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A Way Forward To True Patient-Centered Care

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The current hospital-centric, hub-and-spoke model of care has become obsolete. The time has come to replace this outdated model with a new, patient-centric framework where resources are delivered directly to the patient, their family, and their caregivers in the patient's immediate medical environment.

If we are to remove barriers, change lifestyles, reduce disease load, and meet the medical and social needs of our patients, compliance and lifestyle change adherence must occur in the home. Not only will this shift address current needs, but it will also create the basis for effective value-based care in the future.

New technology can overcome barriers of time, distance, and training to restore the trusted, capable, and connected physician-patient relationships that have eroded over time.

Why have these relationships eroded? Staffing issues, virtual care failings, and the need for patients to attend to follow-up care, tests, and specialty care — the "handoffs" — that are often both inconvenient and scheduled too far in the future have led to a breakdown in the follow-through of care plans.

This "home health hub" will regain better control and understanding of patients' needs and expectations, and provide care consistent with the professional needs and capabilities of our clinicians. In particular, it can reduce the number of inaccurate or poorly understood handoffs that are the source of medical errors or mismanagement. Most importantly, this is the best way to manage those patients with numerous problems — those 10% of patients who constitute 70% of costs and a great deal of the suffering. These are typically older Americans with multiple problems and those who have the most difficulty managing compliance, achieving adherence, and navigating our increasingly complex medical system. If we are to optimize care and bring spending under control, we must have a system that deals most efficiently and most effectively with this patient population.

In addition to providing better outcomes for patients, this system can also replace the growing frustration and resignation among clinicians through promotion of increased understanding, self-motivation, and success.

We can't stop the growing complexity of modern medicine, but we can and must simplify and personalize what patients, families, and care providers see, receive, and do to promote health and treat disease. We must replace complexity with simplicity. This future is within our grasp if we seize this opportunity to launch the next era of medical care — home-based care — for the mutual benefit of our patients, clinicians, medical entities, and society.

This paper explores the current system, the need for change, and the rationale for a home health hub leveraging next-generation virtual care, as well as the means to achieve it.

During the COVID-19 pandemic, millions of patients were introduced to telehealth, as it was often their only route to be seen by a healthcare provider. At its peak in the second quarter of 2020, telehealth represented more than a quarter of all outpatient visits in the US, but the numbers have steadily dropped since, as patients have expressed their preference for in-person care.

We need a new, hybrid model of care — one that combines the potential of new technology with the power of in-person connections.

We call this model "Coactive Care™."

01

The Current Care Model

An honest assessment of the current care model should start with a few simple questions:

- Is the current system working well?
- Is the current system sustainable?
- Are clinicians happy?
- Do patients find it easy to access and navigate the system?
- If the current system is unsustainable, will more of the same correct it?

If you answered a resounding "no" to these questions, then you likely agree it's time for a change.

The American medical system does wonderful things and we must take great care to preserve and enhance those things we do well. However, despite enormous effort and cost, our healthcare system is failing. This is especially true for those who need it most — the patients, their families, and clinicians — and most evident with the elderly, those in rural and inner-city America, and those in our post-acute care nursing facilities. These socioeconomic determinants of health can best be addressed in the home where the needs are greatest and most difficult to reach.

Our current healthcare model is under immense pressure from rising demand due to a growing population and a worsening disease load, not to mention increased costs from scientific and medical advancements, workforce needs, and major reimbursement issues.

Time and time again, our response has been more taxes, more cost shifting, more rationing, more complexity, more consolidation, and more isolation of patients, families, and their clinicians. Every new iteration of the "system" seems to make it more expensive and more complicated, and because changes are so incremental, we have become the frog in the slowly boiling pot.

It's time to think outside the pot. It's time for bold thinking.

We must acknowledge our failings, as well as accept that there is no clear answer in sight within the current system which demands more skilled people, more funding, and more complexity.

We need a new model that preserves our current assets but deploys them much more efficiently, effectively, and humanely. One that can address the behaviors that lead to an escalating disease load that will create a demand for care that we can't possibly meet. One that begins with what matters most — the outcomes most valued by patients, their families, and clinicians — and not what we must settle for.

