

Prehospital Blood Transfusion in Practice — Working with a Blood Supplier in Your Prehospital Blood Program

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Gam Wijetunge: Good afternoon, everyone, and thank you for joining us for the third installment in our special prehospital blood webinar series.

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Gam Wijetunge: I'm Gam Wijetunge, Director of the NHTSA Office of EMS, and I'll be moderating our session today. Today's session is *Working with a Blood Supplier in Your Prehospital Blood Program*.

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Gam Wijetunge: We address a number of EMS issues in our long-standing EMS-focused webinar program, and this summer we kicked off our newest series, Prehospital Blood Transfusion in Practice. If you missed either of our first two sessions, both recordings are posted on EMS.gov.

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Gam Wijetunge: On the screen, you see a list of the remaining topics addressed by the series. Please take a moment and scan the QR code on the slide now, and you can register for the upcoming webinars through December. You'll have to register for each session individually.

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Gam Wijetunge: We look forward to bringing you a variety of experts across different agency structures, different geographies, to share information and hopefully inspire others to consider a blood program in their community.

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Gam Wijetunge: So, a quick word on this series. EMS Focus gives the EMS community a unique opportunity to learn more about prehospital blood transfusion best practices. It brings federal, state and local leaders directly to you.

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Gam Wijetunge: With time for audience Q&A in every session, and closed captioning available throughout.

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Gam Wijetunge: You see here the NHTSA Office of EMS email address. Please do send us your questions and requests for future topics that you would like to see addressed.

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Gam Wijetunge: So just a few housekeeping items. Use the Q&A button on your Zoom control panel to send in questions at any time. We'll get to them in the remaining few minutes of the cast.

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Gam Wijetunge: Captions are available, just click on the button that says Show Captions.

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Gam Wijetunge: A word on our mission here at the office. NHTSA's mission is to reduce death and disability on our roadways.

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Gam Wijetunge: At The Office of EMS, we strive to improve patient outcomes in the prehospital setting, focusing on a system approach to EMS improvement.

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Gam Wijetunge: This ensures that any patient experiencing a medical emergency, whether it's motor vehicle crash trauma or cardiac arrests, our EMS systems and clinicians are prepared to provide effective clinical care to reduce injury and save lives.

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Gam Wijetunge: To support this mission, NHTSA focuses on bringing together data and experts to find the critical issues,

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Gam Wijetunge: providing leadership and coordination to the EMS community,

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Gam Wijetunge: and assessing, planning, developing, and promoting comprehensive, evidence-based EMS and 911 systems.

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Gam Wijetunge: One way we achieve our mission is by providing resources to support EMS leaders and clinicians. The Resources Hub on EMS.gov makes it easy to browse, search, and download documents, reports, and guidelines

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Gam Wijetunge: from our office, and from members of the Federal Interagency Committee on EMS, and from partners across the field. Take a minute and scan the QR code on this slide, or just go right to [ems.gov](https://www.ems.gov) online.

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00:04:02.880 --> 00:04:15.940

Gam Wijetunge: All right, on to our panel. So today's panel, Working with a Blood Supplier in your Prehospital Blood Program, is about the partnership at the center of every prehospital blood program:

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00:04:16.290 --> 00:04:22.499

Gam Wijetunge: the relationship between an EMS agency and its blood bank or blood center.

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00:04:23.030 --> 00:04:39.940

Gam Wijetunge: Let me welcome our panelists today, Jeff Hinshaw and Christina Warren. I'd like to ask each of you to briefly introduce yourself and share any disclosures or conflicts of interest. Christina, why don't we start with you?

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Christina Warren: Thanks, Gam. Thanks for the invite today. So, I'm Christina Warren. I am the stem cell transplant and Blood Bank Manager here at Atrium Health Wake Forest Baptist. We are a Level 1 trauma center located here in Winston-Salem, North Carolina, and we have been supporting prehospital blood programs for about 13 years now, and I have no disclosures.

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Gam Wijetunge: Great, thanks. Jeff, over to you.

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Jeff Hinshaw: Great, thanks for the invitation and the introduction, Gam. Pleasure to be with you this afternoon. Like Christina, I am a faculty member here at Atrium Health Wake Forest Baptist

Medical Center, also the Wake Forest University School of Medicine here in Winston-Salem. She's kind of explained our situation with our trauma center in medical school, but in another role, I am Assistant Medical Director for Wilkes County Emergency Services, and have been that for going on about 10 years

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Jeff Hinshaw: now, and I have no disclosures as well.

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Gam Wijetunge: Great, and thank you both for being here today. So, again, it's a panel discussion. We try and keep it informal. I'll shoot out some questions, but at any time, if either of you have anything to add on what's being said, please just

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Gam Wijetunge: go ahead and jump on into the conversation. But I'll start, maybe with a question for you, Jeff. This is very broad. Why don't you just tell us a bit about the Wilkes County EMS and your prehospital blood program?

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Jeff Hinshaw: Excellent. I'm always glad to brag on that, and again, our relationship between our hospital and our EMS agency is rather unique, to say the least.

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Jeff Hinshaw: Wilkes County is a predominantly rural service. We are the 13th largest land mass county in North Carolina. We currently run an EMS agency that covers about 13,000 to 14,000 calls a year with 6 ambulances strategically placed throughout our predominantly rural county. And our program started in 2022, after we started looking at data. Actually pre-COVID,

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Jeff Hinshaw: that kind of derailed our train for a couple of years trying to get started. But we were looking at patients who were hypotensive, who did not respond to fluids, and thinking outside the box; is there something better we can do? And so that was the nidus of our program that eventually started in 2022.

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Gam Wijetunge: Great. And, how did you establish Atrium Health Wake Forest as your blood supply partner? Can you...

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Gam Wijetunge: Maybe tell us what that process looked like early on?

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Jeff Hinshaw: Oh, exactly. So...

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Jeff Hinshaw: Wake Forest University Baptist Medical Center, in association with Atrium Health, has a Northwest Winston-Salem market that includes the main trauma center in Winston-Salem and four additional hospitals out in Northwest North Carolina, one of which you see on the slide

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Jeff Hinshaw: here, at Atrium Health Wake Forest Baptist, which is Wilkes Medical Center, our local hospital. So, we work hand-in-hand with the hospital system on a daily basis, not only transporting to our local community hospital, but we are also

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Jeff Hinshaw: very commonly having to take patients directly to the trauma center in Winston, not just for trauma, but cardiac stroke and other things as well. So it made a logical choice, given the fact that Atrium Health was the primary sponsor of our local hospital, to, of course,

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Jeff Hinshaw: bond with them and establish a relationship for a blood program there, even though we would not be getting our blood from the local hospital, it would come from the trauma center, but again, it just made sense, given that our local hospital was aligned with Atrium Health Wake Forest Baptist.

