

The New Landscape Of Healthcare

What Healthtech Startups Need To Know To Win

Introduction

The United States is home to over 6,000 hospitals, a diverse ecosystem that includes general medical and surgical hospitals, psychiatric hospitals, and specialty institutions such as pediatric, rehabilitation, and oncology centers. This network of hospitals is critical to the U.S. healthcare system, providing essential care and services to millions of Americans annually.

Understanding this ecosystem, the roles different types of hospitals play, and the common challenges among them – like financial pressures and staffing shortages – is crucial for anyone looking to innovate within the healthcare industry.

There are a myriad of healthtech startups being built today all with the goal of disrupting the way we've been providing healthcare for decades and advancing it in meaningful ways. According to [a report by Bessemer Venture Partners](#), "by the end of 2023, health tech venture funding is set to be six times greater than funding in 2012".

As AI is incorporated into surgeries and diagnostics, as remote care becomes more embraced as a way to expand access to healthcare, and as patient outcomes become increasingly tied to the bottom line, there are a lot of exciting areas founders can be exploring right now.

However, the reality stands that healthcare systems and hospitals are still experiencing ongoing recovery post COVID-19 pandemic financial challenges. A report by KaufmanHall suggests that while operating margins improved in 2023 they remain below pre-pandemic levels. With continued significant labor shortages and high turnover healthcare institutions are still facing financial pressures. At the same time, there is an overall cautious optimism for recovery as financial reserves and market conditions improve.

Those leading the charge in innovation at health systems are operating at the intersection of innovation and tightening margins. They need to consider innovations that generate revenue and address the challenges putting strain on their systems before they can invest in strategies that will put them at the forefront of change. But what exactly does that look like? What should early-stage founders be solving for at this critical juncture in healthcare?

Approach

To find out, we connected with innovation and technology executives at four of the largest and most innovative health systems in the US, including Shai Ran Sapir, Technology Development Manager at Mayo Clinic Ventures, Sandra Powell-Elliott, Chief Innovation and Commercialization Officer at Hackensack Meridian Health, David Heenan, Managing Director at Cone Health Ventures, and Matthew Zenker, Director of Deal Flow and Investments at University Hospitals Ventures.

This whitepaper is an amalgamation of the challenges, focus areas, and current initiatives across these four healthcare systems in order to help early-stage healthtech founders build in the areas where innovation is most needed, namely, streamlining operations to compensate for staffing shortages; reimagining healthcare in today's hybrid & remote world; access to care and improved patient outcomes, and; the intersection of AI and early detection.

Innovation Opportunities in Healthtech

- 1. Operational efficiencies**
- 2. Remote and hybrid care**
- 3. Access to care**
- 4. AI-driven early detection and diagnostics**

6000+

hospitals exist and operate in the
US alone

Streamlining Operations to Compensate for Staffing Shortages

Staffing shortages are potentially the number one challenge for health systems right now. Pre-pandemic, there were already difficulties recruiting and retaining sufficient staff, particularly in specialized roles and in rural areas. During the pandemic this worsened as 100,000 nurses exited the workforce, and projections indicate that by 2027, nearly 900,000 nurses — which is close to one-fifth of the total 4.5 million registered nurses — plan to leave their positions. With fewer doctors, nurses, and administrators, there has been a strain put on current staff causing both burnout and prolonged hospital admissions, directly impacting patient outcomes and the bottom line.

Hospitals are looking for ways to create operational efficiencies that create the capacity for staff to provide better patient care. There are many exciting and innovative solutions in the works, and a lot of white space still to be filled. Mayo Clinic, for example, utilizes geo-tagging and computerization for hospital carts to precisely track the location and amount of medical supplies and equipment within the hospital in real-time. This both manages inventory and ensures that the necessary equipment is readily available where and when it's needed, enabling on-the-floor staff to deliver better, faster care.

20%

of nurses are projected to leave
their positions by 2027

“Nearly every cart at Mayo Clinic is not just located through geo-tagging, but is also computerized to manage inventory automatically. For example, when a specific item like a catheter is taken from a cart, the system is notified and it triggers an administrative process to ensure that the item is restocked as soon as possible. It allows us to maintain an optimal level of supplies without manual counts or checks, making sure we never run out of critical items, and at the same time streamlining the workflow for our nurses.”

