**>>Operator:**

It is now my pleasure to turn today's program over to Liz Olson, with the American Heart Association. The floor is yours.

**>>Liz Olson:**

Thank you so much, Ginneen. On behalf of the American Heart Association and Get With the Guidelines, welcome to the third offering in our quality improvement webinar series, “Start Measuring, Start Improving.” Today's webinar is “Measuring and Communicating Resuscitation Quality Improvement,” presented by Ronald R. Galfione, M.D., with Houston Methodist Hospital. My name is Liz Olson, and I’m the program manager for Get With the Guidelines: Resuscitation and Heart Failure. On today's webinar, we have a unique opportunity to hear firsthand the best practices and lessons learned from an award-recognized hospital with Get With the Guidelines: Resuscitation. Dr. Galfione will share his hospital’s best practices in utilizing their Get With the Guidelines: Resuscitation in order to identify areas for improvement in patient care, measure their performance and progress, and best practices in communicating what's learned to hospital leadership. This session is designed to offer an opportunity for Q&A with our speaker, and we encourage your feedback and participation in this event. You can submit questions through the “Q&A” button in the lower corner of your screen. A recording of today’s webinar will be made available on the American Heart Association website, heart.org/quality. It's my pleasure to now introduce our speaker for today. Dr. Ronald R. Galfione is an internal medicine specialist at the Houston Methodist Hospital in Houston, Texas. He attended the University of Texas Medical School of Houston, graduating with honors in 1974. He received his internal medicine training at Mayo Clinic in Rochester, Minnesota, and started his practice in Houston in 1977. Dr. Galfione is currently an associate quality officer who oversees the care, management, and performance improvement activities as well as directs the Code Blue Subcommittee since 2006 at Houston Methodist. Having more than 43 years of diverse experiences, Dr. Galfione affiliates with many hospitals, including the Methodist West Houston Hospital, Memorial Hermann Hospital Texas Medical Center, and Methodist Sugarland Hospital, as well as collaborates with other doctors and specialists across the country. It's now my great pleasure to turn today's webinar over to Dr. Galfione.

**>>Ronald Galfione, MD:**
Good afternoon. We're going to talk to you today about measuring and communicating resuscitation quality and our efforts at improvement over the last 11 years. So you know who I am now, and neither I nor any member of my family has any financial relationship or interest with proprietary entities producing healthcare goods, commercial products, or services related to the content of this presentation, and I do not intend to discuss any unapproved investigative use of commercial products or devices.

Today we're going to discuss data collection and dissemination process, review how opportunities for improvement drive process and performance initiatives, explain benefits of effective and standardized communication process, and describe future initiatives and sustainability of performance outcomes.

So let me give you a little overview of the Methodist Hospital. We'll talk about our committees. We'll talk about some of our measures and outcomes data from 2013 to 2015, some current initiatives, future initiatives, and we'll wrap it up toward the end.

So a little bit about our system. Our system is relatively young as a system. We currently have seven hospitals. We have a well-funded research institute. We now have our own comprehensive residency program, 2,043 operating beds in the system, 814,000 outpatient visits, 101,000 admissions, 20,000 employees, 4500 physicians, and 572 within the hospital physician group. We're affiliated with Weill Cornell, New York Presbyterian, Texas A&M University Medical School, and the Texas Annual Conference of the United Methodist Church. With regard to Methodist itself, which was the original hospital in the system, we are sitting in the middle of the Texas Medical Center, having 830 operating beds, 78 operating rooms, 1,500 physicians, basically, 7400 employees. We have almost 37,000 admissions per year, 326,000 outpatient visits, 72,000 emergency room visits, a little over a thousand births, and we have a number of people from South America, Central America, and the Middle East comprising 12,000 of our patients. We now, as opposed to 2006, have 36 ACGME-accredited residency programs and six non-ACGME-accredited residency programs.

So how did we get to where we are? Basically, back in 2006, there was an affiliation with Baylor College of Medicine. And the medical residents and surgical residents basically oversaw our code process, which we were sort of outsourcing to them and not monitoring and left that to them. But when that relationship changed and we realized we needed our own code program, we developed the Code Blue and ultimately CERT subcommittees, which actually were stand-alone committees and now are subcommittees that report to the Critical Care Care Management Performance Improvement Committee, which ultimately rolls up to all of our patient safety performance improvement committees.

So the membership of the Code Blue committee is an associate quality officer, a vice president for sponsorship and resources, Code Blue responders, including internal medicine resident physicians, nurse practitioners, respiratory therapists, anesthesia, pharmacy, supply chain, nursing leadership, and quality specialists. We have monthly meetings that are facilitated by myself. They are coordinated by a performance improvement specialist, which is new to us since 2006. We utilize the PDCA process to disseminate and review relevant data, to review and drill down opportunities for improvement, to brainstorm and identify action plans and initiatives, and to implement and track outcomes of action plans and initiatives. And then do that all over again.

