“Next Generation House Call” with Ray Dorsey

Transcript of Cerebrum Podcast

Guest: Ray Dorsey, M.D., M.B.A., is the David M. Levy Professor of Neurology and director of CHET, a center at the University of Rochester Medical Center that seeks to advance knowledge and improve health through research and novel applications of technology. Dorsey previously directed the movement disorders division and neurology telemedicine at Johns Hopkins and worked as a consultant for McKinsey & Company. His research has been published in leading medical, neurology, and economic journals and has been featured on National Public Radio and in the New York Times and the Wall Street Journal. In 2015, he was recognized as a White House “Champion for Change” for Parkinson’s disease.

Host: Bill Glovin serves as editor of Cerebrum and the Cerebrum Anthology: Emerging Issues in Brain Science. He is also executive editor of the Dana Press and Brain in the News. Prior to joining the Dana Foundation, Mr. Glovin was senior editor of Rutgers Magazine and editor of Rutgers Focus. He has served as managing editor of New Jersey Success, editor of New Jersey Business magazine, and as a staff writer at The Record newspaper in Hackensack, NJ. Mr. Glovin has won 20 writing awards from the Society of Professional Journalists of New Jersey and the Council for Advancement and Support of Education. He has a B.A. in Journalism from George Washington University.

Bill Glovin: You've had a stroke or are suffering from Parkinson's disease, and you need an assessment after a month of physical therapy. Problem is that it's just snowed a foot and you don't have anyone to drive you to the doctor. Or you're a college student struggling with mood swings, and have been making great strides with your therapist all summer. Problem is, the fall semester starts in a few days, and your therapist office is 400 miles away from the university you attend.

These are just a few scenarios that beg the question, why schlep to the doctor if you can get the treatment you need from the comfort of your own home or dorm room? That's the theme of this month’s podcast with Ray Dorsey, one of the authors of last month's Cerebrum article, “Next Generation House Call.”

Hi, I'm Bill Glovin, editor of Cerebrum, and as you'll hear, telemedicine is all the rage, especially lending itself to physiological counseling, but also stroke, Parkinson's, and a host of other neurological disorders. In this podcast, you'll hear about the proliferation of new startups, fueled with venture capitalist money, as well as money where telemedicine has already taken hold, but there are many obstacles to overcome as Dr. Dorsey points out. Ray Dorsey is both an MD, and holds an MBA, and is the Levi professor of neurology and director of CHET, a center at the University of Rochester Medical Center that studies health through novel applications of technology.

Dr. Dorsey previously directed neurology telemedicine at John Hopkins. He's appeared on national public radio, and been interviewed by the New York Times and the Wall
Welcome Ray, and thanks for doing the podcast. Let's begin with, what neurological conditions lend themselves best to telemedicine?

Dr. Dorsey: So, the clinical field that probably has the greatest adoption of telemedicine has been psychiatry. And so, because of the physical exam is much less important than it is, you know, your example in surgery or it is in many cases in neurology. So there are companies that do nothing but provide mental health services via telemedicine for people in remote clinics, for prisoners, for veterans, for members of the military. So that's probably the biggest clinical application. You could imagine that telemedicine is not well suited to diagnose myasthenia gravis, not well suited to diagnose ALS, not well suited to diagnose multiple sclerosis, but it could be used in combination with in person visits for individuals, once they've been diagnosed for ALS. There might be little reasons for people in wheel chairs or compromised respiratory function to come into major medical centers to receive the care that could otherwise be provided in their home, over the internet.

And the advantage for that, is not only do you save patients and their caregivers and it's a burden, you reduce the risk of nosocomial acquired infections, but you can even provide multidisciplinary care, attend to individuals in their home, you could have visits with the nurse one day, and visit with the nutritionist the next day, and the neurologist, you know, two weeks later. So you can start to bring multiple providers providing care to the patients in their home, and not need to coordinate the time and special requirements to provide a multidisciplinary care clinic that all those providers are located in the same place, and same point in time as the clinician, as the patient.

