**Harlan Krumholz:** Welcome to *Health & Veritas*. I’m Harlan Krumholz.

**Howard Forman:** And I’m Howard Forman. We are physicians and professors at Yale University. We’re trying to get closer to the truth about health and healthcare. This week, we’ll be speaking with Dr. Amy Justice. But first, we’d like to check in on current health news. Harlan, what’s on your mind? What are you thinking about?

**Harlan Krumholz:** Well, I was going to talk a little bit about electronic health records because of our guest today. Let me just take one second to say, can you believe it? Another massacre, another gun violence episode? This is healthcare. We physicians can’t be indifferent to this. And I don’t know if you saw the coach of the Golden State Warriors had what I thought was an eloquent—I think that Steve Kerr—was on Twitter and everywhere else. The outrage is growing, and the fact that the majority of Americans want something done, just simple background checks. And anyway, I don’t think today’s the day we want to talk about this. I think we should have a podcast talking about this, bring on someone like Art Kellerman, others, leaders in how healthcare professionals can play a role in how the society. We should be moving in ways that can mitigate this and find common ground across society because there are areas where the vast majority of Americans agree, and yet we can’t seem to find a path forward to implement these areas even where there’s vast agreement among the population. It’s just, our politicians are still divided.

But I also just, with Amy Justice, one of the stars of the Yale faculty joining us today. A lot has been on my mind about this issue of electronic health records. And just for listeners, to say that there is an emerging transition of a large amount of research from traditional ways of collecting it, which was to fill out what we called case report form. So you would have a patient in front of you and a study, you would ask them specific questions or you would go through their medical record. And a human being would then code what they saw, that was there diabetes, was there hypertension, start filling out forms. Then we would enter those forms into digital formats and then try to analyze them. But a new way is emerging where we’re saying data that’s being generated in the everyday operation of healthcare sits ready for us to learn from. That is, with every interaction in healthcare, there’s data that’s being generated. And that can be the substrate, that can be the resource that we use for researching. And it can obviate the need to spend a lot of labor-intensive effort trying to fill out these forms as a means to do research. And yet, because the way that electronic health records were developed and the diversity of ways that data are archived, organized, and honestly fragmented within these systems, it’s very difficult. It’s not simple at all.

And our next guest is really a pioneer in this, and it’ll be a good opportunity to talk to her about some of the challenges, about taking the data from where it sits for clinicians into a level that can be used for research, where it’s organized and harmonized. And I think she’ll give us an appreciation for that chance. But I just wanted to mention that’s on my mind, because I’m hearing a lot these days about how much we should be using the electronic health record, but we’re still in an era where largely people are using these case report forms for research. And I think we’re at an inflection point, and our next guest is part of that. The legacy of her work has really opened up, I think, a lot of eyes about what’s possible. So anyway, these are just a few things on my mind.

**Howard Forman:** I’m really delighted to introduce Dr. Amy Justice. Professor Amy Justice, is a clinical epidemiologist and the C.N.H. Long Professor of Medicine and Public Health at the Yale School of Medicine. Her research focuses on analyzing electronic medical records data, using statistical methods, machine learning, and cross-cohort validation. But this understates vastly her influence and impact, and here’s why. Her oldest project is the Veterans Aging Cohort Study, an ongoing longitudinal study of veterans with and without HIV infection ongoing for, I believe, more than 25 years now. Her work has developed healthcare indices that can and are used throughout the world. In short, her work extends well beyond her own scholarship, her own publications. While most investigators can have a large impact looking at changes over brief periods of time, Dr. Justice has invested enormous time, energy, planning, and thought in building a living body of ongoing research output that serves a large patient population. She is world-renowned. She’s presented at the United Nations, the International AIDS Society, the Royal Medical College in London, the White House, Congress. She’s been multiply honored as well. And I first came to know her—first of all, she’s a Yale Medical School graduate—but I first came to meet her when I was a clinical scholar doing my MBA at Penn. She was finishing her PhD there and had already started her auspicious career after training in internal medicine.

