Season 3 Episode 6 – Beyond the Equation | Dr. Amaka Eneanya on Kidney Function, Clinical Change, and Communications

Guest: Amaka Eneanya, MD, MPH, FASN

Len Usvyat

Welcome to the Renal Research Institute's Frontiers in Kidney Medicine and Bio Intelligence, where we share knowledge and advances in kidney research with the world. In this episode, I'm very excited to be joined by Dr. Amaka Eneanya, adjunct professor of medicine at Emory University School of Medicine and former Chief Transformation Officer at Emory Healthcare.

Amaka is dedicated to advancing health care delivery and system wide improvements with a focus on patient outcomes, community engagement and team member experiences. Together, we will discuss her pivotal role in changing the eGFR equation and the impact of digital influence and social media on medical transformation.

Amaka I am so excited, welcome.

Amaka Eneanya

Thank you so much Len. It's always good to see you and talk with you.

Len Usvyat

Same here, same here. Amaka, I wanted to start off and I think I wanted to discuss a little bit about this GFR topic. For our audience in case some of them do not know how race played a role in the calculation of GFR and some of the work you have done to change that and maybe you can describe that first for us.

Amaka Eneanya

EGFR stands for estimated glomerular filtration rate. I know that's a mouthful. But essentially, it's a statistical equation that's an estimate of glomerular filtration rate, which is the gold standard for measuring kidney function.

The gold standard requires infusing usually some exogenous biomarkers and taking a series of blood and or urine measurements to see how well the kidney is excreting that biomarker.

And that's how you really measure GFR. So obviously that can't be done. And kind of a snap decision making, environment and so the equation was developed in 1999, basically a regression model to best predict someone's GFR. And at that time of this study, what they did was divide the study population into black and non-black individuals, majority white individuals.

And they saw some differences when they looked at serum creatinine, which is an endogenous biomarker. And they saw for at any given level of glomerular filtration rate, which was measured directly in the study, that blacks had higher creatinine levels compared to whites in that setting. So, they saw a discrepancy at the same measured

GFR. And so, when they did this kind of stepwise regression process, they said, you know what?

It's more accurate. If we add race to the model and have the equation, have two separate equations, one for black individuals and one for non-black individuals, because they saw that discrepancy in creating the levels with blacks having higher serum creatinine levels. And so, what that did was assign black individuals a higher EGFR, depending on the equation used 16 to 21% higher EGFR compared to using the non-black formula.

So that's how we arrived at the race-based EGFR equation. And that was used for two decades. Until that changed in 2021.

Len Usvyat

Wow. Amaka, first off thank you. I think it's a really good indication because some people may not actually know how race came into that equation, I think many of us have seen, of course the GFR calculation for African American and non-African American and it's actually very interesting to hear. And then of course, I think, you were very instrumental in changing that mindset and changing the adoption of kind of this new formula that does not take race into account. So can you talk about some of the elements of that journey, which I know was not an easy journey, but a journey you made to change the perception and how the GFR is actually computed in clinical practice across the United States?

Amaka Eneanya

Well, I'll tell you Len it starts with the personal story. In 2019, my father was, receiving care for his chronic kidney disease. And at the time, I went with him to his, his nephrology appointment, and as EGFR was very close to 20, which with our national guidelines, really is the cutoff for when you can be placed on a transplant waitlist.

And at the time, because his, nephrologist was using a race-based EGFR equation. She very clearly says that your father doesn't qualify. Now, when I was, training in Boston that wasn't used in that manner. I know it existed.

But really, the clinicians, myself included, would use the EGFR that more quickly. You know, have somebody qualify for the transplant waitlist?

I remember having a little bit of an argument with that nephrologist. And, and that's really what sparked kind of my passion for changing it, because I was like, well, y you know, he clearly needs to be on the, on the waitlist. You know, the wait time is quite large in this area of the country, in the northeast.