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Gam Wijetunge: Great.

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Gam Wijetunge: So, Christina, over to you for the next question. So, a lot of our audience are EMS agencies who are looking to start blood programs, but they're not really familiar with blood banks and how they operate and who they are, so...

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Gam Wijetunge: Could you tell us who are the key players on the blood bank or blood center side that an EMS agency will end up working with, and what their role is in the process?

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Christina Warren: Yeah, sure. So, blood banks, I'm sure EMS agencies aren't that familiar with us. We do like to keep to ourselves a little bit here in the lab, but we are typically part of the Department of Pathology if you're looking at a hospital system.

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Christina Warren: We are overseen by medical directors. We are lucky that we have transfusion-specific medical directors, but all blood banks operating out of a hospital system will have a medical director

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Christina Warren: on duty to oversee them. So, your first point of contact is probably going to be the medical director of that facility with which you want to work with.

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Christina Warren: They will then put you in touch with your blood bank contact. So, when Jeff first reached out, he reached out to Dr. Fadeyi, and Dr. Fadeyi went, "no, Christina, you do this." So,

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Christina Warren: we already had stuff kind of set up with other counties, so it was an easy implementation. If you are partnering with a blood center, they still have medical directors, so there's probably a sales rep that you can reach out to to get in contact with the right person.

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Christina Warren: So it depends on if you're looking at the blood supplier part or the blood bank part, from a hospital transfusion service. But either way, it can be done from either,

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Christina Warren: and the key players in setting up the process are really gonna be, you know, like I said, the medical director at first. We can't do anything without our medical director's approval.

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Christina Warren: We have a really great medical director here who's very forward-thinking and wants to be the first at everything. So, he said yes and continues to say yes when I wish he would pump the brakes a little bit.

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Christina Warren: And then, working with that, you go through your validation and your process setup, so you're going to work with your blood bank partner, whoever the medical director pushes you towards, whether that's a manager, lead tech, etc. You're gonna have to probably get your legal teams involved.

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Christina Warren: The legal process to get approvals and agreements can take upwards of a year, depending on, you know, if you have a quick and fast legal team. Even if stuff is already in the works, we find that it can take quite a while

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Christina Warren: to get that established. But once everything is established and running, really, I'm not really a part of it as much anymore unless there's problems. So, you know, the EMS crew is going to work directly with the blood bank staff crew, if you're working with a hospital partner. And then if you're working with a blood supplier, typically you're just getting shipments.

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Christina Warren: So...

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Christina Warren: It'd be great if you had a supplier on that back end that could take your excess if you don't transfuse, so we mitigate wastage a little bit there. But pretty much once the program is established and set up, I get to be pretty hands-off, unless there's an issue.

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Gam Wijetunge: Great.

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Gam Wijetunge: Jeff, I'll throw the next one to you. So, we hear a lot from folks about the importance of relationships and establishing strong relationships.

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Gam Wijetunge: How, kind of the kickoff to that might be, like, an EMS agency's first meeting, with a blood supplier, and

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Gam Wijetunge: how do you think EMS should prepare for their first meeting with a blood supplier, and who do you think should be involved?

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Jeff Hinshaw: There are several key players, as Christina just mentioned. One, the blood bank manager, the medical director of the blood bank.

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Jeff Hinshaw: In our situation for Wilkes County EMS, it was myself and the operations officer at that point in time, and we had our numbers. We had what we considered an idea and a plan where we could make an impact

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Jeff Hinshaw: on the citizens that we were treating that were hypotensive and not responding to crystalloids, and we got our numbers together, I reached out to Christina, and as she alluded to, they had just brought on another EMS agency in our regional EMS program, and they had just started as well, and it was a logical time to move together with this. For lack of a better term, the first domino had fallen.

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Jeff Hinshaw: So now that it made it easy and the relationships were beginning to be built.

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Jeff Hinshaw: And again, it helps with me working not only at the main trauma center, but also at Wilkes Medical Center, that there's an established relationship between the two facilities that bridges the gap. So for us, it was much easier, probably, than some other agencies, but Gam, as you asked the question,

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Jeff Hinshaw: the person with the numbers, the medical director for the EMS agency, the medical director for the blood bank, and then that lead tech, such as Christina, in this particular situation.

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Gam Wijetunge: Great.

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Gam Wijetunge: Christina, back to you.

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Gam Wijetunge: What do you think EMS leaders need to understand about how blood banks work? We've heard information about FDA requirements and AAB standards, and how they're important for EMS to understand before they even walk into a meeting. Can you talk a little bit about that?

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Christina Warren: Yeah, so I think one of the biggest things that EMS providers need to understand is how analytical we are, as a blood bank. We are always operating on the do no harm, now or later. You know, a lot of our processes are built in, historical case studies of where giving a blood product has caused harm down the road.

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Christina Warren: That has built a lot of our practices. We are also highly regulated. We have lots of inspections that are done in blood banks by multiple different agencies. The two that are really applicable in this

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Christina Warren: framework are really the FDA and AABB. And FDA trumps everything, right? Your Code of Federal Regulations

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Christina Warren: outlines what you have to do. You can't get around these. These are things affecting the safety, purity, and potency of blood products, so the quality overall, things like storage temperatures that you have to monitor, traceability of units, documentation of transfusion, things like that. You can't get around that, you have to do those. Then there's the

AABB, and I consider this the gold standard of accreditation. There's new standards out there published

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Christina Warren: by the AABB

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Christina Warren: for prehospital and out-of-hospital transfusions. Those standards can be a little confusing for EMS agencies to read. I think for blood bankers out there, when we read them, they read like standards that we read all the time. So, I would get yourself a copy of the prehospital transfusion standards from the AABB and start learning the terminology. Start understanding the things that we would require in our own blood

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Christina Warren: bank, because they do mirror

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Christina Warren: what we have to do here in the lab with what is required in the prehospital setting. These go above and beyond the FDA regulations, but if you meet them, you definitely meet the FDA regulations.

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Christina Warren: So those things are important to know. The other thing is just our mentality of being very black and white in the blood bank. And then you bring trauma into that world, and that's a huge gray area, and I think understanding... your trauma centers are going to know this, but some of your smaller facilities may have

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Christina Warren: some difficulty understanding, you know, we've been doing this this way in the blood bank for patients for eons, and now we're gonna switch and do it differently for trauma patients. If you think about just, like, Rh compatibility, we never gave Rh-positive blood out in emergency releases in the past, and now it's becoming a very common occurrence. So, some of those ingrained practices that we have done for safety.

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Christina Warren: When we're looking at them again, we're like, well, maybe they're not applicable in this setting. So, understanding that,

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Christina Warren: being up-to-date on your AABB standards and understanding what we would like for teams to do before you even come to the table would be appreciated.