Shai Ran Sapir,
Mayo Clinic Ventures.

Cone Health has taken significant steps toward incorporating remote patient monitoring and virtual assistance into patient care in order to allow for more efficient use of nursing staff. They have installed cameras and televisions in patient rooms enabling a model whereby one nurse can monitor the vitals of an entire floor from a central location, reducing the need for physical rounds and facilitating quicker response times to patient needs.

Hackensack Meridian Health is engaging its team members in innovation challenges aimed at identifying and solving operational challenges, such as reducing the length of stay in hospitals. By tapping into the firsthand knowledge of those who interact with patients and the healthcare system daily, the organization can uncover practical, impactful ways to enhance care delivery and operational efficiency. This type of initiative also contributes to staff retention – by making problem-solving and innovation a collective effort it helps all staff members feel engaged and valued.



Healthtech Startup Spotlight

Deepscribe is reimagining clinical documentation by using ambient AI to transform patient conversations into fully customizable, detailed clinical notes for any specialty or care setting – saving clinicians time while allowing them to focus on patient care.

“It is so important that we make the most out of the people and tools already available within the organization. For example, we are using the electronic health record (EHR) system more effectively to prioritize patient care needs and streamline operations, such as ensuring timely consultations and managing discharge processes efficiently. This approach not only improves patient care but also supports staff in managing their workload more effectively.”

Sandra Powell-Elliott,
Hackensack Meridian Health

Similarly, Mayo Clinic Ventures explores thousands of innovation ideas annually from Mayo Clinic staff, willing to meet with anyone internally interested in advancing healthcare technology. They especially like hearing from non-physician employees who they believe can bring a unique perspective to administrative tasks, which can lead to solutions that save substantial time and dollars every year.

In sum, healthtech startups that can create operational efficiencies that remove friction for hospital staff, improve the work environment, and enable them to provide better care are likely to capture hospital venture spend going forward.

Reimagining Healthcare In Today's Hybrid & Remote World

The COVID-19 pandemic severely restricted in-person healthcare and as a result virtual care emerged as a critical alternative in the United States. This period marked a significant transformation in healthcare, whereby the global virtual care market, in terms of revenue, is estimated to grow from \$180.2 billion in 2023 to \$549.7 billion by 2028, at a CAGR of 25%.

There is an increasing amount of importance being placed on remote and hybrid care models, both in the context of developing more patient-centered and flexible solutions, and helping healthcare providers capture dollars that can't be captured in person. Key initiatives today span areas such as virtual primary care and hybrid outpatient rehabilitation

Cone Health introduced a Virtual Primary Care initiative during the COVID-19 pandemic, and recognizing the effectiveness and patient preference for these services they decided to further develop and formalize these offerings. One example is a subscription service that provides patients with a device that can perform multiple basic medical examinations at home for areas like ears, nose and throat. These types of patient concerns would otherwise require a doctor's visit or remain untreated and potentially lead to more complicated, serious health issues.

Cone Health has also developed an intelligent patient routing system that suggests an online doctor visit when it fits their needs. For example, if a patient's age and symptoms suggest an online visit would work well, the system can set up a virtual appointment in just 24 hours, rather than making them wait longer for a face-to-face visit. This approach aims to make it easier for more people to get care quickly, while saving in-person visits for more acute situations that tend to have higher margins for the health system.

"This is an evolution of what we had put in place during COVID that a lot of people liked. Now, we have an entire virtual primary care service line that works in a couple of different ways. One, you can sign up for a subscription service, and we send you a device called Nonagon. It does eight or nine basic medical exams all on one little stick that is approved by the FDA to be self-administered. It can diagnose strep throat or an ear infection and then prescribe you the associated medicine, all from the comfort of the patient's home."

David Heenan,
Cone Health Ventures.

Hackensack Meridian Health is currently focused on creating a smoother transition from inpatient or acute care to home care. Their goal is to enhance the patient experience and ideally improve outcomes by providing care in a more comfortable, familiar setting. It also helps keep their patients engaged with care long after they leave their facilities.