So why not just, you know, start the process. What's the harm? And she said, well, we don't want him to get a transplant when he doesn't need it. And so, I'll never forget that. And at the time, my colleagues at the University of Pennsylvania were also trained in medical ethics. And we wrote this, perspective in JAMA about how this was egregious.

It didn't have a basis because you shouldn't have differences, biological differences by race. We know that race is a social construct. And so why are we using this social construct in this biological tool? And that is how I, you know, really became kind of the central figure, one of the central figures in this controversy before this, and, you know, because we published together, I was focused on patient centered outcomes, quality of life, end of life decision making.

So this is a very different, science for me to really get ingrained into equations and how they were developed and, critiquing those equations. And so, you know, really in a, in a few months, I was starting to get talks, nationally. Remember, the Endocrine Society was one of the first, organizations to invite me for a national talk based off of the JAMA perspective.

And so that started the journey. And because I had that passion of my father and he was like, you know, keep going, even though there were there was a lot of resistance that was really what kept me in the game, despite it being, like you said, a very difficult process. So, it's a personal story.

Len Usvyat

Isn’t that amazing how a personal stories sometimes translates to something much bigger than you probably anticipated, back when that happened. So, my assumption of course for people who listen to this or watch this of course if it was not for the race-based equation then the estimated GFR would have been a little bit lower and then for that reason of course he would have been eligible to be on the transplant list already at that time so

Amaka Eneanya

Correct. Absolutely correct

Len Usvyat

So, you said a couple of things, you mentioned something about resistance, to change. So, since you brought it up, I want to talk about it. Let’s talk about resistance to change in the medical community particularly, because I think we probably both agree on this, a bit, but tell me what you think?

Amaka Eneanya

Yeah. So it was fascinating.

How many people stood, stood up against this change? I think first and foremost, the initial GFR study was published in the Annals of Internal Medicine. So, one of the most prestigious, journals at that time. And it was methodologically, a very rigorous study. Right. Like it wasn't equation wise, if you looked historically at the statistics, that was a rigorously done study.

Now, where the challenge and what I used to my benefit for pushing against this was the flawed assumption of having, black individuals have more muscle mass and then having higher creatinine levels that was completely flawed, completely made up, absolutely no scientific basis. And so, you know, you can't have a rigorous study with that type of information in the study justifying not only the outcomes but the use of that, of that clinical algorithm going forward.

And so, you know, that was the debate was that the naysayers were like, this is a very statistically sound study, and we understand that it feels bad, right, that there is a flawed assumption. But nonetheless, it's a really good equation.

That was where the, the heaviest tension was. And so those individuals that kind of stood in the way of change really use their power for bad.

I think you should always use your power for good. And that meant either publishing very easily in top journals, perspective pieces or research pieces that were countering, us and the rest of the individuals that were trying to push for change, like countering exactly what we were trying to prove. And they were saying that, you know, you were going to harm black individuals if you try to remove this variable from this very statistically sound equation, how dare you?

You're anti-science. Not really acknowledging that anthropologists and sociologists for decades, I mean, like 100 years, have been saying that race is a social construct. And so, this has no place in this biological algorithm.

And so that was disappointing because I think that if we had not had this resistance, this wouldn't have taken a year and a half to change.

Really. It took much, much longer because of the academic debate, because these individuals were making phone calls to chiefs of nephrology, to chairs of medicine, to heads of the laboratory at different institutions across the country saying, don't make this change. It's bad science. What these, woke people are touting, you know, “like, don't do it. You're going to harm people.”

And that just made it so challenging. On the on the flip side, we had journalists. We had all these other people that are not scientists. “They're like, this is crazy. How is the medical community allowing this practice to continue?” So it is very interesting to see that power dynamic, that ego and that like narrow focus on statistics really drive a lot of the resistance.

