

## If the Misdiagnosis Doesn't Kill You, the Antibiotic-Resistant Bacteria Will

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David Burda:

Welcome to the 4sight Health Roundup podcast, 4sight Health podcast series for healthcare revolutionaries, outcomes matter customers, count and value rules. Hello again, everyone. This is Dave Burda, news editor, 4sight Health. It is Thursday, September 19th. I don't know what you were doing two days ago, but I was celebrating World Patient Safety Day On September 17th. I blocked the entrance to our local hospital with my car, and I was waving a Make Patients Safe Again flag. Not really. I didn't even know it was World Patient Safety Day until yesterday when I saw someone mention it online. The good news is that the mention gave me the idea for today's podcast. We're gonna talk about patient safety with Dave Johnson, founder and CEO 4sight Health, and Julie Murchinson partner at Transformation Capital. Hi Dave. Hi, Julie. How are you two doing this morning, Dave?

David W. Johnson:

Well, it's hard being a Minnesota sports fan. After a strong season, my twins are tanking down the stretch. Not long ago they were challenging for the division title. Now they're only half a game up for the final wild card spot. So probably looking for an ignominious end to the season. On the flip side, the Vikings have started two and oh, which nobody expected, and we don't have Kirk Cousins as our overpaid and mediocre quarterback anymore. But they're getting our hopes up just to dash them later on in the season.

Burda:

Oh, Dave, they're two and, oh, come on, man. <Laugh>, enjoy it while I can. Right? Exactly. Julie, how are you?

Julie Murchinson:

Seriously? I was thinking this is like a November update, not a September update. <Laugh> <laugh>, right?

Johnson:

Baseball. Baseball. Julie Baseball.

Murchinson:

You have to remember that I'm a Dolphins fan, so no one's life is worse than mine. When our quarterback Tua who should, I don't even know why that guy's still playing again, has a concussion. So I don't wanna hear you complaining about your <laugh>

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All right. Now, before we talk about patient safety, let's talk about your safety as a patient. Dave, you interact with the healthcare system on a semi-regular basis, at least. Tell me one of your recent patient safety stories, good or bad.

Johnson:

Well, this isn't my story, and I've mentioned it before, but I just think it's so relevant, is Amatab, my friend, Amatab Chandra, the healthcare economist at Harvard, went in last winter with abdominal pains thinking it was an appendicitis and was in Mass General for three days, and they told him it was indigestion and wanted to send him home, five doctors. And on day three, he put his symptoms into Chad GPT and came back with a 40% chance of appendicitis. And it was only then they agreed to give him the abdominal CT scan. It was appendicitis. Everything from there on went great. But since we're talking about medical error today, human bias is a big part of it. And Amatab, had they sent him home, could have died, right? So, right.

Burda:

AI saved them. Interesting story. Thanks, Dave. Julie, how about you? You and your family use the healthcare system regularly? Tell me a patient safety story.

Murchinson:

I have a very recent also Chat GPT save the day story <laugh>. I just had a, you know, biopsy. No one wants to have one of those, right? But the doctor told me that I'd receive the result first and my MyChart which I did, and either they or the ordering physician would follow up within four business days. That was August. Still, I have nothing from either the doctors, but I do have the result, which of course is difficult to understand. So I just plucked it right in chat, GPT, and the words I saw and how it was strung together were negative and benign. And now I feel fine, and the ordering physician has reached out to schedule an appointment, but no one's officially told me the results of the biopsy. So, you know, it, it plays straight into what we're talking about today.

Burda:

That is unconscionable, right? Yeah.

Johnson:

But entirely predictable, right?

Burda:

Well, I'm, I'm gonna tell you a story that I told you guys offline before we taped last week's show, and I guess it's kind of the opposite end of the high tech spectrum. I was visiting a family member in the hospital last week, Edward Hospital in Naperville, which is run by Endeavor Health. That's Endeavor Health. When the first floor elevator opened in the north building, there was a mouse walking across the

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back of the elevator. He turned left, walked along the left wall, turned left again, and then squeezed under the bottom of the electrical panel with all the floor buttons on it. <Laugh> <laugh>. The, the last thing I saw was this tail flip and disappear under the panel <laugh>. So, endeavor Health, if you're listening, if you want a simple way to improve patient safety at Edward, zip over to the Ace hardware at the corner of Washington and Ogden, which is not too far away, pick up a few mousetraps and you know where to put 'em.