**Harlan Krumholz:** Amy, I wanted to just take an opportunity in the podcast to take people step by step with how you take existing data. Sometimes people call that real-world data, data that’s being generated in the ongoing operational healthcare system. How do you take data like that? That’s not collected by protocol. That just becomes part of the medical record because people saw doctors and sometimes these things we call administrative codes, which help the administrators figure out healthcare utilization but don’t necessarily track with who these people are because of miscoding and so forth. How do you turn that into research-grade data? And I know it takes a lot of work to do it. Maybe you can help the listeners understand those steps, because a lot of people think that must be simple. You’ve got all this information in the medical record, and you can just turn it into knowledge, but the truth is, it’s really hard, and you’re one of the world’s experts at this. And one of the most amazing things about you—you were there so early! Can you help the listeners understand what is it that you’re doing that’s different and what did you have to do to take that information, the medical record, and make it possible to do research?

**Amy Justice:** The first step is to get your hands on the data, which, even that alone is not a trivial question. Because you need to understand how it’s stored and how it can be accessed and who can access it. So once—

**Harlan Krumholz:** Because people are so concerned about privacy.

**Amy Justice:** Right. Because people are concerned about privacy, but also quite honestly, as a clinician, when you’re using the electronic health record, you don’t necessarily know how that data is stored. You may know it’s there somewhere, but you don’t know. Okay, if I’m looking at a database, how do I pull out this particular data element that I want, right? So there’s first just figuring out where the data sits and how you can access it. And of course, getting the permissions from the IRB [institutional review board] for the—

**Harlan Krumholz:** Because it doesn’t all sit in the same place, right? I mean, labs can be over here and—

**Amy Justice:** Right.

**Harlan Krumholz:** Radiology’s over here and—

**Amy Justice:** Exactly.

**Harlan Krumholz:** Right.

**Amy Justice:** ...and images sit someplace else, right? Exactly. And for many EHRs, outpatient records sit someplace other than hospital records and may or may not talk to each other. So you have to figure out all those pieces and all those connections. Once you have it all assembled, then you need to make sure you’re actually seeing what you think you’re seeing.

**Harlan Krumholz:** And by the way, how long did it take you to do that initial assembly? Because, people may have in their minds, it’s like one file cabinet, but it’s not. They’re actually in different buildings, and they may be written in different languages. It’s all—

**Amy Justice:** Right. So, those are all those pieces. Plus the people who are running these databases, they have to answer to the clinical needs first and foremost. As a researcher, you are definitely the second or third person in line. And very often they’re understaffed. So you may have to wait quite a period of time for them to get to it and be a bit of a noodge—which I got to be very good at—in terms of getting them to give you that data. So asking nicely, again and again. So before there was a central repository of this data, it would often take a year or more for me to get data out of particular sites. And then of course, I’d need updated data, so it would be another year of asking for updated data. Having the national repository was a huge step forward for those reasons. But even once you can get the data in one place, there is a load of cleaning that has to be done.

**Harlan Krumholz:** And explain what “cleaning” means. Because some people may not even be familiar with that word *cleaning*.

**Amy Justice:** So just as an example, let’s take a routine lab like hemoglobin. Something that we’ve all ordered hundreds and hundreds of times, right?

**Harlan Krumholz:** Yeah. It’s just our blood count.

**Amy Justice:** Right. So that can be named “hemoglobin” or it could be named “hem” or any number of other names. And that’s a common lab—usually that has a fairly uniform name. Newer labs can be named lots and lots of different ways.

**Harlan Krumholz:** So even within the VA system—one system—this one lab that’s so common can be called a whole bunch of different things when you start looking for it?

**Amy Justice:** Right. So a central lab for HIV research is the CD4 cell count, right? Because that really reflects your immune function. We found 250 different names for CD4 cell counts in the VA when we were—

**Harlan Krumholz:** How is it possible that somebody found 250 ways to describe that one test and that the system allowed it?

