



The State of Health at Home Models:

Key Considerations and Opportunities



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Introduction

Today the majority of care services are delivered in clinics, physicians' offices and facilities. With an increasing disease burden and an aging population, health systems are experiencing hospital beds and clinics at capacity, physicians and care teams who are overextended and burnt out, and higher per patient expenditures than anywhere else in the world. There is a desire to provide higher quality care and improve access, clinical outcomes and experiences. Delivering care in the home has emerged as not only a possible solution to points of friction, but a way to transform how we think about caring for patients.

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We're a really busy academic medical center. We operate on an inpatient census at around 92% to 95% daily of our available beds. We have a very busy emergency room that has a larger than desirable number of patients that leave without being seen on most days due to throughput issues with our inpatient bed capacity for admissions. We have a very low percentage of people that come to see us for low acuity problems. Many of them are quite sick by the time they come to our emergency department, and our wait times for specialty care in particular, more recently with primary care but specialty care in particular in our outpatient settings, is longer than we would wish. We're operating at just too high of a level of capacity with not enough headroom on the inpatient, outpatient, operative and ED side.

”

Michael Condrin,

MBA, Chief Operating Officer, Ambulatory Care, University of California Davis

What is Health at Home?

Health at home is defined as the delivery of care to a patient in the patient's home environment. In the 1930s, 40% of health care was delivered in the home. This model of care delivery over time became obsolete due to constraints with scalability, logistics and efficiency, and was replaced by the medical system predominantly used today, which organizes care around clinical facilities, physician offices, clinics, hospitals and emergency departments.

Advances in digital and health care technologies, logistics and emerging value based care models are now revolutionizing the way we think about care delivery. Now, health institutions have begun to explore the return to care at home. Blood and lab tests can be done in the home. Portable x rays and radiology equipment are readily available, and a smartphone can function as an electrocardiogram, remote patient monitoring device, ultrasound machine, data hub and much more. We have more technology and resources available in a patient's living room than ever before.

This shift was accelerated by the COVID 19 pandemic in 2020, which pushed venues of care to capacity and increased non emergency patients' desire to avoid in person visits. The pandemic also provided a unique opportunity for both physicians and patients to realize the potential for health care to be provided in the home. A milestone in the evolution of health at home occurred in November 2020, when the Centers for Medicare & Medicaid Services (CMS) passed the Acute Hospital Care at Home Individual Waiver (AHCaH)¹ as part of the COVID 19 public health emergency (PHE). This waiver allows select institutions to deliver high acuity care in the home. The support for at home care continued, and in December 2022, President Joe Biden signed into law the Consolidated Appropriations Act (CAA) for Fiscal Year 2023 (H.R. 2716), which extends telehealth and AHCaH waivers initiated during the PHE through 2024.

Progress in technology, innovation, and policy have expanded the types of care able to be provided to patients in their homes with many health at home programs today addressing acute, chronic, preventative, and end of life care. With these advanced capabilities, we can once again take care back into the patient's home when appropriate for improved outcomes, access, and experience.

**NOTE:**

Throughout this document, the word “home” is used in reference to a patient's home environment. The word does not refer exclusively to a single family house; a patient's home environment may be an apartment, a hotel room, a mobile home, a single family home or something else. Health at home does not, by definition, exclude patients based on their level of housing security or their type of home environment.

Why Health at Home?

As the population of older adults in the United States continues to grow, the demand for health care services that enable them to age in place is becoming increasingly important. According to The Linus Group, two thirds of individuals between 60-79 years old prefer to stay in their homes as they age.² Health at home programs have become an attractive solution to meet this demand, and the trend is expected to continue given the positive research outcomes and supportive regulatory environment.

Numerous studies have demonstrated that many types of care that are currently delivered in an office or facility could be provided at home, with clinically appropriate, high quality, and cost effective outcomes. For example, the Independence at Home Medicare demonstration program found that home based primary care reduced Medicare costs by over 10% compared to non home based programs,³ A randomized controlled trial of acutely ill adults requiring hospital admission also showed that home hospital care decreased health care use and readmissions, while improving physical activity without any differences in quality, safety or patient experience.⁴

By 2050, it is estimated that 25% of the total cost of care for Medicare beneficiaries could shift to home based care without a reduction in quality or access.⁵ The potential benefits of transitioning to delivering health at home are vast, with an estimated 15-20% of emergency and urgent care services, and 30-35% of hospice services, already capable of being delivered in the home.⁵ Additionally, as offerings are developed, 15-25% of post acute care/long term care could also be delivered in the home.⁵

Moreover, care teams having access to a patient’s home environment can provide valuable insights into the patient’s social determinants of health and environmental conditions, allowing for more tailored and effective care. This increased level of personalization also leads to more touchpoints across the continuum of care, resulting in better outcomes for the patient.

In summary, health at home programs have the potential to revolutionize the way health care is delivered, with significant benefits to patients, care teams and the health care system as a whole. With a growing demand for such services, the future looks bright for health at home programs.