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Gam Wijetunge: Great, thank you for that. Can you, Christina, can you talk about the rotation model and the pay-as-you-go blood supply models, which we just got up on the screen?

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Christina Warren: Yeah, sure. So, we operate on the rotation model here, where all the blood I get in here, I do all the testing on it, and then I distribute it out to EMS and helicopter crews, my emergency departments, and we just do an inventory rotation. But all the blood is still owned and managed by us. So, we will maintain the temperatures, we will do all the validations, and all of that in-house.

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Christina Warren: This allows for unused product that's not transfused to be returned back to my blood center before it expires, and then I can cycle it back into inventory. I really do think some sort of rotation model is the best model out there, especially for rural counties with low transfusion rates, so that we can limit wastage. However, pay-as-you-go models do have benefit in certain settings, so

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Christina Warren: there are a lot of programs that get their blood directly from a blood center, or blood bank, even. But basically, they pay for every single unit of blood that they get, and then EMS takes on the ownership of all of those units, and then can distribute it out to its ambulances.

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Christina Warren: If there's not a rotation built in there, then the blood can be discarded. There are several pay-as-you-go programs out there that we partner with to take their excess. So, there's kind of hybrid models in between these two that can be built as well.

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Christina Warren: The pay-as-you-go models that I don't have to oversee are kind of my favorites. So, they take on the quality and the control of everything. We validate them as a blood

supplier, and then their short-dated products we just accept into inventory and disposition to our trauma patients. So, I think that's kind of the best of both worlds. It's the least amount of work for me and my staff.

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Christina Warren: And it also gives those services an outlet for their blood products.

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Gam Wijetunge: And we got one of the questions kind of popping in here. What's the difference between a blood center and a blood bank?

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Christina Warren: Yeah, so those are... that's a good question.

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Christina Warren: I guess you could say that we are a blood bank/transfusion service. So, blood banks and blood centers, I guess that's kind of one terminology, those are going to be like your American Red Cross, your OneBlood, The Blood Connection, those big

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Christina Warren: companies that collect the blood, they will test the blood for transmissible diseases, they follow all the FDA regulations for that, and then they distribute it to transfusion services. So, my blood bank that I call a blood bank is really a transfusion service. We're hospital-based, and then we issue it to patients. So, that's really the biggest differentiator there. Blood bank can apply to both.

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Christina Warren: So, you really need to know if you're talking about a blood center or a transfusion service.

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Gam Wijetunge: Got it. I'm gonna try and save that in my brain. Thank you for explaining that to me.

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Gam Wijetunge: Oh, so, I think as folks know, there's a national shortage of whole blood. I've heard the words blood crisis,

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Gam Wijetunge: And with that shortage, we've heard there's more talk about other blood products out there like packed red blood cells and plasma, liquid or, I've heard the term, freeze-dried. Christina, can you explain what are the different types of blood products you recommend for agencies? And then

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Gam Wijetunge: Jeff, just to tag on that... What is Wilkes County currently operating within the field?

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Christina Warren: Yeah, so, everybody wants Low Titer O Whole Blood, right? That's

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Christina Warren: like, the gold nugget of blood, I guess. Everybody wants that product. There can be caveats to having whole blood on your truck, though. The expiration dates can be shorter than with other products, which might mean you have to have rotation happening more often, or you might expire more products.

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Christina Warren: Also, if you're not working with a trauma center or a blood bank or blood center that lets you cycle those back

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Christina Warren: and uses them expeditiously, it can be hard to get whole blood. So there's a lot of other counties in North Carolina that really want whole blood, but the hospital they're trying to partner with currently doesn't have whole blood in their own blood banks at their hospital. So that can make it a hard problem. Like, why am I going to give you whole blood if

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Christina Warren: my own trauma surgeons don't know what to do with it when it's in-house here? So I think EMS agencies do need to be open to getting the components. So, from whole blood, you can make it into different components, such as packed red blood cells, plasma, platelets.

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Christina Warren: And then that plasma eventually can get freeze-dried. We won't see freeze-dried plasma on the market for at least 3 to 5 years

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Christina Warren: even though it's been approved.

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Christina Warren: But the liquid products, like packed red blood cells, typically have a longer expiration date than your whole blood products do. There's plasma, liquid plasma that's never been frozen, that has a 28-day expiration. So some of these components can be used instead of whole blood in areas where whole blood is

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00:21:45.630 --> 00:21:49.909

Christina Warren: hard to get, or, you know, your blood bank doesn't offer it.

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00:21:50.100 --> 00:21:52.350

Christina Warren: They're perfectly fine

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Christina Warren: substitutions, and we actually do substitute with these products when we're running out of whole blood ourselves.

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Jeff Hinshaw: And I'll tag on what Christina said, exactly. In our four years, we've only had one time where we've had packed [red blood] cells when we've returned with a cooler from main campus.

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Jeff Hinshaw: She has been very gracious to sometimes even give us some of the last whole blood that she has in the blood bank to come back to Wilkes County while she's awaiting a shipment to come in from the American Red Cross. We currently go with low titer, O-positive whole blood in both of our coolers. However, we are entertaining, and Christina and I have had the discussion, regarding plasma. Plasma does have a role, especially with head injuries, burns, and sepsis.

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Jeff Hinshaw: So there is definitely a wide scope for indications in the EMS world there, but the majority of folks, as she has already echoed, are asking for that gold nugget of low tide or O-positive whole blood.

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Gam Wijetunge: Right, so—

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Christina Warren: Everybody thinks whole blood is better, right? Whole blood is the best thing that you can give. There's no studies that prove it's better. I think we're going to have a hard time proving that whole blood is better than a one-to-one ratio of components. I think that the biggest part is making sure you have blood components, making sure that you have

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Christina Warren: red cells and/or plasma on board if you can't get whole blood. Whole blood's definitely easier, but I can't say that we have seen that it's definitely better than components.

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Jeff Hinshaw: And I'll tag on to that. One of the things that we think about is if you have an EMS crew that's having to hang multiple bags of products and track multiple numbers and things in a resuscitative effort during a transport.

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Jeff Hinshaw: From the ease of things, it is much easier to spike one bag, one number, and track that, rather than multiples across a different platform. Our helicopter service, which I am associated with as well here at our institution, does carry a combination of whole blood, packed cells, and plasma, so you can imagine the tracking issues, as Christina has alluded to, which are arduous, but are navigatable, as the case may be.

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Jeff Hinshaw: But would have to be tracked in a situation such as this.

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Gam Wijetunge: So, clearly the two of you have a very strong relationship that you've built, and I would just note in the questions—Christina, you got a shout-out for being an amazing advocate for prehospital blood.