So prior to 2013, we did not have an abstracter assigned under Quality to do abstraction and submit data. We did that periodically, but when that person would leave or get transferred, there was a gap in our data. We knew that, at least in terms of survival of the event and survival of the discharge, comparing the 500-plus bed hospitals, that we were doing quite well. But drilling down to the exact specifics of the performance, we did not have great records on. We then decided to assign a designated abstracter under Quality and ultimately to add a performance improvement specialist so that we could analyze data, try to get data as accurate and in as timely a fashion as possible.

So I'm sure you're all familiar with the PDA cycle, but it's best served by accurate data. And so one of our great struggles has always been to get accurate data. Our current process is for the unit manager to review all code sheets for accuracy and completeness and submit them within 72 hours. However, from time to time, we noticed significant delays in that process. And obviously, if we get a code sheet seven, 10, or 14 days after an event, our ability to go back and refine our understanding of what happened, what the timeline was becomes extremely compromised. So it drastically influences the PDCA cycle and ability to get the performance improvement.

So with Quality Department leadership oversight and a dedicated abstracter, we tried to figure out multiple ways of getting appropriate and timely data so that we could look for our opportunities for improvement. We met with nursing leadership. We met with the residency program. We explained to everyone how important this data was, and I think initially there was some aggravation on our part that we could not get the cooperation that we wanted. However, when you step back and think about what's going on, this is a very chaotic time. Everybody on the Code Team has actually been pulled from somewhere else, some other duty, to do this activity. And from their perspective, the resuscitation event is their major task. What we had to do was go out and educate them that without the data, without it being accurate and timely, we were not going to be able to do any performance improvement. And over time what we've seen in at least in this execution as, since 2008, we've ramped up an incredibly large transplant program and advanced heart failure program, our CMI and the level of illness in this hospital has risen substantially. So if we're going to maintain good resuscitation outcomes, we're going to have to make what we bring to the table and to our patients the best possible thing we can. So that's why creating these dedicated performance specialists working with nursing leadership ultimately allowed us to accomplish things at better rate than we had before.

So what did the data say in 2013? Well, with regard to witnessing cardiac events, we were above the 85 percent bar. Time to first chest compression was one minute -- we were well ahead -- and device confirmation of ET tube placement, we were above 85 percent. But where we fell down was in first shock in less than two minutes for VF or pulseless VTAC. And as we look back, this was actually not new data. This was one of the things we struggled with for some time when we went back and looked at that. And we decided to put something in process to try to look at exactly how we did that. What we found when we went and looked at some of those cases is that frequently the documentation of a shockable rhythm changing to something else was not documented, but the timeline was still running. Or when the defibrillator was on, sometimes, particularly in units that to not see codes very often, there was some reluctance on the part of inexperienced people to go ahead and push the button and defibrillate before the Code Team got there. And that was where our biggest opportunities were. So we worked on that by doing numerous mock codes throughout the hospital, particularly in the non-ICU beds, which is where most of these fallouts are. And also, one of the things that was very effective for us was our secret shopper. So one of our ACLS trainees or trainers would go around the codes and just stand back and watch and not get involved in the process but observe the process. And that provided us with an immense amount of very helpful data, not just about shocking, but about the rate of compressions, the depth of compressions, how documentation was going. And so that, I would strongly advise you to do as a way to look for opportunities for improvement.

So this gets to the problem that we’ve had. The Code Blue is called, CPR is initiated, the staff fills out the code record in whatever fashion they can in that immediate period, but frequently, there is -- the start of the documentation is a little haphazard. Many times what would happen initially was that the focus was on the patient, as it should be, not on documentation. And so we started off in a hole, and then that document, which was not complete, would be given to the unit manager to complete within 72 hours. But as I mentioned, frequently that did not get to us. We did not have a good and consistent way of finding out when codes were. Frequently, codes in the ICUs were not called by the operator, so that log was not available to us. So sometimes these things would drift in at two weeks or three weeks after the event, at which time any sort of meaningful opportunity to address documentation issues and understand completely the timeline was gone. As I mentioned before, the front-line staff thought the really important thing we're doing here is the resuscitation, not the documentation. And while we agree with that, it did limit our ability to do performance improvement. So we continually strive to work with nursing, to work with the residency program, and we'll show you some efforts that are coming up that we think are going to actually make this much better.

So we tracked the code sheet turnaround times. We presented this data to nursing, to the Code Blue Committee. We went to various vice presidents in the organization to enlist their help in getting this documentation completed. And basically we're not too proud to beg to get this done. Sometimes that's exactly what it took. But ultimately, when we had complete data – and there were periods of time where our code sheet turnaround time was very good, and our completion of the document was 95 percent-plus. And that's when we really could see what was going on and allow ourselves to create some plans to improve our actual performance.