Bill Glovin: What say you to critics that claim that telemedicine is just a fancy way for doctors to make more money?

Dr. Dorsey: Actually, I think the major benefits of telemedicine accrue to patients and their caregivers, and that's why we were actually seeing slower adoption. If there were physicians who were the ones benefiting or if there were hospitals that were benefiting, I think you would see much broader adoption, because you'd have a concentrated political force, especially hospitals to drive adoption. You know right now Medicare pays more money for neurologist visits that happens in a hospital based clinic than they do in a community based clinic, and they pay nothing for a virtual into somebody's home. So, the people who come out ahead here are the patients, case they don't have to travel and they don't have to wait. In our studies, the time and travel savings have been three hours of time per visit, 100 miles of travel per visit. If you value that, if you value peoples time at minimum wage and their driving, you know, 50 cents a mile, that turns out to about $80 to 100 of cost savings per visit via telehealth. So really the people who come out ahead are patients and their caregivers, but those costs are discounted and often times neglected.
Bill Glovin: In a recent survey of 500 tech savvy consumers, 39 percent said they hadn't heard of telemedicine and of those who had heard of it but hadn't used it, 42 percent said they preferred in person doctor visits. Telemedicine seems to be a bit of a cultural shift. How do you change this paradigm?

Dr. Dorsey: I think there are some powerful forces that are going to drive demand for telemedicine. I think maybe the biggest is social. So that we have about 50 million people who are over the age 65 right now, and next 10 years it'll be 70 million, and they're going to have children who are geographically separate from them, who are going to be caring for them, and they'll be willing to take their, parents, for example, once to go see the doctor, but the idea that, you know, for chronic neurological condition, that someone going go back and forth to the doctor for Alzheimer's disease, or Parkinson's disease, every three months for the balance of their life, or every six months I think is unrealistic, and people are going to look for technological enabled solutions to get the care that they need.

I think you're going to see people retiring to areas of the country, or areas of the world where there aren't the neurological and psychiatric expertise. Or people might want to retire to Vermont or New Hampshire or Maine or Arizona and they may not retire in communities where there are specialists, and people want to be able to retire and live where they want to live, and be able to still access the expertise that they need regardless of where they live.

I think you'll see an increase in a drive to view the management of people remotely as a way to reduce cost. There are lots of costs associated with clinics and parking lots and waiting rooms and the staff, so although I don't see that happening in the near term, as you can see, over the longer term you could see that happening, and we see this in retail.

Five years ago very few people shopped on Amazon, and now probably most of your listeners do. And five years ago people went to the shopping mall, but my guess is, right now, most of your listeners don't. And I think these changes don't happen linearly. It's not like you go from one, to two, to three, to four, to five, but these happen exponentially, and we're not quite at the bending point yet, where we see rapid rise in adoption, but we do see that in Canada. We do see that in the VA, where there's reimbursement for these care models.

I think once you start seeing that in Medicare, for example, you'll see much more rapid adoption. But to me, the biggest driver is likely social factors, the aging of populations, the separation of extended families, and the desire for people to live where they want to live independent of proximity to clinicians.

Bill Glovin: In the article, you write that the VA has been especially successful in adopting telemedicine for neuro. Usually people think of the VA as being behind the curve, but here it seems like they're ahead of it.
Dr. Dorsey: Yeah, any organization that’s financially at risk for the population that they serve is actually been large adopters, and that goes from the VA, to prisons, to Kaiser Permanente Northern California, which had more virtual visits, phone, email, and video than in-person visits last year, to Canada. So, as I alluded to, this could end up being a cost-effective way of providing care, cause in the grand scheme of things, physicians visits are relatively inexpensive, especially in comparison to institutional care. The VA really has a mandate to increase access and insure access in their caring for geographically disbursed populations. Lots of veterans live in rural communities. They live in Oklahoma. They live in Iowa. They live in Kansas, and there aren’t as many doctors, and many neurologists or psychiatrists in those areas. So, this is a great way to increase access.

