Discover Healthier Podcast: The Future of Healthcare

Speaker	Start time	Dialogue	End time
Azania	0:00	Welcome to Discover Healthier: everything you need to know about health brought to you by Discovery Health. I'm Azania Mosaka. You can join the conversation as we explore some of the most pressing matters in the healthcare environment today. A wide variety of topics and specialist guests will empower you to care for your health, now and in the future. Digital and artificial intelligence based innovations are disrupting industries globally. It's no different in healthcare. Well in this episode, we explore current digital healthcare tools and services, and what further developments mean for consumers and providers of health care. We also visit a medical practice for a first hand experience of how technology supports patient care. We're talking about the future of healthcare, why it's important to adapt and what it means for healthcare.	0:55
Azania	1:02	Dr. Jonathan Broomberg, the CEO of Discovery Health, says we should embrace AI and digitization in healthcare for a more empowered system and consumer. I spoke to him about how technology is transforming the healthcare landscape and some of the positive outcomes for doctors and for us as consumers of healthcare.	1:21
Azania	1:21	So Dr. Broomberg, I understand that the future of healthcare is a topic of particular interest to you. So tell me why it excites you?	1:34
John	1:34	Well, it excites me because I grew up, you know, in healthcare, I studied medicine, worked in it all my life. But what really excites me now is the pace at which things are changing. There is such incredibly rapid innovation and development, right across the spectrum of health and healthcare and medicine. That really, you know, it's hard to even keep up every day. And that's very exciting.	1:59
Azania	1:59	Yes, as you said, there's this explosion of innovations. So if we look at how digital this revolution is transforming healthcare, what is the picture?	2:08
John	2:09	The picture is very broad. It all comes down to some of the same trends that are allowing digital transformation to literally upend all other industries. So, the massive increase in computing power, the reducing price of more powerful computers and storage, the ability to gather huge amounts of data and analyze them. So healthcare has that in common with many other industries as well. What it's changing in healthcare, I think it can be seen in a few areas. The first is the power to gather huge amounts of data, and then to both predict disease much earlier than we could in the past or than we even came in the present. So, disease prediction is one area. The second is personalization of medicine and health care. We currently treat every patient kind	3:53

		of one-size fits all. If you've got high blood pressure, you need this pill; if you've got diabetes, you need that injection. And the reality is that every human body is actually quite different. Our genes are different, our metabolisms are different and we're on the brink of an era where literally each hypertensive will be treated differently from any other one and a diabetic will have a unique treatment. So, personalization of medicine is another area. Third, in the field of artificial intelligence, is where we're now able to develop algorithms that are able to do some things that doctors have historically done and to probably do them better and much faster, and more accurately. So, there's a whole new field of diagnostics. So there are a number of- those are three of them, I could keep talking all day. Those are three of the very big ones that I think are interesting to talk about.	
Azania	3:53	So let's drill down into the three that you've that you've pointed out. You mentioned analytics, there's also big data.	4:00
John	4:00	And personalization. And then AI.	4:03
Azania	4:03	Yes, so clearly over the past, and especially when you look at things that we have known about human beings, often the research has been based on studying men, for instance. So now we get to understand more about women and how disease presents in women; we get to be a lot more specific, and even bring it down to the actual individual and how they are wired, why they suffer from what they're suffering... and how to be able to respond to particular treatments. So what impact does that have on the cost of medication, for instance, or the cost of healthcare?	4:37
John	4:37	Well, if you start with- where I began, which is about being able to predict the onset of disease much earlier, that has the potential to bring down the cost of health care quite significantly, because just imagine that today, somebody starts to feel bad and they go to the doctor after a few tests and it's established that they have diabetes, and then they're on quite expensive medication for the rest of their life, including dealing with complications, and so on. So, picture a different scenario now. We can come to you and say, Azania, based on your data, there's a very high risk that you are likely to develop diabetes somewhere [close] to three or five years from now; we also know what you can do to avoid that, either permanently avoid it or push it far further into the future. So most things are much simpler and cheaper; there's exercise and healthy eating and regular checkups. And so if we can delay the onset of your diabetes, or actually, in many cases [mean] you never get it, there's enormous opportunities for bringing down cost. But actually, I'm not even sure we should prioritize the cost issue. Just think about how life changing that is, you know, if you can avoid the diabetes, and everything that goes with it. So that whole idea of predicting disease in advance, I think, is really on the brink of being quite widely applied. And that could make a huge difference to health and healthcare.	6:02
Azania	6:03	So, this then means a lot of investment, Investing in these tools,	6:21

		the AI, the analytics, the data, and having these algorithms that are able to lift out all of the warning signs in order for you to predict. Talk to me about that ability to predict in the course of someone's lifetime.	
John	6:21	I think what's interesting is to start by thinking about where the healthcare system was just a few years ago, and actually we're parts of it, unfortunately, still are. You go to a doctor or you go to hospital, and your records are captured on a piece of paper. You've probably been to a doctor who writes notes on a foolscap pad, you know, she puts her notes into a manila folder, it goes into the back office. Unfortunately, many practices around the world are still like that but they're moving very, very quickly to a world in which everything is digital. So, the doctor is typing, either while she's seeing you or afterwards, in the hospital, everything that happens to you is being captured digitally. What that means is that all that data is available to be analyzed afterwards. So historically, that data has been dead- it's been lying in a manila folder in the back office or in the storage of the hospital- it's now alive, it means that machines can analyze it, you can look at huge amounts at the same time. And where that gets you to is to start to see patterns in the data and so that investment is being made all over the place in the healthcare system. Doctors are needing to become more digital, and we're seeing a big change as younger doctors graduate. They're born as digital natives; they've used their iPhones or their, you know, their laptops all their life and so it's easy for them to hop into practice and become digital from day one. People my age who've had to transition, I think are finding it a bit more difficult. Some docs will tell you they hate looking down and typing, they like to just look at their patients, right. So, it's happening in the doctor's office, it's happening in hospitals. In South Africa today still, the vast majority of hospital encounters are not captured digitally. But if you're going to talk to the big hospital groups, they are all investing hundreds of millions, if not billions in going digital. Certainly in Discovery, we've been digital for decades so we've always had electronic systems to process claims. We've been storing data on patients, our members for, you know, 20 years, and we've been analyzing it. So in some ways, we've been quite far ahead of the curve in the healthcare system and it's very good that the providers, the health professionals and the hospitals are starting to catch up because it means we can all do a lot more together.	8:43
Azania	8:43	Is there a fast enough pace of adoption of these digital tools?	8:46
John	8:46	You know, I think it's never fast enough but it depends on your perspective. So even five years ago, it felt incredibly slow. It now definitely is catching up. The pace is increasing and I think you'll be at a point quite soon where, you know, you'll go to a doctor, and if they're slow, writing on paper, you'll kind of look at them and think, you know, is this really a good doctor? That's not the case today, but I think we are getting there.	9:11

