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

**Howard Forman:** And I’m Howie 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 have a special guest—

**Harlan Krumholz:** No, no, wait, wait, wait, wait, Howie. This is a surprise this week, on the guest. Let’s just hold off on that. We’ll do the first segment and—

**Howard Forman:** Okay, okay.

**Harlan Krumholz:** ... then we’ll introduce the guest to the listeners. We’ll let them hang in the—

**Howard Forman:**All right. Well, let’s at least check in on current health news, then. What’s on your mind?

**Harlan Krumholz:** Well, this week I was thinking I would share a little bit of a thing that’s unfolding around vitamin C. I mean, most people who are listening know about vitamin C, and they also know broadly about the idea of promoting vitamins. But what they may not know is the long list of studies that have really failed to show that largely, vitamins in a well-nursed society don’t seem to be making a big difference. But that doesn’t stop people from getting excited about it. It doesn’t stop a billion-dollar business from occurring.

And so we are still on a march to figure out whether vitamins make any difference. And from time to time, certain studies come up that suggest that they’re beneficial. But then that sometimes leads to other studies that may change the story. Look, when I wanted to talk about vitamin C I also made a great discovery. Discovered that you in grade school wrote your first report in science on vitamin C, so then I thought, well ... right? Is that right?

**Howard Forman:** That is correct. Linus Pauling.

**Harlan Krumholz:** Well, did you get an A? I mean, what was it on?

**Howard Forman:** It was about Linus Pauling and ascorbic acid, vitamin C. And I followed that so closely for the next 10 years; it was a topic I couldn’t stop focusing on.

**Harlan Krumholz:** And that’s a perfect example. Double Nobel Prize winner, brilliant guy, little bit of a shaded legacy because of issues around his views on a wide range of social issues that turned out to be off the rails. But no doubt, smart guy, but then start pushing vitamin C for colds, and there’s still a lack of strong evidence around that. I don’t know, what was the conclusion of your third-grade essay?

**Howard Forman:** That we didn’t know. And I remember feeling how brilliant that is, that we don’t know the answer. But Linus Pauling had won two Nobel Prizes and he believed it, so it definitely was my bias at the time.

**Harlan Krumholz:** But anyway, the main thing that I was going to say was that vitamin C had been used in at least one single center small study, about 47 people. And the authors were giving intravenous vitamin C for a condition that’s life-threatening, sepsis. Now this is what happens when people tend to get—all their organ systems start to shut down in the face of a massive infection. It’s responsible for about half the deaths among everyone who’s hospitalized, because this thing is just so devastating. And so we’re constantly in search for ways to make earlier diagnoses and to intervene better.

Anyway, these people put in place a randomized study; they suggested there was benefit. It led to [a large study](https://www.nejm.org/doi/full/10.1056/NEJMoa2200644) that was just published June 15th. And in that study, it was a randomized, placebo-controlled trial of people in the ICU for not more than 24 hours who were needing medicines to help support their blood pressure. And they studied almost 900 people. And in one group they gave intravenous vitamin C, and in another group they gave an infusion that was just without anything in it. Just to determine what would happen. Lo and behold, at the end of the day: no benefit, no benefit.

Again, you’ve got this situation where, a lot of hope, and then they actually test it formally, and they fail to find a benefit. And another reason I wanted to bring this up today was, this just reminds me of all the swirl around COVID and long COVID and vaccine injury and a whole range of conditions and a small number of people hold out hope, these people are desperate. And there seems to be a little bit of good news and maybe one center suggests something’s beneficial, but this just shows why we have to be disciplined in the science and really test the things well to determine if there’s a benefit.

**Howard Forman:** I mean, it makes me thankful that people do it. This trial on sepsis and vitamin C is really enormous in a sense, you mentioned over 800 people, I think. And by the way, one other vitamin that’s been in the news over the last several months and throughout the pandemic has been vitamin D. And I believe there too, even though there’s a strong correlation with vitamin D deficiency and worse outcomes from COVID because of probably coexisting factors, there has been no evidence that using vitamin D as a therapy is actually helping patients.

This is another example of a vitamin being used in treatment that people are advocating for. You can go onto websites and find people celebrating the use of vitamin D to prevent or treat COVID. And there’s no evidence that that works, either.

**Harlan Krumholz:** Yeah. So, Howie, let’s move on to our special guest today. I thought that the listeners might enjoy this. We decided this week to have you as the special guest—you, Howie Forman.