**Amy Justice:** Well, so initially the way the VA got people to switch over to the electronic record is they called it the decentralized database and allowed a lot of flexibility and tailoring by the individual sites. So it was acceptable, quite frankly, to the doctors, who were very resistant to going to a paperless record. And that led to this kind diversity of names. Over time, that’s all been standardized, but it’s taken really my whole career watching that happen. And there’s still are, sometimes, little glitches, but nothing like what we first faced when we were trying to do the cleaning.

**Harlan Krumholz:** See, because I imagine when people see your papers, they have no idea that you had to, even to make one element like CD4, have to go and figure out, because no one even gave you the list of 250 names. You have to figure them out.

**Howard Forman:** I looked at a few of your papers, certainly not any big fraction, but knowing that Harlan’s here, cardiovascular outcomes were interesting to me as well. And so, [heart failure in HIV patients](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3687533/) I thought was fascinating. Can you tell us a little about that correlation or another one? And just give our listeners a little idea of the depth of knowledge that has been gained from this type of study and how it continues to inform everything about treating HIV as well as how to manage people as they age.

**Amy Justice:** Thanks, Howie. So it’s an interesting story. So when HIV first happened, I mean, and the parallels with COVID are also interesting. But anyway, when HIV first happened, there was a huge panic. We didn’t have any therapies. We were trying to figure out how people got infected. All of that happened, right? Then we finally had a test for whether or not people had HIV, and then over the next decade we developed treatments, right? So one of the modern miracles of medicine is that we now have the cocktail multi-drug treatment for HIV that suppresses the virus very effectively, as long as people can take the medication. Often restores their CD4 counts to near normal CD4 cell counts and gives people a very extended life expectancy. It’s not—people talk about “a normal life expectancy”—that’s really a little bit of an exaggeration. But more along the lines of people having diabetes or other chronic conditions than it was initially. When I first started studying HIV, the median survival after hospitalization was six months. I mean, think about that: six months. Now, depending on the person’s age, it could be 20 or 30 years. So it’s a totally different story.

However—and when we first had those medications available, we all thought, “Oh, wonderful, people are going to be great.” But I said, as a general internist, “There’s still a price to be paid for having this infection. We’re not clearing the virus; we’re suppressing it. Probably there is going to be some effect as people age with this virus as opposed to without it.” And I thought, [we need to study that](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4254786/). So we need a comparable group of people who are like the folks with HIV but don’t have HIV. And the VA offered a really nice scenario for that, right? Because for instance, hepatitis C co-infection, which is often a co-infection with HIV. In veterans, without HIV, but who are demographically matched, i.e., by age, sex, race, ethnicity, and site to folks with HIV. Among HIV-infected people in the VA, it’s about 45% have hepatitis C co-infection; among the controls, it was 15%. In contrast, in the VA more generally it’s 6%. To give you a flavor that we were able to identify people who were behaviorally and demographically very much like the folks with HIV but didn’t have HIV. So that we could then try to understand how much of what we’re seeing is due to HIV. How much of it is just aging in a population of folks with socioeconomic issues or minority populations etc., much of which hadn’t been very well studied either. So that was a very important piece. And we’ve been able to learn a great deal of things because we have those very close controls to the HIV-positives. And we’ve seen that, yes, there is a price to be paid for chronic infection with HIV. There is this inflammatory, low-level inflammation that continues even after we suppress the virus. And that is a key piece in the aging story, right? We know in general, many of the diseases associated with aging are tied to chronic inflammation, low-level chronic inflammation. And the more of that you have, the more of those conditions you tend to develop. Whether it’s cardiovascular or cancer or any number of conditions, diabetes, those are all in some senses inflammatory conditions.