Azania	9:11	Yeah. So we can imagine a day where we don't have to struggle to read the doctor's handwriting.	9:15
John	9:15	Exactly. There will be no handwriting.	9:16
Azania	9:16	Yes, yes. So, are these words of displacement, though, or do you think these sources of opportunity? I mentioned that because a Google-inspired algorithm, which was developed by Stanford University, can diagnose things like skin melanoma and just from a single photograph, with the same accuracy as a certified dermatologist, and this is... it takes about 15 seconds. What does that mean to certain professions?	9:45
John	9:45	So firstly, there are many other examples exactly like that one. There's an Israeli company called Zebra which allows you to upload a scan or an MRI and for $1, or a few dollars, will use an AI algorithm to read that scan and give you an extremely accurate interpretation. You know, there are many different views on this, my view is that these AI developments are going to explode in the next few years and they will replace certain functions that doctors do. I do not think for many, many decades, if ever, they will replace doctors entirely. Quite a lot of what doctors do today is quite mechanical and quite repetitive and machines can do that better and they should. And what doctors will then be able to do is to move on to much more complex decision-making, more complex processing of different kinds of information and very importantly, what doctors always used to do, but have kind of lost the ability a bit, is caring for patients. Providing emotional support, explanation, etc...machines are never going to be able to do that in my view. So I don't ever see doctors being displaced, I see some of their functions being displaced and I think in the end, the practice of medicine could, as a result, become more rewarding, and more enjoyable because of the more human component.	11:10
Azania	11:10	Do you see a need where they have to then also diversify the skills? That now doctors qualifying would have to also come in with a, say, a certification in other disciplines that are technologically-oriented?	11:24
John	11:24	That may be. It may be certification, I suspect, you know, in general, people who choose medicine and other caring professions tend to be very smart, very hardworking, and many of them will be able to make these adjustments themselves. I think it's true around the world that many specialists practice below their true skill level and so, as you can get machines to replace certain things, they'll be able to exercise much more of their true cognitive skills. What you've described, and what I've described, if you think about it is simply, it's image-recognition software. So, all that that AI is doing is reading an image and recognizing it very well. Just think about how much more complex a diagnosis is then just reading an image. You're having to synthesize a huge amount of information, and that I think doctors are always going to have a significant edge is going to	12:15

		change.	
Azania	12:15	Is it going to increase accuracy?	12:18
John	12:18	In those kinds of things, I think without a doubt, because you know, when you train an AI on 100,000 or 200,000 images, that's way more images than your average radiologist will see in their whole career. And never mind in the early stages of their career. So they're learning to recognize patterns. Now you've taught a machine to recognize them far more accurately. So I do think it'll increase precision in certain areas but you know, in the end, you also will always need human judgment.	12:48
Azania	12:48	Yes. And then what about things like liability? Because we do live in a litigious society, we see doctors increasingly becoming concerned about the comeback- legal come back for a treatment that they've carried out.	13:02
John	13:03	That's a great question and this is a good example of huge parts of our society today, where the technology is outstripping our rules and regulations and laws, and even our social contract of how do we govern all of this? And this is a good example. So when you have an AI reading, a brain scan, or a lung scan, or a skin mole, as you said, who is going to take responsibility for that? I think there's a reasonably simple answer: the healthcare system that has offered that AI. So, it could be a hospital, could be a medical practice, somebody has to offer it to patients, and they are going to have to either take the liability, or ask the patients to indemnify them against the liability. But it does raise... it's a fascinating question and we are on the brink of those debates.	13:57
Azania	13:57	So how do you see these innovations? What kind of impact do they have on your core business as Discovery Health or on the core business of medical schemes. Does it give a different shape to it?	14:07
John	14:07	I think that it gives a different shape in many different dimensions. So firstly, it allows us to communicate in a much more dynamic and rapid way with our customers. Our clients are using digital apps far better than the old fashioned email and phone call. So apps and web chat and those kinds of technology. Just the immediacy of customer engagement is brilliant and it's improved. Let me give you a very nice example. We've trained an algorithm to read the emails that we get every day, we get about 35 to 40,000 custom emails arriving every day. That can be as simple as "Please send me a tax certificate" and as complex as two pages of a person explaining a problem and asking for help. The small proportion of our members who write those emails are extremely angry with us for whatever reason. And today, prior to switching on this new algorithm, it would take us 24 to 48 hours to get back to you because your email would just join a long queue. Whether someone was angry or not, it was in the queue. We've now trained an algorithm to read the email, and to	16:39