**Howard Forman:** Well, I’m shocked and surprised, but thank you.

**Harlan Krumholz:** Well, we searched high and low for the very best person we could find. And funnily enough, you were available this time slot, so we were able to get you in this week. And let me just formally introduce you to people, and then I’m going to start off with a question just to get you going.

But for those listening, you’re very familiar with, of course, Professor Howard Forman. You may know that he’s a professor of diagnostic radiology and public health and economics and management, all those together. He directs the Healthcare Management program at the Yale School of Public Health and teaches healthcare economics in the Yale College Economics Department. He’s the faculty, founder and director of the MD/MBA program at the Yale School of Medicine as well as faculty director of the healthcare focus of the School of Management’s MBA executive program. I can’t even get this all out, Howie, because it’s so much.

I’ll do one more, that you’re co-founder with Marcella Nunez-Smith to the Pozen-Commonwealth Fund Fellowship in Health Equity Leadership program, which focuses exclusively on the issues around health equity and trying to improve the careers of many people who are from underrepresented groups within our healthcare system. And you’re so much more than that. I mean, I’m just trying to make the introduction. But one thing I wanted to start out with was, there are people in our midst who want to make a career of being a great teacher and a great mentor. And you do many things. You do clinical things; you’ve done research; you’re doing a lot of things. But what you’re known for most, in my opinion, is being one of the best mentors, teachers in the world. So how did you do this? I mean, how were you attracted to this kind of career, and how did you make it a success?

**Howard Forman:** Yeah. It’s interesting, because I think one of the difficulties of mentorship is that it’s almost, by definition, uncompensated work. And so I think a lot of people are not able to make a lot of time for it. You do, by the way, just for our listeners, I mean, you’re very kind about me, but I can give a long list of incredibly successful people that you’ve mentored.

**Harlan Krumholz:**Thank you, thank you.

**Howard Forman:** But it is the core of what I am and what I have been. And I’m fortunate to be able to interact with students at the undergraduate, the graduate, the graduate medical education, and so on levels. And now I have this role for the health system, which is clinical leadership development. And so I have the good fortune of meeting with people who are early mid-career professionals looking to continue leadership in healthcare.

And it does start to feed on itself after a while, because once you build the network, you’re able to connect people more easily and help them more easily. And I think it’s always helped me that I’m very satisfied in my own job, and I have no aspirations. So when I reach out to someone and say, “Can you speak to somebody?” people know that I’m not looking for anything in return. I’m just looking to help somebody.

And I will remind people that there’s mentorship, there’s sponsorship, there’s advice, there’s coaching, there’s different things you could do. In the last year and a half I got trained as an executive coach, which is different than mentoring, and it’s different than advising, and it’s different from sponsorship. And we each can play those different roles, but I’ve found over these last 26 years at Yale that helping people develop their careers is one of the most satisfying things to me. And while some of it may be undercompensated, the School of Management and the Yale New Haven Health System have valued that.

**Harlan Krumholz:** When did it occur to you that this was going to be a central part of your career? I mean, you were socialized like the rest of us, through really a focus ... clinical and research kind of get all the star power and all the attention. When did it occur to you that this could be a central tenet of your career?

**Howard Forman:** I’ll be honest with you. I think I was starting to do this in high school. I was for whatever reason, people who are much older than me wanted to talk to me about careers, about decisions, and I would talk to them. And there was this genuine sense, even though I was obviously very young, there was this genuine sense that just allowing people to talk and freely speak about what they were doing and why they were doing it would get them to realize things that they weren’t otherwise coming to. What they enjoyed, what they didn’t enjoy, what they felt they were really good at but enjoyed, versus what they were really good at but hated. And trying to get to that intersection of things that make you happy, things that you are really good at, and things that other people value in you. The intersection of those three things is what most people are trying to achieve. Everybody is able to reach that intersection. How much we can make the intersection of those three things the core of what we do is the challenge for most people.

**Harlan Krumholz:** And along the way, like I said, it tends to be devalued and not adequately budgeted within the process. Somebody often doesn’t say, “Well, that’s great. You’re doing so much mentoring, let’s make sure that you’re supported for that.” I mean, in general, in our discussions with our chiefs and so forth, I mean, it’s just assumed we’re going to do that work, but now you’ve made it a centerpiece.

Can you just reflect? I mean, did you run into obstacles, to being able to establish that and getting the adequate credit for it? I know you’re not seeking credit, but honestly, as you go up in your career you’ve got to be promoted. You’ve got to get people to pay attention to this. Not as a sidelight, which it is for many, but actually as a central way. And by the way, you’re not a dean. It’s one thing for some dean of education, that’s a job. But you’re doing it as a faculty member, honestly. I mean, you started running programs; you actually began programs. But anyway, can you just talk about that path, once you decided you were going to do that?

