

ASPR TRACIE Webinar Transcript

Introduction to the Disaster Available Supplies in Hospitals (DASH) Tool

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Shayne Branmann: 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 ASPR's Technical Resources, Assistance Center, and Information Exchange (TRACIE) webinar titled "Introduction to the Disaster Available Supplies in Hospitals (DASH) Tool." Before we begin, we have a few housekeeping items to note: 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. 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. Today's PowerPoint presentation and speaker bios are provided in the "Handout" section of the GoToWebinar console and will be posted, along with the recording of this webinar within 24 hours on ASPR TRACIE.

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Next Slide. To meet the nation's health and medical needs ASPR is focused on 3 key priorities. Extend capabilities to respond well and emerge quickly from the COVID-19 pandemic. Restore resources and capabilities diminished during the pandemic. Prepare for future emergencies whether natural or man-made

Next Slide. My name is Shayne Brannman, and I am the Director of ASPR TRACIE and I want to welcome, new and old friends of ASPR TRACIE to this webinar. I want to thank you for what you do daily to enhance the preparedness, response, and recovery activities of your healthcare entities and communities, while facing myriad challenges, including ongoing supply chain disruptions. Your role is so vital to addressing the daily and arduous challenges being presented so your willingness to spend the next 60 minutes with us to further advance your knowledge is noteworthy. I also want to convey my heartfelt thanks to our awesome line up of panelists for this webinar. Your willingness to lend your precious time and share your substantive expertise so others might benefit is commendable and genuinely appreciated. Lastly, many thanks to the ASPR TRACIE Crew for coordinating this session. For our new friends to ASPR TRACIE on

the webinar today, this slide depicts the 3 domains of ASPR TRACIE: Technical Resources; Assistance Center; and Information Exchange. If you cannot find the resources you are looking for on the ASPR TRACIE website, simply email, call, or complete an online form and we will respond to your inquiry.

Next Slide. Dr. Sullivan just joined us and she has had a very busy morning. So again, it's my pleasure and honor to introduce Dr. Meg Sullivan, who serves as ASPR Chief Medical Officer. Ma'am, the floor is yours.

Dr. Meg Sullivan: Thank you so much Shayne, for inviting me to introduce today's webinar, and really a huge thank you to the hundreds of healthcare professionals who have joined us to learn about the DASH tool. As she said, it has been an incredibly busy day, but this is something that is such a priority and so important. And I just feel honored to be part of it. I just wanted to say a few words of introduction, and to start off by saying that medical supply chain disruptions and shortages are unfortunately no stranger to many of us. And the COVID-19 pandemic only served to exacerbate these existing challenges, ranging from early days of extreme PPE shortages to the more recent difficulties in obtaining contrast dye for medical imaging. As we look forward to the future, many hospital emergency planners, clinicians, and supply managers are asking how they can mitigate medical supply shortages moving forward. For example, what can hospitals do now to improve resilience for future disasters? How can hospitals plan with their supply vendors and healthcare coalitions to ensure enough supplies are available for the next emergency?

I'm so pleased that ASPR TRACIE has been collaborating with exceptional partners, Healthcare Ready, the Region 7 Disaster Public Health Response Ecosystem, and the Health Industry Distributors Association to develop a tool to help answer these questions. The Disaster Available Supplies and Hospitals or DASH tool estimates which supplies and in what quantities hospitals should have on hand based on their characteristics and roles in the community in four domains, pharmaceutical, PPE, burn, and trauma supplies. DASH is intended to help hospitals estimate supplies needed for their quote 90% of incidents that may occur in their community. Today's presenters will share their perspectives on how hospitals can use the DASH tool to inform discussions with their supply chain partners about their disaster supply needs. Then we will see a demo on how to use the dash tool. On behalf of ASPR, thank you to our presenters for their work developing this tool over the last few months and speaking with us today. I'm so excited to share the data with our audience. And let us begin by hearing from Shelly Schwedhelm, representing the Region 7 Disaster Health Response Ecosystem. Shelly?

Shelly Schwedhelm: Great. Hello, everyone, and thank you for that great introduction, Dr. Sullivan. And I want to also take a moment to really thank our ASPR TRACIE team. When I call with kind of crazy ideas out there, you know, they've always listened. It's so exciting today to really get to the fruition of seeing these modules come to be. And we're excited to tell you a little bit more about them today. So, the quest for this tool really came about as a long management history and emergency management for myself. Lots of years as a coalition leader and now as part of the Regional Disaster Health Response Grant. Next slide.

So many of our Regional Disaster Health Response System (RDHRS) sites across the country actually contributed in significant ways to this tool as we were developing them, along with many other industry agencies, and groups and associations. So, we'll talk about them a little bit

more, as we move through the different modules. So, the goal of an RDHRS is to really build capacity in part of that, is, in that first 48 to 72 hours of an event, to really help us manage things from boots on the ground. Every event, as we all know, starts locally, and it will take a while before the resources really begin to show up. So, the whole goal of an RDHRS is to really build that capacity and capability as a region, and even partnering with other regions, if needed, in those first hours after an event. So, development of the DASH tool modules is really an example of this. and many of the strategies of the RDHRS complement the work of this tool. So very excited today to bring this to you, and really, again, want to thank our ASPR TRACIE team, and all of the agencies that participated in it. Next slide, please.

