

NCTRC Webinar - Leveraging Tel...plantation in Rural West Texas

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Telehealth, Renal transplantation, Mobile health, Rural access, Kidney disease, Patient education, Video modules, Telemedicine, EMS providers, Post-transplant care, Readmission rates, Health literacy, West Texas, Medical technology, Clinical outcomes

SPEAKERS

Lynsey Biondi, Aria Javidan, Caroline Bowers



Aria Javidan 00:18

Hello, my name is Aria, and I'm the project manager for the National Consortium of Telehealth Resource Centers. Welcome to today's webinar: Leveraging Telehealth and Mobile Integrated Health for Access to Renal Transplantation in Rural West Texas. Today's webinar is hosted by the Texla Telehealth Resource Center, and these webinars are designed to provide timely information and demonstrations to support and guide the development of your telehealth programs. Just to provide a little bit of background on the consortium located throughout the country, there are 12 regional telehealth resource centers and two national. One focused on telehealth policy, and the other on telehealth technology. Each serve as focal points for advancing the effective use of telehealth and supporting access to telehealth services in rural and underserved communities, we did want to share that the consortium is collecting success stories from organizations, patients, and providers who have benefited from telehealth with support from a telehealth resource center. Share how your TRC helped make telehealth work for you for a chance to be featured along with your organization. Our monthly consortium newsletter. The link and QR code there will take you to the survey. A few tips before we get started today: your audio has been muted. Please use the Q and A function of the Zoom platform to ask questions. That is located at the bottom of your screen. Questions will be answered at the end of the presentation. Please only use the chat feature for communicating issues with technology or communication access issues, please refrain using the chat to ask questions or make comments. Please also note that closed Captioning is available, and that is located at the bottom of your screen. Today's webinar is also being recorded, and you will be able to access today's and past webinars on the NCTRC YouTube channel and the NCTRC website at telehealthresourcecenter.org. With that, I will pass it over to Caroline Bowers, program manager for the TexLa Telehealth Resource Center.

 Caroline Bowers 02:10

Hi, everyone, and thank you for joining us today. I just want to introduce and thank our speaker today, Dr. Lindsay Biondi. She is the transplant and surgical director of Covenant Health kidney transplant, and I'll pass it over to you, Dr. Biani.

 Lynsey Biondi 02:24

Thank you so much. I'm glad to be here. Are you able to see my screen right now?

 Aria Javidan 02:27

Not yet. I think you might have to reshare.

 Lynsey Biondi 02:30

Let's see. Are we okay now?

 Aria Javidan 02:39

Yep, looks great.



Lynsey Biondi 02:41

Okay, awesome. Well, thank you so much for having me. I am Lynsey Biondi. I am a transplant surgeon here in Lubbock, Texas, and I'm just excited to talk to you guys about our the way we've used telehealth and mobile integrated health for access to renal transplant here in a rural area of West Texas. So again, I'm speaking on behalf of both Texas Tech Health Science Center and Covenant Medical Center here in Lubbock. So we'll talk a little bit about the benefits of kidney transplant, just to get a background of why we're doing all this. We'll discuss some of the barriers to transplant here in rural West Texas. We'll describe what we've done with telehealth and mobile integrated health, and then talk about a few ways to expand this to other programs. So, just to get started, so you know why we're doing kidney transplant, we'll just talk about when we do it and why we do it. So, kidney disease is one of the most costly problems in our country. Renal failure shortens life expectancy significantly. So even a diabetic that's in their 20s or 30s that approaches dialysis and starts dialysis has an average life expectancy of only five years, and one in five patients who start dialysis in this country will die within the first year of starting dialysis. So it's definitely not just an altered lifestyle, but it's a problem of longevity. Dialysis is required to sustain life, but it profoundly alters lifestyle. So patients are sitting on dialysis for hours a day. There's many side effects, and it's mental and emotional toll on anyone who's doing it. Most people need to go home and take a nap. It's difficult to work. It's hard to do the family activities that patients want to do, but it also costs a lot of health care dollars, Medicare dollars through the End Stage Renal Disease Network and Act. Much of this is covered by Medicare, and many patients end up going on disability and having to stop work. So not only are they not making an income, they're having high healthcare dollars, but they're having trouble making ends meet while they're sitting on dialysis, not being able to work. So all in all, it's costly both from a money perspective, a health perspective, and emotional perspective. So why do we do kidney transplant? Transplant is the best option for renal failure treatment. It improves lifestyle. Their patients are off dialysis. They have improved health. Their dietary options are opened up significantly. Most patients experience a lot more energy and return to work or activities they like. It increases life expectancy, which I'll talk about in a little bit, and actually, it's a net cost saving. So dialysis costs anywhere from 90 to \$110,000 a year on average, and a transplant costs much less after the first year. So it's about 20 to \$30,000 to maintain medications for transplants. So it actually significantly saves money for every patient that gets a transplant, and saves tax money because we're decreasing Medicare dollars. This is a patient that I have permission to post, but he is a gentleman who was transplanted in his mid 60s. He had been a big kayaker pre-transplant and hadn't kayaked in about five years while he was on dialysis. Within six months of transplanting him, he took a three-day overnight kayak trip down the Schuylkill River up in the Northeast and had his medicines in a dry bag and did it as a fundraiser for transplant. But you can see you can do a lot of things now. If you couldn't kayak first, I can't promise that you'll be able to kayak later. But you can get back to whatever you like to do after you get transplanted. Pharmacy financial coordinator, medical specialist, as well as a surgeon and nurse specialist before they even get listed, and then they follow up that care lifelong. They take lifelong Immunosuppression, which can come with complications of infections. They can have rejection complications, but compliance is the biggest factor in whether they'll do well long term or not. Missing meds put you at risk for rejection, and a lot of times meds aren't missed because patients don't take care of themselves, but because they have limited resources and they they become expensive.



