Strong Medicine interview with Ron Walls, 18 April 2014

Q: [00:00:00] So this is Alyssa Botelho and today is April 18, 2014. I am here with Dr. Ron Walls in the Emergency Medicine Department at the Brigham and Women's Hospital and we are going to record an interview as part of the Strong Medicine Oral History Project. And so if you could, Ron, tell me a little bit about yourself, where you're from, where you went to school, and how that leads to your current position.

A: OK. I grew up in a small town in northern British Columbia about halfway between the British Columbia-US or Canada-US border at Alaska, halfway up. We had long cold winters. I remember the coldest day I ever went to school was below -50 degrees Fahrenheit.

Q: Oh wow.

A: And we had about 140 inches of snow every winter.

Q: Oh my gosh, 140 inches.

A: So it was a different environment. And I ended up going to university in Vancouver at the University of British Columbia. And it was interesting because we had a large graduating class in our high school. It was a small town. I think it was about 10,000 people. And there was only one high school. So the high school had a graduating class of

600 and something, and I think about 20 of us went on to education after high school, because that was the standard. But I went off to university and in the course of doing math and computer science, I liked the idea of doing medicine almost on a whim.

Q: Oh, interesting.

A: And so I streamed into medical school, I had to take all my prereqs in one year, my senior year.

Q: Wow.

A: Because I hadn't taken any of them. And I really did it almost impulsively and I think back now at how lucky that was that I had that impulse because I've loved it so much.

Q: Oh, that's great.

A: So I graduated medical school in Vancouver and I did my residency in emergency medicine in Denver at the Denver General Hospital as it was called then. Then I had a faculty position at George Washington University in DC for three years. Then I went back to Vancouver as chair of the Department of Emergency Medicine at the Vancouver Hospital. And I was there for six years, and then I came here in 1993. I was the first chair of that department at Vancouver, and I was the first chair of the department here at the Brigham.

Q: Of emergency medicine.

A: Of emergency medicine.

Q: Oh, wow, that's great.

A: The department had just formed. And I came here in 1993 and I've been here ever since.

Q: Perfect. And do you currently hold any other positions?

A: I don't. I'm a professor of medicine at Harvard Medical School in the Division of Emergency Medicine. And I'm excited because this year Harvard is going to form a Department of Emergency Medicine also.

Q: Oh, great.

A: So I'll finally become a professor of emergency medicine, which is what I hoped to accomplish when I came here 20 years ago.

Q: That's great. And what does a typical day look like for you?

A: Varies a lot with the day. I have a wife and three children who are now grown. So they used to dominate at least the weekend days and evenings. But a typical day for me begins, usually I get up around 5:30. And I'm here in the hospital before 7:00.

Q: Wow.

A: And depending on what is planned for me that day I am meeting with people or mentoring faculty or working on budgets or seeing patients in the Emergency Department or

teaching or doing my research or solving what seems to be an endless litany of problems. And that fills my day up pretty liberally as you've seen today when you waited outside, for which I apologize.

Q: And your research interests are, briefly?

A: So I focus predominantly on a certain aspect of resuscitation called airway management. So I focus, most of my research through my career has been on how we take steps to ensure that patients who are dying or at risk of dying have an adequate airway to provide oxygen and remove carbon dioxide from their body, even if they can't have that airway on their own.

Q: Great. Have you worked on Marathon Monday before?

A: I have. I've been here I think most of the Marathon Mondays over the 20 years I've been here. I think I've always been in town. Maybe I've been out of town once or twice. And I've almost always been in the hospital.

Q: And did those typical Marathon Days look any different in the Emergency Department from other days?

A: Yeah. Marathon Monday is different here because we staff differently because we know we're going to have Marathon Monday. So it's a different kind of day. First, it's a holiday for the state, but it's not a holiday for the hospital. So we have everybody here. And just to be

clear, I'm not on duty in the Emergency Department. I'm in the hospital. So in the Emergency Department we actually add some additional staff so that we have people ready to deal with the running-related things and the crowd-related things. And typically those are heat-related and [00:05:00] dehydration, the things that happen to runners. And we also have just a really great attitude on Marathon Monday, because everybody's really upbeat because it's a fun thing, nobody I think really minds that they're working, because it's such a great event for the city and for the state. So we have a few extra people around. It's usually a very busy day, but everybody feels good.

