EPISODE 24

“HI: The Human Side of Artificial Intelligence” (Live at AMIA 2021)

**For Your Informatics Podcast**

[Intro Music]

Welcome to another edition of For Your Informatics, a podcast where we explore the limitless world of medical Informatics. Created and led by the Women in AMIA, we offer insights into career paths, leadership and education. Thanks for joining us as we highlight lives to inspire greatness inclusion and diversity in the field of Informatics.

**Dr. Wendy Marie Ingram (WMI):** Hello and welcome to a live recording of the For Your Informatics podcast where we explore the limitless world of medical Informatics. My name is Dr. Wendy Marie Ingram, and I'll be your host today. Speaking to you from the Unseated Traditional Territory of Kumeyaay Indigenous Peoples, the land now known as San Diego, where the 2021 AMIA Annual Symposium is being held. Our podcast is being sponsored by the Women and AMIA Leadership Seed Grants and Grantees. Thanks go to our sponsors and thank you for joining us. Before we begin, we want to announce our ‘Shout-out’ winners, Dr. Sue Boren, Dr. Deepti Pandita, and the Public Health Podcast Network. Thank you for subscribing and supporting our podcasts.

Today I have the pleasure of introducing and interviewing our guests. The closing keynote speaker of the conference, Dr. Irene Dankwa Mullan. Dr. Irene Danka Mullan is a nationally recognized physician, researcher, and industry thought leader working at the intersection of healthcare, health equity, public health Informatics, data science, and applied artificial intelligence. She serves as the Chief Health Equity Officer and Deputy Chief Health Officer at IBM Watson Health. Today we will be embarking on an intimate conversation of HI the human side of artificial intelligence. Thank you so much for joining us and welcome.

**Dr. Irene Dankwa-Mullan (IDM)**: Thank you. I am delighted to be here.

**WMI:** So we wanted to start with you, the human. Please tell us a little bit about you and your path and how you got to where you are today.

**IDM:** Okay. Where do I start? About Me I would like to describe myself as a product of a social mission raised by a village or my tribe. We have to say in Africa that it takes a village to raise a child. So I was raised and nurtured by my tribe. That includes my extended family in Ghana, West Africa. I'm a woman. I'm a woman of color. I'm an immigrant, Ghanaian-born American who has benefited from a great education and from opportunities that I was offered in high school and here in College at Bernard and Medical School at Dartmouth. I'm also a primary care and public health physician, but I also consider myself a health equity scholar in training because I'm learning so much from the health equity health disparities community. And I also think about myself as a global health advocate. But I do stand on the shoulders of many I really like your introduction about where we are here in San Diego, the ancestral land. I stand on the shoulders of many Giants who have paved the way before me, whether civil rights or equality, fighting for equity, for opportunities, and whose paths I aspire to follow and to emulate and help advocate for others. So, yes, my reflection, who I am is really shaped by my ancestors, my tribe, and the Giants that have come before me.

**WMI:** That's so wonderful. And thank you for sharing a lot of the identities and how multifaceted you are. You don't identify as one thing. It is many, many things that go together to make the whole complete human that you are. Are there any childhood memories or thoughts that maybe around some formative things that led you to even think that this was possible or that differentiated you from some of your friends or colleagues growing up or friends?