Lynsey Biondi 07:14

So so maintaining good access to care and good access to the transplant center long term is very crucial, and it's a limited resource. So patients need to be healthy enough to benefit, but they also need to be savvy enough to or educated enough to be able to take care of this resource long term, which leads us to some of the reasons we looked into this telemedicine and and MIH program. So this is a a very classic slide that just shows that kidney transplant improves life expectancy. So the horizontal line is the relative risk of death compared with staying on dialysis, and the orange line here just shows that you're increased you do increase risk when you have the surgery for transplant, but after 100 to 200 days, depending on the kidney you get, your risk of dying goes down and stays down for years afterwards. So, it's very beneficial to be transplanted. Actually, 93% of patients will be alive with a working kidney at one year, and that's that's all comers. So, whether they die in a car wreck or a plane crash, those are all filtered out. So, very good improvement in life expectancy. And this is just another slide that shows that breakdown of life expectancy by age group. On your left is our patients that are transplanted within two years of starting dialysis versus four years of starting dialysis on the right, broken by age group. The white lines are the life expectancy with a living donor transplant, and black is dialysis, and then other types of kidneys in the gray. So you can see for a 20-year-old in that category on the left that's transplanted within two years. They're seeing estimated life expectancy of 40 plus years, and and that still stands that they increase their life expectancy. But the longer patients wait, the harder it is on their body, and you can see after four years it decreases. So, access to transplantation early and soon after diagnosis is very important for for the longevity benefits. So that that moves me to. Oh, sorry, my mouse is going backwards there. I apologize. So West Texas is a special place if you're not from West Texas. We are very remote from most big cities. Lubbock is a is a nice sized city, but we are 250 300 miles from most other large cities to DFW. So, want to talk about the barriers to doing transplantation here in West Texas. My mouse is not cooperating today. So we have in West Texas a very high incidence and prevalence of end-stage renal disease. This is data from the USRDS, which gives us the incidence of dial of end-stage renal disease by county, and you can see as the from the scale at the bottom, the darker the the shading, the more the the higher the incidence of renal failure. Here in West Texas, you see we're all in the dark blue, so we have that one of the highest incidences in the country, and it's a large swath of of our state that that has this high likelihood for end stage renal disease. I am sorry, I I am having some kind of mouse problem. So West Texas also has a very high mortality from end-stage renal disease. It again, when you look at the shading, is the darkest area, and and the circle is just kind of a circle around Lubbock and the the surrounding areas of a couple 100 miles, and you can see that more than most parts of the country, we have very very high death rates from end stage renal disease, and I think that comes from a lot of problems. West Texas is has a lot of population risks for for renal failure. So obesity is very prevalent here. There is a lot of diabetes as well as hypertension that that is familial based as well as dietary and obesity related. We actually have a very high incidence of Frailty in our population. So, based on Frailty testing that's objective, we have more frail patients here than than in some other places. We also have a lot of problems with low socioeconomic status, so patients who are earning less, language barriers, lower education levels, so health literacy is a big issue, and then travel distance. We we travel a long way in West Texas to go anywhere.