“We had an asthma exacerbation that was initially secondary to a viral infection, but when we were in the patient’s home, it smelled of mold. It took her longer than expected to recover because of the mold exposure, but we would have never had that insight if our team hadn’t gone to the home. She would’ve just been sent back to that environment and likely had a recurrent flare if she had only gotten her care in the hospital.”

- **Caroline Yang, MD**, Attending Physician, Home Hospital Program, Massachusetts General Brigham

“Am I going to go back to the ED if I have chest pain? Or I am going to go back to the ED [because] I just don’t have a way to get to the clinic. Or am I not taking my medications, not because I’m non compliant, but I can’t afford them. Or my diabetes is not under good control because I can’t afford to pay the cost share for my test strips.”

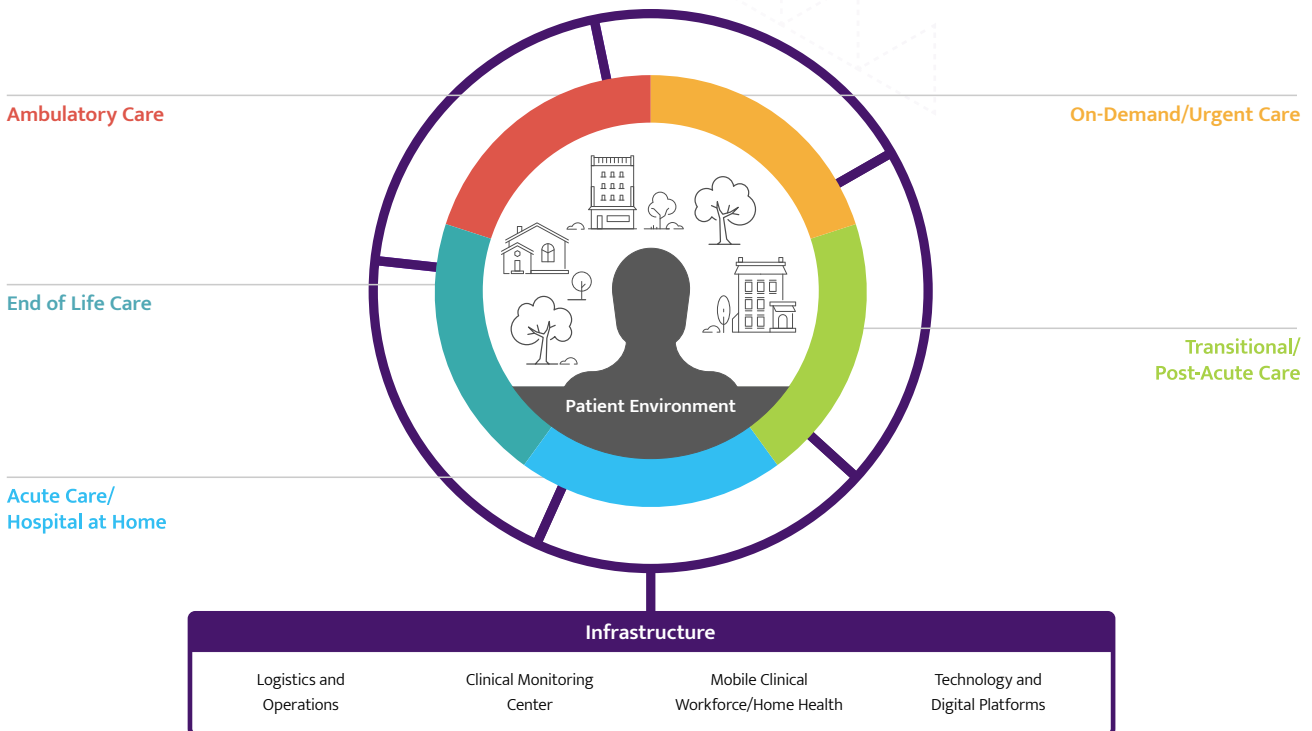
- **Janet Tomcavage**, EVP and Chief Nurse Executive, Geisinger

Research has shown that health at home programs offer increased capacity, reduced costs and increased patient satisfaction.^{6,7,8} The broader Return on Health⁹ perspective shows that health at home programs offer an opportunity for positive impact in many areas, including enabling the delivery of better care, not only at the individual level but also from a population health perspective. As health at home programs and other innovative models of health care delivery continue to expand, we anticipate even more benefits to be realized, such as supporting physician satisfaction and mitigating staffing challenges. Although additional research is needed to fully understand these impacts, the evidence points to a promising future for health at home programs in the health care industry.

The Health at Home Framework

Based on findings from a literature search, subject matter expert input and interviews with 10 organizations, we developed a Health at Home framework to represent the types of services that are being or can be delivered in the home setting and the infrastructure necessary for doing so successfully.

Fig 1. At the center of the Health at Home Model is the patient’s home environment, the place where care is being delivered. The model outlines the types of care (i.e. ambulatory, on demand, transitional, acute and end of life) a patient may receive in their home environment and the tools needed to deliver that care.