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Gam Wijetunge: Let's talk about relationship building, because it seems, again, this is just so, so core to success here. What do you think, what are questions that agencies should bring for their

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Gam Wijetunge: first meeting, and then, subsequently, what are some steps that you've learned to help solidify that partnership?

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Jeff Hinshaw: I think for us, when we started, we were very much on a fact-finding mission. We knew what our numbers told us, but it was like, Christina, what can we make work? What can you offer for us? Not going in demanding, if you will, but saying: these are our needs, how do we make this work?

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00:25:04.190 --> 00:25:18.509

Jeff Hinshaw: Christina and her team had been supporting our aviation transport service for many years, so we had experience there from that. So from the EMS agency, we were like, well, this is what AirCare has done. Do we... Can we get this model?

120

00:25:18.510 --> 00:25:31.269

Jeff Hinshaw: And as Christina has alluded to with us, in Wilkes County, we have whole blood on our ambulances, which we do not have at our local hospital. So, again, what can the EMS agency bring to the local medical care community as well?

121

00:25:31.270 --> 00:25:45.859

Jeff Hinshaw: But the biggest thing is having an open-door conversation—and I will give [Christina] a shout out, as we've worked together now for about the last 5 years—to our blood bank here, with her leadership and Dr. Fadeyi, who are extremely proactive and pro-EMS.

122

00:25:45.860 --> 00:26:01.050

Jeff Hinshaw: So, some of those barriers that other people have mentioned in the past, we have not faced here because of the positive working relationship we have between our agency and

the other agencies that she now supports in the northwest portion of North Carolina with blood products.

123

00:26:03.330 --> 00:26:08.570

Christina Warren: Yeah, so I'll piggyback off of that, Jeff, and I mean, Jeff's been great to work with. I communicate with him

124

00:26:08.830 --> 00:26:15.029

Christina Warren: 50 times more than I communicate with any of the other EMS agency leaders that we work with.

125

00:26:15.160 --> 00:26:27.550

Christina Warren: But when he first came to the table, and when any EMS agency comes to the table and wants to partner with us, I have to know, what do you do? What's your county look like? What do your accident scenes look like? Who are you transfusing to?

126

00:26:27.550 --> 00:26:41.370

Christina Warren: One of the biggest issues we had with Wilkes, being such a large, rural, mountainous county, is access to patients. Sometimes the patient is not on the road. I know we're worried about highway safety here, but

127

00:26:41.370 --> 00:26:52.690

Christina Warren: Jeff's team often has to go get patients that are not on the highway. You know, they didn't get injured that way. So, transportation of blood—can we put blood in a refrigerator and have it stay on a truck?

128

00:26:52.690 --> 00:27:11.029

Christina Warren: Or does that refrigerator need to be mobile? So, Jeff's team operates with a hybrid model. They have one supervisor vehicle with a refrigerator, and they have one with a cooler. And that cooler is vastly more mobile than the refrigerator, obviously, even though the refrigerator can move around.

129

00:27:11.030 --> 00:27:19.310

Christina Warren: So I always want to know that. How are we setting this up? Are you going to keep products for a couple of days in coolers?

130

00:27:19.310 --> 00:27:31.399

Christina Warren: Are you gonna change out the coolers and run them, or am I gonna change out the coolers? Are you gonna have refrigerators? How many units do you want? All of those things are good conversation starters when you're building a program.

131

00:27:32.020 --> 00:27:36.389

Jeff Hinshaw: And having a good idea of how much you plan on transfusing per month.

132

00:27:36.390 --> 00:27:56.420

Jeff Hinshaw: It's one thing to come to the table saying, hey, we've got numbers saying this potentially, but being realistic with what you may be faced with and things. We started off very slowly our first year. We only gave blood to 13 patients, but it was 20 units, and so far, as of last year, we transfused 35 patients and gave 47 units.

133

00:27:56.420 --> 00:28:15.949

Jeff Hinshaw: So again, we've been able to expand our program, and unfortunately, as our call volume goes up—as most EMS agencies are seeing—we're seeing those GI bleeds, trauma patients, stab wounds, other complications, OB trauma that may be happening with postpartum issues. Those are all things that initially were not on our radar scope that maybe

134

00:28:16.030 --> 00:28:19.290

Jeff Hinshaw: weren't happening, but now they are becoming more frequent.

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00:28:23.550 --> 00:28:28.680

Gam Wijetunge: Great, so—and we're getting some questions about this,

136

00:28:28.950 --> 00:28:41.279

Gam Wijetunge: how can agencies be a good steward of the blood supply once that partnership is established? I've heard folks talk about donor drives and efforts to prevent waste. Could you all talk a little bit about that?

137

00:28:42.230 --> 00:29:00.289

Jeff Hinshaw: Well, as soon as we started our program, we started having fairly regular blood drives that were hosted at our EMS headquarters building. Many agencies—I'll give a shout out to my colleagues in Cabarrus County—they have a Battle of the Badges on a fairly regular basis as well,

138

00:29:00.520 --> 00:29:11.340

Jeff Hinshaw: basically pitting fire versus EMS versus law enforcement as to who's going to give the most units. Again, being proactive in the community, trying to raise awareness for blood transfusions.

139

00:29:11.340 --> 00:29:23.200

Jeff Hinshaw: But on the other hand, Gam, as you mentioned, being a good steward means that we do the right thing. We make certain that our quality assurance programs are in place, that we don't over-transfuse.

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00:29:23.370 --> 00:29:28.399

Jeff Hinshaw: Our particular agency, we're the third busiest EMS transfusion agency in North Carolina.

141

00:29:28.400 --> 00:29:48.540

Jeff Hinshaw: Now, does that mean that we are aggressive? Yes, we have aggressive protocols, but does that patient really need that unit of blood? So, being honest and reviewing the calls and making certain that unit of blood was justified in that particular situation. And then, of course, Dr. Fadeyi and Christina, we have a multifaceted

142

00:29:48.540 --> 00:29:55.270

Jeff Hinshaw: medical oversight group that reviews it not only from the EMS side, but from the transfusion side as well, to make certain it was clinically indicated.

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00:29:56.770 --> 00:30:11.410

Christina Warren: Yeah, so piggybacking on that. For me, the biggest thing is communication. Once you establish a relationship, you can't go quiet, right? You have to keep communicating. So anytime blood is transfused from any of the blood that we provide to any of the agencies, they send us the EMS chart.

144

00:30:11.410 --> 00:30:23.700

Christina Warren: And the supervisor will usually respond and say, hey, this is what we saw on the front end, here's the chart. I'll then review it for appropriateness of transfusion. Did they document everything? Did they follow their

145

00:30:23.970 --> 00:30:34.319

Christina Warren: guidelines for transfusing? If we need any charting adjustments, we will reach out to the team. They will respond almost immediately and correct the charts and get those fixed.

