

# K32428\_21005\_RITM0365362\_S4DrRichardVonk

## AlexMaiersperger

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ALEX MAIERSPERGER: Are you or is someone close to you currently in the fight against cancer? That question applies to just about all of us. Some statistics say that one in two of us will get cancer at some point in our lifetime. I'm your host, Alex Maiersperger. Today on the SAS Health Pulse podcast we're diving in with a global leader known for his work in uncovering insights and delivering actions to get us to a healthier future.

Joining us today is Richard Vonk, vice president, head of oncology statistics and data management at Bayer. Richard, welcome.

RICHARD VONK: Thank you Thank you, Alex. I'm excited to be here.

ALEX MAIERSPERGER: So I've heard you speak before, and I've heard part of your talk about your personal purpose is seeing cancer be a manageable disease within your lifetime. Where are we in that battle today?

RICHARD VONK: Alex, that's a great question. Thank you. Ultimately, I would like to see cancer to be cured or even be prevented. That's a really hard task. Cancer death rates have declined over the last years, but there are still cancer types that-- where the death rate increases. So I hope we can come to a point where we can manage the disease.

As you said, one in two people will be having cancer over their lifetime. But of course, if you look at least the Western population, almost everyone will be affected by cancer in a certain point in time. Either they have cancer themselves, or close relatives will have cancer. People around them will have cancer. And so I think if we can make this disease manageable in some way, that would be a great step forward.

We're getting there.

ALEX MAIERSPERGER: You talk about the data side of it. There's been a huge increase in the volume and the diversity of data. How is the way that you're working with data changing?

RICHARD VONK: Yeah, I think you're right, Alex. Originally, we've concentrated very much on clinical trials, getting the data from there. But we see more and more very diverse inputs of data, wearables, for example, that can help us understand how a patient is really doing real time. So I think that the way we get data is changing.

We, of course, have partnerships. So we get different formats of data. We look at biomarker data, different formats again. But I think that the availability of data, the speed of this availability and the way that we derive actions from the data will really be the-- well, the determinant of the success of the drug development program. So getting the data in, making sure that you can derive actions from the data that will make the real difference.

ALEX MAIERSPERGER: That's the part that matters is the insight, but--

RICHARD VONK: It is.

ALEX MAIERSPERGER: Also attached to the action. So artificially--

RICHARD VONK: The extent--

ALEX MAIERSPERGER: Go ahead.

RICHARD VONK: Sorry, yeah, the extent of the availability is, of course, changing very rapidly. And I think that the speed of availability or the availability itself and again, the ability to derive actions from that, that will make the difference. And it's no use to just having the data. We need to be able to create an action based on that data. That's the important part.

ALEX MAIERSPERGER: What is artificial intelligence's role in this? AI is certainly having its moment in the news. Is AI widely used in pharma today, and where might it be used even more in the future?

RICHARD VONK: Yeah, I think had you asked me this question like two years ago, I would say, no, really-- not really. But now it's slightly different right. We see a huge uptake of AI in research, detection of molecules, for example, chemistry. We see a lot of AI in diagnostics.

For example, if you look at detection of breast cancer, AI can detect breast cancer so much early than any doctor could be. And that helps us, of course. If you think about making this disease more manageable, this will be a combination of early detection and treatment and prevention, of course. So we see AI getting, well, really important in that area.

However, if you look at the development part, the part that I play a role in, I don't see a lot going on there. But this is changing rapidly. We all hear about ChatGPT, for example, which is an NLP-based AI, for example. And we need to think about how are we going to use that in our work? And I think that these AI parts will significantly change the way we work and the task that we have, the roles that we have in clinical development.

Now, it will be easier to, for example, program tables, the things that we need to do for regulatory submissions. That will be helpful or write submissions. And I think that these tools can help with the operational aspects. Not so much with the science aspects yet, but I may be mistaken in two years. I don't know.

ALEX MAIERSPERGER: That's the hard part about the future, right?