And in fact, what we have been able to show in a dose-response way, and I’ll explain what I mean by that in a second, that cancers, cardiovascular disease, both acute and chronic and a number of other conditions, you’re at greater risk if you have HIV, even if it’s suppressed. And by dose response, we’ve looked at people with unsuppressed virus, people with recently suppressed virus, people with long-term suppressed virus and compared them to folks without HIV and shown that there is a dose response. The more virus you’ve got on board, for the longer the period of time, the more the risk. And that’s been very important to trying to understand mechanisms of accentuated aging in people with HIV, but also understanding aging more generally, right? This whole study of inflammation is something that’s very key to the understanding of aging and aging in a healthy fashion as opposed to not a healthy fashion, without HIV as well.

**Harlan Krumholz:** Amy, I wanted to just take an opportunity in the podcast to ask you to reflect a little bit on your career and your path. What were the kind of challenges you faced, and what was it that’s been key to your success?

**Amy Justice:** Well, I think one of the advantages I had was being different. We talk about how diversity enhances science, and I really do believe that. My career talk is entitled [“Being Left-Handed in a Right-Handed Scientific Universe.”](https://medicine.yale.edu/event/leadership-in-biomedicine-lecture-series-the-advantages-and-disadvantages-of-being-left-handed-in-a/) But I think that the more you come at a question that other people are looking at with a different perspective, sometimes the more you can bring to the table. I was a general internist working with infectious disease docs, by and large, so I looked at HIV as a chronic disease to begin with. They didn’t. They looked at it as something we’re trying to cure, and they made many advances by looking at it that way. But I had something else to offer, which was thinking about it as a chronic disease. And how do we study a chronic disease in this new population? The VA has many advantages for studying these kinds of questions.

I remember when I was getting my PhD back at Wharton, one of the people that was a very senior professor there said, “There are lots of databases on people who aren’t very interesting to study, but there are very few databases that are really good databases, good quality data, on people who are interesting to study.” And I thought, “The VA’s got both, right? We’ve got a lot of minority patients. We have people with complex disease. We’ve got people with socioeconomic disadvantage. We’ve got people with substance use issues. We’ve got people with mental health issues. We’ve got homeless people.” It’s a great place to study a lot of these questions, and people haven’t been doing it nearly as much as they might do it, in part because the VA was only funding certain kinds of research. And people had the impression that they couldn’t fund VA research with NIH money. And I was told, “You’ll never get a grant to study this from the NIH because they don’t think veterans are interesting.” Well, I made the argument that this was an opportunity to understand EHR cohorts and to create them, and eventually NIH bought it. So I think that, I would say that was my biggest secret to success that I was willing to think, I just inherently think about things differently.

**Harlan Krumholz:** Yeah, that’s incredible. It’s good.

**Howard Forman:** One of the things that you’ve both highlighted for me—or reminded me—is just, we have a universal healthcare system for our veterans, or at least universally available for our veterans. And you’re able to do this study. We could use that to do studies on COVID, but I imagine that this is one of the places that we almost have to rely on to do this type of cohort investigation. I know the [Framingham Study](https://www.bmc.org/stroke-and-cerebrovascular-center/research/framingham-study#:~:text=Framingham%20Study%20is%20a%20population,risk%20factors%20for%20cardiovascular%20disease.), which is of cardiovascular disease, is not based out of a Veterans Administration hospital. But I wonder, is this the future, that we’re going to have to rely more and more on the VA for doing this type of work? Or is there a way that this can be done now that all hospitals have EHRs, even if they’re not integrated with one another?

**Amy Justice:** So, Howie, I think it’s an excellent question. One of the issues, of course, is that whenever you try to bring data together from multiple hospitals, so Yale New Haven Hospital health system is interested in doing this, as Harlan well knows. And we’d love to be able to know about, okay, what about the patients who are getting some of their care in New York and some of their care in Boston and some of their care in Connecticut and some of it within Yale New Haven and some of it from other health systems, right? We’d really love to be able to follow people throughout, to have the whole picture for what’s happening to them. The problem is linking those databases requires using individual identifiers. And there are many barriers to being able to do that. Some of which are quite justifiable, but which make it very challenging when you’re talking about trying to study an epidemic across the country.