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We have aspirations to have a more comprehensive care at home division and approach across the continuum of care...[one that takes into account] unnecessary clinic visit access that could be handled virtually, with in home remote patient monitoring or with other personnel to the home to check on people, to care for them in a less acute, less emergent, less urgent manner, to keep them healthier.

”

Michael Condrin
 MBA, Chief Operating Officer, Ambulatory Care and BJ Lagunday, Executive Director,
 Ambulatory Clinics and Population Health, University of California Davis

The table below explores the types of care and use case examples of where health at home is already being or can be provided:

<p>Ambulatory Care</p>	<p>Care associated with delivery in outpatient settings.</p> <ul style="list-style-type: none"> • Primary Care • Chronic Care • Specialty Care • Mental and Behavioral Health • Oncology at Home • Population Health • Home Dialysis • Home Infusion • Remote Patient Monitoring
<p>On-Demand/ Urgent Care</p>	<p>The provision of immediate medical service offering outpatient care for the treatment of acute and chronic illness and injury.</p> <ul style="list-style-type: none"> • Virtual and Mobile at Home Urgent Clinic • Emergency Medical Services Telemedicine • Mobile Laboratory • At home Testing • Mobile Radiology
<p>Transitional/ Post-Acute Care</p>	<p>Care aiding a patient’s transition from one level of care to another.</p> <ul style="list-style-type: none"> • Bridge Clinics (Emergency Department, Hospital) • Post Discharge Clinics • Transitional Remote Patient Monitoring • Home Pharmacy Services • Skilled Nursing Facility at Home • Rehabilitation at Home • Home Physical Therapy • Home Occupational Therapy • Home Health
<p>Acute Care/ Inpatient Care</p>	<p>Care that includes the health system components, or care delivery platforms, used to treat sudden, often unexpected, urgent or emergent episodes of injury and illness that can lead to death or disability without rapid intervention</p> <ul style="list-style-type: none"> • Hospital Services • Hospital at Home • Observation at Home
<p>End of Life Care</p>	<p>Care supporting a patient’s transition to end of life.</p> <ul style="list-style-type: none"> • Palliative Care • Hospice

The flow of information between the patient environment at home and the physician led care team is critical; therefore, the framework also outlines key infrastructure needs to successfully operationalize a Health at Home program and provide digitally enabled care.¹⁰ We have outlined four components of the infrastructure including: logistics and operations management, a clinical monitoring center, a mobile clinical workforce, and technology and digital platforms.

- Logistics and operations is a broad category, encompassing how information is processed and made actionable, and how resources are deployed. The processing of information includes the application of clinical context to patient data and the sharing of information through integrated systems. Resources deployed could be physical items, such as supplies, or personnel, such as members of the care team sent to a patient's home. The effective management of logistics and operations is the crux of a well operating and financially viable health at home program.
- A clinical monitoring center is a place wherein information is monitored, processed and used to make decisions. This center can be a physical location, such as a building or command center, or a digital center, such as a software program or technological hub. It will be important to determine what and how information is monitored, and who's responsible for monitoring data and escalating information as needed.
- The mobile clinical workforce is a core component of health at home programs. Because care is delivered outside the traditional "four walls" of an institution, it is necessary to have a trained workforce, which can be employees or individuals from partner companies or organizations, who are sent to a patient's home environment to deliver care under the leadership of a physician.
- Technology and digital platforms represent all the technological solutions that enable the delivery of care at home. These solutions may be physical, such as a remote patient monitoring device, or digital, such as an online patient portal. Some form of technology will be used in all health at home programs to capture and monitor data, however, the type of technology and degree of use will vary from program to program.

Each health system or practice that is considering implementing a health at home program will have specific circumstances that necessitate unique paradigm shifts and approaches to leveraging this new model of care delivery. This framework is designed to help determine the scope and plan for key implementation needs.

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Define what it is you're trying to do and then make sure you've laid out your steps to get there and that you understand what your driver is. You can easily get lost in scope creep if you don't define well what it is you're trying to accomplish out of the gate.

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Ryan Raisig

MHA, FACHE, Associate Vice President for Coordinated Care and Continuum Integration,
Virginia Commonwealth University

Factors to Consider

There are unique aspects to delivering care in a home environment rather than a health care facility, requiring practices and health systems to think differently about ways to operationalize and scale health at home programs. Some of these considerations include whether to partner, how to factor in the evolving landscape, and preparing physician led care teams and patients for delivering and receiving care in the home. Existing programs are continually learning what makes a program successful, but it's clear that optimizing digitally enabled care will be required to realize the full potential of Health at Home.

Leveraging the [AMA's digitally enabled care blueprint¹¹](#) and learnings from industry contributors working in or developing health at home programs, the following key factors were identified for consideration in program development.