RICHARD VONK: Yeah. Difficult to say.

ALEX MAIERSPERGER: I appreciate that. Managing and modeling across all of this diverse data and the different inputs coming in, what are your perspectives over the advantages and limitations of open source?

RICHARD VONK: Oh, that's a really difficult question. I know that there are companies that are now betting on open source much more than commercial software, and I look at it with great interest. I think that there's several challenges. If you look at the commercial software, you need to have people that are trained to use this software. And if you look at university, for example, when we get new people, very few people are trained in commercial software.

People use R and Python, and so the question is, OK, now they are coming into our company. What are they familiar with to use? There's a lot of discussion also about the costs of commercial versus open source software. I don't see that to be a big differentiator. Of course, if you use commercial software, you have to pay for that.

What I see in open source is that there are other costs that are a little bit more hidden. So you need to take care of version control yourself, validation of the software, et cetera. So there's other costs that are incurred there. What I would like to see, if you think about the difference between open source software and commercial software, is a little bit more, say, trust between software providers and those using the software. So I actually think that working with solution providers, let's call them that, could be very, very helpful in our quest to cure cancer.

They have a lot of experience in areas that I don't typically look at. And having an active exchange with software providers, with solution providers, can really help us move the needle. For me, never mind where the solution comes from, it's open source or commercial. We need some tools to do certain tasks, do analysis, for example, or data management tasks. And I don't mind so much where it comes from. I think that the future is not open software or commercial software. It is the mix of it that counts.

ALEX MAIERSPERGER: Really insightful. I appreciate that. Statistics has somewhat of a controversial reputation in some circles. So there's a great debate about the value of certain types of statistics. Bayesian, for example, I know is a hot topic in many circles. How about statisticians, and so those doing the work? How are they viewed and used in your organization?

RICHARD VONK: Yeah, I'm always surprised when people say statistics is controversial. For me, it's mathematics, so it shouldn't be controversial. You've interviewed, I think, Bruno Boulanger a while ago. He's a Bayesian, and I know him very well. And I remember when we first met, he said, you will be a Bayesian. And I said absolutely no way. But he was right in a way.

So for me, the different statistical methods are matters to answer questions, to calculate risks in a drug development program. And sometimes this is in a frequentist way. Sometimes it is in a Bayesian way. I don't mind so much. So a lot of the discussions are in the statistics area between statisticians. I don't think that there's a lot of discussion outside of that area about the methodology.

That's the main thing is that we get answers to our question. Now with respect to statisticians, delicate question. It-- over time, I think pharma has realized that people doing statistics are as important as the statistics itself. So we are moving away from the writing protocols, SAPs, and doing basically tables, listings, and figures for a specific study. We are now integrated much more also in the strategic discussions.

We see this at Bayer as well, so we are part, of course-- we are part of the project teams, and then-- and there's an increasing ask for strategic input. So what are we going to do next? What are the next steps? How would it pan out? That circles back to the data again.

So if you look at why we use data, the data is typically used for submissions. So we try to get a drug developed. We show that it works, that it's safe, and then we submit it to the authorities. But now, using the methods that are available to us, we can also start thinking about what does that-- what happened in this study? What does that have-- what are the consequences of this for our project, for the drug, or for our portfolio, even, right?

We can start thinking about simulating clinical trials. So what is going to happen to these patients? And this requires a lot of data that is, again, available in a timely manner. And I think that statisticians are the right people to manage that, to see what can we do with the data? And what is it that we can't do with the data?

So to me, if I say what-- ultimately, what does a statistician do? It's we calculate the risks. Yeah, we assess the risks of a portfolio, the risks of a study, a risk of false positive, if you want. We assess the risk. That's what we help you with.

ALEX MAIERSPERGER: I enjoyed that because it sounds like statisticians aren't just an input to the strategy but are driving the strategy. And I think that's a big differentiator in many organizations of how they view statistics.