Len Usvyat

Even though, we do a lot of statistics at the Renal Research institute, I think, as we all know, statistics is not the only thing that, matters in these conversations and discussions. And you brought up, of course, something that I want to pick up on, which is journalists, and media and social media, other outlets like that because I think you’re obviously successful in convincing the public about making this change and I think I

loved to hear what made you successful and I'd love to hear about the media, and I'd love to hear about journalists and social media as well. I think this would be very helpful.

Amaka Eneanya

Hopefully this inspires many young scientists and researchers to, you know, to keep going especially, you know, when you have a fire in you and you know, you're trying to change something for the better.

But at the time of this change, I was an assistant professor in the year two of my K Award. Very junior. Not a lot of power, I guess, in the medical community, outside of some of the research publications that I had, I had, you know, published that were in not very high impact journals. So I was very limited. But what I did have was, a savvy for social media. So as a renal fellow at Massachusetts General Hospital and Brigham and Women's Hospital in Boston, I haphazardly saw a social media training.

It was a three day course. It was free, and I was like, oh, this is cool. Not knowing that those tools, we're going to be so critical to this change because guess what? All of those very powerful individuals who are making the phone calls and kind of doing the bullying, they weren't savvy on social media. So the things that I learned in the social media training were really how to translate your message in an effective way for broader populations.

We practiced in small groups. Then they talked about really Twitter. That's really where I got my kind of crash course in Twitter on how to hashtag. You know, at the time there were limited characters, I think 142 characters at the time. And so how do you craft a message? How do you hashtag things? So if people want to just search quickly for kidney and eGFR or health equity and kidney, my messages were going to be at the top of the list.

And so it made it very, easy for this to pick up a lot of traction. And I remember the New York Times being that first very large media outlet that reached out to me and said, hey, we want to highlight your research. At the time, all I had was that JAMA perspective, and then I had done a collaboration with my colleagues at Brigham and Women's Hospital, looking at some epidemiology of their CKD cohort to see what would happen if you remove the race variable, what would actually change in terms of transplant outcomes, dialysis outcomes, etc..

And so I had two papers and New York Times, you know, featured my voice because I was doing so much tweeting about this topic. And so once they did that, then all of the other big media outlets started to pick it up. So Consumer Reports, Scientific American and I had those journalists on speed dial. Right. So when we actually started publishing more and more research to say that we needed to change when it was in press, I would call the journalists and be like, hey, do you want first? It's like, you know, this is I can't give you the paper, but I can tell you what's coming out. Do you want to do a story? And they were. Yeah, they were happy to pick it up. They're like, yes, first dibs.

And so that was very powerful. And then, you know, later on, you know, Shonda Rhimes, her writers from Gray's Anatomy saw some of the work, and the people were resharing and influencers started to talk about it, and they were highlighting what look at this individual and how she's fighting the medical community.

And so they started spreading it amongst their networks. Shonda Rhimes found me and they did a Gray's Anatomy episode, season 18, episode two on this and they still air it. And it was this amazing kind of public dissemination of this topic when really historically, as we've talked about, that usually gets, you know, that usually stays in the academic community and it's not usually disseminated so widely.

Len Usvyat

That's truly fascinating. I think you're able to influence the community differently now than maybe we were twenty or thirty or forty years ago. So I do think that's very interesting. Let's talk about patients and involving patients, I know obviously you talked about your father and how there was a very personal connection, but again I think as you know we do a lot of AI work at Renal Research Institute, we do a lot of evidence generation work and we often try to involve patients into the process. But I think it reminded me of how important that actually is, and so again I'd love to hear your perspective on this.

Amaka Eneanya

Yeah, I know people have written, you know, extensively about the power of the anecdote, but that's really kind of the central, reasoning or passion for many researchers, many physicians write, is that there's anecdotes, you know, all over the place, mothers from their family or from their kind of experiences that have drawn them to science or drawn them to medicine.

For this controversy, patients were really involved initially, just from hearing it again, from social media or from traditional media outlets. And then later on when the American Society of Nephrology and National Kidney Foundation formed this race and eGFR Task force to reassess the use of this algorithm and to come out with national recommendations.

