minnesota.

JD: From a health equity perspective, the rural areas, there's good data both from us and nationally that the rural areas of our state were not receiving the same level of attention that the tertiary care centers were.

JH: Absolutely.

which creates significant equity and access issues. And I'm glad you mentioned that, and I'm sure we'll come back and touch on that in the discussion. So we'll move a little bit further west from Minnesota to Colorado, and Matt Wynia, who is director of the Center for Bioethics and Humanities at the University of Colorado, amongst his many other titles.

So Matt, again, thanks for contributing today.

Matt Wynia (MW): You bet, really happy to be here.

And I was asked to broach one of the more difficult challenges, questions about who gets resources when they're in short supply.

And for this purpose, I'm going to focus on what may be the most difficult challenge, which is taking resources away from one person so that those resources can be made available to another.

This is part of what people in bioethics and clinical ethics often talk about, those sort of withholding and withdrawal domain of ethical issues.

And I'll just note in passing that it is sometimes easier to not start something at all than it is to start something and then take it away from someone.

That's an emotional response, obviously, and there are sort of philosophical arguments about why it's actually better to start something and give it a chance before withdrawing it.

But anyone in clinical practice knows the practical challenge of withdrawing a resource from someone in order to give it to someone else is much, much more difficult from a sort of day-to-day standpoint.

And I'm going to start with a case that sort of illustrates some of these complexities about making these kinds of decisions during a pandemic.

This is a case that made a lot of news, a guy named Scott Quiner, who caught COVID in early 2020, sorry, early fall of 2020, and by January of 2021, he'd been on a vent for a number of weeks with no improvement.

And on January 11, the hospital told his wife that he was going to be removed from the ventilator in compliance with their policies and procedures regarding medically non-beneficial interventions.

And medically non-beneficial is the terminology that's in better favor today than the word futility.

But this is fundamentally the hospital saying it is no longer of any potential benefit to Mr. Quiner to continue him on the ventilator.

They're doing this, however, in a politically contentious context.

And when at the time there were less than 1% of available ventilators free for use in Minnesota.

So this was taking place at a time when everyone knew that ventilators as a resource were extremely scarce.

And his wife went on an anti-vaccination podcast and asked for a lawyer to take the case.

She got a lawyer, a judge issued a restraining order.

The hospital did what it is supposed to do ethically.

And I'll show another slide in just a second about this.

But the hospital actually found another hospital to take Mr.

Quiner, that hospital did, he moved to Texas and a week later passed away.

On the next slide, I'll just show you what the ethical responsibilities are when you think that, so go ahead and go to the next slide.

The ethical responsibilities with regard to non-beneficial treatments are actually pretty well-defined.

We talk sometimes about physiologic futility, And when you think that an intervention is actually no longer going to achieve the stated goal or the desired goal, it is ethically acceptable to say we're not going to keep doing this.

You do this in the context of a conversation about goals of care, you do this in the context of providing appropriate symptom management, and you try to negotiate a plan that's consistent with the patient's goals, and with sound clinical judgment, right?

So this happens in some states, these decisions about non-beneficial treatments or what used to be often called futility of treatment.

These things are sometimes even legally protected in some states.

And there's sort of a well-described ethical framework for thinking about these and a process for bringing these kinds of decisions forward.

There's a legal history behind this, which I won't get into, but it relates to the development of the intensive care apparatus that can allow us to keep what is sometimes essentially a dead body alive in a way because of mechanical support back in the 70s and 80s, and it started with the right of patients actually and their families to have services withdrawn that the patient and family thought were no longer of any benefit.

And then it evolved through a series of cases to a couple where patients and families said, we want ongoing treatment, even though the doctor in the hospital thought that those were no longer of any benefit to the patient.

So there is both an ethical and in some states, at least a legal framework around this.

On the next slide, however, We'll talk a little bit about how this applied in the pandemic, where we start to conflate issues of futility, literal physiologic futility, and issues of not beneficial enough to warrant ongoing resource use, because there are other people for whom those same resources might be more beneficial.

That's no longer a futility conversation.