**Howard Forman:** I think it’s very frustrating. I mean, I’m not going to lie about that. I mean, very early on there were people that said to me, “Why are you making so much time for these people? It’s not going to help you in any way, shape, or form.” And I just felt obligated to do it.

And so I would be meeting with students. As soon as I started teaching in the undergraduate Yale College, my office would be filled with undergraduates coming in for 30-minute meetings. And it was time-consuming. Over time I figured out how to make it more efficient and how to make sure I could be available. I now do Zoom office hours on weekends and so on, but it is undercompensated, or in most cases uncompensated, in financial terms.

But again, the intersection of those three circles is about making you feel better. Having utility, having satisfaction in your work. And not every part of your job has to be compensated. There are things that you can do that are completely uncompensated but give you so much utility that it’s worth it. And let’s face it, at this point in both of our careers, we can point to people who we’ve helped who are highly successful. Many of those people will give us credit for some of their successes, however true or untrue that may be. And that’s also deeply satisfying.

**Harlan Krumholz:** Yeah. By the way, just quickly, you’re an unbelievably amazing healthcare economist, but you don’t have a PhD. You got an MBA; you’re a radiologist. How do you end up teaching in Yale College?

**Howard Forman:** Yeah. That’s a funny story where ... Balanced Budget Act of 1997 obviously passes in ’97, and my life is miserable as an administrator in radiology. I don’t think I realized just how dramatic that had an impact on the healthcare system, but it made my life miserable. And so I was thinking—

**Harlan Krumholz:** How did it make it miserable?

**Howard Forman:** It was the single largest cut in hospital reimbursement in the history of Medicare. And being someone involved in hospital administration through radiology, we were expected to help figure out how the hospital could cut their budget. And it was just difficult. And at that time I was really looking to leave medicine, leave Yale. I considered other opportunities. You came to my rescue at a time during that period.

But one of those things is, I reached out to the Economics Department and said, “Can I teach macroeconomics?” And they laughed at me. They said, “We have Nobel laureates teaching macroeconomics. We can’t have a medical school faculty member.” But within five seconds he then said, “But you know what? We have this fellow coming to teach health economics in the spring of ’99. Would you be willing to teach it in the fall of ’98?”

And I don’t remember how long it took me to say yes, but it wasn’t more than a minute. And by 1998, I started teaching in the Econ Department. And that first day teaching, that rush of teaching, and I come from a family of teachers. That has never left me. I love it to this day. It is the best drug. And that particular position, teaching in the Econ Department, is probably my most undercompensated job, but it is also my most, most enjoyable one.

**Harlan Krumholz:** Well, maybe it’s an opportunity for you to ... I know your parents are so important to you and have been such formidable influences. Do you want to just say a word or two about who they are and the role they’ve played in your life?

**Howard Forman:** Absolutely. I mean, it was obvious from day one that my parents were teachers. They went off to teach every single day. My father wore a sport jacket and a tie. And so to this day, on the days I teach, I wear a sport jacket and a tie. They both were much loved by their students. I remember well my father coming home with gifts from students from a whole class, because they just loved him. And the same thing went for my mother. And by the way, my sister is retiring from teaching this coming week, and so I’m going down to see her retirement party.

So teaching was not just in the blood, but it was honored. And I came to realize later on that there’s no higher service that we can give than to teach. And in fact, the word doctor derives from the word teacher, I think in Latin, but it’s “to teach.”

**Harlan Krumholz:** Yeah, no, it’s really remarkable. And of course, I’ve had the pleasure, honor meeting your parents. They are amazing people. And they’ve touched me too, by just getting to know them.

One of the things I’ve seen with your teaching also is a commitment to, like what we’re doing in the podcast, translating medical knowledge for the general public. How do you think about that? How do you effectively connect outside the profession to help educate people around issues that are going on in medicine?

**Howard Forman:** Yeah, so I try to learn from everybody. And I got on Twitter very early on but didn’t use Twitter until six years ago. But I learned a lot from you on Twitter in the fact that we can really influence people’s understanding of complex issues through Twitter. You mostly communicate with a sophisticated medical audience. My goal has always been to talk to people that are not necessarily in the field. And that’s why it’s been great with you, that we get to do this podcast. Our audience is sort of purposefully, not necessarily doctors or PhDs but people who are educated and interested in health and healthcare.