Q: And in terms of extra staff, what kind of staff do you usually bring on hand? More physicians? More nurses? Or a little bit of everybody?

A: Yeah. We have a little bit of everybody. We have more nurses on duty and we have extra physicians that either are scheduled to overlap or just are readily available depending on what the demand actually is, because we're pretty close to the finish line, as are all the hospitals in Boston.

Q: That makes sense. So to transition to talk about the marathon last year. If you could talk about how the day began and when you knew something had happened.

A: So it was a very ordinary Monday for me. I was actually in this office, and I honestly don't remember what happened in the morning. I'm not sure anybody can remember what they did that morning. But everybody remembers what they did that afternoon. So I was sitting in here with my department administrator and we were going over some budget material actually. And it was a little bit after 2:30 in the afternoon. And in a rather peculiar fashion both of our mobile phones rang at virtually exactly the same time. So as she was fishing her mobile phone out of her bag, I whipped mine out of my pocket and looked at it and saw that it was an internal number. It was the main hospital exchange. And so she got her phone out and I said, "Christine, who's calling you?" And she said, "It's the main hospital exchange." And I knew. Actually, what she said was "I don't know, it's an inside call," was what she said. So as soon as she said that I knew this was going to be a disaster alert because it would be statistically highly improbable that both of us would receive inside calls at almost exactly the same time unless it was an automated dialout. And we do those for disasters and drills and notifications. So as I'm about to push the green button on my iPhone to answer and hear the message, a *USA Today* banner drops down across the top of my phone and

says, "Bomb explodes near Boston Marathon finish line." So before I answered it to get the disaster alert I already knew something was going on. And the disaster alert was on the recorded message as it is. And I walked over to my computer and took a quick look at the Channel 5 live feed from the finish line and saw there was a lot going on there. And that took 10 or 15 seconds and I headed up the hill to the Emergency Department. Is this too much detail, by the way?

Q: No, this is perfect.

A: Because feel free to --

Q: No, no, no. This is exactly what we're looking for. And of course in the Emergency Department you've been trained for a disastrous event like this. So did you follow a certain management plan, a certain sequence of steps, that afternoon? If you could go through what happened when you left your office that afternoon.

A: So we've done a lot of preparedness planning here, as all hospitals have. But we maybe have done more, in some cases a lot more, than some of the other hospitals have done. We've trained our personnel and we've done drills between -- I looked it up later because I didn't really know the number then. But between 2006 and 2012 we did 623 separate drills, tests, and activations.

Q: Wow.

A: It's a large number. So we know what we're supposed to do. And we know how to do it. Whether you can do it of course is always another step. But we were very fortunate that particular day because the physician who was on duty in our Alpha Unit, which is our main trauma receiving unit, is a woman named Stephanie Kayden. And Stephanie, she's an international global emergencies worker, in addition to her emergency medicine specialty here. And Stephanie's last big foray into the unusual was being on the ground in Haiti within 72 hours of the earthquake and having to organize not a single emergency department to be a trauma receiving center but to organize an entire trauma hospital, which she did. So she was -- if you took all of our almost 50 faculty including me and including Eric Goralnick, who's our disaster preparedness director, and you picked one person who would be the highest performer in that type of immediate on-the-fly organization, it's Stephanie Kayden.

Q: Wow. How do you spell her last name?

