Executive Perspectives on Data and Insights Platforms

eHEALTH INITIATIVE

Cerner

UNDERSTANDING DATA AND INSIGHTS PLATFORMS

The push toward value-based care has amplified the need for quality patient information that directly contributes to improved care. In the continual quest for long-term sustainability, access to data from disparate sources and multi-tiered systems are increasingly important within, and between, provider networks and healthcare organizations. The healthcare industry is ramping up efforts to use data, from multiple sources, in a more meaningful and efficient manner, and is developing strategies for comprehensive, whole-person care for any circumstance that could affect health.

The emergence of electronic health records (EHR) represented an incremental step in digitizing healthcare. The next iteration of technology is aimed at helping healthcare stakeholders manage large, and increasing, volumes of data. "Data and insights platforms" help providers navigate information from multiple sources, analyze data, turn insights into action, and capture feedback for continual improvement. Analytics presents, summarizes, and highlights data. Insights enable decision-makers, based on the analytics, to understand what is going on, why it is going, and what is next. Insights are a derivative of analytics; they are the result that enables changes in actions or responses.[i]

> "The insights are the most important component of a platform."
>
> *-John Glaser, Ph.D. Executive Senior Advisor, Cerner*

In 2019, eHealth Initiative (eHI) explored the subject of data and insights platforms with industry leaders. eHI endeavored to ascertain the benefits and drawbacks of the use of data and insights platforms in turning data into actionable insights in today's healthcare landscape. Using our research on the topic, interviews with healthcare executives at provider organizations, and information gathered from 20 years of multi-stakeholder collaborations, this white paper offers a basic understanding of these types of platforms and executive perspectives on their use. The paper also discusses:

- Platforms as a means for improved population management tools
- Data policies and practices that support platforms
- The role of artificial intelligence (AI) in platforms
- Using platforms to effectively close care gaps
- Ensuring platforms grow with organizations

WHAT IS A DATA AND INSIGHTS PLATFORM?

Data and insights platforms unify technologies to manage and analyze data, test and integrate the derived insights into clinical and business actions, and capture feedback for continual improvement.

DATA AND INSIGHTS PLATFORMS = BETTER POPULATION MANAGEMENT TOOLS

Most executives interviewed emphasized the critical importance of having a data and insights platform to manage their patient and consumer populations. As one executive stated, "When managing populations with a data and insights platform, you see the difference." At the core of population management efforts are data and analytic tools and the *insights* gleaned from that data. Data is now so vast and complex it requires new and powerful computational resources.[ii]

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> *President of Population Health, Hackensack Meridian Health*

Data and insights platforms enable the 'right' data to be sourced, managed, and analyzed. Insights from both user and system analyzation can be acted upon to promote desired outcomes. Those outcomes can be fed back into the system to close the feedback loop and support continual optimization.[iii] The 2017 eHI report on *The Role of Technology in Value-Based Care & Patient Engagement*, stressed the fact that provider organizations are seeking comprehensive tools and platforms to layer on top of current EHR or billing systems to support value-based care initiatives.

An EHR is central to a consistent standard workflow but should not be confused with data and insights platforms that were built to marry multiple data sources. EHRs are an important part of the puzzle, but they only offer insights on a single, episodic point-of-care and are often not interoperable with other systems, such as other EHRs, claims processing, and pharmacy benefit management systems. Patient care is hindered when EHRs and systems across a network do not communicate.[iv] In the hopes of freeing up more time for patient care, providers are investing in tools that enable better workflow integration and track and manage patient flow, admissions, and outcomes. Data and insights platforms can collect data from multiple systems and provide the structure necessary for true analytic capacity and other complex data initiatives.