If you think about the fundamental purpose of Medicare, and when it was created in 1965, was to ensure access to healthcare for older Americans, at a time when Americans didn’t have such access. And to me, telehealth is just an extension of that social compact between older Americans and the US Government. I think you’re going to find that Medicare beneficiaries, some of whom been paying into Medicare since its inception for, you know, half a century, are not going to like the idea that they have to be limited to the care that they receive based on where they live. And that limitation is an artificial one, generated simply by policy decisions about the coverage of telehealth.

So, I think eventually this will be a political issue. I think eventually demographics and social factors will drive adoption.

Bill Glovin: Great point. In a poll of 1,500 family physicians, only 15 percent had used it in their practices but 90 percent said they would, if they were appropriately reimbursed. So, I guess that’s a huge issue.

Dr. Dorsey: Yes, and in a poll 5 years ago, you wouldn’t have gotten 15 percent, you might have gotten 2 percent. I think one that just I don’t think 15 percent of neurologist are using telemedicine except maybe for stroke, where certainly it is the case, but it shows signs of how quickly adoption is spreading, and then it highlights one of the major limitations, one of the key barriers right now is reimbursement, which is increasingly happening in per private insurance. Twenty-nine states mandate that private insurers cover telemedicine as they cut the coverage of in-person care. And 48 states mandate that Medicaid programs cover telehealth to some extent. The real slacker here is Medicare, which in 2015 spent less than 1/100th or one percent of its budget on telehealth.

Bill Glovin: I was talking to a physiatrist who has a practice in New York City yesterday, and he says he’s been using it for years and years, mostly with college students who are away at school and it’s just a very convenient and practical way to keep therapy going, without them having to find somebody new and develop a whole new relationship with.

Dr. Dorsey: Yes, so this extends the reach of physicians, psychiatrists, and neurologists and enhances continuity of care. You know, I moved from Rochester to Baltimore and back to Rochester, and I was still able to set, follow the same patients that I was caring for across my moves. And you can imagine the same could happen for patients who move.
One of the chief limitations though, is another policy barrier that requires that patients only see physicians that are licensed in the state in which they are physically located. So, for example, if a student went from Baltimore to California, and I weren't licensed in California, I couldn’t follow, care for that student. There are changes afoot to help address this, but there's just all these artificial barriers that aren't present for example, in the VA, that aren't present in Canada, that are preventing people from receiving the care that they need.

Bill Glovin: So how does that change? I mean all these rules that differ widely from state to state. Does there need to be sort of national lobbying force, or anybody working on legislation to change the way things work now?

Dr. Dorsey: There's an interstate compact that's supposed to facilitate life insure of physicians in multiple states in about 17 to 18 states are a part of that. That's supposed to be implemented this year, so it should be relatively easy for physicians to get licensed. Also, states there was a bill in Congress last year called the Telemedicine Act, that would enable any Medicare beneficiary to receive care from any participating Medicare provider, clinician, which is exactly the way the VA works. If you're in the VA, you can receive care from any vet, from any clinician in the VA. And as you know, both Medicare and VA, are federal programs.

Right now the state licensing laws do little, but perhaps protect vested interests. You know, we drive across the country but no one say you need to have a drivers license in every state in which you’re driving in. So, I think there are policy solutions out there that can be very sensible. In means to track, you know, rogue doctors, and we'd like to make sure that people who are practicing inappropriately can be tracked and followed.

But again, I think these are largely artificial barriers to ensure any access to care for people who don't have it. As we mentioned, over 40 percent of Medicare beneficiaries with Parkinson's disease don't see a neurologist, and if you look, you see a lot of people in like Norwood, Nevada not seeing a neurologist, just because there aren't any neurologists in Norwood, Nevada. And really the major barrier there is the state licensing law.