		incredibly accurately spot when a customer is cross and that email is picked out of the queue and sent to a dedicated team who call the member within an hour. Okay, so now you're going from 48 hours to 1 to 2 hours and we can solve the problem. And now, almost every one of those members rates, us at 9 out of 10, you know, at the end of that interaction, whereas they were at a one or two when that email came in. So, there's an example of how digital and AI can enhance our customer interactions. Of course, we're also plying them very significantly in enhancing the quality of health care that our members get. So we have our health ID application, we gather data from doctors, and we're able to see that Dr. X is providing better care for his diabetic patients than Dr. Y. We can pay Dr. x more and we can go to Dr. YI and say, "You need to up your game here and there" and we care about it because, you know, our members are suffering if you're not doing the right number of tests or checking their blood sugar often enough or their blood pressure. So, we can improve service with this technology, we can dramatically improve the quality of care that people get and if I can take you back to the beginning, we can also start to predict when people will get sick and intervene early to stop them getting sick.	
Azania	16:39	So, we've looked it at from the schemes perspective, from the practitioners perspective. Now, if we have to consider from the members perspective, how do we prepare? How do we come into this picture empowered?	16:51
John	16:51	So firstly, I think this technology is hugely empowering because if you even go back 10 or 20 years, we had this huge gap in information between the doctor on the pedestal, and the member who's down there kind of treating doctor like God. Today already, even if you read Dr. Google, which is not always the best source of information, you're already on a different sort of power relationship with your doctor. But as you're aware, we have a Dr. Connect application, so this gives members a highly curated, very smart ability to get answers to the medical question questions and so on. So the first step, I think is that if consumers use the tools, if they figure out what's available out there and learn to use them, they can be hugely empowered. I think that's very important and, you know, many members are still phobic of digital technology. Again, this is a generational issue. But you know, my message would be that these things are generally pretty simple to use; they work on phones, on iPads, on laptops or desktops. I would say just learn to use the tools, get confident, because it can make a huge impact on how you feel and, you know, how you then engage with your health care profession.	18:05
Azania	18:05	How do we then factor in those prognoses that require a doctor? You know, when explaining either blood tests, either a diagnosis, for instance, yes, we have this information in arms reach within our phones but ultimately, these are serious things that need to be communicated with care and with compassion, and with great responsibility.	18:29

John	18:29	There's no doubt and you know, the last thing I think we would be saying is that these kinds of tools are replacements for the touch of a health professional. These are tools that can add to your knowledge. It means that when you go and see your doctor, you can ask more informed questions, you just feel more of an equal, rather than having this huge power imbalance but I would always say for almost every problem you do need a doctor. It doesn't always have to be face to face consultation, this can be done via chat, it can be done via video link virtual consultations, but very often, you do need the doctor's hands on you to to make a diagnosis. So, I see these tools as additive rather than one replacing the other.	19:14
Azania	19:14	We live in a developing country and there are huge disparities, of course, in access to health care. And yes, we are talking about the private healthcare space. But ultimately, do you see these digital innovations improving and increasing access to quality healthcare?	19:31
John	18:04 19:31	I think without a doubt and that includes access to quality for the whole population. So, we certainly don't have to think of these technologies as limited to the private sector. Ironically, these technologies really can allow us to leapfrog decades from the past to the future. Because just think about a remote rural hospital and a dermatology service, or even a radiology service. The likelihood of getting a skilled radiologist or dermatologist there is zero, but incredibly easy now with the equipment that's available to train a nurse or another primary healthcare worker there. To take good pictures, you'd need a radiographer to do a scan but you don't need a radiographer to take a good picture of a mole on the skin. You can send hundreds of those across, and they can be read either by an algorithm or by a radiologist. And so you're providing highly sophisticated specialist service in a deep rural area and there are many other examples like that. So I think in a good way, this technology also can allow rapid advancement in under-resourced areas, and for people who have access only to, you know, rural healthcare service.	20:43
Azania	20:43	Yes, it really delivers on that promise of what technology means.	20:47
John	20:47	Government needs to adopt that implement that. I think that's still really, we're not really up to speed on that yet. And if you go to countries like New Zealand and others, which do have these highly distributed populations over huge spaces...Canada, they're using this extensively, and we do need to catch up with that here.	21:06
Azania	21:06	So that future is here.	21:07
John	21:07	It's here. I think we have to grab it with both hands, and kind of make it real, you know, in our personal lives. Doctors have to make it real in their practices. We are trying to make it real in Discovery Health, but we're in a period of very rapid change. I think 5 or 10 years from now, you won't recognize the present	21:28

		and that's, I think, quite exciting.	
Azania	21:28	That's a great note to end it off on. Thank you so much, Dr. Broomberg.	21:31
John	21:31	Thanks very much. Enjoyed it. Thanks.	21:32
Azania	21:38	Next, I speak to Dr. Ryan Noach, the Deputy CEO of Discovery Health, to find out how data insights, technology, robotics, electronic health records and wearables are applied to improve healthcare, enable healthy behavioral change, and advance the healthcare service experience.	21:57
Azania	22:03	So Ryan, you've been at Discovery Health for 11 years or so. You must have seen a lot of different things over the years and this must mark an exciting new era when it comes to technology.	22:13
Ryan	22:13	Doesn't feel like eleven years. It feels like a year. I'm having a great time and I've been privileged to be exposed to all sorts of innovations and, you know, to feed my own personal passion around digital and technological innovations too.	22:27
	22:27	So, technological innovations have disrupted a lot of industries and they've changed how things are done in all those industries. How are they disrupting healthcare?	22:37
Ryan	22:37	Sadly, the truth is that healthcare is almost last in the chain of industries to be disrupted by digital. We've been particularly sticky to stay with manual processes and manual organization and have not allowed digital to be as pervasive as it could have been. I guess, on the one hand, the favorable part of this is that doctors and healthcare providers in general are clinging to a patient interaction, a face-to-face warm interaction which they've been brought up and trained around and which they tend to prefer. And I think if you speak to many patients, as much of the research shows, patients do prefer that intimacy. But on the other hand, there's a lot of waste and a lot of duplication in healthcare systems. And certainly, there's some quality leakage, which could be addressed in an efficient manner by the introduction of digital channels and digital systems.	23:31
Azania	23:31	Yeah, you talk about how doctors have traditionally been trained, you know, the bedside manner, that thing that we used to rate them on about why we go back to a particular doctor over and over again; the proximity, how they make you feel, the comfort that they provided. So this is something that technology can never replace, and as we say, perhaps that's part of the resistance. And yet, we're dealing with a very information hungry and empowered consumer.	23:59
Ryan	23:59	Absolutely and, you know, healthcare consumers, because there are so many pervasive permutations of a disease that may manifest in so many different ways that...if it was possible, through machine learning and artificial intelligence, to predictively provide a patient with the right answer at the right	24:41