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We're a really busy academic medical center. We operate on an inpatient census at around 92% to 95% daily of our available beds. We have a very busy emergency room that has a larger than desirable number of patients that leave without being seen on most days due to throughput issues with our inpatient bed capacity for admissions. We have a very low percentage of people that come to see us for low acuity problems. Many of them are quite sick by the time they come to our emergency department, and our wait times for specialty care in particular, more recently with primary care but specialty care in particular in our outpatient settings, is longer than we would wish. We're operating at just too high of a level of capacity with not enough headroom on the inpatient, outpatient, operative and ED side.

”

Ron Amodeo

Chief Strategy Officer, University of California Davis Health System

The Evolving Landscape

The landscape is evolving for Health at Home programs. The COVID 19 pandemic accelerated the need to provide care back in the home, but the end of the PHE comes with financial and regulatory uncertainties that affect the future of health at home.

Currently, reimbursement for fee for service and diagnosis related groups for home based care is limited. The CMS waiver¹² enacted during COVID was a monumental shift, allowing reimbursement for select institutions delivering high acuity care in the home. Other payers have begun to follow suit, transitioning toward reimbursement for at home care, although the services covered are still limited and dominantly linked to high acuity care. With the end of the PHE, the Medicare program has been extended through December 2024, but is at risk if congressional action doesn't make it permanent.

Remote based services such as [telehealth](#) and [remote patient monitoring](#)¹³ are critical to delivering care at home, especially for those with chronic conditions. Home testing is another way hospital systems are increasing adherence, helping clinicians monitor patients and saving time for patients. The "Lab at Home" model is evolving and will continue to grow in the future.

Many institutions mentioned they are trying to do things differently financially to be able to deliver better care at home and achieve better outcomes. Institutions such as Geisinger are focused on driving the right care model to the right population. They acknowledge though, that it is very difficult, and value based care models have yet to be optimized for home based care delivery.

Leaders at the Veterans Affairs medical centers focus their funding based on population based initiatives and their mission. Their simple promise to care for people enables them to have a longer term horizon on return on investment and therefore, they aren't limited to the way services are processed and paid for in a commercial landscape.

“

Hospital at home is going to have an uphill battle in this industry, and it all boils down to business incentives.

”

Sumit Nagpal
Chairman, CEO, Founder,
Cherish Health

Institutions with fee for service models or those led with a return on investment lens may feel less incentivized to develop health at home programs. However, these institutions could consider shifting toward a [Return on Health](#)¹⁴ perspective. The Return on Health framework illustrates a broader picture of cost savings, one that accounts for the financial benefit of improved patient health, access and experience.

As programs expand across states, there will be legal implications for models of care delivery. For example, state laws may differ about patient confidentiality related to the use of data, what type of professional can enter a home to administer care, what type of care that professional can administer once in the home, and nuances of credentialing and licensing of physicians and other members of physician led care teams. Institutions must also remain cognizant of ongoing compliance with Stark laws as programs and networks grow. Additionally, organizations that choose to work with a partner will need to clearly outline roles and responsibilities to be clear on liability between parties.

The financial and regulatory future of health¹⁵ at home will continue to evolve. More laws supporting home based care could be passed, such as the Choose Home Care Act of 2021 (S.2562)¹⁶ that has been introduced in the United States Senate. Payers may increase the home based services eligible for reimbursement, or transition to episodic reimbursement. New models for revenue streams may emerge, such as a subscription based model. For example, health care providers such as Forward and One Medical offer annual monthly memberships to access health services. Today, these providers offer services in a physical location. However, the introduction of on demand, subscription based home services may be available to consumers in the very near future from other leaders in the industry.

Virtual first health care companies and commercial players, such as CVS, Walgreens, Best Buy and Amazon, are likely to continue their disruption of the traditional health system driven delivery of care. There could be potential to learn from these emerging models and adapt or partner on future approaches.

Partner or Build?

When developing the capabilities needed to support a health at home program, some institutions build them internally, yet most leverage the resources and expertise of a partner.

The decision of whether to partner could include consideration of an institution's existing capabilities and strengths, budget, desired level of clinical control, timeline, technology integration and usability, and scalability needs. State affiliated institutions may have additional considerations, including legal protocol related to high cost projects and unions.

Common reasons institutions seek a partner include reducing costs, improving outcomes through value based care models, expanding reach (more patients in an existing geographic range or new patients in a broader geographic range), or increasing staffing resources. Partnerships can provide a vast range of expertise and services, including mobile imaging, emergency medical services, skilled nursing and mobile workforces, phlebotomy, medical equipment, transportation, meal delivery and/or support program scaling.

To determine if a partnership is the best option for your program, consider the following questions:

- What is the need and purpose of our program, and which aspect(s) of that would be accomplished through a partnership?
- Do we need to partner to provide this offering initially? To scale? Both or neither?
- Based on our existing offerings, capabilities, staffing, resources and other circumstances, are we able to address needs internally? At what cost and do we have the budget?
- Is a hybrid approach for our program an option?
- Based on our needs, geography, financial resources and other circumstances, with whom could we partner?
- What would we give up in a partnership (e.g. financial resources, clinical control)? What would we gain (e.g. increased capacity, shared risk)? **Note that it may be easier to answer these questions with specificity as discussions with potential partners develop.*

If considering a partnership, assess whether the organizations are delivering value for their existing partners. This assessment could include reviewing statistics like net promoter score and demonstration of cost savings if the organization collects and is able to share that information. Requesting testimonials from current or past partners is another way to get referral data.

