2022 KLAS Emerging Solutions Top 20

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The partnerships that healthcare organizations make with technology vendors and services firms drive outcomes for years to come, and amidst a flood of new technologies, amazing potential partners can be missed. For the first time, KLAS has asked 16 prominent members of the healthcare community with broad HIT expertise to read 42 KLAS reports on emerging technology and rate their perception of the solutions based on their potential to impact the Quadruple Aim of Healthcare: to improve outcomes, reduce the cost of care, improve the patient experience, and improve the clinician experience. This report (1) ranks these emerging solutions by their ability to disrupt the healthcare market and (2) provides insights from participating healthcare leaders into what innovation themes organizations should be aware of as they seek to provide the best patient care.

The 42 emerging technologies reviewed in this report are only a sample of the emerging companies KLAS is measuring, and KLAS plans to publish future Top 20 reports as the range of measured companies expands. If you know of another emerging HIT vendor/services firm that KLAS should research, please let us know here.

2022 KLAS Emerging Solutions Top 20

The companies ranked below are those who received the top 5 scores in relation to each Quadruple Aim; those ranked for each aim combine to make up the 2022 Emerging Solutions Top 20. In addition to being featured in this report, the Top 20 emerging companies were recognized at KLAS' 2022 Digital Health Investment Symposium.

Report Methodology

Rankings are based on interviewed provider thought leaders' ratings (on a 1–9 scale) of the emerging technologies' potential to impact each Quadruple Aim. The feedback included in this report is primarily **perception based;** C-level/executive provider leaders shared their opinions on measured vendors and firms after reading about the experiences of customers. Respondents read about 20 reports each and are split into two groups based on whether they have a clinical or operational background. For a full list of participants, see page 6. Each solution or service eligible for this report was highlighted in a KLAS Spotlight or First Look report between January 2021 and May 2022 and received an overall score from customers of at least 85 out of 100.

Top 5–Improve Outcomes

1 ⩔ atlas — Connecting Patients with Philanthropic Aid

"I love the Atlas Health solution. It is a game changer for nonprofit health systems and, more importantly, for patients with limited resources who find themselves faced with a significant diagnosis that is expensive to treat. The Atlas Health solution is a very good use of AI that improves outcomes. Many times patients can't afford the treatment or medication that will improve their outcomes. If cost is no longer an issue, the patients will get the treatment or medication they need." —Non-customer C-level/executive

2 Datos Health
Remote Care & Automation Platform — Globally Supporting Remote Care Workflows and Reducing Care Team Workloads

"Datos Health offers an interesting combination of RPM data and data from patient questionnaires. The drag-and-drop interface design is another plus. The Redox partnership should significantly help." —Non-customer C-level/executive

3 Clarify
Clarify Atlas Platform — Harnessing Big Data to Generate Actionable Healthcare Insights

"The Clarify Health solution seems really nice for organizations that either have limited analytics or BI capabilities or want to outsource or substantially augment their analytics capabilities." —Non-customer C-level/executive

4 PHOX HEALTH   [Technology-Enabled Logistics for Healthcare](#)

"The vendor provides an innovative approach to closing the loop in the patient journey. The patient journey is not always the end of the encounter; rather, it is viewed as the beginning of care optimization and a successful outcome of the patient that is sometimes the hardest. I like the concept of Phox Health because it can complete the process of full patient satisfaction through methodology of medication and durable equipment delivery services through an expanded network of medical couriers to the patient's home. Phox Health mimics some of the consumer demand expectations like that of Amazon, Uber Eats, and others. Ultimately, patient satisfaction and patient value are typically seen at the last mile of care, closest to home." —Non-customer C-level/executive

5 HEALTH TALK A.I.   [Improving Patient Access through Patient Engagement Technology](#)

"Patient engagement that uses AI and other technologies is an exciting frontier for health systems. Engaging patients up front is one task; however, the real challenge is to maintain engagement, communication, and a bidirectional information flow when patients are not in the care setting. HealthTalk A.I. goes beyond simple messaging and care gap identification to include patient surveys and patient-reported symptoms. When properly integrated with EHR and data analytics platforms, these tools will further improve health systems' ability to care for their populations and predict areas of resource allocation. HealthTalk A.I. has completed integration with over 90 EHR vendors, positioning them well for success in the near term." —Non-customer C-level/executive

Top 5–Reduce the Cost of Care

1 AvaSure   [Utilizing Remote Monitoring to Increase Patient Safety](#)

"With staffing being one of the biggest issues for operations today, AvaSure makes a lot of sense because it is a force multiplier. Rather than having one sitter watch one patient, a unit can have one sitter watch twelve patients with remote monitoring." —Non-customer C-level/executive

