This program is underwritten by VA New York/New Jersey Healthcare Network. Welcome to "VA Healthcare Advantage." I'm John Mazzulla, veteran, VA employee, and your host today. The VA New York/New Jersey Healthcare Network is a network of eight VA medical centers and 32 VA healthcare clinics located on Long Island, in metropolitan New York/New Jersey and surrounding counties. "VA Healthcare Advantage" is aired to discuss health-related topics of interest for the nearly one million military veterans, their families, and the general public. Our guest today is Dr. Samadani, who is a neurosurgeon at the New York VA Medical Center. Welcome to the show, Dr. Samadani.
>> Thank you for inviting me.
>> Dr. Samadani, before we begin talking about your specialty, why don't you tell our listeners a little bit about yourself?
>> I grew up in Wisconsin, and I did my undergraduate degree at University Wisconsin Madison, and that's where I started doing surgery research. I ended up getting my MD and my PhD from University of Illinois, Chicago, and then I did my residency at the University of Pennsylvania in neurosurgery. I did a fellowship in Gottingen in Germany, and then I came to Manhattan VA.
>> Okay. Tell us what a fellowship is.
>> My fellowship was a combined research clinical fellowship with the emphasis on research. What I'm interested in primarily is treatment of brain injury and recovery from brain injury, and so my fellowship was focused on trying to use small molecules to help the brain recover from these problems.
>> Mm-hm. And brains, when they're injured from CVA, from a stroke, or from a head injury, that's what you're looking at and how they repair themselves?
>> Yes. The primary model that I used was actually of a hemorrhage, of a bleed into the brain, because that's a very, very common problem. Approximately 37,000 people per year have bleeds into their brain that occur basically spontaneously. They just happen. And it's a fairly devastating problem. Only about one-fifth of those patients go on to go back to the quality of life that they had before the hemorrhage, so that's something that obviously is very concerning to many people, in terms of affecting people's quality of life.
>> Mm-hm.
>> And so that's one of my areas of research interest.
>> Mm-hm. Are you continuing that research after fellowship?
>> Yes, actually, I am. Since arriving at Manhattan VA, I received funding from the American College of Surgeons and the American Association of Neurological Surgeons, and recently I have just won a VA Merit Award.
>> Very good.
>> And so, we will be looking at recovery from traumatic brain injury for patients who have basically become what we call persistently vegetative, or they've been rendered essentially unconscious or permanently unconscious by brain injury, and that's something that is, I think, incredibly important to the VA population. We have basically brain injury as the hallmark injury in veterans returning from Iraq and Afghanistan. That is a major central problem for these patients, and my research focuses not only on the severely injured ones, who have decreased consciousness or are in a vegetative state, but also ultimately on helping those with mild or moderate brain injury. And I'm writing a grant to look at that right now, and hopefully that will also get funded. But in any event, that's something that's very, very important to me, and that's one of the reasons that I chose to come to the Manhattan VA, because I do have these opportunities to do research there.
>> Right, right. You're also on staff at NYU?
>> Yes, I'm an assistant professor at NYU, and I'm very happy to have the resources of NYU available to me, because it's through collaborations in our surgery department and other departments in neuroscience at NYU that I'm able to do a lot of this research.

>> Okay, okay, well, very good. We're certainly glad that you're with us here at the VA.
>> Thank you for inviting me, yes.
>> Sure. Let's begin by talking about the New York VA Medical Center. It's in lower Manhattan, right next to NYU.
>> Yes.
>> Right?
>> We're about four or five blocks from NYU, which is very helpful for us, because a lot of our complicated cases get discussed with staff at NYU, and we formulate treatment plans for these patients, in conjunction with other services and neurosurgeons at NYU. A small percentage of our cases actually get performed at NYU. Those would be the vascular cases, such as aneurysms and the gamma knife cases.
>> Mm-hm.
>> We don't have a gamma knife at Manhattan VA, but through our collaboration with NYU, we are able to send our gamma knife patients to NYU.
>> Okay, you're going to have to explain gamma knife.
>> Gamma knife is a treatment that basically is a very, very focused beam of radiation that can be used for, particularly for benign tumors, but also for some malignant tumors in the brain, and it's a treatment that has been shown and demonstrated over time to be safe and have fewer side effects than conventional surgery for particular types of tumors, especially those that are in very, very difficult to access places, from a surgical standpoint.
>> Mm-hm.
>> So tumors that are very hard to get to surgically are often good candidates for gamma knife, and if we see those kinds of patients at the Manhattan VA, we send them up the street to NYU for that.