It's no longer really a non-beneficial treatment determination.

It's a question of appropriateness, given the resource constraints and other ways of using those same resources.

And there was a lot of hope early in the pandemic that we could use some kind of a scoring system that would give us a numeric score and that we would be able to use those scores to make a clear sort of mathematical determinations of who deserved to receive a scarce resource and for whom those resources could ethically be withheld because they would not be likely enough to provide benefit that they ought to be used in that circumstance.

Unfortunately, one of the main lessons that came out of the COVID-19 pandemic where we did have a number of systems that were so overwhelmed that they tried to resort to these kind of scoring systems.

And what you find is number one, the scoring systems were found to be relatively unreliable in predicting critical care outcomes.

And so they just didn't feel serviceable in that regard.

Also too many people ended up getting roughly the same score or literally the same score, right?

The SOFA score does not have that much distinguishing to it that if you're an eight, you're an eight.

There's not a high eight and a low eight or a high seven and a low seven.

And the difference between a seven and an eight is really not probably all that beneficial either in terms of making actual triage decisions.

So many systems where these conversations had to take place ended up needing to revert from the sort of mathematical model to a team-based model of deliberation with individualized assessments of prognosis based on more data than are used just for the SOFA score, despite all of the concerns about bias and so on that can arise when you bring a group of people together to look at a more holistic assessment of what is the underlying pathology and how likely is this person to survive or to get benefit from being on this ventilator or getting this monoclonal antibody versus this other person who also might benefit from the ventilator or the monoclonal antibody.

So then last slide, please will get us to this question of if you can go to the next slide yeah to this question of you know making these inappropriateness type decisions so not futility decisions anymore but inappropriateness decisions under extreme pressure.

And there is under that kind of pressure a lot of incentive to want to call a decision about inappropriateness a decision about futility.

And so we have some evidence and a lot of anecdotes of conversations where rather than saying this is an inappropriate use of a scarce resource, families might be told, this is a futility decision and this, the ventilator is not going to benefit your loved one because they are too far gone at this point.

Whereas in a normal circumstance, they would have gotten that ventilator because we would have had a ventilator available for them and it would have been worth at least a try.

And this possibility of conflating futility conversations and inappropriateness conversations is one that is ethically extremely complicated and difficult because it's not at all clear that you're benefiting a family, honestly, by casting something as an inappropriateness decision rather than just casting it as a futility decision, which may be easier for a family to hear and to cope with, but it is also not entirely honest to do that.

And these are things where they're really impacted by the legal environment.

There are, as I mentioned before, states where inappropriateness decision, sorry, futility type decisions, non-beneficial treatment decisions, if you follow that process, is both ethically and legally protected.

There are no such protections if you are talking to a family outside of a declared crisis where crisis standards of care have been authorized. There are no legal protections for

someone saying, we have to make this triage decision right now because we don't have enough of this resource for everyone who needs it.

And that of course puts tremendous pressure on individual practitioners and healthcare teams to call things non-beneficial when in fact they're making inappropriate mis decisions.

And we are seeing now some lawsuits around these kinds of issues similar to the case that I started with where people are saying look this patient should have been transferred but there was no place to transfer that patient to. That unfortunately does not necessarily prevent the patient and family from filing a lawsuit.

So we'll see how those suits play out, but my task, as I said, was to open this conversation.

Unfortunately, there are not easy answers to these kinds of questions, so I will leave it there.

JH: Thank you, Matt. That's very helpful.

You know, I think just in relation to the Quiner case, that because there was sort of an early adversarial relationship between the family and the caregivers, they, you know, they went to extremes getting multiple outside experts to consult on prognosis and really being extraordinarily cautious about making decisions about withdrawing life-supporting treatment in that case, which obviously takes time.

So our non-beneficial treatment processes that result in withdrawal of life-sustaining treatments take a very long time, and yet enhancing those measures, enhancing those operations is probably a higher yield than some of the original concepts we had around triage teams that would take resources from somebody who is getting them inappropriately so they could be used by someone else.