Johnson:

<Laugh>, I knew you were gonna find a way to get that into the narrative, Dave. I just knew it. Yep. But at least it wasn't a rat, right? I mean, right.

Burda:

Well, that, looking on the positive side, right?

Murchinson:

Where there are mice, there are rats, <laugh>.

Burda:

You know, that's a story I'm gonna tell until the day I die. So I guess thank you, Endeavor Health <laugh>. Okay. Let's talk about patient safety, not disease carrying rodents in hospitals, thanks to two new reports. The first is a report from ECRI, the Patient Safety Organization on diagnostic Errors. The second is a study in the journal Lancet on antibiotic resistant bacteria. Let's talk about the ECRI report first. ECRI analyzed more than 3000 adverse patient safety events that happened in 2023. Here's what they found. 34% of the events were related to diagnostic errors. Of the diagnostic errors. Nearly 70% happened during the testing phase. That's ordering, processing, obtaining results, or communicating results. 12% happen during the monitoring and follow-up phase, and 9% happen during the referral and consultation phase. Of the errors that happen during the testing phase, more than 23% were technical or processing errors. Another 20% were things like mixed up samples, mislabeled specimens, and tests done on the wrong patient. That's comforting. Here's the story from the Lancet study. Researchers looked at more than 500 million patient records from 204 countries to find out how many deaths were associated with or caused by antibiotic resistant bacteria. I'm going to go with the associated with numbers because they're higher in scarier. That's what journalists do. 4.7 million deaths were associated with antimicrobial resistance in 2021. That number will double to 8.2 million a year by 2050. That means 169 million people will die over the next 25 years. Again, not too comforting. Dave, I know you have a thing about the market developing new antibiotics. So I'm going to ask you about the Lancet study. What's your reaction to the numbers? And what would you do from a policy standpoint to combat this pending public health and patient safety crisis?

Johnson:

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Well, I actually have a thing about the market and not developing <laugh> new antibiotics. And this study really, really bears out the risks associated with that. They're massive and they're global. Take a step back. When he was Secretary of Defense during the second Gulf War Donald Rumsfeld became something of a media star or media darling with his snowflake memos and his constant use of terms like known unknowns. Things we know we don't know, unknown unknowns, where we don't know what we don't know. And I've always liked that terminology. But for me, the biggest challenges we face as a society are known unknowns. That's where we can identify and quantify risk, but lack the resolve and capacity to address it. Environmental crisis is an example of that, and certainly this antimicrobial resistance risk falls into the known known risk category. The numbers in the Lancet study are absolutely horrifying. So, 39 million people will die between now and 2050 from anti-microbial resistance, from the lack of antibiotics treat this. And much of this will happen in hospitals, which despite the mice, or maybe because of the mice can also be very dangerous places, particularly for older people. And older people are at the most risk. And exacerbating this problem is that clinicians using antibiotics often either misuse them or overuse them, and they create even greater resistance. It's a global problem. 30% of the projected deaths in the Lancet study will occur in South Asia notably in India, where the mortality rate will be greater, they projected will be greater than 30%. Russia, Brazil, and Turkey, among other large nations have very high mortality rates from bacterial resistance 25%. But even in the US it's 15 to 18%. So it's a global problem, requires a global solution. The WHO should be front and center on this with support from all of the major health agencies across the globe. You know, we have the recent experience of coming up with ways to treat covid once it manifested, and then to develop the vaccine. That wasn't perfect but it ultimately worked. So it can happen even when the response is somewhat uneven. But when you have these known, known public health risks there has to be a sense of urgency and focus. But when I sit here and think about anti-microbial resistance, I really begin to wonder who's gonna rally for a solution. It's certainly not something that people are are going to the, going to the streets about. So I think this problem's gonna be with us for a while. Absent that type of, of urgency and focus,

Burda:

Great, Dave, thank you, Julie. Any questions for Dave?

Murchinson:

Well Dave, we've been talking about antimicrobial resistance for years, and it does feel like it's not getting better. You've talked about how the pipeline is pretty bleak, and the market for antibiotics is broken. You know, what should the government do or market? What are the market opportunities to fill that?

Johnson:

Well, I, I've actually got a good news story here, Julie <laugh>. Perish the thought!

Murchinson:

Awesome.