02

Measuring Healthcare Success

Medicine today is caught in the crunch of lower reimbursement, higher cost, and greater demand for services. Few are more frustrated than those who manage these systems, as they have to do more with less. This led to an appropriate focus on increased efficiency, but how efficiency is defined and achieved is critical for properly informed decision-making. The KPIs (key performance indicators) we rely on have developed a reality of their own — that of the focused factory model. They measure outcomes in terms of the medical factory rather than those of most importance to patients and clinicians. They fail to capture the complete experience in terms of full patient cost, inconvenience, suffering, delay, and error, as well as clinician frustration with the way medicine is practiced.

Unfortunately, patients and their families are tasked with managing and measuring the system — the very people who are least equipped to manage it and measure it in its current form.

Any questions about access, satisfaction, and engagement are asked in the context of the current model and current limitations, and not from the perspectives of what patients experience and expect:

- What did it take to get the appointment — and the next one and the next one? Can you afford it?
- Who manages all of that?
- When were you seen and did we get it right?
- Do we get it right the first time every time or are patients referred to someplace else?
- Could you find a primary care doctor? Can you get help from one at night or on the weekend?
- Who can get off from work? Who takes care of the family?
- Who can afford to travel? Who can travel, period?
- What happens with those delays?

We need new measures for deeper KPOs (key patient outcomes) from the perspectives of patients, their families, and clinicians. If we ask the right questions, we will get better answers to serve our people.

We are relatively blind to those we don't see, those who never get in to see a care provider, or those who are lost to the system. Providers and healthcare leaders at all levels can be misled by their own experiences because they (we) receive "insider care" — informed care that capitalizes on relationships and processes that allow them to navigate the system more successfully than others. Those who receive "outsider care" have a far more difficult time. We need to listen to them.

03

How We Got Here

To build a new way forward to true patient-centered care, we must first understand how our healthcare arrived at its current state.

Many seminal events and achievements in the history of American medicine have set medical education, training, and practice on its current course. The Flexner Report of 1910 transformed the nature and process of medical education, while the Mayo brothers would later pioneer group practice, recognizing that medicine had advanced far beyond what any one clinician could know. This shift heralded the growth of medical complexity, the need for specialty medicine, and the associated need to assemble in groups to provide collaborative care.

Over time, many groups evolved into the integrated delivery systems consisting of clinics and hospitals. Some became academic medical centers blending clinical care, teaching, and research. The virtually exponential growth of scientific knowledge and advanced treatments almost requires consolidation. The advent of the modern electronic medical record (EMR) also had a profound effect on the delivery of health care — strongly affecting how patients interacted with their clinicians, as well as how clinicians interacted with each other. In the name of patient care, the needs of patients and clinicians were subservient to the needs of the EMR and the charge capture process for insurance payment for which it was designed. Point-of-service data entry reduced their clinical effectiveness and how they felt about their work.

As one most respected senior physician said,

> **"I remember the day Epic was installed and that day my practice of medicine – the clerical demands on my time, and my relationship with colleagues and clinicians – changed for the worse."**

Some institutions developed their own insurance companies, while others contracted with for-profit or not-for-profit insurance companies. Payment models dictated many activities and policies within the medical industry. These forces led to progressive consolidation in largely urban areas and gave rise to the current, hospital-based "hub and spoke" model, with the "spokes" radiating out to suburban and rural facilities and clinics to draw patients and resources into the medical centers. The growth of Medicare, Medicaid, national insurers, national vendors, pharmacy benefit managers, and international pharmaceutical companies — combined with commensurate growth in healthcare systems to match scale to scale — effectively accelerated that consolidation. As smaller facilities join or are acquired by larger systems, they can benefit from economies of scale, but typically do not benefit from increased medical capabilities. This is the structure that exists today and the crux of our problem.

The "spokes" from major hospitals take more than they give, and have drained rural facilities of patients and resources. They attract the workforce needed for rural America and nursing homes, reducing rural facilities into dwindling referral centers. As they fail, so do their communities, causing unseen rural America to shrink and suffer.

Reimbursement and manpower shortages also severely handcuff our nursing homes. A tour through many would likely be an eye-opening experience for decision-makers, spurring support for a different model of care.

There is a clear dichotomy today between centers of excellence that grow in size and capability contrasted with areas of severe need. Major centers now suffer from hypercapacity, while small facilities operate under capacity, making them both inefficient and difficult places in which to work. This state of affairs is a logical outcome of the growing disease load and the barriers of geography, timing, and training. Distance from care created self-evident problems. The workforce can't keep up with demand, resulting in insufficient numbers and skills regarding how, when, and where they are deployed.

