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ALEX MAIERSPERGER: Some of the most critical moments in your life may happen in an intensive care unit. And AI is already there. I'm your host, Alex Maiersperger. Today on the SAS Health Pulse Podcast, we're diving in with a global physician leader known for his work in trustworthy AI, getting us to a healthier future. Joining us today is Dr. Michel van Genderen, physician leader, assistant professor, and founder of Datahub at Erasmus Medical Center in the Netherlands. Welcome, Michel.

MICHEL VAN GENDEREN: Thank you very much.

ALEX MAIERSPERGER: Erasmus Medical Center is a notable name for quality care and innovation in northern Europe. For those who may not know as much about it, please give us a little bit of background on Erasmus Medical Center.

MICHEL VAN GENDEREN: Erasmus Medical Center is the largest university hospital of the Netherlands. And we see ourselves as a though leader of innovation, and I'm proud to say that we truly are. We really treat around about 170-260,000 unique patients, and we have 121 ICU beds. And that makes us the largest ICU of the Netherlands.

ALEX MAIERSPERGER: Tell me a little bit more about your role there.

MICHEL VAN GENDEREN: I'm an attending intensivist. That means that I work on the ICU, and I take care of the most critically ill patients in our hospital.

ALEX MAIERSPERGER: You've been exploring the use of artificial intelligence and other innovative technologies in the intensive care unit and have been an author on many scientific papers on the topic. What do you think is the promise of these technologies, both for patients and clinicians?

MICHEL VAN GENDEREN: Yeah, we all know AI has the true potential to transform healthcare. And we are facing two major healthcare challenges, not necessarily for the Netherlands, but globally, so also for the United States. And the two challenges are, first, we have a shortage of healthcare personnel, and, secondly, we are facing an increase of [INAUDIBLE]. So the question is, how can we come up with solutions to tackle these two problems?

ALEX MAIERSPERGER: That shortage of healthcare personnel and society needing more care coinciding is definitely worrisome. You're seeing the most critical cases in that trend. Can you give us an example of AI being used today in the ICU?

MICHEL VAN GENDEREN: So when using AI, we have to make sure that it is responsible and that it is safe. But concurrently, it also has a decreased workload, which is the most impressive stress vector for our nurses. And therefore, we recently developed a stress [INAUDIBLE] AI model that decreases the workload and administration loads of our nurses.

ALEX MAIERSPERGER: On the responsibility and safety side, I imagine you have strong feelings about the need for governance and oversight to ensure that these powerful technologies are safe, responsible, scalable. How are organizations collaborating today on health AI governance?

MICHEL VAN GENDEREN: The role of ethics in AI is crucial because, for me, as a healthcare professional, I will only trust and use AI when I'm 100% confident that it is safe, responsible, and that it does not harm patients. So we have to make sure that, when using AI, it improves quality of care for

every patient, for every human being. So thinking about AI, thinking about how to adjust AI and adopt it in a way that it is responsible and safe so that it can be trusted at the bedside is crucial for adopting AI in healthcare practice.

ALEX MAIERSPERGER: From what you're seeing in your own organization and across your professional interactions, have we reached a tipping point in the mindset of physicians to be more open to data science and medicine or view the anomaly?

MICHEL VAN GENDEREN: I truly love my job, and I'm really proud to work at Erasmus Medical Center because we see ourselves an innovative thought leader in healthcare, and we are. And we recently finished a study in our nurses working at the ICU, and we asked them if they feel ready to adopt whenever AI is ready, and more than 80% entered yes.

So I feel that we reached a tipping point, but we have to make sure that AI is safe and that it's responsible so that nurses and other healthcare professionals trust AI and that it does what it's supposed to be doing when we use it at the bedside. So we have to shape all the conditions-- the technical, but also the clinical conditions-- to optimize adoption at the bedside.

ALEX MAIERSPERGER: Is the ICU the ideal place to implement AI within the hospital setting, or are there other areas that make more sense, at least to start with AI?