RICHARD VONK: Together with-- together, of course, with the rest of the team, right? With the clinicians who ask the questions, with programmers, with data managers who make sure that we get the data and

the right quality, basically, with a lot of people. A lot of people are involved in drug developments. It's not only in statisticians. But I think they are a vital part of the team, yes.

ALEX MAIERSPERGER: There's a lot of promise throughout that sort of life cycle of automation that it's going to free up time. And so if resources can be deployed where you may not have had them before, potentially, it gives more time to learn from the data that you do have, either that you already have or that you will have in the future. Do you see opportunity in that automation side freeing up resources?

RICHARD VONK: Absolutely. Yeah, I think there's this ambiguity almost between industrialization of work and the ultimate automation of, say, certain tasks and creating tables and listings and figures for clinical reports, for example, and the requirement that we work in a more agile way. And I think that if we can automate certain tasks, we have more time to look at the real science.

So it's-- now, at the end of a study, we have to do a lot. So people are really busy with creating the tables and figures and writing reports. There's very little time to really dive into the data to see what happened really in the study. And I think if we have more time to do that, we can say, OK, so now we have this study, and hopefully it's positive, so the drug works. What were the drivers of the responses? What were the drivers of what happened to these patients?

Are there subgroups of patients that work-- that were-- for whom the drug worked better, or even are there subgroups of patients that should not be getting this drug? And I think that if we have more time to do that, we free up time, we can be much more consequential even in the work that we're doing. So that's I think the big advantage. But we have to be careful. To me, it's like an 80/20 approach-- like 80% doing things, basically, in a traditional way and then 20% doing ad hoc work and seeing what-- where is it that we need to look next?

ALEX MAIERSPERGER: It sounds like there's some opportunity on the AI side, on the automation side, on the elevating statisticians to be driving and working alongside the strategy side.

RICHARD VONK: Absolutely.

ALEX MAIERSPERGER: Because there are some real challenges that exist in just the health world today. There's an aging population and aging world. In many cases, we're getting sicker, or we're living with even more sickness. There's global travel. We have such an interconnected world, and so we're maybe spreading disease a little faster or different diseases that are showing up in different places. So we're definitely seeing the need for faster, better, cheaper drugs across, perhaps, even a wider range of diseases. What's it going to take to get that done consistently?

RICHARD VONK: Yeah, that's-- this question has a huge geopolitical aspect, and I will leave it to others to answer that. So I'll stick to the statistics, but yeah, I think that if we would be able to share data in an easier way and have access to more data, without violating data privacy, of course. But if we can find ways to collaborate better, to share data, to develop new methods based on data, I think that's what it's going to take to move faster. It's all about the data that we get.

ALEX MAIERSPERGER: But it sounds like Bruno may have got you on the Bayesian side after all.

RICHARD VONK: No, I'm still not the Bayesian. I would say I really like Bruno, but I do think that some of the questions call for a Bayesian approach. So to me, it's just taking from the toolbox that we have, from the methodology that we have and the knowledge that we have, take the right tools to answer the right question. And that's-- I think that is what it's all about, not about being a Bayesian or frequentist. There's a place for everything.

ALEX MAIERSPERGER: Love that insight and really appreciate your thoughtful approach to elevating the role of statistics and statisticians, and love that you brought it back to the people. It's really the people who are interfacing with technology and, like you said, using the right tool for the right question to be able to drive a healthier future. Richard, thank you so much for joining us today.

RICHARD VONK: You're welcome. Thank you so much for having me.

ALEX MAIERSPERGER: So we've heard about AI. We've heard about automation. We've heard about statistics and the differing forms of it and how that can help drive everything from drug discovery to automating parts of the drug discovery lifecycle to development and production. So stay tuned as we continue to tackle some of health care and life science's biggest challenges together. We'd love to hear the ways that you are driving a healthier future, so leave a comment on YouTube down below, or reach out to us at [thehealthpulsepodcast@sas.com](mailto:thehealthpulsepodcast@sas.com). We're rooting for you always.

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