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How virtual and in-person care merge for a healthier and more sustainable future

Health systems must not revert to old habits that center care in hospitals and instead should seize on recent progress to push toward new models that seamlessly integrate virtual, home-based and in-person care.
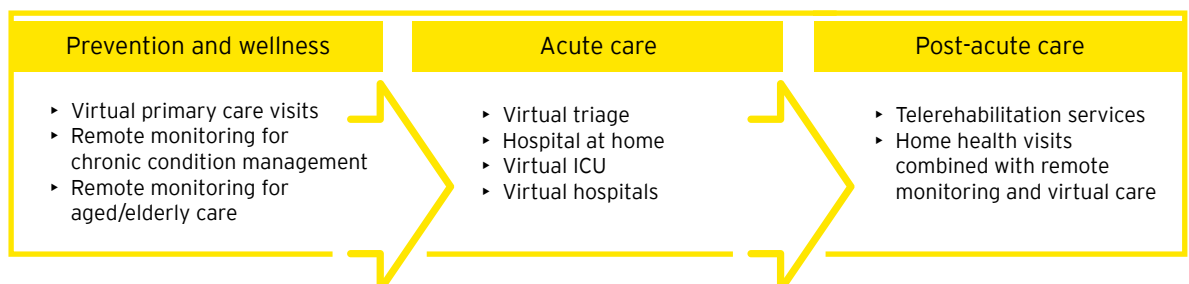
In brief

- Global evidence suggests integrating virtual and in-person care can free up staff and hospital beds, reduce costs, and improve outcomes as health systems try to treat an older, sicker population, with fewer health workers.

- In the intelligent care ecosystem, health systems should have deep knowledge of the patient pool so care pathways can be stratified according to consumer preferences, lifestyle factors and health needs.

- The successful integration of virtual and in-person care requires new workforce roles, payment incentives and expanding concepts such as digital command centers, care coordination and hospital at home.

How care delivery models can successfully integrate virtual and in-person care

Built on connected digital platforms that unite data from across the ecosystem, this hybrid care delivery model is proactive, data-driven and user-friendly, allowing for care that keeps patients healthier at home longer and prevents the progression of disease to crisis points. From primary care to post-surgery, care teams can be constructed to help patients set up the wearables and connected devices needed to monitor important biometric data in their home. Those readings can be monitored by clinicians at a digital command center that alerts the care team to act if certain readings warrant a virtual call or a home health visit. Artificial intelligence (AI) can be incorporated to flag changes in readings and surface them to the staff.

Virtual care and remote monitoring across the care spectrum

Figure 1: Hybrid care models keep patients healthier at home longer

Prevention and wellness
- Virtual primary care visits
- Remote monitoring for chronic condition management
- Remote monitoring for aged/elderly care

Acute care
- Virtual triage
- Hospital at home
- Virtual ICU
- Virtual hospitals

Post-acute care
- Telerehabilitation services
- Home health visits combined with remote monitoring and virtual care