There were two patients on that task force. Now it's been published, there's no secret that that task force was incredibly contentious. Okay. A lot of ego in the room, a lot of very disparate opinions. It was very political. It was a very tough process. And it was nice to have two patients to really ask questions like, you know, what does this mean?

Or you like, what are we doing? You know, you guys are talking about all these high-level statistical things or, you know, ethical things. And it brought the ego down in the room. So I think that was incredibly powerful to move forward, to actually have the recommendations to remove race from the equation. And then as the traction continued to kind of pick up, there were petitions that students and trainees reforming that patients would sign.

I did an episode of The Doctors where there were two patients that were my kind of co, panelist on the show and talking about their stories. And so they were really invested in this, the National Kidney Foundation, American Society of Nephrology also had these kinds of public testimonies where they invited patients to kind of share their perspective on this. I thought that was probably one of the biggest game changers, was to publicly hear, you know, patient's testimonies and how they felt about how this was being used behind their back and betrayed. And just a lot of questions and that really helped some of the naysayers move along, because

First of all, it's not popular anymore. Right? Like they didn't want to be the bad guy. And then just to hear these powerful stories, I think really involving patients from the beginning to the end and then researchers, they should really be at the table when you're designing the protocol. Just imagine if we had had some patients at that table in 1999, and they're like, black people are going to be this.

And, you know, now black people are good. Wouldn't that have been so special if there are patients that realize what is second, that this is how. Right. So I think that's something that people are starting to do more have these patient advisory councils and not look them in on the back end, have them in at the table at the beginning of the research protocol or the grant, even to give their perspectives.

Len Usvyat

Yea. I think your absolutely right, involving, including patients in these panels and discussions, I think really changes the tone of the conversation. I know certainly any time I listen to a panel with patients on them, I think it gives a very, very different perspective than I think listening to people talking about more abstractly. I think its very different when it affects me as a patient vs me as a provider of care, I can certainly see this. So want to just pick up a little bit on this, you said the word "egos", what were some of the sources of this resistance? Talk about this a bit more, if you can.

Amaka Eneanya

Yeah. I you know I wish I could answer that question like you know affirmatively and say it was definitely, you know, someone who maybe felt left out of this movement who was going to make it theirs. You know, there's the theory on that or you know, really maybe someone really felt that like going against a statistical equation, no matter the reason, shouldn't be done.

Right. And so I think there's a lot of this in academic medicine. And I and I think it needs to change these kinds of God complexes. Right. And what I, would used to say in the controversy is like, hey, when I was a resident, they upgraded troponin biomarkers like three times. Like I just can't imagine like, you know, like a clinician being like, wait a second.

We don't want more sensitive biomarkers to detect heart attacks earlier. Right? So to me it was the same thing. It's like we should be updating our science. We should be critiquing old practices as we evolve, you know, in science and technology and as this is as populations change, right? We need to be doing this to be more accurate.

And so the kind of God complex of like, I'm on the editorial board of five journals and on the national kind of societies and all of these things. And so what I say goes that needs to end like ASAP. I mean, this to me was a true exemplar of how that can get in the way of progress and how, you know, even as I, later in my career, I may have a reckoning where even though I've been raised a lot in this controversy and maybe some other things, I need to check my ego at the door.

Right. And if someone's challenging something I've said or done or some work that I don't agree with, I need to be open to that discussion. And many of the, let's just say more powerful leaders who did that were so incredibly helpful. And that to me, is the true definition of being a fantastic leader.

Len Usvyat

I often wonder if its more present in medicine, then it is in maybe other disciplines, be it engineering or biology or other areas. I do think there is something about medicine that makes this hierarchy maybe a bit more evident that in other industries. You talked a little bit about the change you were able to make and I think again congratulations because you were successful. Were there one or two things that also helped you succeed, was there anything else you would say were the right timing when that happened.