When COVID started to happen, I was asked by the VA to be the scientific consultant to a large federal collaboration, trying to bring together databases to study COVID. I was involved in calls two and three times a day. There were a bunch of discussions. We talked to the people at CMS, which is the Medicare and Medicaid people. We talked to the Centers for Disease Control people. We talked with a number of different groups who had federal databases that could in theory be linked. The “Mother May I’s,” as I like to say, were just impossible. There was no technologic reason why we couldn’t do this. It was getting the permissions that weren’t possible. So in the end, most of the studies were done using VA data alone because we’d already created that data. We already knew how to clean it, and we already knew how to analyze it. So we did write—there were a number of COVID papers that came out. But none of those other databases, which really would’ve enhanced the work, could be brought into play because there were just too many “Mother May I’s.”

**Harlan Krumholz:** When you’re thinking about, what’s going to happen next with regard to this, and you’re counseling young researchers about the areas that they should think about investing, I wonder if you could just share some of your thoughts with the people listening about where you think those are and what you do tell people who are coming to you for the next, thinking about the next 10 to 20 years?

**Amy Justice:** I like to say, embrace complexity. When you think about basic science, the secret to basic science is honing the question down to a very precise, limited focus. Whereas I think for the kinds of studies that we do, we really need to be able to be comfortable with complexity and figure out what aspects of complexity are relevant and what aspects can be ignored. But not try to avoid complexity, instead embrace it and try to comprehensively understand it.

**Howard Forman:** I was just going to make a plug right now, that you say, embracing complexity. This is sponsored by the School of Management, and that’s their theme, is embracing complexity of trying to educate leaders for... It is hard when you’re early in your career, and you’re always looking for sort of simple solutions for things, to be open-minded to the idea that maybe things aren’t as simple as we’d like them to be. Or politics, or—

**Harlan Krumholz:** And I think it’s more than that, which is—and Amy, you were able to resist this. I’d like to think I was also able to, but I can’t tell you how many times people told me, “Focus.” And what they meant by “focus” was, narrow to a very simple question and become the world’s expert in a very small thing as opposed to seeing something more broadly. And I don’t know, that just never fit my conception of how it could make progress in medicine where that is on our side of the clinical medicine, applied medicine, trying to improve outcomes. It’s never that simple, you have to understand, and I really love the way that you’re expressing it, that you actually have to embrace that complexity, which means you have to understand a bigger picture. Maybe that’s intrinsically part of primary care too, that, in the perspective you bring.

**Amy Justice:** I think it’s why I went into primary care. I mean, I think that there’s a role for both. It’s like this ridiculous debate about randomized trials versus real-world data. It’s not one or the other—it’s both. We need both. We need people who can be somewhat narrow and specialized. And I have a bunch of people who I work with who are very good at that. And they complement me because they think about the details that I don’t think about. So I think it’s partly understanding what it is you’re good at and what you need to rely on others for.

**Harlan Krumholz:** So I have, well, I do want to leave with one thing, which is, we both have great admiration and appreciation for Alvin Feinstein as a—

**Amy Justice:** Absolutely.

**Harlan Krumholz:** ...sort of a, one of the giants of Yale’s scientific history who actually paved the way for, I think, legitimizing the rigor with which you could apply to clinical science. And when I think about you, I not only think of your creativity in impact, but I think of the rigor of your science. And I think that probably, Alvin, as you were… He was one of your mentors and one of mine. So I just wondered if you wanted to reflect just for a moment about what Alvin Feinstein meant to you, just as a way for us to pay tribute to him together on the podcast.