**IDM**: Yes. And I like the way you phrase the question. As I mentioned, I've been inspired by many people in my early years growing up in Ghana, I was particularly inspired by a woman who was at a Church who was called Irene, and she was a dentist. And I called her Auntie Irene no relation, because at that time there were very few women doctors in Ghana. And I was really inspired by her, even though I was also motivated by the idea of being taught as someone who was a woman who was smart and caring in a dedicated physician. I also wanted to show that women can be doctors. And so I was really interested in and motivated wanting to have those abilities. And in addition, growing up in Ghana was quite different, right. I saw a lot of illness. I saw a lot of preventable diseases, chronic conditions. I remember getting mumps. I remember getting chicken pox. My mom told me I had measles when I was a child, and I think we were vaccinated. So I realized my calling to medicine and public health earlier on and Auntie Irene, of course, was one of the people who motivated me. But I also wanted to be more compassionate with patients. I was drawn by the desire or the opportunity to pursue that deep scientific understanding of the human body, the physiology of disease. It was all intriguing to me and physiology of disease and why it occurred and why was disproportionately seen among lower income and communities that were poor. So as I ended at medical school, I think my motivational who inspired me as I learned more about determinants of health, I sort of saw the same thing here in the US. And I then decided I also wanted to do public health and primary care. And my reasons differ significantly because I wanted to prevent disease rather than having it okay later. So I also wanted to be more compassionate and listen and understand patients, their values, their beliefs and their culture. And so it was about helping to change the way we take care of patients, how we really bring empathy and compassion into care with a focus on addressing the disparities that I was seeing, I saw in Ghana. And then we're seeing here and supporting those interventions because I knew the connection between social determinants of health, social factors and ill health or poor health. And I felt both needed to work together. But I would say after med school residency, my biggest advocate or my influence was my late husband, Fitzhugh Mullin, who inspired me the most. He passed away two years ago, November of this month. And even though he was a professor of medicine and Pediatrics and health policy, his favorite title was being a civil rights physician.

**WMI:** Wow. Tell us more about him as a human. What attracted you to him? How did you get to know each other?

**IDM:** Yes. So I was working as a primary care physician in public health in Maryland, and I was a medical director, and I started to form a cancer we had funding for cancer prevention screening, tobacco use prevention program in Maryland. And I worked with a community to develop coalition, cancer coalition to really understand how we can spend identify how we could spend the funding that we had been given from the state of Maryland. And I needed people to serve on my cancer board. I met him through our health officer. They were friends at that time. And actually he founded the National Coalition on Cancer Survivorship. And we met at dinner, and I said, would you be interested in serving on community cancer coalition? And he said, absolutely. And so that's how we met. But I did not realize his work. He was genuinely a caring person. His parents were from Ireland, and he basically grew up in privilege, he said. But he spent his summer before medical school in Holmes County, Mississippi. He wanted to go to the Deep South and work with families and help run student run clinics. So he talked about the poverty. He saw. He talked about the browser hood that he felt with the African American Blacks in Mississippi. He saw the racism in medical care. And when he headed back to medical school at University of Chicago, he really wanted to make a difference. So he turned his mission into a social mission to address health equity, and he became a powerful influence. He influenced a lot of medical students and residents and continued to do so. To me, he was my biggest health equity advocate.

**WMI:** That's wonderful to have a partner that has aligned missions and values and is compassionate and wants to step out of their comfort zone. I can see how that was really intriguing. And so one of the things words that you said when you first met him, you were building a coalition. So a coalition is something that I think in settings like this, at conferences, people just mentioned coalition, but that's really a group of people. It's a group of humans to come together and do something that not one person can do. Right. And so I'd be curious to hear a little bit more about your experience, maybe with that one or with other of these large group kind of building something together with others. What are some of the reflections you've found of what makes those things work because you've been so successful? Many people try it or maybe think it's easier than it is before they embark. But you've been so successful bringing people together to achieve bigger goals. Tell us a little bit about what's the human side that really makes that work.

**IDM:** Well, I would say it was the community leaders, the members that make this coalition building effort successful. It was around a shared vision for addressing health and health care among different racial and ethnic minority groups. We ended up establishing a cancer coalition, but then we had a Latino health coalition, an African American health coalition, and an Asian American coalition so that they could bring in the uniqueness of that community and identify how best to spend funding what resources we needed. So they were basically developed so that they can guide us or inform us on how to run cancer screening programs or tobacco use prevention programs for their community. So I think having coming together around a shared vision. And then I think one of the things that made it successful was trust and empathy and understanding where they were coming from and integrating their culture, their values into these coalition building efforts was what made it successful. I think.