Amaka Eneanya

The pandemic obviously brought a lot of opportunities, or differences in ways how we were able to communicate things, how we were to work remotely, how we were, you know, networking, for instance. So I think my networking and the ability to collaborate with individuals where I don't think I would have had that opportunity, before the pandemic so easily, you know, messaging people, social media, emailing talks, etc. the murder of George Floyd was really important in this process as well, and the racial reckoning that was occurring in medicine and just looking inwards and being like, what is happening?

Like, are we doing things that are harmful to black individuals or others, you know, subpopulations, minorities, racial, gender, minorities. And so, you know, what are we doing? That was so incredibly powerful and probably lucky, right, that a lot of institutions were like, wait a second. Like, you know, we don't want to be left behind. We want to we want to look inwards and make sure that we're doing the best that we can for all patients, regardless of their background rate.

And so that helped the messaging at times. But it also caused, again, the naysayers to be like, oh, this is all woke, right? This is politicized. And that is why the change is happening instead of, you know, again, digging deeper into the theoretical underpinnings of why racialized biology just doesn't exist and is wrong.

So I think the timing of, of all of this was key to have rapid dissemination and to have people, you know, really join the movement for change.

Len Usvyat

Certainly, during the George Floyd events that transpired in the country and as you said the awakening moment, I think the younger generation played a very significant role and I think. I'd like to tie back between the younger generation and social media and the importance of these concepts, that I think even for me are a bit foreign although I get the idea of it, things like influencer and social media, who is more followed or less followed and how important that has become in changing guidelines, changing public opinion and so on and so forth.

Amaka Eneanya

Yeah. I think this, this example was a really egregious, practice that we were doing in medicine. Very simple to kind of understand that it's wrong. Right. And so a very simple topic for someone to make a very short TikTok video about and circulate that widely. So, Doctor Joel Brovel at the time that this was happening, was making a lot of videos about how, harmful practices were done, racial biases were happening across medicine, and he had millions of followers.

He has since won the most prestigious journalists awards for his work. And I mean, that type of support and collaboration really went a long way. I mean, he's been on every talk show that you can think about. And this example of race and eGFR was one of the main things that he would talk about continuously for years. And so that only helped the cause.

And I certainly had my little crash course testing. But I was no I was no TikTok like, expert at that. I made one viral video. I'm proud that recently my niece is like, you only have three TikTok videos on your account. And she's right. Like, I didn't make a ton of those, but I had, you know, influencers and they were all sharing each other's videos.

And so I think, you know, moving forward, we need to be forward thinking about how we leverage our, younger generations that are savvier with these platforms and tools and how we can collaborate to make our scientific messaging more palatable to the masses. Right. Like, I think sometimes we get stuck in our, like, conference presentation mode of, like, it's got to be high level.

It's got we got to drop all of the right statistical or epidemiological terms to be relevant. No, it has to go back to again that patient story and using, different storytelling methods, whether it's using influencers or other methods on these platforms, is I mean, even doing like a viral dance. Can you imagine, like talking about a research study and dancing at the same time like that makes things go viral?

People remember that. So I think we should be thinking about how we leverage that rather than shying away from it and being like, oh, that's anti-science.

Len Usvyat

You never know, you know, podcasts may be the future of delivering medical messages to the community. I think there is such an component about the fact that generally the younger generation is much more connected to social media. I think that's a very important point in my mind, because I think there will only be more and more users obviously as the younger generation is aging and they are all used to using social media. I would not be surprised if in the future that will become a much more important method of actually getting the messages out, not just about trends, but healthcare messages and guidelines and other things. I mean we certainly want to get it backed up by science, but I think in how you get the message out. Many organizations are struggling in coming out with nephrology guidelines or cardiology guidelines, but I think actually getting the message out there and getting it adopted in the scientific and medical community. It often may be difficult to do and maybe social media is certainly one of the ways helping this as opposed to some may say "oh that's not the traditional medicine", but I think it should augment whatever people do from a more traditional dissemination of information in medicine such as publishing.

