From the Vision 2020 Project, welcome to CRR Radio.

Ed Comeau: Welcome to CRR Radio. My name is Ed Comeau with Vision 2020. Today, we're talking about how one department in Texas is reducing the impact of cardiovascular disease on their community. Joe, could you take a moment and introduce yourself to our listeners?

Joe Casciotti: Oh, sure, Ed. Thanks. My name is Joseph Casciotti. I'm the Battalion Chief of Community Medicine for Harris County ESD 48 Fire Department.

Ed Comeau: And before we get into what you're doing in Texas, Joe, some may be wondering why we're talking about cardiovascular disease, or CVD, on CRR Radio in the first place. So I'd like to give just a little bit of explanation. Our listeners may not realize that CVD is the leading cause of death across the nation with over 600,000 people dying each year. Now, that's a pretty huge number, but to put that into context, that's 200 as times many people die from fires. So that by reducing the impact of heart disease in the community, you can make a major difference in saving lives.

If you're doing a community risk assessment, it's important to look at where the risks lie in your community and where you can have an impact. There are many communities across the nation that have never had a fatal fire, but I'll bet every single one has lost people to heart attacks.

And another reason we're diving into this topic is my firsthand experience, which gave me a whole new perspective on this as a CRR issue. In 2015, I went through chemo, which damaged my heart, and in 2018, I had my first congestive heart failure, and then a second one in 2019, which resulted in my getting an implantable defibrillator. The reason I'm telling you is this experience has really made me realize the tragic toll of CVD and the role that a fire department can have in a major and immediate CRR impact way, which leads up to what you're doing there in Harris County.

So Joe, with all of that, tell us about your program.

Joe Casciotti: Thanks, Ed. So, our program, and I will tell you that when I started here, I was brought on board in September of 2018, and really, the reason I was brought onboard was to get the community paramedic, or sometimes I'll say MIH, mobile integrated health, they're both kind of interchangeable terms, some programs use one, some use the other, but I was brought on to get that program started, implemented and kind of developed. And I will be honest with you that the vision that I had or what I expected was going to happen when I walked in that first day in September of 2018 is vastly different now than what it was just two years ago.

So there was some work being done ahead of time by our assistant chief of EMS, Eric Bank, with one of our local hospitals, and the hospital that we've been doing the most work with is Houston Methodist West. They had identified the heart attack patients, or STEMIs or NSTEMI patients, and just to cover what the difference between the two is, a STEMI is a ST elevation EMI, that's the heart attack that we can see on the monitor, and then an NSTEMI is a non-ST elevation EMI, and that's a heart attack that doesn't show up on the monitor, but through blood work and history, they determine that the person still did have a heart attack.

We wanted a small population to begin with. There wasn't a lot of discharges that were meeting either of those two qualifications from the hospital, because initially, I was the only person that was going to be going out and seeing these people. So if we're getting referrals for a hundred patients a month, it's just not manageable by one person to give good quality care that way.

And we wanted something that we would be able to tell that our impact was what was driving the improvement. So there's a lot of other programs out there where hospitals do a lot of follow-up care with diabetes or CHF, or even now, COPD in asthma patients, but heart attack post-care really didn't seem to have any follow-up.

We did a real simple thing. I mean, we just kind of talked about, "Okay, well, how do we want this to look? What do we want to do with these people?" And we basically developed a process with the hospital where they send us a referral whenever somebody gets discharged if they meet those two qualifications of either the STEMI or the NSTEMI. I try to follow up within 24 to 48 hours post-discharge and just kind of see what they need.

Now, this is where the variety comes in. This is where this is a step away from traditional fire and EMS, is some of my appointments were 30 minutes long, some of my appointments were three hours long. And this is why I believe that we're uniquely positioned in the fire and EMS service to provide this type of care. When you get home health coming in, or you get visiting nurses or a caregiver coming in, number one, you have to meet the need and the criteria for that, and number two, they're usually limited by time. So your visits are usually a set amount of time. If you need more time than that, then you've got to wait for the next visit or you've got to pay extra or things like that.

So for us, my big thing was I didn't want to limit my time. I wanted to be able to be there with these people and answer their questions no matter how long that took. And like I said, the longest I had was about three hours.

But what we basically did was we'd go into the house. I usually would start with reviewing their, their discharge paperwork. So we would do a medication review, make sure, number one, that they were able to get all their medications,

that they're taking them appropriately, that they understand why they're taking the medications. It's just amazing how many people you come across on a daily basis in healthcare, I mean, I'm a registered nurse as well and I do a lot of ER and ICU work, that they take medications, but they have no idea why they're taking them or what they're for. So we did some education there. We talked about discharge instructions.