Remote/hybrid care also addresses the challenges posed by the financial model whereby providers are compensated based on patient outcomes. Outcomes are often influenced by factors beyond the physician's care making it difficult for hospitals to be in control of this revenue stream. For example, in-hospital physiotherapy is only as impactful as the patient doing ongoing exercises at home in between sessions. Patients are the ones driving critical aspects of their outcomes, from showing up to sessions to doing the work in between to taking their medication, and so on.

This is where remote health coaching, a new category of billable services, has become very interesting to hospitals. Hybrid care introduces a way for hospital staff to be more involved in this part of the process, putting more of the hard-to-control health variables back in the hands of the care provider, contributing to positive long-term impact on the patient outcome. For example, University Hospitals is exploring programs to support patients on multiple fronts across nutrition, mental health, exercise, and stress levels, designed to serve as a "lifestyle medicine" support system. The challenge here, and therefore an opportunity for layering in new technology, is with the logistics of billing, tracking, and scaling impact.

Mayo Clinic is also developing resources to provide patients with personalized education videos delivered in a culturally, racially, and socially relevant manner. This approach aims to enhance the patient experience by making the educational materials more relatable and therefore more likely to be consumed and integrated into their self care process.

"We're working with a company called GistMD that is tailoring education videos, either pre- or post-ops, to the ethnicity, age and even eye color of the patient. The patient can then really connect with the person on the video and is more likely to use the content as part of their recovery"

Ran Sapir, Mayo Clinic Ventures



Healthtech Startup Spotlight

PatchRx provides smart technologies and a dedicated team of personal care staff to help patients manage their medications in order to boost adherence and, in turn, improve patient health outcomes. They also offer remote therapeutic monitoring to provide support and guidance for chronic medication patients.

Access to Care & Improved Patient Outcomes

There are significant disparities across the U.S. when it comes to in-person access to hospitals. Many people in rural areas live more than a half-hour drive from the nearest hospital, making it difficult to access ongoing care. According to the [University of North Carolina's Sheps Center](#), as of 2020, there have been 192 rural hospital closures since 2005, exacerbating access issues in these communities.

There is a direct correlation between access to quality healthcare and improved health outcomes. [The CDC](#) highlights that better access to care, including preventive services like blood pressure screenings, is associated with reduced rates of hospitalization and emergency department visits. As health systems have a vested interest in health outcomes, there has been an increase in focus on solving the problem of access.

Cone Health offers virtual primary care and virtual cardiac rehab in order to increase access to their healthcare services. By removing geographical barriers and reducing wait times for appointments, their goal is to serve a broader patient population. While they acknowledge that the cost-effectiveness and potential for higher margins with virtual care are still under evaluation, they believe that shifting in-person visits toward more acute and higher-margin situations will yield both financial and care quality improvements.

Mayo Clinic Ventures is especially focused on expanding access to healthcare. They don't build any innovations specific to Mayo Clinic's systems. Instead, they tailor their tools and solutions so that hospitals all over the world can adopt and use them, and in turn provide access to patients everywhere.

"Access to healthcare is a problem as there are a set number of providers. We are exploring ways to reach more patients around the world with that limited number of providers by democratizing hospital access to new technologies we build here."

Shai Ran Sapir,
Mayo Clinic Ventures.

The global virtual care market is estimated to grow to

\$550B

by 2028

“A lot of people assume that virtual care is more cost-effective, but there is a lot of backend technology and other things that go into it, such as finding the right doctors that work the right shifts at the right time. The number one priority is to increase access for those that are not geographically close to one of our sites. Second to that, offering virtual primary care in a market where patients have increasing options like subscription-based health services helps Cone Health retain patients and prevent customer leakage to other providers.”

David Heenan, Cone Health Ventures

Hackensack Meridian Health is approaching the challenge of accessibility internally across their vast network of hospitals and facilities. They are the largest health delivery system in New Jersey, with 18 hospitals, around 37,000 employees, and nearly 8,000 physicians. They have a wide range of facilities, including three academic medical centers and over 500 ambulatory care locations to cover almost every aspect of the patient care continuum. Powell-Elliott commented, "my role is very interesting in the fact that I'm not only trying to drive internal innovation but figuring out how to methodically get our solutions to our multiple locations, and in turn to thousands of more patients across the country."