2 atlas   [Connecting Patients with Philanthropic Aid](#)

"Atlas Health seems to have found a unique niche in matching eligible patients with philanthropic medical financial programs. Their financial model is not clear from the customer feedback. Still, they can easily go into a risk-sharing agreement with hospitals and benefit from the upside potential of their solution. Atlas Health's strengths are the quick ROI and simplicity of their AI-based solution. They need to develop integrations with the key EMRs." —Non-customer C-level/executive

3 Clarify
Clarify Atlas Platform   [Harnessing Big Data to Generate Actionable Healthcare Insights](#)

"Data aggregation through a cloud-based delivery mechanism is valuable, specifically for organizations that don't have a robust data team. Alignment with value-based purchasing contracts provides high value to organizations. Clarify Health appears to offer a high level of responsiveness and performance." —Non-customer C-level/executive

4 stellarhealth
Stellar Health Platform   [Improved Value-Based Care through Prompts & Timely Incentives](#)

"An effective and reliable system that ties care-gap identification and closure to rapid payment will help improve provider adoption of VBC principles and practices leading to improved outcomes. This technology can certainly improve the payment for specific actions leading to the reinforcement of improved behaviors." —Non-customer C-level/executive

T5 Vatica Health™
Risk Adjustment and Quality of Care Solution

Improving Risk Adjustment and Closing Care Gaps

"Vatica Health provides high-touch services in the transition between fee-for-service and value-based care." —Non-customer C-level/executive

T5 XSOLIS
CORTEX

Enhancing Utilization Review and Care Management with AI

"The system addresses the administrative burden of utilization management through artificial intelligence, predictive analytics, and machine learning." —Non-customer C-level/executive

Top 5–Improve Patient Experience

1 DeliverHealth

Early Adopters Optimistic about Digital Front Door Solution

"Engaging and embracing patients via a well-designed, user-friendly mobile interface is key to ensuring patient loyalty. The digital front door is a new differentiator for health systems to improve the experience for the patients, caregivers, employees, and community. Streamlining functions into a single application with close integration to the EMR, PHM, and RPM systems is essential. The core EMR vendors are slower to capitalize in this space, and that allows niche vendors to show their strengths." —Non-customer C-level/executive

2 GOZIO Health

Improving the Patient Experience Using Location-Aware Technology

"Gozio's product appears to be a very effective wayfinding solution with great potential to impact patient satisfaction and visit efficiency." —Non-customer C-level/executive

3 HEALTH TALK A.I.

Improving Patient Access through Patient Engagement Technology

"The HealthTalk A.I. solution appears to be a positively received, well-executed, and well-designed platform that includes asynchronous patient contact, a chatbot, and scheduling. Solutions like this should be a core focus for healthcare systems because they can directly increase access and impact patients' ability to connect in the right way." —Non-customer C-level/executive

T4 MDsave

Price Transparency Benefits for Patients and Providers

"MDsave is taking on the difficult challenge to break down the various layers of cost and price complexity in order to be compliant to CMS and get to a cost model that will be sufficient for patients to understand and be satisfied with an appropriate cost for their care. Estimating price bundling based on national pricing is a start, and [MDsave makes] pricing, credit options, and FSA integration seamless." —Non-customer C-level/executive

T4 PHOX HEALTH

[Technology-Enabled Logistics for Healthcare](#)

"The idea of a coordinated service/software to allow for at-home care is absolutely a need in healthcare. I do think Phox Health will improve patient compliance with the care plan and improve outcomes. The fact that Phox Health partners with global and local couriers could result in gaps for some geographic locations. I am not sure whether Phox Health supports their courier partners in building out services where there are not sufficient for a health system's needs. This product has a lot of potential to improve outcomes and reduce overall healthcare costs as it advances technically and enhances EHR integration." —Non-customer C-level/executive

Top 5–Improve Clinician Experience

1 NUANCE
Dragon Ambient eXperience

[Improved Patient-Physician Experience through Ambient Clinical Intelligence](#)

"Conceptually, the promise of a future automatic dictation solution that can just listen to the patient encounter and then write the note for me seems incredible. That would be a total game changer from a workflow standpoint, as documentation is one of the most painful pieces of the clinical experience as a practicing physician." —Non-customer C-level/executive

2 laudio
Laudio Leader Operations Solution

[Deliberate Performance Management & Engagement](#)

"This technology is extremely interesting to me. The single biggest challenge I face today in my executive role is that of workforce recruitment and retention. We currently use another solution and have not found it to be adequate to address the challenges that the Laudio platform is built to address. It is also proven that addressing workforce satisfaction will have a direct impact on patient outcomes and experience." —Non-customer C-level/executive