A: K-A-Y-D-E-N. She'd be a good person to talk to actually, both about this and how it links back to Haiti. So there she was. There was Stephanie. [00:10:00] And Stephanie organized the Alpha Unit incredibly quickly. In the moments it took me to get up the hill they had already

essentially emptied the Emergency Department. There were 64 patients in our Emergency Department. In the 15 minutes that they had to prepare between an initial notification they got from the field and the time they actually called the disaster alert when they heard more and realized how serious it was, they had emptied the Emergency Department. So people from all services came down. Internal medicine came down. They just took patients up that on an ordinary day would be more of an exchange of information and maybe some discussion and is more testing necessary. But on that day they just took the patients up. The nurses took report immediately and took patients without report if they had to. Our psychiatry service came in and quickly evaluated the mental health patients and got them somewhere safe in something that might take 36 hours in a normal week, and it was a few minutes. So an amazing effort at clearing the Emergency Department. Stephanie had organized and already deployed multiple trauma teams at multiple locations through the Alpha Unit. And when I walked through the door for the first time she had four teams already set up and ready to go.

Q: And when you say Alpha Unit, you mean?

A: So we have different units in our Emergency Department. And the primary designations are Alpha, Bravo, and Charlie.

The Alpha Unit is the unit that is the closest to the ambulance bay and has the major trauma rooms in it. All of the units are capable of resuscitation and care of anything. But the Alpha Unit is the highest intensity unit. So Stephanie was on duty in there. One of the other attendings who was on duty was Chuck Pozner, and Chuck has had a very long history with EMS, and in fact was a paramedic before he went to medical school. And he also lives and breathes and loves disasters. I don't mean loves them in the sense of wants them to happen. But he loves the culture of it. He loves the preparedness. He loves being ready. So Chuck was able to be there to be the medical triage officer, which is another crucial role, which allows the patients to be sent to the right location within the unit as they arrive with an instantaneous high level decision, but also allows us to control the influx of providers, because there are so many people, doctors, nurses trying to get into the Emergency Department to help, and it can be so many that you can choke the place out. So you've really got to control the intake. So there was Chuck Pozner starting to do that. The Emergency Department largely had been emptied and reorganized. There was Stephanie in complete command of the Alpha Unit. And so that left us with the Bravo and Charlie Units setting up as

well. So we had three functional units like three separate Emergency Departments ready to receive these patients. And my principal role there was to coordinate the communications among these three units and the overall movement of the patients.

Q: And was there a large stream of patients coming in? In the next several hours how were you thinking, feeling? Just some of the memories of what you saw. Once the patients started coming in what was it like?

A: So I think most people would tell you their first impression when patients came in was that these were really big injuries. We've all seen things like this before, we just haven't seen so many of them at once. And they usually have a context and the context is understandable. It's a lie-down motorcycle accident where somebody's motorcycle slides out and they go a long way down the pavement with one leg under the motorcycle so they have extensive injury to that leg. It's an understandable mechanism. And I think the combination of the sheer quantity of these types of injuries and the bewildering context in which they had occurred was really challenging for people. And I'm pretty sure everybody had one of those oh my God moments before they could quickly refocus and do what they do best, which is to take care of those patients.

And on the individual trauma teams that we had set up which would be an emergency physician, a trauma surgeon, a nurse and an aide, every one of those teams that day, what was really remarkable was they functioned as if it was an ordinary day and it was one patient. And I think that's the mark really of great disaster preparedness is if you can get your teams into an environment where for them it's an ordinary day. They don't have to worry if they're taking care of one of 50 or one of 30. It's just one for them. They're taking care of that patient. [00:15:00] And if you can make everything else happen around them so they can focus on that job on that patient, I think that's the mark of good preparedness. And that's largely what we were able to do that day.

Q: Interesting. How many patients do you think you saw in that afternoon, that evening?

