# The Virtual Hospital-at-Home Quality Framework: A Foundation for Quality Improvement

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To improve quality and safety for the hospital-at-home (HaH), a foundation for quality improvement is needed that accounts for the unique nature of home-based acute care while honoring inpatient standards for acute, inpatient care delivery. Quality frameworks for the facility-based hospital delivery system have accounted for such drivers of inpatient quality and safety as timeliness, efficiency, and patient-centricity. Hospital-at-Home and other forms of home-based care, which may vary in level of clinical acuity or involve a combination of in-person and virtual care, require a quality framework that expand on these quality drivers for the home environment.

In 2021, quality and safety leaders from Medically Home Group, Mayo Clinic and Kaiser Permanente collaborated to devise the Virtual Hospital-at-Home Quality Framework that honors the nuance of high-acuity hospital-at-home care that is rapidly scaling with collaboration between virtual and in-home clinicians. We convened expert opinion on quality standards, while determining a set of core Hospital-at-Home quality indicators, upon which programs can build quality systems and quality improvement endeavors. In so doing, we sought

consensus from Hospital-at-Home programs in the United States who have leveraged virtual care as a core component of care provision to safely scale home-based care. We elicited feedback from participating programs in an iterative fashion and aligned our quality standards to four distinct pillars of the Hospital-at-Home Quality Framework; each pillar highlights unique areas of importance for our care model as follows:

# Access & Equity

Differentiating healthcare access, separate from health equity, demonstrates the unique ability of HaH care to expand access to acute care, particularly for geographic regions with limited acute care access. Standards for expanding access to HaH itself will include expansion of health insurance reimbursement for HaH care, as well as expansion of points of entry into HaH programs, inclusive of Emergency Departments, hospital wards, primary care or urgent care clinics and direct admission from the home. Separately, standards for HaH care will include equitable care provision that honors patients' unique differences and social drivers of health (SDoH); HaH care has an extraordinary capacity for enhancing equitable care in our health system given its ability to impact SDoH directly in the home environment.

# Safety & Reliability

Safety practices for inpatient hospital settings typically address the prevention of harm. HaH care demands this in addition to high reliability of in-home services that are similar to or better than the traditional hospital along the axes of timeliness, efficiency, and effectiveness. Highly reliable in-home services are not only crucial to the delivery of safer care, but are the primary point of focus for scaling HaH programs that seek to expand acute care services in a distributed geography. Reliability of in-home service

provision involves such quality standards as identity verification, licensing, credentialing, service performance and responsiveness, concepts that are standard for inpatient settings. Moreover, with distributed teams providing in-home HaH care, Just Culture and High Reliability Organization (HRO) principles engage HaH providers in safer, distributed clinical teams and communication patterns.

