



Using Data to Address Frequent EMS Users CRR Radio www.StartegicFire.org/crrradio#cardenas

- Narrator:** 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 with Dana Cardenas from Tempe Fire Medical Rescue in Arizona. And Dana, could you take a moment and tell us a little bit about yourself, please?
- Dana Cardenas:** Well, good morning. Thank you so much for having me on today. My name is Dana Cardenas. I am a registered nurse and I work for Tempe Fire Medical Rescue here in sunny Tempe, Arizona. Been with the department for about seven years and I've been a nurse for 21 now.
- Ed Comeau:** I learned about what Dana was doing through a conversation with a colleague about some of the really creative things they're doing in Tempe when it comes to CRR and trying to make their community better, safer. Could you tell us a little bit more about what you're doing?
- Dana Cardenas:** Sure. I am the EMS community coordinator for the department in our EMS services division. I help to run the community medicine program or what we call patient advocate services here in the city of Tempe. And our patient advocate service program was brought together for a collaboration of reasons. It was started by our EMS captain and EMS deputy chief back in 2013 to kind of address some patients that we had that were frequent utilizers and that had non-emergent calls, things that weren't acute, heart attacks or respiratory issues or strokes, things of that nature.
- Ed Comeau:** So having frequent users of 911 is not an unusual situation in many communities across the country. What kind of approach were you taking to try to address that and minimize that kind of impact on your department?
- Dana Cardenas:** So we're really taking with our patient advocates service program a more holistic and fully integrated approach. It's kind of a collaboration of what everyone would consider either mobile integrated health services, a combination of community paramedicine, community health workers and crisis intervention teams. It's kind of a collaboration of all of those is how we have kind of put together the program that we currently have. It's a fully integrated program. It has key components that are really more of a collaboration with all of our health providers, hospitals, health care plans. And it's very goal directed. It really helps to have a patient centered holistic approach when we're looking at the overall patient.
- Ed Comeau:** When we were talking earlier, when you were telling me about how you're kind of doing a deep dive on analyzing your calls to try to identify the people that were the frequent users of 911. Can you talk a little bit about that?
- Dana Cardenas:** Through the history from the very inception of our program, we've done some things that we've been able to kind of implement to help. In 2013, we launched. 2015, we created a community medicine platform within our EPCR, which we

use Image Trend Elite. In 2015, we collaborated with some local hospitals and we established a really strong relationship with our VA, our Phoenix VA. In 2019, as what is most important is we were able to take the entire program and start looking at some preventative things. We created a predictability model for our program and it really kind of helped to take a look at the overall EMS calls. We have put together that with what is a patient centered approach. So we take a look at all of their comorbidities and things that would inhabit them from probably being successful. In all of that, we make sure that we document all of that and everything is really data driven. That's where that predictability model was formed and put together.

Ed Comeau: That's what I'd like to really talk a little bit more is about that model. How did you go about doing that? Did you have to really bring in somebody to build that for you? Were you able to do it within your existing infrastructure? Just really kind of the nuts and bolts, how'd you go about doing that?

Dana Cardenas: Well, we were fortunate enough that we have a really great city. Here in the city of Tempe, we do a lot of interdepartmental collaborations. One of the things that we were fortunate enough to have was an internship program through ASU. And through that partnership, our department was fortunate enough to get a data analytics person. That student was with us for a semester. And that's really kind of where the synergy, if you will, with the program and his ideas and our ideas with the data kind of came together. We started looking at those high volume patients and started identifying that they have multiple issues. Some behavioral health, as well as a lot of medical issues. When we put that together, along with looking at how many times they've actually called the 911 system, we were able to put that analytics model together and then daily we're able to put together a top five patients that we might reach out to as prevention to see if there's anything that we can do to help to reduce those calls.

Ed Comeau: In other words, you're in or waiting for the patient to call you're looking in advance. Saying, "Okay. This patient has a high potential for calling us and we want to address it before he does." Is that a fair way of saying it?