Bill Glovin: I noticed that there's an American Telemedicine Association, and other organizations that have started accreditation programs, to identify top quality telemedicine sites. How far along is this?

Dr. Dorsey: I'm not very familiar with that effort. I think there's some concern, for example, in the dermatology field that there are some fly-by-nite teledermatology companies that may not be providing the highest quality care from the highest quality physicians. Here I think it's a huge opportunity for academic medical centers, who have outstanding physicians and clinicians, and have outstanding reputations for their work, to really extend their reach. So, you can imagine for ALS Lou Gehrig's disease, that there's no reason that anyone in the country is not receiving care from ALS experts at the top medical centers in the country. My guess is most local neurologists, in showing this level of primary care physicians, have little interest or expertise in caring for patients with Parkinson's disease.
ALS, and this is a chance for these centers around the country to extend their reach and ensure that everyone, and anyone anywhere in the country, can now get the expert care that they need.

Bill Glovin: Commons sense says that the more patients treated online, the more medical benefits they may have to pay, because so many more patients can be treated. How are regulators and insurance companies reacting to telemedicine so far?

Dr. Dorsey: So that's what Medicare, that's what the Congressional Budget Office is most fearful of, and I think it's a penny wise and pound foolish. So, they see that if you make it easier to get medical care, people will consume more medical care. But we should be rationing medical care by making it difficult to access. The fundamental purpose of Medicare is to guarantee access to health care for older Americans, and we should make that healthcare accessible. Turns out that doctor’s visits are rounding error in the grand scheme of things. You know, Medicare currently pays about $80 for Parkinson's disease for a follow up visit, and it pays about $17,000 for a hip replacement. So, a patient could see a neurologist 200 times over the course of their life in order to prevent one hip replacement and Medicare would come out ahead.

And deep research by Dr. Allison Willis has shown that the more frequently someone with Parkinson's disease sees a neurologist, the lower their overall expenditures are, the less frequently they are to be hospitalized for things related to their Parkinson's disease. And there's even a dose-response relationship, that as you increase your frequency of visits with the neurologists of less your overall expenditures are.

Bill Glovin: I would think one place where you would hear criticism is that, poor or less educated people don't have access to the technology that drives this, especially the video technology like Skype or FaceTime or something like that. And so that the access to telemedicine is kind of limited socioeconomically.

Dr. Dorsey: Yeah, so absolutely—and those same individuals have limited access to care currently in our clinic. So, if you look at the patients that we care for in clinic, you can see that same social divide. In many cases the people who have the greatest needs, have the least amount of money, and who are in the geographically poorest areas, and are often the least able to access the care from major medical centers. And so this digital divide; the differential access to internet and related technologies by social and cheap economic factors is a huge issue.

So, in our research we’ve encountered this, that people, for example, in one of our studies, 96 percent were white, 73 percent were college educated, over half had done a video visit before, and so we’ve encountered this problem in our research and other have had the same result. The real promise to telemedicine is that it can extend access to anyone anywhere. We've been able to do that for geographical barriers. We've had less success with social barriers, but we’re working with the Greater Rochester Foundation, the Stafford Foundation on that initiative to provide care to any New Yorker anywhere. And that effort to date, the pilot effort, the initial efforts suggest that we are getting huge geographical coverage. We’re reaching people with much less education.
Only about 30 percent of the people in that study have a college education. We're reaching people from lower socioeconomic status but we’re still not getting many minority groups participating in the study, in that care model.

Bill Glovin: Have you seen a surge in startup companies that are geared into this new sort of industry?

Dr. Dorsey: Oh yes, there is about $4 billion dollars of venture capital money that went into digital health in each of the last two years. Just to give you a flavor, spending is about $30 billion. So, there’s a substantial amount of money going into it. And the reason there's money going into it, and the reason we’re seeing this, is because the way we provide care right now is not satisfactory.