Lynsey Biondi 12:09

So while we are in Lubbock and we have a number of patients for from Lubbock, many of our patients come from 234, hours away to get to our transplant center, and we are by far the closest transplant center to those patients, so all of those patients put all those factors put patients at risk for issues. This is just a map showing Frailty. The darker the color, the more prevalent Frailty is in those counties. You can see California has a high incidence of Frailty, but here in West Texas, up in the Panhandle, you can see a pretty high incidence as well, and Frailty is associated with a lot of poor outcomes, mortality, low quality of life, longer stays, intolerance of Immunosuppression. So that's a risk factor. Another risk factor we have in our area is limited access to Nephrology care. So the lighter the color, here is the the prevalence of seeing a nephrologist prior to your diagnosis of renal failure, and you can see that compared to the rest of the country, most patients in our area never meet a nephrologist or have any kind of care for renal failure until they've already started on dialysis, meaning they crash into the ER, not even knowing they have renal failure because they haven't had access to doctors. So again, lack of access and travel time. So one of the biggest problems was that there was no transplant program, and so access was extremely limited in West Texas until we opened a program in 2024. So at that time, patients in the West Texas, Eastern New Mexico area were having to travel to DFW or San Antonio, looking at 5678, plus hour drives, depending on where they live, with not a lot of stops or anything on the way. So they would have to travel to get a transplant, but that's not just a one-time trip. the The travel for transplantation is frequent. They need visits for an evaluation, which usually takes two or three visits. They need annual appointments while they're on the waiting list to make sure they stay healthy. Right after the transplant, these patients were having to stay in a big city for two to three months while they recovered, and then when they left, they would still have to return for follow up, and there wasn't anyone to care for them locally in the West Texas region because there wasn't a transplant department. So, all of that added up to a lot of problems. And as we started our transplant program, we really realized that health literacy and this secondary issues were very problematic for our patients. So patients need to be involved in their transplantation, but because of low health literacy, not no ability to read or reading at very low grade levels, we were having a lot of patients not even understand some of the benefits and then what they needed to do to care for themselves. They have to take their Vitals every day, take medications, monitor their output and input every day, and know when to call. So all of that was becoming very difficult for patients to understand. So it's taken a lot of work to educate patients. Transplant takes a lot of social support, so you need someone who can take time off work, and then financial barriers are very big here. We have low-income patients who are sometimes on disability, and their insurance premiums are a large part of their income, even if they're on Medicare. So paying for medicine and then having to pay for gas to get three, four hours away, even if they're coming to Lubbock, while it's better than driving six hours, can still be a big hindrance to transplant. And a note for one a lot of our patients is that without secondary insurance, Medicare patients pay a 20% deductible on everything. So every visit they come to the hospital with, they're paying 20% So that adds up very quickly when you're a low income patient, especially, and we and we found that these financial barriers were significant. We've worked on a lot of financial abilities to help patients from things like the American Kidney Foundation to help with payments and try to get all of the insurance a patient can get, but still the costs are very expensive for travel, and so that's where the idea for telemedicine really came in as well.



Lynsey Biondi 16:28

And then I would also say that in West Texas, prior to a program being started, we had very high death rates on the waiting list because patients were not—they were waiting longer for transplantation, and their access was limited. You could see we had one of the highest death rate on the waiting list for the country. Since opening, we have had more transplants than expected. You can see our national data from what's called the SRTR. Our expected transplants are here in teal, and then in navy blue, you can see our actually observed number of transplants. So we're transplanting at a high high rate, and we're having so far 100% success success rate at one year. So what did we do to overcome all of these barriers? Well, I'll talk about three things. One is video education sessions and education modules, telemedicine, and then our mobile integrated health project. So the first thing we did to help with our education issues was create a series of video education modules that were particularly aimed at distant patients. So one of the big barriers to transplant is that patients weren't sure that they even wanted it, or thought the drive might not be worth it. So a lot of them, when we surveyed patients, we found most didn't realize that there was a life expectancy benefit to being transplanted. So they thought staying on dialysis was just the same, and they thought, well, if I have to drive that far, it will make my life worse. So we offer an initial information session to all of our patients, and we initially did those all one-on-one nurse education. So nurses are trained to do it. It's about an hour, and we discovered that one that takes a lot of staff time, but also patients don't want to all drive in. So we created a video module in both English and Spanish, so that we can get the patients on a Zoom or a usually we use Epic actually to play the video, and we have staff interact with the patient before and after. So the video saves our staff time, but it's also allowing people to find out about transplant without any cost at all, so they're not charged for a visit. They're not having to drive in for transplant for a transplant visit. They're just hopping on the computer or on their phone. Most of them do it on their phone, and that education session helps the patient understand if a transplant is a good option for them. And what we find is two things. We often have 90-year-old patients on dialysis who think they want a transplant, and they hear it and realize it's not really probably a great option for them. So it saves them the money of driving when it was never going to be a great option. But second, it it helps some of these patients who thought that that driving for transplant was going to be a waste of their money because it actually can be an option for them. So they say, "Oh, I could live longer. I could feel better. I could eat the foods I want to eat. It is worth me going for an evaluation. So that has really helped patients come in for their appointments and drop our no-show rates as well. But we we've really seen more patients come in with that, and it was just by creating a video. And the Spanish session in particular has been very helpful. We have that Spanish session is by a native Spanish speaker, so we also have videos for ongoing education. So to reinforce things we're teaching in the office, to talk about transplant complications, to talk about some of the risks of the surgery, about when to call and who to call. We're currently working on videos on how to fill their pill boxes. These aren't because we're going to not teach them in person, but it's to reinforce. Or if a new family member is coming along to help, they can watch the video at their convenience. We've gotten a lot of satisfaction from patients, and they're happy with the the opportunity to do that. But they also seem to have fewer problems taking care of some of the things that we're teaching with these videos.