Dana Cardenas: Absolutely. Within our electronic health record, we really were able to make it easier for our crews to refer to us. And primarily that was how we got our referrals at the very beginning of this program, is that our crews saw the need for some patients that were out there that may not have needed to go to the hospital, but kept calling 911. It could be because they had behavioral health issues. It could be that they were elders. We have a really high elderly population and it's growing and growing every day. So some of them need a transitional care placement or some more support services. And our firefighters identified that and would reach out to us. Well, since then, we've really been able to get out into the community and establish great relationships with our community, our nonprofit organizations, our faith-based organizations and everybody in the city of Tempe.

Since then, and with those collaborations, we've been getting referrals back from the community as well. But we wanted to make sure that we were getting the patients that were the most medically vulnerable. And that was when we decided that we were going to look at the overall patient and start trying to do some more preventative things. And that is where the data that we've been able to get from Image Trend and that daily quantifying of those patients, that's where we were able to get that idea of being able to take a more proactive approach.

Ed Comeau: Let's talk about one of your typical patients, Mr. And Mrs. Smith, as Chief Brunacini would have said. What do you do? The list comes up in the morning. What kind of typical action might you take to help them?

Dana Cardenas: We always take, and most of our referrals that come in, whether it's from our crews or police department, or even from the community, we try and get back to within 48 hours. If they've been transported to the hospital, we make a phone call over to the hospital. Our case management departments and all of the hospitals in the area are pretty familiar with our program. So we make sure to collaborate with them and putting in a safe discharge case plan and collaborating with their primary care so that when they do get home, they have what they need.

One of the big things is that we identify social determinant of health. So any type of basic need that the patient has, we also address. And when you're looking at just medical issues, you can always address those medical issues. But if you don't give the basic building blocks that somebody needs and I'm talking some basic things, transportation, housing, food, accessibility to their medical services or helping them navigate their healthcare plans, it's really difficult for patients to become successful in their plan of care when they don't have the basic things that they need to do that.

Ed Comeau: So it could be the sort of thing where, because they don't have transportation, they're not getting the healthcare they need. And it kinds of creates a cascading effect, is that what you're saying?

Dana Cardenas: Absolutely. So we make sure to ask those questions. Another thing is health literacy. So we make sure that those patients visually are able to read their discharge instructions. That they can see their pill bottles, so they know when to take them. That they have accessibility to getting those prescriptions, if not having them delivered to them. Transportation through either their healthcare plans or some of the programs that we have locally here, so making sure that they're getting there effectively and on time. But even through the pandemic, we had issues with accessibility to healthcare. And those are one of the big things that we were able to help out with is services through tele-med.

Ed Comeau: What kind of impact is it having? Do you have any data to show how this program is impacting your runs or the health of the community?

Dana Cardenas: Absolutely. When we looked at this, we have a program in the city of Tempe called FUSE. It's Frequent Utilizers of the System Engagement. And we look at the overall costs, approaches, resources to help provide stability for this high risk population. Some of the things that we were able to do is pull just in looking at what it costs just to run one call per dispatch. Conservatively, we looked at fuel personnel and fleet and maintenance costs for a two medic engine to run on a non-emergent call. And it's about \$136. Again, conservatively, per dispatch.

If you take that and you also add in say, now they've got transport into a hospital. Just a basic hospital, walk through the door, no diagnostics, you're looking at about \$1,600. And again, that's a conservative number with not a lot of diagnostic testing done. You add that together and that's on average about 1,700 just for one. In 2017, we had four patients in the city of Tempe that were really, really high volume callers. And when I say that, one of our patients had 129 calls within a 90 day period. Of course, they weren't just medical calls, but they also had a behavioral health care element to it as well. So if you take that and you think about over a year, that one patient can cost an average of 225,000 per year. That's one patient.

Ed Comeau: Dana, those are some extraordinarily impressive numbers that you're reporting there. And I guess one of the things that's going through my mind, how unique is your program? Before you started it, had you heard of other departments doing it? Or as a result of what you're doing, are other departments embracing this same type of approach too to address the frequent utilizers of your program?