Fortunately, there is a solution. New technology and workflow can bridge the gaps in our healthcare system and foster a great opportunity, if not a mandate, to reexamine our purpose, principles, methods, and goals.

04

A New Care Delivery Model

Much of the current disease load, cost, and suffering is concentrated in a relatively small percentage of patients. The disease load arises primarily from patients' lifestyles at home, with most hospital admissions also coming from the home. With this in mind, it makes sense — from the perspective of medical needs, services, and cost — that we begin in the home and make that the anchor point of care. We need a "home health hub" that includes the home, family, influencers, social services, and the immediate medical environment — a capability that orchestrates care rather than scattering it. More bits and pieces are not the answer.

We need a hub that

Resides with the patient and moves with them

Makes local participants progressively better and more closely tied to a larger team

Promotes health and treats disease

Creates the right model for value-based care

This new model is grounded in our purpose to promote health, alleviate suffering, cure where we can, and meet the medical and social needs and expectations of our people. Our principles should affirm the higher purpose of medicine and support the needs and obligations of the medical profession.

We should cultivate the requisites for self-motivation in our people and our medical professionals. We need to identify what patients, families, and their clinicians truly want, not what they will settle for. We need to give them what they want in terms of service and relationships, as well as what they need medically.

To solve a problem, it is very helpful to start with the answer and work back to the current state. Today, we frequently think in today's terms and fail to envision the ideal future. We are consumed by the urgent and delay the important.

For starters, we need to place a renewed emphasis on the primary encounter — the foundation of medical care that sets the stage for everything to come. Patients want and need a consistent, close, understanding, and personal relationship with their clinician, and they want it close to home. This is the basis of informed, available, and reliable care. Clinicians want to provide the same, but to be internally motivated, clinicians also need skilled autonomy, growing mastery, and connection with patients and their colleagues. This is a time-proven, virtuous cycle that gets better and closer over time, fostering mutual understanding that is both satisfying and medically efficient.

This relationship gives rise to connections with the family and influencers who can identify the sources of problems and the paths to solutions with greater compliance and adherence.

Lifestyle change requires a change in motivation and environment. It requires trusted, informed leaders to understand the drivers of behaviors and assemble the resources needed to change them. A knowledgeable team of local Clinician Extenders™, such as community health workers, EMTs, MAs, NAs, LPNs, nurses, PAs, and NPs, knows what additional resources are needed and assembles them accordingly to meet the needs of their patients. They match levels of expertise with levels of need that fluctuate over time. They should be convened with patients and local clinicians to ensure accurate and mutually understood handoffs. This is the hub of the future, where resources are brought to the home or nearby clinics and facilities.

Local clinicians are fully informed and can navigate care with (and for) their patients. While this was the original purpose of the primary care physician, that role, according to many, has devolved into the role of a triage officer, while the glue that hopefully keeps it all together has transitioned to the EMR. Unfortunately, the connection via the EMR is often too problematic and too late to be memorable and readily available, derailing the patient/clinician relationship. This leaves the clinician uncertain of what happened to that patient who was referred elsewhere and who certainly does not benefit from a collegial, fully informative conversation.

All too often, it is up to patients and their families to manage these clinical relationships, which can involve many handoffs and leave all parties frustrated and feeling, "like we're all running on a treadmill designed by someone else, for someone else."

This is an inadvertent yet accurate reflection of how the needs of the system can usurp the needs of the patients it purports to serve.

The scarcity of needed expertise in underserved areas is a major problem threatening the survival of rural institutions, inner-city care, and the level of care in nursing facilities. Fortunately, the advent of next-generation virtual care can bring this care to the patient and their local clinician. Traditional telehealth can provide certain services, but fails in the management of complex conditions. When a patient is ill, especially a complex patient, the distant clinician might suggest that they see another doctor, but who and when is up to the patient. Access is frequently a real problem, and then the process starts over again.