3 notable

[AI-Driven Workflow Automation and Digitization](#)

"There is a market for robotic process automation in healthcare, which puts Notable in a good spot. However, most RPA solutions focus on nonclinical operations (revenue cycle, access, supply chain, IT, etc.). Notable has an opportunity to differentiate themselves by focusing on provider workflow automation. They will need to continuously innovate to stay ahead of EMRs that are adding native automation capabilities. They will also need to demonstrate continuous ROI, which could be difficult as the workflow constantly changes." —Non-customer C-level/executive

4 DeliverHealth

[Early Adopters Optimistic about Digital Front Door Solution](#)

"I saw a very high-level demo of DeliverHealth's platform at a CHIME event and was very impressed. It wrapped functionality from several disparate solutions quite nicely, creating a seamless consumer experience. My only hesitation revolves around the product's life-span. EMR vendors, particularly Epic, continue to refine and improve their own EMRs significantly and quickly, so any advantage brought by a product like DeliverHealth's will likely be short lived (two or three years at the most). Still, in today's competitive world, there are probably reasons to still move forward with DeliverHealth." —Non-customer C-level/executive

T5 iodine
Interact (formerly Artifact Health)

[Query Transformation Solution to Simplify Physician Response](#)

"Physician communication to the team is critical, and the larger EMR vendors have not made that process easy. This software appears to fill that void and does so with high marks. It should make the workload easier and more efficient. The system has yet another cost for the healthcare system to support." —Non-customer C-level/executive

T5 SyncTimes — Optimizing Clinical Efficiency and Patient Experience

"The tool is focused on the ambulatory clinical environment and improving efficiency in communication resource utilization. Patients will benefit from their active and passive participation in the improvement of workflow and efficiency of office visits. From the full implementation, a successful ROI will be gained in many realms, including team cohesion. As with most products, the success hinges on effective integration to existing l and PHM systems as well as normalized data available for enterprise analytics."
—Non-customer C-level/executive

T5 Vatica Health™ — Improving Risk Adjustment and Closing Care Gaps

Risk Adjustment and Quality of Care Solution

"Payers have an alternative method for engaging both patients and providers who have value-based contracts with them. Vatica Health has automated reports and previsit planning to maximize the efficiency of the office visit, maximize coding and payment, and improve outcomes. Their approach focuses on the payer as the agent and encouraging the change in both the patient and the physician. This is an effective method and could be very applicable for integrated health systems and payer-provider organizations. The initial ROI is mostly for the payer, so aligning incentives among patients, providers, and payers will be essential for long-term ROI and adoption."
—Non-customer C-level/executive

All Eligible Solutions

Click on any vendor name to access their full report.

Below are all 42 solutions and services that were eligible for an Emerging Solutions Top 20 award. Each was highlighted in a KLAS Spotlight or First Look report between January 2021 and May 2022 and received an overall score from customers of at least 85 out of 100.

1upHealth FHIR Platform
Atlas Health
AvaSure
Carium
CenterX Electronic Prior Authorization
CenterX Real-Time Prescription Benefits
Clarify Health Atlas Platform
CorroHealth Autonomous Coding
Datos Health Remote Care & Automation Platform
DeliverHealth
Enjoin CDI Services
Enterprise Health COVID Vaccine Module
Gozio Health
Healthlink Advisors IT Planning & Assessment
HealthTalk A.I.
Intrado HouseCalls Pro
Iodine Software Interact, formerly Artifact Health
Kit Check Bluesight Insights
Laudio Leader Operations Solution
MDsave
Notable
Nuance DAX
Olive End-to-End Prior Authorization (formerly Verata Pathway)
Optimize Health Remote Patient Monitoring

Pareto Intelligence Risk Solutions
PatientBond
Phox Health
Quil Engage
rater8
Smile CDR
SOC Telemed IQ
Spectralink Versity
Stellar Health Platform
SureTest
Swellbox Request Wizard
SyncTimes
SYNERGEN Health RCM Transformation & DOCTRIX
Upfront
Vatica Health Risk Adjustment and Quality of Care Solution
Virtus Informatics Derwaza
VisiQuate RCM Analytics
XSOLIS CORTEX

Participating Provider Thought Leaders

The provider thought leaders listed below are prominent members of the healthcare community with broad HIT expertise.

