

# Primary Care Cures

## Episode 53: Morris Miller

- Ron: You know, most problems in healthcare are fixed already. Primary care is already cured on the fringes, reversing burnout, physician shortages, bad business models, forced buy outs, factory medicine, high deductible insurance that squeezes the docs and is totally inaccessible to most of the employees. The big squeeze is always on for docs. It's the acceleration of cost and the deceleration of reimbursements. I want you to meet those on this show that are making a difference with host Ron Barshop, CEO of Beacon Clinics, that's me.
- Ron: If a completely full IMAX theater burned to the ground every other day, that would get headline news. But here's what doesn't. Those numbers happen every day because people are dying from an infection they acquired in their hospital stay. Many of the super bugs like C Diff and MRSA that maybe you've heard of will cause infections that have become resistant to antibiotics, cleaning chemicals and hand sanitizers. And a cleaning lady with a mop and a Clorox wipe has no chance against these hospital acquired infections. It'd be like fighting killer drones with a slingshot. And I'm talking David and Goliath era. Today we meet a drone killer. My guest today leads Xenex's mission, which is to stop the pain and suffering that is unnecessarily associated with these hospital associated infections by destroying the pathogens that cause them. So your city's largest real estate owner is likely a hospital system that likely pays no property taxes, and hey, it's another rant for another time.
- Ron: But the American hospital systems are gorgeous, compared to those around the world, and the world flocks here if you're a patient, especially in Houston, Texas, medical city. We've got lots of medical tourism here. And if you're a foreign trained docs, we have a backlog of tens of thousands trying to get in through our residency programs and through our medical schools. But despite having all this great access, we have a big problem here because you won't die tonight from staying in the average hotel, but 300 people will die today from staying in an insanitary hospital room. That's about half of 1% of the overall stays of 26 million people last year.
- Ron: So under Morris Miller's leadership, Xenex has become the world's leader in automated room disinfection, through the use of Xenon UV technology. It achieves significant infection reduction results. They've eliminated flu contagions and things like hospitals of course, but they've also donated their equipment to school district in Oklahoma that had a very serious contagion and it literally almost overnight stopped the contagion. So Morris is an SMU Wall student

graduate. He's a UT Austin graduate. He's the cofounder, very proudly, of golfballs.com which I'm told they have a fourth dozen free special just for our listeners today. He's co founded Rackspace Managed Hosting where he acted as a managing director and co-chairman. Morris, I'm so glad to have you on this show.

Morris: Thanks Ron. Thanks for having me. I appreciate it.

Ron: Hey walk us through the numbers on, okay, so today a janitor or maid is going to walk into a hospital room. She's going to slap a mop and some cloth over 20 30% of the surface area. And then the liquids are going to bead up, even if they're Clorox, if they're industrial strengths, infection killers, they're going to bead up like they do on your windshield. And then even a smaller percentage of that 30% is actually covered. And then I'm told it has to, the liquid has to sit there for 10 minutes to do its job. What is the math on all that, Morris? Walk us through that.

Morris: So in general, in a hospital, first of all, it's really important for your listeners to know that these housekeepers are some of the hardest working people on earth. They're trying their best to clean a room. And if you think about a hospital room, you know there's the surfaces around the bed, but then there's the surfaces on the nightstands and on the switch that turns on a lamp, on the nurses call button, on the telephones, on the basin where people wash their hands in the room. There's all these surfaces, windows, all of them can contain pathogens. And the housekeepers are given about 26 minutes to turn over a hospital room and that doesn't even count the bathroom with a commode and the shower, the tub and maybe a secondary sink in there. So in 26 minutes it's virtually impossible for them to get to all of the surfaces. You were talking about dwell time, so typically bleach needs to be in contact with the surface for three or four minutes depending upon its concentration.

Morris: And literally that means that the surface would have to stay saturated with bleach for it to do its job. And the hospitals were using bleach, they had brought down infection rates over the last 100 years, since implementing bleach. So we were in a much better situation than we would've been in the absence of bleach, but it wasn't getting the job done. And the numbers that you said, 2 million Americans get these infections every year. 2 million out of 300 million Americans. And about 100,000 all of them end up dying. Interestingly the junior Senator from Tennessee had a hearing on this in 1984, that was Senator Al Gore, who ended up becoming the Vice President of the United States. And the numbers were almost the exact same then. And when he had a congressional hearing, he specifically said "As a government, we need to put a stop to these infections." And there really hasn't been much progress over the last 30 years.