This basically talks about that, as well. It's part of the PDCA process. And I talked to you about mock codes and the secret shopper. I think that's what really got us to our best performance. So in 2014 and 2015, with those efforts, we got above the 85 percent bar, not by much, but we did. It's the first time we'd been there in a number of years. And we attributed it to that rigor that I just described to you. However, in an effort to be transparent, we have had some degradation in 2016, and we'll show you that. It’s coming up next. So in 2016 -- in 2014, we got the Silver Award for getting there for the first time, and 2015, the Gold Award for staying there for a year. And then in 2016, we fell back in terms of our time to first shock in less than two minutes. So what happened in this institution in 2016? Well, in 2016, toward the end of the second quarter, we went from an EMR that we had been using for a number of years to a completely new EMR, and this time, it was completely paperless. And that transition process has taken up a lot of energy, a lot of focus, and I think, not only in this arena but other arenas, what happens when there’s a major new initiative of this magnitude, there's just not the energy and focus that there is. So I'm attributing it to that because we haven't had the chance to review all of these things as well as we had done in the past. I can't tell you how much energy goes into this sort of a process.

So we wanted to hardwire our feedback. We wanted to have timeless communication, become more engaged in the residency program. I've gone to their noon meetings. I've talked to them about our struggles and difficulties. We've met much more frequently with nursing leadership. We've tried to identify, how do we get this information in a more timely fashion? And so one of the pilots we've just initiated is what's called a hot debrief. So we've got the commitment of the residents and the nurse practitioners and everyone at the end of the code, before the transfer to an ICU happens, to do a two-minute debrief of what went right, what went wrong, what equipment is not functioning, what needs to be fixed, what process needs to be addressed, and then committed to following up with what's called a cold debrief, where they all come together, ideally within a week, hopefully three to five days, when they can sit down in a thoughtful manner and go over all that was mentioned in the hot debrief plus go back over the code sheet again -- which is currently paper, for the most part -- and look for opportunities for improvement and develop and implement process of improvement that we can initiate at the point of care and roll out to the front-line staff.

Now, to move forward, as I mentioned, we were dependent on a piece of paper showing up in our offices to really get ahold of every code that happens. But when we went to this EMR and we looked at what they offered us, there is a code documenting module within that EMR. We looked at it back in September of '15, when we were doing our validation and getting ready for this rollout in basically June of 2016. When we first looked at it, it had a lot of information, but it was not organized in the fashion that we thought was going to be easy to use. So over the next 12 months, we basically worked with EPIC to modify this tool, to bring the most common things close together, to make it a much more functional device and module. And then what we did right before the deployment of the EMR is we had a series of mock codes where we took our Code Blue sheets, a nurse from the floor, a nurse that was trained in the new module, and one of the EPIC specialists who was well trained in the module, and we ran probably four or five codes to see, what does the data look like? And to our surprise, the data that was coming out of the code module modified was far superior, far more accurate, and more detailed than the piece of paper, which we thought was not going to be the case when we first saw this. The other advantage of this is I can run a report every day when this module is used and know how many codes happened, when they happened, and I don't have to wait. And the other thing about this is it's extremely legible, as opposed to our paper document. They don't get lost; they stay in the system. So we think that this is going to help us get at codes in a timely fashion, get much more accurate information, and allow performance improvement processes to occur. We are currently rolling this tool out. We started with the emergency room. They were educated. They have been working with it. We took lessons learned from that rollout. We are now training all of our ICU nurses. That education process I think is complete or close to being complete, and we will let them work with it for a month or two, learn from their experience, and then gradually roll it out to the floor. Between our Emergency Department and our ICUs, that accounts, on any given quarter, for two-thirds to three-fourths of our codes. So we're hoping that by the end of the year we're completely electronic in our code documentation and that our ability to know when a code occurs is no further out than 24 hours.

We think and hope that the Code Blue debriefing process will enhance that, as well. We've already seen evidence in that in that one of the hot debriefs ultimately led to an RCA. So I think good things are going to come out of both those processes, as well as timely real-time evaluation. We will be able to review a lot of the other poor outcomes in a timely fashion to correct situations within the system. We are, as you might imagine, a very big institution, and we are geographically distributed over a large area. This complex was not built at a single time. It was added onto. So we're across the street and have crosswalks, and there's a lot of territory for the Code Blue Team to cover. What we did in our decision back in 2006 was to geographically train respiratory therapists and have them ACLS certified, have them work with our anesthesiologists for intubation purposes, and so we have geographically distributed a lot of first responders who can go to work right away trying to restore spontaneous circulation before the Code Team ever gets there.