		time exactly when they had that question, then digital would be filling a huge gap. Link to that, particularly in South Africa, in our context, we don't have sufficient healthcare practitioners and, you know, if digital could do something to amplify access, and for that matter, also affordability of good healthcare advice to South African consumers, it would be filling a huge gap in the local context.	
Azania	24:41	And when you speak about digital, we think of mobile cellphones. My mind immediately went to those when you talk about this ratio of not having enough healthcare providers, that ratio between population and healthcare providers. What is the role that digital can play, especially when you think of how accessible it is already in our hands? What kind of interventions can mobile healthcare bring about?	25:03
Ryan	25:03	You correctly, as a consumer, have jumped to the consumer's perspective of digital health care, which is the mobile in their hand. But don't forget that a very big part of digitization of the healthcare system is what's in the healthcare professional's hands. And what we can do to digitize their administrative processes, their clinical processes, and very importantly, their record keeping to ensure that they are fully informed about the patient that they're seeing, that they need not duplicate tests or history-taking that's been done many times before, and that they can make informed decisions based on detailed information at their fingertips, on behalf of the patient. So, while you're raising the question about mobile in the consumer context, it wouldn't be right if I didn't say that there is a whole healthcare professional digitization aspect to this. But let's jump to the consumer side, which you raised and what can the mobile do? I mean, from the very obvious and simple, which is just to provide very useful information to somebody at their fingertips, to the far more complex, a full on consultation, either with a machine that's capable of interpreting what you're asking and giving a very accurate answer or, for that matter, virtual consultation with your healthcare professional. And then a range of things in between that- apps designed for specific needs, I've seen apps for autism, I've seen apps to assist the visually impaired., there's all sorts of apps for every need you can think of- sleep assistance apps, and the like. And this full spectrum of rich functionality that's available.	26:38
Azania	26:38	So, that's what the petition of mobile is. But I want to stay with what you raised to the electronic health records, because as Discovery Health, you already have Health ID, this platform that has been in place for a number of years, it enables patients' data to be captured. And so far as a funder, as a scheme, you have access to that... are we seeing- moving towards a time when we have this alignment where these records are accessible to everybody in this triangle- the practitioner, the member and the scheme?	27:08
Ryan	27:08	We think it's a right, not a privilege. It should be a right for every	27:37

		consumer of healthcare to have a detailed clinical record that's highly accessible. It's confidential- must be controlled strictly by the patient and the patient should consent as to who has access- but it should be ubiquitously available to healthcare professionals with that patient's permission. And we think that is a right, why? Because it will lead to better decision-making, because it will lead to more efficient consultations.	
Azania	27:38	So, if I'm imagining the future that you describe, I go to my ENT and my details, whatever is plaguing me, the treatments that he recommends, my recovery- all the notes are captured on this electronic health record. And then later on, if I need to see, say, a specialist because of another condition or the flu, it's winter time, flu season and I get the flu... all of these records, he'll be able to go back and interrogate my medical history because they've all been captured in an electronic form available to everyone. And as a funder, you're also able to see what my health has been like.	28:13
Ryan	28:13	You say "Imagine the future." That is the present. We've worked very hard since we launched Health ID seven years ago. We took a really big risk as a funder, who traditionally in the healthcare system, our role is to reimburse care, but we took a very big risk and made a very big investment to invest in the first electronic health record at scale in South Africa. Today, I'm pleased to tell you that just over 54% of every consultation that a Discovery Health member has with a general practitioner in primary health care is covered by Health ID. And Health ID does exactly what you described, it provides a timeline, in chronological order of all the treatment that you've received, and all the consultations that you've had that we have on record. And we're getting better and better at ensuring that we aggregate the full set of your records. Certainly, everything we've paid for we've got a record of, and hopefully way beyond that. And we make this available immediately to a doctor or another healthcare practitioner that's registered and has your specific consent to access your records.	29:19
Azania	29:19	And what's the next level to electronic health records, what you've just described?	29:23
Ryan	29:23	Well, the next level is something that we're doing on a tool called Dr. Connect. And what Dr. Connect does is it provides consumer health advice to our members through the Discovery app that members use every day. And what that Dr Connect does is it takes into account your electronic history, and helps create an answer to any question that you provide through the incorporation of machine learning. So we have your history on record through Health ID, we use that to best inform the answer to a question that you answer.	29:54
Azania	29:54	Wow. So it's personalized in some ways, because of that machine learning ability.	29:59
Ryan	29:59	Correct. It is personalized in some ways. I shouldn't claim that	30:16