Ron: So here we have a very interesting problem, which is you're going to get sicker in a hospital then you're going to go into a hotel. By the way does this problem extend to hotels, bus stations, I mean airports? Is it anywhere where there's people, are we going to have these infection pathogens?

Morris: The difference may be that the sickest patients are frequently going to the hospitals. And so, not only do they have a potentially more dangerous superbug, but then a more immunocompromised patient population is also in those hospitals and being exposed to that more dangerous superbug. So it's kind of a building effect. You know if you or I go to a hotel in general, we have strong immune systems. So even if there was something there, maybe we won't get it. We probably don't have any surgical wounds, where it's going to get you know rubbed into the surgical wound and become inside our bodies. And therefore we're a lot less likely to do it. So the pathogens are there. If you've ever flown on a plane and three days later you end up with a cold you know chances are that the air vent or maybe the tray table or the armrest was pathogenic from the previous passenger, and hadn't been adequately disinfected. It's going to make you sick, it's probably not going to kill you, hopefully.

Ron: Okay. So clergy, should they be getting combat pay for going to hospitals once a week to comfort the wounded and the sick and the unwell?

Morris: They are brave. We recently had an employee that went in the hospital and when I walked into the hospital, I pulled a few paper towels and I use those to open the doors. And then when I went into her room to just pay a wellness call on this particular employee, literally I never sat down in the room. I didn't touch anything. And she told me that she was put in the room literally 20 minutes after the previous patient left the room. So we know that in that 20 minute period there was no way that they disinfected the room adequately. I asked her, I said, "Do you know whether the previous patient had a superbug, had a hospital... You know one of these dangerous infections?" And she said she really didn't know. But you know as a patient suffering from a serious illness, she just crossed her fingers that the hospital wouldn't make her sick. In that same hospital hundreds of people do get sick a year, but she was fortunate in that particular case.

Ron: All right, so I don't want to go into this. It's kind of a scary topic, but you know you think about zombies, they need night to thrive. What you're doing with your technologies, you're giving light, particularly a light that kills all, most all pathogens. You're shining light directly on the surface by having a robot, let's call a robot that goes into a room with pops up, the Xenon light bays, 70, 80, 90% of the surfaces in the room. Keeps in there long enough to do its job. And then the wipe down, while it's nice, it's not as necessary. Does that about sum it up?

Morris: Yeah, we don't encourage the hospitals to limit the amount of their cleaning. We want them to clean as much as they possibly can. And then as you said, this pulse Xenon light that we have, it's a proprietary light and it's broad spectrum. So it's across every part of the disinfecting spectrum and it is high intensity. And that means that the surfaces that it's hits, it has the capability of killing some of the pathogens that you talked about early. You know MRSA, VRE, C Diff, all of these killer pathogens. And a lot of times physicians and even hospital administrators don't really realize that, like MRSA, is methicillin resistant

staphylococcus. So methicillin was an antibiotic of choice, call it 20 years ago. You got an infection. If it was serious, they would give you methicillin, good to go. By its very name the pathogens have become resistant to methicillin. VRE, Vancomycin-Resistant Staph and Enterococcus so it's like they are resistant to the exact drugs that are in their name.

Morris: And as we all know the pharmaceutical industry is not creating a lot of new antibiotics, because there's really not a huge market for them. And you know, when you look at the numbers, they're estimating that by 2050, unless we change the path of these things, 10 million people a year are going to die from antimicrobial resistant bacteria. And that's really what we're trying to stop. So high intensity light bathes the room, four minutes on each side of the bed and the room is disinfected and becomes safe for the patient.

Ron: All right. And theoretically that should be in the bathroom too. But so these superbugs are now leapfrogging our ability to fight them. There used to be 20 companies that were creating antibiotics. There's now three of them in the whole world. Again, as you said it's just not as economical as going for that next billion dollar super drug, and nobody really seems to be paying much attention to the fact that we are about to be leapfrogged, and it's not 2050 they're talking about the leapfrog is going to happen this decade and what that looks like, Morris, is what? What happens when a contagion hits a hospital and their PR departments not wise enough to keep it out of the news? What do you think? What is the implication of that? Let's hope that never happens. But that is a very strong possibility, isn't it?

Morris: So, yeah. I mean we got a call, there was a California hospital. Mother came in to deliver a newborn. And she delivers the newborn. Just before discharge they recognize that a newborn baby has MRSA, had different kinds of sores on its skin. And then they looked at the mother and they're like, Oh my gosh the mother and the baby have a developed MRSA. So they quarantine them. Another mother and child come in and they deliver children. They're both healthy when they enter, all of a sudden the mother and the child have MRSA. So this happens four more times. At eight infections they have to report that to the CDC, so they report it to the CDC. CDC tells them listen, you need to really, really clean down those labor and delivery rooms with bleach. Try to get rid of the MRSA and let us know how it goes.