>> Sure, sure. How many of those cases do you think that you have done in the years that you've been at New York?
> Probably about 10 to 15 cases a year get sent up the street.
>> I see, I see.
>> To NYU for gamma knife.
>> Okay.
>> Yeah.
>> Okay, well, the Manhattan VA is part of VA New York Harbor Healthcare System, which is really a three division healthcare system. There's certainly the Manhattan VA, and then there's the acute care facility at Brooklyn, the Brooklyn VA Medical Center, and then the extended and primary care center in St. Albans, Queens.
>> Correct. And we get patients from all of those hospitals, and we actually get, we have a large referral base, so we get patients who are even VISN 4 patients who want to come to our VISN. It's amazing. What's happened is we've sort of gotten a reputation as being the place to come for brain tumors and for complex spine problems, and so we are getting patients who want to get into our system, even from as far away as Philadelphia and Delaware.
>> Right, right. And you mentioned VISN 4, and VISN 4 is the VA Healthcare Network that's west of us in Delaware and Pennsylvania.
>> Correct.
>> That's right. Very good. You're actually, the Manhattan VA is actually a neurosurgical referral center, and so we do accept patients from all over.
>> That's correct. If you have a brain tumor, and you present to Bronx or Brooklyn, they will refer you to Manhattan neurosurgery, to our group, because we are the only neurosurgeons in the VISN that are doing cranial work.
>> Right, right.
>> There's lots of new technologies that you're involved in. One is called stealth.

>> Yes, we are extremely excited about this. Basically, what stealth is, is GPS, you know, the kind of technology that you use in your car to try and figure out where you are on a map of the world, for example, but it's made into a molecular version, basically, or a micro version of that. And what it is, is it enables us to take a patient's MRI scan of their brain and download it into a computer and create basically a map of the brain. And when we program our instruments in the operating room to be able to tell us where we are on that map, it can help guide us to a tumor. So, for example, if you're doing a tumor that's in a very, very deep or difficult location, using stealth technology can make the tumor resection safer, because you don't have to--you can decrease the risk of traumatizing overlying brain.
>> Mm-hm.
>> And, for us, that's incredibly important. And, yes, it's possible to take a tumor out of the brain without stealth, but it's just safer to do it with.
>> Mm-hm.
>> This is the kind of technology that really has sort of changed things for patients, because it's taken an operation that could take maybe 10 hours, and require intraoperative ultrasound to localize the tumor, into something that could take a third that time, because you don't have to look. You know exactly where you're going, and you can find your landmarks more easily, your anatomical landmarks, and get to where you need to be and do what you need to do. And it's also useful in assessing extent of resection, because what happens when you take a tumor out is you want to make sure you get the whole thing. And when you use the stealth technology, you can tell exactly where you are in three dimensions at all times. So, you can tell if you've gotten the whole tumor out a little bit more easily than you could before there was stealth. And so, this is something that I think has become incredibly invaluable to the field of brain surgery, especially for tumor resection. And I think that we're going to be using this more and more. We've recently purchased the device. We were renting it initially, and the VISN administration realized that this was something that was very helpful. It was decreasing the length of stay for our patients, because they had smaller operations to recover from, and it's decreased the amount of time we spend in the operating room, and that's great for the patient. They have less time under anesthesia and less blood loss. So, it's something that's very, very helpful.
>> Dr. Samadani, you've mentioned resection, the word resection a few times.
>> Mm-hm.
>> I'm not sure I know what that is. What is that?
>> Oh, I'm sorry. Resection basically means taking out. So, if you resect a brain tumor, basically, you're just taking it out.
>> I see.
>> And the whole goal, whenever you do brain surgery for a tumor, is to try and take the whole thing out, as safely as possible, without damaging the nearby brain or the adjacent brain.
>> Mm-hm. With this stealth technology, are you looking at a screen that shows you where the tumor is?
>> Yes. Basically, what we do is we have a computer that we bring into the operating room, and we've downloaded the patient's MRI into that computer. The MRI is the image that we get of their brain from lying in a magnetic resonance imaging scanner. And then we create the 3D reconstruction, and that shows up on our computer screen, and then we can look at that from different viewpoints. You can look at it from the front, from the side, from the back, however you like. You can get a surgeon's view, which is however you've positioned the patient. You can manipulate the images so that you're looking at it from that angle. And we even have, now, with the new system that we've just bought, we have technologies such that you can link this into the operating room microscope. So, when you're dealing with very, very fine structures deep in the brain, you can look through the microscope, and it will show you in your view piece, exactly where the tumor is, and not only where the tumor is but where other structures are relative to the tumor.