A: Well, I know how many patients we saw. And there's a backstory there that I'm going to tell you because I think this is maybe the most goose bumpy backstory of all of the backstories. And there are a lot of them. So we've done all this disaster preparedness work. I told you we'd done 623 drills. We'd done citywide drills. We'd even done a citywide drill of the idea of a mass casualty bombing in Boston, a bombing at a mass gathering. Operation Falcon in

2010. So we had done a lot of drilling. We were ready and we were about to present -- we meaning our disaster preparedness group, these people are all in my department here although they work for the whole hospital and the whole system. We were about to present our annual report to one of our board committees called the Care Improvement Council, which has a number of board members and senior physicians and senior leaders. And it was time for our annual report. And we'd written a typical annual report saying more or less, "Look how great we are. We've done all this stuff. We've done all these drills. And we've got all this capability. And we're just great," in seven slides sort of thing. And that was coming up in the late fall of 2012. If you remember in July of 2012 James Holmes went into the Aurora theaters in Colorado.

Q: That's right.

A: And shot and injured a lot of people. And many of those people, almost all of them in fact in the first wave, went to the University of Colorado Health Sciences Center. It happened that the chair of emergency medicine at the University of Colorado Health Sciences Center is Richard Zane, was my vice chair here until that previous April. So he'd only been there a few months. And in fact the night that James Holmes shot up the theaters was the night that

Rich arrived with his family. Having lived there by himself and commuted for a while, he came back and got his family. And they arrived that evening. And then later that night that happened.

Q: Wow.

A: So I was sitting in my chair in my home in Wellesley on a Sunday morning sometime in September and I got an e-mail from Rich. And it just said, "Look at this." And what it was was the presentation that they had done for their board in the aftermath of their resuscitation of the Aurora theater victims. They had done a presentation for their board. And it was the slide deck of that presentation. And I actually didn't really get past about the third slide, because when I got to the third slide, what it was was a timeline. And the timeline started at the moment of the first arrival at the University of Colorado Health Sciences Center Emergency Department and it followed all of the patients through. So each time a new patient arrived there was another tick on the timeline. And then those patients were each followed through. So it was a very populated timeline. But what struck me was how many patients they got in the first hour. And I actually counted them up. I put the slide on screen show and I used my finger and I went across and I counted the tabs because

there were no statistics yet. They came later in the presentation. There was 23 patients in one hour.

Q: Wow.

A: That's what I thought. Wow. I thought have we ever drilled anywhere near that many, and in our citywide drills and even in our hospital drills we always assumed that we would be part of this Boston response with these five adult level 1 trauma centers. So when I got back to the hospital the next morning, I talked to our disaster preparedness people. And I said, "What's the biggest number of patients that we've ever drilled for in the first hour after an event?" And it turned out the number was 14. So instead of presenting a talk to the board committee about how great we were we completely retooled it. And I said, "What I want to talk about is are we ready, could we do this. If we take the Aurora standard of 23 patients in one hour are we really ready for that?" So we retooled the presentation, gave it an are we ready theme, and identified that we weren't ready, and talked about the things we needed. And it was a great place to talk about it because there were board members there who could make these things happen. So that led to reinvigoration of our preparedness, taking it up to another level. We deployed more equipment and supplies. We thought about deploying more teams

instead of fewer teams. We retrained our senior management leaders, our senior medical and hospital leaders, in disaster preparedness management, hospital incident command system. So we started doing a lot of work. And by April we hadn't done all of it, but we'd done a lot of it. We were pretty far along. Not where we wanted to be, but certainly ahead of where we were. And interestingly, to come back to your question you asked that prompted this big long backstory, in the first hour on April 15th, 2013, we got 23 patients.

Q: Wow. That is goose bumpy.

A: [00:20:00] Isn't that something?

Q: That's something.

A: So we got 39 patients overall that day and we had 15 that went to our Faulkner site. So we had 54 patients altogether of the roughly 200 that were transported. But in that first hour when they transported 116 I think it was patients, we got 23 of those patients in our Emergency Department. And that was a level of preparedness that we would not have reached if not for that eerie coincidence of having Richard Zane be in Colorado.

Q: Wow, that's quite something. Got it. Let's see. Did you use any new technologies that day? Was it the same equipment and training that you had been using?