One of the big things that, and Ed, I know you and I have talked this before about the cardiac rehab after the heart attacks, one of the big things was making sure that they have access to cardiac rehab or they have the referral to cardiac rehab. And that's one of the things that we've caught a couple of times where they either haven't had the referral or they had no idea how to set that appointment up or where to go or anything like that.

So we kind of follow that up with an assessment. We do an EKG, blood pressure and the standard vital signs. And I usually end it with, "What other questions do you have?" And this is where the variety comes in. I mean, I've had discussions about dietary, you know, "Well, they told me I need to eat a heart healthy diet. I have no idea what that means." You get this big pack of papers with all the instructions when you leave the hospital, but most people don't go through that. Most people don't look at that.

The one thing that really stuck out in my mind when we were talking to the hospital about this was they said that their average stay for their heart attack patients was 36 hours, and that these people are usually discharged on no less than five new medications. So if you think about that, if you have no knowledge and you never had been in the hospital before, and primarily, I mean, I'd say at least 50% of the people we interacted with were in the 40 to 50 age range, so we're looking at a younger population in respects to what you would typically see in the hospital. A lot of them, this was their first experience in a hospital or first emergency experience.

So you couple that, you're only there for 36 hours, you get sent home on all of these medications, you have this whirlwind discharge process, plus, at 40 to 50, you're still worried about, not that you're not worried about this as you get older, but you might have a full time job, you might not be retired yet, you might have young kids at home, so you're worried and you're thinking about, "Well, these are all the things that I have to do when I get home. These are all the things that didn't happen while I was in the hospital." And your mind, just in the moment when you're getting those instructions, is just not there. And then as you get home and you get time to kind of decompress and think about things you realize, "Well, I never asked about this," or, "I don't understand this," or all these questions start to come up, and then that's where we come in.

We picked the 24 to 48 hour window because I did some research on STEMI and NSTEMI post-discharge follow-up. And while there's not a lot of studies out

there for fire and EMS doing this, there are studies that show that the closer you get to the 24 to 48 hour post-discharge, the bigger the impact there is with reduction of 30 day readmission rates. And I guess I probably should have started with that, that our main goal is to reduce the readmission rates for these heart attack patients. So by managing them early and solving medication management issues and dietary education issues and, "What kind of activities can I do and what things can I do?" Because sometimes people will come out of the hospital thinking that they can just go right back to what they were doing before, and it isn't quite that way.

So that was really what our main goal was with this program. And we figured if we could show that we can have an impact here, that we could pretty much extrapolate this out to other service lines. So you could take the same concepts that we used and we could do follow up care with stroke patients, diabetic patients, orthopedic patients, pretty much anything that you have. It's just you kind of have to tweak it a little bit differently depending on what their diagnosis is.

We started seeing patients in May of 2019, and we averaged about 12 to 15 patients a month that we got referred to us. Now, out of that 12 to 15 patients a month, we only had about a 30 to 35% enrollment rate. So really, I think at the end of the year, we were referred somewhere around 90 to a 100 patients by the end of the year, and we probably saw only 30 to 35 of those patients in person. Some of the other patients either just didn't want us involved, they had home health already, or they had other services set up that they felt were sufficient. And even if they have those other services set up, we still offer to come out because I feel that we offer a different perspective. And we did work a lot in conjunction with some of the other outpatient services, such as home health and visiting nurses and home PT and such.

The one thing that really stuck out was that of our patients that we saw, so just to give you a background on the hospital here, the national average for readmission for STEMI and NSTEMIs is about 16%. from 2015 to 2018, Houston Methodist West was right around 15.8% for their studies in NSTEMI, so just a smidge below the national average. The patients that we actually went out and saw, we only had, I think, two patients out of those 30 to 35 patients that were actually readmitted within 30 days. And one of those patients was what I would kind of consider an expected readmission. I mean, she had a lot of comorbidities and really wasn't taking care of herself at home the way that she should, regardless of... You know, you can only intervene so much and you can't make somebody do things.

The same numbers were have looked at for the amount of patients that were referred to us that didn't participate in the program, and we had about a 4% readmission rate for participating patients and about a 12% readmission rate for non-participating patients. So the patients that didn't participate were three

times more likely to have a readmission event within that 30 day window for a variety of reasons.

