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Hospital at Home for Admission Avoidance or Early Hospital Discharge in Adult and Pediatric Patients

Health Technology Assessment

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Office of Health Insurance Programs
Empire State Plaza, Corning Tower
Albany, NY 12237
(518) 473-2160
https://www.health.ny.gov/health_care/medicaid/ebbrac
EBBRAC@health.ny.gov

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Prepared by

Center for Evidence-based Policy
Oregon Health & Science University
3030 S Moody, Suite 250
Portland, OR 97201
Phone: 503-494-2182
Fax: 503-494-3807
http://centerforevidencebasedpolicy.org/

Authors

Susan Connor, PhD; Jesse Baumgartner, MPH; Laura Pavlech, DVM, MSLS; Valerie J. King, MD, MPH; Elizabeth J. Brown MD, MSHP.

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List of Abbreviations

Center	Center for Evidence-based Policy
CI	confidence interval
CMMI	Center for Medicare & Medicaid Innovation
CMS	Centers for Medicare & Medicaid Services
CoE	certainty of evidence
CPT	Current Procedural Terminology
COPD	chronic obstructive pulmonary disease
DRG	diagnosis-related groups
EBBRAC	Evidence-based Benefit Review Advisory Committee
ED	emergency department
CQ	contextual question
GRADE	Grading of Recommendations, Assessment, Development, and Evaluation
KQ	key question
MCO	managed care organization
NYSDOH	New York State Department of Health
RCT	randomized controlled trial
SD	standard deviation

Executive Summary

Background

Hospital at Home is an alternative to traditional in-hospital care for patients who meet criteria for hospital admission but do not require critical care unit admission.[1] While the Hospital at Home label is often used broadly, this report uses the Centers for Medicare & Medicaid Services' (CMS) definition of Hospital at Home, which requires at minimum[2]:

- 24/7 availability of nursing services (virtual or in-person, as clinically appropriate)
- At least 1 daily provider visit by a physician or advanced practice provider (which can be remote after the initial in-person history and physical exam are performed in the hospital)
- At least 2 in-person daily visits by a registered nurse, mobile integrated health practitioner, or community paramedic
- Availability of key services that would be available in a brick-and-mortar hospital, such as pharmacy, infusion, respiratory care (including oxygen delivery), diagnostics (including laboratory testing and radiology), monitoring (at least 2 sets of vital signs daily), durable medical equipment, social work and care coordination, and physical, occupational, and speech therapy

For the purposes of this review, Hospital at Home programs take 2 primary forms: admission avoidance and early discharge.[3,4] In the admission avoidance model, patients receive acute or subacute treatment in a home setting or usual place of residence for a limited time, for a condition that would otherwise require a hospital admission.[3] Patients are usually referred from an emergency department (ED) or their primary care physician.[4] In the early discharge model, patients receive acute or subacute care at home for a limited time after a hospital stay, enabling earlier discharge and fewer inpatient days.[3] Patients are typically referred from acute inpatient care.[5] Health professionals who deliver Hospital at Home care can be hospital employees or employed through a service in the community (e.g., home health nurses, paramedic services).[3]

Systematic reviews from the Cochrane Collaboration looking at admission avoidance[3] and early discharge[4] models found that Hospital at Home services provide superior or similar outcomes to inpatient care, although they defined Hospital at Home more broadly than this report. A 2024 CMS review of Hospital at Home using Medicare claims data to compare outcomes for 11,907 unique patients who used Hospital at Home with a control group of patients treated in hospital found that the patients served by Hospital at Home experienced fewer hospital-acquired conditions (e.g., catheter-associated urinary tract infections, pressure ulcers, poor glycemic control, falls) and lower 30-day mortality rates across 25 diagnostic groups.[6]

While Hospital at Home has long been used internationally and in the US Veterans Affairs System, broader US adoption was limited by regulatory and reimbursement frameworks until CMS launched the Acute Hospital Care at Home temporary waiver program in 2020 during the COVID-19 pandemic that allowed CMS-approved hospitals to provide and receive reimbursement for inpatient-level care in residential settings for all Medicare fee-for-service beneficiaries, and Medicaid fee-for-service beneficiaries in states that elect coverage.[7-10] Prior to the CMS waiver program, Hospital at Home reimbursement opportunities were largely focused within Veterans Affairs and certain Medicare Advantage, Medicaid managed care, or commercial

plans.[10-13] Delivery of Hospital at Home services under the CMS waiver program also had to comply with state-level hospital licensure requirements.[6,9]

The CMS Hospital at Home waiver program was extended several times through federal spending bills but recently ended on September 30, 2025, when the US Congress failed to extend it further through a continuing resolution spending bill.[14-18] Current Congressional efforts to re-extend the CMS waiver program are still pending, including temporary spending bills and a separate standalone bipartisan bill that has been proposed to extend the waiver until 2030 but had not yet been passed by the time this report was finalized.[16,19]

As of August 2025, 27 hospitals in New York State had received the CMS waiver prior to it lapsing, 22 of which (81%) were in metropolitan areas.[2] While the CMS waiver program was active, those hospitals were eligible for payment through Medicare fee-for-service, along with individual Medicare Advantage, Medicaid managed care, and commercial plans that chose to cover the services.[6,10-13,20-22] New York's fee-for-service Medicaid program has not reimbursed for Hospital at Home services delivered by hospitals who were participating in the CMS waiver program.[23,24]

Aim

The purpose of this review is to identify and synthesize evidence on the clinical effectiveness, potential harms, costs, and current insurance coverage of Hospital at Home for avoiding hospital admission or enabling early discharge to inform New York State Department of Health (NYSDOH) Evidence Based Benefit Review Advisory Committee deliberations on coverage for Hospital at Home.

Methods

Key Questions

This review is based on key questions (KQs) identified by the NYSDOH regarding admission avoidance or early discharge Hospital at Home services for adult and pediatric (less than 18 years of age) patients eligible for these services:

KQ1. Clinical effectiveness of admission avoidance or early discharge Hospital at Home services

KQ2. Harms of admission avoidance or early discharge Hospital at Home services

KQ3. Costs or cost effectiveness of providing admission avoidance or early discharge Hospital at Home services

KQ4. Clinical practice guidelines and recommendations for the use of admission avoidance or early discharge Hospital at Home services

KQ5. Relevant Medicaid program coverage policies and private payer policies for admission avoidance or early discharge Hospital at Home services

Researchers from the Center for Evidence-based Policy (Center) searched Ovid MEDLINE and other clinical evidence sources for randomized controlled trials (RCTs), observational studies that measured harms of Hospital at Home, cost and cost-effectiveness studies, and clinical practice guidelines and practice recommendations. Where sufficient data were available (i.e., same collection time points and method of measuring the specified outcome), we estimated pooled

effect measures with meta-analyses of data abstracted from the included studies. To identify relevant coverage policies, we searched 9 state Medicaid program websites, 8 health plan websites, and the CMS website.

Summary of Clinical Evidence and Recommendations

We identified 14 publications from 10 eligible RCTs with effectiveness outcomes, 4 publications from 3 observational studies reporting on harms related to Hospital at Home, 3 cost-effectiveness studies, and 7 clinical practice recommendations. The Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) strength of evidence for effectiveness outcomes are summarized in Table ES1.

Effectiveness

Hospital at Home for Pediatric Patients

We identified only 1 RCT related to Hospital at Home for pediatric patients that compared Hospital at Home versus in-hospital care for moderately ill children admitted to a UK hospital for breathing difficulties, diarrhea with or without vomiting, or a feverish illness.[25] Length of care was 1 day longer in the Hospital at Home group compared to in-hospital care, but there were no differences in readmission rates or ED visits after discharge.[25] The authors concluded that the clinical effectiveness of Hospital at Home for moderately ill children with non-life-threatening conditions was not significantly different from in-hospital care.[25]

Hospital at Home for Adult Patients

We identified 9 RCTs and 3 observational studies that explored outcomes related to Hospital at Home for adult patients,[26-37] including 3 studies that focused specifically on Hospital at Home for older adults (aged ≥ 75 years).[33,34,36] All studies tested an admission avoidance model of Hospital at Home, rather than the early discharge model. In most cases, patients who met criteria for Hospital at Home were identified in the ED or referred from primary care. We had sufficient data to conduct meta-analysis on 4 outcomes related to Hospital at Home for adults: length of stay, readmission to hospital after discharge for the acute event, ED visits after discharge for the acute event, and mortality.

Admission or Readmission to Hospital Care

We identified 4 RCTs[31,34-36] and 1 observational study[30] that documented the number of Hospital at Home patients transferred from Hospital at Home to in-hospital care. One RCT reported that no patients were transferred from Hospital at Home,[31] while 3 RCTs[34-36] and 1 observational study[30] reported transfer rates ranging from 6% to 12%.

In our meta-analysis of 5 studies (2 RCTs and 3 observational studies) enrolling adult patients with various diagnoses, Hospital at Home was associated with significantly lower odds of readmission within 30 days than in-hospital care (odds ratio [OR], 0.72; 95% confidence interval [CI], 0.53 to 0.99; P = .04). Among the 4 studies reporting readmissions within 90 days of discharge, there was no difference between groups (P = .84), including in a subgroup meta-analysis limited to 2 studies of patients with exacerbation of chronic obstructive pulmonary disease (COPD) (P = .98). Two studies that recruited elderly patients (aged ≥ 75 years) with heart failure[36] or COPD[34] found that odds of readmission within 6 months of discharge were

significantly lower for the Hospital at Home group compared to the in-hospital care group (*P* = .03).

Emergency Department Visits

Three studies documented the number of ED visits occurring within 30 days of discharge.[30-32] Our meta-analysis found no difference in the odds of having subsequent ED visits between Hospital at Home and in-hospital care groups (OR, 0.73; 95% CI, 0.35 to 1.51; *P* = .39). All 3 studies included in meta-analysis enrolled adults with various diagnoses and were not limited to a specific health condition.[30-32]

Mortality

A study by Ricauda and colleagues (2004) enrolling adults aged 75 and older with first ischemic stroke was the only study to report a large number of deaths during the inpatient phase of their study, although there was no statistically significant difference in mortality during Hospital at Home admission (21.7%) compared to in-hospital care (26.7%) (*P* = .67).[33] In a meta-analysis incorporating data across multiple studies,[26-29,31,32,37] there were no differences in mortality at 30 days (*P* = .18) or 90 days (*P* = .33) after discharge from the acute care episode. Deaths within 6 months of discharge did not differ significantly between Hospital at Home and in-hospital care in a meta-analysis with 5 included studies (*P* = .07)[26,27,33,34,36] or in subanalyses limited to 2 studies of patients with heart failure (*P* = .22)[27,36] or 3 studies enrolling only individuals aged 75 or older (*P* = .41).[33,34,36]

Length of Stay

In a meta-analysis with 2 studies and 209 patients,[29,31] length of stay was significantly longer in the Hospital at Home group compared to in-hospital care (*P* = .02), averaging 1 additional day of inpatient care for the Hospital at Home group. This meta-analysis omitted 2 studies with older populations,[33,34] which had significantly sicker patients with longer lengths of stay. In a study by Ricauda and colleagues (2004) that enrolled adults aged 75 and older with first ischemic stroke, the mean length of stay was 38.1 days (standard deviation [SD], 28.6) in the Hospital at Home group and 22.2 days (SD, 11.5) in the in-hospital care group (*P* = .001).[33] Another study by Ricauda and colleagues (2008) enrolled adults aged 75 and older with COPD exacerbation.[34] The mean length of stay for the Hospital at Home group (15.5 days; SD, 9.5) was significantly longer than for the in-hospital care group (11 days; SD, 7.9) (*P* = .01).[34]

Destination at Discharge

Three RCTs that enrolled older adults (aged ≥ 75 years) reported on patient destination at time of discharge from the acute care event.[33,34,36] Patients who received in-hospital care were more likely than patients receiving Hospital at Home care to be transferred to a long-term care facility at discharge (OR, 0.03; 95% CI, 0.01 to 0.15; *P* < .001), while Hospital at Home patients were more likely to remain at home following discharge.[33,34,36]

Patient-Reported Health Status

Six RCTs included measures of patient-reported health status.[29,31,33-36] Because of differences in survey tools, captured timepoints, and outcome reporting across studies, we did not conduct a meta-analysis. Five RCTs reported no difference in patients' perceived health and functional status between Hospital at Home and in-hospital care groups.[29,31,33,35,36]

Patient Satisfaction

Five RCTs measured patient satisfaction among patients receiving Hospital at Home versus usual in-hospital care; all 5 reported that patient satisfaction with Hospital at Home was equal to or greater than satisfaction with in-hospital care.[31,32,34,35,37]

Caregiver Burden

Three RCTs compared caregiver burden for Hospital at Home and usual in-hospital care, with all reporting no difference in caregiver perceptions of burden of care for patients in Hospital at Home versus those who received care in hospital.[29,31,34]

Table ES1. Summary of Findings (GRADE)

Number of Studies Number of Participants (N)	Findings	Certainty of Evidence	Rationale for Certainty of Evidence Rating
Mortality			
Mortality within 30 days of discharge 4 studies in MA N = 2,473	No difference between HaH and UC • OR, 1.38 (95% CI, 0.87 to 2.19; *P* = .18) • No significant difference between HaH and UC in any of the 4 studies[26,27,31,32]	●●○○ Low	Downgraded 1 level for moderate to high RoB in contributing studies and 1 level for imprecision due to wide CIs
Mortality within 90 days of discharge 4 studies in MA N = 878	No difference between HaH and UC • OR, 0.81 (95% CI, 0.52 to 1.25; *P* = .33) • No significant difference between HaH and UC in any of the 4 contributing studies[27-29,37]	●●●○ Moderate	Downgraded 1 level for moderate to high risk of bias in contributing studies
Mortality within 6 months of discharge 5 studies in MA N = 1,557	No difference between HaH and UC • OR, 0.72 (95% CI, 0.50 to 1.03; *P* = .07) • No significant difference between HaH and UC in any of the 5 contributing studies[26,27,33,34,36]	●●●○ Moderate	Downgraded 1 level for moderate to high RoB in contributing studies
Hospital readmission after discharge from acute episode			
Hospital readmission within 30 days of discharge 5 studies in MA N = 2,969	Significantly lower odds of readmission within 30 days for HaH compared to UC • OR, 0.72 (95% CI, 0.53 to 0.99; *P* = .04) • 2 of the contributing studies found significantly lower readmission in HaH compared to UC[30,31] • 3 of the contributing studies found no significant difference in readmission between HaH and UC[26,27,32]	●●○○ Low	Downgraded 1 level for high to moderate RoB in individual studies, and 1 level for inconsistency, as individual studies found either no difference between HaH and usual care or an effect in favor of HaH
Hospital readmission within 90 days of discharge 4 studies in MA N = 878	No difference between HaH and UC • OR, 0.96 (95% CI, 0.68 to 1.36), *P* = .84 in meta-analysis • No significant difference between HaH and UC in any of the 4 contributing studies[27-29,37]	●●●○ Moderate	Downgraded 1 level for moderate to high RoB in contributing studies

Number of Studies Number of Participants (N)	Findings	Certainty of Evidence	Rationale for Certainty of Evidence Rating
Hospital readmission within 6 months of discharge 2 studies in MA N = 205	Significantly lower odds of hospital readmission within 6 months in the HaH group compared to UC (both studies focused on individuals aged ≥ 75 years with heart failure or COPD). • Lower odds of hospital readmission within 6 months of discharge in HaH compared to UC • OR, 0.38 (95% CI, 0.16 to 0.89; *P* = .03) • Both contributing studies reported a lower percentage of readmission in the HaH group, with a significant difference in 1 study[36] but not the other[34]	●●●○ Moderate	Downgraded 1 level for moderate RoB in both studies
Emergency department visit after discharge from acute episode			
ED visit within 30 days of discharge 3 studies in MA N = 1,739	No difference between HaH and UC • OR, 0.73 (95% CI, 0.35 to 1.51), *P* = .39 in meta-analysis[30-32]	●●○○ Low	Downgraded 1 level for moderate to high RoB across studies and 1 level for imprecision related to high heterogeneity
Length of stay			
Length of stay 2 studies in MA N = 209	Significantly lower mean length of stay in UC compared to HaH[29,31] • Mean difference, 0.64 days (95% CI, 0.12 to 1.17; *P* = .02) • Difference in mean length of stay between UC and HaH was less than 1 day in meta-analysis and in each contributing study	●●●○ Moderate	Downgraded 1 level for moderate to high RoB in contributing studies
Length of stay 2 studies limited to adults ≥ 75 years (no MA) N = 224	Significantly lower mean length of stay in UC compared to HaH • Mean length of stay was 15.9 days (SD, 9.5) for HaH and 11 days (SD, 7.9) for UC in a study of older adults with COPD exacerbation (*P* = .01)[34] • Mean length of stay was 38.1 days (SD, 28.6) for HaH and 22.2 days (SD, 11.5) for UC in older patients with first ischemic stroke (*P* = .001)[33]	●●○○ Low	Downgraded 1 level for moderate to high RoB and 1 level for imprecision due to large standard deviations
Discharge destination			
Transfer to long-term care facility upon discharge 3 studies of adults ≥ 75 years in MA N = 325	HaH patients had significantly lower odds of being transferred to a long-term care facility upon discharge from the acute care episode • OR, 0.03 (95% CI, 0.01 to 0.15; *P* < .001)	●●●○ Moderate	Downgraded 1 level for moderate to high RoB in contributing studies

Note. [a] *For methods and interpretation of GRADE ratings, see Appendix C.*

Abbreviations. CI: confidence interval; COPD; chronic obstructive pulmonary disease; ED: emergency department; GRADE: Grading of Recommendations, Assessment, Development, and Evaluations approach; HaH: Hospital at Home; MA: meta-analysis; OR: odds ratio; RoB: risk of bias; SD: standard deviation; UC: usual care.

Ongoing Trials

We identified a single ongoing study that met our inclusion criteria: an observational study in Spain (NCT06110949) that will compare the incidence of thrombotic events and atrial fibrillation diagnosis within 3 months after hospitalization in adult patients (aged ≥ 18 years) admitted with acute medical diseases (without further specification) to Hospital at Home with those treated in a conventional hospitalization unit.[38] The study is still recruiting cases for the prospective registry.[38]

Harms

No studies reported a significant difference in the odds of death during acute care hospitalization, medication errors, infections, or falls between Hospital at Home and in-hospital care.[25,28-36]

Cost and Cost Effectiveness

We identified 3 cost-effectiveness studies, all of which took a health care provider perspective. Two studies comparing costs for Hospital at Home to in-hospital care found significantly lower costs for Hospital at Home patients, although their methods for identifying and estimating costs differed.[31,39] A study by DeCherrie and colleagues (2021) used data from a CMS-funded demonstration project at New York's Mount Sinai Hospital to inventory fee-for-service payments across different hypothetical reimbursement scenarios for patients with 1 of the 5 least complex admitting diagnoses: urinary tract infection, pneumonia, cellulitis, heart failure, and chronic lung disease.[20] Scenarios were modeled with 2 different nursing assumptions: (1) skilled nursing would be provided by registered nurses contracted or employed by the Hospital at Home program, or (2) skilled nursing care would be provided by a certified home health agency.[20] The authors found that Medicare reimbursement would only be sufficient to cover the cost of providing Hospital at Home acute services in models that incorporated home health nursing.[20] The authors also reported that many services integral to Hospital at Home were not covered by Medicare, including screening of potential patients, travel time, nursing care (if patients failed to meet eligibility criteria for certified home health nursing), supply delivery, or transportation home from the ED.[20]

Clinical Practice Guidelines and Recommendations

We identified 7 clinical practice recommendations published within the past 5 years that addressed Hospital at Home, though none were official practice guidelines supported by systematic reviews of the evidence with clear processes for both evidence review and recommendation development:

- American Medical Association[40]:
  - The state of Hospital at Home models: key considerations and opportunities
- British Society for Heart Failure[41]:
  - Position statement on virtual wards
- Healthcare Improvement Scotland[42]:
  - Hospital at home, guiding principles for service development
- Hospital at Home Users Group[43]:
  - Practice standards for acute Hospital at Home

- National Institute for Health and Care Excellence (NICE)
  - Acute respiratory infection in over 16s: initial assessment and management including virtual wards[44]
  - Suspected acute respiratory infection in over 16s: assessment at first presentation and initial management[45]
  - Virtual ward platform technologies for acute respiratory infections: early value assessment[46]

Recommendations stressed the need for infrastructure and processes that protect patient safety and confidentiality, the essential role of quality measures and continuous review, and the importance of hardware and software systems that integrate with hospital systems while being user-friendly for patients and their caregivers. Recommendations also highlighted the potential for exclusion of patients from Hospital at Home due to internet and technology access issues, health literacy, and caregiver concerns.

Summary of Policy Findings

With the recent expiration of the CMS Acute Hospital Care at Home waiver program, coverage of these services is uncertain and will depend on potential Congressional action to re-extend the program. In this report, we present the coverage status of Medicaid and commercial plans while the CMS waiver program was active through September 30, 2025, and we note any public changes in policies since the waiver program lapsed.