So, what's our why? Our why is that the data tool really can help us focus on that mitigation and preparedness phase of the disaster life cycle. It's really an opportunity for us to use characteristics of a hospital and scenarios that allow us to really do some better judgement and anticipation and really getting to some clarity about what the supplies needed may be for various different types of events. The DASH tool provides an opportunity to help mitigate those supply shortages, as we've all continued to experience. As Dr. Sullivan eloquently noted to define those estimates for the preparedness process and hopefully help us to save lives in those early response timeframes as I noted. So we're going to walk through each of these modules very briefly, and then I'm really excited at the end to have Dr. Hick walk through the modules in real time with us. Next slide.

The DASH tool key points are that the four modules really complement each other. We purposely limited redundancy, so some of it, while you may say, well, where's this, or where's this, please know that we need to do, you know, take a strong look at each of the modules in order to adequately do this work of making sure that the disaster supplies are available. It's intended, as I've mentioned, to be a pre-incident management planning tool, and not something that we use in the moment of crisis. Module outputs can be used to determine what reasonable stock level should be at the facility level. And then the DASH tool, just to remind everybody, it's not going to address staff, space, systems or even education.

So I know Dr. Hick will walk through this when he's demoing the system, but I just want to remind folks, the tool itself cannot house your work. So, we want to make sure that you either download, save or print, or share the URL to a location where you can come back to it, and continue to readjust all of the little elements of how you walk through it. And then there's a really nice quick video on the site as well, that will be helpful as you start to kind of work with each of these process steps in it. Next slide.

The first module I wanted to just quickly touch on is the PPE Module, so near and dear to all of our hearts, right. So input was received from all of the regional emerging special pathogen treatment centers across the United States, as well as NETEC. So feel really good about that. And there's some opportunity there when you think about the different types of events that we might plan for. Next slide. I want to walk through those real quick.

The first type of event that this tool module helps you plan for is a special respiratory illness, so something like a MERS, or SARS, droplet airborne type pathogen. The second one is a viral hemorrhagic fever type scenario. So, Ebola, Lassa, and even Marburg, as we've recently seen as well, not in the U.S., thank goodness. So, that will help you to really think through what are the

PPE items that you might need for something like that. And, third, the pandemic, kind of viral pathogen scenarios, such as COVID that we're currently walking through/working through, as well as, even monkeypox could be very helpful in doing some planning and preparation. The DASH tool will really help you be informed on the items that you might need, and it also might assist us read as we think about what's going to happen this fall.

We know in the southern hemisphere influenza has been pretty significant, so we're heading back into that. We've got COVID continuing, and now we've got monkeypox as well. So hopefully this tool can serve to help you prepare and plan for the fall surge that's likely to come. And then, from a coalition perspective, you know, I think a lot about the hospital and having this clarity is really helpful. But what would even be better is if we could, then, take the hospital data and really cull it together, from a standpoint of the coalition level, and then maybe even eventually, get it to the regional level. And then, identifying what the gaps are, so that we can then be better informed about what are the items that we may need, and for what scenarios and at what levels we might need to be requesting the Strategic National Stockpile Resources, as well.

The things that I also want to make sure that you're mindful of is that this PPE module is not site specific. So, we know, you know, even an N95 respirator comes in different sizes. So those are the things you're going to have to build into your assessments. There's lots of variables, and we have really great tools that are resource documents for you, to walk through all of the assumptions, special considerations, so that you can be really clear about what the strategies are as you're using these modules.

We'll need to think about, also, whether we need to increase our numbers or our estimates for training, right? We all know that you play how you practice so we need to practice hard to do this right. So, we'll need to bump this up a little bit if you're a significant training hospital and really want to be purposeful in that, we also have a little bit of PPE failure here and there and damage. So, another thing to be mindful of, as well as if perhaps you work in an academic medical center and you have a lot of students and other staff that participate as well in the clinical care. So, just some things to keep in mind. But again, those nice modules within the tool itself walk you through those things.

Next slide. The next module I just want to touch on is the burn supply module. So, this will just give you some estimates for initial dressings, topical treatments, patient care. The left column in the graphical display on the right on your slide, is a visual of where you're going to enter the quantity of various topicals on hand. There's lots of different products, sizes, and quantity requirements, of course. So just be mindful of all that, and then in the table at the top right as quantities are input, the values automatically adjust in the table.

Then the table itself, the difference between present inventory and the goal is displayed. The goal is based on the questions answered on the initial assessments, and then you end up with the colored graph that displays the contributions of each product towards your recommended amount of the product that you should have. And it adjusts as you enter your inventory. So, just some key things to remember as you're walking through that. Next slide.