		we entirely own the intellectual property. We've done this through partnership with a very smart Silicon Valley based health tech firm, called HealthTap and together with HealthTap we offer an amazing service through Dr. Connect.	
Azania	30:16	I'm happy that you mentioned Silicon Valley, because there are all these wearables, there all these apps that we've begun to use. But some of these data rich innovations are led by non-health companies such as the Googles and the Amazons of this world. So our healthcare companies will need to also integrate with non-healthcare industries.	30:36
Ryan	30:36	Absolutely central to our forward-looking strategy. And I think every big healthcare organization around the world is thinking about this. Internet companies are really the best at knowing everything about you. Now on the one hand, they've been criticized (and appropriately so) in many cases for what they do with the data. But on the other, if we are to find solutions to access and affordability problems and to quality healthcare problems, they might be very well positioned to work with us to do that. A very good example is our collaboration with Apple on the Apple Watch initiative. Today, you could get an Apple Watch for free, effectively, by exercising like crazy, recording your activity through the Apple Watch and the Discovery app, and then ultimately paying off your Apple Watch, but also obviously being much healthier for doing that. And that's a principle we call shared-value, because you benefit through being healthier, the insurer benefits because obviously a healthier customer means that they claim less, the healthcare system benefits because we reward the healthcare system for working with us and creating these positive incentives, and ultimately, society is much better off. So we see this as shared value. And in fact, this Apple initiative has been recognized worldwide as a very strategic and clever healthcare initiative. And so we're rolling it out in other markets too.	31:56
Azania	31:56	I want to go to this question of telemedicine. What is it exactly? And what is its potential? Are we starting to see areas where it's been implemented through the shared-value notion that you speak of in solving society's healthcare problems and also ensuring access? So, can we stay a little bit longer with telemedicine and how it's being applied and its manifestations?	32:19
Ryan	32:19	Telemedicine...a recent McKinsey paper demonstrated that- or projected rather- that during 2019 they believe there will be more than 100 million virtual telemedicine consultations during the year. These are consultations that happened across a digital interface. They may be asynchronous or text-based, a little bit like your WhatsApp interactive messaging, but perhaps not on that platform, or they could be virtual as in a video call, much like a FaceTime call or a WhatsApp call or something like that. You're consulting with your doctor virtually. So, McKinsey says there'll be a hundred million or more of these during 2019. We've seen in some markets around the world, one very good example is	34:29

		Keiser Permanente, which is a big for-profit healthcare organization in the United States where many, many of their health benefit plans are centred around a virtual consult as the starting point of every healthcare experience. Instead of going and running off to a doctor and incurring big costs when you're not sure whether, in fact, you need to see the doctor or not, if you need advice urgently, do the virtual consultation to start and let the doctor be the judge of where next you should go in the healthcare system. This has proven very successful in those environments. In South Africa, through Dr Connect- the tool I referred to earlier- we can facilitate virtual consultations for every Discovery Health member today. It's very new and we require lots of doctors to be on the platform and lots of members to be using it, and so we're in the process of gaining scale and momentum and we have one regulatory requirement in South Africa that is quite different to other markets. Our regulators currently require that you have an established relationship with your doctor before you do the virtual consultation. So, what does that mean for you? For you that means that you have to have seen that doctor and have a relationship with them from before, before our regulator entitles that doctor to consult with you virtually. And so we've got to work within that framework as it stands today.	
Azania	34:29	What implication does that have on my medical savings account? Does this cut down my costs? WIll it at least allow my MSA to stretch a little bit longer?	34:38
Ryan	34:38	Well, it very much depends which plan you're on but, as far as Discovery Health Medical Scheme goes, we provide virtual consultations for free on some plans- like the Smart Plan. And on other plans at a very reduced rate relative to face-to-face consultations. So, yes, economically, this is a very attractive alternative.	34:57
Azania	34:57	Absolutely, absolutely. I think, conventionally, we've seen consumers turn to Dr Google...what people have dubbed as Dr Google and that can bring about a lot of errors, a lot of wrong diagnoses, a lot of wrong interpretations because we are the laymen, and yet we go and investigate medical matters. So, this almost eliminates all the stress, all the wrong diagnoses, self-diagnoses that we tend to do.	35:23
Ryan	35:23	You know, we have a saying in medicine: Don't confuse your Dr Google with my seven year medical degree. Dr. Google is something that we all depend on and in that respect, I understand, it's pervasive and very, very useful and accessible. We do need to be very careful, particularly for serious medical questions what we believe about what we read there. It is a search engine not specifically designed to answer healthcare questions, and to the best of our knowledge with very limited quality assurance around the healthcare answers that it provides. So we do want to be able to, through Discovery, provide our members with reliable, quality-assured, and if	36:12

		necessary, direct contact with your doctor, to ensure that we're giving you the appropriate consumer-related answers to your health questions.	
Azania	36:12	What does this mean to help practitioners have to adapt their practices?	36:16
Ryan	36:16	Who moved the cheese? I think there's change coming in healthcare without a doubt. And looking forward into the future of healthcare, we can see that the healthcare of the future is going to look very different to what it does today. From a healthcare practitioner's lens, the question you asked, we who are not that good at change and getting used to change, we like to do things in the evidence-based, proven way that we've always been taught how to do them. We need to realize that we've got to adapt to our surroundings, that we should probably open our minds to this fourth industrial revolution digitization that's coming and we should seek, firstly, very safe, but also highly accessible, highly efficient ways of engaging patients that haven't been traditional in the past. We're seeing doctors across the globe really broadly adopt electronic health records now, despite years and years of resistance to that. My prediction personally is the same will happen with telemedicine. We'll see resistance to change, but ultimately a realization that this is very good for consumers, that it can be done very safely but that we need to develop a whole different set of skills and muscles to learn how to cope with this.	37:31
Azania	37:31	How open is Discovery to other wearables? Because we are seeing a feature where digital tattoos are involved or biosensors as form of wearables.	37:41
Ryan	37:41	We've led the way almost globally with some of our programs adopting wearables. We've started in the very safe space of wellness, where we can track your activity and how your physiology your heart rate and your body responds to activity and we've achieved great success. And our Vitality Active rewards program, through our integration with multiple wearables, has proved scalable and repeatable across the world. With very, very impressive adoption, we've seen huge behaviour change linked to this. We've seen people who were previously sedentary, even those that were at risk, perhaps overweight and inactive, we've seen them become active by strapping on a wearable, measuring what they're doing and meeting incentives and goals. The same is going to prove true as these wearables evolve and become more and more relevant to managing disease. Today, we are integrated to certain glucometers. So, for diabetics who are continually monitoring and tracking the blood glucose, there are some glucometers on the market where they can do that and upload all their data into our world, visible on Health ID to the doctor, to a diabetic nurse, educator, and of course, to the patient. And in many cases, also, our case managers may want to use that data to look for signs of deterioration and intervene before a problem actually materializes. And I think we'll see more and more of this going forward.	39:04