Among the 8 reviewed health plans, only Anthem (formerly Empire) BlueCross BlueShield[47] and UnitedHealthCare[48] affirmatively covered Hospital at Home services delivered under the CMS waiver program (Anthem for commercial and Medicare Advantage plans; United for Medicare Advantage plans only, or Medicaid plans if the state agency covered it). Only Cigna affirmatively did not cover Hospital at Home services (for Medicare Advantage).[49] The other 5 plans had either no relevant policy information or unclear guidance. United HealthCare removed its coverage policy after the CMS waiver expiration.[50]

Among the 9 reviewed state Medicaid agencies, 5 affirmatively covered Hospital at Home services delivered under the CMS waiver program (Florida,[51] Massachusetts,[52,53] New Jersey,[54] North Carolina,[55] and Texas;[56] with Florida[57] and New Jersey[58] required by recent state legislation). California Medicaid initially covered Hospital at Home services after the CMS waiver program was announced[59] but ended coverage in 2023 after the state's hospital regulatory agency removed its own facility standard waivers at the end of the state's public health emergency.[60] Oregon Medicaid covered Hospital at Home services for Medicaid members during the COVID-19 pandemic,[61] but it is unclear if coverage remained active until the end of the CMS program. Pennsylvania and Washington Medicaid do not have policy information indicating that they covered Hospital at Home services. Since the expiration of the CMS waiver program, North Carolina Medicaid has issued a public notice about the termination of its coverage.[62]

Medicare fee-for-service coverage was defined by the CMS Acute Hospital Care at Home waiver program, which expired at the end of September 2025.[9] Current Congressional efforts to re-extend the CMS waiver program are still pending, including temporary spending bills and a

separate standalone bipartisan bill that has been proposed to extend the waiver until 2030 but had not yet been passed by the time this report was finalized.[16,19]

Conclusions

All of the reviewed studies explored the admission avoidance model of Hospital at Home. Of the 12 studies limited to adult patients, 5 enrolled patients across a wide range of conditions,[26,30-32,37] 3 were limited to patients with exacerbation of COPD,[28,29,34] 2 enrolled patients with heart failure,[27,36] 1 focused on patients with pneumonia,[35] and 1 was limited to older adults (aged ≥ 75 years) who had experienced their first ischemic stroke.[33] The sole study that focused on pediatric patients included children admitted for nausea or vomiting, breathing difficulties, or fever.[25] Evidence from clinical trials and observational studies indicates that patients who received acute care services through Hospital at Home were at no greater risk of subsequent readmission, ED visits, or death than patients treated in a brick-and-mortar hospital setting. Likewise, no studies reported a significant difference between Hospital at Home and in-hospital care in the odds of death during the acute care hospitalization, medication errors, infections, or falls. Older adults treated in Hospital at Home were less likely than those treated in hospital to require transfer to a long-term care facility at discharge. For both children and adults, patients in Hospital at Home had, on average, a 1-day longer length of stay than those treated in hospital. Taken together, these results support the equivalence of Hospital at Home as an alternative to in-hospital care.

We identified 3 cost-effectiveness studies,[20,31,39] 2 of which originated at New York's Mount Sinai Hospital.[20,39] Two studies comparing costs for Hospital at Home to inpatient care found lower costs in the Hospital at Home group, although they measured and reported costs in different ways.[31,39] A third study estimated Medicare reimbursement across a number of different Hospital at Home staffing scenarios and medical conditions, generally finding that project reimbursement was higher when home health nursing was incorporated in the Hospital at Home model.[20]

We identified 7 publications from the past 5 years that provide guidance or recommendations for Hospital at Home,[40-46] although none were official practice guidelines from government agencies or professional societies that were supported by systematic reviews and guided by expert panels. Recommendations discussed key requirements for acute Hospital at Home programs, including the need for infrastructure and processes that protect patient safety and confidentiality, quality measures and continuous review, and hardware and software systems that integrate with hospital systems while remaining user-friendly for patients and caregivers. Recommendations also highlighted the potential for exclusion of patients from Hospital at Home due to internet and technology access issues, health literacy, and caregiver concerns, issues that were also identified in a 2024 CMS report on the state of Hospital at Home programs in the US.[6]

At least 5 Medicaid agencies within our 9-state review sample covered Hospital at Home services provided under the CMS Acute Hospital Care at Home waiver program through September 2025, and these policies were directly tied in some way to the CMS waiver program. But Hospital at Home service coverage among Medicaid agencies nationally appeared to be relatively uncommon,[63] potentially driven by the series of short-term CMS waiver extensions and the subsequent lack of certainty around longer-term regulatory flexibilities and sustainable reimbursement.[12] Several state legislatures recently passed laws requiring Medicaid coverage of

Hospital at Home services[57,58] or creating state-level regulatory standards for Hospital at Home service delivery.[58,64] However, the recent expiration of the CMS waiver program at the end of September 2025 eliminated facility-care standard waivers tied to hospital participation in Medicare and Medicaid programs,[6,9,17,18,65-68] introducing questions around Medicaid fee-for-service coverage going forward and, absent re-extension, the financial sustainability of hospital delivery of Hospital at Home services.[10,12,69]

Background

Hospital at Home is an alternative to traditional in-hospital care for patients who meet criteria for hospital admission but do not require critical care unit admission.[1] Hospital at Home is particularly well suited for patients who have acute conditions with well-defined treatment protocols, such as congestive heart failure, chronic obstructive pulmonary disease (COPD), hypertension, hyperglycemia, asthma, deep venous thrombosis, or community acquired pneumonia.[1] Hospital at Home provides acute-level care in the home, utilizing a mixture of in-person and virtual medical and nursing services, along with remote patient monitoring.[7] It is distinct from other health care services provided in a home environment, such as home health care (which provides post-acute services for individuals recovering from surgery or illness or assistance in managing chronic conditions) or hospice care (which offers end-of-life support and pain relief for individuals with terminal illnesses).[40] For a patient being treated after a stroke, for example, Hospital at Home would provide acute care services analogous to the care that would be received during admission to a brick-and-mortar hospital, while home health care would provide the same transitional or post-acute care that would be available to a patient who had been discharged from a brick-and-mortar hospital. The goals of Hospital at Home are to reduce demand for inpatient hospital beds and reduce costs, while preserving health outcomes, reducing hospital readmissions and mortality, and increasing patient satisfaction.[3]

The service takes 2 primary forms: admission avoidance and early discharge.[3] In the admission avoidance model, patients receive acute or subacute treatment in a home setting or usual place of residence for a limited time, for a condition that would otherwise require a hospital admission.[3] Patients are usually referred from an emergency department (ED) or their primary care physician.[4] In the early discharge model, patients receive acute or subacute care at home for a limited time period after a hospital stay, enabling earlier discharge and fewer inpatient days.[3] Patients are typically referred from acute inpatient care.[5] Patients generally remain under the clinical responsibility of a hospital clinician while receiving Hospital at Home treatment, although their care may be transitioned to their general practitioner.[3] Health professionals that deliver Hospital at Home care can be hospital employees or employed through a service in the community (e.g., home health nurses or paramedics).[3] Systematic reviews from the Cochrane Collaborative that looked at admission avoidance[4] and early discharge[5] models found that Hospital at Home services can provide superior or similar outcomes to inpatient care, although they defined Hospital at Home more broadly than this report and considered a narrower range of outcomes.

Centers for Medicare & Medicaid Services Support for Hospital at Home Pilot

From 2014 to 2017, the Centers for Medicare & Medicaid Services (CMS) supported the development of a Hospital at Home model through a Health Care Innovation Award from the Center for Medicare & Medicaid Innovation (CMMI).[6,70] The Icahn School of Medicine at Mount Sinai Hospital in New York City received a CMMI grant to develop a Hospital at Home program framework and payment model that delivered acute and post-acute services in the home to an adult target population in Manhattan identified through an ED or outpatient setting at Mount Sinai.[6,70] Mount Sinai also developed a bundled payment model that included risk sharing for Hospital at Home providers.[70] The evaluation of the Mount Sinai program for the CMMI grant was limited to process analysis and general description, without exploring outcomes.[70]

CMS Hospital at Home Waiver

Though Hospital at Home has long been used internationally, its widespread use in the US was limited by regulatory and reimbursement frameworks until CMS's temporary Acute Hospital Care at Home waiver (launched during the COVID-19 pandemic in 2020) allowed CMS-approved hospitals to provide and receive reimbursement for inpatient-level care in residential settings for all Medicare fee-for-service beneficiaries, and Medicaid fee-for-service beneficiaries in states that elect coverage.[6-10,13,71] Prior to the CMS waiver program, Hospital at Home reimbursement opportunities were largely focused within Veterans Affairs and certain Medicare Advantage, Medicaid managed care, or commercial plans.[10-13,20-22] Delivery of Hospital at Home services through the CMS waiver must also be allowed under state-level hospital licensure regulations.[6,9] Contextual Question 3 (CQ3) below provides additional details about the program's specific regulatory waivers and requirements. The introduction of the waiver system led to implementation of Hospital at Home programs across different states and health systems and sparked research into the benefits and risks of Hospital at Home programs and lessons learned for system planning and implementation.[7] Throughout this report, the term Hospital at Home refers to programs meeting the requirements of the CMS Acute Hospital Care at Home Waiver (see Description of the Intervention).

The CMS Hospital at Home waiver program was originally scheduled for termination at the end of the COVID-19 public health emergency, but the 2023 Consolidated Appropriations Act passed by Congress in December 2022 extended the program and its flexibilities to December 31, 2024.[72] It was subsequently extended by Congress again until March 31, 2025,[73] and then again through September 30, 2025.[15] However, the CMS waiver program recently ended on September 30, 2025, when Congress failed to extend it further through a continuing resolution spending bill.[16-18] The CMS website for the program instructed that all waiver-approved hospitals had to discharge or return home-based inpatients to the hospital on September 30, and CMS stopped accepting new hospital waiver requests for the program after September 1st.[9] Current Congressional efforts to re-extend the CMS waiver program are still pending, including temporary spending bills[16] and a separate standalone bipartisan bill that has been proposed to extend the waiver until 2030 but had not yet been passed by the time this report was finalized.[19]

CMS Report on the Hospital at Home Initiative

Congressional extension of the CMS waiver program through the 2023 Consolidated Appropriations Act included the provision that CMS provide an evaluation of approved Hospital at Home programs that summarized the population served, measures of quality of care, and patient experiences.[72] CMS published the statutorily required review of Hospital at Home in 2024 using Medicare claims data from 11,907 unique patients who used Hospital at Home and 643,634 unique patients in a control group to explore quality of care differences between Hospital at Home and hospital inpatient settings.[6] Hospital at Home cases were compared to in-hospital care cases drawn from the same hospitals with the same Medicare Severity Diagnostic Related Groups.[6] The report found that patients served by Hospital at Home experienced fewer hospital-acquired conditions (e.g., catheter-associated urinary tract infections, pressure ulcers, poor glycemic control, falls) and lower 30-day mortality rates across 25 diagnostic groups compared to patients in the in-hospital control group.[6] Differences in rates of readmission varied by condition, however.[6] Readmission rates for the 2 groups were similar for patients with a

diagnosis of respiratory infection without major complications, heart failure with shock, cellulitis, and kidney and urinary tract infections.[6] Readmission rates were higher for patients with a diagnosis of respiratory infections with major complications or comorbidities for the Hospital at Home group (155.8 per 1,000) compared to the in-hospital group (132.7 per 1,000).[6] Readmission rates for patients with a diagnosis of simple pneumonia with major complications were similar for the 2 groups, while readmission rates for patients with simple pneumonia without major complications were lower for the Hospital at Home group (111.3 per 1,000) compared to the in-hospital group (154.5 per 1,000).[6] The CMS review also found that services provided in Hospital at Home were similar to services provided in the in-hospital setting, including imaging, laboratory, radiology, and pharmacy services.[6]

The review did not include analysis of Hospital at Home services provided to the Medicaid population under the waiver because of "technical challenges related to data access and interpretation," and noted differences in how state Medicaid agencies addressed the Hospital at Home waiver, the small number of Medicaid agencies covering Hospital at Home services, and the smaller number of Hospital at Home episodes compared to inpatient care episodes.[6]

Description of the Intervention

While Hospital at Home can also be used to support end-of-life care and allow patients to die at home, rather than in the hospital,[74] that topic is not addressed in this evidence review. Similarly, use of Hospital at Home to provide obstetric care[3] is not addressed in this review, which focuses solely on use of admission avoidance and early discharge models for the acute phase of care. While the term 'Hospital-at-Home' is used somewhat broadly, our evidence review of clinical effectiveness includes only interventions that met the key requirements of CMS's Acute Hospital Care at Home Waiver[9,75]:

- Service associated with a hospital that is responsible for the program
- Daily in-home or remote physician visits
- Daily in-home nurse visits
- Nurse or physician available 24 hours a day, 7 days a week for any urgent or emergent situation
- Monitoring of patient's vitals
- Provision of pharmaceuticals
- Provision of laboratory services
- Provision of radiology services

Aim

The purpose of this review is to identify and synthesize evidence on the clinical effectiveness, potential harms, costs, and current insurance coverage of Hospital at Home for avoiding hospital admission or enabling early discharge to inform New York State Department of Health (NYSDOH) Evidence Based Benefit Review Advisory Committee (EBBRAC) deliberations on coverage for Hospital at Home.

Use and Coverage of Hospital at Home Programs in New York State

Because participation in Medicare and Medicaid requires nursing services to be provided 24 hours a day, 7 days a week, CMS-certified hospitals who wanted to provide Hospital at Home

services for Medicare fee-for-service beneficiaries and Medicaid fee-for-service beneficiaries (in states electing coverage) had to receive a waiver from CMS under the Acute Hospital Care at Home program while it was in effect through September 30, 2025.[6,9,65,67,68,76] While the on-premises nursing requirement was waived, a hospital with the waiver still had to ensure the availability of nursing services (virtual or in-person as clinically appropriate) 24 hours each day to patients receiving Hospital at Home services.[6,9,65] As of August 2025, 27 hospitals in New York State had received the CMS waiver prior to it lapsing.[2]

While the CMS waiver program was active, those 27 CMS-approved hospitals in New York were eligible for payment through Medicare fee-for-service, along with individual Medicare Advantage, Medicaid managed care, and commercial plans that chose to cover the services.[6,9-13,20-22,49] New York's fee-for-service Medicaid program has not reimbursed for Hospital at Home services delivered by hospitals who were participating in the waiver program.[23,24]

During the 2025 and 2026 New York state fiscal year budget processes, the governor's executive budget proposed legislation that would essentially have codified the CMS Acute Hospital Care at Home waiver program into state law by distinguishing Hospital at Home from home care services and allowing the Medicaid agency to set fee-for-service program reimbursement rates.[77-79] Neither of the legislative proposals was adopted.

Contextual Questions

A number of contextual questions (CQs) were identified by the NYSDOH. These questions address issues related to the place of the intervention in the care pathway, health equity considerations, federal guidance, challenges and opportunities, and implementation requirements. Systematic searches were not conducted to identify publications to answer CQs.

CQ1. How does Hospital at Home fit into the overall management of adult and pediatric patients eligible for admission avoidance or early discharge Hospital at Home services? What are considerations for patient selection?

Implementation of Hospital at Home, whether admission avoidance or early discharge models, requires facilities to assess fit with existing care pathways during pre-implementation planning.[3] In an editorial in *Canadian Medicine Association Journal*, Crisci (2023) describes the challenges of successfully implementing Hospital at Home that she observed through her experience as a consultant and former medical lead for the Hospital at Home program in British Columbia.[80] Crisci notes that despite its potential benefits, many Hospital at Home programs intervene too late in the care continuum, when patients are in the post-acute phase, leading to Hospital at Home becoming an expensive discharge-to-home program that duplicates existing post-acute services.[80] To be successful in fulfilling their mission as a true substitute for hospital admission, Hospital at Home programs need to provide services in the acute phase of the care continuum, which would mean taking charge of a patient much sooner, while they are still in the ED or still in the community (pre-acute phase).[80]

Brody and colleagues (2019) describe results of focus groups and individual interviews with health care professionals and administrators at New York's Mount Sinai Hospital as they implemented a Hospital at Home acute care program in a demonstration project funded by a CMMI grant.[81] Six themes emerged, 4 related to health systems and policies (policies and

regulatory, billing, identifying patients, and implementing medical record system changes) and 2 related to partnerships (development and coordination).[81] Examples of challenges identified by stakeholders, how the Mount Sinai team addressed them, and implications for scalability are summarized in Table 1.[81]

Table 1. Key Challenges in Implementation of Mount Sinai's Hospital at Home Program[81]

Challenge Example	Potential Solution	Scalability
Policy and regulatory issues		
Only specific home health nurses could perform infusion services, limiting availability and ability of HaH to perform timely infusion of antibiotics and other IV medications	Change in home health agency policy and skills training for nurses participating in HaH to perform IV insertions, assessments, and infusions	Required time-consuming agency policy changes and approvals followed by time-consuming training
Billing and payment		
When multiple partners are all billing vs. 1 or 2 'superbills' as in current hospitalizations, it becomes unwieldy both administratively and for patients and families	Create unified superbill, similar to what might occur in a bundled payment, where all billing goes through HaH or an intermediary	Limited feasibility for HaH outside of a demonstration project without a solution; limited ability to recruit other outside insurers
Screening, identifying, and recruiting patients		
Unclear what eligible diagnoses can be safely treated in this setting	Started conservatively, and as processes developed, expanded to sicker patient populations	If appropriate mix is not obtained, service is not sustainable due to limited eligibility or safety risks
Implementing an EHR		
Neither inpatient nor outpatient builds of existing EHRs account for the complicated nature of multiple partners, types of patient visits, mix of self and clinician-performed therapies	Created custom Epic chart that merged aspects of inpatient and outpatient builds. Processes developed for medication administration and confirmation, and mix of protocols put in place to ensure orders and information needed for care by outside partners was communicated, confirmed as received, and performed	Custom EHR builds are expensive and time consuming to create; need for EHR vendors to develop a vision for this type of care or incorporate existing users' custom builds into a larger corporate-level framework
Early development of partnerships		
It may not be possible to work with a single home health agency due to lack of coverage across an entire service area	Starting with a smaller service area to allow for greater understanding of how to work with home health agencies, or if regulatorily and operationally feasible, could create an internal set of nurses and physical therapists to provide those services in the home	Without adequate nursing and physical therapy services in place, the model is not providing the necessary care, and cannot scale

Challenge Example	Potential Solution	Scalability
Building coordination, communication, and information exchange protocols		
When multiple partners are providing care, it can be overwhelming to patients/family to have so many individuals in the home, while making coordination and communications between partners and the HaH provider difficult	Develop clear communication, care delivery, and documentation protocols with confirmation checks between external partners and the internal team to ensure coordination and patient safety	Scaling of programs and quality oversight will be difficult without pre-planning and careful coordination of communication with the patient and between partners

Abbreviations. EHR: electronic health record; HaH: Hospital at Home; IV: intravenous.

Patient Selection

Hospital at Home is designed to offer services at home identical in scope and quality to those delivered in inpatient hospital settings for patients with acute conditions.[82] While each hospital establishes its own selection criteria for identifying patients who qualify for Hospital at Home, the 2024 CMS review of Hospital at Home identified the most common diagnostic selection criteria[6]:

- Cardiac (newly diagnosed congestive heart failure, need for continuous diuretic infusion, or decompensated congestive heart failure)
- Pulmonary (acute asthma exacerbation or acute COPD)
- Endocrine (hyperglycemia or diabetic ketoacidosis)
- Infectious disease (acute COVID-19, bronchitis, cellulitis, febrile illness, gastroenteritis, pneumonia, pyelonephritis, urinary tract infection with suspected sepsis)
- Nephrology (acute kidney injury)
- Hematology (deep vein thrombosis or pulmonary embolism)

CQ2. What are health equity considerations for providing admission avoidance or early discharge Hospital at Home services?

An evaluation of Medicare beneficiaries in the Acute Hospital Care at Home initiative published by CMS in September 2024 found that Hospital at Home patients were not representative of the overall general inpatient population.[6] Compared with inpatients receiving services furnished by the same hospital, Hospital at Home patients were more likely to be White and live in an urban location, and less likely to require governmental assistance beyond Medicare.[6] These differences may be attributable in part to criteria hospitals used to identify patients appropriate for Hospital at Home care.[6] Common criteria used to ensure a safe home environment conducive to Hospital at Home included assessment of[6]:

- Utilities (e.g., running water, electricity with grounded outlets, climate control)
- Technology (e.g., smartphone and internet availability, sufficient data plan, allowance to communicate with providers on a smartphone)
- Patient safety (e.g., daily reliable caregiver or support person, no indication of domestic violence or elder abuse, no active substance use in the home)

- Space and location (e.g., not homeless or with housing insecurity, home located within a 30-minute drive of an acute care facility, access to local resources for medical equipment, adequate space in the home for medical equipment and medical care team visits)
- Medical team safety (e.g., pets are contained during home visits, no bedbugs or other pest infestations, and home is in a location safe from neighborhood criminal activity)

As a result of these criteria, individuals in low-income neighborhoods that could be perceived as dangerous or those struggling with housing insecurity, limited access to technology, lack of social support, or poor housing conditions were most likely to be excluded from Hospital at Home programs, even if they otherwise qualified (i.e., were sick enough to require hospital-level care but stable enough to be treated at home).[6]

Ninety-three percent of patients admitted to hospitals with the CMS waiver were in urban areas.[2,6] The 332 institutions with the Hospital at Home waiver in July 2024 were concentrated on the East and West Coasts and in urban areas of the Midwest, with limited access across the South.[2] Great Plains states and rural states like Montana, Wyoming, Maine, or Vermont had no access to Hospital at Home programs.[2] Thus, Hospital at Home is not a means to expand access to care for rural populations without significant changes to the care model.[6]

Authors Brody, Dorfman, Caspers, and Sadarangani, all of whom are affiliated with New York health systems and 2 of whom were on the executive leadership team of the CMS waiver program, published a 2023 editorial in the *Journal of the American Geriatrics Society* that called on CMS to develop a follow-up nationwide voluntary demonstration project or funding model for a seamless transition from the waiver.[7] They identified 3 priorities to strengthen the current waiver program: address social determinants of health, provide flexibility in utilization of scarce clinical staff while maintaining a strong quality and patient safety framework, and implement measures for ensuring quality and patient safety that follow a patient-centered care approach.[7] Brody and colleagues specifically noted the need for policies that prevent systemic racism from blocking disadvantaged communities from accessing high-quality Hospital at Home services.[7] They noted that some individuals will need additional resources to receive Hospital at Home care, such as additional aide hours or prepared meals.[7] Brody and colleagues proposed bundling the acute care phase with a high-quality post-acute transitional stay including rehabilitative, nursing, social work, and medical services as a means of achieving equity as access to high-quality post-acute care is limited in disadvantaged and predominantly minoritized populations.[7]

A retrospective study by Williams and colleagues (2024) examined patient- and community-level factors that influenced health outcomes for Hospital at Home patients treated at 3 Mayo Clinic centers.[83] Authors calculated 3 zip code-level variables: population density as a measure of rurality, the Ginni Index of income inequality, and the percentage of homes in each zip code without internet access.[83] While the odds of hospitalization, re-hospitalization, or mortality were not significantly related to participation in Hospital at Home, the study did not incorporate any truly rural sites (locations were Eau Claire, Wisconsin; Jacksonville, Florida; and Phoenix, Arizona).[83] The authors did not identify any community-level variables associated with likelihood of escalation to hospital care for patients but found that the percentage of homes in the community without internet access was a statistically significant predictor of readmission.[83]

A study by Saenger and colleagues (2020) explored reasons for accepting or declining a referral to Hospital at Home at New York's Mount Sinai Hospital during the CMMI demonstration project described above.[84] Compared to patients who declined, those who accepted Hospital at Home were older (mean age = 77 vs. 69 years), more likely to be female (71% vs. 61%), and more likely to have Medicaid or dual-eligible status (43% vs. 10%).[84] Of patients who decided to enroll in Hospital at Home, most (78%) said they did so because they anticipated being more comfortable at home, 41% said they chose Hospital at Home because they liked having family around, and 36% wanted to be able to still do things around the home.[84] Fifty percent of those who declined Hospital at Home did not give a specific reason.[84] Of the remainder, the most commonly cited reason for refusing Hospital at Home was concern about the ability of the service to meet their care needs (13%), followed by concern about having visitors in the home (11%), and inconvenience (8%).[84] A smaller proportion of respondents (3%) declined Hospital at Home because their caregivers needed respite.[84] Rates of enrollment, or reasons for choosing to enroll or decline Hospital at Home were not explored by racial or ethnic subgroup.[84]

CQ3. What is the federal guidance for providing Hospital at Home services?