I want to make sure that we all understand, too, that there's a lot of considerations in the methodology that's in the module, so, not intended to kind of be the be all end all. We know that all of the modules complement each other. I want to thank, you know, all of our subject matter experts. Those folks are really outlined within these methodology documents, and their contributions have been significant. We also know that this is not a one and done, right? We're going to really want to make sure that we fine tune this over time. But we want to make sure that we also give each of the modules some specific time to be used by several people before we come back and quickly, you know, update them, or change them significantly. So just be patient with us as we walk through that process. The American Burn Association—several of the team members there were involved with us, as well as other subject matter experts at larger burn centers across the country.

So for this one, the patient considerations, you know, assumed lots of different assumptions there. So, 40% burn for inpatients, 5% body surface area for outpatients. So some key calculations were used that hopefully will help us get better clarity on the numbers and types of supplies that were needed and then remember, as you use other modules. So things like analgesia, IVs, things like that, those are going to be in the pharmacy module. And then our airway management and catheters are going to be in the trauma module. So, it's really an opportunity for us to use all the modules together for the varied scenarios. All right. Next slide, please.

Then the pharmacy module quickly is a unique planning tool to assist hospitals with assessing the number of pharmaceuticals that might be needed. And the assumption there was, what do we need to treat patients for up to 48 hours following a mass casualty incident. So, you think about what are those products, right? So IVs, steroids, bicarb, antiemetics, antibiotics.

And then, as you walk through those and in the methodology document, it also then helps remind us of the other medications that we should always consider for disaster situations, as well, from an all-hazards perspective, while not in the assumptions or in the methodology. It does a nice job, the subject matter experts for this one did a fabulous job of really walking through what these additional medications such as, you know, antibiotics for anthrax. What are the medical counter-measure items? So, the Atropine, lots of different potassium iodide, et cetera, that you might need for those other special circumstances. So it walks you through them while not actually having them in the calculations. It does give you some clarity about each one and some potential assumptions that you could use for help.

Then the final module, the trauma module. Next slide.

You can see some of the assumptions up there, it primarily addresses the needs of seriously injured patients, and in some cases, you know, you're just going to have to work through it, kind of better understand. It's got the trauma levels there, kind of the number of default patients that we were kind of using as the assumption.

It assumes that like 50% of seriously injured trauma patients might require intubation. So, an average of one chest tube per patient being inserted there and really does some thorough

assumptions that are spelled out in the module. Pediatric supplies are included in the module but in proportion to their age group and population.

So, if you had an incident that significantly impacted kids over adults, then you're going to need to do some adjustment in the module and we've hopefully been able to spell that out in a purposeful way for you as you're walking through it. So items in the trauma module would include your ET tubes, IV, catheters, art lines stuff, chest tubes, thoracotomy trays, C-collars, splinting materials for ortho injuries, and quite a few other items as well. So I think you know, the demo will be really helpful as we walk through that here shortly. Next, I'd like to transition and introduce Linda Rouse O'Neill. She's going to provide a little bit of an update on the supply chain perspective and how we might be able to work together collaboratively. So, Linda, over to you.

Linda Rouse O'Neill: Great. Thank you. Good morning, everybody. Thanks, Shelly for the introduction and that teed it up perfectly because I am going to talk exactly about how does wonderful tool that's really just walk through and that you'll get a demonstration shortly about what you should maybe be thinking about in terms of supply chain partners in the back of your mind, and how this could foster some opportunities for additional collaborations and planning with those distributors and manufacturers. So, what I'm going to talk a little bit about, first, though, because I know there's a lot of acute care providers on the phone, in case you don't know who the Health Industry Distributors Association (HIDA) is, give you a little sense of who we are, and then kind of connect the dots of what Shelly just talked about with what that means for the supply chain, for you to think about when you have those conversations.

So, on the next slide, HIDA, is the Health Industry Distributors Association. We've got about 119 distributor members, and these are the folks in the medical product space. So think PPE, think testing supplies, think all of those sorts of products you need, regardless of the event, from the needles and the IV solutions to deliver a medical counter-measure, capital equipment, all of those sorts of products and equipment that you might need, those are coming through the medical product distribution channel. We also have a HIDA Education Foundation. So, all of those manufacturers who are making those products, and who value distribution, and depend on distribution to get their products to hospitals, and physicians, and nursing homes, and home care agencies are part of that. And I think what provides us a great opportunity from HIDA is we're able to pull both of those together in a lot of our workgroups, which I'll talk about, which is where we kind of plugged in for our role on this tool. So on this next slide you can see kind of a smattering of logos. A lot of those will jump out at you as some large nationals.

But again, from our distributor membership perspective, keep in mind we've got a lot of distributors who are not on the slide. As I said, we've got 119 distributor members, which means there's a lot of smaller independent regional distributors that you might not even be aware of who might be serving your communities. And distributors tend to focus on a market. So you're going to have your core group of hospital distributors, but there's going to be a lot more regional distributors as well that serve that market. It might be, as you think about your role as a hospital in your planning, but also how you might be collaborating with your community and healthcare coalitions. There are different distributors who've got that core competency to serve physician offices, nursing homes, and home health. So, when you think about what to do with this tool and

then how to think about your community preparedness, just know that those will be very different distributors. It's very different to serve nursing homes than it is to serve hospitals. It's a different mix of products, et cetera. So, I just wanted to plant that seed when you think about partnering with your commercial market distribution folks, that that's going to be a broad range of distributors that you might want to think about including.