Can you comment on how we might try to streamline non-beneficial treatment assessments and make sure that the outcomes take place within a timeframe that's relevant rather than weeks when we're in a crisis?

MW: Yeah, I think you are raising an enormously important question because in an ideal circumstance, of course, during a crisis, you'd be able to make these kinds of decisions quickly.

Sometimes you have to make these decisions quickly.

And unfortunately, it seems that we live in a world where the possibility of someone mistaking an actual futility decision for a rationing decision is enhanced during a crisis. It doesn't go down. It actually, the possibility of mistrust and the belief that, hey, you're telling

me this is about futility, but I think it's just about resource allocation. I think that, actually, unfortunately, gets higher during a crisis, or at least that was our experience during the pandemic.

So I think we do the kinds of things that we do normally by trying to have, you know, these conversations early on, by helping people recognize, you know, from the outset that we are operating in crisis conditions, that we do things like having a trial of therapy and we pose it as a trial of therapy with defined endpoints rather than as an undefined, okay, we're starting this therapy now without talking at that time about how we will know whether this therapy is heading in the right direction or heading in the wrong direction and should be withdrawn.

Those are the kinds of things that probably need to take place.

They're not really structural changes. They're more about relationships and conversations that need to take place and that need to be taking place in an even more sensitive manner during a pandemic than they probably do during normal operating times.

JH: Which is always challenging given the time pressure, but I think you're spot on about trying to make sure that we're leveraging the usual systems but trying to figure out how we accelerate some of those processes, and hopefully in the future can get to better decision tools that allow us to prognosticate in a much different way.

So, well, thanks, Matt.

We're going to move now to a little bit more of a clinician facility perspective with Vikram Mukherjee, Chief of Critical Care at Bellevue and affiliated with New York University.

Vikram, thanks for being here.

VM: Thank you, John, and thank you, everyone, for joining.

Matt's talk was a nice segway into what I will talk about, and essentially, following Matt's talk, it's really important for us to recognize that crisis standards of care, going into a scenario where there's such significant supply-demand mismatches that we have to go into rationing and triage decisions, everyone loses out on that, right? I mean, there is the family that's suffering, watching some resources being taken away appropriately.

There is significant healthcare worker moral distress and loss of resiliency.

There is a possibility of legal implications and lawsuits, as Matt pointed out.

And of course, if this is not done very elegantly, community distrust within healthcare, towards healthcare and towards public health can get amplified when we are in crisis standards of care.

So, my talk is going to focus on, next slide please, on how in advancing supply-demand mismatches, how we can avoid CSC, how we can avoid crisis standard of care and amplify conventional or contingency care so that we can provide some resources for everyone rather than having to go into triage.

Some of these lessons are learned from the bedside.

We were in Bellevue and in New York City, we were in the epicenter of the pandemic just about five years ago.

And I'm glad we're talking about this so that the lessons learned here aren't a footnote in the tragic history of this pandemic.

And we have some lessons that we can memorialize for our next run with this.

So just going along the different ways, we talk about space, staff, supply systems, but it's a little bit more nuanced than that, right?

So if you are amplifying your ICU spaces to build up ancillary capacity across non-traditional units, You still want to have the right bed for the right patient.

Your sickest patients should be in the core ICUs, not in an ancillary endoscopy suite or an ER wing that has been stood up for a surge.

You should try and prioritize that the ones who are on the verge of needing ECMO for SARS-CoV-2 pneumonia for the sickest ones should be in your core unit.

One way of amplifying a ventilator shortage is to use non-invasive ventilators and retrofit them to provide IMV, to use LTV1200 from the SNS and use them for invasive mechanical ventilation.

However, again, the fine tuning there is if you have a patient with advanced ARDS with the PF ratios in the tank, and you need to follow closely their plateaus, their peaks, the minute ventilation, we should still try and get the most conventional ventilators, the ones that everyone's used to using on a daily basis for the patients who are the sickest.

Jeff mentioned briefly the dialysis search.

This is not something we anticipated going into February of March of 2020, the amount of renal failure that would occur.

And just putting up numbers, 60% of our ICU patients had renal failure, 40% had needs for dialysis.