Successfully integrating virtual care allows for patients to be routed to the most appropriate care setting. Virtual triage can help health systems connect patients who might otherwise head to higher-priced emergency departments or urgent care to their primary care provider. To meet the needs of working parents or seniors who lack transportation, systems can offer virtual primary care visits, eliminating drives and waiting room time where they could be exposed to viruses. The burden can be lessened for caregivers, who can be kept informed of the patient's status, in coordination with care navigators.
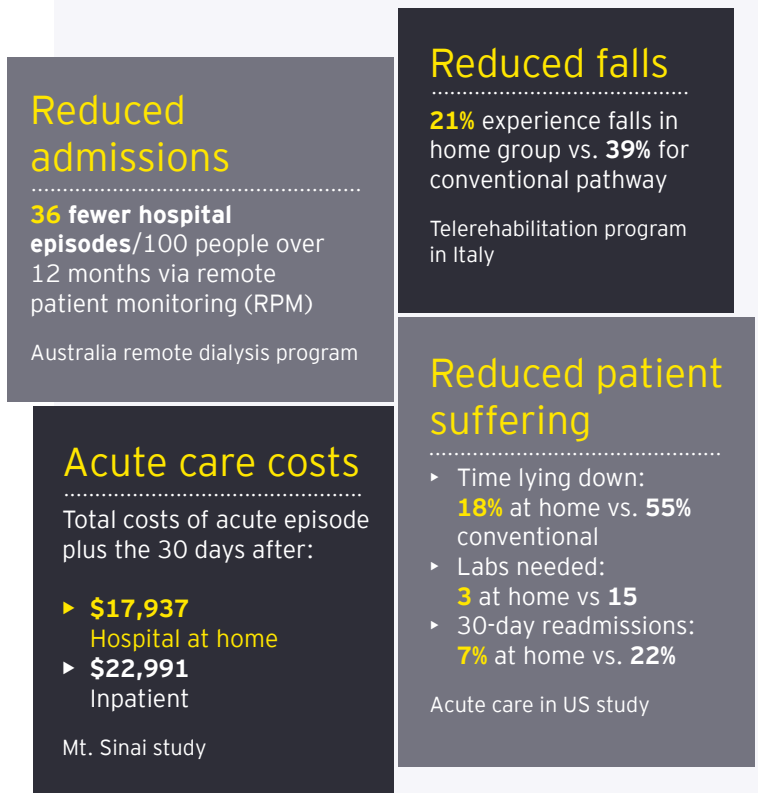
In Alberta, Canada, virtual care has expanded access for a widespread population that may not otherwise have access to care. Neonatal ICU physicians are connected to remote areas via video to consult on newborns in distress, helping determine whether patients should be transported to the NICU. Similar consults can be done virtually with specialists for many needs in remote areas, determining the most appropriate setting for their care. "We save money, we save time, and we save unnecessary congestion of the EDs in urban centers," said Dr. Jonathan Choy, Senior Medical Director of Virtual Care, Access and Navigation for Alberta Health Services, during an EY webcast on virtual care.[1]

Virtual care also can help with clinician gaps. In Western Australia, an inpatient telehealth program delivered virtual ward rounds when general practitioners were not available, allowing 87% of patients to be monitored without needing transfer.[2]

The global evidence for the shift to the home is growing

Research from around the world suggests the business case is building for health systems and payers to move from the hospital to the home when it comes to treating certain conditions. In Italy, a telehealth program for elderly patients with congestive heart failure was able to reduce costs by 65%, while also decreasing emergency department (ED) visits and readmissions within 30 days.[3] In the US, a randomized controlled trial of acutely ill adults through Mass General Brigham showed that providing care in the home could reduce the adjusted mean cost of the acute episode by 38%, with home visits, remote monitoring, virtual care, IV medication and at-home testing enabling that care.[4]

Figure 2: Integrated virtual care can help improve hospital quality measures and reduce patient suffering

Reduced admissions

36 fewer hospital episodes/100 people over 12 months via remote patient monitoring (RPM)

Australia remote dialysis program

Acute care costs

Total costs of acute episode plus the 30 days after:

- **$17,937** Hospital at home
- **$22,991** Inpatient

Mt. Sinai study

Reduced falls

21% experience falls in home group vs. **39%** for conventional pathway

Telerehabilitation program in Italy

Reduced patient suffering

- Time lying down: **18%** at home vs. **55%** conventional
- Labs needed: **3** at home vs **15**
- 30-day readmissions: **7%** at home vs. **22%**

Acute care in US study

Sources: Psarros, G, McElduff, P, "PUK3 Cost Consequence Analysis of Remote Monitoring with Homechoice," Urinary/Kidney Disorders – Economic Evaluation, 01 September 2020; Bernocchi, P, Giordano, A, Pintavalle, G, et al, "Feasibility and Clinical Efficacy of a Multidisciplinary Home-Telehealth Program to Prevent Falls in Older Adults: A Randomized Controlled Trial," JAMDA, 23 October 2018; Saenger, P, Ornstein, K, Garrido, M, et al., "Cost of Home Hospitalization vs. Inpatient Hospitalization Inclusive of a 30-Day Post-Acute Period," Journal of the American Geriatrics Society, 25 February 2022; Levine, D, Ouchi, K, Blanchfield, B, Saenz, A, et al, "Hospital-Level Care at Home for Acutely Ill Adults: A Randomized Controlled Trial," Annals of Internal Medicine, December 2019.