Healthcare executives shared details on the technical nuances of how their organizations access data and the tools needed to run analytics, perform risk stratification, and find areas for the greatest care interventions in an eHI report, also released in 2017. Those interviewees stressed the importance of visualizations in the provider workflow and using tools that integrated with their EHRs. These sentiments were heavily echoed by the executives interviewed for this paper. Today, data and insights platforms specialize in facilitating the delivery of insights into the care team workflows, as well as aggregating and normalizing large volumes of diverse data. One health system interviewed said they use their platform across multiple hospitals and provider offices that use a variety of EHRs and other systems. Another interviewee stated the cornerstone of their platform was its use among 4,200 physicians throughout the marketplace.

Data and insights platforms provide a mechanism that gives providers richer intelligence, in turn empowering more-informed, clinically-appropriate decision-making. Platforms enable organizations to keep data well-organized and aggregated in a central repository, inclusive yet independent of the EHR. According to one executive, when their organization transitioned to a commercial and federal accountable care organization (ACO), they were able to layer data from their existing technology

ONE ORGANIZATION'S OVERVIEW

1 Data & Insights Platform

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- 920 terabytes of data
- 21,269,924 people
- 222, 519,155 encounters

investments into a data and insights platform to effectively execute their value-based care initiatives. Their old ways of managing data were not sufficient. Now their platform handles 920TB of data for 21,269,924 people, reflecting 222,519,155 encounters. Data and insights platforms support a wide range of sophisticated analytics, including machine learning (ML) that identifies patterns, predictive algorithms that identify patients at risk, and logic that identifies a potential need to adjust a person's care plan. Executives are using platforms that can communicate with various systems to pull a wide breadth of data, including environmental, health information exchange (HIE), pharmacy, lab, claims, and EHR information, to improve care.

DATA POLICIES & PRACTICES TO SUPPORT DATA AND INSIGHTS PLATFORMS

As we already know, data is one of the most valuable assets in any organization and necessary to sustaining current and future business models. As organizations grapple with ways to manage continual changes in health information technology (IT) infrastructure and the huge volume of data collected across the healthcare industry, platforms help support data-centric strategies focused on managing the entire lifecycle of data. The policies and practices for managing, protecting, and governing information across a healthcare enterprise are especially important. Integral to data governance are data modeling, mapping, audits, architecture, dictionaries, quality controls, and management. A strong governance structure is a required component of any healthcare organization using a data and insights platform.

Several executives made clear that any data going into the platform needs to be clean, valid, and mapped per industry codes. Data utility is limited when the data is not mapped or codified correctly. Interviewees stated that making sure items were mapped the same way, "an aspirin is an aspirin is an aspirin," was one of the biggest data management benefits of data and insights platforms. Previous research by eHI demonstrates that although value-based care may not have been the starting point for providers when formulating their technology needs, it came to affect how data is conceptualized, collected, and analyzed in their practices.[v] There was no road map when moving from volume to value; therefore, organizations began turning to technology to help fill the gaps. Ten years ago, data and insights platforms did not exist, and records were not digitized to the extent they are now. When value-based care trends led to a greater concentration on population health approaches, many providers thought EHRs were going to be "the" solution, but it is clear healthcare is continuing to evolve beyond the capabilities of EHRs.

> "The economics of healthcare moved toward performance instead of fee-for-service. CMS is paying for outcomes and platforms help excel the move to value."
>
> *-Patrick Young*
> *President of Population Health, Hackensack Meridian Health*

Payment policies play a large role in how healthcare systems develop and even directly contribute to how data is handled. Government and legislation are intrinsically related to the shift to value-based care. Value-based care and legislative efforts first worked in tandem to move organizations toward

EHRs and are now moving them toward data and insights platforms. The Centers for Medicare and Medicaid Services (CMS) began emphasizing value-based, quality healthcare over the volume of provider visits in 2008 when they initiated the Medicare Improvements for Patients and Providers Act (MIPPA).[vi] Over the next decade, the government continued to mandate payment policies and technical standards.