This is not something we had expected from a normal respiratory virus.

So how can you amplify?

Can you give half of those dialysis to your patients?

Can you use emergent PD, peritoneal dialysis, to avoid patients dying of acute renal failure? Just innovation that you can use in the next run that we have this with this.

Something that we'll talk about in a little bit deeper in the next few slides is the disconnect between what the frontline physician and the nurse are facing with an actual scarcity at the command center level, and this is something that we'll talk about, but there is some scenarios that happened where frontline clinicians were making pretty tough unilateral decisions about ventilator allocation and ventilator and code status, when in real life there were ample resources that just weren't communicated to the frontline staff.

We talked about moral distress, and this is something that I think is integral to any crisis care situation, to any surge situation.

The lens that we need to look at is that if you don't have a resilient healthcare workforce who are able to provide tough clinical care to really sick ICU patients, you don't have a working healthcare institution and a bed is of no use unless you have the staff to be able to be physically and mentally be able to provide care to a sick patient there.

And then of course looking at it through a safety net hospital, we recognize that the fundamentals of equitable care are built in, we know that during our pandemic surges, patients who didn't have insurance, who belong to a lower socioeconomic status became hospitalized more often, became critically ill more often, and died more often.

Again, we're not going to fix the entire healthcare equity through a pandemic lens, but any crisis care planning has to have the fundamentals of equitable care built into it.

Next, please.

So this is the disconnect that I want to describe over a couple of slides between a frontline team and their needs and incident command on the right and what they can supply.

So on the left here, you have a frontline team, a multidisciplinary regular ICU team built of physicians, nurses, respiratory therapists, and so on, who are obviously doing patient care, but they also have needs of supplies, PPE, for example.

They need the PPE to go into the room.

They are, bed flow is integral to them because they know that there's a patient maybe in the ED waiting to come up.

And of course, staff morale is integral to any conversation we have.

On the right here is some functions of an incident command system.

They have overview and visibility on supplies, what's in the hospital, what's in the network, what's available at the SNS.

They have pretty good control of bed flow.

And of course, staffing needs usually go through the incident command center, and they play a big role in communications, both internal and external.

In peacetime, for example now, this works really well because if a frontline team has a need, they can usually, if it’s stood up, call an incident commander and get what they need at the bedside when it's a one-to-one-ish ratio.

Next slide, please.

What doesn't quite work out is when you have multiple frontline teams having multiple challenges, all trying to get resources that are best for their patient and their teams to a singular incident command system.

And this becomes fairly dis-synchronized because you have, for example, 10 frontline teams instead of one asking the incident command, the ICS, for the same resources on more healthcare workers, more beds to downgrade to, more PPE, and so on.

So next slide, please.

So in this scenario, when you're looking at a surge and you're looking at multiple teams operating parallel, We found it really, really useful to have a clinical leader be the middle person here.

We call it a pit boss or a clinical coordinator who should be a clinical leader who can prioritize the needs of the different frontline teams that are working in tandem and prioritize and convey to the incident command system, yes, team one needs this, team C needs this, and so on.

That flow, and again, this should be a clinical person who has a natural leadership role, helps prioritize in a fairly equitable manner the resources that are present to the command center and prioritize on who needs them the most on the frontline teams.

Next, please.

And the way it would usually work out as is that the different frontline teams convey the resource needs to the pit boss or the clinical coordinator who is a single point of entry to the incident command.

And in real life, we learned this well into our first wave is that this worked out well where the pit boss wasn't doing clinical care, wasn't, his or her sole role was to round across the frontline teams, get a sense of what's needed across the teams and prioritize who gets dialysis first, who gets the next ventilator, who gets the next ICU bed and so on. Next please.

One other thing that I think we learned very harshly through the pandemic years, and I think we still have work to do is that many of our systems work really well within their system. So there's really good intra-systemic resource sharing, right?

There is policies, there's knowledge sharing, there's load balancing going on within systems in a particular healthcare system.