This shift will need to be made as the current methods of delivering care are not sustainable, in terms of workers needed, the care that will be demanded by a larger aging population with increased rates of chronic disease, and in overall costs to governments and consumers.[5]

Researchers in the Netherlands estimated that between 19% to 32% of care could be moved from the hospital to the home.[6] They did note that while the wards could reduce nurses needed per shift by moving to remote monitoring, they would have to invest in telehealth nurses and the devices needed to operate virtually. However, once this integrated model could be scaled hospital wide, the system experienced savings. Too many pilots across the globe hint at the potential for virtual and remote care, but these options must be integrated holistically so it can be truly scaled.

Hybrid models must consider patient experience to achieve successful consumer engagement. In a patient preferences study at Johns Hopkins, a third of patients surveyed listed qualities such as physician kindness and "efforts to connect with me as a human being" as their top concern about the patient-physician relationship, while 80% wanted shared decision making for medications.[7] The burden to the patient to seek care can also be reduced through virtual, as one US study found that a visit to an in-person urgent care center took on average 10 times longer than the average total time for a virtual urgent care visit.[8] Ninety percent of survey respondents were satisfied with the virtual visit, and 40% said they would have gone to the ER as an alternative or have delayed care without the virtual option.

"How do we keep people well, but when needed, how do we provide the best care for them in the most frictionless way?" asked Eric Liston, administrator of Connect Services for Intermountain Healthcare, during an EY webcast on virtual care.[9] He continued, "We've built our programs based on data and analytics to make sure that we are giving personalized care."

The voice of the clinician also must be incorporated. "As care models and clinical journey maps are designed as a part of the product development process, it is important to remember there are two customers: the clinician as well as the patient or consumer. We need to simplify the workflow to minimize clinician burnout and think about how we can make their lives easier using clinical decision support tools, AI and machine learning (ML), while also getting into the life flow of consumers to make sure that we are building something that is simple to use and gets their needs met," said Kristi Henderson, Senior Vice President and CEO, Optum Everycare, during an EY webcast on virtual care. "While digital can be anywhere, we really have to build trusted relationships, so it's really important to invest in that. If you're going to have a digital or virtual PCP, be intentional about engagement and high-value touch points to allow those trusted relationships to occur," she said.

Health care organizations and ecosystem partners continue to invest in virtual and remote care models with the global telehealth and telemedicine market expected to grow from 2022's $87.8 billion to $285.7 billion by 2027.[10] In the US, Mayo Clinic and Kaiser Permanente have partnered to deliver acute care at the home with Medically Home, which estimates that 30% of hospitalized patients can benefit from the model.[11] Retail giants Best Buy and CVS have recently invested in their own virtual care platforms.[12] The UK and Singapore are expanding their use of virtual wards for certain medical conditions, while Israel has opened a virtual hospital.[13]
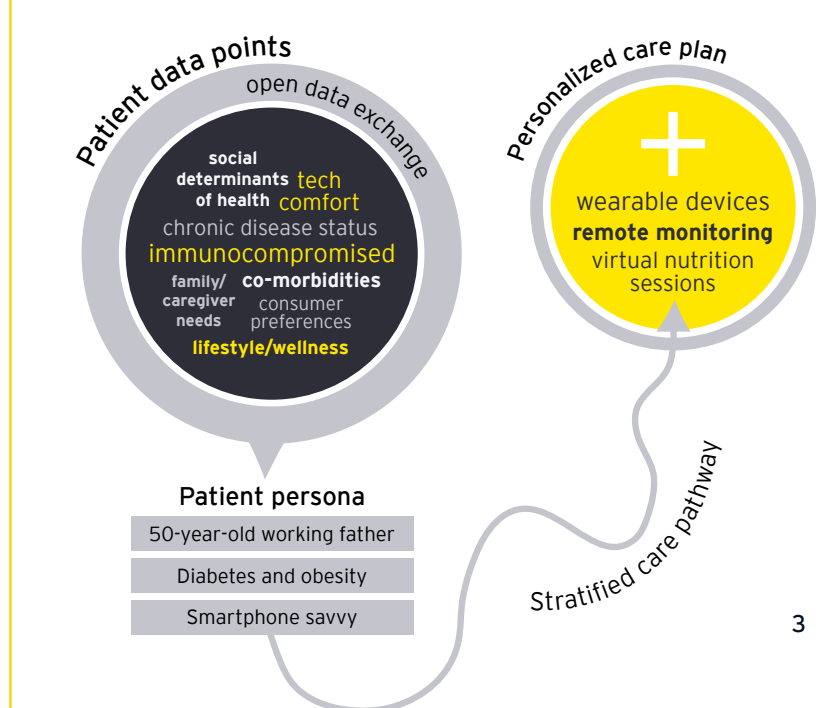
Where can health organizations make the shift now?