Chuck Christian
CTO
Franciscan Health

David Graham, MD
KLAS Advisory Board

John Halamka, MD, MS
President
Mayo Clinic Platform

Mark Jacobs
CIO
Delaware Health Information Network

Nicole Kerkenbush
Chief Nursing and Performance Officer
Monument Health

Patty Lavely
Vice President, Chief Information and Digital Office
Health Care District of Palm Beach County

Kara Marx
CIO
Northern Arizona Healthcare

Greg Nelson
AVP, Analytics Services
Intermountain Healthcare

Daniel Nigrin, MD
CIO
MaineHealth

Nassar Nizami
Executive VP, Chief Information and Digital Officer
Thomas Jefferson University and Jefferson Health

Milisa Rizer, MD, MPH
Chief Clinical Information Officer
The Ohio State University Wexner Medical Center

Donna Roach
CIO
University of Utah Health

Matthew Sullivan
CMIO
Atrium Health

Mark Weisman
CIO/CMIO
TidalHealth

J.D. Whitlock
CIO
Dayton Children's

Haipeng (Mark) Zhang, DO, MMSc, FAMIA
Associate CMIO
Brigham and Women's Hospital

Many of the participating thought leaders also shared the technology innovation themes they are most excited about and believe other providers should be aware of.

Across respondents, comments often focus on improving the patient and clinician experiences. For example, respondents discuss:
- Continued development of virtual care, including virtual remote patient monitoring and tools that are simple for patients to set up and access
- Ambient dictation capture
- Use of AI to improve efficiency and documentation
- Easy interoperability and the use of APIs

Participants' full comments on themes in technology innovation are shared below.

Chuck Christian
CTO
Franciscan Health

Virtual patient interactions in acute care settings
This can range from virtual sitters to virtual hospitalist rounding and so forth. Providers want one solution that can address multiple use cases rather than multiple solutions for each.

Virtual remote patient monitoring
This needs to be easily set up by the patient without a lot of hand-holding. It should be as easy as using an iPad.

Patient engagement
I am looking for a patient engagement solution that presents a standard approach to interacting with the patient, regardless of the care setting where the interaction occurs. These encounters should be able to be initiated by the patient, the provider, a family member, a care team member, etc.

CDS Hooks
Expand the use of CDS Hooks to make the EMR smarter, providing real-time information and feedback to clinicians and presenting information that is germane to the workflow and related to the patient's current condition or previous history. It could present what information is new since the last time the provider viewed the patient's record, and it could include not just EMR information but also information from outside organizations where the patient has received care.

Expand on Zero Trust security approach
We should be expanding on Zero Trust security, creating network designs and architectures that will function as one of the first lines of security defense for an organization.

David Graham,
MD
KLAS Advisory Board

Remote patient monitoring (RPM)
I believe remote patient monitoring holds the greatest opportunity for improved health outcomes, more efficient healthcare delivery, and lower cost to the overall healthcare system, along with improved satisfaction for patients, providers, and health systems. Most people's lives are lived outside of the healthcare system. So it is foundational that their habits, requirements, and challenges in regular life are documented and acted upon. The breadth of opportunity in RPM is staggering—from wearable sensors to EHR-integrated analytics and predictive outreach. Patients and families will have greater confidence in their partnership with the healthcare system knowing that they are being monitored for problems and having interventions scheduled. All elements of the Quadruple Aim are addressed with effectively executed RPM. These tools must integrate with data analytics platforms to ensure a full-spectrum view of patients, populations, and communities.

Patient engagement—digital front door
Another pillar for improving outcomes and satisfaction at low cost is patient engagement and activation through digital tools and other

communication improvements. Tied together with RPM tools, patient engagement adds the most valuable member of the care team: the patient. These tools must be simple and intuitive and offer bidirectional communication between the patient and care team. This will improve patient activation and patients' participation in their care while also giving patients and families a voice (which has been lacking) in the design of their care models. The time between healthcare encounters is the key to long-term health and safety. Filling the void between those encounters and activating patients to better health will improve lives and save money.

Ambient dictation capture

The burden of clinical documentation in the EHR and other required systems is a primary cause of burnout for clinicians of all disciplines. Nurses and physicians are especially susceptible to this burnout. Poor documentation also leads to lower payments and insufficient data for robust population analytics and planning. It is essential that we use natural language processing in an advanced way to capture statements and attribute them properly to the individuals in the exam room. Patients have become hesitant about many attempts to improve documentation and order efficiency, such as in-person or virtual scribes. Most patients prefer the intimacy of the individual patient-physician encounter. Ambient dictation capture helps to eliminate the sense of other ears in the room and improves patient confidence and trust. These tools offer great promise for improved patient-physician communication and interaction in medical facilities while lowering burnout for providers.