Healthtech Startup Spotlight

Remo Health is a virtual dementia care provider designed to support patients and their family caregivers from pre-diagnosis through end of life. Their platform democratizes access to dementia care by bringing world class clinical care to patients at home through virtual visits with a dedicated team of doctors and dementia specialists. They also empower caregivers with a thriving peer community and evidence-based dementia content.

While accessibility remains an important focus for health systems, some are not yet sold on remote care as a revenue generating model. University Hospitals embraced the shift to Hospital at Home and Remote Patient Monitoring (RPM) during the COVID-19 pandemic. However, Zenker and his team are re-evaluating the value and future growth of this model, as well as how to effectively expand and integrate it into their broader care delivery system. They are taking a more cautious approach due to cost considerations and are exploring revenue-generating models for RPM that are less reliant on large-scale system integrations and more focused on specific, revenue-positive applications.

While some are moving forward cautiously, others are bullish. The big opportunity here for startups is to build scalable, cost-effective remote and hybrid care solutions that will democratize access to healthcare and navigate hospital system constraints and budgetary limitations.

The Intersection Of AI and Early Detection

We are at the frontier of AI and healthcare, with so many areas yet to be explored. While at some point in the future there won't be any area of healthcare untouched by AI, early detection and diagnosis are some of the earlier use cases. Well known innovation examples of this are [AliveCor's Kardia](#), a personal, at-home ECG device using AI to detect atrial fibrillation, bradycardia, and tachycardia, and [Google DeepMind Health](#), AI for eye disease detection through retinal scans.

As with AI in every industry right now, there are conversations happening about the technology's accuracy, accountability, and equity. Many health systems are waiting until AI is more stable and safe before incorporating it into high-stakes medical tasks. Some are looking at AI-human collaboration to find a way to deliver the most reliable results. A recent paper co-published by [Nature Medicine](#) and [Google Research](#) proposes CoDoC (Complementarity-driven Deferral-to-Clinical Workflow), "an AI system that learns when to rely on predictive AI tools or defer to a clinician for the most accurate interpretation of medical images."

As with anything of a contradictory nature, concerns also provide more opportunities for innovation. And so there is space for AI health startups that can contribute to greater accuracy for detection, diagnosis, and treatment plans.

Radiology, the lowest-hanging fruit in terms of AI applications, is currently leading the charge in incorporating AI, a well-supported claim in numerous publications, academic journals, and industry analyses. [The Radiology Department at University Hospitals is teaming up with UH Ventures](#) on a project that capitalizes on the research capabilities of UH radiologists in the realm of AI. This new venture is actively engaging with global startups to assess the potential of cutting-edge AI technologies in radiology, including algorithms designed to detect fractures or strokes in patients.

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University Hospitals has also created a platform called RadiCLE that enables external companies to train and validate AI algorithms for research and commercial applications by leveraging de-identified UH imaging data. To support this initiative, they established a new center with dedicated resources and personnel specifically to manage finding, sorting, annotating, de-identifying and making available data while ensuring privacy and compliance standards are met. Their goal here is to accelerate the development of tools to supplement doctors' review, detection, and decision-making processes.

University Hospitals Ventures is continually refining their AI strategy while navigating their many internal point solutions and determining how these can all be consolidated to create coherent and effective AI-driven radiology services. All of this suggests that University Hospitals is actively exploring partnerships with startups that are offering promising AI solutions in radiology, especially those that can work within and improve their current infrastructure, diagnostic accuracy, and ultimately, patient care.

Cone Health is partnering with technology companies like Rad AI to utilize AI to automate the analysis of radiology images. Their goal is to speed up the diagnostic process and also significantly reduce the manual workload of radiologists, allowing them to focus on more complex cases. It also contributes to cost reduction and enhanced quality of patient care by ensuring high-priority tasks are allocated to human professionals where they are needed most.

“RadAI automates looking at radiology images, identifying incidental findings, and populating the radiology board. We co-developed a system with them that both automates those things and ensures that patients get the proper communication about them. This was a very manual process that now only requires half a full time employee and processes 50,000 of those instances a month.”