On the next slide, it gives you a snapshot of our manufacturing partners, as I mentioned, on our education foundation. These are the folks who are bringing to market all of those products that you are depending upon, for whatever emergency and crisis you are planning for. And as I mentioned, this really gives us, I think, a good end to end supply chain perspective from that HIDA is able to utilize through our different workgroups and councils.

And before I talk about those, on this next slide, I wanted to kind of also plant the seed about already the core competencies and skills that distributors and their manufacturing partners do on a regular basis. That can help you, and then when you think about taking the tool and putting it on top of this, what you really could do together going forward. So distributors, manufacturers and experts on venting and onboarding new suppliers. And I know PPE was called out earlier, the critical shortages that we had in the beginning of the COVID experience, since we are still in COVID.

I know from our members for every one supplier that they onboarded there was hundreds that they discarded as not legitimate or not having good quality products, so working with distributors. And I know in a crisis, it's hard to do that. That's why I love that this tool is preplanning, because understanding how distributors can help with some of this before the next crisis is I think going to help folks going forward identifying appropriate products. Substitutions are something that should always be discussed with your distributor and their manufacturing partners. As you look about the types of products that you're going to need, and how many of those products, for the different modules that Shelly walked through. And so when you think about the tool, then, on this next slide, how did HIDA's role, kind of fit into that?

And what we bring to the table, as I mentioned, not only our long history with federal partners, which we've appreciated very much, but we've got lots of ways that our members, both manufacturers and distributors, are able to plug in to HIDA as an organization. So we've got councils by markets such as their Acute Care Council, but also councils by product categories such as PPE. We've also got one on vaccine-related products and we also sometimes do it by issues. So when you think about the breadth of all of those work groups that we've got, and councils, these are the folks that you're dealing with every day to get your products on, on Blue Sky times. And so, we're able to tap into that expertise, if you will, and their subject matter expertise to provide feedback. And that was kind of our role. We're able to do tap into our PDE Council and our Acute Care Council, and they were very generous with their time in reviewing. I can't claim to have on that subject matter expertise myself, but I'm pretty good at finding out who does within our membership. So, they reviewed the tool, reviewed the modules, provided feedback, but I'll be honest, what they got, they love to its credit to Shelly and others involved in putting those modules together and Healthcare Ready. You guys really nailed it. Our guys had very little to say, except that it was great, it was a great tool, and there's a lot of information in there.

So, when I put all that together on the next slide, this is my very lame attempt at a formula since I was fired from fifth grade math homework during our virtual learning year. When you put all of that together, what I think makes me excited from a supply chain perspective, is you pull it together and you're going to have more informed discussions with your supply chain going forward. You have the opportunity to discuss availability and alternatives, it's going to improve that scenario planning and coordination with the supply chain.

But what I love about this is this is preplanning. You can sit down and talk to the supply chain ahead of time. And the best thing about this tool is it actually gives us some numbers. The supply chain loves to understand demand, and actually I'm going to take that a step further. We really want to understand true demand. That helps us with our planning and it helps our manufacturing partners understand raw material needs, for whatever disaster that you might be planning for, or emergency protocol that you're planning for.

So the more we can get our arms around that true demand, and understand what you, as a hospital, you as a region, or the other folks in your communities are going to need, the better and stronger those communications and understanding of your supply chain partners are going to be, and what your true needs are. And I think that's going to help a whole slew of conversations going forward in a much more robust manner than we've ever done in the past. And I think, if nothing else, from COVID, understanding just how inter-connected supply chain and emergency planners and procurement is, and all the different facilities so plugged in together. I really hope with this does is bring all those folks together and have some great planning conversations going forward. It'd be a disservice if we have not learned from that, I think, and I think you've got our members ready to sit down and do that. A lot of them do some sort of cushion, if you will, for their customers now. So there's lots of different ways these conversations could go to help you be better prepared and be able to depend on those products being there when you need them.

From a supply chain perspective that was all that I wanted to share. In the next slide, I'm going to hand it over to Ryan Dadmun. Sorry, Ryan, who was a technical specialist with Healthcare Ready, to talk a little bit more about their role in this tool. And I thank everybody for their attention. I thank ASPR TRACIE and all of our federal partners for the opportunity to be part of it. We really value the partnership and are really excited about where this tool can take us going forward. So, Ryan, thank you.

Ryan Dadmun: Thank you. Yes, good morning. Thank you all for this opportunity to not only work with ASPR TRACIE on developing this tool, but also a chance to talk about it. My name is Ryan Dadmun. I'm the Technical Specialist at Healthcare Ready as well as the primary programmer for the DASH tool. I'll be going over a little bit who Healthcare Ready is, and then we can dive right into the development of the tool itself. Next slide, please.

Healthcare Ready is a 401(c)(3) nonprofit leveraging unique relationships with government, nonprofit, and medical supply chains to build and enhance the resiliency of communities before, during, and after disasters. Our organization focuses on health preparedness and response, serving as a linkage point for the health sector and government partners at the federal, state, and local levels. Our goal is to facilitate the planning and response coordination, which improves our

ability to respond to threats that can disrupt patient access to health care during crises, including cybersecurity threats to infrastructure, and existing systematic vulnerabilities, among others.