**Amy Justice:** Thank you, Harlan. Alvin was my first mentor. When I started medical school, I said I wanted to be a clinical leader. And then I had a patient who was my age, a woman who had cryptococcal meningitis and AIDS. And she said to me, “I know I’m going to die with this thing, but can you tell me how long I’ve got?” I remembered I’d had Alvin for prognostic staging, and he’d worked on cancer. I went to see him, called and said, “Would you help me with this?” And he said, “Sure, who’s going to be the AIDS expert”? And I said, “Oh, I will be,” and as a medical student. And Alvin said, “Great, let’s do it.” And he spent two years with me, meeting with me every week for an hour, teaching me chart review, teaching me epidemiology and methods. And I realized, “Hey, I’m better at this than at clinical medicine. I think this is what I want to do.” So he’s responsible for me being in research altogether. I was going to be a clinician, which I was very excited about, but I think I’m better as a clinical investigator.

**Harlan Krumholz:** You’re actually good at a lot of things, but that is amazing. And he did invest tremendously in students, everything from teaching clinical examination to teaching people how to do research. And anyway, it’s nice for us to have the memory together of his contributions, so.

**Amy Justice:** Can I just say one other thing?

**Harlan Krumholz:** Yeah.

**Amy Justice:** So I was running one of the clinical scholar meetings—not the Robert Wood Johnson clinical meetings, the fellowship afterwards—the year that Alvin died. And at the end of the meeting, I said—

**Harlan Krumholz:** Which was 2001, I think, right?

**Amy Justice:** Yes. And at the end of the meeting, I said I’d like to recognize Alvin Feinstein and the role he’s played in our lives. And I said, “Would everyone for whom Alvin was a direct mentor stand up?” And a bunch of people stood up in the room. And then I said, “Okay, would everyone who has been mentored by someone who Alvin mentored please stand up?” And of course twice as many or three times as many people stood up. And then I said, “Would anyone who’s ever used the word *comorbidity* please stand up?” And of course, everybody in the room stood up, because Alvin coined that term.

**Harlan Krumholz:** Yeah.

**Howard Forman:** I was at Wharton, and that’s when I first met him at the annual meeting, and he was a larger-than-life figure. There I got to know him a little bit during my first five years, as on the faculty here. And as you say, there are so many people, people still much younger than me whose lives have been enormously impacted by him. So, it is an honor to talk about him in this way.

**Harlan Krumholz:** Thanks, Amy. So thank you so much for taking the time with us. It’s such a great pleasure. And as I said, it is a chance when you were coming on to just review your enormous body of work and the impact it’s had. And it’s great to be a colleague of yours at Yale.

**Amy Justice:** Oh, thank you very much. Thank you.

**Howard Forman:** Your contributions are going to go on for decades. I mean, that’s what is so amazing about this. So thank you for everything that you do.

**Amy Justice:** Oh, thank you, Howie. Thank you, Harlan. I appreciate the opportunity and your very kind words.

**Harlan Krumholz:** Well deserved. That was great, Howie. So let’s transition now. What’s on your mind this week?

**Howard Forman:** This is graduation week at Yale. It’s been just a fantastic time. It’s always so inspiring to me as a teacher and as somebody who’s been part of this campus for a while, and I just want to talk about two very special graduates, two people who are particularly important to me. And I say this with incredible respect to all the other students I have, because I have a great privilege to teach all of them. But these two come to mind. Hil Moss. First, she came to Yale five years ago to pursue a management degree after six years at a firm that provided support and consultation for cultural organizations. This is a pretty common background for a student that comes to our school of management. So there’s no big surprise here, but shortly after arriving at the age of 28, she was diagnosed with breast cancer. And I first became aware of her at that time. She took some time for diagnosis, treatment, and then a return to finish our first year in our MBA program, during which time she decided to apply to our MPH program, our Public Health program, which is where I really came to know her story and her passion and her reasons for why she wanted to pivot to the health sector and, to make a long story short, this week she graduated with both the MBA and the MPH degree, is now the founder and CEO of a company that seeks to support cancer survivors. An often-overlooked population with special needs, challenges, and opportunities. She helped co-lead our [healthcare conference](https://www.yalehealthcare.com/agenda), was a leader in so many other activities, and, quite frankly, brought joy, compassion, and her personal experiences into curricular, co-curricular and extracurricular activities. We are so much better off for having her among our graduates.