146

00:30:34.360 --> 00:30:51.179

Christina Warren: We get those signed emergency releases. You know, you have to have a physician say that it was an emergency, that they needed this transfusion and couldn't give consent, so we have to file those and keep those for 10 years. And then I send it to my medical director, and he looks for signs and symptoms of transfusion reactions.

147

00:30:51.180 --> 00:31:11.149

Christina Warren: And sometimes this is Jeff emailing or texting me, saying, "hey, I don't know if we should have given this unit, can you look at this?" And we'll look at it on the back side, and, you know, maybe we have a post-transfusion hemoglobin that's 4, and we're like, oh yeah, no, it was probably indicated. So, sometimes it takes the whole team looking together to make sure that these transfusions are appropriate.

148

00:31:12.090 --> 00:31:27.929

Jeff Hinshaw: Being open, honest, and reflective about this, and realizing that this is a precious commodity that we do not want to waste. We don't want it to go bad in the cooler, nor do we want it to be given in the wrong situation. We need it truly at the right place, right time.

149

00:31:32.520 --> 00:31:38.570

Gam Wijetunge: So, well, next question.

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00:31:38.990 --> 00:31:43.410

Gam Wijetunge: For an agency that hasn't even approached a supplier yet—

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00:31:43.810 --> 00:31:51.940

Gam Wijetunge: and I think both of you alluded to some of these things—in your opinion, what's the single most important thing to have

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00:31:52.060 --> 00:31:57.970

Gam Wijetunge: ready before an EMS agency has that first conversation with the supplier?

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00:31:59.520 --> 00:32:03.439

Jeff Hinshaw: Well, to me, you have to look at your numbers.

154

00:32:03.440 --> 00:32:20.430

Jeff Hinshaw: Who are you planning on transfusing? What's your patient population? For us, we identified those patients who were hypotensive that did not respond to fluid, and we identified what populations those were, and then it was like, is there something else we can do?

155

00:32:20.490 --> 00:32:32.830

Jeff Hinshaw: Then we figured out is this medical or is it trauma? The other thing that the EMS agency has to realize is this is a financial commitment. They need to do their homework on the backend before they ever go to the blood bank.

156

00:32:32.830 --> 00:32:46.110

Jeff Hinshaw: Realizing, if we're going to ask for two coolers, what's our portion of this? Are we going with refrigerators, replaceable coolers? Figuring out what the cost is going to be to begin with, because there is quite a

157

00:32:46.120 --> 00:32:58.139

Jeff Hinshaw: financial burden associated with this, but realizing, though, that we're making patients better in the end. Being prepared before I ever met with Dr. Fadeyi or Christina with numbers and finances really helped out.

158

00:32:59.390 --> 00:33:12.899

Christina Warren: And with that, I would say also, please don't buy anything yet before you talk to your blood bank team. Don't get your heart set on a specific refrigerator or a specific cooler setup. You can definitely do research and have ideas,

159

00:33:12.900 --> 00:33:25.159

Christina Warren: but I would request that you reach out to your blood bank partners first, because they may have specifics that they like to use, and if you want to jump on board with one of their programs, you may need to use some of the equipment that they recommend.

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00:33:26.640 --> 00:33:50.030

Jeff Hinshaw: Said openly, and colloquially, R&D, "rip off and distribute", as the case may be, or duplicate, rip off, and duplicate. Don't reinvent the wheel. There's somebody out there that has done this before you. See what they've used. And Christina makes an excellent point. We need to keep similar products and similar ideas in mind with this, because it makes it easier

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00:33:50.030 --> 00:34:03.460

Jeff Hinshaw: for her team on the backend. "Well, what's this cooler? It's different than what we normally have." And will it even pass the validity challenges and testing that she's required to do for storage, which is a big issue as well.

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00:34:08.790 --> 00:34:12.630

Gam Wijetunge: Great, so in a few minutes

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00:34:12.780 --> 00:34:18.009

Gam Wijetunge: we'll jump to the open Q&A,

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00:34:18.230 --> 00:34:36.200

Gam Wijetunge: but, before we do that, just some, I'll call them public service announcements on my end. So, prehospital blood transfusion is named as a priority in the recently published DOT National Roadway Safety Strategy.

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00:34:36.199 --> 00:34:44.670

Gam Wijetunge: And it's also one of eight priorities in the NHTSA Administrator's Action Plan, Pathways to Safer Streets.

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00:34:46.370 --> 00:35:03.709

Gam Wijetunge: That comes with new tools and resources to strengthen our work with state highway safety offices, because getting blood to patients in the field is a highway safety issue as much as it is a clinical one.

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00:35:03.940 --> 00:35:18.979

Gam Wijetunge: So, at NHTSA, our primary efforts to support this effort include increasing national visibility of prehospital blood transfusion with public safety, highway safety, and elected officials,

168

00:35:19.130 --> 00:35:33.909

Gam Wijetunge: advancing education, collaboration, and best practice sharing across EMS and 911—I believe that's what we call it, R&D—and partnering with national and regional stakeholders across the care continuum.

169

00:35:33.990 --> 00:35:50.200

Gam Wijetunge: And releasing resources. I think folks have probably seen our infographics, videos, use cases, and best practices, including webinars like this, and, providing federal funding to support, scalability of programs.

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00:35:50.210 --> 00:36:02.399

Gam Wijetunge: Our aim at NHTSA with our federal partners is to accelerate adoption nationwide, to advance what is one of the most transformative EMS interventions in a generation.

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00:36:02.530 --> 00:36:20.399

Gam Wijetunge: And from a supply perspective, as you've heard today from our speakers, blood is a finite resource. EMS agencies can be a part of the solution in your own community by partnering with your blood center on donor drives

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00:36:20.460 --> 00:36:31.059

Gam Wijetunge: and encouraging your own personnel, your own EMS clinicians, to donate blood as well. Just talking to folks, we've seen a lot of success with that across the country.

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00:36:33.610 --> 00:36:44.130

Gam Wijetunge: So, scan the QR code that you see up on the screen here to access some post-crash care and prehospital blood resources that are on EMS.gov.

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00:36:44.290 --> 00:36:55.200

Gam Wijetunge: You can learn how 911 and public safety are improving highway safety and enhancing post-crash care, and explore ways these efforts are helping to save lives.

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00:36:57.430 --> 00:37:07.360

Gam Wijetunge: So, thank you, Jeff and Christina, for the discussion today and your insights. Let's dive right into the Q&A portion.

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00:37:07.390 --> 00:37:27.100

Gam Wijetunge: A reminder, folks, to use the Zoom Q&A feature to send in your questions. We will take questions, but also, while we're doing this, just a reminder, the QR code that you see on the slide will take you to previous recordings for EMS-focused webinars.