In 2001 the Institute of Medicine put out a report called Crossing the Quality Chasm, in which they said the gap between the care that we currently receive and the gap, and the care that we could receive, lies not in a gap but a chasm, and I think you’re seeing new entrance come in to try to bridge that chasm, because incumbents, including major medical centers, have been slow to develop alternative care models. We’ve seen some of that, we’ve seen you know some day appointments, we’re starting to see some people provide actually house calls. But by in large, the way we provided care hasn’t fundamentally changed over the last 50 years, and it doesn’t meet the needs of many people, and we’re seeing new entrance come in to seek new ways to address these unmet needs that are only getting larger by the social forces that I highlighted at the beginning.

Bill Glovin: Is there, internationally, is there a model, is there another country that really does this well?

Dr. Dorsey: Yeah, so Canada does this well, so they, Ontario telemedicine network, the largest telemedicine network in Canada, had in 2009, 25,000 telemedicine visits. In 2014, they had 250,000 visits, a ten-fold increase in five years. So, you're seeing a wider and wider adoption of telehealth. Even in the United Kingdom and Australia, you see people doing it now. United States is of the larger country, has a more geographically disbursed population than other, but I think you’ll see this.

You're going to see this in developing countries like India and China, which have a large population that’s largely underserved, and the principal means that which still individuals will be connecting to care through smartphones, because there aren’t a lot of hospitals and medical clinics who have a lot of smart phones. Even among people who are very wealthy, and I think that'll become the dominant means by which people receive care, and many parts of the world is through smartphones.

Bill Glovin: You know as a director of a center that does research in this area on novel applications of technology, is CHET an unusual place, do you see that there is more of an academic interest in this? Is there a shortage of research in this area? Talk about the climate for telemedicine research.
Dr. Dorsey: Ten years ago when we started doing this, there were very few academics examining these issues. Increasingly most major medical centers have innovation centers, or innovation hubs or labs that are aimed at developing and evaluating alternative care models. And there was a huge gap in the literature and a huge dearth of high quality studies supporting the use of telemedicine. Our recent study was a national randomized control trial that was the first national randomized control to our knowledge that provided care from a remote physician to a patient in his or her home for any condition, not just for Parkinson’s disease.

That said, there was a dearth of evidence for the way that we currently provide care, and if anything, we actually know that the way that we provide care is not meeting the needs of many individuals. You know, we as a country, spent 40 percent more than any other country on health care, and outcomes are no better than many areas. So, there’s a dearth of evidence to support the way we currently provide care, and we know that there are substantial shortcomings, and we need more evidence and studies to evaluate better ways of providing care.

Bill Glovin: Okay. Well I think this has been excellent and really helpful. Is there anything that I may have left out that you think that’s worth mentioning to people?

Dr. Dorsey: I think it’s just an immense opportunity for academic medical centers to extend their reach. You know, historically the reach of the University of Rochester, of Columbia University, of Stanford, UC San Francisco, University of Iowa, was limited to people who were in that community, or had the means to, by which to come, to see those clinicians. Now these major medical centers can extend their reach throughout all individuals in their state, and create cases across state lines, enable their expertise, whether that’s for rare disorders, or chronic conditions like ALS or Autism to receive the care that people need. And if they don’t, I think it’s a missed opportunity, and that will likely be filled in by new entrance into the field.

Bill Glovin: Okay, great, thank you so much.

And join us next month, when we’ll discuss research on holding off Alzheimer’s disease without drugs, with Dr. Dharma Khalsa, president and medical director of the Alzheimer’s Research and Prevention Foundation, and the author of Brain Longevity, and Dr. George Perry, Dean of the College of Sciences and holder of the Semmes Foundation Distinguished University chair in neuro biology at the University of Texas at San Antonio. That’s a mouthful.

_Cerebrum_ is produced by The Dana Foundation and you can read “Next Generation House Call,” the article by Ray Dorsey, and his co-authors, and all our monthly _Cerebrum_ articles by going to dana.org. See you next time.