Lynsey Biondi 20:31

Some of the things that we've done that I think could be spread to primary care settings or non-transplant settings are just post simple post operative teaching, drain care, wound care, how to measure your blood pressure correctly. You'd be surprised how many patients of ours have not been able to take their blood pressure correctly, and so some simple teaching methods are very helpful. We're working on blood sugar management. Not not that we're going to give them medication directions, but how do you check your blood sugar? What do you write it down? When do you check it? What does the drop look like? When you have a sliding scale on a piece of paper, how do you how do you convert that with the blood sugar you've taken to know what you're going to give yourself? So things that seem simple but are actually very important. We're actually also working on some exercise strategies to cope with the Frailty issues. So, when do we use telemedicine at at Covenant Transplant? So, we we use the videos in a lot of settings. We always make sure we have someone to talk to the patient before and after as necessary. But telemedicine has also been crucial for us. I would say that we always we only use it in stable patients. We initially need to see the patient at some point in person to do a full exam. So we're not going to do our full transplant evaluation via telemedicine because we do need a full exam. But if we've seen the patient and then we need follow-ups, it's been it's been very helpful. Wounds don't always work on on telemedicine, but follow up can can work. We use it a lot for teaching, as I talked about the video. We also use telemedicine for that, and we use telemedicine both in pre and post transplant phases. We have frequent visits after transplant, so if someone gets discharged from the hospital after receiving a kidney, they're in our office at least twice a week for the first month, then weekly for a month or two, and then monthly. So for patients that have to travel a long way, we are alternating telemedicine with in-person visits if travel is an issue for them. Some patients want to come in, and that's great. If they want to come in, that's great, and they can afford it, but a lot of our patients are traveling a long distance, and so doing the back and forth when they're at weekly appointments and having a telemedicine added in there is very helpful. We also use tele Nephrology, so we transplant Nephrology has a huge shortage in our country right now, so there are so many open jobs for that. If you're a student, you might consider that. But we can't always get coverage in Lubbock in person, and so telephology, where we have the Nephrologist doing some of their evaluations as telemedicine, has allowed us to extend our coverage and have a Nephrologist see patients at every time they're in the office. It works because I, as the surgeon, am here and can do the physical exam with my appointment, and then they do their discussion with the patient online via telemedicine. So, what do we do on pre-transplant telemedicine appointments? So, one, we do have that Nephrology appointment that is sometimes part of telemedicine. We do a pre-evaluation education, as I said, we do the videos, but we also do telemedicine appointments. We do our follow-up testing. So if a patient comes in for an evaluation, but our social worker needs to follow up on caregivers or needs to talk with them about some social issues and depression. They'll they've talked to them once in the office. Now they can call back. Same with our dietitian or our pharmacist. So we use it a lot for gathering new information as they're going through the testing process and following up so that they're not driving in every time. Once we've set a baseline, we also can use it for waitlist reevaluation to monitor the status on their on the waitlist, make sure they haven't gotten too sick, particularly for social work. They need to get a family member to come in, and so sometimes if those people are working, we're able to have them talk on telemedicine. We use it a lot for our finance and nurse education as well.