177

00:37:27.100 --> 00:37:46.670

Gam Wijetunge: So some of your questions might have even been answered in previous webinars. If we don't get to everything, we'll share responses along with recording in the near future. So, let's go ahead, and dive right in.

178

00:37:46.710 --> 00:37:57.210

Gam Wijetunge: Christina, I'll throw this one at you, because I think it goes back to the discussion about definitions and terminology, and we're all kind of learning that as we go.

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00:37:57.210 --> 00:38:06.839

Gam Wijetunge: So the question we got was, "by distributing blood from a transfusion service, does that make you a blood supplier?"

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00:38:07.990 --> 00:38:17.750

Christina Warren: So I think this is probably relating to your FDA registration. We are required here to register with the FDA because we further modify products after we receive them.

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00:38:17.750 --> 00:38:42.189

Christina Warren: Some transfusion services do not and may not be registered with the FDA. When we first started these programs, there weren't standards for these. We were kind of working it out of the box with what we knew to be best practice at the time. We reached out to the FDA and asked kind of this very question and they said, no, we need to treat it just like we would treat units that are put in, you know, a remote refrigerator in an emergency

182

00:38:42.190 --> 00:38:54.289

Christina Warren: department or a helicopter that we service. And you can do that by selecting the source and distributing it to others on your FDA registration. So it would not change if you designate it as a depot or a blood supplier.

183

00:38:56.210 --> 00:38:56.860

Gam Wijetunge: Great.

184

00:38:57.290 --> 00:39:00.339

Gam Wijetunge: Next question.

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00:39:00.450 --> 00:39:13.120

Gam Wijetunge: "How do you evaluate and assure that the blood that is returned to you by EMS has been treated per protocol and is safe to give to patients in other healthcare environments, like the hospital?"

186

00:39:14.070 --> 00:39:22.009

Christina Warren: Great question. So we heavily manage all of the blood that is going out to our EMS crews.

187

00:39:22.010 --> 00:39:41.600

Christina Warren: If it's going in a refrigerator, they have to send me 4-hour temperature logs. It's treated just like a refrigerator here in the blood bank. I've also validated that refrigerator before I give it to them. They send me quarterly temperature checks and alarm checks, and all of our units that go out to EMS agencies also have a temp tracking device on them, so I can tell if they went over temp.

188

00:39:41.650 --> 00:39:53.169

Christina Warren: There's also coolers. If we use the cooler system, those are sealed in-house, and they're not popped open unless it needs to be transfused, so everything is kind of as hands-off as possible for EMS crews.

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00:39:54.120 --> 00:39:58.709

Jeff Hinshaw: Exactly, and I'll tag on to that. It was one of the first times we had a thermometer go bad

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00:39:58.710 --> 00:40:20.070

Jeff Hinshaw: in our system, the crew was literally panicking because the alarm was going off, the temperature was too high, and I was so proud of the guys for addressing the situation and realizing that there was an issue with this, getting this cooler back to the blood bank to be evaluated, and going from there. So it does take diligence from the EMS side, but technology is helping with that.

191

00:40:23.990 --> 00:40:39.820

Gam Wijetunge: We have a data question that came in here. "What metrics can you use to predict use, and is NEMSIS data able to pick out those numbers?" So, Jeff, I think this went to your

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00:40:39.820 --> 00:40:46.569

Gam Wijetunge: question earlier about the data that you were using when you were having those discussions about what your needs would be.

193

00:40:47.130 --> 00:40:57.590

Jeff Hinshaw: And that particular data that we pulled out can be gotten from NEMSIS data, and the thing that we looked at to begin with were those people who were hypotensive and tachycardic.

194

00:40:57.730 --> 00:41:06.940

Jeff Hinshaw: That was the first population. Then, did they respond to a crystalloid fluid bolus? And if they did not, that was going to be our target population.

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00:41:06.940 --> 00:41:24.220

Jeff Hinshaw: And when we did a retrospective analysis of a year's worth of transports, we identified about 45—anywhere between 50 to 75 that were on the limits of things—and we're saying if we get half of those, can we make a difference with blood? And our numbers

196

00:41:24.220 --> 00:41:38.429

Jeff Hinshaw: kind of show that. Again, we started off our first year, we only transfused 13, and now we're already at 35 this year, and only going up. So, again, looking at our numbers and identifying those people with abnormal vital signs

197

00:41:38.430 --> 00:41:50.740

Jeff Hinshaw: is one important thing. Such things for agencies that are calculating shock index. That's going to be one of our markers for transfusion; what's the person's shock index and not only what is the shock index.

198

00:41:50.740 --> 00:42:08.450

Jeff Hinshaw: What that number is also determines if they get drip infusion, or if they get pressure infusion blood, as they may be more critically ill as compared to someone else. So again, these are all definitely trackable numbers that you can use to devise yourself a matrix as to what patients you may be wanting to transfuse.

199

00:42:11.760 --> 00:42:24.959

Gam Wijetunge: And as a follow-up, kind of, along the data front, are you tracking outcomes data and sharing with the blood bank? I think both of you talked a little bit about this earlier.

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00:42:25.610 --> 00:42:33.050

Jeff Hinshaw: We have a free-flowing information chain between the patients who arrive at the emergency department alive,

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00:42:33.050 --> 00:42:47.390

Jeff Hinshaw: are discharged alive, or unfortunately pass away during their time there. And we're seeing a wholehearted, large impact in the reduction of mortality, at least in our numbers, looking at this for the last, going on now 5 years.

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00:42:48.170 --> 00:42:56.039

Christina Warren: Yeah, so I have a spreadsheet; I share it with Jeff. We are lucky in that his patients are my patients, so,

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00:42:56.050 --> 00:43:16.590

Christina Warren: you know, Atrium being here where we are, pretty much your patient, if it's a trauma patient, is going to an Atrium facility. So, follow-up is relatively easy for us in 90% of our cases. In the rare instance where a patient goes outside of the facility, then we would rely on the EMS team to provide us with follow-up on those patients.

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00:43:22.340 --> 00:43:35.029

Gam Wijetunge: Next question. I think this is a good one to talk about. "The blood bank for our area only offers O-positive, packed red blood cells

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00:43:35.170 --> 00:43:45.259

Gam Wijetunge: and liquid A plasma prehospitally. We have some concerns about the lack of O-negative product, especially for females of childbearing age.

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00:43:45.340 --> 00:43:55.289

Gam Wijetunge: How do you handle this, regarding risks to fetuses?" So, I think it's about the Rh-positive, Rh-negative issue.