The Role of Artificial Intelligence in Platforms

Interviewees also value being able to create actionable models and algorithms that feed into the workflow at the point of care. Data and insight platforms enable the creation of AI and ML models that provide actionable information to providers. As Tina Esposito, system vice president and chief health information officer at Advocate Aurora Health, stated, "Platforms enable machine learning and AI, providing physicians and nurses the information they need when they need to know it."

The growing field of AI has created new technology able to tackle large data sets and solve complex problems that previously required human intelligence. "As a field drowning in information with a life-or-death need to understand it, healthcare is ripe to benefit from AI," said John Glaser, Ph.D., executive senior advisor at Cerner. As healthcare stakeholders search for innovative solutions to support clinical decision-making and manage patient information across the continuum, AI is beginning to transform care delivery and has become a primary driver for the use of data and insight platforms.

> "With platforms we are able to create models and algorithms that feed at the point of care and enable the provider to act on. AI is a primary driver for the best use of platforms."
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> *-Tina Esposito, System Vice President, Chief Health Information Officer, Advocate Aurora Health*

Data and insights platforms serve as important tools for providers but will not replace clinical judgment. If anything, data and insights platforms have emphasized the value of provider judgment after receiving the actionable intelligence platforms provide. One executive stated, "AI does predictive modeling well, but at present is not playing a significant role with forming clinical conclusions. Data is only as good as the intuitive understanding, which lies in the hands of the provider. AI will play a larger role in the future." AI is driving the future of analytics and promotes greater accessibility and actionability of information. AI can contribute to advances in radiology, more clinical breakthroughs, the early detection of chronic conditions, precision medicine, the efficacy of drugs, and developments in cybersecurity.[vii]

Data and insights platforms can answer questions such as, what are the care needs of a patient? Is an organization adequately helping a population manage their chronic condition? Is care too expensive? Is one treatment better than another? Data and insights platforms use AI to help healthcare organizations align their outcomes with achieving the Quadruple Aim—improved patient experiences, improved provider experiences, improved population health, and reduced per capita costs of care.

Using Data and Insights Platforms to Effectively Close Gaps In Care

Overwhelmingly, the most significant value of these platforms is their ability to connect members of the care team, including the person. Data and insights platforms enable stakeholders to look at a person in totality and glean insights into how the whole person resonates with multiple providers, speaking to the possibility of a longitudinal care plan. Interviewees feel strongly that data and insights platforms support providers in closing care gaps. With data and insights platforms, it is possible to predict a negative outcome before it happens, enabling a necessary intervention.

Interviewees cautioned against thinking a technology platform alone is a magic bullet to automatically solve problems. Data and insight platforms are complex systems that must be fully incorporated into the structure of an organization for benefits to be fully realized. Organizations must consider the initial tangible wins they would like from a data and insights platform. "Organizations should stay focused on what they are trying to achieve. It can become a fishing expedition quickly without identifying some of the initial wins; otherwise, it will take a long time to prove the benefits," stated Tina Esposito, system vice president, chief health information officer, Advocate Aurora Health. Without a clear goal and good governance strategy, accomplishing organizational improvement will be difficult. If stakeholders are not aligned around why the investment in data and insights platforms is important, the system will be under or unutilized. "To effectively act on the insights, organizations must become more 'data savvy' and proficient in change management," stated John Glaser, executive senior advisor, Cerner.

> "The most important element of a platform is that it is actually used. If the providers don't feel that the insights are actionable and meaningful, it is a waste of money."
>
> *- Eric A. Schmitz*
> *Former Executive Director, Fortify Children's Health & Founder, Aspen Roads*

Ensuring Platforms Grow With Organizations

Executives are looking for platforms to grow with their organizations. There is an endless appetite for using new types of data in healthcare, such as data from schools, community partners, and federally qualified health centers; genetic data; data from patient-reported outcomes, devices at home, wearable apps, and other types of patient-generated health data. One executive stated his belief that the data throughout state governments will help find children who are most underserved and at risk. In this vein, social determinants of health (SDOH) data is starting to be a serious consideration. SDOH are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.[viii] Medical care alone has a limited effect on overall population health and could be significantly enhanced by pairing with approaches that address SDOH.[ix]

Interviewees mentioned SDOH as a driver for future adoption of data and insights platforms. Increased interest in SDOH data is helping to facilitate the shift. Addressing SDOH has become a top priority for public and private institutions. State Medicaid programs and the Children's Health Insurance Program (CHIP) have

"The range of data will continue to expand. SDOH data will become more common, as will genetic data, and data from in home devices. The progressive expansion of the range and scope of data will lead to more effective insights."