05

Rebuilding Care Team Collaboration and Trust With Coactive Care™

Next-generation virtual care allows for a collaborative, in-depth examination to the remote clinician's satisfaction that enables the patient to be diagnosed and treated locally. This critical capability breaks telemedicine's cycle of uncertainty, and removes the need for a subsequent referral to the next bottleneck. To "get it right the first time every time," we need to depart from the conventional model of telehealth and move toward a new hybrid model we call **"Coactive Care™."**

With Coactive Care, we can change the direction of the current patient-to-doctor model to a new doctor-to-patient model. It might sound like a minor change, but this shift can be profound in its effect, if done properly. It hinges on a collaborative relationship between the remote expert, the local clinician(s), and the patient. One where the remote consultant is a colleague and mentor with the expressed goal of assisting in the management of the patient while making the local clinician more capable and building a closer virtual team with each encounter. The local clinician is both informed and better educated to serve the patient, as well as collaborate more effectively with others.

Under this model, the addition of a new Clinician Extender role providing in-person support brings the Coactive Care team full circle for patients wherever they are outside doctor's offices and hospital walls. Clinician Extenders are skilled nurses, clinicians, or medical assistants wearing Augmented Reality headsets or smartglasses who work with patients and assist remote specialty physicians to facilitate expert guidance, educate patients, and support patients' adoption of healthy behaviors. Coactive Care in the home can greatly reduce medical loss by intervening early on patient issues.

If the **5%** of high-use patients could decrease one acute care episode a year, it would impact national healthcare costs by **10%** and lead to happier, healthier patients.

Collaborative medicine is the best medicine and must be a key outcome of this new hybrid system featuring in-person care linked with consistent and collegial remote care. Ideally, the remote partner is part of a regionally available group so any needed hand-offs can be made to a known group as established patients. The patients could then return home and receive assistance as needed in continued collaboration with the local clinicians. To be sustainable for all parties, this must and should work to the mutual advantage of all parties.

Local physicians need consultative help to manage their patients and keep them close to home. Local facilities need to attract local residents and retain them to maintain census, as well as recruit and retain a workforce. Remote specialists and associated facilities typically do not need more office visits, but rather largely sustain their practices on procedures and treatments. When patients need to go beyond medical management and receive diagnostic or therapeutic procedures, they will go to the clinicians that provided their consultations in concert with their local clinicians.

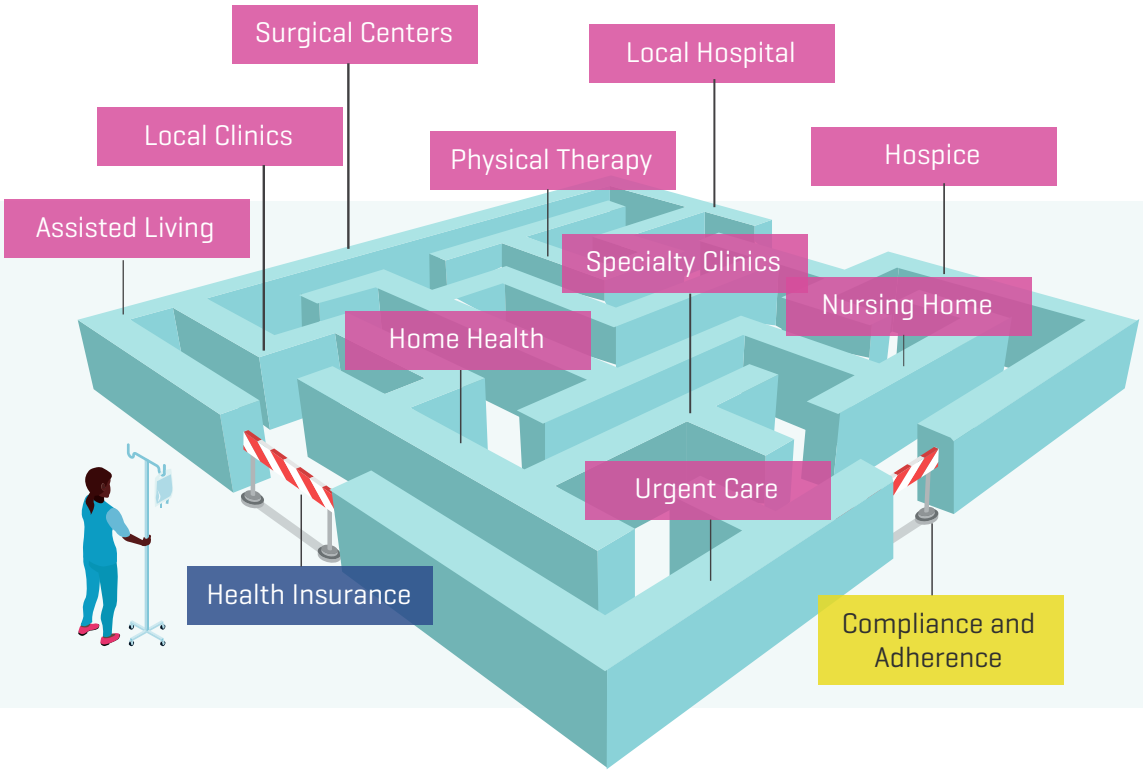
Under this hybrid model, medical groups would ideally become combinations of brick-and-mortar clinics for in-person care augmented by partners who provide virtual care. Some would no doubt be senior physicians who want to continue, but from home. They are likely to be great mentors as well as seasoned clinicians. Increasingly, younger physicians will work part-time and would be amenable to working remotely. In these cases, they would know the clinic and partners well. A clinic could grow without increasing the size of their office, as this virtual workforce does not require offices, medical assistants, or parking places.