So once we looked at the whole year at the end of 2019 and Methodist ran the numbers, they actually had a reduction from the three previous years' 15.8% readmission rate, to an 8.6% readmission rate for 2019. And the only thing that they did differently that year was they started to work with us on doing the readmission follow-up for their STEMI and NSTEMI patients. The STEMI and NSTEMI service line was the only service line that met the [inaudible 00:12:17] percentage that they were given. Now, has thrown us a little bit of a curve ball this year and they dropped that percentage down to 6.8%. So now to be successful, we need to drop it even further, but I'm pretty confident that that we'll be able to do that if we continue to proceed the way that we have.

Ed Comeau: Readmission rates is really important to our hospital these days too, isn't it? Because, I mean, obviously you want to make people healthy and not have them come back, but also, it has a financial impact on them, doesn't it?

Joe Casciotti: Correct. Yeah. From what I looked at, the financial impact for having one patient be readmitted within 30 days for the STEMI and NSTEMIs which we were talking about would be a financial impact of anywhere from five to $10,000 for the hospital.

Ed Comeau: So it's really important from both the health perspective, but also a financial perspective to try to reduce it. And the fact that you had a small population sample, you can still extrapolate from that successfully and prove that what you're doing is working. Can you not?

Joe Casciotti: I would say so. And with COVID, we've had to shift gears a little bit. Because what we started to see in March of this year was we started to get no referrals. And I actually called the hospital and said, "Hey, are you guys not referring patients?" and they said, "No, we're not getting any." So, I mean, that's a whole other discussion there as far as that, but I mean, the STEMIs and the NSTEMIs just kind of disappeared, and this was a trend that was happening across the US. And again, not that they disappeared, but they weren't coming to the hospital because they were afraid of getting COVID.

At the same time, we started to see our DLS and our out of hospital cardiac arrest numbers start to go up as well.

Ed Comeau: Which, yes, I mean, we've seen that, as you mentioned, across the nation that for just that very reason, they're not going into the hospitals. So what was kind of the driving force of this in the first place? How did the genesis of this all come about? Was it something that the fire department was driving to the hospital was driving, saying, "We want to cut down on readmission rates. How can we go do that?" How did that all start up?

Joe Casciotti: This was discussed and kind of in the works prior to me being even brought on board, that they had come up with this idea, but one of the biggest challenges with the community paramedic or mobile integrated health program is funding. Because at the moment, any care that I provide to a patient, if that patient isn't transported, then we are unable to bill for that care. So we had to get creative and start looking for other sources, and are still trying to look for other sources of funding to keep the program going.

And the thought was that if we could prove the worth financially, and again, in addition to the general health of the community, but if we could prove the worth financially to a hospital by reducing their readmission penalties, that there would open a door to some conversation there as far as getting some financial support to continue the program and to grow the program. Because if we can make that impact on that one service line, then it would be beneficial not just for the hospital system, but just for the community in general to open that up to other diagnoses as well.

Ed Comeau: So have you been successful in finding those other funding sources to continue what you're doing?

Joe Casciotti: Yeah, unfortunately right now, we've hit an impasse with a lot of that. We've applied for some grant funding. The challenge that we run into with grant funding is we are a county government agency and we're not a nonprofit organization. So a lot of those have that stipulation there that you have to be a nonprofit in order to receive grant funding.

The hospital financial side gets a little bit tricky because then you run into the legalities of, "Well, hospital system X is paying you to go see these patients, so are you going to now take most of your patients to hospital X instead of hospital Y because you're getting a financial incentive to do so?" There's a lot of challenges in that way.

And honestly, the best way to do funding for a community program is to have the insurance companies get on board with you. If we can show our info to the insurance companies and say, look, this is how we're keeping people out of the hospital. Sending a community paramedic or a MIH person out to their house to care for them once a week or a couple of times a month, or however often it is, for %200 or $250 a visit is much less expensive than a two to $3,000 ambulance ride to the hospital, plus a $3,000 ER bill and the cost of the readmission and everything.

So I think that's really the next route we're going to try to travel. The problem that I've run into is finding the right people to talk to. You got to get to the right person. We have all the data, we have the proof that it works, and it's just bridging those gaps.

And I think if there's a silver lining in the whole COVID pandemic, it would be that it has pushed us to move our program forward by about a year. So in addition to seeing the readmission reduction, we now actually have a community paramedic or an MIH truck on from 8:00 AM to 8:00 PM every day of the week. And we are working with our EMS crews on identifying patients, not just the STEMI and NSTEMI patients now, but our frequent follow-up patients, our COVID patients who are potentially not hospital sick, but still need some follow-up at home with trying to keep them home and medically managing them at home with some routine follow-up and phone calls and things like that.