David Heenan,
Cone Health Ventures

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University Hospitals is actively exploring partnerships with startups that are offering promising AI solutions in radiology, especially those that can work within and improve their current infrastructure, diagnostic accuracy, and ultimately, patient care.

Mayo Clinic is actively working on a number of projects leveraging echocardiogram (ECG) AI for diagnostic and therapeutic advancements. At the forefront of these efforts is Anumana, a solution that integrates AI with ECG analysis to detect heart disease and predict the outcomes of medical procedures beyond the capabilities of the human eye. This work not only represents a crucial leap toward improved preventative care, but also transforms both the accessibility and interpretation of sonographic images, further revolutionizing the field. Mayo Clinic is also developing a way to use biomarkers, specifically voice analysis via smart device, to detect potential cardiovascular issues. This is one of the first integrations of wearable technologies and electronic health records (EHRs), empowering physicians with comprehensive tools to diagnose hidden conditions.

Hackensack Meridian Health is exploring the use of AI in imaging to identify high-risk patients for conditions like sepsis and chronic kidney disease early. They have also invested in Canary Speech, a technology leveraging AI to analyze speech patterns in order to understand, monitor and diagnose neurological conditions, offering a user-friendly and potentially less invasive method for patients.



Healthtech Startup Spotlight

Bloch Quantum is revolutionizing breast cancer detection by marrying near infrared light and ultrasound with artificial intelligence and computer vision to yield high quality functional insights and streamline image interpretation, allowing for more accurate and earlier cancer diagnoses.

Powell-Elliott highlights the potential of Canary Speech to automate processes like depression screening, which traditionally relies on self-reported questionnaires. She suggests that the technology could analyze a short speech clip to assess for signs of depression, providing a more objective and potentially more accurate assessment tool. She goes on to talk about the importance of Hackensack Meridian Health's strategic decisions in AI investments.

"We, as an organization, are going to have to figure out where we want to spend our time, effort, and energy for developing proprietary AI-powered products given our exorbitant amount of data from our health ecosystem."

Sandra Powell-Elliott,
Hackensack Meridian Health

In sum, given what we're already seeing with radiology, ECG and other early detection innovations, the possibilities for AI integration across the healthcare space will be perpetual as time progresses, and a huge opportunity for those building in the space.

Implications for Early Stage Founders:

What Does This All Signify?

Navigating a sale into a health system as an early-stage startup can be very challenging and can take twelve to twenty-four months or more. Healthtech founders need to understand how executives at their target health system(s) are approaching innovation before talking to them, and be open to starting with proof of concepts and design partnerships first.

University Hospitals' mandate for startup investing prioritizes establishing a relationship with a company first, often through pilots or advisory roles, before considering investment. This approach ensures there is a practical connection or use case for the startup's solution within the hospital's ecosystem before any financial commitment is made. They draw heavily on the insights and expertise of the hospital's clinical and administrative leaders to ensure that investments contribute to improving patient care, operational efficiency, and the overall quality of services offered by the hospital. Their evaluation process also considers the hospital's current constraints like budget limitations or the need to integrate with existing IT systems like Epic. This pragmatic approach reflects their understanding of the need to balance innovation with operational realities.

Hackensack Meridian Health's approach to engaging with startups is a balance between investing in promising ventures and being cautious with emerging technologies like AI and machine learning.

"We usually invest at the Series A level if it's a company that we feel we can add strategic value to. We look at both the technology today and the time frame that it may take for that technology to really evolve. For example, we've become less risk-averse on clinical components like diagnostic technology, therapeutic technology, and readmission reductions, and more risk-averse on the use of AI and machine learning – mostly because we know that AI is going to move and evolve very rapidly and so we don't know the best way to make those bets at this point in time."

Sandra Powell-Elliott,
Hackensack Meridian Health

Navigating a sale into a health system as an early-stage startup can take up to

14 Months

Cone Health is exploring healthtech startups that offer solutions aligning with their strategic objectives to enhance patient care, improve access, and drive operational efficiencies. They are also looking at startups that offer solutions for financial challenges such as revenue cycle management and supply chain efficiencies that reduce the costs associated with medical supplies and equipment.