However, especially looking at it from New York City, where you have multiple healthcare systems such as the Safety Net Hospital Network, the NYU, Columbia, Sinai, offshore multiple healthcare systems, we still have some work to do to make the systems work well within each other. There is an absolute need for inter-systemic collaboration.

Four particular scenarios come up, load balancing, for example.

I think we all are conversant with the data that one out of four patients during the pandemic years died because of a surging hospital scenario, and how load balancing to less surged hospital, less strained hospital could save 25% of ICU patients.

Similarly, resource sharing, be it knowledge distribution or PPE sharing, clinical care, we need to be working much better as across systems instead of being siloed and working within our respective chains. Next, please. With that, I will end my talk.

Lots of work to be done, and thank you for the opportunity to speak. I look forward to our panel discussion. Thank you.

JH: Great. Thank you, Vikram. I'll just ask you a question just to tie into your presentation there.

You know, I think that pit boss role is super important, and however you get clinical care integrated with ICS, it's crucial that that happens.

Can you talk a little bit about how important it is for the command structure to support and understand the clinical decisions that are going on though, and also when possible to provide guidance on how to do that allocation on a consistent basis?

VM: Great question, John, and agree that at the end of the day, It's about seamless, timely communication with the patient-centered needs at the bedside and what flows and translates into the resources that a command center can provide.

I think the guidance has to be fairly nimble, just because, as you know, a system or an ICU can slip in and out of crisis multiple times.

You can be in crisis at eight o 'clock in the morning, slip out of it at four p.m., and then go back into crisis, depending on the incoming surge of patients and what the decanting strategies are.

So nimble, timely, round-the-clock conversations would be integral to make sure that we are making the most of our resources that are available.

Thank you.

JH: You bet, and I think we've seen some situations where the incident command system hasn't necessarily been accountable to the decisions that are being made, and that has led to a lot of provider distress.

Of course, Jeff, you were going to chime in on that.

JD: Just to add to what Vikram has said, when we had a statewide working group in Minnesota during the second year of the pandemic, one of the things we recognized, and we did a formal debrief at the end of it, was a statewide working group also has to have an integral place in the response at a health system level so that the information that the frontline staff, we represent frontline clinical people, that has to be able to be well known and understood and acted upon at a CEO C-suite level. And there was a disconnect we found there, very analogous to what Vikram's describing at a system level.

JH: Great.

You know, I think, and I'll start with Jeff on this one.

One of the issues we have run into and many others have run into is just, when are you in crisis?

And, you know, asking providers that does sometimes revolve around their discomfort with what might be regarded as contingency solutions that don't realistically put the patient in jeopardy.

And yet there was also a lot of times when systems were saying we're not in crisis when very clearly their clinicians were saying, no, this is an absolutely dangerous situation.

Gabe Kalin and Dave Marcosi, amongst others, published a nice piece in New England Journal of Medicine Catalyst that basically offered some options as far as here's a system that you can use to assess when your system is in crisis.

And can you comment, Jeff, on how we have found that helpful relative to if you're using this type of staff or ratios or things and just developing some standardization around that distinction between crisis care and contingency?

JD: Absolutely, John. I appreciate that. And again, we don't have a lot of quantitative numbers at this point in time, but I think that there was a lot of learnings for what are the categories of information we need, how do we get at starting to develop a quantitative look at that. Staff in particular is a really important piece. Are you using non-ICU staff? Are you beginning to use non-critical care staff for procedure teams or for CRNA intubation teams? So there are different ways of looking at staff that help us look at that. The other thing that we found was looking at the number of patients in emergency rooms were waiting there. For instance, how many are there? How is that escalating over time? How long are they waiting there? That too is a really good barometer of stress on the systems. And the third piece that I would add is if we have a statewide communication of Medical Operations Coordination Center, again, how much duress does that center beginning to feel? Are they being able to place everybody or are they only placing half or even a quarter of those patients? Those are some of the different barometers of stress that the system has. And as I look to the future, those are some of the things I think we need to start to define in greater detail and be able to, if we can track.

JH: Anyone else have quick comments on that before I move on?

