HealthLeaders Virtual Roundtable: CMO

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CLINICAL PERSPECTIVES ON LEVERAGING DATA AND ARTIFICIAL INTELLIGENCE

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There is a lot of buzz around data and artificial intelligence. But how are healthcare organizations using both to transform healthcare for patients and to guide the organization's business strategy and growth? What investments are they making to implement capabilities? This HealthLeaders roundtable focuses on how health systems and hospitals are taking actionable steps to harness data and using AI to solve their most pressing problems.

The conversation covers a range of topics related to harnessing data, including making data insights more accessible at the point of care, helping clinicians effi-ciently target data that is most relevant to their patients' care, and using new da-ta technologies to position healthcare organizations for future growth.

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HIGHLIGHTS

HealthLeaders: *How can we make data and insights more accessible at the point of care to improve patient outcomes?*

Neil Finkler: From the clinical standpoint, there are certain things that really are table stakes. The challenge that we have is that the data sources are coming from everywhere. And, typically, they are not relevant in a timeframe to make clinical relevance, quite frankly. So, to show a doctor at the point of care what happened last week or last month, or quite frankly yesterday, is not helpful.

They want to know, what do I have today? What's in front of me and how do I act on the data that I have? So, the data must be as real-time as possible and as actionable as possible, which includes both administrative as well as non-administrative data.

Susan Huang: We need to draw the distinction between data and insights. Data abounds—data is everywhere, but gathering the right insights from all that data is tougher. We have to ask the right questions that allow us to generate insights from data.

Additionally, instead of a buckshot approach for addressing a single use case at a time, we should be thoughtful about tackling a disease or health condition along the continuum of care and prove out the effectiveness of our tools on meaningful outcome metrics for that disease or health condition.

HealthLeaders: *What challenges are you facing when it comes to making data insights more accessible at the point of care?*

Joe Kimura: If you can't get all the relevant data aggregated, then your informatics team can't analyze it the way that is clinically useful. It can be almost an impossible task at times.

Finkler: With the reliability of the data and the disparate sources of the data, some of them are just really difficult to get at. I was just thinking about all the genomics data that we have that gets siloed somewhere that's apart from the EMR, and now I've got to pull the EMR data with the genomics data. Then I have all the other laboratory data that sits in some other source.

The data is there. We've got lots of data, but we just don't have a lot of insight yet. That's our big challenge.

Huang: We have to be thoughtful about how we surface those insights at the point of care to get the result we hope to achieve without adding extra burden to the user. If you implement a decision support tool that surfaces insights at the point of care but now requires an inefficient downstream process, such as 10 additional clicks to get to the desired next step, you've created extra work.

HealthLeaders: *What are the primary tools you are using to help clinicians efficiently target data that is most relevant to their patients' care?*

Kimura: The way I understand this question, you are asking about information seeking. If there is a particular piece of information I need to make the right decision about my patient, or my patient is asking a particular question, how do I quickly retrieve that information? So, information seeking is the workflow here.

It's super challenging. Most commonly, the informatics solution is to create summary reports that go back through the reams of EHR information and pull pieces of information together about a patient ahead of time. Hence, we spend a lot of time trying to identify and design for common clinical scenarios based on a particular patient's clinical profile.

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Huang: Our clinicians primarily use the EHR for data retrieval. EHRs are designed for super users. They are not designed in an intuitive way for the average point of care physician or provider. That's why it takes so much training to get clinicians up to speed on even the basics of a EHR system. This is a real challenge.

Kimura: Are your systems using natural language processing? We've been on a seven-year journey exploring and testing NLP solutions for various things. We've worked with several prominent technology partners to test solutions, and it has never quite been "good enough" for us to drop it into production.

David Gruen: The answer is we're doing a lot of heavy lifting. NLP is tough. You have to think about context, multiple languages, semantics—there's so many ways that we deliver the same message with different syntax and verbiage in different geographies just in this country.

What we find is that providers and health systems want it to be perfect. We have a ways to go to get perfect.

Finkler: We've been playing with NLP for a long time as well. And we have finally given the go-ahead to start using NLP for some of our very focused problems. For example, how do we get the appropriate diagnosis-related group for pneumonia based on what's in the record?

HealthLeaders: *How can we utilize new data technologies to successfully position healthcare organizations for future growth?*

Kimura: So, an interesting question is what kinds of technologies are interesting, attractive, or helpful for various patient populations or market segments. We used to think that a lot of the new virtual digital technologies would be mostly attractive to the younger, less morbid commercial patients. But during the pandemic, we found our senior population with multiple chronic conditions love the technology because they can avoid multiple car trips into the city and receive care more conveniently through video.