The first step in realizing the potential of integrated virtual and in-person care is knowing your patient pool. An analysis of areas with high utilization but low-acuity care can spotlight opportunities to shift care out of the hospital. Doing so increases capacity for those who truly need to be in an inpatient or emergency setting, and allows clinicians to practice at the top of their license, improving their feelings of purpose so they can focus on in-person interactions with patients.

"When patients come to one of our services with a clinical challenge, we want to meet that challenge with the right capability," said Dr. Bill Beninati, who helps lead TeleHealth Services, Patient Placement and Transfer, Life Flight, and Classic Air Medical, for Intermountain Healthcare. "We want all clinical leaders to be so capable and fluent in telehealth that when they're solving clinical problems, it's part of their toolkit. They can seamlessly flex between clinic visits versus telehealth versus inpatient care versus a procedure to best meet the patient's needs at that time. When we work with clinical teams to develop that fluency, the telehealth and in-person services are fully integrated and this ensures that we're not duplicating services."

Of course, incentive structures need to evolve for hospitals, as governments and payers will need to construct reimbursement strategies that encourage integrated care pathways to make the system more sustainable. Hospital beds are expensive and precious resources that should not be filled with patients who can be treated more efficiently, effectively and comfortably at home.

Figure 3: A whole person approach to knowing your patient population and stratifying patients in clinically appropriate ways

Patient data points
open data exchange

social determinants of health
tech
comfort
chronic disease status
immunocompromised
family/ caregiver needs
co-morbidities
consumer preferences
lifestyle/wellness

Personalized care plan

wearable devices
remote monitoring
virtual nutrition sessions

Patient persona

50-year-old working father

Diabetes and obesity

Smartphone savvy

Stratified care pathway

Health systems also must confront obstacles in digital literacy and access to broadband, which further underscores the need for health organizations to understand their patient pool and expand their ecosystem partners with pharma, tech companies, retailers, governments and community organizations.

Five key takeaways for global health organizations

1. Know your patients

Using clean, codified real-time data, health organization can build clear insight into their patient pool to understand who wants virtual, remote and home care, which patients benefit the most, and how to stratify their care pathways to provide the best experience and outcomes. Analyze the conditions or personas that might benefit most from a hybrid or home care model, then use a human-centered approach to deliver care how patients want it. For example, for those who lack digital literacy, consider the importance of a tech-enabled partner who can help them get connected and comfortable with the technology. As the sustainability of health systems will continue to be challenged, organizations also should consider cost-effectiveness when stratifying patients.

Health systems also may need communication strategies that further educate consumers on virtual care options and quality. A 2022 cohort study of more than half a million patients in the US found that telemedicine resulted in significantly better performance or no difference in 13 of 16 comparisons on quality measures, mostly in those ratings associated with testing and counseling.[14]

2. Think holistically in your approach

Avoid a thousand pilots that never scale. Avoid adopting a different point solution for every area of care. Health organizations need a hybrid holistic approach to virtual and in-person care to truly take advantage of the potential. They also will need to invest in technology modernization so they have the proper infrastructure to change care delivery.