Transitioning to the New Care Delivery Model

The ability to grow a provider group without increasing fixed and labor costs brings needed margin to help sustain groups in the face of decreased payment. Each gets what they need. Eventually, there is more load balancing. As local facilities become more capable with remote support as needed, they can begin to retain local residents, transition to Centers of Confidence, and become growing health hubs instead of failing referral centers. Larger institutions can move from hyper-capacity to more normal capacity for the benefit of their patients, workforce, and operational efficiency.

The facility-based hub-and-spoke model was designed for a different era that has progressively left the patient behind. It is important to emphasize that this is not because any of the people or facilities want it that way, but is rather a byproduct of the system they are now trapped in. Well-intended incremental change brought us to this point, and we rarely questioned the underlying structure.

We need a new model that begins with the patient as the hub and that moves with them wherever they happen to be in the process of promoting health and treating disease. A system that is anchored in the home and brings needed services and support to them. Patients need and want a personal, trusted professional connection with their local caregiver and local facilities. Local caregivers can be the constant support for patients in the face of growing complexity and uncertainty. This can be done with largely the same assets when provided with the right technology and workflow design.



Most importantly, this new model requires a singular devotion to patient needs and the will to change how we work.

This simplified model illustrates many of the entities a patient might encounter in the course of care. Each entity has its own system of medical records and methods of medical communication. Each has their challenges with manpower, training, and payment. Each has their own referral relationships and ways of making and receiving handoffs. When combined with the complexities of eligibility, network restraints, approvals, denials, deductibles, and copays, it's a wonder these entities work at all. All too often, it is the patient and family that must navigate these problems. They need a new approach built around their needs and limitations. They need a hub that moves with them.

06

A New Way Forward

We want to rebuild the basic relationships in medical care among patients, families, and their clinicians in a way that renews them rather than frustrates them. We want to restore quality, safety, and efficiency based on a simple change in healthcare that can revolutionize medicine. Coactive Care anchored by Hippo Virtual Care™ — an augmented reality platform purpose-built for clinicians — involves the active participation of multiple healthcare providers and patients.

Professionals from different disciplines, including caregivers and family, form a "circle of care" to work together to deliver comprehensive care for patients. This method improves accountability in point-of-care decision-making by providing immediate remote support and including the care circle in patients' care plans, goals, activities, and outcomes. Strong caregiver relationships and in-person support encourage patient commitment and adherence. Providing care to patients and, more importantly, helping patients provide their own self-care, wherever they are, Coactive Care helps health systems treat more patients while freeing up hospital beds and reducing the burdens associated with ancillary scale and administrative overhead.

The addition of a new Clinician Extender role providing expert in-person guidance, education, and support — aided by the affordable, scalable and easy-to-use Hippo Virtual Care Platform — brings the Coactive Care team full circle to support patients wherever they are outside doctors' offices and hospital walls.

The platform enables true remote collaboration and team-based learning by leveraging Assisted Reality (AR) headsets. Hippo provides the latest in voice-activated, hands-free, remote collaboration and data capture technology with the world's most advanced wearable computer platform, providing a "you are there" virtual experience for remote experts.

