

# Hospital at Home: Paying for What It's Worth

Aditya Achanta, MD; David E. Velasquez, BS; and David C. Grabowski, PhD

In recent years, home health care has grown to 3% of overall US health care spending.<sup>1</sup> Investment in home health care delivery including telemedicine grew considerably during the COVID-19 pandemic.<sup>2</sup>

One area that has lagged in terms of growth has been the hospital-at-home model. Prior to the pandemic, a Medicare fee-for-service reimbursement method for hospital-at-home services did not exist. The slow growth of this model has been discouraging because hospital-at-home programs appear to work. A meta-analysis of 61 randomized controlled trials of hospital-at-home programs found that such programs reduced mortality and costs.<sup>3</sup> Patients in the hospital-at-home model compared with those with traditional hospitalizations experience lower rates of delirium and may experience lower rates of falls and infections.<sup>3,4</sup> There also are higher rates of patient satisfaction and caregiver satisfaction in the model.<sup>5</sup>

The COVID-19 pandemic escalated the need for home-based health care delivery programs. On November 25, 2020, CMS announced the creation of an Acute Hospital Care at Home program to reimburse qualifying hospital-at-home models.<sup>6</sup> A number of large academic medical centers are participating in this program. As we increasingly adopt the Acute Hospital Care at Home program and similar home-based services, it is crucial to better define the value of these programs and their appropriate reimbursement rates. Here, we provide a framework centered around cost, quality, and equity to help accomplish this task.

## Measuring Quality

Prior to the COVID-19 pandemic, hospital-at-home services were reimbursed through negotiated payment models with commercial insurance plans and Medicare Advantage plans.<sup>7</sup> CMS' newly created Acute Hospital Care at Home program now provides a fee-for-service reimbursement mechanism for selected hospital-at-home programs.

Currently, hospital-at-home programs are considered extensions of brick-and-mortar hospitals, and services provided by hospital-at-home programs are reimbursed at regular inpatient rates. To qualify for reimbursement by CMS, existing hospital-at-home programs must report monthly on 3 key metrics: unanticipated

## ABSTRACT

On November 25, 2020, CMS announced the creation of an Acute Hospital Care at Home program to reimburse qualifying hospital-at-home models. As we increasingly adopt the Acute Hospital Care at Home program and similar home-based services, it is crucial to better define the value of these programs and their appropriate reimbursement rates. We provide a framework centered around cost, quality, and equity to help accomplish this task. Quality reporting should use both inpatient-specific and home health care-specific metrics, equity-focused process metrics and risk-adjusted outcome metrics, and validated disease-specific tools. Costs should be measured comprehensively and uniformly through the use of time-driven activity-based costing and consider caregiver opportunity costs. It is also worthwhile to consider personal, societal, technical, and allocative value when determining the value and subsequent reimbursement rates of hospital-at-home programs. With careful patient selection, the hospital-at-home model has the potential to significantly benefit a subset of patients. To create sustainable reimbursement mechanisms for hospital-at-home programs, we first need a better definition of the value provided by this model of care.

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## TAKEAWAY POINTS

A framework centered around cost, quality, and equity is essential to define the value of hospital-at-home programs.

- ▶ Validated disease-specific tools should be consistently used to measure process metrics, outcome metrics, quality-of-life measures, and caregiver satisfaction measures.
- ▶ Equity-focused process metrics, care utilization measures, and risk-adjusted outcome metrics should be reported.
- ▶ Total costs of care for hospital-at-home programs should be consistently measured through a time-driven activity-based costing method.
- ▶ Personal, societal, technical, and allocative value should be considered when determining the value of hospital-at-home programs.

mortality, transfer to inpatient care at brick-and-mortar hospitals, and volume of patients treated.<sup>8</sup> Although these metrics provide some insight into the value of hospital-at-home programs, they are inadequate in measuring the true quality of home-based care.

For home health agencies (different from hospital-at-home programs, which provide more acute care services), CMS uses a more comprehensive Home Health Quality Reporting process to assess risk-adjusted process measures, outcomes measures, occurrences of adverse events, utilization of care measures, and cost measures.<sup>9</sup> After the COVID-19 pandemic, similar reporting processes should be implemented for measuring the quality and outcomes of hospital-at-home programs. Because hospital-at-home programs share features of both inpatient hospital admissions and home health agencies, they are uniquely positioned to both treat the patient acutely and improve the living conditions and resources that led to the acute illness. In addition to volume, mortality, and hospital transfer rate metrics, hospital-at-home programs should also report equity-focused process metrics,<sup>10</sup> care utilization measures, and risk-adjusted outcome metrics that may better reflect efforts to address the underlying causes of illness. For example, hospital-at-home programs should collect data stratified by race, ethnicity, and language to improve access to medications and healthy living conditions for all groups of patients.