Ultimately, open collaboration between startups and health systems will need to come first before any deals are signed. Hospitals want time to develop a partnership, ensure strategic alignment and a deep understanding of their unique challenges, and ultimately, build solutions together that are tailored to that health systems' specific needs.

“In order for early stage healthtech founders to get in front of top executives at the forefront of innovation, there are a few things to look for: prospects that have a tendency to be an early adopter, doctors at health systems that have been advisors at other successful health tech startups, health systems with venture arms or technology development teams and ideally have invested in companies as early as seed stage, or finally health systems who have a Chief Innovation Officer and that person is connected to early stage VC’s and/or startup founders on LinkedIn.”

Michael Cardamone,
Forum Ventures

Conclusion

In conclusion, the healthtech landscape is undergoing an unprecedented surge in innovation and potential. Health systems and hospitals are considering and laying out their strategies for AI and care, with most approaching this area cautiously, understanding that accuracy is paramount in this industry more than others and so AI models and algorithms need to be more accountable before moving forward.

As the industry continues to evolve, startups that are solving for critical impact areas such as improved health outcomes, increased operational efficiency, staff retention, and enhanced access to care will become the next generation of healthtech pioneers.

Market Map

Forum Ventures has developed an early stage (Pre-Seed to Series A) healthcare market map to highlight those building in one of three categories:

1. Healthcare staff management
2. Evolution of digital health
3. Operational productivity in healthcare systems

To view a live, searchable and filterable version of this market map, [click here](#).

forum **Early Stage Healthcare in North America: Market Map**

Staff Management

SCHEDULING AND STAFF INSIGHTS



WORKFLOW AUTOMATION



Digital Health

PATIENT ENGAGEMENT, PATIENT JOURNEY, PATIENT MONITORING, VIRTUAL CARE



Productivity and Efficiency as Contributors to Health Outcomes

DETECTION AND DIAGNOSIS



RESEARCH, DISCOVERY, DEVELOPMENT



Contributors



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Shai focuses on identifying and protecting new technologies related to cardiovascular health and collaborate with external partners to explore co-development opportunities with Mayo Clinic to bring innovative solutions to patients worldwide.



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Sandra focuses on the development and implementation of the Life Sciences Research Enterprise at the Center for Discovery and Innovation as well as the development and implementation of a network wide innovation strategy to leverage innovation to drive new care processes.



David Heenan

Managing Director at Cone Health Ventures

David has been involved in healthcare policy, research, and innovation over the past decade and has deep knowledge and expertise in health IT, disruptive delivery models, digital health strategy, and innovative funding platforms.



Matthew Zenker

Director of Deal Flow and Investments at University Hospitals Ventures

Matthew is the first point of contact for startups at UH Ventures, the corporate venture arm of University Hospitals, a US-based healthcare provider. He leads investment diligence for the most promising opportunities and is interested in devices, diagnostics and digital health.



Michael Cardamone

Managing Partner and CEO at Forum Ventures

Michael Cardamone focuses on developing Forum's investment strategy with the mission to make the B2B SaaS journey easier, more accessible, and successful for early-stage founders. He helps portfolio companies navigate the fundraising process and optimize their position in the market.



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Naomi Goetz is an Investor at Forum Ventures who is focused on deal origination, evaluation, and execution. She received her MBA at The Wharton School, while working as an MBA Associate at Alpaca VC, and is passionate about promoting diversity in the ecosystem.



Forum Ventures was founded in 2014 with a mission to make the B2B SaaS journey easier, more accessible and successful for early-stage founders. Forum is the leading early-stage fund, program and community for B2B SaaS startups based in New York, San Francisco, and Toronto. If you are a bold, ambitious SaaS founder, [Pitch Us here](#).

With over 400 portfolio companies globally, Forum Venture's companies have gone on to raise \$1B+ in follow on funding from funds like Bessemer Ventures, Kleiner Perkins, CRV, Craft, NEA, Menlo Ventures, Andreessen Horowitz, First Round Capital, Serena Ventures and many more.

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