Next slide, please. ASPR TRACIE's, Hospital Pharmacy Disaster Calculator and Hospital Personal Protective Equipment Planning Tool were Excel based tool is released in 2019 to assist large healthcare facilities ensure supplies on hand were managed sufficiently in case of a disaster event. As longtime partners with us, the ASPR TRACIE team, had discussed the evolution of this tool, and we believe we could assist in bringing transparency and clarity to the calculation process, especially for users, by putting this tool into Tableau, a powerful visualization software. Tableau allows for dynamic visualizations through user input, clear pathways, which ensure that users input all necessary information, and finally, provides clean web browser compatibility. So, here on the slide, we can see how the assessment used to look, and now, the new tool in Tableau.

Next slide, please. Additionally, Tableau allows us to provide more information to the user through hover over boxes, both for language clarification and calculation clarity. Combined with these dynamic visualizations, these aspects allowed us to build the Disaster Available Supplies and Hospitals tool in such a way that users will be able to understand exactly how their supplies on hand compared to the calculators output, while also providing clarity on how these calculated values were reached, and being easily accessible through any web browser.

Next slide, please. As we know, the medical supply chain has been severely stressed due to the COVID-19 pandemic, from manufacturing to distribution and last mile delivery, which refers to the final delivery of goods to the facility in which they are needed and presents a frequent problem for medical supply. Issues ranging from delayed and limited transportation options for both goods and patients, which can lead to a delay in healthcare delivery, to absent raw inputs for PPE and pharmaceutical manufacturing, which can lead to limited medical supply occur when disaster scenarios shock the medical supply chain. The Disaster Available Supplies and Hospitals tool can assist in diminishing the impact of these shocks by allowing large healthcare facilities to communicate their needs up the supply chain prior to an increase in patient needs.

Next slide, please. Supply chain impacts are large issues spanning multiple critical infrastructure sectors, which require coordination and communication to tackle. Manufacturers can benefit from having an increased lead time to produce needed goods. Distributors can better schedule deliveries and work through logistical issues, should they be aware of an increased need, excuse me, for specific goods. All of these aspects of the medical supply chain begin with patient needs, and clear communication of these needs through their healthcare provider to the remainder of the medical supply infrastructure are vital in ensuring that the health care supply chain is able to successfully meet medical demand. The graphic you see on-screen is one of many offered by Healthcare Ready, in helping grasp all the aspects of the medical supply chain, and more info can be found at the link at the bottom of the slide.

Next slide, please. The difference between preparedness and response is the timing of the effort. Preparedness occurs in periods of stability, while response refers to the efforts occurring during or after an emergency. The DASH tool will assist large healthcare facilities and ensuring their preparedness efforts are sufficient to have the necessary supplies on hands during emergency response. This evolution of ASPR TRACIE's Hospital Calculator Tool provides the necessary

levels of supplies to have on hand for many different specific events. We've already outlined them, but they include burn, trauma, pandemic planning, special respiratory illness, et cetera, while ensuring that the reasoning behind these values is communicated clearly to the user. The Calculator not only provides the users with values of necessary supplies, but also allows them to input their own inventory and directly compare against the calculator output to best meet expected needs. By strengthening preparedness efforts, we can ensure that necessary medical supplies are available where they are needed, when they are needed, as opposed to responding to scenarios and facing an unavoidable crunch on the medical supply chain. It's been an honor to work on this tool, and it feels like it really came through. Thank you to everyone who offered their input and review of the tool that was being built, and with that, I'll turn it over to Dr. John Hick.

Dr. John Hick: Thanks so much, Ryan. We're going to try to walk you through the DASH tool a little bit here. So, give us one second as we switch over presenters, and I'll try to take control here with my screen. As has been mentioned by Shelly and others, the DASH tool is really designed to answer that question of what do we need to be prepared for? We're not aiming to prepare you for every contingency, but what we're aiming for is, in your community, based on the role of your hospital and the size of your hospital, what's going to get you 90% of the way there for a range of different situations? And, again, there's quite a bit of integration between the pharmacy module, the burn supply module, and the trauma module, in particular. So, if you need a scalpel to care for a burn patient, or you need airway supplies, those are actually going to be found in the trauma module. Your IV fluids are going to be found in the hospital pharmacy module, but they'll be calibrated again to the needs of those burn patients. Same thing with the pharmaceuticals. So, there's quite a bit of interdependency. And even though you don't need to complete these modules all at once, it is definitely going to be part of an integrated effort between emergency management, your hospital supply chain and purchasing partners as well as your subject matter experts because you don't want to just go out and buy a particular burn topical dressing if that dressing is not used by the referral centers, that will be receiving your burn patients or were used at your specific hospital if you provide inpatient care.