Federal guidance on Hospital at Home services has been defined by the CMS Acute Hospital Care at Home waiver program, which recently expired at the end of September 2025. At the time that this report was finalized, Congressional action to re-extend the waiver program was still pending. For the purposes of the report, we provide a summary of the guidance and waiver process while the CMS waiver program was in effect from November 2020 through September 30, 2025.

In March 2020, after the beginning of the COVID-19 pandemic, CMS announced its "Hospital Without Walls" initiative, which used authorities under Section 1135 of the Social Security Act that allow the Secretary of the US Department of Health and Human Services to take certain actions during public health emergencies to waive or modify facility standards.[71,85,86] This allowed, for example, hospitals to still receive Medicare hospital payments for patients transferred to outside facilities in order to reserve inpatient beds for more severe COVID-19 cases.[85]

In November 2020, CMS announced that it was expanding the Hospital Without Walls initiative by launching the Acute Hospital Care at Home waiver program.[9,66] This initiative allowed acute care hospitals paid through the inpatient prospective payment system to request waivers that would allow the hospitals to (for the first time) provide and receive reimbursement for inpatient care in a patient's home for certain Medicare fee-for service enrollees, and Medicaid fee-for-service enrollees in states that elect coverage.[6,9,13,71]

Specifically, the waivers issued to hospitals under the Hospital at Home model waived CMS Hospital Conditions of Participation normally required for hospitals that are reimbursed through Medicare and Medicaid, including requirements for: 1) 24/7 on-premises nursing services; and 2) the immediate on-premises availability of a registered nurse to provide patient care.[6,65,67,68,71,76] Approval for participation in the CMS Hospital at Home program also waived certain additional structural and physical environment requirements, but participating hospitals still had to meet all other applicable requirements, including CMS Hospital Conditions of Participation that were not

waived (such as the immediate availability of nursing services 24 hours a day, either virtually or in-person).[6,71]

All patients treated under the CMS Hospital at Home program had to enter the home setting from an ED or inpatient hospital care setting.[9] Inpatient payments for services delivered under the Hospital at Home model were the same as if the patient was treated in the physical hospital (often referred to as the "brick-and-mortar" hospital).[6,9] The CMS Hospital at Home initiative also used telehealth flexibilities provided during the COVID-19 public health emergency and permitted hospital clinicians to deliver remote services alongside in-home nursing care to provide patients with inpatient-level care within their home environment.[6,9] Hospitals also had to comply with state-level requirements and licensures to deliver Hospital at Home services.[6,9]

To receive a waiver under the CMS Acute Hospital Care at Home program, Medicare-certified hospitals paid under the inpatient prospective payment system had to submit a waiver request that was reviewed by CMS, complete an interview, and receive approval from CMS leadership.[6] The process aimed to verify that hospitals had the capacity and ability to provide safe and quality home-based hospital-level services.[6] CMS divided requests into 2 review tiers: Tier 1 hospitals that had delivered Hospital at Home services to at least 25 patients that met inpatient admission criteria, and all other hospitals falling under Tier 2.[6]

Hospitals submitting a waiver request were required to provide a hospital point of contact for the waiver, leadership approval attestation, and a summary of past experience providing Hospital at Home care services.[6] To participate in the Hospital at Home program, hospitals were required to provide a core set of services and maintain certain safeguards; Tier 2 hospitals had to provide detailed descriptions about how all services and safeguards were delivered or provided, while Tier 1 hospitals had to simply attest that they complied.[6]

As listed verbatim in the 2024 CMS-authored report on the Acute Hospital Care at Home waiver program, participating hospitals had to provide the following listed services either directly or by contract[6]:

- Pharmacy
- Infusion
- Respiratory care including oxygen delivery
- Diagnostics (e.g., laboratory tests, radiology)
- Monitoring, with at least 2 sets of patient vital signs daily
- Transportation between the hospital and the home in both directions
- Food services, including meal availability as needed by the patient
- Durable medical equipment
- Physical, occupational, and speech therapy
- Social work and care coordination

As listed verbatim in the 2024 report on the CMS waiver program, hospitals had to meet the following safety requirements[6]:

- At least 1 daily provider visit by a physician or advanced practice provider, which can be remote after the initial in-person admission history and physical exam are performed in the hospital

- At least 2 in-person daily visits by a registered nurse, mobile integrated health practitioner, or community paramedic. If both in-person visits are performed by a mobile integrated health practitioner or community paramedic, then a daily remote registered nurse visit is needed to develop a daily nursing plan
- Immediate on-demand remote audio connection with a care team member who can immediately connect the appropriate registered nurse or physician
- In-home emergency personnel response to a patient's home within 30 minutes, if needed
- Use of an accepted patient leveling process to ensure that only patients requiring an acute level of care are treated by the hospital through their Hospital at Home program (such leveling criteria might include InterQual, Milliman, or others)
- Development and use of patient selection criteria; the hospital must describe the specific clinical inclusion or exclusion criteria that the care team uses to determine whether the patient is clinically appropriate for acute care in the home and ensure the hospital has the clinical capability and the staff capacity to provide safe and quality inpatient care in an alternate setting
- Address advance-care planning with patient prior to admission to the home
- Implement a process for actions when a patient is unable to be reached within 15 minutes when arriving for a scheduled in-person or virtual visit
- Presence of an in-person registered nurse or mobile integrated health practitioner in the home to ensure that durable medical equipment is delivered and set up appropriately on the first home visit
- Self-reporting of selected data measures; the hospital must agree to provide certain data to CMS on a regular basis, including the number of new patients admitted to the home setting (volume), the number of patient escalations of care from the home to the hospital (escalation rate), and the number of unexpected patient deaths (unanticipated mortality)
    - Tier 1 hospitals are required to report quality metrics monthly; Tier 2 hospitals are required to report weekly
    - Reporting measures are designed to quickly highlight potential problems or unintended uses of the waiver
- Establish a local safety committee and attest that all reporting measures are reviewed by a local safety committee prior to being submitted to CMS

Following waiver approval, CMS monitored submission of the required hospital-reported data metrics (admissions, discharges, unanticipated mortalities, care escalations that send patients back to physical hospital facilities) and also conducted reviews of unanticipated mortalities to assess care workflows and processes around the case along with circumstances related to patients being treated after changes in clinical conditions.[6] In 2021, CMS leadership authored a detailed commentary about the development and details of the waiver program structure.[13]

In 2022, the National Uniform Billing Committee instituted 2 new billing codes to specifically identify Hospital at Home service claims[87]:

- Occurrence Span Code 82 (“Hospital at Home Care Dates”)
- Room and Board Revenue Code Subcategory 0161 (“Hospital at Home, R&B/Hospital at Home”)

The recent sunsetting of the CMS Acute Hospital Care at Home program on September 30, 2025, terminated all waivers from CMS Hospital Conditions of Participation (e.g., on-site nursing staff requirements), and CMS instructed that all waiver-approved hospitals had to discharge or return home-based inpatients to the hospital.[9,88]

CQ4. What are the challenges and opportunities to providing admission avoidance or early discharge Hospital at Home services (e.g., availability of appropriate technology for telemedicine and remote diagnostics and monitoring, staff recruitment and training, coordination within health systems and with consultants or contractors)?

A number of challenges and opportunities have been identified related to equitable implementation of Hospital at Home programs, including availability of appropriate technology for telemedicine and remote diagnostics and monitoring, staff recruitment and training, and barriers to patient acceptance of Hospital at Home.

Technology

Hospital at Home requires that a patient's home has adequate internet, cooling/heating, and social support.[1] In an editorial in the *Journal of the American Geriatrics Society*, Brody and colleagues (2023) identify technological accessibility as a significant factor in Hospital at Home ineligibility, as Hospital at Home programs rely on technology for telehealth consults and remote patient monitoring.[7] These systems may not be accessible in disadvantaged neighborhoods or rural settings due to poor internet or cellular service.[7] Hospital at Home may also be inaccessible or problematic for patients and families with limited technology, English, or health literacy proficiency, as well as those with visual or hearing impairments.[7] These same factors may affect the ability to administer medications or adhere to frequent medication changes, which can occur often within the Hospital at Home setting.[7]

Staffing

In a Cochrane systematic review that included 52 qualitative and mixed methods studies exploring experiences, attitudes, or beliefs about Hospital at Home services from the perspectives of patients, caregivers, health professionals, managers, and health funders, Wallis and colleagues (2024) noted that staff recruitment could be more challenging in rural settings, because of the effect of excessive driving on job satisfaction.[3] Travel time was also perceived as an impediment to recruiting and retaining staff in programs with large catchment areas.[3] Hospital at Home staff working for programs covering rural or large geographical areas also noted that the complexity of their timetabling allowed little flexibility when arranging home visits and reduced opportunities to tailor service visits to patient needs (for example, shorter and more frequent visits to manage patients' fatigue).[3] Staff also perceived challenges related to managing an inpatient caseload in an outpatient setting.[3]

Brody and colleagues (2023) assert that ensuring the efficiency, safety, and viability of Hospital at Home programs requires providing flexibility in how programs provide skilled care and carefully creating limits around the number, timing, amount, and in-person versus virtual care required by skilled clinicians.[7] To address physician and nursing workforce shortages, they advise that clinical staff should be used to the highest level of their training and licensure.[7] This could include providing additional training and added responsibilities for paramedics, nursing assistants, and rehabilitation assistants.[7]

Barriers to Patient Acceptance

Patients who are considered good candidates for Hospital at Home are required to affirmatively elect Hospital at Home treatment rather than inpatient care, and patient reluctance can limit the potential of the Hospital at Home model.[3] Gomez-Cabello and colleagues (2024) conducted a systematic review to identify the most common reasons for patient refusal.[89] Of 7 included studies, 3 came from the US.[89] Gomez-Cabello and colleagues reported that the most common reason for refusing Hospital at Home was fear that home-based care would not meet their current needs, either because they felt too sick to go home or they would not trust remote care.[89] In all 3 US studies included in the systematic review, patients were influenced by physicians' lack of knowledge about home-based models.[89] In most cases, emergency medicine or outpatient doctors were unaware of the details of the Hospital at Home care model or felt uncomfortable with the idea of home hospitalization, regardless of the severity of the patient's condition.[89] Home safety concerns could relate to issues like insect infestations or barriers such as steep stairs or lack of a first-floor bathroom.[89]

In one of the US studies included in the systematic review by Gomez-Cabello, Paulson and colleagues (2023) identified additional challenges to Hospital at Home, particularly for female patients.[90] In semi-structured interviews with 13 individuals who had declined Hospital at Home during the COVID-19 public health emergency, women reported the perception that daily home life would complicate the healing process in Hospital at Home.[90] Women believed they would feel responsible for managing their family and keeping up with home and family responsibilities if they were being treated at home, even if they had been advised to stay in bed.[90] Believing that these additional responsibilities would add too much stress, some women elected inpatient care despite acknowledging that they would be more comfortable at home.[90]

CQ5. What are the processes, resources, and skills required to implement admission avoidance or early discharge Hospital at Home services, based on the experience of hospital systems in the United States?

Wallis and colleagues (2024) conducted a Cochrane review that included 52 qualitative and mixed methods studies exploring experiences, attitudes, or beliefs about Hospital at Home services from the perspectives of patients, caregivers, health professionals, managers and health funders.[3] They identified the following processes, resources, and skills necessary to implement Hospital at Home safely and effectively (with Grading of Recommendations, Assessment, Development, and Evaluations [GRADE] strength of evidence rating)[3]:

- Rapid delivery of appropriate equipment in the home, access to staff via phone, and equipment and safety monitoring processes are necessary to provide high-quality care, allay patient fears, and address staff concerns. (*High*)
- Straightforward processes for health care professionals to refer patients and clear guidelines that set out who the service is suitable for. Teaching sessions to help acute staff refer patients to Hospital at Home is helpful for alleviating confusion and managing capacity. (*High*)
- Leadership and coordination from key champions, lead clinicians with medical responsibility and clinical accountability, managers with operational responsibility, and other leaders were essential to provide high-quality care and create a positive staff environment. (*Moderate*)

- Creating a multidisciplinary skilled workforce is critical to implementing Hospital at Home, with collaboration between teams and professionals (e.g., via team meetings) a core feature. (*High*)
  - Allied health professionals noted difficulties with their professional line of reporting and supervision and teams can be challenged by workforce shortages. Implementation of telehealth appointments was identified as a strategy to enhance capacity and responsiveness, but staff were concerned this could affect the provision of patient-centered care.
- Staff training, expansion of roles beyond usual scope of practice, and rapid delivery of equipment or medical testing are essential to implement Hospital at Home. (*High*)
  - Expanding nurse roles increases capacity for acute medical care in the home, while expanding rehabilitation assistant roles increases capacity for in-home rehabilitation. However, expansion of roles requires appropriate governance structures and policy changes.
- Effective communication between staff, patients and caregivers, including documentation and sharing tailored information with patients, is essential to provide efficient and effective care and reassure patients that quality of care is maintained in Hospital at Home. (*High*)

Methods

This review is based on key questions (KQs) and CQs identified by the NYSDOH. CQs are addressed above. Search parameters, KQs, and methodologies for identifying, assessing, and reporting evidence are described in the following sections. Additional details are available in the EBBRAC Methods Manual online.

Key Questions

The following KQs are addressed in the clinical evidence review of Hospital at Home services for adult and pediatric (less than 18 years of age) patients eligible for these services:

KQ1. Clinical effectiveness of admission avoidance or early discharge Hospital at Home services

KQ2. Harms of admission avoidance or early discharge Hospital at Home services

KQ3. Costs or cost effectiveness of providing admission avoidance or early discharge Hospital at Home services

KQ4. Clinical practice guideline recommendations for the use of admission avoidance or early discharge Hospital at Home services

KQ5. Relevant Medicaid program coverage policies and private payer policies for admission avoidance or early discharge Hospital at Home services for adult and pediatric patients

Eligible Studies for Key Questions 1 to 4

Table 2 summarizes the study inclusion and exclusion criteria. Further inclusion and exclusion criteria details can be found in Appendix B.

Table 2. Key Study Inclusion Criteria

Study Component	Inclusion Criteria
Populations	• Adult and pediatric (less than 18 years of age) patients eligible to receive health care from an admission avoidance or early discharge HaH service
Interventions	• HaH service that provided active treatment by health care professionals, for a limited period of time, in a patient's home for a condition that would otherwise require acute inpatient care, and included the following elements: o Service associated with a hospital that was responsible for the program o Daily in-home or remote physician visits o Daily in-home nurse visits o Nurse or physician available 24/7 for any urgent or emergent situation o Monitoring of patient's vitals o Provision of pharmaceuticals o Provision of laboratory services o Provision of radiology services
Comparators	• Standard care provided in a hospital setting
Outcomes	Critical • Admission or readmission to in-hospital care • Serious adverse events (e.g., mortality, health care-associated infections, medical errors) Important • Length of stay in hospital and HaH program • Standardized measures of patient-reported health status (e.g., quality of life, general and disease specific-health status, psychological health) • Patient satisfaction • Validated measures of caregiver burden (e.g., Carer Strain Index) • Cost and cost-effectiveness
Timing and follow up	• Minimum follow-up of 1 month after the end of the intervention period
Setting	• Studies conducted in patient's home or usual place of residence • Studies conducted in countries categorized as very high on the Human Development Index (KQ1–KQ2) • Studies conducted in US, or using US-based health systems data (KQ3)
Study design	KQs 1 and 2 • RCTs • Cohort studies will only be used to identify harms KQ3 • Comparative studies and economic evaluations • Cost-effectiveness analyses • Economic modeling studies KQ4 • Evidence-based clinical practice guidelines that provide specific treatment recommendations • Published or updated within past 5 years
Sample size	• Minimum sample size of 20 participants per group within study
Publication type	• Peer-reviewed publication of primary study results • Published in the English language • Ancillary publications with additional comparative follow up or prespecified subgroup analysis

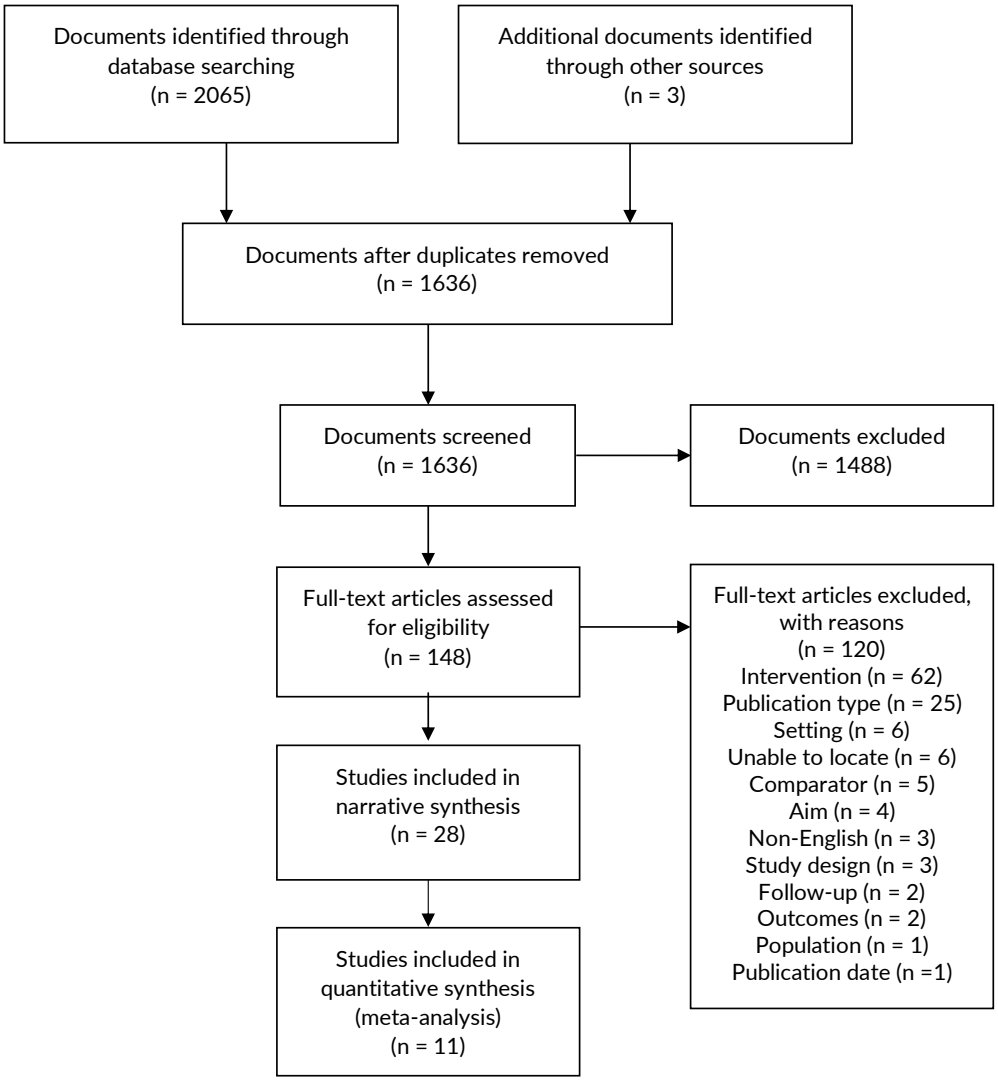
Abbreviations. HaH: Hospital at Home; KQ: key question; RCT: randomized controlled trial; US: United States.

Evidence and Policy Searches

A Center information specialist searched Ovid MEDLINE, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, and other information sources for randomized controlled trials (RCTs), registry studies, cost and cost-effectiveness studies, and clinical practice guidelines. After removal of duplicates, a total of 1,636 potentially relevant publications were identified for the KQs of clinical evidence, harms, cost effectiveness, and clinical practice guidelines (Figure 1). A Center information specialist also searched trial registries for relevant ongoing trials. Searches were conducted April 7, 2025, through May 12, 2025. Clinical trial registries were searched and the Ovid MEDLINE search was updated June 13, 2025. A full list of searched sources and search strategies is provided in Appendix A.