A: We didn't use any new or novel technologies that day. What was happening for us in the background was there was a tremendous amount of social media going around. And I actually participated in a *Boston Globe* panel on social media. And these were all the social media people, so they're all really excited about it. And I think they were a little disappointed because what I said about social media was that yes, it was a way to get early information, but the information was so unreliable that it was impossible to really count on it and make decisions based on it. So I think you can pick up buzz from social media, but as far as estimating impact or numbers or what's going to happen, I don't think it's good for that. Maybe someday. So we had a lot of social media going on but it was really background noise. And I think the signal-to-noise ratio in it was really poor. And we just really relied on communication from Boston EMS, which interestingly was probably less than we usually have in these events, because the event itself was so overwhelming. Usually if it's a house fire or a bus crash it's such a manageable scene, even though it's chaotic and it's a disaster, it's manageable. And they can think about their typical deployment of the communications officer and things who's going to notify the hospitals. And we get regular

updates. Now we think you're going to get six of this type of patient and five of that type. That didn't happen that day. We really just got that initial notification and then it just started. So we didn't have any special technology inside the ED, and we ignored the special technology that was around in society. So it was pretty much for us the care and the execution were as they always are.

Q: Interesting about social media and Twitter. So you saw it. They were blips on your radar. But you trusted the information you got from Boston EMS.

A: And the patients in front of us. There was an interesting sidelight to that too. My daughter works at Harvard at the university in the Harvard Humanitarian Initiative. And I actually thought she was at work that day. I didn't know it was a Harvard holiday. Not long after this all started, I think it was when I was on my way up the hill, I got a text from her that said, "Dad, don't worry, I'm OK. But downtown Boston is a mess." And I had no idea she was even in downtown Boston. And it turned out she had been near the finish line earlier, more around the time the elites had crossed. And then they had wandered off to be doing other things. And they were quite a distance away when the bombs went off. But I was really fortunate because I didn't know she was there. It never occurred to me to

worry about her or anyone else in my family. And it wasn't until I got that text and then in talking to others both that day and later I realized how many people were worried about their family members even while they were taking care of someone else's family members.

Q: That's really interesting. Let's see. And you touched on it with Boston EMS. But if you could talk about the communication that you had with other hospitals or with other institutions, law enforcement, etc., and how that went or didn't go well that day.

A: We didn't have a lot of interinstitutional communication. Most of that was done in the background by patient and family relations and some of our social workers who really were just trying to find family members and to verify identities. The identity verification was a big challenge that day.

Q: Oh, I didn't know. If you can come back to it.

A: I'll come back to that. What happened, because of the way they evacuated so many patients so quickly, is that you might have had two or three members of one family go to two or three different hospitals. And so we would have patient A who would say, "Where's my husband?" And so the patient and family relations people and social workers would start telephoning the other hospitals because that's really the

only way to do it and saying, "Do you have so-and-so?" But a lot of patients had arrived without identification. So sometimes it was do you have a 40ish-year-old man who's six feet tall and 220 pounds. [00:25:00] Really not what you'd want to be doing. And that's one of the things that we've been looking at a lot since the marathon, is how do we identify patients better and how do we communicate better. And communications by the way -- I know it's important to you -- is the central theme in virtually every single recommendation and challenge that we've identified with respect to this event looking back on it. There's so much opportunity in communication that we just didn't have prospectively. So that was most of the background interhospital communication. As far as Boston EMS went, the initial notification came that this was a real event and things were happening. But we didn't get the granular updates that we typically get in these mass casualty events where they would be much more specific about what we should expect. And it was simply because they were consumed with trying to get patients out of the area and get them to hospitals. And it was just fortunate that in Boston, unlike any other big city in America, they had five level 1 adult trauma centers and three level 1 pediatric trauma centers within 10 minutes of where that bomb went off.

Q: That's amazing. And yeah, if you could talk a little bit too about your ideas about how to help identify people more easily.