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00:43:56.270 --> 00:44:14.409

Christina Warren: Yeah, so there is a great article out there that Dr. Yazer and his team put together and published a couple years back, that mentions the risk. So this is one of the things that blood bankers have always been concerned about, and we don't like to give Rh-positive

blood out because you might be a female, you might be Rh-negative, you might get pregnant later with an Rh-positive fetus. So those are a lot of “mights”.

208

00:44:14.410 --> 00:44:28.510

Christina Warren: And his team actually did the statistics there, and I think they calculated the risk of a subsequent fatal HDFN case pseudo-alloimmunization to anti-D to be less than... definitely less than 1%. I think it was 0.4%.

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00:44:28.510 --> 00:44:34.929

Christina Warren: But the depth due to hemorrhage is 8-20%. So, our philosophy is you have to live to have a problem.

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00:44:34.990 --> 00:44:48.539

Christina Warren: We actively monitor Rh-negative females that get blood products. We used Jeff's team as a guinea pig, unbeknownst to his crew, when we first started giving Rh-positive products in the prehospital field.

211

00:44:48.540 --> 00:45:04.140

Christina Warren: And we have, as of today, seen zero cases where we have an alloimmunized female due to this process. We've seen a male alloimmunized, but we have not seen a female. And we have had a very liberal Rh-positive transfusion policy for the past 5 years.

212

00:45:05.780 --> 00:45:17.769

Jeff Hinshaw: And I will tag on to that. Christina's right. We've not had a female issue when it comes to RH incompatibility. We've had two cases of other incompatibility issues that were not

213

00:45:17.790 --> 00:45:25.150

Jeff Hinshaw: untoward to the patient outcome. It was on a more cellular level, but if you transfuse enough, this is going to happen.

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00:45:25.150 --> 00:45:42.450

Jeff Hinshaw: So again, we're into that stage now that we've given enough blood over the last going on 5 years that we've seen these happen. Ironically, both of the cases happened on the same weekend, so it was rather unique that we had gone almost 4 years without one, and then within 72 hours, we had 2.

215

00:45:48.120 --> 00:45:56.160

Gam Wijetunge: A lot of questions are flowing in, so I have to be selective here. I beg people's patience.

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00:45:56.390 --> 00:46:05.620

Gam Wijetunge: "Can you share what tracking device is used to ensure that the units are maintained within temperature requirements?"

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00:46:07.470 --> 00:46:15.670

Gam Wijetunge: So I think, we treat this as a general question about how you ensure that you keep things within that temperature requirement.

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00:46:16.010 --> 00:46:33.759

Christina Warren: So, we use multiple different devices from multiple different companies, just as new data is up, or if an EMS agency already has something, I will validate it to use. So, when you are looking for a device, I would look to see if it's FDA approved.

219

00:46:33.760 --> 00:46:58.749

Christina Warren: There are devices out there that are not FDA approved. It doesn't mean you can't use them, but you have to log temperatures every 4 hours and you really would want something that would notify you if the temperature is being out of the range, out of 1 to 6 degrees, so you can take action before those blood products are affected. And then there's also temp indicators that turn a color if the temperature has been exceeded. We use a combination of all of these different devices.

220

00:46:58.750 --> 00:47:07.090

Christina Warren: And any of... I don't love one more than another. I think they all serve their purpose.

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00:47:07.090 --> 00:47:11.570

Christina Warren: And you're open to choose whichever one is out there that you'd like.

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00:47:12.220 --> 00:47:21.090

Jeff Hinshaw: And as Christina has alluded to, we have two different types of storage mechanisms at Wilkes County EMS. A traditional foam pack cooler, and then the refrigerator.

223

00:47:21.150 --> 00:47:42.549

Jeff Hinshaw: Both have different temperature monitoring devices, but as she said, there are two levels of temperature monitoring; not just the thermometer that is in the storage device, but also the AccuView that is on the side of the unit of blood to see if that has changed colors as well. So, there is a check and balance for this when it comes to temperature.

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00:47:45.280 --> 00:47:54.020

Gam Wijetunge: Quick follow-up for you, Christina. "Can you give us the name of the author of the article, on Rh positive and Rh-negative that you mentioned?"

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00:47:55.200 --> 00:48:00.829

Christina Warren: I know one of the authors is Dr. Yazer. I can definitely get that to you, Gam, so you can include it in the follow-up.

226

00:48:01.050 --> 00:48:01.760

Gam Wijetunge: Perfect.

227

00:48:03.000 --> 00:48:20.739

Gam Wijetunge: Question about QAQI, on blood administration. "Any cases where blood", and you can obviously, I think you can speak generally about this, "where blood was given when it may not have been needed, and how do you approach this from a training and education standpoint?"

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00:48:21.760 --> 00:48:41.240

Jeff Hinshaw: So, that's the first level of when Christina and I communicate; the chart is sent to me for initial review, and it's... well, it's sent to all of us at the same time, myself and her team as well. And basically, it passes the first sniff test, if you will. We look at vital signs, we look at documentation, we look at patient changes.

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00:48:41.240 --> 00:48:48.120

Jeff Hinshaw: And there have been a couple that, Christina and I have talked about, that maybe the vital signs were abnormal to begin with,

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00:48:48.120 --> 00:48:56.400

Jeff Hinshaw: but changed quickly, realizing the fact that the small amount of blood that was given did not make that vital sign change.

231

00:48:56.600 --> 00:49:15.930

Jeff Hinshaw: So then, that's our job with our training division to go back to those crews, reiterate patient assessment, shock index, knowing your protocols, going through scenario-based trainings—and again, doing this real time—so we have psychomotor skills and problem solving

232

00:49:16.580 --> 00:49:26.220

Jeff Hinshaw: cases, if you will, to be able to make certain that the paramedics do understand that just because the blood pressure is low to begin with, doesn't necessarily mean that the patient needs blood immediately.

233

00:49:26.220 --> 00:49:36.809

Jeff Hinshaw: But again, looking at protocols and addressing these in scenario-based trainings has remedied that problem for us. That has been few and far between in our now 5-year history of this.

234

00:49:40.940 --> 00:49:50.810

Gam Wijetunge: Next question is really kind of medication-specific. "Are you administering calcium in conjunction with your blood products?"

235

00:49:51.750 --> 00:50:14.699

Jeff Hinshaw: We are. Gam, as you well know, there is debate amongst the medical community as to when calcium... I think, Christina, when we talk about chelation and storage, and when we get to multiple units of blood, most everyone agrees on calcium then, but there is still debate early in the resuscitative effort as to giving calcium. We have a bundled

236

00:50:15.150 --> 00:50:32.830

Jeff Hinshaw: approach to blood administration. So, if we pop open the blood cooler and the blood administration equipment, the patient, as long as we have enough time transport-wise, we're going to give the blood, they will get calcium, and if it is non-compressible hemorrhage, they will get TXA as well.