Researchers from the Center for Evidence-based Policy (Center) searched 9 state Medicaid program websites, 8 health plan websites, the Medicaid State Waivers List, and the CMS website for coverage policies focused on Hospital at Home for admission avoidance or early discharge Hospital at Home service. Appendix A lists the search terms we used to identify relevant policies, as well as the sources we searched.

Figure 1. PRISMA Flow Diagram



Screening and Inclusion

Two Center researchers used the DistillerSR systematic review software platform to screen publications identified in the searches using the detailed inclusion and exclusion criteria listed in Appendix B. Disagreement about inclusion was resolved through discussion. Appendix D lists included studies, and Appendix E lists studies excluded during full text screening along with the primary reason each study was excluded. Figure 1 shows the numbers of studies screened and included or excluded at each step.

Risk of Bias Assessment

Two Center researchers assessed each included RCT and cohort study for risk of bias using standard forms. Appendix C has detailed tables with criteria considered for assessing risk of bias or methodological quality. Disagreement between the researchers was resolved through discussion.

Data Abstraction

One Center researcher used a standard form to extract all data presented in tables, and a second researcher verified each data point against the original publication to ensure accuracy. One Center researcher assessed the suitability of outcome data for meta-analysis, while a second researcher reviewed outcome data, confirmed final decisions regarding meta-analysis, and verified accuracy of data entered into meta-analytic models.

Synthesis

Where sufficient data were available (i.e., same collection time points and method of measuring the specified outcome), we estimated pooled effect measures with meta-analyses of data abstracted from the included studies and reported the findings with figures, tables, and text. We used RevMan[91] (Review Manager) version 5.4 software to conduct meta-analyses. Figures generated during these meta-analyses appear throughout the report. For the meta-analyses, we used random-effects models due to the methodological diversity (e.g., varying Hospital at Home protocols, variation in outcome measurement) and clinical diversity (e.g., differing criteria for patient inclusion in Hospital at Home programs) of included studies. Random-effects models assume that the studies measured related, but different, effects of an intervention.[92,93] We noted the I^2 statistic in each estimated meta-analysis as an indicator of statistical heterogeneity, but we did not use it as a criteria for selecting random-effects models over fixed-effect models because the I^2 estimate can be biased in meta-analyses with 7 or fewer studies (i.e., it likely underestimates the true statistical heterogeneity).[94] The I^2 estimate can be found in each meta-analysis figure in this report; 9 meta-analyses reported an I^2 of 0%, 2 reported an I^2 of 34% to 44%, and 1 reported an I^2 of 70%.

For outcomes without sufficiently similar data across multiple studies, we provide a qualitative synthesis and tables as necessary. We applied the GRADE approach to rate the certainty of evidence for selected outcomes from the data we abstracted from the trials that compared Hospital at Home to standard in-hospital care. The GRADE system defines the overall quality of a body of evidence for an outcome in the following manner:

- **High (RCTs start here):** Raters are very confident that the estimate of the effect of the intervention on the outcome lies close to the true effect. Typical sets of studies are RCTs with few or no limitations, and the effect estimate is likely stable.
- **Moderate:** Raters are moderately confident in the estimate of the effect of the intervention on the outcome. The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is different. Typical sets of studies include RCTs with some limitations or well-performed nonrandomized studies with additional strengths that guard against potential bias and have large estimates of effects.
- **Low (nonrandomized studies start here):** Raters have little confidence in the estimate of the effect of the intervention on the outcome. The true effect may be substantially different from the estimate of the effect. Typical sets of studies include RCTs with serious limitations or nonrandomized studies without special strengths.
- **Very low:** Raters have no confidence in the estimate of the effect of the intervention on the outcome. The true effect is likely to be substantially different from the estimate of the effect. Typical sets of studies include nonrandomized studies with serious limitations or inconsistent results across studies.

- **Not applicable:** Researchers did not identify any eligible studies.

Evidence Review

We identified 14 publications from 10 eligible trials with effectiveness outcomes, 4 publications from 3 observational studies reporting on harms related to Hospital at Home, 3 cost-effectiveness studies, and 7 clinical practice guidelines. We identified 1 relevant ongoing trial. This evidence review is organized by KQ.

KQ1. Effectiveness

While RCTs were prioritized according to the protocol, we also included cohort studies that addressed harms related to Hospital at Home in relation to in-hospital acute care. Because the critical outcomes identified for this review (admission or readmission to hospital care and serious adverse events) encompass harms, our review of effectiveness of Hospital at Home includes both RCTs and cohort studies. Our review of the evidence includes 10 RCTs described in 14 publications and 3 cohort studies described in 4 publications. Table 3 summarizes the included studies.

Table 3. Characteristics of Included Studies

Study Details	Patient Demographics	Outcomes Measured
RCTs		
Maniaci et al. 2025[32] Country: US (Mayo Clinic hospital sites in 3 states) Primary admission diagnosis: infection (38.8%), CVD (9.5%), other or miscellaneous (51.7%) Follow up: 30 days Ancillary studies: none	N analyzed: 573 HaH vs. 577 UC Mean age, years (SD): 68.3 (16.36) HaH vs. 67.3 (16.22) UC Female, n (%): 297 (51.8) HaH vs. 303 (52.5) UC Nonwhite, n (%): 74 (13) HaH vs. 82 (14.2) UC	Primary Composite of 30-day unplanned readmissions and all-cause mortality at 30 days Secondary Unplanned readmissions within 30 days Mortality within 30 days ED visits within 30 days Transfer to ICU or PCU during the acute phase Falls with injury Medication error Patient experience

Study Details	Patient Demographics	Outcomes Measured
Levine et al. 2020[31] Country: US (Boston, MA) Primary admission diagnosis: pneumonia (23%), heart failure (16%), asthma exacerbation (14%), skin or soft tissue infection (12%), urinary tract infection or pyelonephritis (9%), diverticulitis (5%), COPD exacerbation (3%) Follow up: 30 days Ancillary studies: 2 (Moss et al. 2024, Levine et al. 2021)[95,96]	N analyzed: 43 HaH vs. 48 UC Median age, years (IQR): 80 (19) HaH vs. 72 (23) UC Female, n (%): 15 (35) HaH vs. 18 (38) UC Nonwhite, n (%): 19 (44) HaH vs. 26 (54) UC	Primary Direct cost of acute care episode Secondary Length of stay Readmission within 30 days ED visits within 30 days Patient satisfaction Caregiver burden Patient-reported outcomes SAEs
Echevarria et al. 2018[29] Country: UK Primary admission diagnosis: COPD exacerbation Follow up: 3 months Ancillary studies: 1 (Dismore et al. 2019)[97]	N analyzed: 60 HaH vs. 58 UC Mean age, years (SD): 71.0 (9.6) HaH vs. 68.7 (10.5) UC Female, n (%): 32 (53.3) HaH vs. 30 (51.7) UC Nonwhite, n (%): NR	Primary Total cost of health and formal social care over 90 days from presentation Secondary Death during acute episode Death within 3 months Length of stay Readmission within 3 months Patient-reported health status Caregiver burden
Tibaldi et al. 2009[36] Country: Italy Primary admission diagnosis: acute decompensation of chronic heart failure Follow up: 6 months Ancillary studies: none	N analyzed: 48 HaH vs. 53 UC Mean age, years (SD): 82.2 (5.2) HaH vs. 80.1 (4.9) UC Female, n (%): 26 (54) HaH vs. 23 (43) UC Nonwhite, n (%): NR	Primary Death within 6 months Secondary Length of stay Patient-reported health status Readmission within 6 months
Ricauda et al. 2008[34] Country: Italy Primary admission diagnosis: COPD exacerbation Follow up: 6 month Ancillary studies: none	N analyzed: 52 HaH vs. 52 UC Mean age, years (SD): 80.1 (3.2) HaH vs. 79.2 (3.1) UC Female, n (%): 23 (44) HaH vs. 13 (25) UC Nonwhite, n (%): NR	Primary Readmission within 6 months Death within 6 months Secondary Costs for the acute episode Length of stay Patient-reported health status

Study Details	Patient Demographics	Outcomes Measured
Richards et al. 2005[35] Country: New Zealand Primary admission diagnosis: community-acquired pneumonia Follow up: 6 weeks Ancillary studies: none	N analyzed: 24 HaH vs. 25 UC Mean age, years (SD NR): 50.1 HaH vs. 49.8 UC Female, n (%): 11 (46) HaH vs. 12 (48) UC Nonwhite, n (%): 2 (8) HaH vs. 5 (20) UC	Primary Length of stay Duration of IV and subsequent oral antibiotics Patient-rated symptom severity Patient-reported health status Secondary Readmission within 6 weeks Death within 6 weeks SAEs Patient satisfaction
Ricauda et al. 2004[33] Country: Italy Primary admission diagnosis: uncomplicated first ischemic stroke Follow up: 6 months Ancillary studies: none	N analyzed: 60 HaH vs. 60 UC Median age, years (IQR): 83 (78 to 89) HaH vs. 80 (74 to 87) UC Female, n (%): 37 (62) HaH vs. 29 (48) UC Nonwhite, n (%): NR	Primary Death within 6 months Secondary Length of stay Patient-reported health status
Sartain et al. 2002[25] Country: UK Primary admission diagnosis: breathing difficulty (51%), diarrhea and vomiting (31%), or fever (18%) Follow up: 3 months Ancillary studies: none	N analyzed: 210 HaH vs 189 UC Mean age, months (no SD): 25.8 HaH vs. 25.5 UC Female, n (%): 81 (39) HaH vs. 78 (41) UC Nonwhite, n (%): NR	Primary Readmission within 90 days Secondary Length of stay
Davies et al. 2000[28] Country: UK Primary admission diagnosis: COPD exacerbation Follow up: 3 months Ancillary studies: none	N analyzed: 100 HaH vs. 50 UC Mean age, years (SD): 70 (8) HaH vs. 70 (8) UC Female, n (%): 55 (55) HaH vs. 20 (40) UC Nonwhite, n (%): NR	Primary Readmission rates at 2 weeks and 3 months Change in forced expiratory volume in one second from baseline at 2 weeks and 3 months Secondary Length of stay Mortality

Study Details	Patient Demographics	Outcomes Measured
Wilson et al. 1999[37] Country: UK Primary admission diagnosis: NR (primarily cardiovascular and respiratory) Follow up: 3 months Ancillary studies: 1 (Wilson et al. 2002)[98]	N analyzed: 101 HaH vs. 96 UC Median age, years (IQR): 84 (77 to 89) HaH vs. 84 (77 to 89) UC Female, n (%): 73 (72) HaH vs. 67 (71) UC Nonwhite, n (%): NR	Primary or secondary not specified Length of stay ED visits within 3 months Death within 3 months Patient satisfaction
Observational studies		
Cai et al. 2018 (461)[26] Country: US (Cincinnati VA) Primary admission diagnosis: NR Follow up: 6 months Ancillary studies: none	N analyzed: 127 HaH vs. 692 UC in case-matched samples Mean age, years (SD NR): 67.3 HaH vs. 68.1 UC Female, n (%): NR Nonwhite, n (%): 27 (21.3) HaH vs. 149 (21.6) UC	Primary or secondary not specified Readmission within 30 days of discharge Mortality within 30 days of discharge Mortality with 6 months of discharge
Federman et al. 2018[30] Country: US (New York State) Primary admission diagnosis: pneumonia (19%), urinary tract infection (19%), cellulitis (17%), congestive heart failure (15%), COPD exacerbation (8%), asthma exacerbation (7%), dehydration (7%), other (7%) Follow up: 1 month Ancillary studies: 1 (Siu et al. 2022)[99]	N analyzed: 295 HaH vs. 212 UC Mean age, years (SD): 76.9 (16.6) HaH vs. 71.5 (13.8) UC Female, n (%): 71.5% HaH vs. 64.6% UC Nonwhite, n (%): 176 (60) HaH vs. 140 (66) UC	Primary Length of stay Readmission within 30 days ED visit within 30 days Transfer to a skilled nursing facility Referral to a certified home health care agency Secondary Patient satisfaction
Cai et al. 2017[27] Country: US (Honolulu VA) Primary admission diagnosis: Majority of veterans admitted for pneumonia, congestive heart failure, diabetes, urinary tract infection, or cellulitis (no percentages) Follow up: 6 months Ancillary studies: none	N analyzed: 91 HaH vs. 322 UC Mean age, years (SD): 72.8 HaH vs. 73.8 UC Female, n (%): 5 (5.5) HaH vs. 10 (3.2) UC Nonwhite, n (%): 53 (58.2) HaH vs. 200 (62.1) UC	Primary Cost of care Secondary Length of stay Readmission after discharge (30 days, 3 months) Mortality within 30 days, 3 months, or 6 months of discharge

Abbreviations. COPD: chronic obstructive pulmonary disease; CVD: cardiovascular disease; ED: emergency department; HaH: Hospital at Home; ICU: intensive care unit; IQR: interquartile range; IV: intravenous; NR: not reported; PCU: progressive care unit; SAE: serious adverse event; SD: standard deviation; UC: usual care as a hospital inpatient; VA: Veterans Affairs.

Hospital at Home for Pediatric Patients

We identified only 1 study of Hospital at Home for pediatric patients.[25] While the term 'Hospital at Home' was used in a number of studies that we screened for inclusion, most referenced interventions that provided education for children newly diagnosed with type 1 diabetes in a home environment compared to in-hospital education[100-105]; studies that compared cancer treatment provided at home versus in-hospital[106-108]; or studies that compared interventions to provide parental support during the neonatal period.[109,110] The sole study meeting our definition of Hospital at Home was an RCT that compared Hospital at Home versus in-hospital care for moderately ill children who were admitted to a UK hospital for breathing difficulties, diarrhea with or without vomiting, or a feverish illness.[25]

The study by Sartain and colleagues (2002) recruited children at initial intake assessment (within 6 hours of admission) or at post-intake rounds (within 24 hours of admission).[25] Patients randomized to Hospital at Home received 1 to 4 nurse visits daily, determined by the patient's condition.[25] Sixty-five families who were invited to enroll declined to take part in the trial, most often due to parental anxiety (51% of refusals), although 10 families declined randomization because they wanted to receive Hospital at Home rather than in-hospital care. Reduction in readmissions was the primary outcome.[25] Secondary outcomes included ED visits within 90 days, length of stay, and quality of care assessed through interviews with a subset of families.[25] Table 4 provides a summary of patient demographics and outcomes. Length of care was, on average, 1 day longer in the Hospital at Home group compared to in-hospital care, but there were no differences in readmission rates or ED visits after discharge. The authors concluded that the clinical effectiveness of Hospital at Home for moderately ill children with non-life-threatening conditions was not significantly different from in-hospital care.

Table 4. Summary of Hospital at Home in a Pediatric Population

Study Risk of Bias	Hospital at Home	Usual In-Hospital Care	Outcomes
Sartain et al. 2002[25] Moderate RoB	N = 210 Mean age: 25.8 months (range 1 to 150 months) Female, n (%): 81 (39) Admission diagnosis, n (%): • Fever: 43 (21) • Diarrhea and vomiting: 70 (33) • Breathing difficulties: 97 (46)	N = 189 Mean age: 25.5 months (range 1 to 155 months) Female, n (%): 78 (41) Admission diagnosis, n (%): • Fever: 29 (15) • Diarrhea and vomiting: 55 (29) • Breathing difficulties: 105 (56)	Length of stay: • HaH: mean 2.37 days (range 0 to 9) • UC: mean 1.37 days (range 0 to 10) • *P* < .0001 Readmission within 90 days of discharge, n (%) • HaH: 14 (7) • UC: 17 (9) • *P* = .39 Readmission with the same diagnosis • HaH: 15 of 21 individual readmission episodes (71%) • UC: 6 of 15 individual readmission episodes (40%) • *P* = .09 ED visits within 90 days of discharge • 35 patients (8.8%) reported an ED visit within 90 days but numbers by group assignment were not provided (authors said only "no difference were detected by the study arm")

Abbreviations. ED: emergency department; HaH: hospital at home; RoB: risk of bias; UC: usual in-hospital care.

Meta-Analysis of Data for Adult Patients

Data were sufficiently similar to conduct meta-analyses for outcomes related to length of stay during acute care episodes and hospital readmission (Figures 2–5), ED admission (Figure 6), and mortality at various time points following discharge from acute care episodes (Figures 7–12). All studies reporting on a given outcome at the specified time point were included in meta-analysis, with the sole exception of length of stay. Meta-analysis for length of stay was limited to studies of adult patients; 2 studies that recruited only older adults ≥ 75 years of age[33,34] were omitted from meta-analysis due to substantially longer lengths of stay and are reported separately. For all meta-analyses, sensitivity analyses were conducted with the subset of patients from RCTs (omitting any data from observational studies), with no differences in direction or size of pooled estimates for any outcome measure. Outcomes that were not suitable for meta-analysis are summarized descriptively.

Death During Hospitalization

Nine studies, including 1 pediatric study,[25] reported on deaths during the acute hospitalization (Table 5). There were no significant differences in any study between Hospital at Home and inpatient hospitalization in incidence of deaths during hospitalization.

Table 5. Death During Hospitalization

Author, Year Study Design Population Risk of Bias	Death During Hospitalization, % (n)
Levine et al. 2020[31] RCT Adults, various diagnoses High RoB	Death during acute period • 7% (3) HaH vs. 4% (2) UC, *P* = .53
Echevarria et al. 2018[29] RCT Adults, COPD exacerbation Moderate RoB	Death during acute period • None in HaH or UC
Federman et al. 2018[30] Observational Adults, various diagnoses Moderate RoB	Death during acute period • 0.3% (1) HaH vs. 0 UC, *P* = .14
Tibaldi et al. 2009[36] RCT Age ≥ 75 years, heart failure Moderate RoB	Death during acute period • 6.3% (3) HaH vs. 5.7% (3) UC, *P* = .90
Ricauda et al. 2008[34] RCT Age ≥ 75 years, COPD exacerbation Moderate RoB	Death during acute period • 9 deaths total (8.7% of total sample) • No breakdown by group, but deaths were “equal in the two groups” per report
Richards et al. 2005[35] RCT Adults, pneumonia High RoB	Deaths during acute phase • None in either group

Author, Year Study Design Population Risk of Bias	Death During Hospitalization, % (n)
Ricauda et al. 2004[33] RCT Age ≥ 75 years, ischemic stroke High RoB	Death during acute phase • 21.7% (13) HaH vs. 26.7% (16) UC, *P* = .89
Sartain et al. 2002[25] RCT Pediatric patients with breathing difficulty, fever, or diarrhea and vomiting Moderate RoB	Death during acute phase • None in either group
Davies et al. 2000[28] RCT Adults, COPD exacerbation High RoB	Death during acute period • 2% (2) HaH vs. 0 UC • Both deaths from pneumonia • Patients died within 2 weeks of randomization to HaH, but it is unclear if they died prior to discharge from HaH

Abbreviations. COPD: chronic obstructive pulmonary disease; ED: emergency department; HaH: Hospital at Home; RCT: randomized controlled trial; RoB: risk of bias; UC: usual in-hospital care.

Admission or Readmission to Hospital Care for Adult Patients

Four RCTs provided information on the number of Hospital at Home patients who were transferred back to in-hospital care prior to discharge, as described in Table 6.[28,34-36] One RCT reported that no patients were transferred from Hospital at Home,[31] while 2 RCTs[34,36] and 1 observational study[30] reported transfer rates ranging from 6% to 12%.

Table 6. Patients Transferred from Hospital at Home to Inpatient Hospital Care

Author, Year Study Design Population Risk of Bias	Outcomes
Levine et al. 2020[31] RCT Adults, various diagnoses High RoB	No HaH patients transferred to hospital
Federman et al. 2018[30] Observational Adults, various diagnoses Moderate RoB	33 of 295 patients (11.2%) transferred to inpatient hospitalization
Tibaldi et al. 2009[36] RCT Age ≥ 75 years with heart failure Moderate RoB	4 of 48 patients (8.3%) transferred to inpatient hospitalization
Ricauda et al. 2008[34] RCT Age ≥ 75 years with COPD exacerbation Moderate RoB	3 of 52 patients (5.8%) transferred to inpatient hospitalization • All cases reportedly due to caregiver health concerns and not patient condition

Abbreviations. HaH: Hospital at Home; RCT: randomized controlled trial; RoB: risk of bias.

Ten studies (7 RCTs and 3 cohort studies) described outcomes related to readmission to hospital or Hospital at Home at various time points after discharge.[26-32,34,36,37] In meta-analysis with 5 studies (2 RCTs and 3 observational studies) that enrolled adult patients with various diagnoses, the combined effect indicated significantly lower odds of readmission within 30 days for Hospital at Home patients compared to in-hospital care (OR, 0.72; 95% CI, 0.53 to 0.99; *P* = .04) (Figure 2). There were no differences between Hospital at Home and in-hospital care in the odds of readmission within 90 days of discharge for meta-analysis with all 4 studies included (*P* = .84) (Figure 3) or for meta-analysis limited to the 2 studies of patients with exacerbation of COPD (*P* = .98) (Figure 4). Both studies that assessed readmission within 6 months of discharge (Figure 5) recruited elderly patients (aged ≥ 75 years) with heart failure[36] or COPD,[34] with meta-analysis demonstrating that odds of readmission within 6 months were significantly lower for the Hospital at Home group compared to in-hospital care (*P* = .03).