Telemedicine consultations and management

A constant struggle in healthcare delivery is access: access to care, access to treatments, access to specialists, access to prevention, and access to much more. At the same time, patients and families seek to be close to their home, loved ones, friends, and communities in times of medical need or disaster. We must strive to maintain and accelerate the momentum for telehealth services brought on by the COVID-19 pandemic. The entire healthcare ecosystem of the USA and the worldwide healthcare system will benefit from greater access to high-demand and low-volume specialties and treatments. One key component is advocating for payment for these services and adapting administrative barriers. We must challenge ourselves to keep looking to new models of care delivery for the benefit of our patients and our delivery systems.

Real documentation improvement

Improved clinical documentation has the most immediate effect on payments, and thus the return on investment is often easy to measure. However, the overall benefits to the healthcare delivery system do not stop at improved payments to physicians and health systems. True clinical documentation improvement, including more effective methods of documentation capture, will also offer improved outcomes like more personalized care, expanded volume of data for AI and ML tools to predict and prevent future diseases and maladies, and lowered documentation burden that so heavily contributes to clinician burnout. These are just some of the often long-term benefits of documentation reform. Governmental and payer regulation reform must accompany technologies that support more effective and efficient documentation.

John Halamka,
MD, MS
President
Mayo Clinic Platform

Technologies targeting reduced clinician burden
This is a key challenge in the post COVID-19 era.

Technologies to address employee retention
This is another key challenge in the post COVID-19 era.

Use of machine learning to optimize the patient and provider experience
Everyone needs to practice at the top of their license.

Integrating innovation into EHR workflows
No one has the time to use a bunch of separate point solutions.

Support for emerging remote care models
Remote care is an increasing expectation from patients.

Mark Jacobs
CIO
Delaware Health Information Network

Intelligent IT optimization and automation for administrative and workflow efficiency
Value-based care and challenges brought on by COVID-19 are forcing providers to be more efficient and rethink the way they do things. I prefer automation over manual and legacy tasks. Many of the technology innovations in this report assist in the people side of providing better care.

Analytics and data visualization for intelligent decision-making
Providers are used to measuring and monitoring patients and outcomes through clinical

metrics and visualization. Legacy workflows don't always allow for the efficiencies needed for that work; we need analytics, predictive modeling, and dashboards. What excites me is that the solutions presented in this report allow providers to practice how they were trained, especially if the tools are integrated into the EHR or administrative workflows, whether the patient is receiving direct care or virtual care.

Internet of things, cloud, and cybersecurity protection
EHRs, the internet, patient engagement, telehealth, and virtual care have transformed patient care and provider convenience. In many cases, patients no longer have to consider geography or distance when it comes to receiving care and especially receiving good health outcomes. Data liquidity has also created greater risk, and security is paramount for patient privacy and safety. I am excited about this because it ties into some of many of the innovations reviewed in KLAS' emerging technology research.

Easy interoperability (FHIR, APIs, and standards)
Interoperability standards and use of APIs are finally getting to a point of easy interoperability. I can foresee the day when the legacy methods and solutions left over from paper are no more and when patient and provider information is shared through plug-and-play data exchange.

Closing the loop in the patient care journey—virtual care and patient engagement
The patient journey does not end when the patient is wheeled to the door with their balloons and waved off by the care team. What excites me most about virtual care and patient engagement is that the journey of patient outcomes just starts when the patient walks through the provider's door. A patient's ultimate outcome is also about all the things that happen when the patient goes home. Historically, there were three casualties of legacy care: the patient's physical health, the patient's emotional health, and the patient's loved ones. Virtual care and patient engagement ultimately help minimize any of those casualties because the patient is embedded in their care.

Nicole Kerkenbush
Chief Nursing and
Performance Officer
Monument Health

Solutions that support maximal use of the healthcare workforce we have and decrease FTE burden
The workforce challenges we face will cripple our industry in the next few years if we are unable to reinvent care models. We need our technology vendors to help us rethink how we deliver care more efficiently. We can no longer afford to bring in technology that requires more FTEs to operate. We need technology, such as ambient monitoring, that can decrease the need for the clinical workforce and allow our caregivers to provide care at the top of their license, certification, and/or training. I am not sure we are ready for robots that draw blood, but maybe that is what we need to be thinking about. As more healthcare delivery organizations face difficult choices about continuing or ending services, technology must be considered as part of the solution. Many of the vendors in this report focus on telehealth, but I believe we need to think bigger.

We also need technology that assists with caregiver engagement and managerial oversight of caregivers. Our healthcare leaders are being asked to take on more responsibility at the same time we are asking them to ensure the retention of current workforce. We must use technology solutions to help them make sense of the multiple data points they gather each day. For example, which nurse wants to work eight-hour shifts? Which environmental services employee is going to nursing school? Which employee just sent a child off to college and may be struggling with this life change? There are so many things we could do to support our workforce if we can make the data actionable.