Morris: Before we got a call, over 40 mothers and their newborns had developed MRSA in this hospital. And literally we got a call from the infection preventionist. She's like, "I've done everything that the CDC has advised. I followed all of the guidelines for the Society for Healthcare Epidemiology of America. I don't know what to do." And we just said, "We're going to send in robots overnight. We'll have operators there tomorrow, and we will disinfect your labor and delivery ward end to end." We did that. They didn't have a single additional infection.

Morris: So to your question, what happens if one of these super bugs gets out of control? Literally. It can infect everybody that comes into contact with it. By using the robots, they were able to stop it and the infection preventionist was so happy. Afterwards, we didn't sell them robots, we didn't charge them for the use. We just sent them in and solved the problem. She came back, she bought robots and then she offered to speak to our employees to explain to them how important it is, in terms of what they're doing and what their efforts meant in terms of preventing additional infections to mothers and newborns.

Ron: Well how about a hospital operates on a 5% margin, and if you lose 5% of your business, theoretically you're at break even. You can't afford to lose any business with bad headlines, if you're a hospital. And I'm just trying to imagine if that hospital, I'm sure it's a well-respected name, we're not going to mention it. But I'm sure that hospital would have that, the ripple effect would have been on all the other hospitals also, because people are just naturally associating the word hospital with infection. That's what I'm worried about.

Morris: Yeah. They were able, they were... When we spoke to their PR department, they didn't really want to talk about it because they had managed to keep their name out of the news. And they were pleased about that, cause it would have hurt their labor and delivery business. And for many of these hospitals, it can be a business. But similarly we see other hospitals that they'll experiment with our technology. It will work. The Mayo Clinic used it. They published a poster, then they continue to use it for another two years. And then they saw that continued to work. It wasn't like a onetime, oh, it work now and then it stopped. And at that point they published a study and they bought their full complement of robots.

Morris: So we see lots of healthcare systems like Mayo Clinic. Honor health, Paul Hiltz is the CEO of Naples Community Hospital who just left the position up North to move down to Florida. And one of the first things he did was brought our robots into his new operation.

Ron: Did he try to smuggle them out of his old operation?

Morris: Nope. He left him there. They had worked well there and he and he wanted them to work in both places. But I think, it's just to say that there are leading thinkers. MD Anderson, there's lots of leading hospitals that they're trying to deploy this and protect as many patients as they can.

Ron: Oh yeah, I was so happy for you when I saw Mayo had bought in, because what better name than Mayo? There's such a thought leader and an inspiration to other hospitals. That's such a bell cow for you.

Morris: Thank you.

Ron: So let's talk a little bit about what happens in the future when these prices come down on these machines. Are we going to start saying hopefully or theoretically, robots everywhere so that the infections that are going to be outstripping our ability to fight them are going to be not a worry anymore?

Morris: Yeah, I think we want to see the right number of robots in any hospital. You might end up seeing them on airlines. Certainly if they're flying into areas where there are deadly pathogens, you might remember a few years ago, over in the middle east, they had Middle Eastern Respiratory Syndrome is called MERS. There's been other serious carbapenem resistant enterococci. There's CRE, there's been a lot of different pathogens that crop up in different places. Avian flu, was prominent a number of years ago. So I think you'll see airlines, cruise lines that are going into areas that have had certain infections.

Morris: Maybe they'll be a little more diligent, a little more proactive and trying to stop the spread of those infections. And we know that the robots work against them and it's just a matter of them deciding that, either their customer or patient safety is first. Knowing what I know, it's funny when I talked to the founder of the company, I'll tell him about hotel rooms and he goes, "Oh Morris." He's like, "You're healthy." He's like, "It's good to develop your immune system. So if you get a little sick now, so what, you'll develop the resistance to it later." So that's kind of the epidemiologist view, as long as it's not a super bug that's going to kill you. And, and that's really what we're, we're fighting against in those hospitals is the actual super bugs that will kill you.

Ron: Yeah. I can't wait till that epidemiologist has that effect as a mother and then he'll be eating his words. It's so casual, just relax. Right? Like no big deal. This is no big deal. It is a big deal.

Morris: We'll, he'll, this is a little discussing, but he'll say "The world is covered in a fecal patina."

Ron: Well, yeah.