MW: Yeah, I'll just add that I think one of the things we learned from crisis standards of care during the pandemic was it can be extremely useful. It invokes a bunch of things that aren't necessarily otherwise going to happen on their own, including the implementation of strategies for transferring patients and resources across systems and around the state and even across between states.

And some of the criteria that, you know, were in that paper and that Jeff just mentioned are things that happen, you know, more often than COVID, right?

It's not, it, you know, these things happened because of, you know, drug shortages fairly commonly and they put people at real risk, and yet we do not as yet invoke a MOCC.

We don't as yet invoke some of the resource sharing strategies that we probably ought to if our goal as a system, as a health system writ large, were to save as many lives as possible despite a resource shortage, right? If that were the goal, we would be using some of the strategies that we use during COVID more often.

JH: So, let me just—

MW: I'm not sure how to make that happen because that's a, you know, whether to invoke crisis standards of care at a state level is a political decision more than a medical decision right now.

JH: Let me just tag on to that just a little bit, Matt, you know, I think it's so important with these ongoing drug and medication and other shortages. And when crisis standards of care was conceived, it was, the idea was this was a pervasive event, right? And the state was going to do lots of things and all these other things were going to happen. In reality, we're bleeding into crisis conditions on a daily basis more and more often. And having knowledge upfront about what our criteria are going to be or what emergency conditions we're not going to allow to sit in critical access hospitals, those sorts of things I think are so important to actually generating action. And I think with saline or with the platinum containing chemotherapeutic agents, we've done a good job in illustrating rationing strategies, but like you say illustrating the rationing strategies isn't the same as you have more of this medication than I do and I have a patient who you know sort of meets these criteria that is getting these chemotherapeutics or getting the saline or whatever at your facility and how do we balance that, you know, access to resources equitably. Any thoughts on that what's required?

MW: Yeah and this is that's exactly the type of scenario I was thinking of or like the blood culture bottle shortage recently, where if you bought from one supplier, you might be okay. But if you bought from the other supplier, use the different system, you are not okay at all, and so you're in crisis mode, where you are withholding blood cultures from people who would clearly benefit potentially, from those blood cultures. And meanwhile, literally across the street, you could have another hospital that could be doing those blood cultures, right? And we just don't have the systems established for saying, look, this is now a statewide emergency. It's affecting 20% of our hospitals and the other 80% of the hospitals need to pitch in, right? That would be, that is a policy issue. It's not at the level of an individual hospital making better decisions about how best to triage the resources they have available. It's about how the system responds when some hospitals are facing that kind of a crisis. And my guess is we're going to see more of those moving forward because of the fragmentation of supply chains and the healthcare system and just-in-time supply chain delivery models and so on, all of which are systems issues more than they are ethics issues for an individual hospital to make a better triage decision.

That doesn't exactly answer your question, John, but it's to say what we did during the pandemic is a model for how, in some states at least, is really a model for how we should be managing these more mundane day-to-day shortages that have real impacts on people's survival prospects.

JH: And I think fair to say, Matt, that at some point in these type of situations is that having a triage team, which again in the original CSC configuration was more about like allocation of ventilators. But I think realistically, as Vikram illustrated triage teams and Jeff illustrated triage teams were used to more define who goes to the ICU, or maybe in this case, if we have a certain amount of a therapeutic within this system and none in this system with patients that qualify, let's agree either through a voluntary construct or in a state or other situation that that team is going to decide that we should be moving some of that asset you know over here. It's not you know sort of in our usual conversations and in the private health care sector but at the end of the day there's a public responsibility there that I think we struggle with that dynamic sometimes.

Vikram can you talk a little bit about you know the moral distress that a lot of providers experience not only by providing care that was in non-traditional ways, but also there was often a frustration that they were providing what was regarded as non-beneficial treatment, and yet at the same time knowing there were so many other patients that needed access to those resources.

Is there a way that we can, you know, kind of reduce that stress or help to square that a little bit? And sort of as part of that, how do we make sure that incident command is aware of those tensions and those dynamics?

VM: Great question, John.