Remote experts require a transparent "I see what you see" technology and remote diagnostic tools, such as digital stethoscopes, as they work closely with their Clinician Extenders and patients to assess, diagnose, guide, and reinforce patient care. They need a method that generates revenue for them, as well as referrals for more complex diagnoses, treatments, and procedures. Clinician Extenders need a non-obtrusive technology that allows them to work naturally in a hands-free way that does not distract them from their primary focus on the patient.

Hippo's platform meets the Coactive Care needs of patients and clinicians, providing the evidence and confidence they need to comfortably share information, make decisions, and guide patient evaluations and treatment efficiently.

We believe that simplicity for the patients and their local caregivers is the answer to complexity. We have a simple solution to a complex problem, which is the best answer to intractable problems.

Our platform makes any patient encounter better, and can be adapted constructively by the people who use it. They know the work and they know what they need. Consistent collaboration teaches them how to present to their remote colleagues, which makes them better with each encounter and is far more efficient for the remote experts. Each then does only what they can do best. They can get it right, the first time, every time. That is true efficiency.

The transition from the current model to the new model must be feasible and attractive. To that end, this new model works as effectively in the current fee-for-service environment as it does for value-based care. It is not an either-or solution, which is important since so many systems and groups practice both fee-for-service and with risk-based contracts.

In Summary

01 The last innovation in the delivery of healthcare was the integrated delivery system.

02 Our current model has been "unsustainable" for decades. Only cost shifting, rationing, greater national debt, and higher taxes maintain it.

03 Rural care and post-acute care are in a crisis with rural care dwindling at an increasing rate. In many cases, they resemble care in emerging countries. The lost and unseen patients and caregivers tell the story. Much the same is true for inner cities.

04 We have sufficient resources to address our needs if we use a new technology that enables systems to deploy them differently.

05 We need a new model of care. One that is literally patient centered — the patient Health Hub — that starts fresh from the bottom up. One that begins with the ideal patient encounter rather than one that is "good enough." One that optimizes scarce specialty expertise and builds local capabilities and local Centers of Confidence. One based in the home to finally deliver compliance and adherence to manage disease and the means to create healthy lifestyles to reduce the incidence of disease and the subsequent demand for health services.

06 The home as the Health Hub is the way out. It is time to take it. It is the next model of care.

It's time for a change.

To break barriers, reduce disease burdens, and meet patients' medical and social needs, care and compliance must happen where it matters most — in the home. This shift is not just necessary for today, but is the foundation for effective value-based care tomorrow.

Our outdated hospital-centric model must give way to a new, patient-centered framework that brings resources directly to patients, their families, and caregivers in their immediate environment. This approach prioritizes what truly matters — the outcomes patients, families, and clinicians value most — not the compromises and limitations of the current system.

With technology like Hippo Coactive Care, we can bridge the gaps of time, distance, and expertise, rebuilding trusted, effective physician-patient relationships. The path to a healthier future starts now.

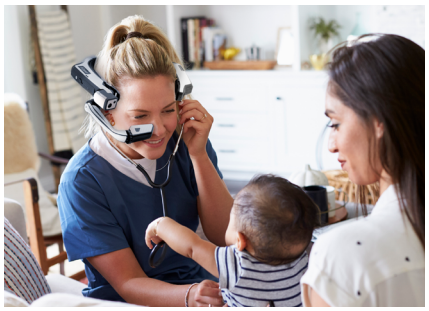
Hippo Coactive Care™

BRING THE HOSPITAL TO THE HOME AND
EXTEND THE REACH OF SPECIALTY CARE

Supercharge your caregivers with wearable voice-enabled computing

Hippo's hands-free, voice-activated, Augmented Reality platform delivers a "through the eyes of the caregiver" viewpoint allowing Specialty Physicians to diagnose and treat patients as if they were in the room.

- Easy to deploy and quick to scale
- Designed by clinicians, for clinicians for ease-of-use
- Team-based clinical workflow platform
- Increases clinician productivity, reduces costs
- Increases patient and provider satisfaction



Hippo Coactive Care enables seamless collaboration between specialists, nurses, and remote caregivers

The Hippo Virtual Care headset delivers a "through the eyes of a caregiver" viewpoint to remote participants and observers.

The Hippo Virtual Care platform allows Specialty Physicians or medical staff to collaborate and conduct real-time patient examinations in the home.

To learn more, contact:

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