Our rural areas are losing their healthcare delivery options, which will create different population migration patterns, forcing people to live in cities near the healthcare they need. This will have a profound impact on our culture and way of life. What technology solutions can prevent this?

Solutions aimed at engaging patients in their healthcare
Patient engagement in reducing healthcare costs and remaining healthy can positively contribute to cost-containment efforts. I would like to see more technology aimed at supporting this partnership. Many times patients and their loved ones are the best sources for determining the best course of treatment, but we need to be able to capture their input and preferences.

Solutions that help healthcare delivery organizations achieve the objectives of value-based care
Achieving value-based care objectives will be critical for the continued survival of many healthcare organizations. We will need to be able to access data that can provide insights into our progress toward these objectives. These needs are complicated by the challenges with multiple insurance companies who are protective of claims information. If technology can assist with obtaining and analyzing healthcare usage (claims) information without negatively impacting the healthcare insurance market this would be very helpful. This is a classic example where people, process, and technology have to work together to find a suitable solution.

Patty Lavely
Vice President, Chief Information and Digital Office
Health Care District of Palm Beach County

Using AI for nonclinical functions that make a difference
The industry has tried to use AI in areas that require clinician intervention, and we have lacked buy-in. However, another great use is pharmaceutical and medical preauthorizations that allow patients to get their medications and to follow up, and that has a direct positive impact on patient outcomes.

Improvements in interoperability
New innovations are driving better interoperability. One example is vendor-agnostic interoperability, which must be our future.

Robotic process automation (RPA) in revenue cycle
RPA in revenue cycle is a no-brainer. Staffing is a real challenge today. RPA technology not only reduces human error but also helps reduce FTEs.

Advancements in ambient technology
Using ambient listening for an exam room encounter is the future of clinical documentation. This is the solution to reducing physician burnout related to EMRs.

Automation around home delivery of medications, patient monitoring, and pickup of lab specimens
Automation is a game changer when it comes to hospital-level care at home. Delivery or courier services and software are not a core competency of hospitals or their IT staff. Technology will allow high volumes of at-home deliveries related to healthcare. Integration with the medical record allows clinicians to treat patients who are at home and have it documented. It also removes some barriers to care, such as transportation.

Kara Marx
CIO
Northern Arizona Healthcare

Integration of AI and ML into other solutions
AI and ML are becoming increasingly popular technology to embed in new solutions. The power of these tools enhances a solution's value and ideally reduces the need for human intervention in an already-strained workforce environment.

Cloud-based solutions that solve real problems
The increasing agility of cloud-based solutions allows these products to be highly targeted and get to market and be implemented quicker. Although the increasingly common subscription business model will put a strain on organizations, the shift in resource support is welcomed.

Increased use of APIs
More and more solutions are leveraging APIs to create rapid integration. It is extremely valuable to be able to move quickly and gain product integration outside of traditional HL7 work. The more we can share data, the better the data is for care and decision-making.

Greg Nelson
AVP, Analytics Services
Intermountain Healthcare

Patient engagement
We need to engage patients no matter where they are on their journey.

Care processes/pathways derived and monitored
We need the ability to derive and monitor nuanced, personalized care processes.

Patient-centered tools
I realize the payment side of patient-centered tools is tough. But I would like to see more solutions that are more patient centered rather than focused on health system issues.

Big data/analytics
I was surprised there aren't more AI-enabled vendors in the emerging space. There are lots of automation tools as well as some high-touch solutions, but they lack benefits like algorithmic efficiencies and derivation of insights.

Daniel Nigrin, MD

CIO

MaineHealth

Voice-enabled documentation

Ambient clinical documentation captured clinicians' imagination several years ago when it was first introduced. When perfected, this technology will truly be a game changer, allowing clinicians to once again focus on their patients rather than the documentation. Although we aren't fully there yet—right now it takes human quality assurance in the background to ensure high-quality output—my sense is that we are rapidly getting to the point where clinical documentation will automatically be ready at the time the visit is completed. Hopefully eliminating the human QA will also help reduce the cost for this technology as well. This is truly Star Trek–level stuff.

Remote patient monitoring (RPM)

Keeping patients out of acute care facilities was a key factor during portions of time during the COVID-19 battle. But this is a concept that we should and have rightfully adopted regardless. When conditions allow for it, it is better for patients to be cared for in their own homes. Use of RPM tools will allow for more conditions to be managed this way.

Patient-facing communication/interactions

There is a whole lot of attention on improving interactions, communication, and education for patients through more modern modalities, like SMS. This will certainly help to increase patient engagement and adherence, ultimately improving their care. This is also likely to decrease costs by streamlining workflows, reducing no-shows, and so forth.