Azania	39:04	So Ryan, one of the value propositions about Discovery is how you enhance and help us protect our health. What are some of the incentives? What are some of the motivators you've put in place?	39:15
Ryan	39:15	You know, it's a great question. One of the biggest challenges as a clinician faces, I can tell you, is when you've got somebody sitting in front of you in need of lifestyle change, in need of behaviour change; you need to get them active because they're sedentary, you need them to lose weight because they're at risk, you need them to change what they eat because their glucose profiles and cholesterol profiles may not be great. And the most difficult challenge you're faced with is actually the behaviour change. It's easy to prescribe medicine and to dispense medical advice but to stimulate behaviour change sustainably is extremely hard. At Discovery, what we've come up with through Vitality, and particularly Vitality Active rewards is this incentive-based program that measures what you do, gives you targets, and then rewards you for achieving those targets. And we've been doing that in Vitality for over 25 years quite successfully. But Active rewards, which is a bit newer, it's really changed the game. What Active rewards does is it measures your activity in a weekly cycle, gives you a points target, and if you achieve your points targets, you get immediate reward and that accrues to your Vitality status, which gives you medium and long term rewards. So we see short term behaviour change around those immediate rewards. Firstly, just our desperate human requirement to meet every target that we're given- that's in our DNA. And then link to that, of course, the coffee, the smoothie, the popcorn at the end of the week, as the reward is a sense of accomplishment. And I'll confess to you that yesterday, I took my children to Kuauai and it gave me great pleasure that all my hard work on the treadmill and my running to keep active, to meet that very steep points target that have now accumulated, resulted in combined meals for my family. And it's a great sense of reward that that sweat achieves more than just, you know, physical wellness. I'm diamond, I confess, I'm an enthusiast. But if you look at population level, at what active rewards is achieved, there is a marked improvement in physical activity right across the cohort, even in- what we would call as clinicians- highly resistant groups: people who typically are obese or overweight, who have historically been inactive, and may be at risk of disease, even those groups, we've seen a marked change in physical activity. So, when I walk into the gym in the morning, I often see people running on the treadmill, looking at their watches, and those are all Active rewards enthusiasts. And we've got broad-based acceptance of this, not only in South Africa, we're seeing it in the United Kingdom, with our Active rewards program there and soon to be in other markets where it's working as well. So that is really exciting.	41:59
Azania	41:59	Now, I think you've got us where it matters. I can't tell you how many times I look down at my Apple Watch and, yes, when you see that your circles are not complete, you are motivated to do	42:35

		something about it, to get a little bit more active. Not only is the watch hungry and demands that you respond to what you're required to do, but you are reminded that there's a reward and there is this goal to chase. You want to get out of the blue status, you want to get into the next status. So you've certainly hit something...you've hit the knack of what it's about to shift from one behaviour to another.	
Ryan	42:35	The phenomenon you're describing is something behavioural economists called 'loss aversion'. So, what does loss aversion mean? It means you become much more motivated to achieve any particular goal, if you know you're going to lose something by not achieving it. So, rather than a positive incentive, that loss aversion is you want to make sure you don't lose out. There's a very good write up of loss aversion in the context of golf. Now, I'm not a golfer, so you have to excuse my ineptitude on golfing terms. But golfers are much more likely to succeed with the put if they need that put to achieve their par score on a hole. If they need that put for a birdie or for an eagle on a hole, they're much less likely to make that same put than if it's for a par. And that is about loss aversion. They are very, very scared of missing that par; of losing or deteriorating their handicap and their golf score, and so that's a very good example, in golf, of loss aversion.	43:30
Azania	43:30	Well explained...pretty well explained. Right. So, in the midst of all of this technological innovation, we hear terms about robotics, about artificial intelligence and we also hear about big data. Organizations such as yours and the scale at which you operate...there is no future without big data. So, how are you using it? How are you mining and drawing insights from it to improve your offering and the customer experience?	43:56
Ryan	43:56	We've made an enormous investment in understanding all the bits of data that we've received. Aggregating them and then learning lessons or asking questions that we didn't know existed from the insights that emanate from this data. One of the great examples is in how we provide support to our customers on our website. We've developed something called a virtual agent and what the virtual agent does is...it knows who you are, because you've logged into our website, it knows your personal details, the specifics of your plan and what your queries may be and it uses reams and reams of data in the background to allow you to ask a question and give you an automated answer from the machine learning that it's developed from this big data environment. So, we launched this virtual agent quite naively as our first foray into machine learning a couple years ago and, much to our surprise, now virtual agent is answering an excess of 15,000 questions a day, and getting very, very good ratings from our consumers that are using it. And so we're really empowering consumers with the right answer at the right time by deploying this big data through a service channel.	45:07
Azania	45:07	As much as we love technology, we also want the human touch.	45:10

Ryan	45:10	Absolutely and that's why we take 35,000 calls a day and we try and deliver outstanding service. And we try and route your calls when you find us predictively to ensure, again, that we're going to give you the right answer based on who's calling us. And this is not to exclude the human touch; this is ultimately to support, to amplify and to introduce efficiency to that human touch.	45:34
Azania	45:34	You've already began to move in a direction where you become a data company. But what do these different technological innovations do to what your core business is? Does it mean going back and redefining what Discovery Health is all about?	45:47
Ryan	45:47	Discovery Health's got a very clear purpose. We're about enhancing and protecting the lives of our customers. We do that through working on preventative programs which share value with our customers to get them to mitigate risk. We've realized that being an insurance company is actually about managing risk, and paying out for claims when there are risks. And the best way to do that is to mitigate that risk by sharing value with our customers and rewarding them for behaviours that reduce their risk. It seems so obvious. It's such a basic principle. And so, we're very clear about our value. Yes, a lot of what we're doing now is around the data that we have and understanding what we can do with that data to further the purpose but our core vision doesn't change at all. And so our fundamental *raison d'etre*, our reason for being, is clear to us that it's about enhancing and protecting the lives of our customers.	45:45
Azania	46:51	I wanted to look at technology in action in a healthcare practice. So, we visited the practice of Dr. Maggie Mojapelo to talk to her about healthcare in the digital age. She gave me a tour of some of the technology they use in the practice for greater efficiency and better patient care.	47:08
Azania	47:15	So Dr. Mojapelo, good afternoon	47:17
Maggie	47:17	Good afternoon.	47:17
Azania	47:18	So, you are what is called a health techno premier. What does that mean?	
Maggie	47:23	What it means is that I think out of the box in terms of delivering healthcare, I have moved from the conventional healthcare system of being physically the institution's walls and so forth. Utilizing digital health technologies to improve healthcare outcomes.	47:44
Azania	47:45	Over your 30 years of doing medicine, you must have seen it all. All different versions and permutations of how healthcare is offered; the interface with the clinician.	47:53
Maggie	47:53	Absolutely. I've seen it all. I've seen it from public [and] private sector, I've seen the challenges of healthcare. Healthcare worldwide has got challenges by virtue of the fact that we don't have enough resources...Hands...because we don't have	48:18