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Huang: There are so many ways to pursue growth. I think we should focus on the value that these data technologies can provide, which will then allow us to provide better services in healthcare and help our organizations grow. These technologies can help us provide a better experience for our patients, deliver higher-quality care, in a more accessible way and at a more affordable price. This value would be compelling for patients, payers, employers, and more. These technologies can also help ease the way of our caregivers who, as a workforce, are really struggling right now. They can help us take better care of our caregivers. We just have to develop the right tools to address the right problems.

Gruen: Neil, how are you going to use data to manage the Disney population? It's a nice example of a fixed cohort, perhaps with a decent number of comorbidities that you're inheriting.

Finkler: We are at risk for the Disney population. So, we're starting to use technology to focus on the high utilizers. What are their comorbid conditions? What are the things that we need to do?

A lot of this is based on social determinants of health and totally unrelated to almost everything else. It's more reliant on where the patients' ZIP codes are than almost anything else. The point is that you've got to be able to identify them to be able to reduce your cost of care, particularly in a population where you are at risk. This is going to become crucial.

HealthLeaders: *Do you believe healthcare organizations can monetize their data?*

Huang: This is a tough question. The answer is, it depends. It depends on how you monetize data. You need to establish rules and guardrails *a priori*. There are a lot of nuances to the monetization of data.

Kimura: I do not believe we should monetize data without involving the patient—without the patient saying, "Yeah, I'm good with that."

HealthLeaders: *That raises an interesting question. Who owns the data?*

Kimura: I believe patients own their own information about themselves. Healthcare providers are stewards of data more than owners.

Gruen: It's a bit of a paradox. We own our own data, yet we need diverse population-based data to transform healthcare. So, how do we cross that proverbial chasm? We build algorithms, and we need to make sure that our algorithms are geographically diverse and ethnically diverse and racially diverse and culturally diverse. If we only rely on patients giving consent, that in itself is a biased population subset. So, how do we do this? I don't presume to have an answer, but clearly this is one of our opportunities and challenges of the next decade.

My personal opinion is, this is a great example of where we need to get out of silos. We need to think about this ecosystem.

HealthLeaders: *How do you get the highest value from your investment in data and data analytics?*

Finkler: It's got to be clinically relevant. And if we look at the value proposition, it's unlikely that we're going to decrease costs. So, if we're not going to decrease costs, how do we improve the quality of the products and the services that we're delivering to the communities that we serve?

That's really the crux of what we're trying to do from a value proposition. And we've looked at it on the acute care side. We've talked about it even in a population health strategy. Certainly, if you look at this from an equity and a disparity standpoint, there's huge potential here to gain great value and improve quality with regards to our data and data analytics.

Kimura: The value of the analytics is captured through our risk-based contracts when the analytics help us improve clinical care and avoid unnecessary increases in total cost of care. The "data value chain" starts

from capturing data, integrating the data, analyzing the data, then reporting the data, and ultimately using the data to improve care. While each part creates some value, the real overall clinical value is realized through the entire value chain.

Gruen: We need to precisely define the problem that we have and the question that we're trying to answer, then bring people together to figure out where the data resides to solve that problem. Once we do that, we'll find it much easier to pool the data sources together to address a specific question, rather than saying we're going to put all these data sources together and see what we get. That's much less palatable.

You get the highest value from your investment in data and data analytics by saving lives. You improve care and decrease costs. It comes back to the same issues. You combine data sets to improve quality.

Kimura: A broader enterprise view on how the data analytic outputs are going to be used is important. In most of our organizations, we have a CIO, a CFO, and a CMO, each working within their own worlds. We need to make sure that any investment in data analytics connects all those worlds if the goal is to improve patient outcomes. It does require more of a holistic view because data may be considered an information technology asset, but its clinical operational value is only realized when we use analytic outputs to change what we do.

HealthLeaders: *We have AI tools to harness healthcare data now. What are the obstacles to implementation that you are facing?*

Huang: It sometimes feels easier to create the tool than to manage the downstream change management. As the tool touches people's workflows and their day-to-day work, there can be potential unintended consequences. Physicians and providers are having many more tasks that are required of them. As we implement these tools, we need to make sure that these tools are easy to use and that we study any potential negative downstream effects. If we want the tools to be adopted, we need to understand the barriers to use.

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"Radiology is right in the forefront of this. There are hundreds and hundreds of algorithms solving one specific problem at a time. Can we find a brain bleed faster or a pulmonary nodule or a fracture? This is one of the things that we're working on in my business—how do we provide value and not slow clinicians down? And the example we like to give is, imagine if there are 15 different chest x-ray algorithms and the average radiologist must read a case in 45 seconds. We don't have time nor the interest nor the ability to look at them."