Morris: He's an epidemiologist, so he knows. On the other hand, he's very specific about what we're trying to do in the hospitals and there's a reason why he's insistent on it making sense in a hospital, even though you may not need to do it on every bus, but if somebody was pathogenic, and was on a bus or in a hotel room if somebody had C-Diff in a hotel. Most people think these pathogens can exist on a surface for 24 hours. 48 hours. No. A C Diff spore can live on a surface for seven, to 10 months.

Ron: Wow.

Morris: And where this played out, I was, I mean, I'll just tell you. Do I have time to share a personal story?

Ron: You only have 15 minutes. So of course.

Morris: Okay. All right. So I'm in a really very lovely hotel in New York. We had just finished a long day and the housekeeper comes into turn down the room and as she walks in, I'm just kind of watching, and she has on a pair of gloves that she has on when she enters the room, turns down all the linens and I'm just watching. She keeps on those same gloves. She grabs a towel, she wipes down the sink. Not too bad, but then I look and she takes that same towel and she wipes down the commode in the room. There was a bidet, which I hadn't used, but I suppose it had probably been used before, to clean somebody's rear, at least in theory. She cleaned the bidet, and I'm like, okay. Hopefully she puts that towel into the laundry. Nope. Before she left the room, she wiped down the sink area one more time with that same towel, after the commode and the bidet. That is scary.

Ron: Patina is a nice word. That's not good. That's not a fecal patina. That's a fecal smear.

Morris: Right. So you know, that's a matter of training, and I ended up not reporting her, but just explaining to the head of housekeeping what had happened on a non identifiable basis, to try to help them improve their training. But those are the kinds of things that people aren't watching out for, that as a result of being in this business and being exposed to the founders, I'm keenly aware of.

Ron: Oh, if you ever talked to the people on the airlines, they'll tell you the exact same things going on when they're turning over an airplane. It's even worse.

Morris: Yeah.

Ron: So, so let's talk a second. There are light fixtures. Last time we were together, you told me about your feeling on the light fixtures that take the air and turn over the air inside the room. But above the light fixture, there's a Xenon or an ultraviolet, some type of array that's going to do some damage to these pathogens. How do you feel about these air cleaners? Are they effective? Are they not effective?

Morris: There's really three or four things you can do in a hospital. I'm going to keep it focused on the hospital just because that's really where the infections are happening and where people are losing their lives. So in a hospital, you need to do hand hygiene. That means that people need to wash their hands. You need to do antibiotic stewardship, which just means, don't give people antibiotics when they don't need them. So really reserve the antibiotics for when you absolutely positively need them, and make sure that the antibiotic you're using is targeted at the pathogen you're trying to kill, as opposed to using just the broadest spectrum antibiotic to get everything. Those are two of the things. Anything additional that you want to do, whether it's putting in copper door knobs or cleaning the air in the room, all of that can't hurt.

- Morris: There haven't been the studies that show that that alone will reduce the infection rates, but everything that the hospitals can do to bring it down a little bit, a little bit, a little bit, and to make it cleaner on an ongoing basis, I'm in favor of, it's always a cost\benefit to me to say like, "Okay, if it costs you \$1,000 per room to put in copper, well, I mean that would pay for you to clean the room, disinfect it with a Xenex robot for the next four years." I'm not sure that that's a good trade off of cash versus benefit, but it'll definitely help.
- Ron: Other than cost. Is there, is there a number one reason people don't tell you yes, Morris? Is it always about the money?
- Morris: It was a question that we had, and there's a hospital in New Orleans that had 800 beds and they literally couldn't afford the machines. They just said, "We're not in a position to put them in." And I said, "Okay, I'll tell you what, we haven't done this before, but we're going to do this. We'll put it in the robots free of charge. Basically, we'll let you run them and if you don't get a 10% drop in infection rate, which would more than pay for the robots, 10% drop in infection rate pays for the robots. If you don't get that, I won't even send you a bill." They said, "Wow, you really believe in your technology." I said, "I really do." So they said, "Okay, we'll give it a shot." So we deployed eight robots in the hospital.
- Morris: We came back 90 days later and they showed us that they had dropped their infection rates 48%, they deployed phase two, which was another eight robots. Again at our expense, not theirs. We came back 90 days later, they showed us that they had dropped the rates 70%, and in the most recent report from that hospital, their infection rates were down 78%. Of course we send them a bill now and basically that was my effort to say to a hospital, "Look, don't take our word for it. Let us help you solve the problem. And as long as we do, then we'll send you a bill. And if we don't, then you've, you've suffered no costs." That seems like a fair trade. So, that's my effort to take any monetary argument off the table.
- Morris: One of the things that I've been, I've kind of scratched my head about, and in other businesses, if you come up with a car that's much faster, people naturally want that car because they're making the decisions for themselves. In the hospital business, somebody else is making the decision on behalf of the physician and therefore oftentimes on behalf of the patient. And so there's a disconnect between the person, the service, and their ability to direct what service they're going to get. So it would be like somebody telling you "No, you're going to drive a Honda or you're going to drive a Toyota or a Chevrolet or Ford." And everybody would say, "Well no, no I don't really... You don't get to tell me what I'm going to drive." But in the hospital business, that's what it is. And the rate of adoption, I've been astonished how much slower it is. than in the technology business, where we're now sitting here with 33 peer reviewed published studies.
- Morris: I had never heard of a peer reviewed published study, before getting into this business. And even with 33 peer reviewed independent studies, a hospital