Figure 2. Readmission Within 30 Days of Discharge

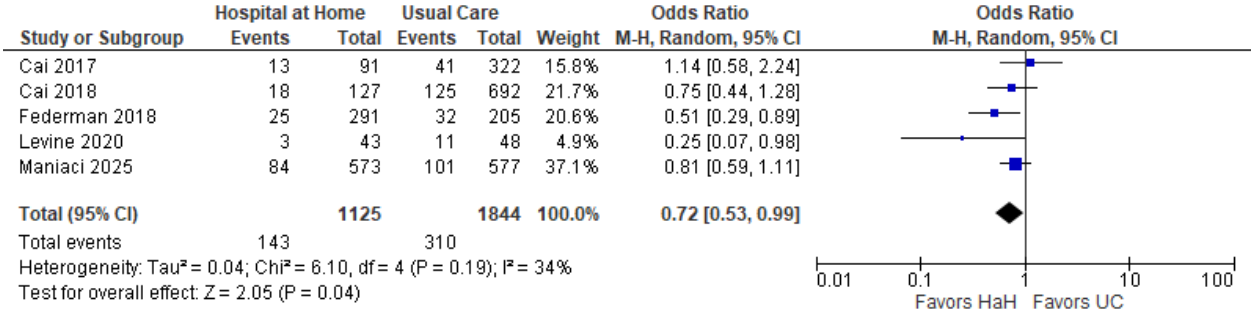


Figure 3. Readmission Within 90 Days of Discharge

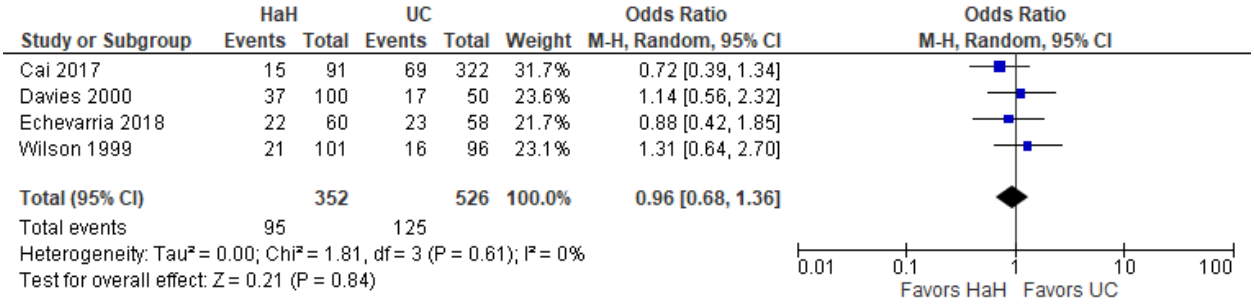


Figure 4. Readmission Within 90 Days of Discharge for Patients With Acute Exacerbation of Chronic Obstructive Pulmonary Disease

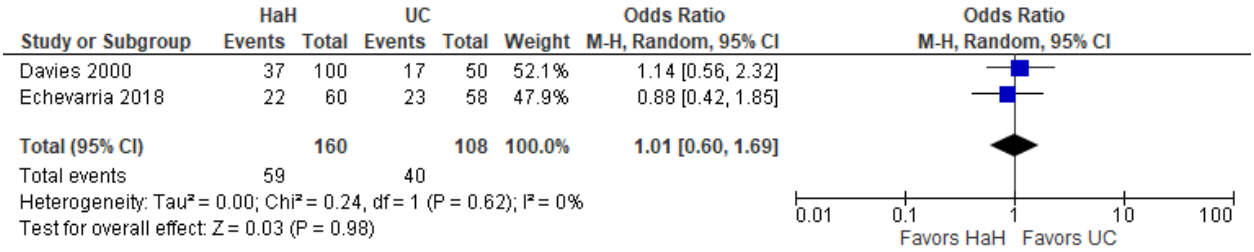
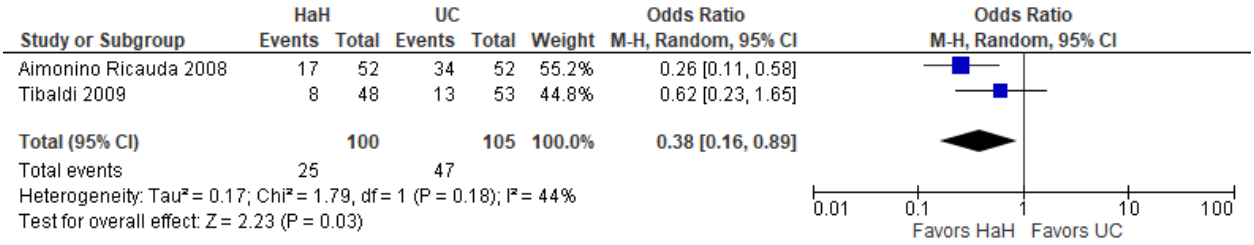


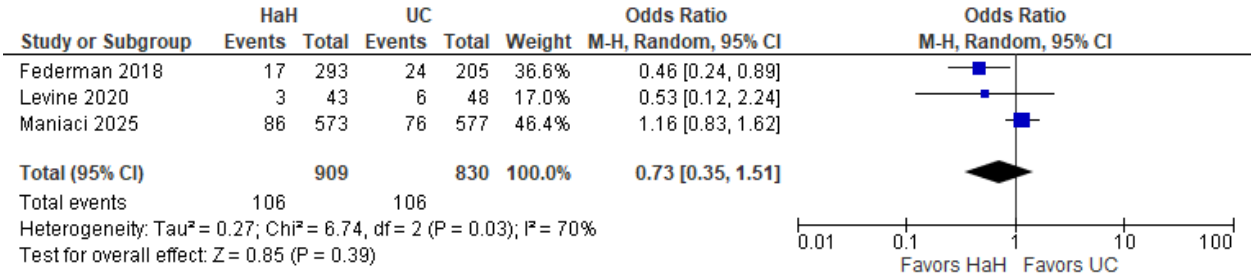
Figure 5. Readmission Within 6 Months of Discharge



Emergency Department Visits for Adult Patients

ED visits were included in evidence review due to their relationship to readmission. Three studies reported on the number of ED visits within 30 days of discharge.[30-32] Meta-analysis (Figure 6) found no difference in the odds of having one or more ED visits within 30 days of discharge between Hospital at Home and in-hospital care groups (*P* = .39). All 3 studies included in meta-analysis enrolled adults with various diagnoses and were not limited to a specific health condition.[30-32]

Figure 6. One or More Emergency Department Visits Within 30 Days of Discharge



Serious Adverse Events for Adult Patients

Mortality was the only serious adverse event reported routinely across studies (additional details on adverse events are included under KQ2—Harms). Because of the frequency of zero values, we were not able to run meta-analysis for inpatient mortality. A study by Ricauda and colleagues (2004) enrolling adults aged 75 and older with first ischemic stroke was the only study to report a large number of deaths during the inpatient phase of the study.[33] There was no statistically significant difference in inpatient mortality for Hospital at Home (21.7%) compared to in-hospital care (26.7%) (*P* = .67). Similarly, there were no differences in mortality at 30 days (*P* = .18) (Figure 7) or 90 days (*P* = .33) (Figure 8) after discharge. Deaths within 90 days of discharge for patients with exacerbation of COPD did not differ significantly for Hospital at Home and in-hospital care in meta-analysis with 2 included studies (*P* = .86) (Figure 9). Deaths within 6 months of discharge did not differ significantly for Hospital at Home and in-hospital care in meta-analysis with 5 included studies (*P* = .07) (Figure 10) or in subanalyses that were limited to 2 studies of patients with heart failure (*P* = .22) (Figure 11) or 3 studies that only enrolled individuals aged 75 or older (*P* = .41) (Figure 12).

Figure 7. Death Within 30 Days of Discharge

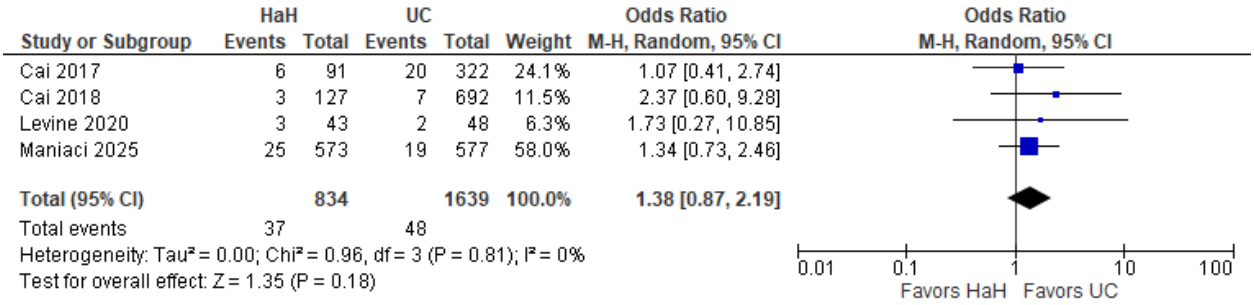


Figure 8. Death Within 90 Days of Discharge

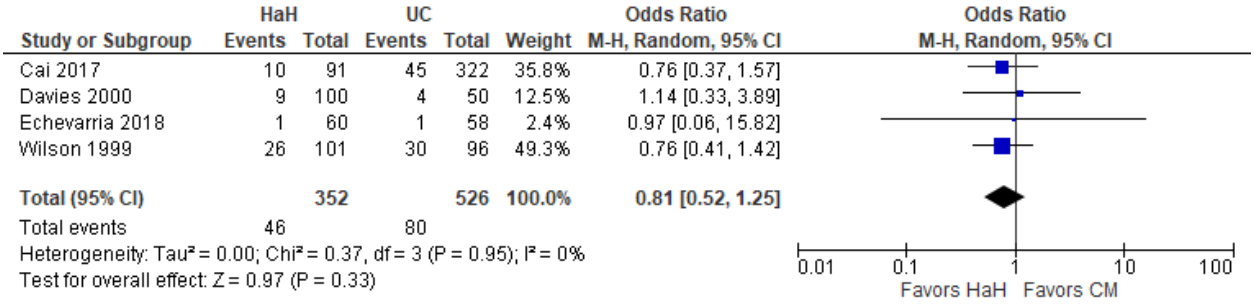


Figure 9. Death Within 90 days of Discharge for Patients With Exacerbation of Chronic Obstructive Pulmonary Disease

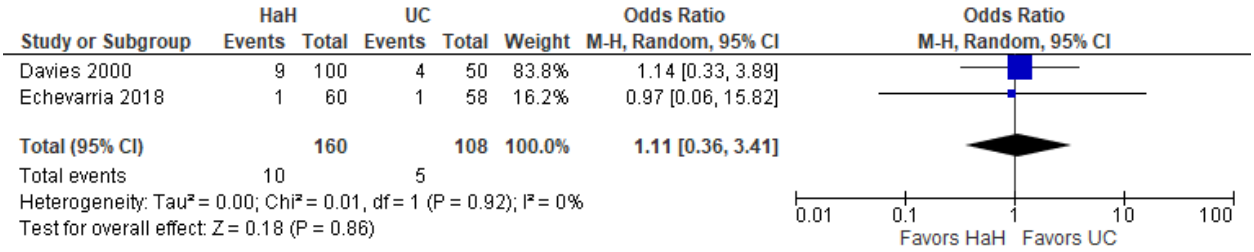


Figure 10. Death Within 6 Months of Discharge

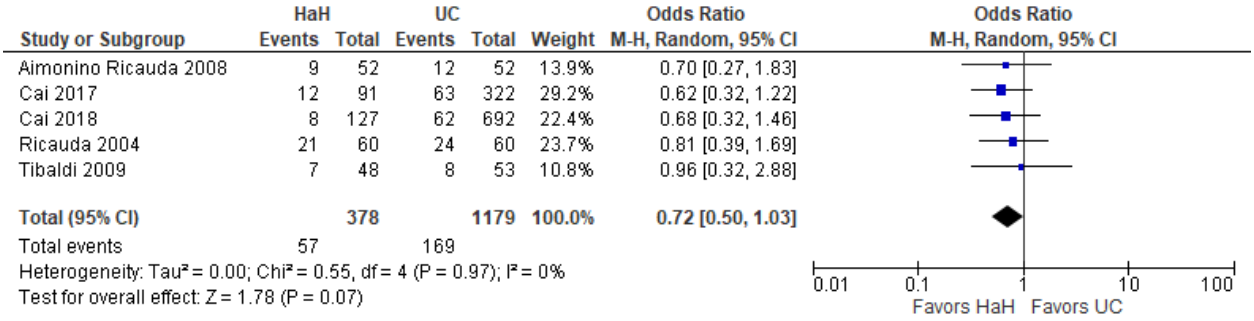


Figure 11. Death Within 6 Months of Discharge for Patients With Heart Failure

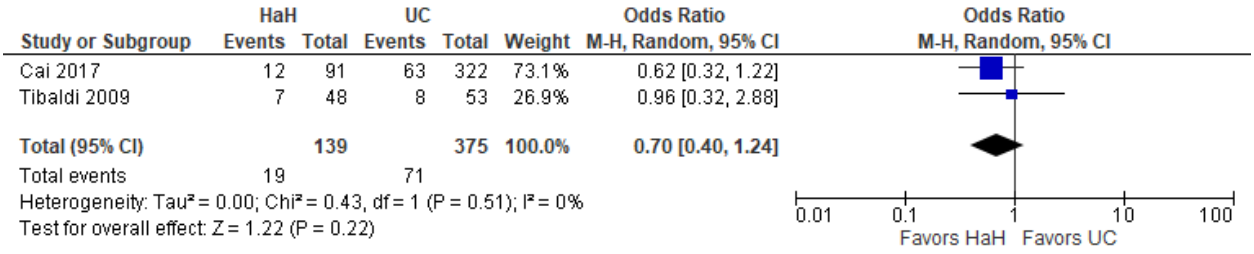
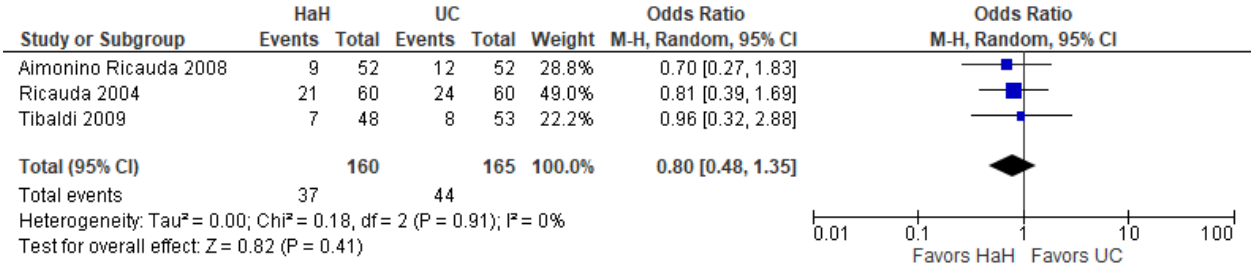


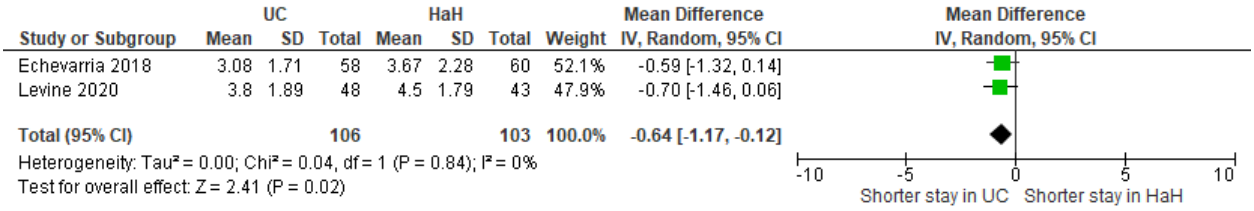
Figure 12. Death Within 6 Months of Discharge for Studies Limited to Patients Aged ≥ 75 Years



Length of Stay for Adult Patients

Eight studies reported length of stay, but only 4 provided information sufficient for meta-analysis. [29,31,33,34] Figure 13 shows the results of meta-analysis with a study by Levine and colleagues (2020),[31] who recruited adults with various diagnoses, and a study by Echevarria and colleagues (2018),[29] who recruited adults with COPD exacerbation. While neither individual study found a significant difference in length of stay between Hospital at Home and in-hospital care, the combined effect in meta-analysis with a larger sample size and greater statistical power indicated a significantly longer length of stay for the Hospital at Home group (*P* = .02), which represented less than a full day difference (Figure 13).

Figure 13. Length of Stay (Mean Days)

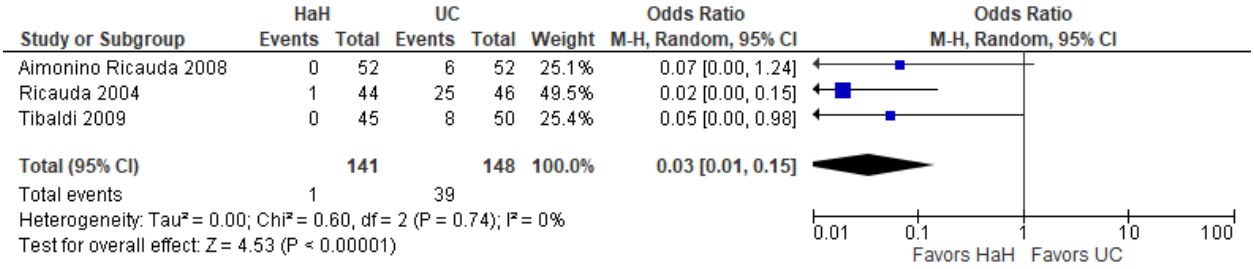


Importantly, this meta-analysis omits 2 studies with older populations,[33,34] which had significantly sicker populations with longer lengths of stay. In a study by Ricauda and colleagues (2004), which enrolled adults who were 75 years of age or older with first ischemic stroke, the mean length of stay was 38.1 days (standard deviation [SD], 28.6) in the Hospital at Home group and 22.2 days (SD, 11.5) in the in-hospital group.[33] Length of stay was significantly longer for the Hospital at Home group (*P* = .0001).[33] Another study by Ricauda and colleagues (2008) enrolled adults aged 75 years and older with COPD exacerbation.[34] The mean length of stay for the Hospital at Home group (15.5 days; SD, 9.5) was significantly longer than for the in-hospital care group (11 days; SD, 7.9) (*P* = .01).[34]

Destination at Discharge for Adult Patients

The 3 RCTs that enrolled patients aged 75 and older provided information on patient destination at time of discharge from the acute care episode.[33,34,36] In the RCT by Ricauda and colleagues (2008) that enrolled older adults with COPD exacerbation, 6 in-hospital patients (11.5%) were transferred to long-term care upon discharge, while all Hospital at Home patients remained at home.[34] In the RCT by Ricauda and colleagues (2004) that enrolled older patients with ischemic stroke, only 1 patient in Hospital at Home (2%) was transferred to long-term care at discharge, compared to 25 patients (54%) in the in-hospital care group.[33] In the RCT by Tibaldi and colleagues (2009) that enrolled older patients with heart failure, no Hospital at Home patients required transfer to long-term care at discharge, compared to 8 patients (16%) in the in-hospital group.[36] In meta-analysis that combined data for the 3 RCTs (Figure 14), Hospital at Home patients were significantly less likely than patients who received in-hospital care to be transferred to long-term care at discharge from acute care (*P* < .00001).

Figure 14. Transferred to Long-Term Care at Discharge



Patient-Reported Health Status for Adult Patients

Six RCTs included measures of patient-reported health status.[29,31,33-36] Because of differences in survey tools, captured timepoints, and outcomes reporting across studies, we did not conduct a meta-analysis. Five RCTs reported no difference between Hospital at Home and in-hospital care in perceived health and functional status (Table 7).[29,31,33-35] Two RCTs using the Nottingham Health Profile reported better quality of life in the Hospital at Home group compared to in-hospital care,[34,36] but the direction of the change would indicate a decrease in quality of life, based on instructions for interpretation of the Nottingham Health Profile.[111]

Table 7. Patient-Reported Health Status

Author, Year Population Risk of Bias	Tool	Outcomes
Levine et al. 2020[31] Adults, various diagnoses High RoB	Katz Index (functional impairment in activities of daily living) • Scale 0 to 6 • Higher score indicates greater independence	Patients perceiving a decrease in functional status from baseline to discharge, n (%) • HaH: 6 of 42 (14%) • UC: 6 of 45 (13%) • *P* = .89 Patients perceiving a decrease in functional status from baseline to 30 days post-discharge, n (%) • HaH: 4 of 42 (11%) • UC: 6 of 38 (16%) • *P* = .51

Author, Year Population Risk of Bias	Tool	Outcomes
Echevarria et al. 2018[29] Adults, COPD exacerbation Moderate RoB	EuroQuality of life • Scale: −0.208 (worst possible health) to 1.0 (best possible health)	Percent of patients who improved by an MCID of 0.051 at discharge • HaH: 56.7% of 60 • UC: 49.1% of 57 • *P* = .41 Percent of patients who improved by an MCID of 0.051 at 3 months post-discharge • HaH: 43.9% of 57 • UC: 49.1% of 56 • *P* = .76
Tibaldi et al. 2009[36] Age ≥ 75 years, heart failure Moderate RoB	Nottingham Health Profile • Scale 0 to 100 • Lower score indicates better self-perceived functioning	Change in score from baseline to 6 months post-discharge • HaH: +1.09 (SD, 2.57), n = 48 • UC: +0.18 (SD, 1.94), n = 53 • *P* = .046 • Authors report self-assessed quality of life was better in HaH patients, despite increase in score representing worse functioning • Lack of clarity about how results were reported and interpreted
Ricauda et al. 2008[34] Age ≥ 75 years, COPD exacerbation Moderate RoB	Nottingham Health Profile • Scale 0 to 100 • Lower score indicates better self-perceived functioning	Change in score from baseline to 6 months post-discharge • HaH: 3.6 (SD, 7.9), n = 52 • UC: 0.8 (SD, 4.5), n = 52 • *P* = .04 • Authors interpret as significantly improved quality of life for HaH patients, despite apparent increase in score • Lack of clarity about how results were reported and interpreted
	Katz Index (functional impairment in activities of daily living) • Scale 0 to 6 • Higher score indicates greater independence	Change in score from baseline to 6 months post-discharge • HaH: 0.12 (SD, 0.64) • UC: 0.08 (SD, 0.73) • *P* = .81
Richards et al. 2005[35] Adults, pneumonia High RoB	SF-12 • Scale 0 to 50 for each component (physical and mental) • Higher score indicates better functioning	Mean score at 6 weeks, physical functioning component • HaH: 42.2 (SD NR), n = 24 • UC: 45.8 (SD NR), n = 25 • *P* = .18 Mean score at 6 weeks, mental functioning component • HaH: 50.4 (SD NR), n = 24 • UC: 51.0 (SD NR), n = 25 • *P* = .81
Ricauda et al. 2004[33] Age ≥ 75 years, ischemic stroke High RoB	Katz Index (functional impairment in activities of daily living) • Scale 0 to 6 • Higher score indicates greater independence	Functional impairment at 6 months post-discharge, median (IQR) HaH: 4 (2 to 5), n = 39 UC: 4 (2 to 6), n = 36 *P* = .57

Abbreviations. COPD: chronic obstructive pulmonary disease; HaH: Hospital at Home; IQR: interquartile range; MCID: minimal clinically important difference; NR: not reported; RoB: risk of bias; SD: standard deviation; SF-12: 12-item short form survey; UC: usual in-hospital care.