>> That's fascinating.
>> Yeah.
>> Dr. Samadani, we have to take a quick break, but we'll be right back and continue this discussion.
>> Thank you.
>> This is "VA Healthcare Advantage." We'll be right back.
>> Did you know the New England Journal of Medicine, the National Council of Quality Assurance, and the Annals of Internal Medicine all cited the VA for providing high quality healthcare? Did you know that the VA offers a full continuum of healthcare services, including health promotion and disease prevention, mental health, primary care, and special healthcare programs for women veterans? Did you know that VA healthcare is portable? With over 1,400 sites of care across the nation, veterans enrolled in VA can be seen at any VA facility across the country. To apply for the healthcare services you deserve, stop by the eligibility office at the nearest VA Medical Center and complete a 1010 EZ form. You can also apply online at www.VA.gov/elig or by calling toll free, 1-877-222-8387.

>> Welcome back. This is "VA Healthcare Advantage." Our guest today is Dr. Samadani, who is the neurosurgeon at the New York VA Medical Center. Dr. Samadani, prior to the break, we were talking about stealth technology, and it was a great and exciting technology, and thanks for that explanation. But what other equipment do you use, typically, in this kind of surgery?
>> Well, for brain tumors, it basically, the equipment is chosen depending on where the tumor is. We do a fair number of tumors in the pituitary area, and where the pituitary is, the pituitary is a gland that is situated sort of right behind the eyeballs and in the center of the head. And, actually, the easiest way to get there is through the nose. So, what we do is we do those cases in conjunction with the ENT surgeons, the ear, nose and throat doctors, or otorhinolaryngology, as they prefer to be called.
>> Mm-hm.
>> And when we work with them, we use the same stealth technology, because that is very helpful for us in getting to the tumor and figuring out exactly where we are. And we also use a microscope. Sometimes we use endoscopes. Endoscopes are basically cameras on very, very thin tubes, so that you can, for example, put them into the nose and see far up. Other technology that we use in the operating room, we use what's called a CUSA, a cavitron ultrasonic aspirator, and that is something that we use to take out brain tumors. We use a variety of other surgical instruments that would probably be not very easy to explain.
>> Okay, okay, okay.
>> But for the most part, we do a lot of microsurgery at the VA, and that's something that we have access to what we need for.
>> You know, when I've thought about microsurgery, it's just amazing to me that a surgeon's hand needs to be so steady to, I guess, what, hold the scalpel?
>> We don't drink a lot of coffee. That's correct.
[laughter]
Yes, you do need a steady hand to do neurosurgery. For the most part, I think people who want to become neurosurgeons tend to self select. They tend to be people who can sit still for a very long time and who don't mind working underneath a microscope or working with their hands. I personally find it very calming to sit in the operating room and do a case. You don't really think about other things at the time. You're sort of just thinking about what you're doing.
>> Mm-hm.
>> And it's, in a sense, very, very gratifying. Then, at the end of the case, when you are done, and you get to see the patient wake up, and they do well, that's the best part.
>> Mm-hm.
>> But, certainly, I think neurosurgeons tend to be people who like to work with their hands.

>> Mm-hm, mm-hm, mm-hm. Certainly, you've seen a lot of veterans, and you've had to do surgery on a number of veterans in your time at the VA. Are there any cases that you could discuss?
>> Yes, we do quite a few brain tumors. We do some spine cases, as well.
>> Mm-hm.
>> I can tell you a little bit about some of our recent brain tumor patients. We had a woman who was a combat vet, and she was one of the very first female combat vets, because there haven't been a whole lot of them.
>> Mm-hm.
>> And we took out a tumor in her temporal lobe. It had caused her to have a seizure, and we got the whole thing out, and she's done great. She's actually back at work in the States. She's done very well. Recently, we had a young marine that we operated on. He was referred to us by one of the--Brooklyn VA Hospital, I believe, and he presented--he found out that he had this brain tumor, because he passed out while he was driving. And it turned out that the tumor was located very deep in his brain, and it was a good tumor for the use of that stealth technology that I was talking about. On -- the one side of his tumor was located in the area of his brain where his speech is based. So, he would have been unable to talk, if we damaged that. Behind the tumor was where his vision was located. On top of the tumor was movement to one side of his body, and on the other side of the tumor was a relay pathway that processes a variety of movements. So, it was hard to find a good corridor to get into that tumor.
>> Mm-hm.