I think this moral stress has a long-lasting impact on the healthcare workforce way beyond the pandemic here. I'll give you some examples.

During a surge, during contingency or crisis times of care, the lens that healthcare workers often have to approach often shifts from patient-centered care to a more utilitarian approach to more of a public health ethical approach where you're doing something, you might be withdrawing or reallocating care from a person in front of you to someone who is abstract and might not be a direct patient of yours.

Some other challenges for the healthcare workforce that we've seen over the years is staying up to date on rapidly shifting protocols is unrealistic.

Telling families that they cannot visit and witnessing patients die alone takes its toll.

Treating patients often without proper PPE, and abandoning conventional bedside and proper protocols due to high patient volume, low resources, all has an effect on health care worker burnout. And the numbers are clear, right? So by 2027, the forecast is 800,000 nurses will have left the profession.

There's around 60,000 physicians that have left the profession in the last two years, or 10% of the health workforce, which is why I say that the strain and the moral burnout that has happened over the last three years has ripple effects far beyond the pandemic years. What can we do about it? I think recognition is key. Many healthcare workers want to fight through mental challenges and burnout and loss of resiliency. I think recognizing ourselves, recognizing our peers is key, easier said than done.

Lots of lessons to be learned from our friends in the military, who also go through a lot of mental stress and models such as the battle buddy, where you're paired up with a colleague to check in on each other is a model that has worked there and may lend itself to healthcare workforce as well. And then of course, this cannot be left on the individual, there has to be organizational support. Knowing that, yes, you're taking care of a physical need, yes, but mental well-being is just as pertinent to patient care as it is, as physical needs are.

So there has to be organizational support that is built during peacetime now so it can be amplified and operationalized further during wartime. That is the search. Those are some thoughts from my end. Would love to hear what the others think.

JH: Thank you. Matt or Jeff, any thoughts on that?

JD: Only to strongly support Vikram's position on that and his feelings about that. I know the task that really states just that, that the mental health and the moral stress from the pandemic truly left an impact on the workforce across the board.

JH: Go ahead.

MW: I was going to say, so endorsing everything that's been said, one of the strategies that we've found useful is group debriefs. So we call them moral distress rounds, which gives, you know, regular opportunity for teams to express to each other what they have experienced and often you know the wisdom of the group is there and people can really help each other and it's probably better for them to help each other than it is to sort of have an external person come in. The external person in our case is really just a facilitator, not just, it's an important role obviously and not an easy role, but the person who comes in who didn't have that experience is there really to facilitate learning and emotional processing for the team.

The other thing I just wanted to highlight which maybe John you were about to highlight is there is also moral distress that arises from continuing to provide services that you and the team may feel are futile, that they are not beneficial, they're not going to achieve physiological goals that are generally established and instead are being used or perceived to be being used to sort of mollify a family that is not ready yet to accept the passing of their

loved one. Fully understandable of course, but there is moral distress associated with continuing to provide services to someone when you know there's a line out the door of other people who are maybe some of them being denied those same services and however they're being denied those services they are suffering consequences from that denial. So that too generates moral distress.

So it's There is no distress-free zone for getting through a triage situation, right?

No matter what happens, you are going to feel moral distress in the sense of you could not accomplish all that you've been trained to accomplish because the resources weren't there.

I think by the way, sorry, sorry, I'll stop because I can go on about moral distress for an hour.

JH: Yeah, absolutely. And I think some of that moral distress is just unavoidable, right? But I think a lot of the moral distress is, to a degree, mitigatable if we know that we're doing the best we can to provide transparent, equitable access to resources, that the clinician has the backing of other clinicians of the incident command system of the state. There are protections offered, or we're doing the best we can from a regulatory standpoint to waive things. All of those things help to reduce some of that, but it's never going to go away.

So, Jeff, in talking a little bit about the state, in your role in the science advisory team, which is a clinical and administrative group that meets in Minnesota for resource shortages to both before and after that integrates feedback from the healthcare coalitions in the state, can you talk a little bit about how that sort of structure, working with coalitions, working with the state, can drive consistency, can lend support to guidelines that come out.

