

Transcript Details

This is a transcript of an educational program. Details about the program and additional media formats for the program are accessible by visiting: <https://reachmd.com/programs/clinicians-roundtable/robotic-telemedicine-in-the-neurology-department/3383/>

ReachMD

www.reachmd.com
info@reachmd.com
(866) 423-7849

Robotic Telemedicine In The Neurology Department

ROBOT CALLED THE RP-7 THAT ACTUALLY HELPS DIAGNOSE AND TREAT STROKE PATIENTS

Free CME on ReachMD is now easier. Link to ReachMD's free custom application for your iPhone at www.reachmd.com starting next week.

If you happen to be in Kentucky and suffer a stroke, you may need a robot as your consulting neurologist.

Welcome to the Clinician's Roundtable. I am your host Dr. Larry Kaskel. My guest today is Dr. Kerri Remmel, Interim Chair of the Department of Neurology and also the director of the University of Louisville Stroke Program. Dr. Remmel is a funded researcher in acute stroke treatments and served as a principal investigator on numerous clinical trials through individual research efforts focussed on cryptogenic stroke and disparities in stroke risk factors.

DR. KASKEL:

Dr. Remmel, welcome to the show.

DR. REMMEL:

Thank you for having me.

DR. KASKEL:

Can you tell us a little bit about what this whole new computer robot consultant is?

DR. REMMEL:

Yes, I am very excited about it. We have noticed, this is not uncommon across the country, but in Kentucky that there are many counties that have no neurologists, not just stroke neurologist, but not any neurologist, and with the treatments we have available to completely reverse the symptoms of stroke, if treated quickly, we looked for a way to get to those patients throughout the state in small hospitals

that have no specialists.

DR. KASKEL:

Whose idea was it to come up with a robot?

DR. REMMEL:

Well, we were already doing telemedicine with telephone and several of the people here at U of L Healthcare got together and talked about what kinds of alternatives might be out there. Our Executive Vice President for Health Affairs agreed to allow us to just take a look at this technology, the RP-7 robot and when we saw it, we realized that this was the most advanced that we could imagine at this point.

DR. KASKEL:

Can you tell our listeners a little bit about RP-7 and how it differs from R2-D2?

DR. REMMEL:

RP-7 is a robot that is developed by InTouch Health in Santa Barbara, California. This robot is literally wireless and completely mobile and controlled by the physician. I sit at a workstation at home or at the office at the hospital and when I am called for an acute stroke patient in an ER at a remote site, I beam in, I can even unplug myself from the wall in their ER, roll myself into the patient's room, my face is in the monitor of this 5 feet 6 inches robot and I go into the room and introduce myself, take a history, do a neurological exam, and turn my head, look at the patient, turn my head to look at the family, take further history, look up at the monitors, read CAT scans, MRIs, have full mobility and independence.

DR. KASKEL:

I mean, it sounds quite futuristic and a little bizarre that I could be lying in a bed and my physician is looking at me through a computer screen. How can you examine the patient?

DR. REMMEL:

Well, what happens is when I go into the room of the patient, it takes those patients, I've really looked at this carefully, it takes him about 30 seconds to forget that it's a robot and to start interacting with me, and I can with the help of the nurse at the bedside, I can actually look at the pupillary light reactions. If the nurse shines a penlight in the eyes of the patient, I can zero in on it and literally look at the pupillary reaction. Now with the neurological exam, I am looking at very great details of the cranial nerves, you know that is the cranial nerve exam, the motor exam can be done by performing the NIH Stroke Scale. This is the standard neurological scale that's used for stroke patients. The one thing that I cannot do is I cannot touch the patient and so for sensory exam, then I am really dependent on the doctor or the nurse at the other end, but as far as really evaluating motor and the function of the patient, the language and speech and cranial nerves, we are quite, quite apt at it, we are very good at it.

DR. KASKEL:

What are the limitations of the robot? Besides doing some sensory exams, what can you potentially miss that you'd have picked up being in the room personally?

DR. REMMEL:

Well, the fine details of the motor exam such as the grip, you might not get, but we use some other techniques, such as arm rotation or finger tapping that can be pretty sensitive for motor deficits. What we are looking at is this person impaired and should this person get the IV TPA or intra-arterial treatment for clot removal, so those are the issues. Is this a patient that needs intervention or not.

DR. KASKEL:

I mean can't you use the scan and the history to determine whether or not it's an embolic stroke versus a hemorrhagic stroke?

DR. REMMEL:

Yeah, the CT scan will either be negative in an acute ischemic stroke or, of course, positive in a hemorrhage, but that's not good enough to decide on treatment because a CT scan doesn't become positive for 6-8 hours in ischemic stroke and you really have a 3-hour window for IV TPA. So you need to look at the exam, the clinical exam and the history are as important as anything else in this, so we were able to do that in full exam. There is so much more to this that I was completely surprised about. I mean I expected to be able to take a history, do an exam, read a CAT scan myself, read an MRI myself, look at the monitor so forth, but I did not expect to preserve the patient-physician relationship.

DR. KASKEL:

That was my next question, what happens to the therapeutic relationship and the power to heal by just kind of holding their hands.