		enough resources, we have to look at other opportunities that are avail themselves to us, hence thinking out of the box.	
Azania	48:19	And does that thinking out of the box involve digital solutions? Digital innovations in your practice?	48:24
Maggie	48:24	Absolutely. Actually that is the core of thinking out of the box in terms of improving patient outcomes.	48:32
Azania	48:32	So, how have you applied it in your practice? Take me through from the minute I pick up your name that I'm coming to Medi-Well because I've got this medical condition. What is the process?	48:44
Maggie	48:44	The process is: we've got [an] online booking system because we want to see the doctor and before we do [the] online booking system, our website is interactive with patients. They access the website, it's not just a quiet website, it's a technologically savvy website. It's got a chatbot, it has got the online system so patients can book 24/7 and the patient can chat with us [in] extended hours- that means even after we have closed. So, it has got the chatbot attached to it and of course we've got the Whatsapp. We are utilizing what is existing,. Whatsapp booking...one of the first practices to do it. Why? Because millions of patients or clients have got Whatsapp. Not the higher LSMs but even the lady in Diepsloot, also can book through Whatsapp.	49:38
Azania		So I pick my slot, I go online, I make my booking, I get the WhatsApp confirmation.	49:38
Maggie	49:38	A WhatsApp or email confirmation depending on what you have. And we have found that the email is a bit, you know, the Internet of Things is- it's fine but most people Whatsapp. Almost 99.9% of our communication with patients, whether it's booking, you know, it's very responsive.	50:01
Azania	50:01	So, from the patient side, we're able to take a little bit more control of our appointment and accessing the healthcare clinician but, within the practice itself, what are the digital innovations you've introduced?	50:13
Maggie	50:13	Okay, we've got the online booking system- one - and then we've got electronic health records. We are paperless; no paper allowed in the practice. We are paperless. We've got electronic health records and patient personal health records. Personal health record is the patient-empowered records that you can- they have got limitations obviously, you can't go beyond because electronic health records are confidential, you know, it's doctor-controlled, but the interface with the patient, only that patient. But electronic health records are good, because all their records, 5 years, 10 years, are stored in there. Lab records, results, and notes, etc.	50:59
Azania	50:59	So, why is that good for doctors?	51:01
Maggie	51:01	It's good for doctors because [of] five things. I can mention ten	52:23

		but I'll mention five. [It] avoids medical errors, saves time, it empowers us to see the trend in patient visitation to the doctor. I can see that you have visited four doctors before you came to me. I want to see about the drug issues where a person is getting sleeping tablets from different doctors in the area when he comes here. We interact with the Health ID, a Discovery innovation, brilliant stuff, because we can see that he has visited so many doctors and the scripts are also embedded in the electronic records. So, they interact and we can now make [an] informed decision in terms of scripting a particular drug. And what is also nice [is that] they are interconnected with other professionals within the facility. So, that's what we call- we are the leader in care coordination. Care coordination means the delivery of healthcare is not fragmented. Fragmentation is a problem- if I don't know what the other hand is doing, but we are treating the same patient. So, care coordination is the buzzword at the moment with digital health.	
Azania	52:23	What has that done? What has the effect been on the patient doctor relationship?	52:29
Maggie	52:30	The patients are happier. It issues convenience, it teaches patient-empowered, patient-centric...we are evolving from... we have evolved from, you know, from top (doctor) bottom (to patient). Now... we've got the empowered patients, our solutions are patient-centric, we're not now looking at just institutions, we focus on the client and we offer value-based healthcare, not just 15 minutes consultation and the patient is gone and 'ta ta'. We access that patient across the journey. And it is brilliant. The patient loves it. They love it.	53:10
Azania	53:10	And as it had an effect on outcomes when it comes to healthcare of your patients?	53:15
Maggie	53:15	Absolutely, because of the cost. Care is an expensive exercise. If I have seen Mr. R...Mr. R has got chest pain... I'm just giving a quick example...Life-saving. Mr. R has got chest pain that is associated with [a] heart attack. Once we have done our tests, and you know, because we are integrated ECG, we have lab results and stuff, we can access the records on the platform. If Mr. X had a situation where it was not urgent but he has the mild chest pain and wants to rush to the board meeting. It happened when the patient was at the board meeting, we were able to access the results. We access the patient immediately to say that you have to be admitted immediately because we heard the results. And those results, they're not just on our PC, they're on our mobile and that brings the advent of M-health- Mobile health. Electronic records.- E-Health And what [has] it done? Instead of Mr. R with a high TROP T that signaled for a heart attack to happen maybe in an hour or two, it was circumvented. Didn't have to come and follow-up, etc, we did a digital follow-up and [he] was admitted and four or five hours later, was in theater. So, they don't have to come for follow-up because we can follow-up digitally. So, it's good for them to come and follow-up but it's also	55:06