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Kimura: Our tools are getting so sophisticated that the black box phenomenon erodes the ability to trust new tools that are constantly coming out.

Gruen: Radiology is right in the forefront of this. There are hundreds and hundreds of algorithms solving one specific problem at a time. Can we find a brain bleed faster or a pulmonary nodule or a fracture? This is one of the things that we're working on in my business—how do we provide value and not slow clinicians down? And the example we like to give is, imagine if there are 15 different chest x-ray algorithms and the average radiologist must read a case in 45 seconds. We don't have time nor the interest nor the ability to look at them.

I know one of the things we're looking at is how we orchestrate AI into workflow, and we're doing this in imaging, but I think it's across all of healthcare. How do we seamlessly orchestrate the solution so that a clinician has the information when they need it without slowing them down? And I think that's one of the barriers to adoption.

Finkler: I don't think we can overestimate the importance of workflow because if an AI tool is not within the workflow of the person at the bedside, this all fails very dramatically. We've got lots of examples where we

have great ideas, but the workflow just didn't work. And guess what? The adoption was zero because if you're going to give even one more click to do something, or if it's not in my workflow, or if you're going to make me go out to a different system, it is not going to work.

HealthLeaders: *How do you align the workflow with your data systems?*

Huang: Within our organizations, we have hundreds of different workflows. Just think about a call center and all the different workflows that exist. Think about all the different protocols we have as our call centers work to navigate our patients to the right place at the right time for the right service. The complexity of these workflows in healthcare operations is vastly underestimated by a lot of people who are not from healthcare. If a company comes in with a solution but does not understand all the nuances and edge cases that exist in healthcare and its workflows, then it will be difficult for them to deploy their solution.

Gruen: Data systems need to be invisible.

"It's got to be useful, trustworthy, timely, and reliable. Those are really the critical components. And it can't disrupt too much of my workflow because the EMR and click fatigue is real, and alert fatigue is real. A good clinical decision support tool is very useful, but if I'm going to get 18 different queries as I'm trying to put together my note for the visit, I'm really going to have a struggle."

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HealthLeaders: *And how do you achieve that? How do you achieve making it invisible?*

Gruen: This is exactly the question that we're all trying to answer. How do we harness data and provide it in a timely, accurate, seamless way to fingertips when people need it? It's just-in-time technology.

We've accomplished this in a lot of other industries. Airline safety is innovation that works and is invisible. We don't worry that there are other planes over an airport. We just know that it's working. And similarly, we need to trust and have this kind of big data available with the right tools. It comes back to ecosystem. It comes back to systems working together. We need to figure out a way to use big data securely and accurately and with relevancy when we need it.

Kimura: It's getting the right data to the right person at the right time in the right place presented in the right way to be able to support the right action. So, if that lines up, then it actually does become invisible because it's helping you and it's facilitating an even quicker action step, which I think is fantastic.

HealthLeaders: *How have you put your data together with AI to make the data useful?*

Finkler: We continue to struggle with that. The biggest challenge for us is getting this within the workflow with all the "rights" that Joe just talked about. I think that remains the greatest challenge. We've got pieces of it that work reasonably well. Then we have pieces of it that are just incredibly difficult.

Huang: In our organization, we make data useful by first deeply thinking about what problem are we trying to solve. Often, these problems are right in front of our face. Our caregivers and providers will tell us what problems they are facing. Our patients give us feedback on what's not working. From these insights, we can then tackle meaningful problems. As an example, Providence recognized that there was an opportunity to better predict staffing models. So, this is something we then built our own models around.

During a COVID surge, our Providence teams built models that would predict COVID census a couple weeks out. These models were built out of a very immediate need, and the information in these models could influence downstream decisions involving things such as space utilization, supply chain, and staffing.

Those are just a few examples of where Providence has been successful in leveraging data to address practical needs.

HealthLeaders: *What are the key factors for a good clinical decision support tool?*

Finkler: It's got to be useful, trustworthy, timely, and reliable. Those are really the critical components. And it can't disrupt too much of my workflow because the EMR and click fatigue is real, and alert fatigue is real. A good clinical decision support tool is very useful, but if I'm going to get 18 different queries as I'm trying to put together my note for the visit, I'm really going to have a struggle.

Huang: Transparency is another important factor. I would specifically want to know what data sources were used. I'd also want to know what the performance is of the tool on various populations.

Gruen: Innovation makes technology invisible, and invisible includes exactly the words that Neil used—useful, trustworthy, timely, reliable, and non-disruptive. Clinicians are burned out: "Just don't give me one more thing to do. I can't handle one more thing." And I hear this all the time in every single specialty.