Lynsey Biondi 24:37

Post transplant, we use telemedicine in our routine monitoring. So again, I talked about those visits that they have frequently. A lot of times, we're looking at their Immunosuppression meds and their levels. We're reviewing medications and blood pressure levels or diabetic management before they get back in with an endocrinologist. We have a significant shortage of endocrinologists here in the area, and so we end up doing short-term management of their blood sugars while we wait endocrinology appointments. So all of that allows us to review their their logs that they keep. We can look at them. They can text them to us, and then we can talk to them via telemedicine. And then ongoing education. We have a lot of problems with new onset diabetes after transplant, so we can do some of that education via telemedicine without any problems. Our pharmacists can review medications as well, so all of that decreases the visits and allows the patients to spend less money. I think some of the tips and tricks that we have learned as we've gone forward using a lot of telemedicine is one you got to know your patient, so you need to have conversations about the fact that sometimes they've got to travel, and if we get on the phone and we're very worried about something, they're going to have to come in, and that's just part of transplant that they might have to come in and see us. But also, you can know that some patients are going to be much more forthcoming with what's going on with them than others, and those patients do better with telemedicine. On the flip side, you also know patients that are just going to refuse to come in because they don't want to drive or they're running out of money for the for gas. And so, putting a telemedicine appointment on that really shows them that you're working with them, and they appreciate that. You just have to empower yourself to switch to in person when it's necessary. The second thing that has been very helpful is to utilize photography. We use secure messaging systems to send pictures if we have concerns. If a patient has a concern, so they might develop a mouthful, or or have concern that they have thrush, they might want us to look at their wound or their incision, and we can have them send us pictures that we can see better than if we're just on the telemedicine platform. They can close up and and get a better lighting than we can sometimes on on just using the the Epic Link. So that's been very very helpful for us, and then we can upload those pictures into the chart, and you can follow things over time. And then I think the third thing is empower your staff. If you're a physician, my nurses know our patients, and they come kind of can get a lot of how they're doing. If if you listen to them, the nurse can say they just don't sound right, or they're saying stuff, but it doesn't add up, and that's not normal for them. So I really rely on my nurses when they give me those gut feelings about patients and say I think they need to come in. If they tell me that, I say have them come in, tell them that telemedicine is not going to work after all. So just being able to flex in that way and listen to your staff can be very very beneficial. So what else have we found? We found that it really does reduce barriers. So the travel costs are significant, especially with gas prices now here in West Texas. So Amarillo is the the closest bigger city to us, and we have a number of patients from there. Round trip for an appointment is two 240 miles of driving. When it's an early appointment, or they they need to come in early, then it ends up being an overnight stay. So reducing that is significant. It also allows them to work that day if they do a telemedicine appointment as opposed to driving for five or six hours. So they're they're getting less time off work. They also don't always have a copay with a telemedicine visit, so it's much cheaper, especially when you're looking at patients that have that 20% out of pocket after transplant.



Lynsey Biondi 28:33

That can make a big difference on whether they can afford their medicine. So so having telemedicine has been cost saving in a way that allows someone to keep a transplant working, and then honestly, in flu and COVID seasons, we're we're not exposing our immunosuppressed transplant patients to an office or a hospital full of sick people when when they're on telemedicine appointments. They're from the safety of their own home. If we know flu is up, they're not getting exposed, which for our immunosuppressed population is a big deal. So all of those things have been very beneficial to us. I'll go back and tell a story before I move on to our mobile integrated health. But we have a patient; he's about nine months out from transplant, and he lost his secondary insurance when January hit after he was transplanted, so he now pays 20% on everything. So anytime he has a procedure, an appointment, and he actually lives about two and a half hours away. So he said, "I don't know that I'm going to ever be able to come back. I just can't afford it. He had just retired right as he got transplanted from teaching, and he just couldn't afford any of the visits. So, us working with him on telemedicine has allowed him to continue to keep his allograft and only travel when necessary. And he's been able to pay for his meds, so that's been a big deal. Let me move on to mobile integrated health. We call it our MIH program for post-transplant recipients, we came up with this idea because of the long, complicated post-op care that's needed for transplantation, and to address a number of issues: the low health literacy, the long travel times, and the cost of readmission. So, most transplant programs, on a nat, the national average is a 30% 30 30.5% readmission rate in the first month after transplant, and that doesn't come out of the patient pocket that first month. It comes out of the hospital total payment for transplantation. So we're a brand new program. We we're going to be able to afford losing all that money when we're not getting paid yet from Medicare, so so we tried to find ways to reduce costs both for us and the patient, and we don't have a lot of regional hospitals for patients to go to, and none of them have transplantation as a field of expertise. So there's no transplant providers in any of the regional hospitals, so we set out to do this mobile integrated health program to reduce our 30-day readmission, to facilitate weekend and holiday discharges because that reduces the cost and the length of stay, and to facilitate after-hours care for our patients and to improve their outcomes while addressing some of the educational barriers. So, what is our mobile integrated health program? It is a team of EMS providers. They, while they work through Lubbock County EMS, when they're working from MIH, they're only working for MIH, and they're dedicated 24/7 on call shifts to the MIH service. So they're not on call for the fire department when they're on call for the the MIH program. These EMS providers, there's about six of them. They have been trained in our very specific protocols, and we did a significant amount of education on transplantation risks, benefits, how to care for them post transplant before we implemented, and we developed protocols on what they can do. We developed a system of routine and urgent visits so that they can go out just to check on patients, but they can also get called all of a sudden to go just like an EMS call would. And there's no cost to the patient or the program. This program was initially started for some cancer patients and funded through Covenant Health Partners, which is our accountable care organization, they used a grant to initially start, and they had already hired these EMS workers. So when we dovetailed onto the program, we didn't increase their workload so much that they had to hire new ones. So it actually didn't increase the cost of the program, but actually met more patient needs with the same program already in place, and then I think the biggest thing is we have ongoing verbal communication between the transplant staff and our EMS MIH providers.