And between, if you think about what both of us do right now, we have medical communications, we have a podcast, we have Twitter and other social media that we use. We have teaching opportunities, in my case a lot of teaching opportunities. This, I think, is one of the most important things we can do because you could have the best science in the world, but if you’re not communicating it, the opportunity is in a great part wasted.

**Harlan Krumholz:** Yeah. And in this world of misinformation, I think it’s more important than ever for these trustworthy credible sources. And you, as a teacher, your role in this has just been so important.

One thing I wanted to ask you, so as you look forward, of course lots is changing in teaching. I mean, the methods, the approach, technology. I mean, what do you see for yourself and for the field with regard to what next steps are? What’s it going to look like in 10 years, do you think?

**Howard Forman:** COVID changed a lot. And it’s around this time two years ago that I taped all my lectures and flipped the classroom for the fall semester of 2020, because Yale was not returning to in-person teaching at that time. And I was very uncertain of what that would feel like. I taught in this office, on this screen. It was not enjoyable at all, but we were able to make it through it. And I learned a lot about how you can do both synchronous and asynchronous teaching, how you can use a flipped classroom, how you can take lemons and turn them into lemonade.

But I also learned that there’s a lot about teaching and learning that occurs in a classroom with people interacting with one another. So I don’t think we’re going to walk away from the in-person teaching, but the business model of teaching and the scale of teaching online does support that we could, as we like to say, democratize higher education by using some of those technologies, by using synchronous and asynchronous teaching to reach many more people and making higher education affordable to more individuals without burdening them with enormous debt.

**Harlan Krumholz:** Yeah. I think there shouldn’t be just a small group of people at Yale who get the chance to sit in your class. The more that we can make the class ... well, it may not be the same experience, but at least it’s part of the exposure.

Let me just end by asking you if you could relate a story. What’s one of the most satisfying things you’ve had, without necessarily revealing names of an individual, but over the course of all this time in your role as a mentor and a teacher, what was one of those days that you came home and you thought like, “God, there’s nothing like this.”

**Howard Forman:** Well, I mean, I mentioned [a few weeks ago](https://insights.som.yale.edu/insights/health-veritas-unlocking-the-insights-in-healthcare-data-ep-35) about a couple of students graduating so I won’t go back to that one. But that’s very satisfying to watch people succeed and to give you the feedback that lets you feel like you were part of that. But one of the most satisfying things is that person that you don’t necessarily notice in the class who 10 years later, 15 years later, writes you a long email explaining how their career has turned out this way. And how their time in your classroom was the moment that things changed.

And I’ve gotten enough of those letters over the years from people who have nothing to gain at that point from sending such a letter to believe that it’s genuine. And it reminds me that you don’t necessarily know who you’re impacting the most at the time you’re teaching them, that things settle in at different paces, at different times. And we have an opportunity and an obligation to afford everybody in that room the same effort.

**Harlan Krumholz:** Well, this has been great to hear from you. I will say that you’ve taught me so much. And when I watch you, what really you exemplify is a deep professional commitment to doing your best every day for every person, no matter what.

Making the time, doing the work, and also enjoying the relationships. I also see that you’re able to sustain these relationships over decades, and it’s just really a tribute to what you do. I know you’re a role model for so many. And let me just say thank you for coming on the podcast today.

**Howard Forman:** Thank you for having me. This was really great, Harlan. I look forward to us flipping the script sometime and doing the same thing with you.

**Harlan Krumholz:** Yeah, sure. Yeah, that’ll be fun.

**Howard Forman:** Thank you.

**Harlan Krumholz:** Okay. Let’s turn to the next segment. And now I’m with my partner, Howie Forman, who, in this part of the segment, I get to ask him as, now he takes off his hat as guest and resumes his role as cohost. What’s been on his mind this week? Howie, so what’s keeping you up at night or getting you excited these days?

**Howard Forman:** Yeah, so I’m not ready to declare even a small victory. In fact, just as I came on here today, I saw on Twitter that there are some hiccups, but the gun violence and gun reform bill that’s pending in the Senate right now, it’s not a victory right now but they seem to be making progress. And I think it’s very possible that it will, in one form or another, get passed by the Senate and House and signed into law by the president. It includes a few of the things we talked about before, specifically red flag laws, enhanced background checks for those under 21. And some less controversial measures such as school safety funding and mental health investments. But we’ll wait to see more about that.