-John Glaser, Ph.D.
Executive Senior Advisor, Cerner

introduced care models to engage individuals in improving their well-being, and private health plans are also working to address environmental factors that impact a person's health.[x] Insurance companies are uniquely suited to help populations of all sizes lead healthier lives and have been addressing SDOH by coordinating housing, employment, education, food services, and supporting other needs such as childcare. According to one interviewee, SDOH data needs to be intuitive and digestible. New models of care focused on specific populations that are at risk need a variety of actors on the same page—parents, caregivers, pediatricians, health plans, insurers, pharmacies, school nurses, and other stakeholders. Addressing SDOH will require the type of collection and analyzation made possible by data and insights platforms.

Over the next ten years, we know there will be a significant increase in consumer and SDOH data, but the real question is, what lies beyond? Esposito said it best, "We don't know what we don't know." Having large data sets should, hopefully, lead to new research hypotheses and insights. The more data is harnessed in a structured manner, and the more answers should become evident, creating a future that is more affordable and more convenient to the consumer, instead of one where organizations become lost in the data. Data and insights platforms enable current and future data to be warehoused and cleansed. As types of data grow, so should take steps to ensure bias is not baked into data collection and governance.

CONCLUSIONS

Data and insights platforms are helping healthcare stakeholders manage large volumes of data amongst and between systems, while connecting members of a care team, including the actual patient. The insights gleaned from data and analytics is proving invaluable, and healthcare stakeholders need systems that offer a smooth pathway toward sustainability. Data will continue to be the most valuable asset in managing current and future business models.

"The penalty of not implementing is being left so far behind that you can never catch up."

- Eric A. Schmitz
Former Executive Director, Fortify Children's Health & Founder, Aspen Roads

As organizations grapple with ways to manage the huge volumes of data collected across the healthcare industry, these platforms are helping to create data-centric strategies focused on managing both the entire lifecycle of data and longitudinal, whole person care for any circumstance that could affect health. Data and insights platforms are the waves of the future. Eric A. Schmitz, former executive director at Fortify Children's Health and the Founder of Aspen Roads, appropriately summed up the sentiment, "The penalty for not implementing is being left so far behind that you can never catch up. The race to the population health business model is underway for both insurance and provider organizations. The winners will be those that made early strategic investments in reliable and scalable data insights platforms."

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- **Patrick Young**, President of Population Health, Hackensack Meridian *Health*

ABOUT EHEALTH INITIATIVE

eHealth Initiative & Foundation is a Washington DC-based, independent, non-profit organization. eHI convenes executives from every stakeholder group in healthcare to discuss, identify, and share best practices in technology and innovation to transform the delivery of healthcare. eHI, and its coalition of members, focus on education, research, and advocacy to promote improving healthcare through data sharing. Our vision is to harmonize new technology and care models in a way that lowers costs and improves population health and consumer experiences.

ENDNOTES

[i] What health IT shops should do now to prepare for the next generation of platforms
https://www.healthcareitnews.com/news/what-health-it-shops-should-do-now-prepare-next-generation-platforms
[ii] Big Data Definition
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[v] The Role of Technology in Value-Based Care & Patient Engagement
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[vi] The history of value-based care
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[vii] Artificial Intelligence in Healthcare
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[viii] Social Determinants of Health
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[ix] We Can Do Better — Improving the Health of the American People
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[x] Beyond the Boundaries of Health Care: Addressing Social Issues
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