MICHEL VAN GENDEREN: Yeah, to start with AI, I guess there are two major departments where you can test AI model and see if it's truly working. So on the one side, that's radiology. But from a clinical perspective, you have to have a clinical department. And traditionally-- and it will grow only in the future-- the ICU department is a department where we gather the most data points per patient. So solving this issue for the ICU means that you actually solve it for the whole hospital-- actually, for the whole healthcare field. So from my point of view, it makes sense that we start with ICU data.

ALEX MAIERSPERGER: I love that-- makes perfect sense. You start with the place that has the most data.

MICHEL VAN GENDEREN: You see? Yeah, so we have all data points. We have more data points per patient than every other word. And we have streaming data. So we have real complex data. But then you have to make sure that you talk about clinical data and not about radiology data.

ALEX MAIERSPERGER: Another one of your titles is founder of the Datahub. What is your vision for that organization?

MICHEL VAN GENDEREN: Yeah, the Datahub is a physical place located in a hospital, and it's a place where all relevant stakeholders can come together because we realize that, although we work in the same hospital and we want to tackle the same challenges, we don't actually talk the same language. So the Datahub is the place where all relevant stakeholders can come together, from patients and their families to data engineers and data scientists, so that we make sure that the challenge that we want to solve will add true value to the clinical field.

We work towards prespecified steps in our model development, and we continuously monitor our model performance. That's what we do at Datahub, and we always make sure that we keep the ethical guidelines in mind by developing these models.

ALEX MAIERSPERGER: So there's an effectiveness and an adoption component to this. On that effectiveness side, you talked about the model development and production of the AI and analytics, and then the adoption side by the clinical team. So we know healthcare is a team sport. I'd love to hear your

thoughts on how that team comes together to develop and deploy AI in clinical practice. What kinds of roles and skill sets do you think achieve the best results?

MICHEL VAN GENDEREN: Yeah, to truly warrant the adoption of AI in the field, you have to make sure that you have all stakeholders in place. So you have to have the data people, you have to have the data engineers, the data scientists, but also the clinical input from physicians and from nurses. But we must not forget that, in the end, it's about people. It's about patients. So you also have to make sure that patients and their families are also included in the stakeholder assessment.

So before you truly-- let me say differently-- the real challenge here is to make sure that you make a model that, in the end, will be adopted at the bedside. And it should be produced in a responsible way. And to make sure that you achieve this challenge, you need all the stakeholders you can get, from data scientists to data engineers, but also patients and their families because, in the end, it's about people and it's about patients. And it's about solving a clinical challenge. So it's crucial that you have all stakeholders engaged when tackling a challenge using analytics or AI.

ALEX MAIERSPERGER: I love that you brought the focus to patients and their families. Hopefully, for most of us, the most time that we spend isn't going to be in the ICU or in a hospital at all, and we clearly see the value of responsible AI and technology and people coming together to deliver the best care at the hospital setting. How about outside of the hospital? What is the role of AI in helping shape a healthier future?

MICHEL VAN GENDEREN: Yeah, responsible AI is important for everybody because, in the end, in healthcare, we are treating patients, but we must not forget that patients are people. And that is also relevant for other industries-- for instance, the banking sector or insurance companies. And, for instance, in the Netherlands, we had a huge debacle with our IRS. They used software, and this software introduced huge bias.

And this debacle happened three years ago, and to date, we are still struggling with solving this issue. So working with AI, but making sure that AI is trustworthy, that it is responsible, and that it does not harm patients or does not harm people is crucial for every sector, not only for healthcare, but also for the government or for the IRS companies, even insurance companies. So it truly makes sense that we have this debate together, not only in healthcare, but globally and throughout all industries.

ALEX MAIERSPERGER: Thank you so much for spending some time with us today, Michel.

MICHEL VAN GENDEREN: Thanks, Alex, for having me. It was a real pleasure.

ALEX MAIERSPERGER: Today, we've learned some real examples of how important it is to have trust in the technology and people treating us in the intensive care unit and in the hospital. Stay tuned as we continue to tackle some of healthcare and life sciences' biggest challenges together. We'd love to hear from you. Please leave a comment down here in the comment section on YouTube or reach out to us, thehealthpulsepodcast@sas.com. We're rooting for you always.