**WMI:** Yeah, that's wonderful, wonderful insights. And another word that I picked up you mentioned earlier was listening to people. Is that one of the key tenets of how to build trust in your experience? And if so, is there an example of something that you can think of? I know I'm putting you on the spot. Just any kind of nugget or story about where listening really transformed either the level of trust you had with group or coalition or where you saw that not happening and that needed to happen. Anything like that?

**IDM:** Yes. Definitely I think it’s not only listening that helped it work, but also following through. Right. And sustaining sort of the relationship. A lot of the time as researchers or as physicians, we tend to want to work with community groups. And then when funding is through a funding cycle or a project is done, we basically go back and we do not engage the community. So it was really developing that partnership and building trust along with listening and incorporating their values and their preferences and seeing them as co-equals in that partnership, that really made that difference. So many stories, but maybe one that I would recall was sometimes we would want to as researchers, we want to write papers or we want to publish with community groups. And in one instance, as we were trying to develop or write one of these white papers, one of the leads this was in the Latino Health Coalition came up to me and said we need to make sure that the community leaders are the first authors or the leads. And so we made that happen but that was something that most of the time we had to go back and tell the researchers, saying, you know what? This is a community led effort, and therefore the preference is to have one of the community members be the lead, and I think they own it and they need to see themselves as lead on this paper. And so that's the one that I remember. That was really an eye opening experience because I totally assumed that this academic research is going to be first author on this paper. But they took it gracefully and became maybe third or last fall.

**WMI:** And what a great way to really create real trust between the two. That just is amazing. I love that follow through, not just listening, but responding to what they say and continuing to engage with them even after the big Bucks, maybe have dwindled a bit. That's amazing. Thank you. Absolutely.

**IDM:** Sustaining that partnership.

**WMI:** Yeah. So people should really think about that as their long-term planning for even the short term funding cycle. Wonderful. So we kind of mixed two things together in the first segment here about you as an individual as well as the people that have been really influential. Is there anyone else that you want to talk about a little bit or tell us about that has been really hugely influential in your career path or how you think about health equity?

**IDM:** Yeah. So I've been at IBM Watson Health for five years, actually, maybe five and a half, a little over five years. Time really flies. Before IBM Watson Health, I was at the NIH, the National Institutes of Health within the Institute on Minority Health and Health Disparities, and at that time we were really trying to build a transdisciplinary, translational health disparity science, because I realized that we tend to work in silos and a lot of our science is poorly translated. A lot of our evidence is poorly translated into our practice and basically launched a course, a translational health disparities course, with physicians, researchers, policy makers from various sectors. And it was really successful and I was really influenced and inspired by all. We started with a small cohort of 40 students, and it had gotten, because we really wanted it to be small group. We wanted it to be intensive and learn from each other. By the time I was leaving, it was up to almost 196. It was very competitive. But I wanted to point out that every year that we held this course in August for two weeks, I was inspired by all the scholars and part of the reason was they brought such different, rich, unique perspective. It was diversity of thought. It ended up pulling together the faculty and publishing this scientific textbook that was released by Wiley this year in March, the very first book on the science of health disparities research. And it's a combination of over 100 thought leaders, researchers in the field to pull together their work because a lot of the time, I think health disparity signs. There's so much richness, there's so much information, but it sometimes may not make it into mainstream or integrated into our work. So I wanted to pull all the information and the hard work, the great research that had been done by the community into a resource. So I think this is about so many chapters, but 400 pages with a lot of great information. And it's available at institutions that subscribe to Wiley free of charge and online as well.

**WMI:** So for those of you listening and not here in the audience, Dr. Dankwa-Mullan was pointing at the book, *The Science of Health Disparities Research*, published by Wiley Blackwell and edited by Irene Dankwa-Mullan, MD, PhD. Can you read the other names there? And tell us a little bit about who these other folks were. It sounds like it was a labor of love to make this.