So let's just take a quick look at a couple of these modules. For the hospital pharmacy module, it's really, really important to look at the instructions and the methodology. Both of those contain a lot of background material that will help you to, one, not get frustrated when you're completing the module on saving it, but also to really understand the significant amount of background and the assumptions that go into planning this module, what is included, what is not included. And that's critical, because if you want to have an awful lot of oral and amoxicillin on hand or ciprofloxacin for an anthrax attack now, we're not giving you those predictions. So that really relies on community and regional planning, you know, for a bioterrorist event, but not necessarily on hospital specific stocks for those items. So, there's discussion of those as well as Shelly mentioned, you know, stock if you want to have some potassium iodide around, et cetera. That's great. But when we don't make specific recommendations in that domain. So here's our domain.

First, we're going to do our initial assessment, and we'll pretend that we're a Level 2 trauma center here, and we have 30 emergency department beds. That doesn't really affect our calculations because of our trauma level, but it could, if you were a low-level, relatively low-

level trauma designation, like a 4, but you had 30 plus emergency department beds, then we're going to consider you a pretty busy emergency department, we're going to bump up your needs. We don't do inpatient burn care as a Level 2. We don't transfer trauma patients out, we're going to say that we're in an area where we do not have a whole lot of risk about receiving a disproportionate share. You can see if we change that to yes you can look at the bars on the other side there and they just doubled. You know, now we've gone from planning for 50 seriously injured patients to planning for 100 seriously injured patients. And again, serious is really important here. We're not planning for taking care of minor injuries, we're taking care of the seriously injured, seriously burned patients.

With some calculations I will say for burn, and for outpatient analgesia that do take some of those outpatients into account. We won't say that we're likely to be isolated by a natural disaster for a long period of time. Already you can see for our different categories here what some of the requirements are going to be. And we'll just shift right over here to a drug category, and we'll take a look at that. So, under injectable analgesia, we've tried to include the most commonly available forms. So not only the drug but how the drug is provided, and so for injectable analgesia here you can see what our goal is. And we can start, you know, basically just plugging in numbers here.

And you can see, as we do that, here's some, you know, fairly concentrated forms of fentanyl that are designed for ongoing analgesia, and so when we put numbers into those, they significantly boost our contribution there. You can see that big red bar is you know, what was our concentrated fentanyl. So pretty quickly, you can see that we're getting you know up to target and we haven't completed our list, but this again allows hospitals discretion on what forms pharmaceuticals they may have in stock or prefer to stock based on cost, ease of inventory, all those different things. So now we can go right onto the next category if we want to. And that's opioid analgesia, oral, complete the same thing. But we'll go back here to the index and go back to the tool. You can see that there's quite a large number of different categories here. Also included here are IV fluids and both maintenance fluids as well as your initial resuscitation fluids. We do require you to have a certain amount of lactated ringers available for resuscitation and burn patients, because that is a preferred IV fluid for those patients.

So, now that we've taken a look at that, let's take a look at our burn supply module here. And, again, very important: to take a look at the methodology and instructions. You don't want to just go into this and say, well, I think we'll do bacitracin, or I think we'll do, you know, methanide. You definitely want to read the background and also consult with the burn subject matter experts in your region. So, this time, we're going to be a critical access hospital. We're going to have six emergency department beds. We don't provide any initial trauma care, don't provide definitive care for burns, not a receiving center. And, let's say, yes, we are expected to be isolated for a significant amount of time. Based on this, we are looking for eight seriously burned patients in 30 outpatient burns.

So, we'll go to first our topicals, and here, because these different topical agents are important in different ways. You don't want to stock just one of these. Methanide is very important for full thickness burns. Silver sulfadiazine and bacitracin can be used somewhat interchangeably, although silver sulfadiazine needs to be put on thicker best trace and is better for the face. There's

a whole number of considerations here, but some of it does come down to institutional preference, which is why 30% of, you know, 30 to 40% of what you choose that can be based on what your institution prefers. So, again, you know, some of these supplies are in pretty large quantities, so, if we have, for a critical access hospital, if we happen to have eight one pound tubs, bacitracin, that's going to get us pretty quickly to, and past target for bacitracin. I'll actually reduce that number here to four because that's probably more reasonable. And then, we definitely want to have some methanide cream available here too, so we'll have six four ounce tubes of that, and that meets our goals for topical.

So, we'll move on to dressings. And, again, this comes down a lot to what type of dressings your burn referral centers, you know, would like to have you use. So, if they're using an impregnated Adaptic, so petrolatum gauze, that's a choice. If you're using sterile dry burn gauze dressings, and applying that directly over topical, that's great, too. But, you definitely want to work with your referral centers in deciding what you're going to use. That will affect and if you are lucky enough to stock silver impregnated burn dressings, we account for that here. If you don't have the exact sizes, just choose something that's very close. Because these are all calculated to meet the needs of a 40% burn patient, and the number of patients at your hospital would be receiving. So, you can see that square inch treatment equivalency here for all the different types of dressings, and obviously some of these burn gauze dressings at 24 by 36 inch, and that's a thick dressing so it absorbs fluid. That's going to get you a lot of mileage, and it's going to have a good shelf life, because it's basically a dry sterile product.