Dana Cardenas: Here in the state of Arizona, all of our local fire departments have had some form of community medicine program. It has just been because of lack of grant funding. Usually these pilot programs spark from grant funding. And a lot of our local fire departments have had very, very good programs as well. We've been fortunate enough to have such support from our city that we've been able to continue with additional grant funding to maintain the program. I think one of the big things that collectively, as we all come together and discuss this, because we do, is that sustainability for these programs is really kind of been the issue. So as a department in the last couple of years, we've looked at one of the main goals is sustainability. How to maintain and continue these programs. One of the things that we're really proud of is that we became a Medicaid provider. So our community medicine program is now able to get reimbursed for some of these calls and those go right back to the program to help for costs to help to sustain it.

Ed Comeau: Not being that familiar with the world of EMS and fire departments, is it that unusual that you are now a Medicaid provider? Which obviously provides another source of revenue to you. Is that unusual?

Dana Cardenas: All of our fire departments that they do have a transport company are Medicaid providers. But the uniqueness of being able to have treat and refer now or our

community medicine programs being reimbursed is something very new. Something that's very helpful for sustainability of our programs. All of our departments around the valley do get together and we talk about finding some standardization for these programs. One of the big things that we've done is partnered with our local universities. UofA, currently right now, we're doing a program with them where we're trying to find some things that are key approaches to even being able to put together a program so that they can actually offer some curriculum for standardization.

Ed Comeau: If somebody's listening to this podcast and they want to do something similar, what were some of the lessons learned both good and bad that you got in setting up this program?

Dana Cardenas: I think one is really making sure that you have strong community involvement. I think that we were fortunate enough in the city of Tempe to have our city and council really support us. That was one of the key things. But really making sure to have that case coordination and collaboration with all of your community partners, that really is the key. Once they know who you are and what you're able to do, everybody benefits from it. The hospital systems, the municipalities, as well as the healthcare plans. And then the end result, the quality of care that the patients get, it's totally completely different now because we're able to take a more proactive approach and to be able to help them before an emergency arises or their medical problem actually gets to a point of becoming emergent. So the quality of care of our patients is really the overall benefit, I believe.

Ed Comeau: Were there any pitfalls that you encountered along the way that you want to give people a heads up to, to avoid?

Dana Cardenas: The big thing is having the ability to be able to record or have data. I think at the beginning of this, and as important as it was, just like any other program, we started out with post-its and paper. Really kind of trying to reach out to different people in the community to establish those relationships. But it was really difficult for us to have any evidence of what we were doing. So taking a more evidence-based approach, being able to be data driven, making sure that we have everybody that is in our local area that is able to see those costs or savings. Those are all of the key elements if anyone's listening across the country and is wanting to get started. Those are the things that really are highlighted. Every time that you're able to save some money it helps to be able to bring it back to a program like this. But the overall team approach could not be more important.

And the fact that we've been able to have a team within our department that was stable, it wasn't a transit type of personnel, we really have a team approach here. And it's the same team that sees those patients day, after day, after day. I know that some of the fire departments have utilized some of their light duty personnel. And again, that's kind of how we mitigate costs a lot of times. But if you don't have a stable team that is goal directed and is able to be there day

after day, I think that's one of the key things that we found is when you have revolving employees coming through, there's not a standard that stays or the consistency of the program kind of changes as people flow through.

Ed Comeau: Well, we've been talking with Dana Cardenas, from the Tempe Fire Medical Rescue in Arizona, about how they're applying predictive analytics to reduce the use of frequent users on their EMS system. And really some great information. I know there's a lot more than we could talk about than we have in this podcast. So I really appreciate taking the time to talk with us today, Dana.

Dana Cardenas: Well, we appreciate you letting us come on and talk about it. Yes, I could talk a lot more about this. But anyone wanting any information can always reach out to me.

Ed Comeau: And I'll include your contact information in the show notes below. If you're not already subscribing to CRR Radio, well, you can do it through your favorite podcast app. Whether it's Apple Podcast, 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. CRR Radio is a production of Vision 2020. It's edited by Rich Palmer and produced by me, Ed Comeau. Thanks for listening and we'll see you next time.

Narrator: This is CRR Radio.