Focused attention on value-based care and its needs

Value-based care is becoming increasingly important as the healthcare industry continues to struggle with improving outcomes while constraining costs. It is good to see several solutions focused on allowing providers to identify the conditions that warrant attention to ensure healthier populations as well as helping maximize providers' revenue while caring for those same patients.

AI-backed visual systems

I have seen interesting work coming from vendors that use video and audio technologies backed with sophisticated AI to solve many existing intrahospital problems, such as elopement, falls, hand hygiene, nursing check frequency, and so forth.

Milisa Rizer, MD, MPH

Chief Clinical Information Officer

The Ohio State University Wexner Medical Center

The use of big data for better insights

For over 15 years, we have required physicians to change their way of documentation to do more data entry and less storytelling. It is clearly time for the data to be used for discovery, improved efficiency in care, improved outcomes, and so on. Data is not just nice to have; it is a must-have.

The use of AI for improved, more efficient documentation

The documentation burden on physicians with all the billing, quality, and government regulations has gotten totally out of hand. It has affected the physician-patient relationship in a negative way. The use of ambient listening and transcription during patient visits has the potential to allow documentation to be left to the computer and to truly put the joy back in seeing patients.

Improved cataloging and access to philanthropic organizations and opportunities

With the loss of jobs and businesses closing during the pandemic, the ability to access philanthropic opportunities quickly and reliably is more important than ever. Easy access to those opportunities is critical to providing healthcare to the underserved.

Simple opportunities for patient interaction with the system for updates, appointments, scheduling, etc., through the use of data acquisition

The ability to use in medicine what other organizations have used for years is critical in this age of advancing technology. Patients want a quick and easy way to get an appointment, cancel an appointment, get directions, and so on without having to talk to a person. Some may still need to talk to a person, but we need to realize that patients waiting on hold for extended periods of time is not helpful. There are a lot of opportunities in this space that need to be taken advantage of.

Donna Roach
CIO
University of Utah Health

Expand virtual care
Patients no longer want to take time off work, drive to an appointment, and wait in waiting rooms just to spend 15 minutes with their practitioner. We look to deploy telehealth solutions that help patients navigate patients and clinicians coordinate along a personalized care journey. We plan to minimize the use of clinic resources for virtual visits and define target virtual visit proportions for each specialty by utilizing a sustainable technical support model.

Ease access
Patients seek a personalized digital experience to find care, schedule appointments, and navigate the system. We look to standardize online offerings, referral access, and specialty care by providing patients with self-service omnichannel access points. We plan to leverage artificial intelligence and machine learning technology to enable consumer-centered experiences and orchestrate care.

Manage chronic diseases and expand remote patient monitoring
The future of healthcare exists beyond our four walls, and we need to think of healthcare anywhere. We will leverage remote monitoring for patients leaving the hospital who need close follow-up or for chronic disease patients who need higher management. This will ultimately reduce readmissions, improve care transitions, and extend the care team's reach. We are looking to create platform capabilities for geographic and rural outreach to address health equity and population health. 5G integration with medical devices will be important for enabling connectivity between devices used in our facilities and devices sent home with patients so that we have real-time communication back to our systems. Home devices with 5G reduces dependency on a patient's home internet, which will be a barrier as we do more remote patient monitoring.

Artificial intelligence
Practitioners are being asked to ramp up patient volumes, improve care quality, and optimize the patient experience. Care teams are already overstretched and operating margins under pressure, so the time is now to automate processes to drive efficiency and increase capacity. We plan to move forward with AI imaging interpretation, workflow optimization, patient-safety monitoring through video and audio sensors, AI smart room automation, AI predictive analytics, decision support, and algorithmic medicine. We are also exploring virtual reality and augmented reality as well as the gamification of consumer apps.

Consumer/patient experience
We want to anticipate patients' and caregivers' needs and meet people where they are at. We look to reimagine hospital and clinic experiences to be touchless, self-service, and centered on the consumer/patient while also aligned for growth. We plan to build a new hospital of the future with smart room technology, guardian angel services, and real-time location services. We seek real-time patient feedback via a closed-loop communication channel so that we can deploy immediate changes with more meaningful and specific feedback.

Digital architecture
We are committed to ensuring that the underlying infrastructure and architecture can support all digital opportunities. Infrastructure modernization is foundational to our digital transformation efforts and includes the broad use of cloud technologies and new digital health platforms integrated with on-premises legacy systems. Central to the digital architecture is our information architecture, which serves as the data foundation to all systems and platforms. Interoperability between the many components of our digital and information architectures is key to abstracting complexity and providing integrated, seamless consumer and provider experiences. We are establishing several support structures to ensure our digital architecture aligns with our digital strategy, including a digital architecture review committee, a cloud center of excellence, and an automation center of excellence to facilitate rapid adoption and deployment of cloud and other transformational technologies.