I think I've said most of what's in here, and then there’s something -- we currently have a relatively new defibrillator system that is now deployed house-wide. Its advantage is that it continuously records all rhythms. There’s no tapes floating around that are untimed. It’s all electronically timed. It measures, if the defibrillator pads are in the right place, the rate of compression, the depth of compression. You can actually turn on a voice that will help guide you through the process while it's real-time. But the real advantage of it is that record, which is extremely complete, is downloadable to an independent server. It's not integrated into the EMR code module, but I don't think we need that. I think we just need to be able to evaluate it. We do need to buy some -- if we were to buy a little remote control entry device, we could actually put medication in there, as well. But I think what we're going to be able to do with the time intervals is to be able to recognize what the rhythms were in a much more accurate fashion, real-time, and coordinate those with medication, with shocking, and see exactly how the code went in a much more accurate way. So that's our future improvement in our process. I think it takes us light years away from 2006, when we first started, and hopefully it will get us to the top of our game.

I think the next slide is us accepting the Gold Award at the House of Blues in New Orleans in November. It was a real honor to get that award. We really thank the American Heart Association for all the help they've given us. And I'm happy to answer any questions that you might have. In summary, we have assigned dedicated quality specialists and abstracters to the registry to make sure we have data as well vetted as possible. We've tried to standardize our process. We've tried to create very timely review and feedback of the event which, by its very nature, is chaotic and hard to document. We're trying to be as transparent with the data as we can. We endorse the PDCA process. We’re engaging leadership and clinicians and frontline staff, and the reasons why we're trying to do this is paramount. We love to learn from opportunities for improvement and move things forward and align with best practice and policies and to leverage technology, which we're now starting to do, which I think is going to really help us. We also like to recognize and celebrate success wherever it occurs in this institution, and in the Code Blue arena in particular. Thank you so much.

**>>Liz Olson:**

Thank you so much, Dr. Galfione. We really appreciate you presenting today, especially despite being under the weather. Fantastic content, and we're excited to take some questions at this time. In order to do that, it's my pleasure to introduce our moderator for today’s Q&A, Tanya Lane Truitt, senior manager, QSI Programs and Operations for Resuscitation and Heart Failure.

**>>Tanya Truitt:**Thank you. Before we read the first question for our presenter, Gwen, can you remind our participants how to enter questions? Oh, I’m sorry, Ginneen?

**>>Operator:**

Thank you. As a reminder, if you'd like to ask a question via the web, click the “Q&A” button in the lower left-hand corner of your screen, type your question in the open area, and click the “Submit” button. And I'll turn it back to your Q&A session.

**>>Tanya Truitt:**

Thank you. Our first question is, “Does the PI specialist have other duties as well, or do they solely focus on Code Blue Team events?”

**>>Ronald Galfione, MD:**
They do have other duties. I mean, currently they also help support the Critical Care CMPI, and they probably have other duties with regard to other initiatives within the institution. It's not just one thing that they do.

**>>Tanya Truitt:**So there are several questions about your EMR, one of them is, “How did you improve the early documentation directly into the EMR?”

**>>Ronald Galfione, MD:**

Could you rephrase? I’m not sure I understand the question.

**>>Tanya Truitt:**

How did you improve the -- how did you work with EPIC, I gather?

**>>Ronald Galfione, MD:**
Right, right, right. So there was an initial period when we're getting ready to get ready, and they showed us the document. And there were sessions where they said, what don't you like? And we put those things in what's called the parking lot that we were to come back to. So a number of things from the Code Blue Navigator Narrator wound up in the parking lot, and then we started a process of working with them. We asked them to give us the names of other institutions that actually were using that module. We talked to them. We saw what the module looked like that they had modified, and then we went back to EPIC and said, okay, we like this, but we'd like to move this here and that there. And it was just a gradual process, over a long period of time, of the Code Team, nurse practitioners, working with them and nursing to say, this is a much better way to navigate this module than that, and pulled it all together. It was available for us to test probably 30 days before we went live, and it actually is working quite well. Now, it does require some training, and we have spent some time doing that. The other thing I would say, and the other thing we're trying to get done, and we've had some pushback from nursing, and that is we would love to have, every shift on every unit to have somebody dedicated as the documenter. So as soon as something happens, they know, this is my job, and I'm going to go start that job right now, as opposed to letting it be delayed for a minute or two. Now, before we had this tool, we had some pilot programs. And one of them that stands out is the CCU did exactly that. Every shift, they had a dedicated documenter so that when a code occurred, she knew or he knew that that was their job. And they had, for a long period of time, as long as that stayed in place, the best documentation, house-wide, hands down. Nobody even came close. So I think that's the other piece of this, is everybody needs to be trained. But I think, optimally, if there are some really dedicated super-user documenters, you're going to be far ahead.