Partnerships can be leveraged with companies or community resources and groups. For example, Mayo Clinic, Kaiser Permanente, Cleveland Clinic and others are partnering with the company Medically Home to deliver hospital at home care. Medically Home provides a variety of services and can flex offerings based on a health system’s needs. From providing post kidney transplant hospital services at home, managing the technology, conducting testing at home and more.

DispatchHealth, an on demand care provider, partners with health systems to help them expand their footprint through a lower capital expenditures model. Their mobile services help a health system improve their brand recognition and allows them to manage patients more effectively in a larger geographic area. They also integrate with health systems to provide a range of different services within the home from primary care delivery to providing high acuity care in the home.

Most organizations with health at home programs have chosen to partner with organizations to provide services. However, some organizations such as Highmark Health and Virginia Commonwealth University have built some of their programs in house. For example, VCU is connecting with more than 40 community resources to support their broad health at home offerings.



“

With health systems seeing improved outcomes for eligible patients, we fully expect to continue to see decentralized high acuity care scale across the country. Because it’s patients’ lives, you need redundancy. Because it’s patients’ lives, you need 24/7. Because it’s patients’ lives, you need to be able to do that within an hour’s notice. That, we believe, at scale can be most safely and efficiently accomplished with partnerships.

”

Rami Karjian
MBA, Co Founder and CEO,
Medically Home

“We had a preexisting program that we were trying to incorporate into the new programs that we’ve stood up. We had gone out and partnered with our local agency on aging, a group called Senior Connections. They have Medicare health coaches or community health workers, who are laypersons that are trained to go into the home and help educate patients ... it gets back to making sure that you’re getting the right resource to the patients. We don’t need to send a nurse practitioner if they need somebody to do some coaching and education for them to be successful, or if they need socialization and they live by themselves. We’ve elected to partner with folks in the community that are doing that so that it’s intentionally not a health care driven model. It’s a wellness model.”

- **Ryan Raisig**, MHA, FACHE, Associate Vice President for Coordinated Care and Continuum Integration, Virginia Commonwealth University

Highmark Health focused on understanding the capabilities they wanted to prioritize first. From there, they built holistic models around cohorts of populations. Before the pandemic, in January 2020 they launched SNF at home, hospital at home and palliative care at home.

“I would say, if you were building out capabilities around health at home, and you were looking at that, you would say, “OK, what are the list of capabilities you need to have?” And you can go anywhere from basic to it’s on the front end of innovation. [Our focus areas] we actually stood that up just prior, January of 2020, so right before the pandemic was realized.”

- **Monique Reese**, DNP, Senior Vice President, Highmark Health

Mobilizing the Workforce

As identified in the Health at Home framework, a mobile workforce is often a core component of many of these programs. It presents the opportunity to advance health equity and better understand the social determinants of health of patients by getting a glimpse into their day to day, but it also comes with key challenges and considerations.

Safety is a top priority when sending care team members into the home. Entering the home to deliver care may be a new concept for many and may elicit hesitation from members of a physician led care team. Developing protocols for delivering care at home and ensuring proper training can help ease concerns.

Some best practices established by existing health at home programs include:

- Develop and provide safety training for all team members, including a scene safety assessment that can be completed on arrival. Some organizations have partnered with law enforcement groups to learn more about effective safety training.
- Design physician led care team deployment for safety, such as sending care teams in groups of two, rather than individually, and by giving all care team members an emergency alert device.
- Expand screening protocols to include careful screening of employees, as these in home care team members will operate out of direct supervision.
- Create policies and protocols for patient enrollment and dismissal from the health at home program including key up front questions and assessments.
 - Be prepared and account for nuances in policy and protocol development. For example, a common criterion is that the patient does not have weapons in their home, but that could cause confusion: What qualifies as a weapon? Is a baseball bat allowed? What if the patient is a law enforcement officer and keeps their legal firearm in the house? Even with nuances, it is imperative that these policies be developed for the safety of the care team and other staff.

“
**Is the home safe?
 As a health care provider,
 that was one of the first things
 I thought about when a
 speaker came and talked
 about health at home.**

”
 Physician at a
 leading institution

“

If we're going to be launching a [health at home] program, our responsibility is to make sure that our care teams feel confident and comfortable as much as our patients feel confident and comfortable with the experience.

”

Cole Zanetti
Chief Health Informatics Officer,
U.S. Department of Veterans Affairs

Organizations should also explore how existing legal protections for brick and mortar health care delivery will translate to delivering care in the home. Workers' compensation and malpractice claims will remain relevant in the home. Care teams may also face home specific accusations by patients, such as theft.