But I wanted today to just go back to another public health issue that people don’t necessarily think is public health. And it was brought to me by a thread that I saw from Arnold Schwarzenegger, the former governor of California and, obviously, a media star. And he had [a thread](https://twitter.com/Schwarzenegger/status/1536617922801520645) talking about the challenges and opportunities presented by climate change and fossil fuel pollution and its relation to children’s health. And I don’t think it was intentional, but it came out at the exact same time that there’s [a review article](https://www.nejm.org/doi/full/10.1056/NEJMra2117706) in the current week issue of The New England Journal of Medicine on the same topic. So I’d urge listeners to look at both and to learn about fossil fuel pollution, climate change, and the relation to children’s health.

There are two key points from the governor’s pithy thread. Seven million people died last year from the direct effects of pollution. Seven million people. It’s an enormous number, direct effects of pollution. And for the first time ever, a nine-year-old child’s death in London was explicitly, on her death certificate, attributed to pollution. The New England Journal of Medicine article highlighted the vast adverse health effects on children and fetuses from air pollution and climate change, including two million preterm births worldwide in 2019 alone.

So climate change and pollution have enormous population-level impacts on health. Our individual abilities to mitigate this for ourselves, for our families, is de minimis, meaning whatever I do isn’t going to help me personally. And this is in contradistinction, for instance, to infectious disease, where my individual actions do have substantial impact on my own destiny, even as they also help the population. When it comes to climate change and pollution, our collective efforts are required to tackle these issues, but that should not be confused with the belief that each of us does not have individual responsibility to health.

And you’ll find that, I think you know this about me, I’m not an absolutist about almost anything, but certainly most things. But each person will make daily choices that are either going to preserve, improve, or worsen our environment. And some days we might do all three of those things. But if we each make an effort to leave the world in a slightly better place than when we arrived, everyone would benefit. And in Hebrew we call this tikkun olam, or “repair the world.” And frankly, we just need more of this right now.

**Harlan Krumholz:** I’m really glad you brought this up today. This is a thing that occupies my thoughts a lot too, because we’re all in this together. It’s about climate change. Air quality of course is a big thing. As you know, I spent a lot of time in China over the last decade prior to the pandemic. And especially around 2014, you may remember the Beijing apocalypse, when it was such a dense fog but it wasn’t a natural fog. It was a man-made pollution fog. Your visibility was only a couple hundred yards.

And then there’s been a spate of articles that just show, when the daily maximum PM2.5, the small particles in the air, get to a certain level. And you’re talking about it in the UK, but when we look at Delhi, we look at Beijing, we look ... I mean, actually China’s gotten a little bit better, but we look at a lot of cities around the world. I mean, they are much, much worse, and people are much less protected because of the situation. And then we see the heat in India, where air conditioning is really only for a minority of the population. We see greater possibilities of harm.

This is something we all have to dig in to recognize. It’s on the magnitude of a pandemic. I mean, the number of people who can be harmed, the.... In our capacity to actually mitigate is also substantial if we’ll just act together. Yeah, I’m glad you brought it up, it’s a major issue and one that should hold our attention.

**Howard Forman:** Yeah. And I will say that there are people who are enormous advocates for government action on these topics who aren’t necessarily doing their.... I’m not criticizing any specific individuals, but I think it’s not going to be about the government solving this. It’s going to be about us all working together and the government doing its part to make progress in this direction.

And I thought, Schwarzenegger’s thread, for those of you who see it, and we’ll link it in our posting, but his thread was good. It was actually a very optimistic thread, even though we talked about this nine-year-old girl dying.

**Harlan Krumholz:** I have this dream that our society changes its tune and says, “Our whole reason for being is to make it better for those who follow us.” And not to be so focused on what it’s like tomorrow or the next day, but actually just say, “What’s it going to be like in 20, 30, 40 years?” And let people know that we were the ones who invested in that better future, even with some uncertainty about different actions. But we’re going to place bets, bets that if we do certain things it’s going to be better for those who follow. And that’s just not the spirit right now. I mean, we have to try to figure out how to make it so that our own sacrifice for the future builds a better planet, builds a better future.

**Howard Forman:** 100%.

**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:** [@ H-M-K-Y-A-L-E](https://twitter.com/hmkyale/). That’s HMK Yale.

**Howard Forman:** And I’m [@thehowie](https://twitter.com/thehowie/), that’s @ T-H-E-H-O-W-I-E. 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 or for more information on our innovative programs. Or you can check out our website at [som.yale.edu\emba](https://som.yale.edu/programs/emba).

**Harlan Krumholz:** And after today, why wouldn’t somebody want you as a mentor so they should check out this program. Health & Veritas is produced with the Yale School of Management. Thanks to our researcher, Jenny Tan, and to our producer, Miranda Shafer. Talk to you soon, Howie. Great session today.

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