**>>Tanya Truitt:**

Great. The next question is, “Do you have a computer in each room already logged in to EPIC? We found, by the time that the computer was brought to the bedside, logged in, the code narrator was started, we were already two or three minutes behind, at least, from the start of the event, and we couldn't get caught up after that.”

**>>Ronald Galfione, MD:**
We have a lot of those mobile units. There's not a computer outside of every room or in every room. But we have so many mobile units that I don't anticipate that's going to be a problem. And so far it isn't, but we may find that out when we go to the floor. I certainly don't think that's going to be in problem in the units, and it hasn't been a problem in the ED so far.

**>>Tanya Truitt:**

So the next question, couple of questions, is about your debriefing system. “How are you able to get the Code Team back together for debrief?”

**>>Ronald Galfione, MD:**
Well, this is a relatively new process, so I think we're working through it mechanistically. We've piloted this now for probably three weeks. What I initially had happen was that there were two medicine residents on our Code Blue Committee. They're great guys, and we worked with them to create a process to take to all the residents. I went to that meeting. They seem to understand the importance of it, they signed off on it, and they committed to it, basically. So between the resident and the nurse practitioner involved in the code, they're the ones that try to make sure that the hot debrief happens and create the time interval that the cold debrief will happen. So far, that seems to be working. And we'd like to get that time interval between hot and cold as close as possible, but we realize these are very busy people being pulled a lot of different ways. So we’ll have to update you on that process. It is a work in process, actually.

**>>Tanya Truitt:**

Great. “So what is the timing of your code debrief? How far past the event do you do it?”

**>>Ronald Galfione, MD:**
The hot debrief happens in the room at the bedside.

**>>Tanya Truitt:**And the cold debrief?

**>>Ronald Galfione, MD:**
The cold debrief will happen in a room -- we asked them to be sure it was within seven days. We'd like them to be three to five days. And I think what we would ask them to do is, the more problematic the code is, the closer to the hot debrief we would want it. But we're just now starting to harvest all this data. So what's going to happen four, eight weeks from now, we'll see how many hot debriefs were there, what's the time interval to the cold debrief, what were the issues? Is this working, not working? We can improve it by doing this, and we'll figure that out.

**>>Tanya Truitt:**

Great. Thank you. “So what role does the supply chain have on your team?”

**>>Ronald Galfione, MD:**
Supply chain has a lot to do with just the equipment, what’s on the code cart. For instance, one of our problems, particularly since there's not a surgical resident on the Code Team, was line access. So one of the ways to get around line access was to go the easy IO, the intraosseous IV solution, both for the humorous or femoral long bones. So supply chain was very much involved in getting that for us. And then ultimately, all the nurse practitioners, all the medicine residents are trained, as well as all the ER physicians, are trained in easy IO use, which can be used for up to 24 hours and handle large volumes of fluid for resuscitation.

**>>Tanya Truitt:**

Excellent. So the next question -- actually several questions is about the defibrillator that you use. So basically, what brand of defibrillator do you use, how does it work, and what information can you get from it?

**>>Ronald Galfione, MD:**
It's the ZOLL R series. It's now deployed pretty much house-wide, right? Yeah, it's everywhere. It does require its own server to download this information to, but you can hit a button right after the code and download it. It comes with a little -- you can get it without the remote device, or you can get it with the remote device that allows you, basically like you're watching TV, to enter medications, put a patient's name in, I.D. number. And then you can go back to the server and query that entire document. You can look at all the rhythm from beginning to end. You can look at the rate of compression, the depth of compression. You can correlate that with medicine, shock. It's quite a definitive tool. Now, it doesn't integrate with EPIC. You can scan it in as a PDF file. I happened to talk with the EPIC rep at your meeting in New Orleans, and it would be probably cost prohibitive to sort of integrate these two systems, and I don’t think necessary. I think you just need to be able to go out to the server and query all that data and decide, what is it that we need to do differently? What went wrong? What went right?

**>>Tanya Truitt:**

The next question is really about your Code Team itself. “Have you considered doing like a house-wide Code Team that that's all they do, or do you have such a thing, with assigned roles and responsibilities?”

**>>Ronald Galfione, MD:**
That's what we do have. I mean, initially, when we started out, when the residency program left in 2006, we did not have medicine residents or surgical residents. But we do now, and over the course of time, we've built up our own internal residency program. So initially we contracted with Anesthesia to be the code caller and to run the Code Team. Nurse practitioners were assigned to that Code Team. Respiratory therapists were assigned. All those people that were absolutely critical to the -- pharmacists were assigned. There's crash carts distributed geographically everywhere. And then, as the residency program developed and we realized this was an educational opportunity that they needed to have, we gradually migrated into a residency-run program, code program. So the components of the Code Team are all defined. It’s just that we are a big complex, and we are geographically distributed in the medical center. So it sometimes takes them a while to get to the outpatient center, where we do some surgery, or where the bronchoscopies occur. We’ve also tried to have a lot of first responders everywhere, geographically distributed, in addition to a Code Team.