Many organizations are looking to health at home programs to help them reach patients in rural locations, but that, too, presents new, unique workforce considerations. Staffing challenges and attracting and retaining talent have been an ongoing concern in rural locations, so systems and practices looking to recruit in these areas may find it difficult. If existing employees or care team members are mobilized, that may lead to lengthy commutes to and from patients' homes. These commutes can feel isolating and devoid of fulfillment, which could make hiring and retention more difficult and lead to decreased professional satisfaction.

This is an area that may be ripe for partnership, where companies already have experience and expertise in delivering mobile workforce capabilities. Organizations and practices will still want to understand partner approach, process for training, and what existing protocols are in place to ensure positive patient experiences and alignment on care delivery, as any partner will become an extension of the existing employee care team.

Patient and Caregiver Experience

Health at home holds potential to improve patient and caregiver experiences with health care. As Alan Dow, MD, MHSA, of Virginia Commonwealth University explains, health at home can “take some of the things that patients really hate about health care out of the system,” including long wait times for visits; missed, necessary appointments due to commuting or other complications; increased disease exposure at facilities; or the discomfort and isolation of being separated from one's home environment.

The following outlines a real world application of health at home that illustrates the dynamic nature of the Health at Home framework through a hypothetical patient journey.

“

Patients want to be in their home environment and they want to be in their community.

”

Monique Reese
DNP, Senior Vice President,
Highmark Health

Example Patient Journey: On-Demand Care at Home

Scenario: An on-demand care provider, who partners with health institutions to deliver at-home urgent care and other offerings to patients, is helping reduce potentially unnecessary emergency department visits and providing convenience, support and peace of mind to patients.

- 1 A patient with chronic obstructive pulmonary disease is experiencing minor restricted breathing and believes they need to visit the emergency department. They call their primary care provider’s office. Based on triage, symptom burden and the patient’s past medical history, the primary care office activates an on-demand care provider, and a mobile care unit is sent to their home. The mobile care unit includes licensed medical team members under virtual supervision of a board-certified physician. Mobile unit capabilities include moderate complexity labs, diagnostics, procedures and medication such as nebulization.



Infrastructure Needs		
Logistics and Operations	Clinical Monitoring Center	Technology and Digital Platforms
<ul style="list-style-type: none"> • Documented triage protocols • Supplies necessary for mobile unit to provide care in the home 	<ul style="list-style-type: none"> • Primary care clinic triage line and clinical pathway. 	<ul style="list-style-type: none"> • Integration of primary care clinic EMR with referral order to a mobile unit • Dashboard to monitor the status of care • Integration of EMR between Clinical Monitoring Center and mobile unit • Communication tools

Example Patient Journey: On-Demand Care at Home (cont.)

- 2 The mobile care team arrives and assesses the patient, administering tests for COVID-19 and flu. The tests do not highlight any concerns. The patient appropriately receives nebulization treatment leading to significant improvement in symptoms. Clinical documentation regarding the patient's condition, lab findings, medications and treatment is complete and sent to the primary care physician's office.
- 3 To increase patient comfort, the care team sends a prescription to the patient's pharmacy for a short-term inhaler.



Infrastructure Needs		
Mobile Clinical Workforce/Home Health	Mobile Clinical Workforce/Home Health	Technology and Digital Platforms
<ul style="list-style-type: none"> Resourced with licensed medical staff under virtual supervision of a board-certified physician. Mobile unit capabilities include moderate complexity labs, diagnostics, procedures and medication such as nebulization. 	<ul style="list-style-type: none"> Resourced with licensed medical staff under virtual supervision of a board-certified physician. Mobile unit capabilities include moderate complexity labs, diagnostics, procedures and medication such as nebulization. 	<ul style="list-style-type: none"> Integration of documentation back into the EMR after delivery of care.



Benefits for the Patient*

- Relief—instead of taking an ambulance or driving to the ER, a provider will visit the patient at home
- Comfort—care is provided in the patient’s home
- Peace of mind—trained professionals will provide the medical help the patient needs, without having to endure the stress of the ER



Benefits for the Care Team

- Access—provides rapid clinical access on-demand
- Experience—improves the experience for clinicians
- Patient satisfaction—patients receive care in the comfort of their own home
- Improves clinical effectiveness and lower cost of care—diverts expensive ER visits
- Efficiency—lowers the number of patients visiting a very busy ER

**Benefits to the patient are based on interviews with patients as part of this project.*

Many patients may not have received care at home before, and will have questions and—potentially—concerns about it. To create a positive patient experience, design the program with patient experience and safety at the forefront, take the time to educate patients about health at home and the specific program within your institution, and include motivational interviewing for participation.