Patient Satisfaction for Adult Patients

Five RCTs measured patient satisfaction with Hospital at Home compared to usual in-hospital care.[31,32,34,35,37] Because surveys were study-specific and not validated, no meta-analysis was conducted. Across all 5 studies, patient satisfaction with Hospital at Home was equal to or greater than satisfaction with in-hospital care (Table 8).[31,32,34,35,37]

Table 8. Patient Satisfaction With Hospital at Home

Author, Year Population Risk of Bias	Outcomes
Maniaci et al. 2025[32] Adults, various diagnoses Moderate RoB	Patients reporting they were extremely satisfied with the care they received when surveyed at 30 days post-discharge, n (%) • HaH: 77 of 90 (85.6) • UC: 77 of 92 (83.7) • *P* = .73
Levine et al. 2020[31] Adults, various diagnoses High RoB	Patient experience score on a scale from 0 to 15 when surveyed at 30 days post-discharge (higher value indicates better experience), median (IQR) • HaH: 14 (2), n =48 • UC: 14 (3), n =48 • Statistical analysis NR
Ricauda et al. 2008[34] Age ≥ 75 years, COPD exacerbation Moderate RoB	Patients rating care as very good or excellent when surveyed at discharge, n (%) • HaH: 49 of 52 (94%) • UC: 46 of 52 (88%) • *P* = .83
Richards et al. 2005[35] Adults, pneumonia High RoB	Patients reporting being very happy with medical and nursing care when surveyed at 6 weeks post-discharge, n (%) • HaH: 24 of 24 (100%) • UC: 15 of 25 (60%) • *P* = .001
Wilson et al. 1999[37] Adults, various diagnoses High RoB	Score at discharge on satisfaction survey with a scale from 0 to 18 (higher score indicates greater satisfaction), median (SD NR) • HaH: 15, n = 48 • UC: 12, n = 35 • *P* < .001

Abbreviations. HaH: Hospital at Home; IQR: interquartile range; NR: not reported; RoB: risk of bias; SD: standard deviation; UC: usual in-hospital care.

Caregiver Burden for Adult Patients

Three RCTs compared caregiver burden for Hospital at Home and usual in-hospital care.[29,31,34] Because studies measured and reported caregiver burden in different ways and at different timepoints, no meta-analysis was conducted. All 3 studies reported no difference in caregiver perceptions of burden of care between patients in Hospital at Home and those who received care in hospital (Table 9).[29,31,34]

Table 9. Caregiver Perceptions of Burden of Care

Author, Year Population Risk of Bias	Tool	Outcomes
Levine et al. 2020 Adults, various diagnoses High RoB	Zarit-12 Burden Interview • Scale 0 to 48 • Higher score indicates higher level of perceived burden	Median score at discharge (IQR) • HaH: 9.5 (10.8), n = 22 • UC: 8.0 (10.5), n = 11 • *P* = .98
Echevarria et al. 2018 Adults, COPD exacerbation Moderate RoB	Zarit Burden Interview 22-question scale • Scale 0 to 88 • Higher score indicates higher level of perceived burden • Completed by only a subset of participants	Improved or same from baseline when surveyed at discharge, n (%) • HaH: 11 of 19 (57.9) • UC: 5 of 15 (35.7) • *P* = .20 Improved or same from baseline when surveyed at 3 months post-discharge, n (%) • HaH: 5 of 18 (27.8) • UC: 2 of 13 (16.7) • *P* = .48
Ricauda et al. 2008 Age ≥ 75 years, COPD exacerbation Moderate RoB	Relative Stress Scale • 15-item scale • Range 0 to 60 • Higher score indicates a greater level of stress	Change from baseline to 6-months post-discharge, mean (SD), n • HaH: 4.6 (5.6), n = 52 • UC: 2.6 (6.1), n = 52 • *P* = .16

Abbreviations. COPD: chronic obstructive pulmonary disease; HaH: Hospital at Home; IQR: interquartile range; RoB: risk of bias; SD: standard deviation; UC: usual in-hospital care.

GRADE Summary of Effectiveness and Safety of Hospital at Home Compared to Usual In-Hospital Care

Table 10 presents a summary of effectiveness and safety outcomes from RCTs and observational studies comparing Hospital at Home to in-hospital care for all outcomes included in meta-analyses. The only instance in which studies reporting a given outcome were omitted from meta-analysis involved length of stay for the subset of studies limited to older adults (≥ 75 years), which are graded independently. Deaths during hospitalization are not included in GRADE ratings due to the small number of studies reporting this outcome and the small number of events. Patient-reported outcomes are not included in GRADE ratings due to differences in measures used, time points at which surveys were administered, and response rates. Appendix Table E2 provides additional information on the use of the GRADE system for rating certainty of evidence, while Appendix G provides detailed information on GRADE ratings for critical and important outcomes included in evidence review.

Table 10. Summary of Findings (GRADE) for Effectiveness and Safety of Hospital at Home

Outcome No. of Studies Participant N	CoE	Relationship	Rationale for CoE Rating
Mortality within 30 days of discharge 4 studies in MA N = 2,473	●●○○ Low	No difference between HaH and UC • OR, 1.38 (95% CI, 0.87 to 2.19), *P* = .18 • No significant difference between HaH and UC in any of the 4 studies[26,27,31,32]	Downgraded 1 level for moderate to high RoB in contributing studies and 1 level for imprecision due to wide CIs
Mortality within 90 days of discharge 4 studies in MA N = 878	●●●○ Moderate	No difference between HaH and UC • OR, 0.81 (95% CI, 0.52 to 1.25), *P* = .33 • No significant difference between HaH and UC in any of the 4 contributing studies[27-29,37]	Downgraded 1 level for moderate to high risk of bias in contributing studies
Mortality within 6 months of discharge 5 studies in MA N = 1,557	●●●○ Moderate	No difference between HaH and UC • OR, 0.72 (95% CI, 0.50 to 1.03), *P* = .07 • No significant difference between HaH and UC in any of the 5 contributing studies[26,27,33,34,36]	Downgraded 1 level for moderate to high RoB in contributing studies
Hospital readmission within 30 days of discharge 5 studies in MA N = 2,969	●●○○ Low	Odds of readmission within 30 days were significantly lower for HaH compared to UC • OR, 0.72 (95% CI, 0.53 to 0.99), *P* = .04 • 2 of the contributing studies found significantly lower readmission in HaH compared to UC[30,31] • 3 of the contributing studies found no significant difference in readmission for HaH and UC[26,27,32]	Downgraded 1 level for high to moderate RoB in individual studies, and 1 level for inconsistency as individual studies found either no difference between HaH and usual care or an effect in favor of HaH
Hospital readmission within 90 days of discharge 4 studies in MA N = 878	●●●○ Moderate	No difference between HaH and UC • OR, 0.96 (95% CI, 0.68 to 1.36), *P* = .84 • No significant difference between HaH and UC in any of the 4 contributing studies[27-29,37]	Downgraded 1 level for moderate to high RoB in contributing studies
Hospital readmission within 6 months of discharge 2 studies in MA N = 205	●●●○ Moderate	Significantly lower odds of hospital readmission within 6 months in the HaH group compared to UC (both studies focused on individuals aged ≥ 75 years with heart failure or COPD) • Lower odds of hospital readmission within 6 months of discharge in HaH compared to UC • OR, 0.38 (95% CI, 0.16 to 0.89), *P* = .03 • Both contributing studies reported lower percentage of readmission in the HaH group, with a significant difference in 1 study[36] but not the other[34]	Downgraded 1 level for moderate RoB in both studies

Outcome No. of Studies Participant N	CoE	Relationship	Rationale for CoE Rating
ED visit within 30 days of discharge 3 studies in MA N = 1,739	●●○○ Low	No difference between HaH and UC • OR, 0.73 (95% CI, 0.35 to 1.51), *P* = .39 • 2 of the contributing studies found no significant difference between HaH and UC[31,32] • 1 study reported an effect in favor of HaH[30]	Downgraded 1 level for moderate to high RoB across studies and 1 level for imprecision related to high heterogeneity
Length of stay for adult patients 2 studies in MA N = 209	●●●○ Moderate	Significantly lower mean length of stay in UC compared to HaH • Mean difference 0.64 days (95% CI, 0.12 to 1.17), *P* = .02 in meta-analysis • No significant difference between HaH and UC in either contributing study[29,31] although effect reached significance when studies were combined in meta-analysis • Difference in mean length of stay between UC and HaH was less than 1 day in meta-analysis and in each contributing study	Downgraded 1 level for moderate to high RoB in contributing studies
Length of stay for adults aged ≥ 75 years 2 studies, no MA N = 224	●●○○ Low	Lower mean length of stay in UC compared to HaH • Mean length of stay was 15.9 days (SD, 9.5) for HaH and 11 days (SD, 7.9) in a study of older adults with COPD exacerbation (*P* = .01)[34] • Mean length of stay was 38.1 days (SD, 28.6) for HaH and 22.2 (SD, 11.5) for UC in older patients with first ischemic stroke (*P* = .001)[33]	Downgraded 1 level for moderate to high RoB and 1 level for imprecision due to large standard deviations
Transfer to long-term care at discharge for adults ≥ 75 years of age) 3 studies in MA	●●●○ Moderate	Patients in UC more likely than those in HaH to be transferred to a long-term care facility upon discharge from the acute care episode • OR, 0.03 (95% CI, 0.01 to 0.15), *P* < .001 • Percentage of HaH patients transferred to long-term care at discharge ranged from 0 to 2% (1 patient), compared to 11.5% to 54% for UC	Downgraded 1 level for moderate to high RoB in contributing studies

Abbreviations. CI: confidence intervals; COPD: chronic obstructive pulmonary disease; ED: emergency department; GRADE: Grading of Recommendations, Assessment, Development, and Evaluations; HaH: Hospital at Home; MA: meta-analysis; No. number; OR: odds ratio; RoB: risk of bias; UC: usual care in hospital

Relevant Ongoing Studies

Though an initial search of ClinicalTrials.gov identified 19 potential ongoing studies exploring interventions described as Hospital at Home, only 1 met our inclusion criteria. Most studies lacked a control group receiving in-hospital care or involved interventions that did not meet our definition of Hospital at Home, such as virtual follow up after hospital discharge or receiving chemotherapy in a home environment rather than at the hospital. The sole potential ongoing trial

is a Spanish study entitled "*Thromboembolic Risk Assessment in Patients Admitted With Acute Medical Diseases to Conventional and At Home Hospitalization* (TROMBODOM)" (NCT06110949).[38] This observational study will compare thromboembolic risk in adult patients (aged ≥ 18 years) admitted with acute medical diseases to Hospital at Home with those treated in a conventional hospitalization unit.[38] Although the estimated completion date is listed as March 2025, the study is identified as still recruiting cases for the prospective registry.[38] Primary outcomes are accelerometry data obtained from a wrist-worn device measuring movement and sleep, as well as incidence of thrombotic events and incidence of atrial fibrillation diagnosis within 3 months after hospitalization.[38]

KQ2. Harms

In addition to the mortality outcomes addressed under KQ1, 4 RCTs and 1 observational study included more detailed information on adverse events occurring during the acute period of care (Table 11).

Table 11. Harms and Adverse Events Documented During Hospital at Home or In-Hospital Care

Author, Year Study Design Population Risk of Bias	Other Adverse Events, % (n)
Maniaci et al. 2025[32] RCT Adults, various diagnoses Moderate RoB	Medication errors • None reported in HaH or UC
Levine et al. 2020[31] RCT Adults, various diagnoses High RoB	Acute kidney injury • 2% (1) HaH vs. 4% (2) UC, *P* = .58 Catheter-associated UTI • None in HaH or UC Delirium • 7% (3) HaH vs. 8% (4) UC, *P* = .86 DVT or pulmonary embolism • None in HaH or UC Falls • 2% (1) HaH vs. 0 UC, *P* = .33 Hypokalemia • 2% (1) HaH vs. 2% (1) UC, *P* = 1 New arrhythmia • None in HaH or UC New clostridium difficile infection • 0 HaH vs. 2% (1) UC, *P* = .35 New MRSA infection • 0 HaH vs. 2% (1) UC, *P* = .35
Federman et al. 2018[30] Observational Adults, various diagnoses Moderate RoB	Falls • 1.4% (4) HaH vs. 0 UC, *P* = .09 Nosocomial infections • 0 HaH vs. 1% (2) UC, *P* =0.9 Urinary catheter placement • 1% (3) HaH vs. 4% (9) UC, *P* =.02

Author, Year Study Design Population Risk of Bias	Other Adverse Events, % (n)
Richards et al. 2005[35] RCT Adults, pneumonia High RoB	Antibiotic side effects • 8% (2) HaH vs. 8% (2) UC, *P* = 1 Extrapulmonary infections • 20% (5) HaH vs. 16.7% (4) UC, *P* = .77 • 2 UTIs, 4 upper respiratory infections, 3 IV site infections (group-specific counts NR) Pleural effusion • 8% (2) HaH vs. 4.2% (1) UC, *P* = .58
Ricauda et al. 2004[33] RCT Age ≥ 75 years, ischemic stroke High RoB	Respiratory infections • 33.3% (20) HaH vs. 26.7% (16) UC, *P* = .43 UTIs • 23.3% (14) HaH vs. 20% (12) UC, *P* =.66

Abbreviations: COPD: chronic obstructive pulmonary disease; DVT: deep vein thrombosis; HaH: Hospital at Home; IV: intravenous; MRSA: methicillin-resistant Staphylococcus aureus; NR: not reported; RCT: randomized controlled trial; RoB: risk of bias; UC: usual in-hospital care; UTI: urinary tract infection.

KQ3. Cost and Cost Effectiveness

Costs of Hospital at Home or cost effectiveness was reported in 3 publications.[20,31,39] Two publications focused solely on the economic aspects of Hospital at Home, using data from a Mount Sinai demonstration project funded by the CMMI.[20,39] The publication by Levine and colleagues (2020) also reported clinical outcomes and is included in the evidence base for KQ1.[31] All studies took a health care provider perspective to cost analyses.[20,31,39] Table 12 presents study details and outcomes. Risk of bias was moderate for 2 studies[20,39] and high for 1 study.[31]

Saenger and colleagues (2022) used data from Mount Sinai's CMMI grant to compare the cost of acute hospitalization for patients admitted through 2014 through 2017.[39] Risk of bias was rated as moderate due to lack of subgroup analysis, limited generalizability to nonacademic medical centers, and potential bias introduced by use of data from only a subset of patients. Residence in Manhattan was a criteria for inclusion in the demonstration project and the study sample for cost analysis was limited to fee-for-service Medicare patients with available claims data.[39] Approximately half (46%) of patients whose data were included in analysis were dually eligible for Medicaid.[39] While a variety of conditions were eligible for the Hospital at Home program, primary admitting diagnoses were urinary tract infection (22%), pneumonia (21.2%), cellulitis (17%), exacerbation of congestive heart failure (11%), or dehydration (11%).[39] Mean age was higher in the Hospital at Home group (81.6 years; SD, 12.3) than the in-hospital group (74.6 years; SD, 14.0), but there were no differences between groups in sex, education level, or race and ethnicity.[39] The comparator group consisted of patients who had been offered but refused Hospital at Home or were admitted to the hospital during hours when a Hospital at Home clinician was not available.[39] Costs for Hospital at Home patients were estimated by combining Medicare Part A and B claims data and vendor invoices for services that were not billable to Medicare, such as allied health services, laboratory tests, patient transportation, equipment and

supply delivery, medications, and radiology services.[39] Staffing estimates included salaries for physicians, nurse practitioners, registered nurses, social workers, physical therapists, administrative assistants, practice manager, medical director, and clinical supervisors, with 6-month aggregate costs divided by the total number of Hospital at Home patient visits.[39] Administrative costs for the Hospital at Home program were divided across the total number of Hospital at Home episodes.[39] The costs of care for comparison patients were calculated from the Medicare Part A and B claims for the hospital admission.[39] The mean cost of hospitalization was $9,843 for Hospital at Home patients and $14,323 for patients cared for in-hospital.[39] The authors identify use of telemedicine for some clinical visits as an approach to decreasing costs related to clinician time and travel.[39] The authors further note that Medicare payments used in analysis were higher than those produced in an actuarial analysis conducted during program planning, likely reflecting Mount Sinai Hospital's Medicare Disproportionate Share Hospital and indirect medical education rates, which significantly inflate Medicare payments.[39] As a result, the authors caution that findings from the demonstration project may not be generalizable to hospitals that do not receive Disproportionate Share Hospital and indirect medical education rate-adjusted Medicare payments.[39]

A study by DeCherrie and colleagues (2021) used data from the same Mount Sinai CMMI demonstration project to inventory fee-for-service payments across different reimbursement scenarios for patients with 1 of the 5 least complex admitting diagnoses: urinary tract infection, pneumonia, cellulitis, heart failure, and chronic lung disease.[20] Risk of bias was judged as moderate because the authors did not disclose their approach for handling skewed or missing data or how variability in factors such as practice patterns and costs were incorporated in modeling. The authors reported that the CMMI grant funded the salaries of all program staff, diagnostic and laboratory services, supplies and medications, and durable medical equipment.[20] Other costs were billed to Medicare, including charges for ED visits, outpatient medications filled during the stay, and other post-acute care.[20] Scenarios were modeled with 2 different nursing assumptions: first, that skilled nursing would be provided by registered nurses contracted or employed by the Hospital at Home program, or second, that skilled nursing care would be provided by a certified home health agency.[20] Modeling of costs assumed that when home health services were included in Hospital at Home, patients would meet eligibility for Medicare-certified home health services.[20] The study modeled costs for 4 alternate payment models: fee-for-service Medicare with or without home health nursing, and accountable care organization with or without home health nursing.[20] The authors omitted some services with low frequency in Mount Sinai's Hospital at Home experience, including home radiology expenses.[20] Medicare reimbursement amounts were based on 2020 national payment amounts for each common procedural terminology code.[20] The total projected Medicare reimbursements for each scenario and diagnostic group are included in Table 12. For both scenarios that did not incorporate home health nursing, Medicare reimbursement fell short of the cost of providing Hospital at Home acute services.[20] Additionally, the authors reported that at the time of publication, many services integral to Hospital at Home were not covered by Medicare, including screening of potential patients, travel time, nursing care (if patients failed to meet eligibility criteria for certified home health nursing), supply delivery, or transportation home from the ED.[20]

Finally, a study by Levine and colleagues (2020) described an RCT comparing costs and outcomes for Hospital at Home with usual in-hospital care for adult patients treated at Boston's

Brigham and Women's Hospital during 2017 and 2018.[31] Risk of bias was judged as high due to insufficient detail to fully understand the methods, assumptions, and findings. Eligible patients had a primary diagnosis of any infection, heart failure exacerbation, COPD exacerbation, asthma exacerbation, or selected other conditions.[31] All patients received at least 1 daily visit from an attending general internist and 2 daily visits from a home health registered nurse, with additional visits as needed.[31] Specialists were available for telehealth consultation.[31] The Hospital at Home service met requirements of the CMS waiver, including continuous monitoring and access to respiratory therapies, intravenous medications, and diagnostic services.[31] Direct costs of the acute care episode were the study's primary outcome.[31] Costs reported in Table 12 include physician labor, nonphysician labor, supplies, monitoring equipment, medications, laboratory orders, radiology studies, and transport related to each patient's Hospital at Home care.[31] The publication did not provide any other details on the economic modeling method, handling of missing data, or assumptions applied in the course of constructing estimates.[31] When adjusted for patient sex, age, race, ethnicity, education level, discharge diagnosis, and number of comorbid conditions, the mean costs of Hospital at Home were 25% lower (95% CI, 10% to 38%) than in-hospital care.[31] The authors acknowledged that the small sample size limits the generalizability of results and that the study was stopped sooner than planned to roll out Hospital at Home on a wider basis at Brigham and Women's Hospital.[31]

Table 12. Summary of Studies Related to Costs of Hospital at Home

Author, Year Location RoB Goal	Study Design Model Inputs	Outcomes
Saenger et al. 2022[39] Mt. Sinai HaH program Moderate RoB Determine if costs for HaH are lower than inpatient comparisons	• Retrospective observational study using data from CMMI demonstration project • Medicare billing (Part A and B claims data) and vendor costs not billable to Medicare but covered by CMMI award funds	Mean total costs of the acute hospitalization (not adjusted for inflation) • HaH: $9,843 (SD $5,057) • UC: $14,323 (SD $6,572) • *P* < .001

Author, Year Location RoB Goal	Study Design Model Inputs	Outcomes
DeCherrie et al. 2021[20] Mt. Sinai HaH program Low RoB Identify HaH services that could be reimbursable under Medicare to inform fee-for-service Medicare reimbursement	• Scenario analysis based on data from CMMI demonstration project • Data derived from EMR, Medicare billing, and itemized vendor billing for HaH, with no comparison to inpatient care	Total projected Medicare reimbursement for each scenario • Traditional FFS without home health nursing ○ UTI: $1,360.66 ○ Pneumonia: $1,120.97 ○ COPD: $915.04 ○ Cellulitis: $1,548.08 ○ Congestive heart failure: $1,397.15 • Traditional FFS with home health nursing ○ UTI: $4,464.24 ○ Pneumonia: $4,606.71 ○ COPD: $4,521.97 ○ Cellulitis: $4,736.45 ○ Congestive heart failure: $4,825.34 • Medicare ACO without home health nursing ○ UTI: $1,416.66 ○ Pneumonia: $1,219.37 ○ COPD: $1,153.32 ○ Cellulitis: $1,662.48 ○ Congestive heart failure: $1,472.38 • Medicare ACO with home health nursing ○ UTI: $4,621.68 ○ Pneumonia: $4,548.69 ○ COPD: $4,469.86 ○ Cellulitis: $4,661.84 ○ Congestive heart failure: $4,710.89
Levine et al. 2020[31] Brigham and Women's Hospital, Boston High RoB Determine if costs for HaH are lower than inpatient comparisons	• Primary outcome in an RCT that compared HaH with in-hospital care for acutely ill adults • Summing the costs of physician and nonphysician labor, supplies, monitoring equipment, medications, laboratory orders, radiology studies, and transport related to each patient's care during the hospitalization	Percentage of change in adjusted mean cost (95% CI) • 29% relative reduction from costs of in-hospital care (10% to 38%) • $P < .001$ • Adjusted for sex, age, race, ethnicity, education, discharge diagnosis, and comorbid condition count

Abbreviations: ACO: accountable care organization; CI: confidence interval; CMMI: Centers for Medicare & Medicaid Innovation Center; COPD; chronic obstructive pulmonary disease; EMR: electronic medical record; FFS: fee for service; HaH: Hospital at Home; RCT: randomized controlled trial; RoB: risk of bias; UC: usual in-hospital care; UTI: urinary tract infection.