**>>Tanya Truitt:**“On your code team, is there somebody that's designated to do the documentation?”

**>>Ronald Galfione, MD:**
Not on the Code Team. Usually that's left to whatever the unit is. That's how it happens. The Code Team has got the nurse practitioner, the pharmacist, the resident, there's now a CRNA on that Code Team, but they're really more involved in the care of the patient and all the things that need to happen during the process. That's why we're trying to get nursing to agree to a designated documenter per shift.

**>>Tanya Truitt:**“Is there a designated R.N. that responds direct with the Code Team that isn't assigned to patient care?”

**>>Ronald Galfione, MD:**
The nurse practitioner, yes. The advanced nurse practitioners are. They're all members of the CERT Team. So if you look – and there are certain ICU nurses that are assigned to certain areas if a code happens where maybe the nurse practitioner coverage isn't as good. So yes, there is an assigned nurse. But we've built up our nurse practitioner program since 2006, have a very robust CERT Team, and actually, if you look at our data, as the number of CERT calls have gone up, the number of Code Blues have gone down, which is what we were hoping to see and expected to see. So when we first started in 2006, we probably had, per quarter, 120 or so codes and did not have any CERT calls whatsoever. And now our CERT calls -- I'm not sure what – I know what it is per quarter, but it's robust. And our code events per quarter now sometimes are 68, 72. They've dramatically declined as we've got the Emergency Response Team seeing people before they code and taking care of them, getting them transferred to the appropriate level of care.

**>>Tanya Truitt:**

The next question -- thank you. The next question that we have is, “The debriefing forms you noted, are they specific to Code Blues only or any other meaningful events, such as internal or external disasters, catastrophe, workplace injuries, patient issues? And do these debriefing forms get audited?”

**>>Ronald Galfione, MD:**
Well, ultimately, we're going to wind up seeing all the Code Blue debriefing forms and both the hot – well, probably the cold, because the hot is more of a verbal event. I'm not sure I can speak to house-wide events and how that's handled. I just don't have that information available.

**>>Tanya Truitt:**

So the next question -- okay. Sorry.

**>>Ronald Galfione, MD:**
But the debrief is being audited by our Quality Performance Improvement people since we've started this pilot three weeks ago.

**>>Tanya Truitt:**

Great. Okay. “How long does it take to log in to your EMR and to get into the code modules? How often are there delays, or have you looked into that?”

**>>Ronald Galfione, MD:**
To actually bring up EPIC is not that difficult. I mean, I would say I'm usually in within, easy, 20, 30 seconds. Bringing up the code module, if you know where to look for it, is probably no more than that, or less. And then you're ready to go. The code module -- if there is some information that is there but is based on something that happened before you opened the module, you can actually go back and enter it and time it, but it's stamped that you did this retrospectively so that we know that that's how you did it. But there is a way to make sure that that document reflects what happened but also reflects with a timestamp when you did it, for transparency.

**>>Tanya Truitt:**

Right. “Do you have problems with staff documenting on paper and then putting it in the EMR?”

**>>Ronald Galfione, MD:**
A lot of people wanted to do that. We’ve discouraged that, particularly after we did our mock codes, using paper and the module. The module, even in people whose experience with it was not that great, was so much better, so much more complete, the timing was better, that we decided, as we roll this out from unit to unit to unit, we're not going to go to paper. Now, people can do that, but the documents we've seen that have been done in that fashion, I'll use paper and I'll transfer it over, they're just not as good. I don't know how else to say it. It just doesn't flow right. And I was -- I'll have to admit upfront, when I first saw that module, I was probably their biggest skeptic. And now I may be their biggest supporter, now that we've worked with it.

**>>Tanya Truitt:**

Great. “Can you describe the process” -- a lot of our hospitals -- a lot of hospitals have trouble with time to first defibrillation, so “Can you describe the process for tracking the time to first defibrillation prior to implementation of the EMR and then after and any effects or differences?”