Matthew Sullivan
CMIO
Atrium Health

- Patient engagement
- Remote patient monitoring (RPM) integration
- Transition to value-based care
- Decluttering of the work of healthcare
- Integration

Mark Weisman
CIO/CMIO
TidalHealth

Staff engagement
I am excited to see a tool devoted to improving staff engagement, especially one that integrates with time and attendance systems. Staff morale is low related to COVID-19 and staff turnover, and the ability for leadership to gain insights into their people is critical. Without our people, healthcare does not happen.

Remote patient monitoring
Remote patient monitoring is moving into the mainstream, and this is good for patients. Healthcare happens in between office visits and hospital stays, and we need tools to help us engage with patients on a regular basis. EMR vendors will move into this space with more investments and make remote patient monitoring a core feature, but until they do, the bolt-on solutions are good options. The tighter the integration, the higher the adoption. The challenge for all the vendors in this space is to deliver curated insights that clinicians can act on instead of dumping large volumes of data into the in-basket.

Patient engagement solutions
Removing the friction of interacting within the healthcare journey is critical to improving the health of our patients. Too many patients will disengage if there are roadblocks put in front of them, but they generally will do what is easy. We must make it easy for them to reach us. Most health systems will use their EMR and the associated patient portal. If they don't have a robust solution, a bolt-on can work but will create workflow headaches when the data doesn't integrate well. Patient engagement using psychographic segmentation has the potential to be a game changer in terms of achieving outcomes.

Ambient technology
The ability to sit in an exam room or at the hospital bedside and just talk to a patient without being a slave to the keyboard is the holy grail, but it has remained elusive. Nuance DAX is coming close, but until documentation becomes fully machine automated, the costs will remain out of reach for most provider organizations in the country.

Acute care telemedicine
The need for specialists in remote parts of the country will only increase, and the quality of care available to patients should not be determined by their zip code. We must extend the knowledge of these specialists to all parts of the country, and acute care telemedicine is the only way to do this economically. This area of medicine will expand if the payment methodologies support the growth.

J.D. Whitlock
CIO
Dayton Children's

Increasing use of enterprise EMR app stores
After looking at the KLAS ratings, one of the first things I check when talking to a new vendor is whether other health systems that use our EMR have implemented the new vendor's application through our EMR app store. It was great to see that in a few cases, relatively new vendors have had quick growth through customers implementing their application via their EMR app store. This is important because the promise of EMR app stores was that good ideas could be rapidly adopted with less integration efforts. Adoption has been slow until recently.

Real innovation in revenue cycle
One of the nice things about innovating within the revenue cycle is that patients aren't killed if we get things wrong, so we can innovate faster. It is nice to see tools like Atlas Health's that are introducing net-new capabilities. In Atlas Health's case, they are helping to ease the burden of connecting patients with philanthropic aid.

Maturation of offerings focused on the patient experience
We can all agree that most health systems have a way to go in terms of improving patients' ability to find the right provider, access, and payments. It is nice to see vendors like Notable that are approaching the problem holistically.

Efficiencies optimizing enterprise EMR and ERP
As more health systems are on both single enterprise EMR and ERP solutions, they can focus more than 80% of their optimization efforts on just these two platforms. That is the good news. The downside is that these massive enterprise platforms require a great deal of care and feeding, especially in terms of upgrade cycles and testing. It is nice to see vendors like SureTest tackling the problem and providing a healthcare-focused automated testing platform that includes large libraries of commonly used test scripts.

Look for strategically important capabilities that enterprise EMR and ERP vendors are not going to do (or do well) in the next three years
The trickiest task related to adopting innovative new technology in a health system is having the wisdom to know when to pull the trigger on a new vendor and when to wait for (and/or put significant effort into building) capabilities from enterprise EMR and ERP vendors. This wisdom

requires a well-executed and well-communicated enterprise strategy, sophisticated governance processes, and deep knowledge of the EMR and ERP vendors' road maps, all of which are easier said than done. My last piece of advice to health systems on technology innovations to consider is just to make sure their governance process can handle everything.

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- Using ambient technologies to streamline clinical workflows
- Patient-reported outcome measures (PROMs) solutions
- RTLS and digital mapping of physical spaces
- Natural language processing/chatbot technology to scale patient engagement
- Better analytics tools for business intelligence in healthcare

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Our Mission

Improving the world's healthcare through collaboration, insights, and transparency.

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