**IDM:** Absolutely. The other co-editors are Dr. Eliseo J. Pérez-Stable, who is currently the director of the National Institute on Minority Health and Health Disparities. Dr. Kevin Gardner, who at that time was the scientific director for the Institute on Minority Health and Health Disparities, Dr. Xinzhi Zhang, and Dr. Adelaida Rosario, both of whom were also program officers, very intimately involved in the work and the effort. So those are the other co-editors. And I also have two chapters that I wrote with other colleagues around data AI technology. **WMI:** Okay, I'm going to put you on the spot again. Pick one of your coeditors or coauthors and tell us a little bit about them as a person and what kind of human traits really made them great to collaborate with. You can only pick one. Otherwise, I'm sure you'd have wonderful things to say about everyone.

**IDM:** Well, that's a tough one because they were all great. But I would say all the co-editors had put so much effort into this. And I'll pick on the second Dr. Eliseo J. Pérez-Stable, who is the current NIH National Institute on Minority Health and Health Disparities and held his party's research the director, and he was at UCSF before joining NIH and has been very compassionate, kind about the science wanting to advance it. And he was also an influence in getting this book established, published and joining the scholars and the thought leaders. So I would mention him as an influence in someone who greatly is helping to shape the health disparities landscape at the NIH.

**WMI:** And what kind of characterizes that compassion. Is it generosity? Is it time or understanding with people? I was recently involved in writing a chapter for a textbook, and it is quite brutal. So I have a lot of respect and appreciation for you as an editor as well as the editor of mine. But there are so many things that can kind of go wrong. People who are getting involved in these things that are experts, are so busy, have so many other things going on. How did this co-editor influence and react to people who maybe needed a little more time or encourage them to come and be willing to write a textbook chapter?

**IDM:** Yes, I think it was dedication on all of our part to see this through, because we knew how important the science was to be told and how we needed to get this book out there. So it was basically a labor of love, I would say, for all of us and for him as well. And that was the strongest motivator getting the signs out there. And I think all the co-authors, every single book chapter, was a labor of love for them. And they put in a lot of time and effort to pull this through.

**WMI:** That's so wonderful. So maybe you should shift now to what you're working on at IBM. IBM Watson has the power through AI to be very influential in the world and already is in many ways. And so in your role, can you tell us a little bit about, you will definitely be talking about the nuts and bolts in your keynote kind of thing, but here's an opportunity to really talk about the people, the humans behind the AI, as well as the humans that it's going to affect. Can you tell us a little bit about your thoughts of how important that is to you and how you think about it and how you get others to think about it, too?

**IDM:** Yes, I had a lot of thoughts and ideas running through my mind when you ask me to speak to the human side of AI. So I think they say that we already know AI has a lot of promise in enhancing or transforming healthcare and medicine. But we also know that in healthcare, our compassion, our humanity, our empathy is more important than the AI technologies that we're building. And it's our humanity or our compassion or empathy, that's what makes us better scientists, better researchers, better humans, better physicians. And so our team is basically made up across IBM. We are working with centering health equity in our technologies. And what we do is looking at how we can basically transform our AI for social good. And so we've embarked on a lot of initiatives, and it's so great and so proud at IBM to see every single business unit, every single sector working on inclusive technology, language, racial equity in our design, integrating health equity principles and social justice principles into the AI development lifecycle. Because we realized that AI needs to be, we need that humanity in the loop, is what I should say. But I think you can't have human intelligence, I read it somewhere, without personality or emotions, people don't change their behavior on an information, they change it on emotions, they change it on empathy, on compassion. And so we know that our machines are AI have endless capacity to work, identify patterns they can predict, they can streamline our data, and we can make it as accurate as they can be. But as humans, we are able to interact with our patients or with people and feel and understand. And we can solve dilemmas. We can have dreams and what we think our machines need to do until our empathy, compassion are all important aspects of health care and needs to be at the center of healthcare with AI.

I know we need to have empathy with our tools, but I also talk about how even with our data that feeds our algorithm, we need to have empathy data, empathy. We need to understand the sources of our data and the people and places that make up those data. And so part of we're all learning a lot. And so part of our within IBM Watson Health, we are constantly talking about how we can integrate health equity and these principles into our tools. I wanted to share this. I just learned in an article that was written by Jun Wu in Forbes, and he talks about the process of empathy and having three things. Like when we think about empathy, we basically talked about in terms of how we feel or how we react, how we internalize emotional stimuli that we receive. And there are three parts of empathy that she described.