Lynsey Biondi 32:52

So anytime they see a patient, they're calling either myself or the nurse and talking about what's going on, and they don't do anything without orders unless it's an urgent situation and they're calling me immediately. So what do they do? The MIH team does an initial visit right upon discharge after transplant, and they include a home safety inspection as well as review of patient instructions. We they actually sometimes meet the patient in the hospital before they're discharged, and they almost always get to the house the next day. But they're reviewing what our instructions are, what we've gone over with the EMS provider, and told them that we want the patient doing, and then they review it with the patient. So they're reinforcing teaching. They do this on weekends and holidays. They do urgent medical assessments as well. Anytime they see a patient, they're checking Vitals. They can draw labs if necessary. They can do a well-being or a safety check on the on our patients if we're concerned. They can re-educate about some of the simple things that that like blood pressure management or how to inject their glucose or their insulin, either one, and they can also tell us about things that the patient's concerned about but didn't tell us about. So one day the MIH provider called me and said, "Did you know that your patient so and so fell in the driveway earlier today? I said, "No, I didn't. Yeah, so we got all the details on that, and I was able to have him come into the office and check him out because he hadn't bothered to tell us that a month post transplant he'd fallen in the driveway and had some injuries while on blood thinners. So we were able to intervene in that because they sometimes will open up to the EMS provider or remember things when they're at their house. They can also do urgent medical interventions like IV fluids. They have some medications that they can do per protocol, including Lasix, Zofran, some things like that. So we have found that MIH really extends the quality of care beyond our clinic to the comfort of home, and they they aren't just taking care of the acute medical need; they're verifying the patient overall need, if they feel like there's food insecurity that we didn't find out about, or if they find out that there's something not safe in the home, or that the caregiver's not really there, they're telling us those things. They're doing the home safety inspection, and actually, they go above and beyond. We've had them replace lightbulbs for patients who were in the post-op period and couldn't reach their light fixtures. They check the smoke detectors because they obviously are EMS guys who work for the fire department. They're very, they're very attuned to that kind of thing. They actually found out one of our patients didn't have a fire extinguisher. They got him a fire extinguisher for the kitchen. They have helped with identifying and removing home trip hazards, so they're really creating a safer environment for our patients in general. Again, they communicate concerns, and all of our patients say that they have an enhanced feeling of safety that they felt taken care of because they knew the EMS guys were part of our team and and and could come out and help them. So here's just a review of our first 10 transplants using the MIH program at Covenant. So, nine of the 10 patients utilized MIH services, and the median time between discharge and the first visit was one day. Four out of 10 of those patients received a holiday or weekend discharge that they would not have been able to get otherwise because of MIH, and most of that's because we have to monitor labs very closely post transplant, and that allowed us to have a lab draw on the weekend or the holiday. They visited our patients in that post-op period between two and nine times within the first 30 days. The nine, the patient that needed nine visits was a little bit more frail than some of our other ones, and just needed a little bit more hand holding. So all of the nine patients that used the MIH received lab draws and wound checks by the EMS providers. Eight of them had those lab draws during the first weekend.