A positive user experience can increase patient trust and engagement with health at home offerings over time. When designing health at home programs, organizations should consider key needs for patients early for every aspect of the program from navigating an online patient portal to interacting with the care team (as applicable) to what care delivery will look like in the home to paying for care. Best practices include:

- Engage patients early in the process by talking to them about health at home, get their feedback, perspective and experiences at the time of design.
- Have patients help test any potential technology that they may be required to use as part of the health at home program. This can help iterate on tools being developed in house or support partnership decision making.
- Ensure a cohesive and consistent experience through integration of technologies, touchpoints and experiences. Patients shouldn’t receive a different experience from employed care team members versus a company partner who is supporting a particular aspect of the program.
- Create clear expectations for and modes of communication among the patient, their support system, and the care team.
- Develop strong patient education materials, resources and talking points. Proper patient education leads to improved outcomes and experience through increased engagement, trust and collaboration among the patient and care team.

“It’s much more consumer centric to integrate. Imagine getting your groceries delivered and they just sent the fruit section to you and then just sent the meat section to you and so on. Having one team manage all the services and having one relationship with your health care organization probably leads to a better relationship, all in all.”

- **Ron Amodeo**, Chief Strategy Officer, University of California Davis

Organizations will also need to consider other caregivers that might be a part of the patient’s care (family member, community lead, etc.) in the home. Some patients have a family member, friend or other individual who assists them; some have a community of caregivers; and some do not have access to a caregiver at all. Each of these scenarios will impact the patient experience differently and may require adjustments to the health at home care plan.

If a caregiver(s) is present, the patient’s care plan can and should account for that. The caregiver plays a vital role in providing care and/or helping keep the patient accountable for health milestones. Best practices for leveraging caregivers and community in health at home programs include:

- Educate caregivers and patients together, rather than speaking to a caregiver as if the patient is not present.
- Recognize the cascading impact a caregiver’s health has on those for whom they provide care; if a caregiver becomes ill, others will likely soon need additional support.
- Build trust with patients by collaborating with trusted community groups, such as families, community centers or churches.
- Consider if and how your program will involve remote caregivers through technology

With the development of any care model, we want to ensure patients receive the right care, at the right time, with the right modality to ensure successful outcomes and positive experiences. Motivational interviewing can help assess a patient’s willingness and ability to participate in a health at home program and is an opportunity to educate them about the program. Patients should understand what the program is, how it works, and what to expect. Some key questions to be able to answer include:

- What is the health at home program? How does it work?
- What can it do? What can’t it do?
- Will a physician be involved in my care?
- What are the risks and benefits?
- What will the care plan look like?
- How will I communicate with my care team?
- What technology do I need to engage with to use the program? Do I have options so I can choose the one which I am able to use, or with which I am most comfortable?

While receiving health care at home is a desirable option for many patients, it may not always be the best option for some for a variety of reasons. In determining if and/or how a patient will receive care, it is important to account for patient preferences and the conditions of a patient’s home environment.

The term Patient Environment includes the patient and the social determinants of health that shape their environment. As outlined by the U.S. Department of Health and Human Services, the [five social determinants of health](#)¹⁷ are Economic Stability, Education Access and Quality, Healthcare Access and Quality, Neighborhood and Built Environment, and Social and Community Context.

As these categories relate to health at home, Neighborhood and Built Environment includes the circumstances of the home environment, such as how the home is set up (e.g. design, accessibility) and resources available in the home (e.g. running water, Wi Fi connection), and health indicators in the home (e.g. nutritional value of food present, sanitary condition). Additionally, Social and Community Context includes whether a patient has an individual caregiver or caregiver community.

Conditions and resources in each patient's home environment may differ, and impact an organization or practice's ability to deliver health care in the home; for example:

- A patient needs to store medicine in a cold location and does not have a fridge.
- A patient's data is sent to the hospital via Wi Fi, and the patient's home is in a rural area with unstable internet connection.
- A patient is connected to a lifesaving electrical machine and lives in an area where storms cause power outages.
- There is domestic violence or abuse in the home environment.
- There is poor air quality in or around their home that could create poor outcomes.

Care delivery models either must be flexible enough to accommodate these differences or identify potential issues up front to avoid sending patients home for care when they are not able to truly receive care in their home.

Information and Resource Management

Effective management of information and resources is the operational and financial crux of a viable health at home program. With patients outside a facility, it's crucial to be able to access timely information about their condition and deliver needed resources

"Delivering clinical care in the home is not necessarily the hard part for hospitals to implement. The hard part is the logistics. It's really critical to be able to [manage logistics], or you're being cost additive. If I don't have a good, strong supply chain and I'm sending five different people out to that patient's home on a given day, we're making a more complex system rather than reducing some of that administrative burden and cost footprint."

- **Ryan Raisig**, MHA, FACHE, Associate Vice President for Coordinated Care and Continuum Integration, Virginia Commonwealth University

One of the most important aspects of information management is processing and contextualizing patient data. Health information about patients must be captured, recorded and made accessible to members of the care team, and setting up the digital infrastructure to accomplish this can be no small feat. A commercial stakeholder, Biofourmis is helping hospital systems with their proprietary program that takes insights from the patients first, and then matches it with FDA cleared software medical device algorithms to understand what is happening to patients clinically. This information is then shared through a patient's EHR and made accessible to all relevant members of the care team.