One is cognitive empathy, which is understanding each other's frame of mind or a person's frame of reference. Then there is effective empathy, which is the capacity to respond with the appropriate emotion. So that's effective empathy and then push empathy is your physical reaction associated with the empathy process to touching or feeling like it would be okay. So when she gave an example, like when we feel someone's love for us, we will use our cognitive empathy to feel the love they have for us. Then we use our effective empathy to respond with the love that we feel for them. And then finally the laugh that we feel may lead to a physical reaction such as a heartbeat and faster. So this is so much empathy. And so in AI, we want to move towards artificial intelligence that has that empathy. And empathy is essential. Right. The machine will just give you the outcome or the tool, and we need to have an understanding of a patent frame of reference. We need to respond with that appropriate emotion with that outcome that the AI tool has given us. And so the actions that we take as researchers or choosing not to take really has an influence on our data, on our patients, on our interaction.

**WMI:** Yeah, that's wonderful. And I'm so glad you defined empathy and used that quote in order to really give it so many layers, which it has. And that's one of the reasons why it is challenging to understand what you mean when you initially said you have to have empathy for the data or with the data. And that might seem very foreign or impossible to some folks, but the way now you're describing it, there's humans on the data collection side, which data is being used, how it's being integrated into a system using artificial intelligence, and then the response to that, too. So I see the human side of things now massively more interconnected with AI than I think a lot of people probably hear of I was asked by a client recently, I do consulting, but I was asked by a client recently, if someone asks us, can we put our data in AI? I was like, that's a weird question. That's just a very simplified version, thinking that AI is some box within which you pour data into, and then out comes actionable derivatives, I guess. But you really just gave it so much more complex experience, I think, which is a massively more important thing to know and for people to think about.

**IDM:** Yeah. I could give you an example where having data, empathy is really critical. Right. So a patient, and I'll use the healthcare as an example, a patient may come arrive at a primary care clinic or hospital with symptoms. So the practitioner will determine the course of action based on his or her assessment, their assessment and belief, often in combination with maybe lab work, maybe imaging, pulling guidelines based on evidence, and also listening. Right. So their actions are a reflection of their beliefs about what they think the patient has. And this action can be based on listening. It's our examination and getting the patient's perspective and values and culture. Or it could just be based on the lapse. But sometimes the action can also be unconscious or conscious bias or stereotypes. So that intent is translated into writing the treatment plan or the intervention. And guess what goes into our AI data models? It's what's captured in EHR systems. It's what's captured in claims for patients who have robust health profile or who have the appropriate treatment outcomes that's reflected in our AI models. So I always say that having empathy or having compassion and providing each and every patient with the right intervention translates into our data and translate into our algorithms. And so we all need to have that empathy or that mission, social mission or responsibility to ensure optimal outcomes that really reflect a patient values and culture because it's translated into our data and translated into our algorithms.

**WMI:** So I'm going to ask a couple more questions here about this particular topic. And the first is, what are some of the bad cases or an example of how not having empathy with AI and with the data will result badly? And so you're kind of hinting a little bit about people's biases, maybe implicit or influencing the data, and then that data being downstream, causing potential harm. But maybe you can give us another, bigger picture of, how can this go wrong if we don't have empathy? Or what's a worst case scenario kind of potentiality? And then the second question, which I'll repeat if you want me to, will be, what are the most critical pieces that informaticists and physicians, and especially physician informaticists, here at AMIA or listening to this podcast, really could take home with them as what they can do in order to help contribute to avoiding that catastrophe? Does that make sense? And is that a fair question?

**IDM:** It is a fair question, but I would say that we already are experiencing that catastrophe because we're already experiencing disparities. Right. Disproportionate. Disparities. And we already sold the COVID. There's a lot more that needs to be done with addressing bias in our data, practicing or translating our signs to be more accurate. But the catastrophe is the disparities we're seeing. We're in the catastrophe we are in, and we saw it with COVID. And I think what we need to see right now and seeing it with the huge disparities, which was exacerbated by even lack of data right in the beginning. So I think we're working on that. We have a long way to go. Like health, achieving health equity is a process like we all say. And I think there's a lot that we need to do. We need to code empathy into our machine learning tools.