administrator can look at you and say, "Hmm, that's interesting. I'm not sure." And we're oftentimes looking at them like, what other proof do you want? Like tell us what you want in terms of proof. So giving them the robots and then letting them experience their own infection rate reduction. I thought that would be the one two punch. So far it's working well at the hospitals that do it, but I want to see more adoption just cause as you said, 300 people a day are dying from this and another 6,000 are getting the infections every day. And based upon what we've seen now we've disinfected 21 million rooms, we can help stop the problem.

Ron: So you have a left punch is what you're calling your proof beyond proof. The right punch might be that the hospitals are highly incentivized financially to have their infection rates drop, so that they can meet federal guidelines. So CMS is throwing them a curve ball and saying if you don't have these proper infection rates, you're not going to get paid as much. Isn't that helping you?

Morris: I think the more direct correlation for the hospital. If CMS could analyze our data and say, "Okay, we've done a meta analysis of your 30 studies, you have a 50%, the hospitals have reported a 50% infection rate reduction in some, 100% in others, we're going to average it out and say the hospitals have reported 70% reduction. You know what? Based upon that, anytime a hospital uses your robot to disinfect a room before the next patient enters, we're going to give them \$15." If the government would incentivize the hospitals, in a very direct way to disinfect every room, every time, then the hospitals would do it because there's no downside cost to them. They get to build that through. Magically, their infection rates would drop. Medicare, Medicaid would pay for fewer infections. The VA hospitals have done a phenomenal job. We're in about half or more of all of the VA hospitals because there's a direct linkage between the governmental entity that's paying for the infection, and who's running the hospital. So they want to stop all of the infections, a direct linkage incentivizing the hostels to actually disinfect every room. That would work.

Ron: So is that called onomatopoeia when you can spell a word forwards and back? No, onomatopoeia is when it sounds like the sound. What does, when you spell a word backwards, Xenex is that word, isn't it?

Morris: Palindrome. Palindrome.

Ron: It's a palindrome. So Xenex is a palindrome, right?

Morris: A man, a plan, a canal. Panama.

Ron: That's a good one. I got to tell your mom and dad should be proud of the education they gave you. Your Latin was excellent today and your palindrome is superb. Two more questions, Morris. One is how do people find you or find Xenex online?

Morris: Everybody, I think the name is hard to spell, but it is a palindrome www dot X-E-N-E-X dot com. So Xenex, X-E-N-E-X dot com. That'll get them to us.

Ron: Okay. And if they want to find you, are you on Twitter or any other social media?

Morris: If you look up Morris Miller, and I'm happy to give you my cell phone. It's (210) 273-3676, (210) 273-6768. I've had the same phone cell phone for over 20 years and I'd be happy to talk to anybody and explain what this is and get them right to the people that can help them solve their problems.

Ron: Thank you for doing that, Morris. My last question is, if you could fly a banner over America and say one message for all Americans to read, what would that be?

Morris: I think I would tell Americans that the leading hospitals have proven that pulsed Xenon, it was really invented to stop hospital infections. The leading hospitals in the world, Mayo clinic, MD Anderson, Stanford, Honored Health, Naples Community Hospital. These hospitals have proven to the world that this technology, this pulsed Xenon technology, was invented to stop the hospital infections. They do not have to worry about going to a hospital and getting an infection, that uses these robots.

Ron: Beautiful. Well, let's stay in touch more, I know we will anyway cause we're friends but I do want to have you back on the show again, as you continue to get traction and as the prices drop and more and more clinicians can afford to put it in primary care, which is the focus of this show, is what's true in primary care. But listen, when you're cleaning up hospital rooms, you are cleaning up primary care, because so many hospitalists are practicing in that facility. So I want to thank you again. I enjoyed it a lot and I can't wait to do it again.

Morris: Thank you Ron. I really appreciate it. Nice to talk to you.

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