237

00:50:37.360 --> 00:50:42.609

Gam Wijetunge: Wonderful. And bear with me, folks,

238

00:50:47.020 --> 00:50:51.220

Gam Wijetunge: I think this is kind of a clinical question.

239

00:50:52.580 --> 00:50:56.289

Gam Wijetunge: "What is recommended for the second unit?"

240

00:50:56.550 --> 00:51:02.089

Gam Wijetunge: If whole blood is given first, is fresh liquid plasma a good option?"

241

00:51:04.350 --> 00:51:06.089

Jeff Hinshaw: I would say so, again.

242

00:51:06.290 --> 00:51:28.280

Jeff Hinshaw: Everybody wants the golden nugget of whole blood because it has platelets, packed cells, and plasma all with it. But again, if you only have one unit and have to supplement that with packed cells or plasma, not seeing a lot of platelets in the prehospital world because the focus is going to be on packed cells and plasma. But again, if you do have a patient in extremis,

243

00:51:28.280 --> 00:51:39.819

Jeff Hinshaw: where they are not responding to your traditional resuscitative efforts, if you have that option, I think that's something to think about. And again, in today's world, Christina and I have had this discussion. She knows that I want to add plasma

244

00:51:39.820 --> 00:51:46.029

Jeff Hinshaw: to our units at Wilkes, and it's not just for trauma, but it's the other added benefits as well.

245

00:51:51.200 --> 00:51:51.860

Gam Wijetunge: Right.

246

00:51:54.780 --> 00:51:58.720

Gam Wijetunge: It was

247

00:51:58.820 --> 00:52:07.369

Gam Wijetunge: an interesting question. "What is your inventory buffering capacity to ensure your EMS agency won't face

248

00:52:07.620 --> 00:52:19.800

Gam Wijetunge: stock outs during regional shortages or mass casualty incidents?" I guess this is kind of like a logistics question in how you plan for things like that.

249

00:52:20.530 --> 00:52:22.020

Christina Warren: Yeah, so...

250

00:52:22.570 --> 00:52:34.229

Christina Warren: Interesting question. So, Wake Forest Baptist, being situated in Winston-Salem, North Carolina, we are a minimum of 2 hours away from a blood center. So from an American Red Cross, a blood connection, etc.

251

00:52:34.230 --> 00:52:49.440

Christina Warren: Because we're a level 1 pediatric and adult trauma center, we run very, very heavy on blood products. We know that if an MCI were to happen, we have to support ourselves for at least 4 hours. We don't have backup coming in that amount of time, so

252

00:52:49.520 --> 00:52:58.169

Christina Warren: I don't usually have to worry about this because I run heavy. At any given day, I have 50 units of whole blood in my inventory on my shelves that I'm rotating in and out with.

253

00:52:58.250 --> 00:53:09.850

Christina Warren: I have 200 units of O-positive red cells, maybe 50 units of O-negative red cells. We run very, very heavy, so that's not a concern for us.

254

00:53:14.270 --> 00:53:16.919

Gam Wijetunge: Great, I think we have time for

255

00:53:17.080 --> 00:53:36.390

Gam Wijetunge: one more question. We're starting to run up against the clock, and I can sometimes talk slow, so forgive me, but the last question: "Can we establish joint educational initiatives or community blood drives to help offset supply costs and maintain inventory?"

256

00:53:38.810 --> 00:53:53.189

Jeff Hinshaw: Anything that you can do to help support the American Red Cross, OneBlood, Blood Connection. Having blood drives to get this in the system, because in many areas, it is a blood desert. You just can't get it.

257

00:53:53.190 --> 00:54:15.559

Jeff Hinshaw: And as Gam, you've mentioned already today, there is a crisis level of this, especially during our trauma season between Memorial Day and Labor Day. Christina, as she shakes her head, is going, yes. She kind of likes the winter, at least for a few months, because knowing when the spring hits, most every weekend that supply can dwindle very quickly between supporting multiple EMS agencies,

258

00:54:15.560 --> 00:54:19.030

Jeff Hinshaw: soon to be 4 helicopters and a Level 1

259

00:54:19.030 --> 00:54:30.289

Jeff Hinshaw: pediatric center for not only adults, but pediatrics as well. So, anything that we can do to promote getting blood drives and getting that product into our system for transfusion is markedly impactful.

260

00:54:30.930 --> 00:54:46.899

Christina Warren: And I would also say, I don't know that everybody understands that blood expires rather quickly. You can only donate blood every 8 weeks, I believe it is, if you fit all the criteria. And it expires in...

261

00:54:46.980 --> 00:54:56.000

Christina Warren: at the most, 42 days, for a packed cell, for 21 days for whole blood. So we need repeat donors. We don't just need people to donate once a year.

262

00:54:56.000 --> 00:55:08.659

Christina Warren: We need a lot of repeat donors. Will that offset supply costs? No, because your blood center is not going to charge you less because you donated more blood. I don't think they do that anymore. So...

263

00:55:08.660 --> 00:55:13.870

Christina Warren: Yeah, I wouldn't say it would offset supply costs, but it would definitely help with the inventory shortages.

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00:55:16.140 --> 00:55:25.720

Gam Wijetunge: Yeah, great, and we just had a... here at DOT, we, at our Safety Expo, on Friday, we just did another blood drive, and

265

00:55:25.890 --> 00:55:44.370

Gam Wijetunge: our leadership is making a point of making those a regular thing again, so that our folks contribute. So that's something everyone can really do today, even if you're not doing transfusion in the field yet, is start supporting blood drops, because they're really needed.

266

00:55:45.120 --> 00:55:55.790

Gam Wijetunge: Thank you, both. We're done with Q&A. We're pushing up against the clock.

267

00:55:55.790 --> 00:56:09.819

Gam Wijetunge: Jeff, Christina, thank you for taking time out of your busy schedules to come and share your insights. Just as a reminder to folks, this is the third of six

268

00:56:09.820 --> 00:56:24.390

Gam Wijetunge: sessions. The ones that we have scheduled to go ahead, will go deeper on operational, clinical, and logistical sides of prehospital blood. I think both of you answered questions from the entire spectrum, so great job!

269

00:56:24.440 --> 00:56:34.050

Gam Wijetunge: Up on the screen is a QR code. Please scan it. You can register for the rest of the series on EMS.gov.

270

00:56:34.110 --> 00:56:39.459

Gam Wijetunge: Our next session is October 28th

271

00:56:39.550 --> 00:56:45.979

Gam Wijetunge: and it's on paying for your prehospital blood program.

272

00:56:46.090 --> 00:57:00.919

Gam Wijetunge: Today's recording will be posted on EMS.gov soon. Again, thank you to both our speakers, and thank you to everyone for joining us. We'll see you at the next one.