In addition, validated disease-specific tools should be consistently used to measure process metrics, outcome metrics, quality-of-life measures, and caregiver satisfaction measures. For example, for heart failure, a number of validated tools exist to measure process metrics, outcome metrics, and quality of life. The American Heart Association's Get With the Guidelines – Heart Failure, an in-hospital program, describes a comprehensive, robust set of quality measurements including process and outcome measurements for heart failure management.<sup>11</sup> Process metrics include assessment of left ventricular ejection fraction, adherence to guideline-recommended medical therapy at discharge, and scheduled follow-up; process metrics correlate well to high-quality heart failure care.<sup>12</sup> Outcome metrics include 30-day mortality and 30-day readmission rates.<sup>12</sup>

Although hospital-at-home programs have been associated with lower costs, these cost reductions are mostly due to reduced length of hospitalization,<sup>13</sup> number of consultations,<sup>14</sup> and clinical

testing.<sup>13</sup> It is yet unclear if the reduction in services utilized also leads to a reduction in value for the patient—either through fewer completed process metrics or significantly increased caregiver burden. The careful utilization of disease-specific validated tools will allow CMS to better determine the value and price of hospital-at-home individual services compared with traditional hospital services.

### Measuring Costs

Hospital at home has generally been found to be less costly than traditional hospitalizations;

however, the methods of identifying costs are heterogenous. Of 34 studies included in a meta-analysis comparing the costs of hospital at home with those of hospitalizations, 32 studies found hospital at home to cost less.<sup>3</sup> For example, in a recent randomized controlled trial evaluating patients treated in a hospital-at-home program compared with those treated in a traditional hospital, the risk-adjusted cost reduction of home care management was 19%.<sup>15</sup> In this trial, costs were calculated by summing the costs of labor, equipment, medications, laboratory tests, imaging tests, and transport during the period of hospitalization.<sup>15</sup> In hospital-at-home models, cost savings are thought to be achieved due to reduced length of hospitalization,<sup>13</sup> decreased number of consultations,<sup>14</sup> reduced nursing labor costs,<sup>15</sup> and decreased clinical testing.<sup>13</sup>

However, no uniform method exists to track and assess costs,<sup>16</sup> and there is worry that the costs of hospital-at-home programs are underestimated.<sup>17</sup> To fill this gap, these programs should report and analyze the total costs of care—including costs incurred by patients and their caregivers—rather than simply the reimbursement rates for care. This would require a time-driven activity-based costing (TDABC) approach that would comprehensively track costs by analyzing the time spent on each unit of activity and include the cost of referral, labor, equipment, resources required for program set-up, transport, and caregiver opportunity cost. TDABC has not been used for home-based care, but it has addressed the challenge of costing health care services in other areas of health care.<sup>18</sup>

An equity perspective will be required to fairly attribute costs to hospital-at-home programs because caregiver opportunity cost and cost of purchasing resources may vary across socioeconomic groups; caregivers from lower-income households may find it more burdensome to give up an hour of work than caregivers from higher-income households. These differences among households should be taken into consideration when assessing a program's total cost and subsequent patient cost-sharing and insurer reimbursement rates.

Another challenge of assessing costs for hospital-at-home programs is that the length of stay can be ambiguous. Without an accurate and comprehensive assessment of the cost per period of care of hospital-at-home programs, it is difficult for Medicaid, Medicare, and insurers to determine fair reimbursement rates.<sup>16</sup> Uniform costing methods and definitions of periods of care for

hospital-at-home services are necessary prerequisites to defining value, determining reimbursement, and widespread adoption.

## A Broader Definition of Value

In addition to the traditional definition of value, it is worthwhile to consider the Quadruple Value model,<sup>19</sup> which considers personal, societal, technical, and allocative value, when determining the value and subsequent reimbursement rates of hospital-at-home programs. The notion of personal value considers health care decisions as having greater value when they align closely with a patient's value system. Hospital at home may add significant personal value for patients.<sup>15</sup> When participating in hospital at home, a patient's potential greater comfort may make them more likely to play a larger role in health care decisions and to voice concerns.<sup>20</sup> Societal value is generated by hospital-at-home programs by allowing patients who are hospitalized to continue to be active members of their community. From home, patients can receive support from neighbors, siblings, parents, and children, and in turn can continue to support others. This model neatly ties into the domain of patient experience, another critical component of measuring value in addition to quality and cost.

## Conclusions

Due to the constraints imposed by the COVID-19 pandemic, patients and doctors have grown comfortable with telemedicine and have a newfound appreciation for the benefits of home health care services. With careful patient selection, the hospital-at-home model has the potential to significantly benefit a subset of patients. To create sustainable reimbursement mechanisms for hospital-at-home programs, we first need a better definition of the value provided by this model of care. Even if CMS fee-for-service reimbursement mechanisms are appropriately replaced by bundled payment or capitated arrangements, our quality and cost considerations would still be applicable under these frameworks. It is therefore prudent for providers and insurers to begin to more accurately assess the cost, quality, and equity of their hospital-at-home programs. ■

**Author Affiliations:** Department of Health Care Policy (DCG), Harvard Medical School (AA, DEV, DCG), Boston, MA; Massachusetts General Hospital (AA), Boston, MA.

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**Address Correspondence to:** Aditya Achanta, MD, Harvard Medical School, 4 Greenway Ct, Apt 1, Brookline, MA 02446. Email: aachanta@mgh.harvard.edu.

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