

Michael Crawford is Battling Chronic Disease with Data – Hospitals In Focus Transcript

Recorded ([00:05](#)):

Welcome to Hospitals In Focus, from the Federation of American Hospitals. Here's your host Chip Kahn.

Chip Kahn ([00:14](#)):

Despite systemic challenges of race, ethnicity, aging, and poverty, health care givers can enhance health equity in communities across the country. But just as social determinants of health vary between groups of Americans, so too are the interventions needed. Today, we will do a deep dive into the use of technology and data to change the dynamics of socioeconomic status, race, age, and chronic disease. We will explore the role of technology and what it can do in addressing social determinants of health and chronic disease and scalable solutions that can be adopted in communities throughout the nation. Here to discuss these topics with us is Howard University's Associate Dean for Strategy, Outreach and Innovation, and the Founder of the 1867 Health Innovations Project, Michael Crawford. Thank you for joining me today, Michael.

Michael Crawford ([01:07](#)):

It's a pleasure to be here and thank you for the opportunity to share my insights with you and the audience online.

Chip Kahn ([01:14](#)):

Michael, will you tell us a bit about yourself and the 1867 Health Innovations Project at Howard University, which you started?

Michael Crawford ([01:24](#)):

Thank you for the question. I am currently the Associate Dean for Strategy, Outreach and Innovation at Howard University College of Medicine, Interim Chief Administrative Officer Howard University Faculty Practice Plan and Founder of 1867 Health Innovations Project. In this capacity, I am a Senior Advisor to the Dean of the Howard University College of Medicine and Vice President of Clinical Affairs. And collaborate with College of Medicine and hospital leadership, as well as the broader campus leadership to advance the academic health and innovation mission. Prior to Howard University, I held domestic and international leadership positions in strategic management, operation strategy, finance, product and program development, innovation policy and business development, at large corporations, nonprofits, and startups. And before I dive into describing 1867 Health Innovations Project, I would like to start with a story. And the story starts with me traveling around the country 18 months ago to visit innovation hubs in some of the largest cities in America.

Michael Crawford ([02:35](#)):

I traveled to Boston, Chicago, Seattle, Austin, San Diego, New York, Atlanta, to really observe what type of health innovation was occurring. And I quickly recognized that there is a lot of interesting and innovative things occurring, but that innovation was not being solely focused on medically underserved communities. So that was part of the input, in impetus for me to develop 1867 and also looking at life expectancy. So we were reviewing life expectancy data in particular, well, life expectancy data that was conducted by New York University School of Medicine evaluating the 50 largest cities across the US, to determine the gap between the most affluent neighborhood and the poorest neighborhood. And surprisingly DC was in that top three in terms of gap of life expectancy. And there was, actually based on the survey, there was a 27 year life expectancy gap between the most affluent neighborhood in Washington, DC and the least affluent neighborhood.

Michael Crawford ([03:52](#)):

So just imagine two children grow up in the same city, one has an expectation of living to be approximately 94 years of age and the other has an expectation to live to be 67 years of age, which is an unacceptable reality in the most powerful city in the country. So 1867 was developed to address these particular challenges for the medically underserved. And we developed the program with the understanding that we would be solely focused on partnering with entrepreneurs, researchers, technologists, and corporate partners to tackle complex challenges, confronting medically underserved communities. The program's goals are to use technology and innovation to improve healthcare access and outcomes, by helping to reduce the cost of care, validate the efficacy of cutting edge digital solutions in medically underserved communities and chronic disease management. Co-create with entrepreneurs, researchers, and innovators and corporate partners with respect to aligning technology with medically underserved patients care needs, while facilitating the adoption of disruptive technologies.

Michael Crawford ([05:04](#)):

We also aim to create new models of care supported by digital health technology and research frameworks through our rigorous evidence based model. And then ultimately, we look to publish and disseminate research findings and insights to enhance the body of research related to digital health technologies in medically underserved communities. From a technology perspective, we're very much interested in identifying mobile apps, sensors, virtual and augmented reality, artificial intelligence and machine learning, wearables, voice and facial recognition and data analytics products. To pair with new and existing models of care to address healthcare conditions that are endemic to medically underserved communities. Such as diabetes, hypertension, cardiovascular disease, genetic disorders, cancer, neurodegenerative diseases, and behavior and mental health. All of this is being done to improve some of the critical care delivery elements such as patient and family engagement, care coordination, virtual care, and data analytics. So we are hopeful that 1867 Health Innovation Project will be a positive catalyst to transforming care for the medically underserved.