A: So I don't really have the right answers to that yet. And a lot of very smart people are thinking about it. I'm sure they'll come up with some. But we face challenges for example that we preregister our disaster and trauma patients. So we had a preregistration system that would register them and acknowledge they were unidentified but then give them a unique number identifier. And we do that every day. What we didn't think of in advance, which we thought of afterward when we did our reviews and our debriefings, was that by populating those fields with the word unidentified first, we used up most of the fields that were still available when the number was truncated or when the field was truncated, most of the positions were used up by unidentified. And so basically we had on our beautiful visual patient tracking board, which is digital, there were patients, one beside the other beside the other, that just had unidentified on them, because the rest of it that said they were a man or woman or what age was truncated. Or it might say unidentified male 38 years. But then the unique number would be truncated. So that was a problem. Since then that was a simple change we changed to colors that are

very short. And we rotate through colors so people have a unique color and a unique number. But the other piece of it was that we had a hard time just identifying patients, period, because they were standing on the sideline. Let's say it's a woman. With their purse over her arm. The bomb goes off. The purse flies. And this person who is really scared and really badly injured and has low blood pressure comes through your door with no identification on them. And everybody's working feverishly to save them and at the same time someone's trying to get their exact spelling of their last name and maybe a birth date so we can really identify them in the way that we know we have to to safely care for them in a normal environment in a hospital. So that was another challenge. And I don't know if somebody at Massachusetts General told you the story of a patient who actually had her friend's purse and ID.

Q: Oh no.

A: And so when she arrived at the hospital she was there but it was not her identification that she had. And that created a misidentification issue. Not that related to patient safety but that related to the communications with the families about those two women. So there are lots of details that you can't possibly figure out in advance. And I've told many people that doing this one day, this one

response of the marathon on April 15th, 2013, was as good or better than doing a thousand high scale drills. We learned more about the strengths and the weaknesses of our systems and the people in them on that one day than we could have from a thousand drills.

Q: And I guess that leads into the last part. The things that you decided to change. And then as you said strengths and weaknesses that you identified after that day. If you could talk a little bit about that.

A: One of the great things about thinking back on that and figuring out how to do it better is that we don't feel that we're really in a defensive position. It's easy to get a lot more resources and make massive change if you really did things badly and you can say, "This can't happen again and here's what we would need." We didn't do that [00:30:00] and I think we felt very good about not doing it. And it raised a different kind of challenge, which is how do you get people over feeling so good about the outcome, because everybody I think felt terrible about the event and great about the outcome. In fact I think a lot of our staff, the solace that they found was in their own individual performance, the performance of the team they were on, the performance of the unit they were in, the performance of the whole hospital, and the fact that those

things together with what happened across the city had such a great outcome that none of the patients who came to any of the hospitals alive went on to die.

Q: Wow.

A: So it's very hard to get people who feel that good about something to understand how critical it is to change it. So we did a lot of debriefing at first just to help the staff to understand the emotions they were feeling and the issues that they had faced. But as we processed through that, we went to group sessions where we really looked at so what went wrong for you. And I don't mean did you feel bad. I mean what went wrong for you. Well, what happened for me was when I was trying to call orthopedic surgery to arrange this then this is what happened or -- so we really started getting down into detail. And that allowed us to form an inventory of what the key issues were. And as I said earlier, for us -- and I think this would be true across the city -- the key issues were identification, so consistency of identification of the patients, and the communication that had to occur not among team members, that communication was great, but between team members across the unit and between units. And interestingly the best communications occurred at the bedside with the team at the bedside and between units. So from say our

Emergency Department to the OR. We're sending down patient X with this. Those are the two ends that worked the best. In between that was challenging. So for example you've got -- I mean think of this. You've got maybe 14, 16, 18 resuscitations going on at once. Usually it's one, occasionally it's two. Everybody needs orthopedics, or three people need neurosurgery. So typically we go to the front and say, "I need neurosurgery for Room 3." Well, this was happening all over the place. So when neurosurgery arrived we knew who needed them more or less. But we didn't know who needed them the most. So if one neurosurgeon arrives say and three times have called for neurosurgery, how do you know which one should get them first? So it was that super level of coordination that I got involved in on that day, which was deploying resources to the teams and then thinking about the other resources the patient needed. So if seven patients needed a CT scan, and we have one scanner in our ED, who goes first? If four patients need to go to the OR immediately, which one is the most immediate of those four? So Stan Ashley, our chief medical officer, was in the Emergency Department with me. And Jonathan Gates, our chief of trauma, was there. And Hugh Flanagan, our medical director of the OR and postop recovery area, an anesthesiologist. So we were all there.