**>>Ronald Galfione, MD:**
Well, I think, up until this moment where we're going to get stuff real-time and live, we've been compromised. So we've reviewed some charts where a code was called because somebody from Telemetry called the nursing floor and said somebody's got VTAC. Well, if you go look at that code document, it starts off with VTAC, which, in that process, may have been 30 seconds, 45 seconds. We have no idea if VTAC was still going on, but that's what we're documenting, so that's held us to that timeline. What we need is to know what we're doing is accurately documenting what the rhythm is, so that requires that we get the ZOLL on, we get some device on that tells us, yes, we still have VTAC, and that's when time zero starts, because you can't expect us to be held to anything greater than that, I don't think. Then the other issue is, if we’re seeing, as we review the ZOLL, that there was this shockable rhythm, and it was sustained for a period of time during the code, then we need to go back to the residents, the nurses on the floor, everyone who had a chance to do the right thing and say, here's a fallout, here's a defect in our process, and gradually bring that around. Then, like I said, do mock codes on the floor, have a secret shopper come in, and just do more and more training to get people comfortable. The problem with our floor nurses are, they may not see a code but every eight to 10 months. And all of a sudden, to them, it's a new event. So somehow we need to get them comfortable to trust technology. If technology says shock, then you need to shock. That's what you're supposed to do, and not wait.

**>>Tanya Truitt:**So the next question is actually kind of a combination question, that a lot of institutions have trouble with the number of people who show up for events, for lack of a better term. You call the code, everybody kind of rushes in, you have all these people. Do you have a method of signing in who comes into the code room where the event is taking place? How do you control the chaos?

**>>Ronald Galfione, MD:**
Well, what I've done recently is I’ve talked to the residents and said, “Look, you are the code caller. You run the code. When you show up, you announce who you are and that you're taking over. And you control the room. If you think there are more people in there than need to be, then you need to tell them to leave. You need to tell exactly who stays in the room, whose help you need, and whose help you don't. You may want to ask them to wait outside in case they're needed, but you're in control of this. And if anybody does not follow your request, I need to know it so I can interact with them.” So that's kind of currently how we do it. Now, you can imagine that you've got a program with first, second, and third-year residents. So it seems like only a moment ago that I was doing my first code at the Mayo Clinic, and I was not the most confident guy in the room. So that's part of their skill development, is to learn how to take charge, take control, even though they may feel a bit inadequate compared to some of the other folks in the room. But that's the protocol.

**>>Tanya Truitt:**Great. The next question is about your hot debriefings. “So who leads your hot debriefings, and how do they work? How do they occur immediately following the event or how far? Who attends them? A little bit more information, please.”

**>>Ronald Galfione, MD:**
I think basically the hot debrief is the resident, the nurse practitioner, pharmacy, maybe the CRNA if they were involved, respiratory therapy. It happens ideally as soon as the patient is stabilized, before they're transferred, while everybody is still in the room. Everybody has left some other task to come here to do this. So that's the opportunity to really speak to what stands out, first blush, of this whole process that we went through. What was great? What was terrible? What needs to be fixed? And then, who's going to schedule the cold debrief? I think that's what happens. You've got plenty of time to do that for most patients once you've stabilized them. And it's a two-minute or less process, so it's not particularly burdensome. But once people start leaving, then all that information and that data just vaporizes if you're not careful.

**>>Tanya Truitt:**

Great. So we now go back to questions about the defibrillator or AED. “Do you have AEDs in areas that don't see codes frequently?”

**>>Ronald Galfione, MD:**
Yes.

**>>Tanya Truitt:**So if you do, second part of the question, “Do you empower the non-ICU nurses to use -- to trust the technology, and how do you get them to actually use it?”

**>>Ronald Galfione, MD:**
We empower them and trust them to use the technology. I think getting them -- we're realizing a little bit more acutely now how difficult it is for them to actually commit to doing what the machine is telling them. So I think we're going to have to have a substantial education initiative to make sure they're comfortable, put it into their annual competency training and evaluation.

**>>Tanya Truitt:**

Okay. Thank you. So now I guess now, with EPIC -- I'm trying to kind of adjust the question a little bit, because I think with EPIC you don't have this issue as much. But do you have issues with time, like the differences in the nurse’s watch, the clock on the wall’s time, the defibrillator time, and the EPIC time? How do they all match, or do you have problems with that anymore, now that you use EPIC?

**>>Ronald Galfione, MD:**
I think that's potentially a problem when somebody is using paper in EPIC. So they've entered something in EPIC, but they've also got a paper document that may have started out with a time discrepancy, which is another reason not to use paper. I think there's always going to be that potential discrepancy between ZOLL and EPIC. We'll have to figure out how we deal with that. I think it's doable. Relative to everything else that happens in the cardiac arrest, it's one of the simpler things to fix, is to get that time gap narrowed and accurate. Certainly, with a paper document, it was a much bigger problem. But I think if, in fact, EPIC is running, the code navigator is running, and somebody turns on a ZOLL, it's just a matter of saying zero time on ZOLL is X time on EPIC, and that's just set -- and you can actually add notes at the end of the -- you can add text at the end of the code narrator to actually include all that so that you know.

**>>Tanya Truitt:**

Great. Thank you. There are several questions -- several people have asked the same question, which is, “Are you willing to share the data elements and how your code sheet within EPIC works and what you've kind of made it to work like? Are you willing to share that with others?”