Chip Kahn ([06:19](#)):

Clearly, Michael it's just such important work that you're doing. Let's look at a particular set of projects of the 1867 Health Innovations Project. And AARP Innovation Labs recently announced a strategic partnership to develop new models of care for seniors using technology. Would you tell us a little bit about the two clinical pilot projects you have, and I think you have some other news about partnerships that I'm sure would be interested in also.

Michael Crawford ([06:49](#)):

Yes, this past June, we made an announcement that we were partnering with AARP. So 1867 Health Innovation Project was partnered with a AARPs Innovation Lab to focus on developing new models of care for 50 plus medically underserved. The collaboration will explore H tech solutions to enhance health care access for individuals with chronic health conditions in medically underserved communities. And we will explore a range of health conditions such as diabetes, hypertension, cancer, neurodegenerative disorders, genetic disorders, such as sickle cell, as well as behavior and mental health conditions. The first two pilots that we're focused on is diabetes because diabetes had had a disproportionate impact on individuals that reside in medically underserved communities throughout the district of Columbia. And we will be focused on how can we leverage solutions and new and existing models of care to improve medication adherence as well as overall management of diabetes.

Michael Crawford ([07:52](#)):

The first part of the project we'll assess a facial and voice recognition device that enables video calls to the provider and reminds patients to take their medication. The second pilot will assess a digital online health community, where patients are paired with other individuals, struggling with diabetes. The research team will use the Morisky Medication Adherence Scale in measurements of hemoglobin A1c level to track the success of the project. And patients also will be given surveys about whether the technology helped with their diabetes management. Overall, the partnership hopes that these clinical pilots would generate meaningful insights to help improve access to care, improve healthcare outcomes, and hopefully be able to reduce the cost of care in the process. And as you mentioned, Chip, prior to your question, we do have an announcement about another partnership. Yesterday we announced a partnership with Health and Human Services, so 1867 Health Innovations Project in the center of sickle cell disease at Howard University, will explore technology and data solutions to help improve the health and wellbeing of patients living with sickle cell.

Michael Crawford ([09:11](#)):

We're extremely excited about this partnership. Sickle cell is a disorder that disproportionately impacts people of color. So we are looking at ways where we can leverage cutting edge solutions in data to improve folks that are living with sickle cell disease. Primarily in the areas of the transition from pediatrics to adulthood, emergency room care, care coordination, and patient and family engagement.

Chip Kahn ([09:41](#)):

As you pointed out, Michael COVID-19 has amplified the discussion regarding health disparities across America and the need to craft sustainable solutions to help vulnerable communities. How are you planning to use the insights collected from these initial pilot projects and your other research to inform care delivery?

Michael Crawford ([10:01](#)):

COVID has accelerated the use of telemedicine modalities as well as additional virtual healthcare solutions. So we believe that the work that we're doing is extremely timely. We had a supreme focus on being able to leverage telemedicine and virtual health solutions to improve access and healthcare outcomes for the most vulnerable. And what we believe now is that we have an infrastructure in place, along with the payer mechanism to really put forth, really compelling and comprehensive models through our clinical pilot process to help folks really better manage their chronic conditions. So for instance, the diabetes pilot is using a facial and voice recognition technology. And it is very timely because we have seen through COVID-19 is individuals have delayed their care because either they were afraid to travel to their medical provider's office, or they were simply afraid to come in to an environment where they felt that they could contract COVID. Because most of our patient population is part of that highly susceptible COVID population that can contract the disease.

Michael Crawford ([11:21](#)):

So now that we are conducting these pilots, it gives us an opportunity to really validate these solutions in real time in an iterative clinical setting, to generate key insights that will help inform how we look at virtual care in the future. Particularly around remote monitoring in telehealth as well as wearable devices that we believe could provide us with the requisite real time data to help inform how we craft proactive solutions to help folks better manage their conditions or actually realize a higher quality of life. So we believe that these pilots are going to be very useful in terms of generating meaningful insights

from a technology delivery perspective, but also from a user perspective. We will also be able to better understand how users engage with technology. What type of onboarding is required for these individuals to be able to fully leverage the use of the technology. What their home environment looks like, their natural habitat, in order to effectively deploy solutions to their home. All of these insights will give us the ability to deliver a higher quality of care to a population that is often overlooked and underrepresented within technology clinical research.

Chip Kahn ([12:49](#)):

So it's really clear from what you've discovered, Michael, that health technology for the 50 plus seniors is so critical. How can we leverage online patient and health platforms to help these and other Americans better manage their healthcare and their chronic diseases?