So the burn module really concentrates on the dressings, the topicals, the absorbents. You know, we definitely leave the IV fluids and other things, you know, into the other modules. And this is really about absorbent dressing and bandages. And if you do choose petrolatum gauze, or other things that need an absorbent on top of them that will generate requirements here for you if you're using dry burn gauze directly applied over topicals and you will not have absorbent requirements. So, again, there's a lot of things in the assumptions that are really important. We'll quickly cover a few things and the trauma module here, and then take a quick look at PPE. But, again, very important to read the methodology.

This time, we're going to be a Level 3 trauma center. We'll have 20 emergency department beds and we are not the primary receiving centers, so we're going to plan for 20 seriously injured patients. Again, this was based on whatever we could find for empiric information about mass casualty incidents based on size of community and size of facility. So, at this, basically, we do not specify the brand or anything else. But this gives you the numbers of the bag valve masks and all your airway things that you need to have on hand. And a lot of these are not going to be a problem for most hospitals. You're going to inventory these and say, "Yep, I think we're in good shape, might need to add some tourniquets, might need to add some other things here." So, there's a few pages of trauma information.

PPE is much more of a standalone module, and again, the methodology is critical and what your hospital does is very, very critical. So, let's just take a quick look at pandemic. And again, here, this can be really important when all your hospitals in a given area or in a regional construct, your healthcare coalition, are thinking, OK, well, we went into the last pandemic, not knowing how much PPE we had. And we really want to go in knowing that everybody's got enough to get them through the first six months if we assume we're going to use those masks for you know,

two shifts. For example, use respirator for two shifts. So, you can choose how many days of PPE you want to plan for here, but you can't go lower than six months. And the reason being is because we had to incorporate surges occurring during which time everyone in the hospital would be wearing masks versus times when the inpatient side was not surging. And so, all the inpatient providers didn't have to wear masks. So, if you do use PAPRs or elastomeric, you can insert the percentage of your staff that do that, or that you have a contingency for that during pandemics, that will reduce your overall respirator burden.

You can choose the number of shifts that a provider would be expected to wear, an N95. So we'll just say that that's two shifts. And then if you want to implement Search Staffing, you can choose that here. We're going to say that 30% of our staff have eyewear and won't need eye protection. And again, the fraction of days that all inpatient staff use respirators is based on sort of surge curves from the current pandemic and expectations for inpatient staff. So, if you want to adjust that, you certainly can.

What percent of your gowns are reusable? We will say that 50% are going to be reusable because we do use gown laundering, but we may not have enough gowns to meet the needs of all inpatient and emergency department staff.

So, on the next page here, we're going to input our staffing, and I'm just going to leave the numbers that, that actually came up here as defaults in the interest of time.

But you can adjust the nurses and physicians and the APPs and other providers that are on. This will give you a table that basically shows you what our basis for calculating the number of gloves that a particular provider needs for a shift, the number of gowns, et cetera. So again, the methods here really drive the outputs. But here are your outputs. And so, you know, looking at, what are we going to need for PPE changes, for gloves for N95 respirators across the hospital. If we use N95 respirators for two shifts for 315 days, I meant to choose 365, you know, we're talking about 34,000 N95 respirators. But if you adjusted the number of shifts, if you adjusted the total days of planning, you're going to get different answers. This is a great discussion driver from a regional standpoint at the state level to say, we're willing to have this on hand at the hospital. What can we do at the coalition level? What can we do at the state level? What can we do with our suppliers? So again, very powerful not only from a what should we have on hand, but also what should we do as a region to respond to the needs of our healthcare providers during a pandemic. So that's a really quick tour through DASH. And I hope gives you a sense of how powerful this tool is, and how much background work has been done to work through the assumptions for you to, you know, work through the calculations to make sure that we're trying to count as best we can for the 90% of incidents that are going to occur in your community with patients come into your facility and answering that question, what should I have on the shelf in order to be reasonably prepared? So I'll turn it over at this point, to Audrey Mazurek, who has some questions for us. Audrey?

Audrey Mazurek: Great, thank you so much, John. Thank you to all of our speakers. As a reminder to all of the participants, due to the number of participants on the webinar, you all have been muted. Please submit your questions through the Questions section of your GoToWebinar console, and I will ask the questions directly to the presenters. If you have a question for a

specific presenter, please note that in your question. Questions that we are not able to answer on today's webinar due to time constraints will be answered directly to you via e-mail. And we will post a redacted Q&A. And we will also have an FAQ on DASH tool up on ASPR TRACIE and up on the dashtool.org website shortly after this webinar. First question is actually going to be for Miss Shayne Branmann, the director of ASPR TRACIE. Are you planning to develop additional DASH modules in the future?

Shayne Branmann: Thanks for the great question, Audrey. The answer is, at this time, we just disseminated the DASH, and now, this is for the webinar, trying to explain it to you, and this is the time for everyone to really take a look at the four modules that we have developed where it's working really well for you. We'd like to get that kind of feedback, but also where you're having challenges so we can continually improve the four modules of TRACIE. If you have suggestions or ideas for other modules like chem, radiological, EMS, et cetera, at this time, we are not currently resourced to take those on. But put in those requirements, get back to us and give us your feedback on why would be very important for those domains to be added on. And we can certainly try to justify additional resources in the next fiscal year to be able to refine it. But right now, the answer is, for the next six months, we're going to be evaluating TRACIE DASH tool, taking in comments that we receive, refining those, and then, also, seeing what else comes in on how we might want to make refinements or additions in the future, given resources commensurate with the requirement. John, anything you'd like to add to that?