KQ4. Clinical Practice Recommendations

Our review identified 7 documents published within the past 5 years that provide guidance or recommendations for Hospital at Home programs.[40-46] Only 1 of these, a 2020 publication by Healthcare Improvement Scotland, was supported by a systematic review of the evidence, although the systematic review itself is no longer available on the Healthcare Improvement Scotland website and limited details are provided in the recommendations document.[42] Only 1 of the 7 publications is presented as a guideline—a publication from the UK's National Institute for Health and Care Excellence on the use of Hospital at Home platform technologies for early assessment and initial management of acute respiratory infections in patients aged 16 and older.[46] However, this publication lacked information on the process used for evidence review or recommendation development.[46] We did not conduct a methodological quality assessment as none of the publications met our definitions of a professional clinical practice guideline: supported by a systematic literature review and including detailed methods for developing recommendations, identification of guideline panel members, and review by external peer reviewers.

Summaries of the publications and key findings or recommendations offered are provided in Table 13. Key issues identified across recommendations and guidelines included:

- Need for infrastructure and processes that protect patient safety and confidentiality
- Importance of quality measures and continuous review
- Need for hardware and software systems that integrate with hospital systems while being user-friendly for patients and their caregivers
- Potential for exclusion of patients from Hospital at Home due to internet and technology access issues, health literacy, and caregiver concerns
- Importance of ensuring that staffing for Hospital at Home programs do not impact availability of staff for inpatient care

Table 13. Hospital at Home Guidelines and Recommendations Published in the Last 5 Years

Organization Title Country Year	Author's Description	Recommendations
Hospital at Home Users Group[43] Practice standards for acute Hospital at Home US 2025	National US practice standards	Key identified domains: • Develop leadership infrastructure for the development of policies, procedures, personnel, and protocols that ensures the delivery of high-quality, safe, ethical care • Follow professional education and training standards of the discipline and adapt them to the clinical care of HaH • Qualify and manage organizational human resources to maintain the goals of HaH care • Manage and safeguard patient and clinician information • Adopt quality measures that inform and improve HaH care • Ensure policies, protocols, and practices are in place to promote patient safety, including but not limited to: ○ Infection control ○ At-risk behaviors of patients or their housemates ○ Safety committee reviews of problematic clinical events • Adopt staff and patient/family/caregiver standards and protocols for admission, ongoing daily care, provision of 24/7 care, role of family caregivers, discharge, escalation of care, medication management, medical equipment management, discharge against medical advice, and procedures.
American Medical Association[40] The state of Hospital at Home models: key considerations and opportunities US 2023	General overview and guidance for developing new programs	Describes development of a Health at Home framework to represent the types of services deliverable in the home setting, on a continuum from ambulatory care to end-of-life care. • HaH is identified as 1 example of health at home, described as "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." • Provides no additional information or guidance on the infrastructure or workforce requirements necessary to provide acute-level care in a home environment. • References the CMS Acute Hospital Care at Home Individual Waiver in a general context, without specific guidance for potential HaH providers.

Organization Title Country Year	Author's Description	Recommendations
British Society for Heart Failure[41] Position statement on virtual wards UK 2023	Position statement and recommendations	Current guidance and considerations • There is no NICE specific guidance on the use of HaH for heart failure patients. • Due to the complexities of managing heart failure patients, their care should remain under specialists even in a HaH setting. • Existing heart failure staff would be required to support a roll-out of HaH to support eligible patients, which could potentially incur delays for other heart failure patients. • Significant challenges remain to tackle digital exclusion and health literacy to increase the proportion of heart failure patients that can be managed remotely. Recommendations • The heart failure virtual ward is not a substitute for hospital level care for people with heart failure with hemodynamic instability, pulmonary edema or who require additional monitoring and interventions. • Development of local virtual ward processes must include the lead heart failure clinician with clearly defined clinical inclusion and exclusion criteria. The assessment of the social determinants of health that could impact the safety of patients enrolled in virtual wards should be considered. • Patients with heart failure in the virtual ward must have a care plan developed by a heart failure specialist and implemented by a team with expertise in heart failure. • Assessment of safe staffing requirements for heart failure virtual wards is essential and should not compromise the care provided by existing heart failure services to outpatients. • To determine the safety and effectiveness of virtual wards, an audit program for evaluation should be embedded from the outset with pre-defined reviews to assess impact on outcomes (quality of life, hospitalization, mortality). • Data collection to assess outcomes from the outset is advised.

Organization Title Country Year	Author's Description	Recommendations

NICE[46]
Virtual ward platform technologies for acute respiratory infections: early value assessment
UK
2023
	Guidance	Recommendations
		• HaH platform technologies with appropriate regulatory approval can be used in the NHS while more evidence is generated to monitor people over 16 with acute respiratory infection in their place of residence.
		• HaH platform technologies should have the following key features:
		  ○ Be interoperable with electronic medical record and associated medical devices
		  ○ Provide risk-stratified alerts for health care professionals when readings go outside of agreed range.
		  ○ Have a patient interface with an easy to use, user-centered design.
		• Further evidence should be generated on clinical and cost outcomes.

NICE[44] Acute respiratory infection in over 16s: initial assessment and management including virtual wards UK 2023	Quality standard	Quality standards for HaH • Adults admitted to an acute respiratory infection virtual ward are given verbal and written information about the service. • Adults admitted to an acute respiratory infection virtual ward are cared for by a multidisciplinary team that has access to specialty advice and diagnostics, and is led by a named consultant practitioner or GP with suitable expertise. • Adults admitted to an acute respiratory infection virtual ward are supported to self-manage, including having a self-escalation plan. • Adults discharged from an acute respiratory infection virtual ward are given a discharge summary, including follow-up details, that is also shared with their GP.
NICE[45] Suspected acute respiratory infection in over 16s: assessment at first presentation and initial management UK 2023	Guideline	Guidelines for clinical diagnosis of pneumonia • If a clinical diagnosis of pneumonia has been made, carry out a risk assessment using the CRB65 scoring system. • Consider hospital assessment for people with a CRB65 score of 2 or more. • Discuss options with people with a score of 1 and make a shared decision about the best care pathways for them, including supported home-based care using a virtual ward.

Organization Title Country Year	Author's Description	Recommendations
Healthcare Improvement Scotland[42] Hospital at home: guiding principles for service development UK 2020	Evidence review and guidance for developing new programs	What does the published research tell us about HaH • Can be delivered safely without increased rates of death or readmission to acute care • May reduce likelihood that patients will be living in residential care in the months after the acute episode • Patients generally express high levels of satisfaction with the service • Has the potential to be a cost-effective option • Impact on informal caregivers is not yet understood • Requires IT and digital infrastructure • Requires integration with EMR to capture patient admission episodes • Requires usable IT hardware solutions in home or clinical settings that provide access to hospital systems • Requires software solutions that allow management of staff, electronic record keeping, and task or workflow management • Requires video conferencing to enable remote consultations • Requires remote monitoring using devices that remotely monitor pulse, temperature, oxygen saturations, blood pressure, movement, and posture continuously and relay the information wirelessly to a central monitoring system

Abbreviations. CMS: Centers for Medicare & Medicaid Services; GP: general practitioner; HaH: Hospital at Home; IT: information technology; NHS: National Health Service (UK); NICE: National Institute for Health and Care Excellence (UK).

KQ5. Coverage Policies

The recent expiration of the CMS Acute Hospital Care at Home waiver program at the end of September 2025 has introduced uncertainty about the coverage of these services moving forward, dependent on potential Congressional action to re-extend the program. In this report, we focus on the Hospital at Home coverage status of Medicaid and commercial plans through September 30, 2025, while the CMS waiver program was active, and we note any public changes in policies since the waiver program lapsed.

Health Plans

Among the 8 reviewed health plans, 2 affirmatively covered Hospital at Home services for at least some insurance plan types through September 2025, while the CMS waiver was in effect; 1 affirmatively did not cover the services for Medicare Advantage plans; and 5 plans had no relevant policy information or unclear guidance.

Aetna

It is unclear if Aetna's insurance plans have covered Hospital at Home services or referenced the CMS waiver program.

In our review of Aetna medical policies, we did not find any formal documented policy on Hospital at Home services or the CMS waiver program for commercial or Medicare Advantage plans. The only policy-related document was from Aetna's New Jesey Medicaid managed care plan, which provided billing guidance for the CMS waiver model based on the state's Medicaid guidelines (see New Jersey Medicaid policy review below).[112]

Several Aetna documents indicated that the insurer may have covered Hospital at Home services, but the status was unclear. A 2025 Aetna provider guide for services requiring precertification listed inpatient confinements, "including hospital at home (except hospice)" as a service requiring precertification.[113] A 2024 Aetna submission form on nonquantitative treatment limitations for federal mental health parity law regulations advised that nonquantitative treatment limitations for medical and surgical services applied to all inpatient admissions, including Hospital at Home.[114]

Anthem (Empire) BlueCross BlueShield

Anthem (formerly Empire) BlueCross BlueShield affirmatively covered Hospital at Home services for its commercial and Medicare Advantage insurance plans through September 2025, with direct connection to the CMS waiver program.

Effective July 1, 2022, Empire (now Anthem) BlueCross BlueShield announced that it was accepting qualifying claims for acute Hospital at Home care services under the new Hospital at Home revenue code 0161 for its commercial and Medicare Advantage insurance lines.[47] Federal employee plans and Medicaid plans *were not included* for participation or coverage.[47] The notice specified that the code would be subject to the same guidelines and coverage policies as hospital-based inpatient services and that providers had to be active participants in the CMS waiver program for Medicare plans.[47] Patients had to be at least 18 years old and express a preference and consent for receiving Hospital at Home care, and could be admitted from the ED or transferred from an inpatient hospital setting.[47] Empire BlueCross BlueShield also announced a broader program for Hospital at Home care to help advise hospitals on setting up the model.[115]

Subsequent Empire BlueCross BlueShield notices indicated that the plans were following MCG Health inpatient and surgical care guidelines (formerly Milliman Care Guidelines) for Hospital at Home care for COVID-19, acute viral illness, cellulitis, COPD, heart failure, pneumonia, and urinary tract infection.[116,117]

Cigna

Cigna's Medicare Advantage plans affirmatively did not cover Hospital at Home services through the CMS waiver program.

For Cigna's commercial plans, we found no policy information relating to coverage of a Hospital at Home program or the CMS waiver model. For Cigna's Medicare Advantage plans, the policy manual states that CMS did not mandate Medicare Advantage plan participation in the Acute

Hospital Care at Home waiver program; Cigna chose not to participate and did not reimburse for the Hospital at Home revenue code (0161).[49]

Fidelis Care

It is unclear if Fidelis Care plans have covered Hospital at Home services or referenced the CMS waiver program.

We found no definitive policy information relating to coverage of a Hospital at Home program or the CMS waiver program. The clinical policy manual for short inpatient hospital stays, developed by Centene for Fidelis commercial plans, does include a reference to the CMS notification on the new Hospital at Home occurrence span and revenue billing codes for the CMS waiver program[87] and the American Hospital Association's webpage on Hospital at Home programs,[14] but the CMS model is not otherwise mentioned in the policy.[118] A 2025 Fidelis notice also noted that the updated MCG clinical guidelines used by Fidelis Care include a new guideline around Hospital at Home care.[119]

HealthFirst

We found no policy information relating to a Hospital at Home program or the CMS waiver program.

MetroPlus

We found no policy information relating to a Hospital at Home program or the CMS waiver program.

Molina Healthcare

Molina Healthcare's commercial insurance plans in other states did not appear to cover Hospital at Home services or reference the CMS waiver program; it is unclear if that policy also extended to its New York-based plans.

We found no policy information specific to a Hospital at Home program for Molina's New York-based plans. A 2025 provider inpatient services document for Molina's commercial marketplace coverage plans in 15 states (California, Florida, Idaho, Illinois, Kentucky, Michigan, Mississippi, Nevada, New Mexico, Ohio, South Carolina, Texas, Utah, Washington, Wisconsin) clearly specified that Hospital at Home services were not covered in any of the states.[120]

We also identified Molina references to updated MCG clinical guidelines that included Hospital at Home guidelines,[121,122] and an inpatient revenue code list that included the Hospital at Home code (0161).[123] However, these documents do not specify if the services were covered.[121-123]

UnitedHealthcare

UnitedHealthcare covered Hospital at Home services for its Medicare Advantage insurance plans under the CMS waiver through the end of the waiver program in September 2025; it did not cover the services for commercial plans, and only covered them for Medicaid managed care organization (MCO) plans in states where the Medicaid agency required it. After the CMS waiver program lapsed on September 30, 2025, UnitedHealthcare removed the Hospital at Home policy from its website.[50]

While the policy was in effect, Hospital at Home services delivered by approved hospitals under the CMS waiver program were a covered benefit for UnitedHealthcare's Medicare Advantage and Medicare Advantage Special Needs plans (including dual-eligible special needs plans), Group Medicare Advantage plans, and Medicaid plans only if required by the state's laws and regulations.[48] Hospital at Home services were not a covered benefit for UnitedHealthcare commercial plans and Medicaid MCO plans in states that did not require coverage of services delivered under the CMS Hospital at Home waiver program.[48]

The UnitedHealthcare Hospital at Home benefit page included guidance and citations to the CMS requirements and waiver process that hospitals had to complete.[48] The benefit also required that participating in-network hospital providers must[48]:

- Provide evidence-based criteria for inpatient care
- Provide notification of patients admitted to the Hospital at Home program, transfers back to inpatient facilities, and any other care plan status change
- Use the specific Hospital at Home billing codes (revenue code 0161; occurrence span code 82)

UnitedHealthcare subjected all Hospital at Home claims to standard utilization management processes and did not cover observation stays under its Hospital at Home program.[48]

Medicaid

Among the 9 reviewed state Medicaid agencies, 5 agencies affirmatively covered Hospital at Home services delivered under the CMS waiver through September 2025, while the program was active; 1 agency previously covered the services but ended coverage in 2023; 1 agency covered the services during the COVID-19 pandemic, but coverage status in September 2025 prior to the end of the CMS waiver program was unclear; and 2 agencies have no information indicating past coverage.

California

California Medicaid previously covered Hospital at Home services delivered under the CMS waiver program but ended the coverage in 2023 after the state's hospital regulatory agency rescinded its approval for hospitals to deliver Hospital at Home care under the CMS program.

In December 2020, the California Department of Health Care Services released both a general bulletin and a guidance letter to Medicaid MCOs announcing the recent CMS creation of the Acute Hospital Care at Home waiver program and advising that the California Medicaid program, Medi-Cal, would pay for acute inpatient care for any Medi-Cal enrollees (both fee-for-service and managed care) receiving Hospital at Home care under the CMS waiver model.[59,124] The department advised that hospitals receiving approval from CMS for participation in the waiver program also needed approval from the California Department of Public Health, which regulates state hospital facilities.[59,124,125] The Medicaid agency held managed care plans responsible for knowing and monitoring the CMS waiver authority status for participating hospitals, authorizing care in this setting as medically appropriate, reimbursing hospitals at the same rates as traditional hospital settings unless otherwise negotiated with the provider, and submitting monthly reports on the number of members receiving Hospital at Home services at each participating hospital to the Medicaid agency.[59,124]

In 2023, after initially advising Medicaid MCOs that the CMS program was being extended through December 31, 2024 following federal legislation,[126] the California Department of Health Care Services provided notice to Medicaid enrollees that effective May 11, 2023, California Medicaid was no longer participating in the CMS Hospital at Home waiver program.[60] This was done to ensure alignment with the California Department of Public Health, which rescinded its hospital flexibility guidance that had allowed state hospital facilities to participate in the CMS waiver program because it "does not have statutory authority to license this type of care with the expiration of the state [public health emergency]."[60,125,127]

A background memo authored for a California legislative committee hearing in May 2023 stated that only 1 state hospital system (Adventist Health) had 5 hospitals approved to operate a Hospital at Home pilot under the CMS waiver program and California's own state regulations.[128] Prior to closing its last pilot site in 2022, the Adventist hospital system reported providing more than 6,000 days of Hospital at Home care to more than 1,000 patients, with 70% covered by Medicare or Medicaid; it reported reduced readmission rates compared to the traditional hospital setting, high patient satisfaction, and no falls with injury, hospital-acquired pressure injuries, or cases of *Clostridioides difficile*, methicillin-resistant *Staphylococcus aureus*, or surgical site infections.[128]

Florida

Florida Medicaid covered Hospital at Home services delivered under the CMS waiver program through September 2025, following passage of a state law in 2024.

A state law passed in March 2024 directed Florida's Medicaid agency (Agency for Health Care Administration) to seek federal approval to implement an Acute Hospital Care at Home program into Medicaid.[57]

Florida's Medicaid agency subsequently issued a provider notice in November 2024 to announce that it was reimbursing Hospital at Home services for Medicaid enrollees provided by Florida hospitals that were approved by CMS for the waiver program.[129] The notice specified that to be eligible, a provider had to be an active Florida Medicaid hospital provider, an active Medicare provider in good standing with an approved waiver from CMS, and had to complete a Medicaid-specific attestation form for the program.[129] The Medicaid program reimbursed providers for Hospital at Home services via diagnosis related group (DRG) payment in line with the agency's inpatient hospital services policy, as if the same services had been provided in a physical hospital setting.[129] Claims starting July 1, 2024, were required to include the Hospital at Home-specific revenue code (0161) and occurrence code (82).[129] Florida Medicaid subsequently held a public meeting and updated its inpatient hospital services coverage policy to reflect the new coverage, including an additional requirement that hospitals in the CMS Hospital at Home waiver program make required federal reporting measures under the model available to the Medicaid agency upon request.[51,130,131]

Massachusetts

Massachusetts Medicaid covered Hospital at Home services delivered under the CMS waiver program through September 2025.

In February 2021, Massachusetts Medicaid issued a provider bulletin to acute inpatient hospitals stating that it would provide reimbursement for Hospital at Home services delivered by hospitals approved by CMS for the waiver program.[53] The bulletin applied hospital requirements under the CMS guidance, required hospitals to submit CMS Hospital at Home waiver approval letters to the Medicaid agency, provided billing code instructions, and advised hospitals already credentialed for the CMS program on how to claim payment for services already rendered.[53] Hospitals were required to follow all CMS waiver rules along with state Medicaid regulations and guidance for acute inpatient hospitals.[53] The Medicaid agency reimbursed hospitals for these services under the Adjudicated Payment Amount per Discharge payment methodology.[53] The Massachusetts Medicaid agency issued a subsequent bulletin to its MCOs requiring them to follow the same reimbursement policies.[132]

In June 2021, the Massachusetts Medicaid agency submitted an amendment request for its Section 1115 waiver to CMS highlighting the experience of local hospitals with the Hospital at Home model both prior to and during the COVID-19 pandemic and requesting ongoing flexibility to reimburse Hospital at Home services beyond the end of public health emergency and the CMS waiver program (with the continuing benefit modeled on the CMS waiver structure).[133] However, CMS did not approve this request in its broader acceptance letter for the waiver in 2022, writing that it would continue to review the flexibility request and work with the agency.[134,135]

In September 2023, following the extension of the CMS waiver program through federal legislation, the Massachusetts Medicaid agency updated its provider guidance and included new billing codes released specifically for Hospital at Home services (occurrence span code 82: Hospital at Home care dates; and revenue code 0161: Hospital at Home, R&B/Hospital at Home).[136] It updated its corresponding guidance to the MCO plans in April 2024 to reflect those same changes.[52] Hospital at Home services were listed as part of the definition of "inpatient services" in the Medicaid agency's acute hospital services payment advisory bulletin.[137]

The Massachusetts Division of Insurance also issued a bulletin to commercial health insurers in 2022 communicating expectations for covering Hospital at Home services from CMS waiver-approved hospitals and using initial reimbursement rates no less than Medicare levels while negotiating final rates with facilities.[138] A 2025 proposed state law would require different state-regulated insurance plans to cover Hospital at Home services delivered by CMS waiver-approved hospitals.[139]

A 2024 Massachusetts law on improving quality and oversight of long-term care created a task force on acute hospital care that examined opportunities for expanded reimbursement and coverage of services delivered by CMS Hospital at Home waiver-participating providers.[140] The subsequent report recommended the expansion of Hospital at Home models, including sustaining CMS Hospital at Home waivers through Section 1115 waivers, state plan amendments, and state and federal legislation.[141]

In a November 2023 news article, a medical director for Massachusetts Medicaid said the program had more than 1,000 Hospital at Home admissions and 5 CMS-approved hospitals that were billing the Medicaid agency.[142]

New Jersey

New Jersey Medicaid covered Hospital at Home services delivered under the CMS waiver program through September 2025, following passage of a state law in 2023.