**>>Ronald Galfione, MD:**
Absolutely.

**>>Tanya Truitt:**So should they contact you or one of the people currently on the screen if they would like additional information as to what your forms look like?

**>>Ronald Galfione, MD:**
Correct. Well, you mean what the code navigator narrator looks like?

**>>Tanya Truitt:**

Navigator narrator looks like, yes.

**>>Ronald Galfione, MD:**
Yeah, I'm not the sharpest IT guy, but I can certainly refer them to someone who could work with them from EPIC, our in-house EPIC, and show them that. There's no reason to try to re-create what we did. We're happy to share that.

**>>Tanya Truitt:**

Okay. Let's see. I was trying to get down to where there were some additional questions. Give me just one second. Sorry, I missed this one. “Where does your documenter stand in the room, for lack of a better term?” Apparently the hospitals have difficulty with their -- when they bring the computer on wheels. Then they end up being stuck outside the room, trying to listen to what's going on. Do you get them into the room, or is there some kind of standard that you're using?

**>>Ronald Galfione, MD:**
Well, I think if the room is big enough, and they can fit in there with all the other people necessary, they get in the room. Otherwise, they're right outside the door. But we've worked with our people to be sure that they're telling them what they need documented. They're not just doing stuff and mumbling and talking to themselves. They understand that they've got to communicate with the documenter, and that's an important piece of their role.

**>>Tanya Truitt:**

“So you did say that you have nurse practitioners assigned to respond to all Code Blues. Are they members of the assigned Code Blue Team 24/7?”

**>>Ronald Galfione, MD:**
Yes.

**>>Tanya Truitt:**And they have no other patient assignments besides responding to Code Blues?

**>>Ronald Galfione, MD:**
No, no. Well, they may be doing a CERT call. They may be -- they may be doing sepsis screens, seeing somebody who has got a positive sepsis screen, evaluating them. We keep them busy.

**>>Tanya Truitt:**

Great. I'm sorry. I could hear somebody else talking in the background, but I couldn't tell what they said, so I'm not sure if you wanted to repeat it or not.

**>>Ronald Galfione, MD:**
Well, they answer CERT calls. They're part of our sepsis initiative, which has allowed us to bring our sepsis mortality down from the mid-30 percent to about 12 percent, because we jump on it right away with their assistance. And then they're also available to respond to codes.

**>>Tanya Truitt:**Excellent. So for your hot debriefings -- I'm sorry. “For your hot debriefings, how do you deal with patient privacy? Are you doing this at the bedside? Do you allow family members present? Have you had that issue?”

**>>Ronald Galfione, MD:**
I'm sure that's a potential issue. Actually, right now, this is such a new process for us that I don't know that I can answer that. I think we've encouraged them to use their discretion, and if it seems like it's inappropriate to do it at the bedside for whatever reason, to do it as soon as they can. It may be that they make that decision, and everybody follows the patient down to the ICU. They may do it once the elevator door closes. So it may just be the nurse practitioner or maybe the respiratory therapist and the resident. I don't have enough detailed information on the hot debrief process to answer that question, but obviously, at some point in time, it's going to come into play, that concern about privacy.

**>>Tanya Truitt:**

Okay. So one more question about hot debriefing, and -- or cold debriefing. And that is, “Is the documentation discoverable, and where is that documentation kept?”

**>>Ronald Galfione, MD:**
It's within our Performance Improvement Plan, so it's not discoverable.

**>>Tanya Truitt:**Perfect. And this is going to be our final question, and that is, “Do you offer family the opportunity to be present during resuscitation events?”

**>>Ronald Galfione, MD:**
Yes.

**>>Tanya Truitt:**“Have you found any complications associated with that?”

**>>Ronald Galfione, MD:**
Nothing comes to mind. I mean, you worry about that, but I really can't think of a case in recent memory where that was an issue. I think we're better served by allowing that than by denying that.

**>>Tanya Truitt:**
Great, thank you. I'll turn it back over to Liz, then.

**>>Liz Olson:**

Great. Thanks, Tanya. Thank you, Dr. Galfione, for leading us in that fantastic presentation. We had so many great questions, so I'm really happy that we were able to get to so many of those questions for you today. Thank you to our attendees for your participation in today's event. In the next week, a recording of today's webinar and presentation slides will be available on the American Heart Association website, heart.org/quality. We also have samples of some suggested code forms. I know we had a lot of questions about that, so you can visit heart.org/quality for those clinical tools, as well. We'll also be emailing you a survey to gather your feedback on today's webinar. Thank you again, and have a great day.

**>>Operator:**

Again, thank you all for joining us. We hope you found this presentation informative. This concludes our program, and you may now disconnect.