"[Regarding patient data] this information goes through our algorithm and then it's... presented to the care team in a clinical toolkit that includes dashboard, includes the ability for the care team to do outreach, audio, video chat, connection. So we have the tech stack, which is that data collection, data analysis, and then care management. And then layered around that, we have services and EMR integration."

- **Sandeep Pulim**, MD, Medical Director, Biofourmis

Health at home also offers the ability to provide more personalized patient care by capturing information specific to the patient's home environment and their social determinants of health. Considering this up front and addressing it at the time of design and implementation will benefit the health at home program, future patient care delivered within a facility, and provide opportunities for improving population health through data aggregation.

"I don't think it's about a patient, I think it's about a person. And a person is part of a community, part of a population and if we don't influence the health of a population, we're going to fail. It's really about taking accountability for a population...you do it one person at a time, but you must drive a population health outcome or it's not a sustainable model. And that's why this needs to be directed at a population. ... It needs to be an individual person centered approach or care plan, but it needs to be in the scope of managing the population, understanding the population, and providing the right level of services for the population."

- **Janet Tomcavage**, EVP Chief Nurse Executive, Geisinger

A personalized care plan, one that specifically considers factors inside the home, can lead to better outcomes. When the care team from DispatchHealth arrives in a patient's home, they gather insight into the patient's day and everyday life. This context can create a bridge between physical medicine and social well being.

"I think where health at home also is very unique, is [getting insight] into the role that social components play in being able to manage patients. Historically as clinicians, we treat their acute symptoms inside of an office and we don't really understand what is resulting in those acute symptoms. [When inside a patient's home we can look around.] Do they have food in the fridge? What food are they actually eating? Are they a fall risk with everything ... that's going on inside the home? Do they have access to resources?"

- **Kevin Riddleberger**, PA C, MBA, Chief Strategy Officer and Co Founder, DispatchHealth

The clinical monitoring system, a crucial infrastructure element in the Health at Home framework, is central to effective information management. Some institutions have one location, for example a building that houses administrative and care team staff that can virtually connect with patients to provide care. Others use hybrid or fully remote versions of this model, with geographically dispersed staff. Organizations have had different approaches to operationalizing this command center including staffing with in house employees and care team members and partnering with other companies that are better equipped to provide 24/7 monitoring and support.

For example, at Virginia Commonwealth University, they developed a Continuum Integration Center (CIC). This 24/7 multi disciplinary practice has care providers (such as social workers and nurses) and technology experts, all overseen by physicians. All remote patient monitoring is overseen from this center as well as everything related to delivery of hospital at home.

Resource management encompasses the deployment of resources—both supplies and personnel—to a patient’s home. As mobile care teams and supplies are significant components of the cost of health at home programs, ensuring an efficient supply chain, with the *right* amount of resources being sent to the *right* patient at the *right* time, is crucial for cost management and providing care in the home.

“

A good rule of thumb to follow when designing and launching a Health at Home programs is not to scale until you replicate. Leverage lessons learned, challenge assumptions and really test the model to establish trust and prove that the solution works at scale before moving anything into production.

”

Ryan Vega

MD, MSHA, former Chief Officer for Healthcare Innovation and Learning at the U.S. Department of Veterans Affairs

Organizations are relying on data modeling, sometimes called predictive modeling, to help effectively manage information and resources. Many consider at least basic data analytics essential for financial sustainability and scaling of health at home programs. It’s important to note that ensuring data that is representative of the populations served is critical when leveraging health related decision making. Successful existing programs use data modeling to guide cost effective resource allocation, flag patients for escalation, decrease administrative burden or decrease bias.

What's Next for Health at Home?

While there are numerous factors to consider for health at home programs and the landscape is evolving, it is important to remember why these programs exist. There is value to healing in the comfort of one's own home. And extending care and support to patients is overwhelmingly what brings individuals to the health care profession; health at home is another way for that purpose to be realized.

“

They're welcoming you into their home, which I've always felt is a tremendous privilege to be able to go into someone's home, especially when they're ill... One of the important things that we do each and every time is acknowledge that we're very thankful that they let us do that.

”

Anthony Wylie

DO, Senior Medical Director, Geisinger at Home

As part of the AMA's Future of Health work, we are committed to developing new resources to accelerate the adoption of digitally enabled care. Following this foundational Health at Home Report, the AMA will produce case studies aligned with the [Digital Health Implementation Playbook Series](#).¹⁸ These in depth case studies will examine specific applications of health at home, how these programs are being implemented and optimizing digitally enabled care, and [measuring value](#).¹⁹

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Throughout the document, the interviews conducted with 10 organizations and three patients are used as background information and referenced content in the body of the playbook.

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**Individuals interviewed as part of this report represent organizations and companies that constitute a small fraction of the organizations and companies that provide health at home services. Inclusion in this report does not imply any endorsement of an organization's or company's products or services by the AMA.*

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