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Johnson:

You're certainly right, Julie, that the market in and of itself isn't doing the job of developing new antibiotics. And Pew has done terrific research on this, as you know. And the problem is widespread use low reimbursement rates and companies can't generate a return investing in creation of new antibiotics they can generate a return for orphan cures to orphan diseases. So that's where a disproportionate share of the resources go. But here's my my good news story. In 2022, the Biden administration set up something called ARPA H: Advanced Research Project Agency for Health. It's a research funding agency that supports biomedical and health breakthroughs ranging from the molecular to the societal to provide health solutions for all. And the goal is to accelerate better health outcomes. It's based on the very well established precedent in the Defense Department. So under Eisenhower, the Defense Department created the Defense Advanced Research Projects Agency after Sputnik when we needed to rally to that national challenge. And the number of innovations that have come out of that is breathtaking. The internet, voice technology, weather satellites, drones, stealth technologies. And the hope is that ARPA H can do the same thing in healthcare. And here's the good news story. Almost exactly a year ago, on late September, 2023, ARPA H announced awards to address the rapidly growing threat of antimicrobial resistance and drive antibiotic discovery to improve health outcomes. So obviously, still very early in that project, but here's your government doing something to marshal resources put focus and great brains on a problem. And if it's anything like what's happened in the defense industry we'll see great solutions come out of this.

Murchinson:

That's exciting.

Burda:

Wow, I didn't know. Thank you. Julie, let me get your take on the ERI analysis. Did the numbers surprise you? Did the causes surprise you? And what innovations in the market do you see addressing diagnostic errors?

Murchinson:

Well, the numbers are high. I mean, <laugh> sort of too high to really digest. But there is a reality here. I mean, some sophisticated health systems have the ability and doctors have the ability to order tests directly in a computer, but many others have no integration. And a lot is done on pen and paper, and we're still writing on vials, and, you know, everything that we know we've been doing for decades. So, naturally, ECRI recommends things like developing a tracking system. Okay, that seems logical <laugh>, but these can be, you know, pretty massive capital investments because they could mean a rip and replace of current lab systems or, you know, some sort of major upgrade or add on to a tech system. But more than technology, ECRI focuses on all the underlying processes and, and human factors. So their second recommendation is address the human factor. Well, well titled, you know, similar to my story, perhaps test results were not reviewed quickly enough by the ordering providers, or the results were never communicated to the patients. Okay, well, these are clearly like process and workflow issues.

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They also found that healthcare leaders needed to establish a culture where missteps are identified and learned from without assigning blame. <Laugh>, this one made me laugh. I mean, this shouldn't even have to be written in black and white, but we're talking about healthcare not wanting to admit mistakes, right? And I loved this next one, simplify test names in electronic health record menus, <laugh>. And when results are communicated, I mean, okay, not only do we still need to standardize, but we need to make names obvious. Like, of course we do <laugh>. So the recommendations definitely made me chuckle. And, you know, the unfortunate part about this is there's still so much human bias being brought into the process. So it leaves women and people of color with a 20 to 30% higher chance of experiencing an adverse event related to a diagnostic issue. I mean, it definitely impacts the outcomes. So you know, I think EC RI had a lot of very kind of basic things to talk about that were, that have big impacts. You know, we're into a big shared decision making movement right now, so patients and families being part of what's happening can help this. My favorite quote was, the system is only as good as it's designed. And the EHR was designed for billing. So, so much of the equity report was funny about where we are from a technology perspective and how human these issues are. So, you know, while there are certainly market innovations out there, Berta, that can help solve these issues, so many of them are human driven and communication oriented, where some of the basic technology is really what we need.

Burda:

I don't know if you guys have ever been in a Binny's liquor store and asked for something they may or may not have, or you couldn't find, they could look that up and they could tell you exactly if they have it or not, how many that they have or don't have. And if they're available at a store down the road, another place, <laugh>. I mean, so really, they should just go to Binny's and take a class. So <laugh>

Murchinson:

Inventory management, <laugh>.

Burda:

It is, it's brilliant. Thanks, Julie. Dave, any questions for Julie?

Johnson:

Wow. Address the human factor. Julie, you're right. I mean, the results of this ECRI study just scream human error. That's even before accounting for human bias. You know just a lot of it just processing error. So I told the story of Amatab's experience at, you know, one of the Harvard teaching hospitals, and I don't mean to be crass here, but don't the machines and the advancing Gen AI have the potential ability to eliminate almost all human errors in medicine within the next five years? And if they do, how does the system enable this to happen with the least amount of professional resistance? What do you think?