Lynsey Biondi 36:54

One of our patients required IV fluids in that first month, and one of them had to have a drain declotted on the weekend as well, so that was very helpful. We have documented five absolute Readmissions that were prevented in the first 10 patients. So five Readmissions. When you look at readmission costs, that's a big deal. So, so what were those? The first one was Hyperkalemia over a icy weekend, so we don't normally have ice and snow here in Lubbock, but we had a big ice storm. We had a patient whose labs came back fairly high, but safe to be at home, and we were able to do a recheck during that ice storm to make sure that he was stable, rather than having the patient come in to monitor. So he they rechecked potassium, we got it run. We were able to check Vitals, and he was able to take the medication that we had prescribed in case of Hyperkalemia based on that lab level. We had a patient develop acute swelling over a weekend and was concerned for rejection or fluid overload, and they were able to get checked out and get a dose of Lasix. We had a patient with Hyperglycemia who was having difficulty with their insulin injections, and that was able to be rectified by the EMS going out and showing them how to dose it and what to do, and recheck in their labs with a serum glucose as well. We had a patient with severe dehydration who was given fluid and was able to stay out of the hospital. That happens fairly frequently after transplant in patients who haven't been able to drink for years on dialysis, and they they don't keep up with their fluids, and then we had a patient who called us with severe hypertension. He said he was over 200, over 120, and the EMS was right in the neighborhood. So he stopped by, he recheck the blood pressure, and it turns out that that patient wasn't that Hypertensive, and he was taking his blood pressures wrong, so he got a re-education. But without this program, I would have told him to come straight to the ER. So we saved an ER visit. Now MIH can't prevent all your Readmissions. Some things you've just got to readmit a patient for. We did have two Readmissions in the first 10 patients within the 30 days of transplant. One was someone who developed severe gastritis and duodenitis, and then one was a patient who developed Rotavirus from a outside contact and required too much IV fluid to to be an outpatient. But that still kept our readmission rate down to 20% compared with a 35 30.5 national average. So we're very pleased with that. So overall, MIH has improved our outcomes as far as discharges being sooner than we would have been able to discharge, decreased readmission rate, and really a lot of saved money for the hospital as well as the patient. So a transplant readmission on average is 20,000. It can be upwards of 100,000 if they're very sick. So we're looking at a significant amount of money saved in those five Readmissions. The biggest thing is that communication is key. We you've got to talk to your your providers, the EMS guys that go out there. I say guys because all of ours are are men. You need to really be able to do ongoing education with them, so they know what your expectations are, and be responsive. If you don't have a physician that's willing to respond back, it's not going to work because they're not going to feel comfortable that they can communicate with you. And then document all of the encounters, and our EMS do that in our chart, so we can read it, so they have access to our same charting method, and then you have to understand the limitations that not everything can be approached. I'm not going to send them out for chest pain. I'm going to have the patient come in immediately. Things like that. So you you do have to to know the limitations of what you have. So all in all, telehealth and MIH has been great for our program. We have I have a few suggestions for when you consider doing something like this to benefit your patients. I think it's very applicable to to a lot of different services.



Lynsey Biondi 40:52

I think video education is extremely valuable, both for saving staff time, reinforcing content, and being able to repeat repeat it over and over again and use it after you get it made, so that might be where I'd even suggest starting. Telemedicine reduces cost and travel burden and can be safely applied. And I know most of you are doing tons of that. And then our mobile integrated health partnership was a bigger lift, but it has been so extremely valuable for our our high risk population, and I can see value in heart failure or in cancer patients and anyone who's requiring high level coordination of care and frequent visits. So, how did we start an MIH program? Well, it had initially started as a way to get cancer patients things like fluids and Zofran, and it was paid for by the accountable care organization. But even though it's paid for by that group, it's available to all patients. It's not insurance based, so they don't have to be in a certain insurance because it is reducing costs to the whole network. We have found that by dovetailing with a program that was already started. We didn't have an initial startup cost, and that was really important. I would look to your programs that you already have in the in your regions or your whatever other cancer center. You know, some some programs have the drop-off center for fluids and medications. Sometimes those can be utilized and see how you can cooperate for your patient-specific needs. A lot of rural counties have different forms of outreach through grants or cancer centers, and I would say partner with them and use what they're they've started in one area to expand to other areas. And then I would say education and involvement of your partners is really important. So we do a lot of back and forth talking with the EMS providers and their leadership, and I think that has really made it more fun and also kept them engaged. And again, you have to have a physician that's willing to to talk to them and answer the phone. If they're trying and calling physicians and can't get them on the phone, you're not going to have a successful partnership. They're not going to be able to do what they need to do, so I think that's key: is to find a physician champion. As far as implementing video education, this sounds overwhelming if you're not used to making videos, but actually, it has been very successful for us and has been no cost. So we had \$0 to start this program, but we had some staff that were interested in reporting things. We had some people comfortable talking on microphones, that kind of. So we just started with our staff and some volunteers. We wrote the content ourselves. We did a lot of proofreading. We've done some multiple versions of certain things, and we've had staff and some volunteers record, so we wanted native Spanish speakers to do the Spanish, not my bad Spanglish. So we we found native Spanish speakers who would record it after we had it translated, and that has been so valuable. I would say, what do you do every day that you repeat yourself, and there's not a lot of interaction, and that is where you would start with video. So for us, that was our education session and review of some of our forms. And we're not just leaving the patient alone. We're talking to him before the video. We're talking and answering questions afterwards. But the staff can be in the room, getting some work done while the video is playing, and then we're telling them the same thing every time, as opposed to if one staff member is giving it and they get tired and forget, or get get a phone call and get distracted. We know the patients get all of the information every time the same way. I would say it's very very helpful for things like simple teaching ins and outs teaching probably glucose injections, pillbox management, that kind of thing. And our transplant education class alone-it's less than one hour-has saved our staff two to four hours of of time working at least a week because they were giving those videos so many times in order to reach patients. So it has been-it was a small effort for a big savings. Other telehealth tips.