And then, in the other sphere is Arya Singh, who I first met when she was a sophomore undergraduate taking my class in the fall of 2019, right before the pandemic began. She scored the highest raw score in a class of nearly a hundred students. But she didn’t stand out just for her scholastic excellence, but also because she was wheelchair-bound, a motorized wheelchair. And I learned a lot about the challenges of access on even our ADA-compliant campus. Because, after the first week of sitting in the back of the lecture hall and being reminded that I had to speak more loudly because she was so far back there, I learned that she was sitting back there because she couldn’t figure out how to get to the front of the classroom. We had this sort of hidden elevator, and she eventually found the hidden elevator and joined me in the front of the room, where I learned more about her. The fact that she was diagnosed with spinal muscular atrophy at a time when it was, quite frankly, a fatal childhood illness, and how she enrolled in a clinical trial of new therapies and eventually being among the first cohort of patients to receive a new therapy that has prevented the further advancement of the disease, offering her an opportunity for a more fulfilling and full life. And along the way, I learned about her children’s book that she wrote about clinical trials, her interest in orphan drugs. And I was able to hire her as my course in technology assistant for the pandemic years 2020 and 2021. And it’s not an exaggeration to say that she absolutely got me through the pandemic semester and then the pivot back to in-person teaching. This week, she was the student Class Day speaker.

And I encourage everyone to listen to her talk. We’ll [link it in the narrative for the podcast](https://youtu.be/nlWs73swjSI?t=4278). And the next day she graduated Yale College. And after some healthcare consulting this summer, she’s going to come back to Yale to finish her MPH degree. Again, helping me this time as a formal teaching fellow. We all face challenges in our lives—these two women have turned those challenges into opportunities, have made the world a much better place for those around them, including me. I am so grateful for their efforts, for their friendship now. And it just reminds me why teaching is such a great part of my life and what makes me enjoy being at Yale so much more.

**Harlan Krumholz:** Yeah, well, I really appreciate that you shared those stories, Howie. And we’re indeed so lucky, these two individuals are extraordinary. But—no “but”—*and* so many of the people that we encounter, so many of the students that we have, the privilege of meeting are just amazing and what they do, how they think, what they aspire to try to make happen, and in many cases obstacles that they’ve overcome, and really appreciate you sharing with us today. And for us to be able to note that an academic calendar, we’ve just passed graduation, and it’s such a wonderful time of year to see people through their growth and now ready for the next chapters of their lives. So thanks so much for sharing that.

**Howard Forman:** For sure. Thank you.

**Harlan Krumholz:** You’ve been listening to *Health & Veritas*, with Harlan Krumholz and Howie Forman.

**Howard Forman:** So how did we do? To give us your feedback or to keep the conversation going, you can find us on Twitter.

**Harlan Krumholz:** I’m @hmkyale, that’s hmkyale.

**Howard Forman:** And I’m @thehowie. That’s @thehowie. Aside from Twitter and our podcast, I’m fortunate to be the faculty director of the healthcare track and founder of the MBA for Executives program at the Yale School of Management. Feel free to reach out via email for more information on our innovative programs.

**Harlan Krumholz:** By the way, how did you become “The Howie”?

**Howard Forman:** Oh, that’s a great story, Harlan. Did you really want to know?

**Harlan Krumholz:** We’ll save it for next time.

**Howard Forman:** Yeah, let’s save it. I got to tell that story one day.

**Harlan Krumholz:** All right, I got to hear that. *Health & Veritas* is produced with the Yale School of Management. Thanks to our researcher, Jenny Tang, and to our producer, Miranda Shafer. Talk to you soon, The Howie.

**Howard Forman:** Thanks, Harlan. Talk to you soon.