Michael Crawford ([13:09](#)):

According to our partners at AARP, technology is already a central part of the life of older Americans. And the connection with their devices is only expected to grow. According to AARP's 2019 tech's trend survey by the year 2030, nearly 132 million Americans, aged 50 and older will spend upwards to 84 billion a year on technology products. The survey also indicates that 91% of those age, 50 plus report using a computer and 94% say technology helps them keep in touch with friends and family. That data provides a lot of helpful insight in terms of the work that 1867 Health Innovations Project and AARP are undertaking. We believe that seniors are adequately prepared to be able to use technology. And we think that through our evidence-based model in some of our clinical pilots, we will be able to generate additional insights to improve virtual health efficacy, improve the efficacy of these virtual healthcare models. So we believe that the timing of this is critically important, and we believe that we're on the precipice of really changing the way seniors can access care through technology and innovation.

Chip Kahn ([14:30](#)):

How do you think we'll take what you've learned and this knowledge base and provide insights that will allow you to scale into care delivery?

Michael Crawford ([14:43](#)):

We believe that we've already through some of our pilot projects, we have been able to generate some really interesting insights from our patients, as well as our providers. We have had meaningful conversations through our co-creation process with some of the entrepreneurs that we've been working with. We've been able to modify the onboarding process for some of the technologies that we're currently using in our diabetes pilot. We've been able to modify some of the training material in patient support that is required to ensure that folks are using their technology to its fullest potential. And then we've also received a lot of insight from our providers around some of the interfaces, how they can communicate and connect with their patients via these platforms. So we believe that this information and insights through our co-creation process will help us be able to develop new models of care supported by cutting is technology, that can be scaled not only within the Howard University network, but through some of our partners, our strategic partners, as well as trade associations that have a shared mission to transform care for the medically underserved.

Michael Crawford ([16:01](#)):

And so we are very hopeful from some of the initial findings from our clinical pilot studies and that these insights could help us improve the efficacy of our models across hypertension, cancer, diabetes, genetic

disorders, as well as behavior and mental health pilots that we plan to conduct throughout the rest of the remainder of the calendar year.

Chip Kahn ([16:24](#)):

This is great and really sets the stage for transforming healthcare, but obviously getting it paid for is key and getting it integrated into policy is key. What needs to be done to enable these insights, to impact healthcare policy and health insurance plan design?

Michael Crawford ([16:44](#)):

If the models prove to be efficacious, ideally we would look to partner with payers as well as policy makers through this co-creation process, to provide them with some level of insights around what types of technologies have proven to be efficacious. For instance, we have seen that through an initial project that we worked on, through a remote glucose monitor, that it had the ability to reduce the amount of emergency room visits for a patient population. We believe that that is important information for our payer partners, because if the technology has proven to be efficacious in reducing the amount of unnecessary ED visits, it's a technology we're reimbursing. That gives the technology companies and entrepreneurs, a payer mechanism to be able to support the deployment of their product. And it gives the payer a validated way to demonstrate that this product was efficacious. So based on some of the initial conversations that we've had with payers through our model, if we were able to validate the efficacy of the solutions, it gives them an opportunity to reimburse, think about how they would reimburse these products, particularly for their folks that are the most vulnerable and chronically ill.

Michael Crawford ([18:05](#)):

From a policy perspective, we believe that when you think about deploying sensors, wearable devices, mobile apps, virtual augmented and mixed reality. And then also thinking about some of these online platforms, some of the challenges around interoperability have been well documented, but what we're seeing in real time is that we have a lot of great entrepreneurs that we're working with, but they have separate interfaces. So sometimes it makes it cumbersome for the provider, as well as the patient to interface with multiple technologies with different platforms. So the policies around interoperability are critically important. So if we could aggregate that data into a single data set, it will provide the provider with more information to craft solutions that are aligned with the patient's needs and desires. So we believe that legislation, these insights should help policy makers, help inform policy makers thought process around some areas such as interoperability, digital therapeutics, also around areas such as the digital divide, which I know that we're going to talk about a little bit later.

Chip Kahn ([19:22](#)):

Michael, that does bring our conversation to this issue of the digital divide. With so much of the world taking place online these days, and in the care that you're discussing, internet access, wifi and download speeds impact an individual's experience across many aspects of their lives. And clearly here with the kind of delivery we're discussing, it's mission critical. How does this factor work into your project and what you're trying to develop for patient care? And do you consider internet and wifi access, frankly, a social determinant of health?