Amaka Eneanya

Yeah, I totally agree. And now that we have these, you know, all of these AI agents, like, that's a game changer to to have, you know, even a conversation with an AI agent, and partnering or powering that with influencer. And there's, there's so many things that you could do that makes that scientific message so much easier to digest and so much, so much more relevant.

Be really interesting to see, like uptake of guidelines, like you're saying, if you were to use just various methods of social media, or AI kind of agent messaging to see like what is the effect on people's behavior, their health and their health outcomes?

Len Usvyat

Now you've got me thinking maybe we should do some analysis of whether certain changes in guidelines will more accepted because they were also shared on less traditional methods of disseminating information. I think that's very interesting.

Amaka Eneanya

I'm sure someone's already looking at that. Yeah that's right.

Len Usvyat

I know, I gotta look into that 3-day course. Hey Amaka I have a couple of quick questions for you, one of the questions was about transformation, and of course you've done so much transformative work in healthcare, certainly at Emory, talk about this a little bit, what do people get wrong about transformation in healthcare, what are your thoughts about this, or about this topic.

Amaka Eneanya

Yeah. So I, I like to, I like to borrow from the business literature about like case studies of change resistance, change management. I mean that that is all been widely

described. And I think that we don't understand it as well in health care. For instance, John Carter, who is, Harvard Business School emeritus professor, has eight stages of transformation, and I won't go through all of them.

But if you skip any of those stages, like your transformation will fail. One of them is, is to really kind of garner a powerful team when you're trying to do transformation, I think incorrectly, especially what we've been talking about. People think of a hierarchy, right. And the most powerful is at the top. So let's getting good with the journal editors and the chiefs and the chairs hospital presidents.

But no, it needs to be frontline workers, right? It needs to be those people who are really driving the change, the those people who can really sabotage your change efforts. If they're not on board, they need to be incorporated with the kind of design of the change. Right. And those are going to be the people that really carry that is a powerful coalition.

And I think in the case of race and EGFR, it was students, it was trainees, it was patients, community organizations. Those were the frontline people carrying out this kind of messaging and change for it. You need to be constantly rewarding those individuals that are that are bold, right, that are kind of aligned with your transformation, vision and moving barriers out of the way.

Again, something that we don't do well in medicine. The people at the top get all of the awards right. They sweep all of the awards regardless of their bad behavior. They're never removed. Why is that right? And just thinking of the status quo and how long it takes for us to translate, you know, our research to kind of the bedside practice, it makes me question, you know, is it because we're not doing the transformation in the way that it's been described?

And then, you know, I'll skip to kind of the last part, and that is this succession planning and making sure that change is sustainable. So for the case of race and eGFR, we had the task force recommendations from ASN and NKF, which made you know, it clear this is what our two biggest nephrology societies are recommending. But I was also honored to be a part of the federal policies that came from this work.

And there were three game changers for transplant care. The first said that there could be no, race-based algorithm used in transplant wait listing. The second, which to me was the most transformative, was to review all black individuals on kidney transplant waitlist and use that new race neutral equation that we had developed myself in the original researchers and apply that to that waitlist time.

And so, like you said, if you remove that black race variable, you shifted people's eGFR downwards, giving them more waitlist, waitlist time. And so, a bunch of people got moved up on the waitlist.

As of July, 19,000 black Americans had their waitlist high and modified, and over 6000 black Americans have received kidney transplants because of those changes. Those federal policies and those national recommendations were key to sustainability. If we had just published a paper saying like, here's the race neutral equation, yay, right?

Nothing would have happened. So, you really need to have those guideline changes. You really do need to have those federal policies so that we don't slide backwards and start to regress to the old and the comfortable way of the status quo. And so again, there are these key steps for transformation that I just don't think that people in health care know about, nor do they apply it. To, you know, our scientific and clinical practices in transformation.