So we've really taken our community model out and tried to engage the community and say, "Hey, if you're afraid to go to your doctor or if you're afraid to go to the hospital, but you need medical care, here's a number that you can call, and we will come out or we will do a video visitor or we will call you and we will help you, and we'll try to find you the best option for you. Because it might not be go to the ER. It might be go to urgent care or do a video visit, or have our crew come out and evaluate you and let us help you determine the best route to go."

Ed Comeau: And community paramedicine is somethings that's taking off across the country. Have you been talking to your peers in other departments about what they're doing or have they been calling you to learn more about what you're doing?

Joe Casciotti: We've definitely talked. In the Houston area, we actually have a subcommittee of our... STRAC is the Southeast Texas Regional Advisory Council. On there, we have our regional EMS committee. Our community paramedic programs have actually become a subcommittee under the EMS committee. So there are several other departments in the Houston area that are doing similar things to us. Not many. I think we're the only one at this point that has actually partnered with a hospital system to get the patients directly from the hospital system. There are some other programs in varying stages.

But yeah, I've had quite a few departments locally, as well as departments from other parts of the country that have contacted me from different conferences I've been at or spoken at, and asked how we set it up or what did we do. And really, I think the challenge with a community paramedic program is that it's very much driven on your community needs assessment and the community risk assessment, because what we're doing in my community here doesn't necessarily work even for the neighboring department because they have a different demographic. So you really need to look at what is it that you're trying to affect with your program and develop it for that purpose.

Ed Comeau: How are the firefighters and how's your fire administration reacting to this whole concept of community paramedicine? Because I know the firefighter is so attuned to reacting, getting out there, fixing the problem, and then it's the

hospital after that, the patient is for them to take care of. How is this change in a mindset going over with the firefighters?

Joe Casciotti: It's a slow process. It takes a little bit of getting used to. Because you're right, our mindset on fire and EMS is what do we need to do to not fix the problem now, but take care of the problem for the next 30 to 45 minutes until we can get them to the hospital and get them to definitive care, whereas our community paramedic program, you're looking more longitudinal, you're looking what are we doing today that's going to keep this person out of the hospital for the next week, the next month, the next year?

We've really engaged our crews. And I would say probably in the last six months, we've started to get a lot of referrals from the EMS crews. So we have a program that we use called [inaudible 00:21:12] and we use that as basically our charting software and our patient management software for the community paramedic program, and ESO is our main PCR that we use. In ESO, there's a MIH referral form that the crew can fill out. And all they have to do is click a button, MIH referral yes, and it auto-generates a referral that comes over to the [inaudible 00:21:34] program and alerts us that a crew has given us a referral. And then we can log in there, we can look at their narrative, we can look at why they referred the patient, and then we can go and make contact from there.

So it's really started to take off a lot more. Even now, like we've gotten crews that will, while they're on scene, they'll actually call the truck out and have us come out there and engage the patient right away. Like I had a patient the other day who had a vagal episode, and by the time EMS got there, she was conscious and didn't want to go to the hospital and had no complaints, but she had some blood pressure issues and some heart issues, and they didn't really feel comfortable leaving her at the house without any kind of follow-up care. You know, this is another way that you can bridge that patient that doesn't want to go to the ER, but you really think that they need some kind of follow up because you just don't feel right about leaving them at home, this is another way that you can assist with that.

So they called us out and the patient was agreeable to, "Hey, I'm not going to take you to the hospital, but let me come out tomorrow and follow up with you and let's work on getting you an appointment quicker." So she was supposed to have a follow-up appointment with her cardiologist I think two or three weeks from the day of that incident, I was able to help them get an appointment two days later. And then we did follow-up every day with her until that appointment, figured out what are some issues with medications, that she wasn't taking her medications appropriately, which also contributed to the issue. And then we were able to successfully keep her out of the hospital, get her the care she needed and provide her some education. And ultimately, the patient was happy and the crew felt more comfortable with having a refusal and her not going to the hospital by having that follow-up.

Ed Comeau: Well, we've been talking with Battalion Chief Joe Casciotti from the Harris County Emergency Service District 48 in Texas. And Joe, I really appreciate you taking the time to talk with us today about your community paramedicine program down there in Texas.

Joe Casciotti: Thank you, Ed. It's my pleasure.

Ed Comeau: And if you aren't already subscribing to CRR Radio, you can do it through your favorite podcast app, whether it's Apple Podcasts, Stitcher, Overcast, or any other app. Just search for CRR Radio, hit the subscribe button, and you'll get CRR Radio automatically downloaded whenever we come out with a new episode.

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Speaker 1: This is CRR Radio.