3. Consider new workforce roles and incorporate the clinician view into design

Do health organizations have enough of a pipeline to fill the roles that will be needed for the future, such as care coordinators, nurse information technologists, command center clinicians and home health workers? How can health organizations evolve the technical acumen of the clinical workforce in a positive way to encourage adoption, so this model is not just one more digital initiative that is being forced upon physicians and nurses? Clinicians should have a voice at the table when it comes to any new digital tools. And what nonclinical roles can be created to reduce administrative burden and save clinical capacity for where it is only truly needed?

4. Challenge the incentive structure

Governments should not back away from the special permissions they granted for new care models during the COVID-19 pandemic. The ecosystem must think creatively about how to fund and incentivize the shift toward tech-enabled services that consumers are accustomed to in all areas of their life. Continuing on the current pathway is not financially sustainable.

5. Don't forget the caregivers

They are essential to improving outcomes, experience and making sure patients receive the appropriate care, but too often are left on their own to navigate complex, befuddling systems and to advocate for their loved one. Virtual care options, when combined with care navigators, can help lessen the burden on them and keep them connected to the care team.

Contributors:

Aloha McBride, EY Global Health Sector Leader
Kelly Hawk, EY Global Virtual Care Solution Leader
Kenny O'Neill, EY Global Smart Health Experience Solution Leader
Rachel Hall, EY Global Smart Health Experience Solution Leader and US Digital Health Leader
Crystal Yednak, EY Global Health Senior Analyst

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References

1. "How to create the care models of tomorrow that are barely imaginable today," EY webcast, 15 December 2022.

2. Government of Western Australia, Western Australia Country Health Service, "Snapshot: WACHS Command Centre," 15 October 2020.

3. Burdese E, Testa M, Raucci P, Ferreri C, Giovannini G, Lombardo E, Avogadri E, Feola M, "Usefulness of a Telemedicine Program in Refractory Older Congestive Heart Failure Patients," *Diseases,* 20 January 2018.

4. Levine, D, Ouchi, K, Blanchfield, B, Saenz, A, et al, "Hospital-Level Care at Home for Acutely Ill Adults: A Randomized Controlled Trial," *Annals of Internal Medicine,* December 2019.

5. United Nations website, "Ageing," accessed 20 December 2022.

6. Peters, G, Doggen, C, van Harten, W, "Budget impact analysis of providing hospital inpatient care at home virtually, starting with two specific surgical patient groups," *BMJ Open,* 01 August 2022.

7. Hirpa M, Woreta T, Addis H, Kebede S, "What matters to patients? A timely question for value-based care, *PLoS ONE,* 09 July 2020.

8. Khairat, S, Lin, X, Liu, S, et al., "Evaluation of Patient Experience During Virtual and In-Person Urgent Care Visits: Time and Cost Analysis," *Journal of Patient Experience,* 12 January 2021.

9. "How to create the care models of tomorrow that are barely imaginable today," EY webcast, 15 December 2022.

10. PR Newswire, "Global Telehealth & Telemedicine Market 2022," 12 April 2022.

11. Mayo Clinic, "Mayo Clinic, Kaiser Permanente announce strategic investment in Medically Home to expand access to serious or complex care at home," 13 May 2021.

12. CVS Health, "CVS Health to launch new virtual primary care solution on single digital platform," 26 May 2022; Landi, H, "Best Buy shelled out $400M for Current Health as it ramps up health strategy," *Fierce Healthcare,* 29 November 2021.

13. Ang, A, "Singapore's Ministry of Health expands virtual ward pilots," *HealthcareITNews,* 05 October 2022; NHS, "Enablers for success: Virtual wards including hospital at home," 25 April 2022; Nicholls, M, "Sheba Beyond: Creating Israel's first virtual hospital," *Healthcare-in-europe.com,* 08 May 2021.

14. Baughman, D, Jabbapour, Y, Westfall, J, et al., "Comparison of Quality Performance Measures for Patients Receiving In-Person vs Telemedicine Primary Care in a Large Integrated Health System," *JAMA Network Open,* 26 September 2022.

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