>> But using the stealth technology, we went right in between speech and vision, erring a little bit towards the side of vision, because he had already had a problem with his vision before the surgery, and we were able to get the whole thing out, and it turned out it was a benign tumor. So, this patient will do well. He's young enough that his vision pathways will recover, and he will probably be able to function fully. He'll be able to drive. He's very motivated. You know, having a brain tumor is emotionally and physically draining for a patient, and it's a very, very, very tough thing to go through. I wouldn't want to go through it myself, and I can't imagine what these patients go through.
>> Mm-hm.
>> Psychologically, it's very tough for them, and he has really had a very positive attitude. His family has been very supportive, and I know he has a lot of friends. So, I think he's going to do well.
>> Mm-hm.
>> He wants to go back to fighting with his unit, and I think his unit is deploying to Afghanistan in the next several months, and he's hoping to be with them.
>> Mm-hm, mm-hm.
>> So, we do see patients who are devastated, obviously, by their initial diagnosis. And what is really rewarding for us is when they are over that phase, they are over the phase where, you know, they've had the tumor resected, and they're dealing with any potential adverse effects from having the tumor, and they've recovered from that, and then they're getting back to their lives.
>> Mm-hm.
>> And that's the best part.
>> Oh, I can imagine how gratifying that is.
>> Yes.
>> You mentioned in this particular case that the, you know, the vision, if there was any effect on vision, those pathways would grow back again? Is that referred to as plasticity in the brain?
>> Yes, exactly. What happens is, is that the younger you are, the more plastic your brain is, and that is why, for example, it's easier for children to learn how to play an instrument, or how to speak another language, than it is for adults. But all people have some amount of plasticity all

their lives. It's just that they have to encourage it. And one of the most important things for all of us to do, as we age, is to try and push our brains to be as plastic as possible, which means learning new things.
>> Mm-hm.
>> It's very important for a patient who's trying to recover from brain injury, or from having surgery on their brain, to try and do as much as possible, to try and talk, to try and read, to try and do sports, if they can. If you can learn a new sport or learn how to play a new instrument, after a certain age, or after any sort of brain injury or brain surgery, I think that that would be a great thing towards enhancing your recovery.
>> Okay. Because what is that doing? Is that forcing your brain cells to work again or to connect with other brain cells more quickly or more readily?
>> Exactly.
>> Exactly, okay.
>> What happens, as you age, is that the pathways that you are, that are being used in your brain are used more and more, and the pathways that aren't used tend to atrophy. They tend to basically wither away. And so, whenever you learn something new, it's good for your brain.
>> Mm-hm. Just as an aside, I started playing guitar very recently, and it's amazing that, you know, when you're learning new chords, and your fingers up on this part of the instrument have to go to different places and has to kind of like relate to where your fingers are down here by plucking the strings, it's--
>> Yeah, that's a fabulous idea, to learn how to play the guitar.
[laughter]
At an--I wouldn't want to imply that you're older, but at a non-junior age.
>> Right.
[laughter]
>> I think that it's probably great for your brain.
>> Uh-huh.
>> And, you know, there are portions of your brain, if someone were to do a functional MRI on you, while you're trying to learn guitar, that would not light up at first, and that would light up later.
>> Uh-huh.
>> And so, they could probably demonstrate that you are learning.
>> Wow. I'd be able to see what a D cord looked like on my brain.
[laughter]
>> Yes, exactly.
>> Dr. Samadani, we need to take another quick break. We'll be right back.
[music]
>> Are you an Operation Enduring Freedom or Operation Iraqi Freedom veteran? Have you received a Purple Heart medal? Were you a former prisoner of war? Have you been denied VA health benefits due to high income? If you answered yes to any of these questions, you may qualify for cost free healthcare. There are also many other ways that a veteran may qualify to receive top notch VA healthcare at over 1,400 sites across the nation. Apply for VA healthcare at your nearest VA Medical Center or online at www.VA.gov/elig or call toll free, 1-877-222-8387. Again, www.VA.gov/elig or call toll free 1-877-222-8387.
>> This is "VA Healthcare Advantage." Again, I'm John Mazzulla, your host. Before we get back to the show, just a quick message to our listeners. Call us and let us know how you like this program. Call the "VA Healthcare Advantage" comment line. It's toll free. It's 1-866-214-1847. If you get voicemail--it rings on my desk. If you get voicemail, please leave a name and a phone number. I will call you back. We really would like to get your feedback on the show. Okay, our guest today that we've been listening to, and discussing neurosurgery, is Dr. Samadani, who is the neurosurgeon at the New York VA Medical Center. Why don't we start here, Dr. Samadani?

How do most people know that something is wrong or that they might have something going on, like a tumor or something? I mean, how do they get to you?