**WMI:** You have to tell me, how do you code empathy into a machine to our data?

**IDM:** Well, it's a continuum. We need to have better research signs that informs evidence. We need to understand have that empathy and compassion understand. Every single patient is unique. Every single patient has a lived experience. And so integrating their social as well as their environmental and their physical factors, is important to clinical decision making or to public health decisions that we make.

**WMI:** That's wonderful. I think that's a great time to point, to pause our conversation and go to the audience. So we do have a microphone that we would love for anyone in the audience who has questions for Dr. Dankwa-Mullan to please, maybe Karmen, would you be able to hand the microphone to people?

**Audience Member:** Thank you so much for your talk today. I really appreciate it. And I have a question as it relates to empathy, equity and data. And as you mentioned, we need to see more empathy embedded into these algorithms and into the data. Can you share some examples of where that needs to be redone, perhaps, or that conversation continues to need to be changed, like some specific example where we've seen the data, we've seen the bias, we've seen the lack of equity in that data and that algorithm. And what are your recommendations to change that algorithm that exists?

**IDM:** Yeah. Great question. Do we have time?

**WMI:** Yeah. So that'll be the workshop at next symposium. Go ahead.

**IDM:** I usually would present it as what we need to do. So there's an entire spectrum where we all need to work towards to get to address bias in the algorithm. And one the first is looking at. See, AI does not only use data, it also used an evidence base. Right. So we're building clinical decision support tools is the data that gets fed in. If it's clinical decision, it's sort of guidelines. What the literature is saying, what's in real world evidence… So we need to look at how our research and our clinical trials is being conducted, how it's being reviewed, who is getting funded, how it's being disseminated.

Our clinical trials need to be more diverse. It's not. And they only even reflect people who tend to be in clinical trials, which may not be the communities in which we want to address disparities. And then the research evidence base that is used for clinical decision making needs to be more robust. Right. So what determines evidence? Is it based on a diverse patient pool? Is it based on real world evidence? A lot of that also needs to be reviewed and looked at. Who is making that evidence? What determines what the evidence base is? And is it evidence for just a minority, white males? Right. Because sometimes the studies may not include women. So our research and translation, I think, needs to be really reviewed and transformed in a way that would integrate inclusivity and diversity.

The second E, so that's research evidence. The second E to me is the healthcare provider, the expertise and the experience and whether they really have that. The human bias is also what we need to really understand and address. If a physician does not provide you with the full range of treatment and just decide, oh, I'm going to give you this without even having a shared decision making, that there's bias there. Right. And so unconscious or conscious biases that exist within the health care system, within provided or even health plans that may say we're only paying for this treatment for you is adds to that bias. Right. Because when we're developing AI tools, machine learning and healthcare, we're using EHR data and the treatment that was written for a particular patient. We're looking at claims data. And so that E for provider expertise, experience, and really having the knowledge about their patients, culture, values or what's accurate for them is really key.

The third E is the environment. Are they incorporating social determinants or factors that determine the disease into that algorithm? And it all depends on the context for that algorithm. And I would say there's also embedded data biases. Right. So that's E, that's the fourth E. There's sometimes the data may be missing. It excludes certain patients. It may be using EHR that favors a certain group of patients that may have really robust health profiles because they visited the hospital and their physician or provider was more attentive to their needs and was prescribing until you see that reflected. And that's a bias. And I think the fifth is that data empathy that I talked about, we're really having sort of an understanding of different belief systems, the sources of the data, why cultural biases, family structures, a host of other culturally determined factors influence the manner in which people experience illness or adhere to medical advice or respond to treatment. That's all part of that data. Empathy.