Murchinson:

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<Laugh>? I mean, we could have five other podcasts on how big a statement that just was. Yeah, but listen, tracking systems are real, and if we're still writing on vials, we have a problem, right? And tracking systems are not pervasive. So that's like a number one, the two stories that we just told today where chat GBT could be used in MyChart in the results process could be used as a communication tool between physician and patient and patient's family. That's huge. I mean, that's all I needed, honestly. And you know, when you look at the advancements of some of how lab laboratory in particular is happening, not all diagnostics, of course. Some of the at-home movement, you know, creates an automated way of thinking about this, right. Test delivered to home. That test is tagged to that patient. Patient takes tests, test gets returned, processed by you know, the tag that was assigned to it. The system, the communication system automatically tells that patient in plain language what the result is. And then there's wraparound service to that. That's a very different way of thinking about it than how tests are ordered in an outpatient or inpatient environment today. So there's so many ways in which we're innovating that will solve these issues, but humans have to recognize that technology enablement is actually critical to the outcomes impacts that are coming from this. And, you know, doctors have the best intentions that doctor didn't tell me it before days and then blow me off, like, so it's painful right now.

Burda:

Yeah. Yeah. A smart checklist, right? That's that simple and effective. Thanks, Julie. I keep thinking about the surgeon who last month allegedly killed a patient by removing his liver instead of his spleen. I don't know if you guys caught that story. You know, even I know you can't live without a liver that happened according to the story I read at an ascension hospital in Florida. So pretty scary. So I, maybe the best patient safety strategy is health, not healthcare. To paraphrase you, Dave, right?

Johnson:

Yeah.

Burda:

Yeah. Thank you. And thank you, Julie. Now let's talk about other big news that happened this past week. Was it all bad? Was it Julie? What else happened that we should know about?

Murchinson:

Well, I have something good to report for once. I'm very excited.

Burda:

All right.

Murchinson:

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You may have seen this also, but the CDC published data this week that the opioid overdose deaths have dropped to their lowest level nationwide in three years. Wow. Declining by 10.6% from April 23 to April 24. So this is good news people. I'm happy to hear it. I'm sure there's a lot of reasons for it. I'm sure there's plenty of people that we know listening to this podcast who could poke holes in this, but it's great.

Burda:

No, no, that is great news. Thank you for that mention. Dave, what other news is worth mentioning too?

Johnson:

God, we are just brimming with optimism today, <laugh> 'cause I've got another feel good story. And it very much Dave picks up on your health, not not healthcare concept. I went to the groundbreaking on Monday for the Sankofa Village Wellness Center in Garfield Park the west side of Chicago, a really challenged neighborhood. Sankofa Village is, I've never seen a facility of this type. It's it's gonna have the first new YMCA in metro Chicago in decades. It's gonna have an FQHC. There are gonna be centers for behavioral health and chronic disease management. Rush is a big sponsor, rush University Medical Center, big sponsor. And they're gonna have a facility there as well. And it's all about rallying the the community to pursue healthier lifestyles. Incredibly powerful. It went from concept to reality in five years. There was a brainstorming session at a MacArthur event five years ago. Four people sitting around a table that created this idea. One of them happened to be Camina Brooks from the Community Builders where I serve on the board. And Camina has been the the force behind this with all kinds of partners, as I I just mentioned. And this center will be 45 million bucks in, in Garfield Park. And at the groundbreaking, the CEO of Rush, Omar Latif, who's a breath of fresh air got up and said, the gym at the YMCA, the new gym will save more lives than the ECMO machines at, at Rush. And Rush is now adopted as their slogan because they're embracing the west side. Who gets the chance to be healthy? And that's a question we should be all be asking ourselves, who gets the chance to be healthy? And here's a project that puts emphasis on health, not healthcare.

Burda:

Yeah. Another arrow pointing in the right direction. That, that's great. Thanks Steve. And thanks, Julie. That is all the time we have for today. If you'd like to learn more about the topics we discussed on today's show, please visit our website at [4sighthealth.com](http://4sighthealth.com). You also can subscribe to the roundup on Spotify, Apple Podcast, YouTube, or wherever you listen to your favorite podcasts. Don't miss another segment of the best 20 minutes in healthcare. Thanks for listening. I'm Dave Burda for 4sight Health.