DR. REMMEL:

See that's the thing as the art of medicine is preserved. I've got numerous examples of this, not just with patient testimonials, but in my own self I've noticed, I will give you a poignant example of it. On Christmas morning I was called for consult with possible stroke, but it really wasn't a stroke patient, it was an anoxic brain injury patient, who had an extremely poor prognosis. I examined the patient, was able to look at everything and make a diagnosis and prognosis, but I had a meeting with the family after later that day and the emotion and the depth of interaction that you experience with the family in those kinds of times was exactly the way it is when I am sitting in a room with the family, I mean they were tearful, I felt tearful, it was an amazing experience because I never expected this with a robot. I expected to be able to go through the mechanics. I've had funny experiences, so humor is preserved. I've had other great experiences with patients where we develop a relationship. Occasionally, they are transferred into my stroke center and when they meet me, we feel like we know each other already. They have already had that doctor physician bedside relationship that was built in the remote hospital.

DR. KASKEL:

If you've just tuned in, you're listening to the Clinician's Roundtable on ReachMD XM 157. I am Dr. Larry Kaskel and my guest today is Dr. Kerri Remmel. Kerri is the Director of the University of Louisville stroke program and we are talking about a new robot called the RP-7 that actually helps diagnose and treat stroke patients.

DR. KASKEL:

Kerri, why Kentucky, what is the reason that it's there?

DR. REMMEL:

We are in a stroke belt, among the highest in mortality rates for stroke in the United States.

DR. KASKEL:

Why is that, is it just untreated hypertension?

DR. REMMEL:

Partly.

DR. KASKEL:

There is lot of atrial fibrillation there for some reasons.

DR. REMMEL:

Some of it is unknown, but if you look at the CDC maps for the vascular risk factors, smoking, obesity, hypertension, diabetes, then you're going to find a high rate of these vascular risk factors in the Southeastern United States, so that's part of it. Lack of neurologists, lack of expertise throughout the state. Many small hospitals that just don't have the subspecialists. I mean, this technology is actually being used beyond stroke care. We are using it in neonatal ICUs and it can be used in emergency care for other conditions other than stroke. We are using it in outpatient outreach for Parkinson's. ICU doctors use it around the country so that they can re-round in their ICU in the evening without going in.

DR. KASKEL:

Are you seeing more patients as a result of this and do you run the risk of burning out quicker than a normal neurologist, who gets burned out all the time?

DR. REMMEL:

I am not burned out and I am encouraged by it. What keeps me going is the fact that we are reaching more patients and treating more patients than we ever did before with the stroke reversal types of treatments like IV TPA and intra-arterial treatment. So that's very encouraging that we are getting to those facilities and when you're on call, you are on call 24 x 7 for stroke anyway. I feel much better about leaving patients at their home hospital that did not need to transfer. By telephone, I would have transferred by robot. I keep patients at their home hospital that don't need to come.

DR. KASKEL:

How many robots does Kentucky have?

DR. REMMEL:

We only have 11 in our system right now, getting ready to place 4 more and we plan to increase that number significantly.

DR. KASKEL:

I know in an article you were in, you were quoted saying that "with stroke, time saved is brain saved," so what is the actual improvement on time, time to getting TPA or time to whatever intervention?

DR. REMMEL:

If I've been in immediately and examine a patient, when they hit the door of the outside ER, then we streamline that timeframe to making clinical decisions immediately. If it's a telephone call and a transfer, then there is a waste of time or there is a potential for patients being treated that didn't need to be treated.

DR. KASKEL:

Is there a Medicare code for billing for seeing someone through a computer?

DR. REMMEL:

Telemedicine is covered. Telemedicine consult as long as the physician that's operating the robot has credentials in the remote hospital.

DR. KASKEL:

So they can't just call you up and say hey we need you to see a patient, you have to be on staff at all these little hospitals.

DR. REMMEL:

Yeah, so I have credentials at the hospitals and not only that, you have a telemedicine code for billing, but yes, it can be billed.

DR. KASKEL:

How much does an individual robot cost?

DR. REMMEL:

They are very expensive. Some facilities purchase their robots, others lease, but they can be up to \$250,000, or leased for a little over 5000 dollars a month each.

DR. KASKEL:

And does the hospital end up paying for that, or?

DR. REMMEL:

There are different models for that. At this time, we are paying for the robots, but there are different models. Let's say you have a small critical access hospital so there is no way you're going to hire subspecialists in many of these areas, so if they have one robot but they are connected with a tertiary center that has the specialist, then they are really saving money in the long run, because they have at their possession, at their access intensivists, emergency medicine, subspecialists in pediatrics, subspecialists in neurology, it goes on and on, cardiologists in the subspecialties, and a lot of those small hospitals would not be able to hire those professionals full time. I get asked frequently about adding psychiatry and dermatology in many of the remote hospitals because they have a difficult time keeping those subspecialists or those specialists in their hospital.

DR. KASKEL:

Dr. Remmel, what are you looking most forward to with the future of this technology?

DR. REMMEL:

I am looking for the ability to use this in rounding, in teaching being able to have these in ICU rooms, but have a little more mobility than just a standard camera that sits in those rooms so that we can interact with patients and make judgements in the middle of the night as to what to do for them. I think that really our imagination is the only thing that's limiting us.

DR. KASKEL:

Well, Dr. Kerri Rimmel of the University of Louisville Stroke Program, thank you very much for coming on the show.

DR. REMMEL:

Thank you very much.

DR. KASKEL:

I am Dr. Larry Kaskel and you've been listening to the Clinician's Roundtable on ReachMD XM 157. To comment or listen to our full library of on-demand podcasts, please visit our website at www.reachmd.com and if you register with a promo code radio, you'll receive 6 months free of streaming ReachMD for work or home. You can also now reach us by phone with comments and suggestions at triple 8 MD XM 157 (888-MD-XM157) and thanks for listening.