**WMI:** What a great question. That got a great answer.

**IDM:** So that's the five E's the summary, right? Yeah. So it's the research evidence, e the provider expertise or experience of your healthcare team. It's the environment integrating social determinants of health. It's exclusiveness in the data. We need to be more inclusive. Right. So embedded data bias, it's not comprehensive, it's not complete. And then the fifth is empathy.

**WMI:** Perfect. That's beautiful. And I'm going to remember that or at least try to. So are there other questions from the audience right now? Yes, we have one.

**Audience Member:** We want to reduce this disparity in health research, but one of the biggest barriers is actually getting people of color to actually participate in research studies. So I think that's a big hurdle. Do you have any suggestions on how we can combat that? Until more people of color are actually participating in this research, we will always have that problem of just a few simple size who are actually not truly representative of diversity of people of color?

**IDM:** Yes, that's a great question. And it reminds me of I would say we have work to do in building trust with communities of color and also being trustworthy. Right. Because you build trust, but you also have to be trustworthy. I think with research, we can all be part of the research enterprise. We as in communities of color and everyone. And once I think the conversation from, oh, we're coming to do research with you, and we all want to advance our science, we want to be healthier. We want to understand why you have higher burden of disease. I think it depends on the conversation and having us become part of the research enterprise, co-publishing with them. Like I said, they were the first in that example I gave with the Latino Health Coalition, they were driving that research because communities have a lot of assets, they have a lot of knowledge and reframing that conversation and approach and looking for grants with community, I think may change that paradigm, but I think it begins with trust. And you're right. A lot of the time we lack the data from communities of color. I think our discussion and conversation with them needs to reflect the fact that this is something that we're all doing together for the benefit of everyone and build that trust with whatever it takes. Otherwise, we will not really get to where we are with addressing achieving health equity. But that's a great question.

**WMI:** Any other questions right now? If not, I will totally ask a question. So following up on that kind of line, what does health equity look like? What does achieving health equity? How do we know? I know you said it's a process and it's probably a very long road, but is there a way you can define what it'll look like? At some point or what you're going to look at in order to say we're at least on the right path, we're heading in the right direction.

**IDM:** Yes, great question. I think what health equity looks like is when every single person, individual and their families are given the resources, the opportunities to achieve optimal health right and optimal health outcomes, and they're able to function and contribute to society. So providing each and every single person that reflects their needs, that reflects their preferences. So the resources they need, the opportunities they need, engaging them in shared decision making to achieve that. So it's when everyone has that sort of real opportunities and they do not experience any barriers. And this can all be done with compassionate care, with a health care system that has the competencies, that has the compassion or passion. And when I say competency, basically cultural competency all that, when they have that to provide to the patient, then we'll be achieving health equity. Maybe I went over...

**WMI:** …but that's I love it. I wonder if maybe we could explore some of the human side of resistance to health equity or how did we get here, or do you ever encounter folks I mean, everyone that you wrote this book with obviously is a champion. And so there's kind of a preaching to the choir where you really are engaging with the folks that know and understand and value health equity and translating our knowledge and our insights into real patient care really helping people. But there's a lot of hesitancy. I mean, if it was easy, if it was something that everybody was already aware of or cared about, we would already be well on our way towards health equity. Right. So maybe can you share any experiences or generalities that you've encountered and folks who might be hesitant to making the actions that will get us in that right direction?

**IDM:** Well, I would say to them, health disparities is costly. Our healthcare system is so expensive, and the cost of health disparities is in the trillions of dollars. And so what we're doing basically is sort of a one size fits all. And so I think we just need to appeal to sort of that moral ethical imperative that it needs to be addressed because our healthcare system is overburdened. We are experiencing a lot of medical errors. And our opening keynote Speaker, Dr. Eric Topol, mentioned that as well. Where our system is overburdened and it's costly. And so addressing health disparities is the right way to go. I mean, can you imagine every single one of us achieving our full health potential and how productive, how innovative we will all be and where we will be in terms of advancing the science in our health? I mean, that's the way I would put it.