>> Well, the interesting thing about brain tumors is that, actually, more people have brain tumors than realize, but most brain tumors don't actually need treatment. When a study was done of brains from autopsy specimens, it was found that up to 13 percent of people have benign brain tumors that are present in their brains that cause absolutely no symptoms whatsoever. So, with that in mind, one has to realize that, really, the only brain tumors that need treating are ones that cause symptoms. Now what sort of symptoms would those be? That's, I think, your question.
>> Mm-hm.
>> Sometimes brain tumors can present with headaches. But I'll tell you right now that 99.9 percent of people who have headaches don't have a brain tumor. Most of the time, there's going to be something else, as well. If the patient is having vision problems that aren't explained by an exam from their ophthalmologist or optometrist, looking for something wrong with their eyes, if they're having weakness on one side of their body or another, if they're having behavior changes that just don't make any sense at all whatsoever, and are not consistent with, you know, their known history of behavior, then, you know, that's something that would trigger concern.
>> In this example, would the individual know that their behavior was somewhat different, or is it really from family or friends that--
>> The individual doesn't always know. Often, it is family or friends. We've had patients who have presented to the doctor by being brought in by their family members, who say, "All of a sudden, he's just acting really strange." And, you know, then we do a neurologic exam, and we have findings on that neurologic exam. Sometimes, patients won't even notice themselves, but then when you get the scan, it becomes very clear that there was a reason for their behavioral changes. Depending on where the tumor is, if it's in the visual area, a patient can present with vision problems. Our patient that we talked about earlier, the young Marine with the brain tumor, he, in retrospect, had noticed that he was bumping into doors on one side. And the reason for that was that he was having a little bit of vision trouble only on one side, and that was where his tumor had been.
>> Mm-hm.
>> We see patients sometimes who are weak on one side of their body or have decreased sensation. They can't feel things normally. Every now and then, you'll get someone who has trouble talking, depending on where the tumor is. Brain tumors are--brain tumors that require treatment are actually relatively rare, but the ones that do need treatment generally are symptomatic.
>> Mm-hm, mm-hm. I see. And they get to you how?
>> Well, most patients who have a brain tumor don't find out about it until after they are either seen by their primary care doctor or by an emergency room doctor. And then, in a lot of those cases, the patient will have either a CT scan, or an MRI scan, and then get sent either to a neurologist or directly to us. So, basically, every single patient that I see in my clinic or in my hospital with a brain tumor has already been seen by another doctor.
>> Mm-hm.
>> They already have been diagnosed with this. Often, they've been diagnosed with what they call a brain lesion or some sort of abnormal finding on MRI that they're not sure is a brain tumor, but it'll often--it'll usually be seen by the radiologist and diagnosed as a brain tumor.
>> I see. You've mentioned CT and MRI. Just very briefly, these are radiological scans of one sort or another?
>> Yes. CT is computed tomography. Basically, what it is, is a very sophisticated x-ray of the brain. It was developed in the 1970s, so it predates MR. MRI really became big around 1980, and MRI is much better for seeing details inside the brain. You can actually see individual

vessels. You can see things very, very clearly. Most patients who are in a car accident, or who have a sudden severe headache, will need just a CT scan, because a CT is great for seeing things like a bleed or a hemorrhage.
>> Okay.
>> Most patients who have a slow onset of headache or some other neurologic deficit will usually get an MRI first.
>> Okay. Dr. Samadani, unfortunately, our time is almost up. We have about a minute left. Could you--what would you like listeners to remember from listening to this program? What are some takeaways?
>> I think the main takeaway here is that if someone finds out that they have a brain tumor, they really shouldn't panic. I think they need to come in and see us or whoever their local neurosurgeon is, and get an opinion and find out exactly what their options are, because brain surgery is not as scary as one would immediately think, and the technology that we have now has made it a lot safer.
>> Okay. Dr. Samadani, thank you so much for taking time out of your day and coming for this interview today, and we really appreciate you being at the New York VA and for all you do for veterans every day.
>> Thank you.
>> "VA Healthcare Advantage" is aired to reach military veterans residing in the metropolitan New York/New Jersey area. For additional information about VA healthcare, to enroll for care, to schedule an appointment, please call your nearest VA Medical Center or VA Healthcare Clinic. Additional information about VA healthcare in our listening area is available atwww.NYNJ.VA.gov. Let us know how you like the program. Call the "VA Healthcare Advantage" comment line toll free at 1-866-214-1847. If you get voicemail, please leave a name and phone number, and I will call you back. I'm John Mazzulla, host of "VA Healthcare Advantage." Thank you for listening today, and please join us again next week.
[music]