Len Usvyat

You know we do a lot of publications obviously within Renal Research Institute it would be interesting to actually take one these examples and augment what we may be doing with a more traditional dissemination of information with some more social media. I can also tell you that personally with work and some of the AI work that we do at RRI is certainly some of the advances that you have talked about in 2000, we have been very cautious and thoughtful about any kind of discussion about what variables actually go in to the calculation of various predictive algorithms and other things that we do and that race is not included in these calculations. I do think these have been quite consequential impacts on further down the line and certainly not just in the GFR calculation that you've spearheaded. Its amazing.

Amaka Eneanya

Absolutely. There are we don't actually have the final number of racialized algorithms in healthcare. And I think each society, the Doris Duke Foundation, is working with CMSS, the Council for Medical Societies, really have each major society do a deep dive into racialized algorithms in each field. So that work is ongoing. And I think over the next few years, we'll see a lot more come out to say like, hey, we don't need to use this.

And so I'm glad that the RRI is doing that same thing.

That's awesome.

Len Usvyat

Yeah. So I think in conclusion I know time flies, Amaka I would love to hear some key lessons learned from your perspective, that you want to share with the audience. How do we do this better? How do we do it using the modern method of disseminating information.

Amaka Eneanya

Yeah, so I always say that, like, I hope everyone gets the opportunity to experience a transformative change in their life. As I have experience, I feel incredibly blessed and lucky. And I really, at that time that I was in this controversy, I really I didn't know if I should stay in it because like I said, I was getting a lot of bullying, and it really pulled me away from a lot of my formative research. I was it was a little scary, like, you know, how is this going to end? But if I thought about kind of like my personal story, not only my father, but like, you know, I studied black sociology in college. Like, I knew race really well. Right. And then I understand ancestry. My family's from Nigeria. And then I was

trained in epidemiology with my MPH and statistics, like, who better for me to take this on.

Right. And so I hope that, you know, the inspiring piece is that if there's something that's personal to you, right? And it kind of matches your science, like keep going because you were supposed to think that you are supposed to be taking that on. And I think if we all had that mindset, we could really do transformative work.

The other thing I would say is that, you know, I was really inspired by the younger populations as we talked about, and I think too often we kind of push them to the side and say, like, they don't know they're too slow. No, it was such a powerful, like I said, coalition to be a part of this movement.

And I think doing more with not just medical and maybe scientific trainees, but even like undergraduate and really getting people more involved in the scientific work is awesome for pipelines, but also kind of and just keeping that change going. And so, you know, the lessons learned is that there's still a ton of work to be done.

But I was really inspired to be a part of it, to see it from beginning to end to the federal policies, to see all those lives affected. It is, you know, it makes me emotional sometimes. So I hope that as a field, like you said, we can think outside of the box, think of social media, get on Grey's Anatomy, like, you know, like, let's think outside of the box and, and how we do things and like, really keep pushing for the necessary change that I think we all feel inspired to do.

Len Usvyat

Amaka, thank you I think Im gonna have to go back and watch that episode of Grey's Anatomy, I don't usually watch it, but I'm going to go ahead do it. It sounds terrific. Its also interesting you said something about the younger individuals, we just had a technician actually in one of our dialysis clinics who is very interested in data science and we are trying to find a way to bring him in to do some work with us because its not only someone who is younger but has that on the floor experience in the dialysis clinic so I thinks its really wonderful and inspiring to hear. Well, Amaka, I want to thank you very much for joining us here today.

Amaka Eneanya

You should it's a really good episode. Thank you for having me

Len Usvyat

And thank you to our listeners for joining the Renal Research Institute for this episode of Frontiers in Kidney Medicine and Bio Intelligence. We invite you to connect with us on our social media channels and stay tuned for the future episodes as we continue sharing insights and advancements in kidney research.