		provides crowding and that patient would be dead, by the way. So, it saves lives; it saves time; it's, you know, efficient. It's 24/7. We can access the results. We have got a mobile app. Once we have done the blood, even if we are closed, they come on our mobiles. All of the doctors are connected.	
Azania	55:06	Wow, what is the next frontier? Where to from here? Clearly, because you want to stay ahead of the innovation curve or just with that innovation curve in healthcare.	55:16
Maggie	55;16	My vision...now we're talking universal health coverage. The future- and this is the NHIs- but I like universal health coverage because it's a better way. When you say NHIs like insurance of some sort, universal health coverage, the future of universal health coverage is digital. And why digital? Because it will enable that dream to be realized to leadership. If you've got leaders across the healthcare ecosystem that don't re-imagine and redesign the way healthcare, the future of healthcare, goes, then we are going to be stuck with challenges. But if we evolve with digital, that's how universal health care coverage will be realized.	55:57
Azania	55:57	I'd like to see the screen. Can you give me a quick tour of your operations and the digital innovations you use on a daily basis?	56:05
Maggie	56:05	Absolutely. The good ones, some of the gadgets that we use...If you give me your finger, I can take any one...we do this, you see? An asthma patient or yourself, we can see your saturation, the amount of oxygen being generated by lungs and we can see your heart rate.	56:27
Azania	56:27	What [do] we call this little gadget because you've just literally put it around my forefinger?	56:32
Maggie	56;32	It's called a pulse oximeter. So, it measures the heart rate and it measures this saturation. You can see the oxygen here.	56:40
Azania	56:40	Yes. So, good or bad?	56:41
Maggie	56:42	It's, it's good. It's good. And what the future holds is that we [are] going to be able to give the senior people or people at home who have challenges with lungs, heart...this and this will be fitted with a SIM card and the SIM card will be transmitted to our platform and we can manage our asthma patient, chronic respiratory, chronic lung diseases. You can imagine a whole lot of things and this is just a start.	57:18
Azania	57:19	Right. It looks like a giant peg that you've put on my finger but it's got an electronic screen on it with the name 'pulse oximeter.' How convenient.	57:30
Maggie	57:30	We love it. So, we've got all these gadgets and then I'll show you the auto-scope. Where in the past we used to look into the ear and see, you know, that dark. Now we put, you know, a gadget in your ear, we connect to your cell phone, and you can see your wax, you can see your eardrum, you can see different diseases,	58:02

		and we can send it to you or to mommy if the children come here and then we can discuss. So, it's brilliant.	
Azania	58:02	Because these are the sort of things that were kept away from the patient. We wouldn't see our scans and, yes, X-rays would be explained and so on, we wouldn't necessarily have access. But now we can see what the doctor's talking about	58:16
Maggie	58:16	Absolutely. It's now an empowered patient. Now we are not hiding. We don't have [a] monopoly of knowledge. Now we share with the patient, and we interact and we manage for better patient outcomes.	58:30
Azania	58:30	So, this is your appointment screen, the one that is live, that patients can make appointments on.	58:35
Maggie	58:35	Okay, if you can see this one, we've got five doctors, we can put as many as eight providers possible. So, we have got the five doctors [that] are here.	58:48
Azania	58:48	In different color modes, at different time slots, the reds and yellows, greens...	58:53
Maggie	58:53	It [can] identify each doctor with the colour codes and then when you book a patient, here, it's front. The doctor's coming, it's seeing, they booked the patient in front but it's not dependent on the patient being booked in front. They interact with the WhatsApp platform in front so that they can translocate the patients to their slot, so that there isn't stress, you see. So, it's a brilliant system and the important thing is interoperability. Then you take what is available in the market, in terms of digital platforms or solution, and you interact, because if you don't interact the solutions, then the patient, the dashboard, is not going to be beneficial to the patient and to the doctor.	59:42
Azania	59:42	What has this meant for you as a clinician? Because your thing is medicine, [it] is to treat the body, to treat the human being, but now you've entered this arena of digital and technology. Has it meant new skills and upskilling?	59:56
Maggie	59:56	It's empowerment, innovative skills; it's quick, it's swift, it's agile and then it's [to] provide interoperability with other providers within the center- whether it's chairo or whether it's the other doctors. And because we share this patient, if seen by me, the following day if he's seen by a doctor, the second doctor, their records...there's consistently and they can see what we have given and they they will not repeat the same antibiotics. And so, it is swift, it is agile, it makes the doctor happy as well. You know, doctors, we, in the past, we used to be tired. We used to have 40 patients waiting, because they walk in, you know, there's no WhatsApp, there's no booking online. But now we have got happy doctors, we have happy clients in terms of patients because we navigate through the system quickly and efficiently. But what is important is that we don't have 30 patients waiting to see the doctor [and that] is because of digital health. And I had	1:01:15

		said time again and again, if you've got 30 patients waiting to see the doctor, you've got a problem in terms of quality, in terms of outcomes. 30? Two doctors? It's a lot.	
Azania	1:01:15	That's a telltale sign.	1:01:16
Maggie	1:01:17	Exactly.	1:01:17
Azania	1:01:18	Well, Dr. Mojapelo, it's been wonderful seeing your operations up close. Thank you so much.	1:01:23
Maggie	1:01:23	Yes, thank you very much. And we hope the future of healthcare towards universal health coverage through digital platforms will be realized, so that we can enlarge this number or scope of people that need that essential healthcare. So, digital is the way.	1:01:45
Azania	1:01:50	Everyone I spoke to agrees technology and digital tools have the potential to enable access to quality healthcare for more people. Adapting to technology is vital, bringing more knowledge, personalized care, and a greater focus on prevention. Thank you for listening to this episode of Discover Healthier, brought to you by Discovery Health. Join the conversation on social media with the #discoverhealthier and tag @discovery_SA. You can subscribe to our podcast channel Discovery South Africa on your favorite podcast app or visit discovery.co.za to listen to our shows.	1:02:29