Michael Crawford ([20:01](#)):

As we have began to undertake our two diabetes clinical pilots and been working to deploy the devices into the homes of our participants, we initially ran into some barriers around wifi connectivity, as well as

broadband challenges. So immediately, we recognized that broadband and wifi are critically important pieces for us to be able to deploy cutting edge technologies. And some of the things that we quickly learn is that because folks have access to broadband and wifi doesn't necessarily mean that they have the appropriate level of access to use technology such as virtual mics and augmented reality, facial in language processing technologies, because they have a certain level of download speed. And these devices require an elevated amount of download speed to use these products to it's full potential. So we quickly recognized that folks have access, but they need to have enhanced access. And some of the folks who had download speeds around 25 megabytes per second, where some of our devices required around 90 to a hundred megabytes per second.

Michael Crawford ([21:20](#)):

So that in it of itself was a barrier for us to deploy these technologies, to some of the folks that wanted to participate in these clinical pilots. Also, what we recognized is that security definitions and software associated with some of these wifi and routers, were somewhat outdated. So the way that the technologists were designing their devices, there was some incompatibilities issues. We have these wifi and browser devices that prevented us from using or deploying these technologies into the homes of our participants. So we had to work with our entrepreneurs and technologists to troubleshoot these issues, to ensure that these were not served as a barrier. So we quickly recognized that some people do not have access at all, some people do have access, but because you have access doesn't mean you have a sufficient level of access to fully leverage the use of cutting edge technologies.

Michael Crawford ([22:24](#)):

And we look at it within three buckets, access, usability and empowerment. I touched on a little bit about the access from a wifi broadband perspective, but some of our patients do not have access to a tablet, a laptop, or even a smartphone to be able to access some of these platforms. Some folks from a usability perspective, don't have the technical literacy and knowledge to be able to engage in using these technologies or onboarding to these technologies in an efficient and efficacious way. And then the empowerment piece, folks do not feel confident with using technology and using internet browsers to be able to query and use these devices to better manage their conditions just simply because they haven't been exposed to it. So I know that the digital divide concept is very complex and nuance, but when we look at it, it really comes down to access, usability and empowerment. And we believe that the work that we are doing helps address those three areas and enhances that level of technological literacy and usability. And we are also empowering patients in the process to use these different types of technologies.

Chip Kahn ([23:39](#)):

Michael, we know there are so many issues around the care for communities of color. One of the long running problems has been the clear under-representation in clinical research and trials of communities of color, which makes the work you are doing even more important. How will your work help improve clinical trial participation for these important populations?

Michael Crawford ([24:03](#)):

We have done a fairly exhaustive surge of technology and innovation research occurring within medically underserved communities. And what we have discovered that there is a limited amount of research occurring in this area. So when folks are developing augmented and mixed reality and facial and language recognition and wearable devices and sensors and data analytics platforms, folks that are

minorities and communities of color are not necessarily participating in this RD process. So as we continue to scale up in terms of the number of clinical pilots that we plan to conduct, our hope is that we're elevating the participation of communities of color in our pilot projects, this based on our patient population and the demographic that we are targeting. So folks are not only being able to participate in this process, but they're also being exposed to cutting edge technologies in being a co-contributor in shaping and developing these solutions for better deployment.

Michael Crawford ([25:16](#)):

So we believe fundamentally that our work is going to help elevate participation in clinical research. We also know about some of the historical barriers that have prevented communities of color from participating in clinical research. And they generally revolve around the following areas. Trust, most folks are familiar with the infamous Tuskegee Syphilis Study, that has really jaded how communities of color view and participate in clinical trials. I think it still has had an impact on how folks view whether or not they should participate and can they trust the entities that are conducting these clinical trials? So I believe trust is a huge issue. Cost is also a barrier, some of these clinical trials require folks to travel to certain locations and take time off of work. If you are a wage worker, you can't afford to take off of work, or you would be put in a vulnerable position of losing your job. And then it's also about access and knowledge about receiving information to participate in clinical research. So that has been a traditional barrier.

Michael Crawford ([26:29](#)):

We believe that some possible solutions are the work that we are currently doing at 1867. And then also if folks that are conducting clinical research could think about that cost component, as well as being able to proactively market to communities of color about clinical research and addressing some of the concerns and challenges that they've had in the past. I think that would help in terms of increasing participation in clinical research. So we are hopeful that will be a positive and productive component of increasing participation. But as other folks think about undertaking clinical trials, particularly during this area of COVID, that they will look at those areas that have been traditional barriers.

Chip Kahn ([27:14](#)):

Michael, thank you so much for joining us with your insights into how health care providers can improve care for vulnerable Americans and for sharing the work of the 1867 Health Innovations Project, which is just so impressive to hear about. Really appreciate your being with us.

Michael Crawford ([27:34](#)):

Thank you so much, Chip. I really appreciate your time and the opportunity to share my insights with you and your audience online. Thank you again.

Recorded ([27:47](#)):

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