Dr. John Hick: Yeah, thanks, Shayne. You know, we certainly considered the possibility of adding in modules for different types of facilities as well as different types of scenarios. But, to be quite honest, from a metrics standpoint, there's not, for example, very much agreement about what your throughput for contaminated casualties should be from a decontamination standpoint. How many decon team members should be staffed, for a size of a facility, so we'd be going out on a limb, honestly, making those kinds of recommendations. We do certainly include some chemical antidotes and radiologic countermeasures in our discussion in the pharmacy section. So certainly, refer to that for sure. But definitely chemical, radiologic, those are really important regional planning efforts, and you'd need to know where your countermeasures are available from, and how your patients will get them. The DASH tool is maybe not the best way to answer that question, though.

Audrey Mazurek: Thank you very much to John and Shane. Question for John, I believe we can start off and, if any of our other presenters have any comments, you could certainly jump in. Can DASH be used to aggregate results from all hospitals in my healthcare coalition or healthcare system or within my region?

Dr. John Hick: Great question. We wrestled with this one a lot, and Brian may want to chime in, but we felt Tableau environment enabled the degree of interactivity and graphical representation that was just not possible with Excel. Excel would allow us to aggregate data, but unfortunately it's got a lot of limitations that don't allow us to do what we're doing with the dash tool as it currently stands. We also, you know, potentially could have considered an online data repository, an aggregator. But there were a lot of concerns about data privacy. And so, we elected not to do that, but, at the same time, we do intend for this to drive regional discussions.

But we really don't want a region to rely on an aggregate number, like if we had a 100 chest tube in a region, you know, that's great, and it might meet the overall metric, but it doesn't mean that the individual facilities have an adequate number of chest tubes. So, planning at the facility level is really the driver here, and then elevating that conversation of consistency of level of preparedness to the coalition and regional level is critical. Ryan, do you have any other comments on the choice of Tableau, versus Excel, some of the other potential data interactions we looked at?

Ryan Dadmun: No, not many. I think you covered it very well, that the key points. For one, we wanted to ensure data privacy was maintained, and so we're not saving any of the data from a user perspective. Anything they put in Tableau isn't saved if you were to reload the page. It would bring you back to the start, which is why our saving options are as specific as they are as you move through the tool itself. The URL actually changes, so when we hit the Share button, you can paste that into a Word document, click on it later, and it will re-open up where it was beforehand. The choice to use Tableau was about clarity in calculation and a direct comparison between what the calculator outputs, as well as what is in each individual facilities inventory, and showing that very quickly as a side-by-side bar chart. So the aggregate is not something that this platform allows us to easily, although it could be beneficial to look into that in the future.

Audrey Mazurek: Thank you so much to John and Ryan. I have a lot of questions in here. So regarding a couple of these topics, I'm going to go ahead and just answer it, so everyone can hear. We are recording this session. The PowerPoint slides are available now in the handout section. If you'd like to grab those, otherwise they will be e-mailed out to you, along with the recording of this webinar, within 24 hours, probably likely later today. We'll get that out to everyone who registered for the webinar, and they will also be posted on the ASPR TRACIE website so you can grab that as well there. And I know folks are also asking where else we plan to socialize this. I do want to point out that there is a short, quick start, three-minute video on the dashtool.org website. That is where you can get the DASH tool. It is available now. And so you could start there.

This webinar recording of course, will also be available for viewing and to share out with your partners. And also do want to do a quick plug that ASPR TRACIE and our partners will be at the National Healthcare Coalition Preparedness Conference in Anaheim, California. And we have a session there specifically dedicated to the DASH tool on November 30th, at 3:30 PM. So, if you happen to, be joining that conference, will be there, and I'm sure there'll be other opportunities where you'll see more of the DASH tool, and can certainly ask if you have questions about the DASH tool. If you have questions about how to utilize it, please email askasprtracie@hhs.gov. Well, that is all the time we have.

Shayne Branmann: I just want to make sure that we mentioned, one soul that was really important to the development of the DASH tool on the ASPR TRACIE side was Jennifer Nieratko, and Jennifer, just take a curtsy. Her efforts as the project lead for TRACIE on this were instrumental and since we acknowledged everyone else, I just wanted to make sure we acknowledged Jennifer's efforts. Thanks, Audrey, back to you to close it out.

Audrey Mazurek: Thank you so much, Shayne. Thank you. Yes, Jennifer was absolutely instrumental along with Dr. Hick and other partners. So thank you so much, and thank you all for your time today. We have a lot of questions that we were not able to get through. We will look at all of those, and we will get back to you. We will also put together that FAQ document and get that out to our panelists for review and then out to all the requesters and everyone that's on the call today. So again, the webinar will be archived and posted on our website, asprtracie.hhs.gov. On behalf of the ASPR TRACIE team, and all the presenters today, thank you so much for joining. Have a wonderful day.