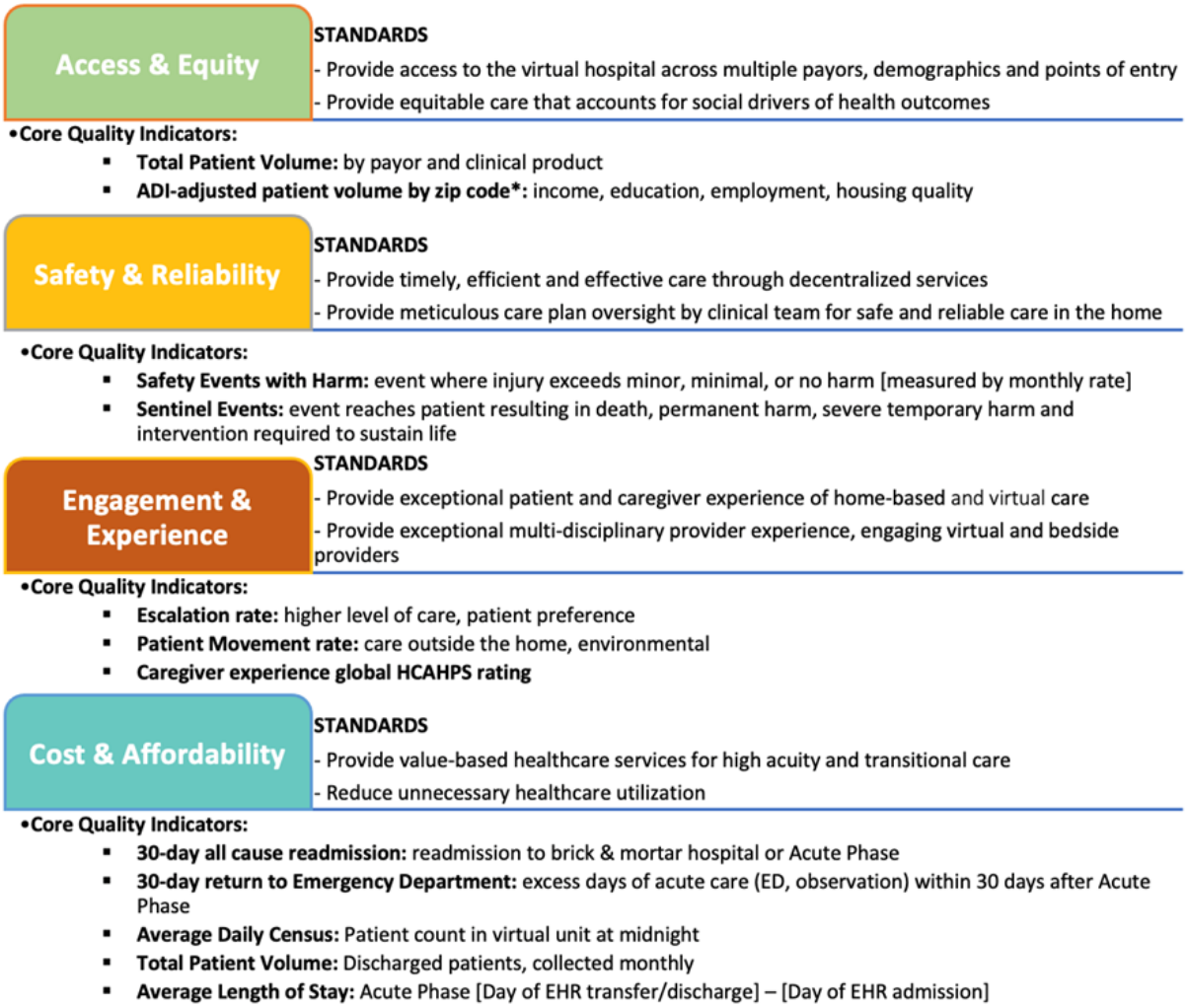
## Engagement & Experience

Traditional hospital quality frameworks account for patient-centeredness; HaH care requires patient- and caregiver- or family-centeredness. HaH care providers must be deeply engaged in their clinical care planning to optimize clinical outcomes. Moreover, the HaH care model has the potential to reduce provider burnout and improve clinician experience of care provision, in part because of the unique connection that HaH clinicians may develop with home-based patients. Provider, caregiver, family, and patient experience and engagement may be improved in the home, while growth and scale of the HaH care model requires engagement of providers, patients and caregivers who have not historically experienced this form of acute care provision.

## Cost & Affordability

Hospital at Home is a value-based care intervention, by virtue of improving quality of care while reducing total cost of care for the healthcare delivery system. The value equation (value=quality/cost) may be applied to the above quality pillars, with the goal of improving value by increasing the numerator while maintaining or reducing the denominator. To scale HaH programs, services must be provided safely and economically in a way that improves value for patients in need of acute care. The support of government, health insurance and public health stakeholders in HaH care will depend upon the

value that HaH care provides to patients and families.

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# Conclusion

By distilling and highlighting these principles, quality leaders from Medically Home Group, Mayo Clinic, and Kaiser Permanente defined core HaH quality indicators for the purpose of benchmarking against the standards associated with each pillar of the Virtual Hospital-at-Home Quality Framework. In this way, the Virtual HaH Quality Framework serves as a foundation for quality improvement endeavors, as well as a foundation for the addition of novel standards and indicators to advance HaH quality and safety in practice.

# Further Research

Future directions for the HaH Quality Framework are underway and will include further specification of such quality indicators as 30-day mortality, rate of discharge to post-acute facilities, and demographic variables of patients served in HaH programs. Risk adjustment of quality indicators and establishment of standardized data definitions will facilitate benchmarking between HaH programs, to enhance quality across all HaH programs by further defining best practice.

# ABOUT THE AUTHOR

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Gregory Snyder is a clinician and physician innovator applying technology and novel care model design to improve healthcare quality. He is a graduate of the Sidney Kimmel Medical College at Thomas Jefferson University, Brigham & Women’s Hospital Internal Medicine, and Harvard Business School. He practices

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