**WMI:** That it's not just moral and ethical. It's monetary, too.

**IDM:** It's monetary what motivates them. It's being productive, everyone being able to contribute back and being productive members of society. And that's why health has a particular value to it, because ill health prevents you from contributing to society. And so having that opportunity or resource or ensuring that we're addressing health disparities can be transformative in itself.

**WMI:** So anyone out there who's still resistant to how important this is heed these words. Yes. So I am a mental health informaticist. I'm very passionate about how we collect and use data to better understand the ideologies and the treatment responses and create precision medicine approaches for treating people's mental health. There is a huge amount of stigma and even arguably, in many cases, even larger disparities among mental health and wellness from physical health. And obviously the two are highly, highly intertwined. I'm curious, do you really engage in those conversations? Is that included in what everybody's talking about, or is it being given another different spotlight or more or less in IBM Watson or in some of the work of the co-authors of this book that you were involved in? So maybe I'm just curious and asking for myself.

**IDM:** No, absolutely. I think mental health is a huge part of our health. Right. Our health is basically our social health, physical health, mental health and mental, behavioral and financial health. Right. That's all part of health and well-being. And we do not give that attention and investment in mental health as that we should. Right. And if anything, COVID was traumatizing, and every single one of us needs need to take care of our mental health in addition to our physical health. And you're right, there's such a stigma with mental health. I was mentioning to you the other day, we have annual fiscal exams and we go to get preventive screening. We should have biannual mental health visits. Right. So that it's not stigmatized because we all need to have a mental wellness. Right. Mental health and wellness. And so we really need to look at how basically the mental health institution, there's a huge, huge disparities, even more than fiscal health, and there's a lack of treatment interventions. They are overburdened. And I think there needs to be more intervention in that space. And so, yes, it's one of the areas in which I care deeply about and want to advocate for some more and push our health disparities effort towards looking at those fiscal and mental health issues.

**WMI:** I love that. And I immediately want to introduce you to certain people to try to make that happen.

**IDM:** Yes, I would love to meet with them.

**WMI:** We're getting close to the end. So maybe I wanted to see first if you have any last things that you wanted to cover today that I didn't ask you about yet.

**IDM:** I didn't get the chance to emphasize that empathy and AI ethics need to be integrated. We need to basically look at how we are using AI for the right purpose and bringing humanity into the best in humanity, into our AI, how we can live and work with our AI machine counterparts. And when we're drawing up on AI ethics or ethical AI really integrating empathy into these AI systems, I think that's what I wanted to mention that I had forgotten.

So that's what I wanted to say. But in terms of closing, I think we all add the change that needs to happen. We cannot wait for someone else to step forward. We need to bring that change. And I think the change can be all of us working, doing the best we can be in our jobs, influencing others with kindness because kindness is infectious. And if anything, I think COVID has taught us that humanity depends on everyone's humanity.

**WMI:** We are so interconnected and nothing like the COVID pandemic has really elucidated that to such an extent, has it?

Well, thank you so much. This has been amazing. This is Dr. Wendy Marie Ingram, concluding this live recording of For Your Informatics podcast where we explored together the limitless world of medical Informatics. Thank you so much for your time and for being willing to talk to us today and the incredibly important human intelligence behind pioneering AI. It's been exciting to hear about your personal life, the people who have influenced you, as well as what is happening at IBM Watson and how we from organizations to the individuals can include more empathy in what we do when we engage with AI and the data itself and the people from whom we pull this data from.

So for the folks who are here at the live recording, don't miss the closing keynote by Dr. Dankwa-Mullan. And for those who are listening, please check out the wonderful book, *The Science of Health Disparities Research*. This is fantastic. And the lead editor is Dr. Irene Dankwa-Mullan, MD, PhD. Thank you for your time.

**IDM:** Thank you. It was a pleasure to be here.

[Outro]

Thank you for joining us for this edition of For Your Informatics Podcast where we explore the limitless world of medical Informatics. Follow us on Twitter, Instagram and LinkedIn @FYInformatics, and never miss an episode. We would love to hear from you. Let us know what you think about the show, ideas for future topics for guests, and other suggestions. Until next time…