L Lynsey Biondi 45:06

I would say the biggest thing we've had to do is utilize the resources we have, like Epic and Teams, and then find family members who can help the patients make it work. So, a lot of times you have an older patient, you got to find a tech savvy family member to help them set things up or set their their mic chart up while they're in the office, and you can they'll hand you your phone their phone and have someone in the office who can help set that up. Some of our patients don't have great Wi-Fi, so they can travel to a clinic and use the Wi-Fi in the region. So we have partner clinics through Covenant that they can go and even just sit in the parking lot to use the Wi-Fi. We do have to pay attention to state line limitations, and then protocols have helped. Like when can you use telemedicine? When do should you not? And and you have to be flexible with that. But timing it back and forth so alternating visits can make a big difference. We've also done a lot of facilitating labs before a telemedicine appointment, so that there's a rural lab setting where we can get the labs drawn a couple days ahead, and then have the telemedicine. So that makes a difference as well. I think the last thing is making sure that patients have the appropriate expectations with telehealth. Make sure that I I had one patient try to get on the phone while driving a delivery truck, so you got to set those expectations. You can't be driving while you're doing that. We we need you to have a safe environment to do it, and that sometimes that they'll need to switch over to a face-to-face encounter, especially if they're ill and need to come to the hospital. Setting up permissions to use photography ahead of time and using a secure platform so you can upload them as necessary are great, and then talk to them about it's. This is to benefit you. If you don't want telemedicine, you can certainly come in, but it can help reduce time off work, travel, and most patients are very excited to have it. So again, for us, kidney transplant was vitally needed here, but very complicated in our rural setting. And using technology in some thoughtful ways has been very beneficial in saving us time and money, and actually accessing patients that wouldn't come in, particularly through video education. And the MIH has is possible. It sounds like a big lift, but it is possible. It reduced cost, and it has really made our patients safer and improved outcomes over time. So I highly suggest looking into that. And then I'm available for questions. And here's my contact information. Thank you.

C Caroline Bowers 47:49

I think we'll just open up the floor for questions. If there's any, I don't see any in the Q and A. Oh wait, oh there is one. Says thanks for the presentation. Lots of great information. My question is about EGFR. Why is it? Do you think that they worry once your numbers drop below 60? Couldn't we potentially get better end results with patients if they were alerted before their EGFR dropped below 60?

L Lynsey Biondi 48:18

Yeah, I think 60 obviously is the abnormal cutoff, and you're just getting into a lower GFR there. But I think that's one of our biggest problems: is that patients aren't even really understanding that they have kidney problems until their GFR is 20 or their GFR is 10, and they're starting dialysis. So I think communication with patients earlier, even through I've seen it done with alert systems in different hospitals that they get a contact if if their EGFR is lower that they could have kidney problems. I think addressing that so that they can look at their their health earlier would be great. What I find is a lot of times someone comes in and they're already on dialysis for a year or two, or they and they haven't taken care of their diabetes, they haven't watched their phosphorus, and their vessels are already too terrible to even transplant. So the sooner we can get patients knowing what they can do to protect their health, take their binders, monitor their glucose, that kind of thing, the better off all of our patients will be. I think that was the question.

C Caroline Bowers 49:24

I think so. Any other questions? Oh, I think we have one more. Okay. With the MIH program, do the EMS staff utilize telemedicine to reach back to you as the physician, or just phone conversation?

L Lynsey Biondi 49:38

The MIH staff just calls us directly, so they also put in a note for any visit they do, but they they call directly.

C Caroline Bowers 49:48

Okay, any other questions? Okay, I guess not. Well, thank you so much, Dr. Biondi. I know Aria has some closing remarks. I'll let him do that.

L Lynsey Biondi 50:04

Thank you very much.

A

Aria Javidan 50:09

Thank you, Caroline. Thank you, Dr. Biondi, for your presentation. Just a reminder that our next webinar will be held on Thursday, October 15. That will be on rapid care, remote reach, disaster medical reserve corps, telehealth strike team model, and it will be hosted by the Southeastern Telehealth Resource Center. Registration information is available on the NCTRC events page. And then, lastly, we do ask that you take a few short minutes to complete the survey that will pop up at the conclusion of this webinar, as your feedback is very valuable to us. Thank you again to the TexLa Telehealth Resource Center for hosting today's webinar, and thank you to Dr. Biondi for her presentation today. Have a great day, everyone. Goodbye.