JD: Well, absolutely. The nice thing about having a statewide team, both of scientific experts, as well as this Department of Health, is that you can talk to all of your, you bring all of the players, if you will, to get the health systems. We work with the Minnesota Hospital Association, who's a wonderful partner. We work with the leadership of the health systems. And when you have an event such as a pandemic, It's the clearinghouse to bring everyone together. It's information sharing. It's how you develop an infrastructure if indeed an infrastructure is needed. It wasn't pandemic.

It may not necessarily have the same priority under smaller shortages such as the IV fluid shortage, for instance.

But what it does is it gives you a chance to bring together the experts as well as team building across the state to try and work together to find solutions that everybody benefits from.

It also requires a lot of experience. It requires really good political leadership and just really basic fundamental leadership to be able to pull them together, pull systems and different partners together to work together as a team.

JH: Absolutely. But that, you know, healthcare facility coalition state access is just so important in making sure that we're maintaining, you know, consistency in our care delivery. So we just have a few questions we haven't gotten to that we'll try to follow up the results on after the webinar. But I just want to do a quick 20, 30 seconds, anything that has come to top of mind for each of you during our presentation here that you want to make sure we leave folks with.

So in order of appearance, Jeff, I'll start with you.

JD: I appreciate that, John. Again, just to mirror the same comments I just made, it's really about teamwork. Probably the most valuable thing we found during a pandemic was being able to be together, share together, and be able to problem solve together.

JH: Vikram.

VM: Thanks, John. My takeaway would be, you know, this is just about five years into the pandemic. And I think many of us are forgetting a lot of the things we learned in these surges and lessons learned are translating into lessons observed. I think this is the time that we don't repeat the mistakes that we made and be better prepared from documenting and memorizing those experiences. So next time this happens to all of us, we can do better for our patients and colleagues.

Thank you.

JH: Great. Matt?

MW: Yeah, I really like the closing comments of both Jeff and Vikram. Thank you. Thanks for putting this together, John and the ASPR team. I would just close with a recognition, again, of the nuances and uncertainties associated with this work. And it's maybe illustrated by the reality that we separate contingency strategies from crisis strategies, for example, And yet at some point, contingency bleeds into crisis and crisis then deescalates back into contingency. And so I think sometimes the language that we use around these things can get in our way. I know that came up in one of the questions online as well. Just be thinking as we move forward, how we describe the different strategies that we are using and the risk associated with those strategies. Sometimes it's useful to separate them into crisis and contingency. Sometimes it may be better to just talk about we are implementing this strategy because it's the best strategy available to us given the circumstances we're under right now.

I would love it if we could get a more medically public health-oriented set of strategies and the implementation around those so that it was less politicized, so it was less susceptible to some of the vagaries of the political process.

I don't think that's going to happen in the near future, so we're going to be, I think, stuck, and we should get comfortable with being stuck in a circumstance where we need to talk from the point of view of medical and public health strategies and what we can achieve given the resources available to us.

JH: And I think even with the difficulties with non-beneficial treatment and futility and some of the life-sustaining treatments, the good news is that we've got a lot of resource shortages that are occurring pretty frequently. The practice on the quality. And so with a systems approach, we have the opportunity with saline shortages with other things to really exercise these principles and develop tiered strategies based on the level of shortage that we're going to implement. And like you said, Matt, get comfortable with being uncomfortable, but also have those tip points, those thresholds as Jeff was alluding to and as we talked about the Gabe Kaelin article, that we all agree once we get to here, we're all going to have to coordinate and we're all going to have to balance whether it's using MOCCs or resource sharing strategies or other things. At some point we're all in that together because we've hit that threshold. So I think there's a lot of great work going on out there. A lot of great resources on ASPR TRACIE to help you out, a lot of great expertise nationally to help you out. Reach out to ASPR TRACIE, we're here. Our webinar will be available within 24 hours, archived for yours or others' reflective viewing as well as the slide deck will be available there in the bios of our speakers. We look forward to your ideas and thanks for your service. Have a great day.

MW: Thank you.

JD: Thank you.