And that's really what we did. We coordinated the care between the teams, the use of ancillaries, and the flow to the OR. And that allowed the teams to just focus on what they needed to do, which is take care of the patients. So those are all complicated, complicated problems. Sounds really simple. Super complicated, because it happened on the fly. So that's what we're spending most of our time working on now, is how to enhance those communications and make that all smoother.

Q: So to systematize the second level of decision making you have to make after you've told somebody in a different unit on a different team of a situation.

A: Yeah. Exactly. So when a team has a need, they're resuscitating somebody there, and there's another team there, and there's a third team over there, they all maybe have the same need. But there's only one of those things or there's two of them. Who gets them and how do they get them? And if you knew that, if you knew that you were only going to have two of those, and you were going to deploy them to two teams, what would you do with the third team? So that might be a patient that instead of imaging that patient, they're just going to go straight to the OR. But now they're in the OR queue. So they're trying to get to the OR but so are five other patients elsewhere in the

unit. It's those layers of prioritization that are challenging because it really requires somebody to have the whole picture like an air traffic controller does when studying their radar screen. We don't have that capability. And we have to figure out how do we create something that allows us to function like that knowing we can't have that capability.

Q: As far as following up, is there a project or is there a name for that kind of [00:35:00] work that you're trying to do in terms of systematizing prioritization? Or is this internal just between directors and staff?

A: You are a reporter. You're like a reporter. You said you'd be like a reporter today. That was a reporter question. So across our disaster preparedness system and throughout the hospital -- and I know this is happening on the city level as well because you can say a little bit also about the coordination and communication between the various trauma centers -- but throughout our disaster preparedness system we are looking at, everyone is looking at, communications and how to enhance them. As I said we came up with a very rapid solution to the patient identification issue. But that still leaves issues about the quality of the identification against their ID so that we really know that the person we think is John Smith

really is John Smith. And it's the right John Smith, so that when John Smith's family calls we can verify that's the right family, the right patient, before we give information and so on. So that part we're pretty far down the road on. The more complicated communication part that allows us to integrate care and prioritize care between teams and between units, that's going to take some time.

Q: Well, it's 2:32. So we should probably end.

A: How close are you to your end?

Q: I'm good, actually. I think that we've pretty much covered what needed to be covered and your thoughts and reflections after in the year since. Is there anything else that you want to make sure you add on the record?

A: Yeah. So we're about a year later now. And this is the week before the marathon this year. But the one-year anniversary date, April 15th, was two days ago, three days ago now. So part of the challenge is figuring out how much reverence and respect and reflection should we have as individuals and as an institution, and how much do we just move forward. And I think this year is a special year because it's the first year. And I think there will always be a little something along the way. But until we get past this first one I think we're not really able to look forward. And part of that happened here for us. Every

hospital did this. But we had a day called Hope and Healing on Tuesday which was the exact anniversary. And we had patients and family members come in and talk about their day, the survivors, some of whom were really really severely injured. And then we had a lot of providers get up and talk about what they saw, what they felt that day. So we had a really good community day with that. We raised a special flag. We went to the tribute that was held at the finish line. So we made a day of that. That was one big hurdle I think. The second big hurdle is the actual marathon itself when it gets run next Monday. And I really think, and I really hope, that after this, a year later, and after the running of the marathon, people really will feel enough of a sense of closure that they can just move forward. And as a city this was a big event. But this is a big beautiful city with great people in it. And those people really need to focus on what's good and what's in their future and what we're all doing to help one another. And I think we really need to look forward and not look back anymore.

Q: Great. Thank you so much.

A: That's what I wanted to say on the record. [00:38:33]

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