In July 2021, the New Jersey Department of Health issued a waiver removing state requirements that hospitals only provide services within their physical facility and allowing them to deliver Hospital at Home services under the federal waiver program if approved by CMS.[143] Hospitals were required to submit their CMS waiver approval letter, the date they would begin providing Hospital at Home services, and contact information to the Department of Health.[143]

In 2023, the New Jersey State Legislature passed the Hospital at Home Act, which directed the Department of Health to establish a state program for providing Hospital at Home services consistent with the CMS waiver program as long as it remained in effect.[58] The law also required the New Jersey Medicaid program and other commercial insurers to provide coverage of Hospital at Home services on the same basis and reimbursement levels as services delivered on-site at the hospital, including the same utilization management policies.[58] It also required the state's Commissioner of Human Services (home to the Medicaid agency) to apply for any Medicaid state plan amendments or waivers needed to implement the bill and receive federal financial participation for Hospital at Home services for Medicaid patients.[58]

The New Jersey Department of Human Services issued a policy bulletin in August 2024 providing notice that New Jersey Medicaid fee-for-service and MCOs would provide coverage for Hospital at Home services delivered under the CMS waiver program.[54] The notice advised that participating hospitals must be enrolled in the Medicaid program, provide documentation of their CMS Hospital at Home waiver, and be approved by the state Department of Health to deliver the services.[54] Medicaid members had to provide consent for hospital services delivered in the home, and utilization management criteria could not be stricter than policies for services provided in a hospital facility.[54] The notice provided billing guidance for using the Hospital at Home-specific codes and advised that Hospital at Home services covered by the fee-for-service Medicaid program would be paid the same reimbursement as if the services were delivered at the hospital facility, while services reimbursed by managed care plans would use rates established in the MCO-hospital contract.[54,112] Certain New Jersey Medicaid managed care plans subsequently released their own policies reflecting the coverage requirement.[112,144]

New York

New York Medicaid fee-for-service has not previously covered Hospital at Home services under the CMS waiver program.

During the 2025 and 2026 New York state fiscal year budget processes, the governor's executive budget proposed legislation that would essentially have codified the CMS Acute Hospital Care at Home waiver program into state law by distinguishing Hospital at Home from home care services and allowing the Medicaid agency to set fee-for-service program reimbursement rates.[77-79] Neither of the legislative proposals was adopted, and New York fee-for-service Medicaid has not reimbursed for Hospital at Home services delivered by hospitals who were participating in the CMS waiver program.[23,24]

North Carolina

North Carolina Medicaid covered Hospital at Home services delivered under the CMS waiver program through September 2025, following a restart of the benefit in 2023 after temporarily ending coverage. The agency recently issued public guidance that the benefit coverage ended on October 1, 2025, following the recent expiration of the CMS waiver program.[62]

Starting in September 2021, North Carolina Medicaid announced that it would cover Hospital at Home services provided to Medicaid members by CMS-approved hospitals participating in the Hospital at Home waiver program through December 2021.[145,146] Payment for hospitals followed the state's existing inpatient reimbursement methodology, and hospitals were required to identify patients treated at home through the program by putting the condition code "DR" twice on the claim.[145] The Medicaid program then extended its Hospital at Home coverage through March 31, 2022.[147]

North Carolina Medicaid subsequently opted not to further extend its Hospital at Home coverage and allowed it to end on March 31, 2022.[148]

In May 2023, the state legislature passed a law extending the state regulatory waivers needed for hospitals to continue participating in the CMS waiver program through December 2024;[149] the waivers were subsequently extended again in 2024 to terminate at the end of the CMS waiver program.[150]

During a September 2023 webinar while Medicaid coverage was paused, a North Carolina-based organization involved in the state's Hospital at Home system efforts gave an overview of the state status and noted that, in July 2023, the Medicaid agency shared mixed initial outcomes data for Medicaid members receiving Hospital at Home services with state hospitals and Medicaid managed care plans; the presenter advised that in response to agency concerns, state hospitals made adjustments to adapt their patient inclusion criteria for Hospital at Home services (specifically social and environmental factors).[151]

In September 2023, North Carolina Medicaid relaunched its Hospital at Home coverage.[152] In announcing the decision, the agency said that an evaluation of its previously active program had shown mixed results compared to historical Hospital at Home program studies; however, it noted that allowing hospitals sufficient time for capacity building was key for successful model implementation and stated that "the hospitals under the current CMS waiver have been working on their programs since the program evaluation completed March 31, 2022, and have provided assurances that their outcomes are equal to that [*sic*] or better than other [Hospital at Home] evaluations nationally."[152] The agency cited "extensive discussions" with CMS, health systems in the state, Medicaid MCO plans, and other Medicaid programs in its decision to reactivate Hospital at Home coverage from November 2023 through December 2024 using its existing DRG reimbursement methodology.[152] The policy bulletin also noted that if CMS continued to extend its waiver program beyond December 2024, North Carolina Medicaid anticipated a potential change in reimbursement toward a percentage of the DRG and eventually a bundled value-based care approach.[152] The agency stated that coverage of the program past December 2024 would be determined by longer-term model approval from CMS and analysis of its Hospital at Home data during the next 12 months.[152] It also updated its billing guidance to use the

Hospital at Home-specific codes released in 2022.[152] The agency subsequently extended its coverage of Hospital at Home services for Medicaid members through March 31, 2025,[153] and then again through September 30, 2025 until the CMS waiver program expired.[55,62]

Oregon

Oregon Medicaid covered Hospital at Home services under the CMS waiver program during the COVID-19 pandemic, but it was unclear if the coverage remained active through September 2025, prior to the end of the CMS program.

In September 2022, Oregon released an updated COVID-19 Medicaid provider guidance document detailing services provided under Medicaid during the COVID-19 emergency declaration.[61] The document stated[61]:

- **"Coverage of home care through the Acute Hospital Care at Home waiver:** For hospitals that receive federal approval to provide acute hospital care at home, hospital care provided at home will be considered an extension of the hospital."

It is unclear if this coverage was still in effect in September 2025 through the end of the CMS waiver program. A recent publication listed Oregon as one of the states paying for Hospital at Home services through its Medicaid fee-for-service program while the waiver was active.[63] However, the publication's list appears to have certain inaccuracies, and we found no additional guidance or details on the recent coverage status of Hospital at Home services within the Oregon Medicaid program.[63]

The Oregon Health Authority's public health division previously issued guidance on how hospitals could apply to receive state regulatory approval for delivering services under the CMS waiver program.[154] However, the guidance specified that the temporary waivers from state regulations could only be renewed "if the COVID-19 pandemic is still impacting hospital services in the month prior to the license expiration," and the temporary license application form link was no longer active in August 2025 even though the CMS program had not yet lapsed.[154]

Pennsylvania

We did not find any evidence that Pennsylvania Medicaid previously covered Hospital at Home services under the CMS waiver program.

Texas

Texas Medicaid covered Hospital at Home services delivered under the CMS waiver program through September 2025.

In July 2022, Texas Medicaid released a policy bulletin to its MCOs stating that they must provide all medically necessary services covered by Medicaid to members, summarizing the launch of the CMS Hospital at Home waiver program, and advising that the 2 new billing codes specifically for Hospital at Home services were effective as of July 1, 2022 (occurrence span code 82; revenue code 0161).[56] The Medicaid agency subsequently updated its Medicaid provider manual to include the Hospital at Home billing codes, which remain in the current manual.[56,155]

During the COVID-19 pandemic, the Texas Health and Human Services Commission issued a temporary emergency rule permitting hospitals to apply to participate in the CMS Hospital at Home waiver program temporarily.[156] The rule expired in July 2023.[156] In 2023, the state legislature passed a law codifying a state-led regulatory structure that would allow hospitals to operate Hospital at Home programs with standards "at least as stringent" as the CMS waiver program, with approval from CMS and the Texas Health and Human Services Commission.[156,157]

In October 2025, Texas Medicaid issued a notice that hospitals could request a waiver from the state to continue operating their Hospital at Home program after the expiration of the CMS waiver, and also provided contact information for inquiries about Medicaid reimbursement.[158]

Washington State

We did not find any evidence that Washington State Medicaid previously covered Hospital at Home services under the CMS waiver program.

In 2024, the Washington State Legislature passed a bill to establish a formal, state-led regulatory structure for hospitals to provide Hospital at Home services.[64] The bill directed the state Department of Health to establish standards "substantially similar" to the federal CMS waiver model; once those rules were established, the state regulatory structure would take precedence.[64] The bill did not include any coverage provisions that relate to Medicaid.[64] An inpatient billing guide released by the state Medicaid agency referred to Hospital at Home room and board services as not covered by the agency.[159]

Medicare

Medicare fee-for-service coverage of Hospital at Home services was defined by the CMS Acute Hospital Care at Home waiver program, which expired at the end of September 2025.[9] We did not identify relevant Medicare national or local coverage determinations in our search of the CMS Medicare Coverage Database.[160] Current Congressional efforts to re-extend the CMS waiver program are still pending, including temporary spending bills and a separate standalone bipartisan bill that has been proposed to extend the waiver until 2030 but was not yet passed by the time this report was finalized.[16,19]

Discussion

Our review included evidence from 10 clinical trials reported in 14 publications with effectiveness outcomes,[25,28,29,31-37,95-98] and 3 observational studies reported in 4 publications reporting on harms related to Hospital at Home.[26,27,30,99] While all included studies described Hospital at Home programs that met the specifications of the CMS waiver, the majority of clinical trials took place in Europe or New Zealand, with only 2 trials taking place in the US.[31,32] All 3 included observational studies were based on US data.[26,27,30] All studies described the admission avoidance model of Hospital at Home, rather than the early discharge model. In most cases, patients who met the criteria for Hospital at Home were identified in the ED or referred from primary care providers. For the 12 studies limited to adult patients, 5 studies enrolled patients across a wide range of conditions,[26,30-32,37] 3 studies were limited to patients with exacerbation of COPD,[28,29,34] 2 studies enrolled patients with heart failure,[27,36] 1 study focused on patients with pneumonia,[35] and 1 study was limited to older adults (aged ≥ 75 years) who had

experienced their first ischemic stroke.[33] The sole study of pediatric patients included children being admitted for nausea or vomiting, breathing difficulties, or fever.[25]

We had sufficient data to conduct meta-analysis on 5 outcomes related to Hospital at Home for adults: length of stay, readmission to hospital after discharge for the acute event, ED visits after discharge for the acute event, mortality, and destination at discharge for older adults. In meta-analysis with 2 RCTs, length of stay was significantly longer for Hospital at Home patients, averaging 1 extra day.[29,31] The sole study involving pediatric patients also found an average 1 day longer stay for patients in Hospital at Home compared to in-hospital care.[25] Across studies, Hospital at Home resulted in, on average, 1 extra day of inpatient care compared with brick-and-mortar inpatients; CMS's 2024 Hospital at Home program review reports a similar finding.[6] Odds of readmission within 30 days or 6 months of discharge from the inpatient acute care event were lower for Hospital at Home compared to in-hospital care,[26,27,30-32,34,36] while odds of readmission within 90 days of discharge did not differ.[27-29,37] There was no significant difference between Hospital at Home and in-hospital care in the odds of having an ED visit within 30 days of discharge from the inpatient care event.[30-32] Similarly, there were no differences in the odds of death within 30 days, 90 days, or 6 months of discharge from the inpatient acute care event.[26-29,31-34,36,37] In studies that enrolled older adults (aged ≥ 75 years), patients who received in-hospital care were more likely than patients in Hospital at Home to be transferred to a long-term care facility at discharge (OR, 0.03; 95% CI, 0.01 to 0.15; $P < .001$), while Hospital at Home patients were more likely to remain at home following discharge.[33,34,36] Certainty of evidence across these various outcomes ranged from low to moderate, generally reflecting downgrades for moderate to high risk of bias in studies included in meta-analysis or imprecision in estimates. The sole study enrolling pediatric patients found similar results, with no between-group differences in the odds of readmission within 90 days of discharge or ED visits within 90 days of discharge.[25] No studies reported a significant difference between Hospital at Home and in-hospital care in the odds of death during the acute care hospitalization, medication errors, infections, or falls.[25,28-36] **Taken together, these results indicate that patients who received acute care services through Hospital at Home were at no greater risk of subsequent readmission, ED visits, or death than patients treated in a brick-and-mortar hospital setting.**

Self-reported outcomes were not included in meta-analyses but provide insight on the patient and family experience. Self-reported health status was measured in a variety of ways, including functional impairment in activities of daily living and health-related quality of life, with 4 studies reporting no significant difference in self-perceived health status for patients in Hospital at Home and those receiving inpatient care.[29,31,34,36] Patient satisfaction was high across all 5 studies that included this measure.[31,32,34,35,37] Three studies assessed caregiver burden, and none reported a higher level of perceived caregiver burden for patients in Hospital at Home compared to patients treated in hospital.[29,31,34]

We identified 3 cost-effectiveness studies,[20,31,39] 2 of which originated at New York's Mount Sinai Hospital during CMMI demonstration grant funding.[20,39] Two studies that compared costs for Hospital at Home to inpatient care found lower costs in the Hospital at Home group, although costs were measured and reported in different ways.[31,39] A third study estimated Medicare reimbursement across a number of different Hospital at Home staffing scenarios and

medical conditions, generally finding that project reimbursement was higher when home health nursing was incorporated in the Hospital at Home model.[20]

While we identified 7 clinical practice recommendations published within the past 5 years that addressed Hospital at Home,[40-46] none were official practice guidelines supported by systematic reviews of the evidence with clearly outlined processes for development of recommendations. Recommendations stressed the need for infrastructure and processes that protect patient safety and confidentiality, the importance of quality measures and continuous review, and the need for hardware and software systems that integrate with hospital systems while being user-friendly for patients and their caregivers. Recommendations also highlighted the potential for exclusion of patients from Hospital at Home due to internet and technology access issues, health literacy, and caregiver concerns. CMS's 2024 program review echoes this concern, noting that Medicare beneficiaries enrolled in Hospital at Home were not representative of patients receiving in-hospital care in the same institutions.[6] Hospital at Home patients were more likely to be White and live in an urban location, and less likely to receive Medicaid or low-income subsidies.[6]

CMS's 2024 evaluation of hospitals that received the Hospital at Home waiver reaffirmed our findings regarding the safety and relative efficacy of Hospital at Home programs for admission avoidance for acute conditions but also identified additional issues regarding equitable availability of Hospital at Home services.[6] Hospitals establish their own selection criteria for identifying patients suitable for Hospital at Home, but safety criteria typically encompass availability of required utilities and technologies, reliability of patient support, safety of the home and neighborhood for patients and healthcare providers, and proximity to acute care facilities. As a result, patients in low-income neighborhoods and rural areas, as well as those with limited access to technology or social support, are more likely to be excluded from Hospital at Home programs.[6] CMS's 2024 evaluation also found that hospitals that received the Hospital at Home waiver were concentrated in urban areas, with limited access across southern states and no access in rural states like Maine, Montana, Vermont, or Wyoming.[6] **Thus, this model of Hospital at Home is not a means to expand access to care for rural populations without significant changes to the care model**.[6]

Medicaid Policy and Regulatory Discussion

At least 5 Medicaid programs within our 9-state review sample covered Hospital at Home services provided under the CMS Acute Hospital Care at Home waiver program through September 2025 while the program was active, but coverage among state Medicaid fee-for-service programs nationally was low—despite multiple extensions of the CMS waiver program over the past few years.[63] In recent years, some state legislatures started to pass laws that required their Medicaid program to cover Hospital at Home services under the CMS waiver (e.g., Florida,[57] New Jersey[58]).

To date, there has been minimal presentation of data specific to the Medicaid population under the CMS Hospital at Home waiver program. A September 2024 CMS report on the program only analyzed data from Medicare members due to Medicaid data challenges,[6] and a 2023 publication authored by CMS staff showed that only around 15% of the 11,159 patients treated between November 2021 and March 2023 under the program were exclusively Medicaid members.[8] North Carolina Medicaid staff published an invited commentary in 2024 with descriptive data

from fewer than 240 members receiving Hospital at Home services under the program, based on claims between March 2021 and August 2022,[161] and Massachusetts Medicaid staff gave a public presentation in 2023 showing that there had been approximately 900 Hospital at Home admissions among Medicaid members between October 2020 and September 2023 (less than 1% of all admissions for members during that period)[151]; admissions had grown past 1,000 by November 2023.[142]

Among many factors, multiple short-term CMS Hospital at Home waiver extensions and a subsequent lack of long-term regulatory and reimbursement assurances may have contributed to lower Medicaid coverage to date and deterred Medicaid agencies from investing time and resources to create the necessary policies and operational infrastructure.[12] This uncertainty has continued with the recent expiration of the CMS waiver program at the end of September 2025, and federal legislative efforts to extend the program further are pending.[16,17,19] Upfront infrastructure investments and uncertainty around CMS federal waiver extensions have also been cited as potential reasons for the low delivery of Hospital at Home services, even among hospitals that *do* seek and receive a CMS Hospital at Home waiver.[12,69,162,163] In 2022, only 37% of the 284 CMS-approved hospitals were providing active Hospital at Home services under the program; and 26 hospitals were responsible for 71% of discharges under the program.[12,69] In September 2023, Massachusetts Medicaid reported that 4 of the state's 19 CMS-approved hospitals had billed for a Medicaid Hospital at Home admission, and that 14 of the approved hospitals had not yet started their program[151] (by November 2023, 5 hospitals were billing Medicaid[142]). Recent reporting highlighted specific challenges faced by pediatric specialty hospitals in receiving waiver approval under CMS requirements while the program was active.[164]

Additionally, individual state-level licensure regulations must also allow for hospital delivery of Hospital at Home services, separate from the CMS waiver allowances.[6,9] In California, the Medicaid program ended coverage of Hospital at Home services in 2023 after the state's hospital regulatory agency removed its Hospital at Home-related waivers once the state public health emergency expired.[60,127] Recently, several new state laws have established state-specific regulations and standards allowing Hospital at Home service delivery, although the laws have generally mirrored or directly linked to the previously active CMS waiver program (e.g., New Jersey,[58] Washington State[64]).

However, even in states that have passed such laws, the recent expiration of the CMS Acute Hospital Care at Home waiver program on September 30, 2025, introduces uncertainty for Medicaid fee-for-service coverage moving forward.[63,162] Among the reviewed Medicaid agencies, Massachusetts requested broader and more permanent CMS approval for Hospital at Home coverage through its 1115 waiver in 2021, but CMS did not approve the request.[133,134] The temporary CMS waiver program is the first time that Medicaid fee-for-service programs have had the option to reimburse for Hospital at Home services,[13] and all Medicaid Hospital at Home coverage policies identified in our review directly tied coverage guidance in some way to services delivered by hospitals approved under the CMS waiver program (see KQ5, Coverage Policies). With the CMS program's temporary flexibilities currently expired, hospitals can no longer receive waivers from select CMS Hospital Conditions of Participation (e.g., 24-hour in-person nursing availability), which apply to participation in both the Medicare and Medicaid programs.[6,65,67,68,71,76,85] Accordingly, for the moment, hospitals and Medicaid agencies will likely

not be able to receive federal reimbursement for Hospital at Home services delivered to fee-for-service Medicare and Medicaid populations, barring additional federal action. If the program is not re-activated in some way, it will likely limit hospital revenue opportunities to Medicaid managed care, Medicare Advantage, and commercial patient populations, and raises questions around whether hospitals will invest in Hospital at Home program infrastructure for a reduced number of potential patients.[10,12,69,70,162]

A continuing resolution spending bill proposed in Congress prior to the recent federal government shutdown did include a short-term extension of the CMS Hospital at Home waiver program, but it had not passed at the time this report was finalized.[16] Separate bipartisan federal legislation was also proposed during 2025 to extend the CMS Hospital at Home waiver program for 5 additional years through 2030.[19] It has received support from advocacy groups and clinicians with Hospital at Home experience, but its passage is uncertain.[14,163]

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Appendix A. Search Methods

Clinical Evidence Sources and Search Strategies

We searched selected bibliographic databases and grey literature sources using key words such as *hospital at home, hospital in the home, home hospital, home-based hospital, and virtual ward* to identify randomized controlled trials, cost-effectiveness studies, and clinical practice guidelines. We did not use date limits, but we did limit search results to publications available in the English language. An information specialist constructed and executed all searches. A second information specialist peer reviewed the Ovid MEDLINE search strategy. Searches were conducted on April 7, 2025, and May 12, 2025. Clinical trial registries were searched and the Ovid MEDLINE search was updated on June 13, 2025. References from key systematic reviews and meta-analyses were reviewed to identify additional potentially relevant studies.

Bibliographic Database Sources

- Cochrane Central Register of Controlled Trials (CENTRAL)
- Cochrane Database of Systematic Reviews (CDSR)
- Ovid MEDLINE

Evidence Synthesis Sources

- Agency for Healthcare Research and Quality (AHRQ)
- Canada's Drug Agency
- Epistemonikos
- Health Quality Ontario
- Institute for Clinical and Economic Review (ICER)
- Institute for Health Quality and Efficiency in Health Care
- International Health Technology Assessment (HTA) Database
- National Institute for Health and Care Excellence (NICE)
- Oregon Health Evidence Review Commission (HERC)
- Veterans Administration Evidence Synthesis Program (ESP)
- Washington Health Technology Assessment

Clinical Practice Guideline Sources

- American Academy of Pediatrics (AAP)
- American Heart Association (AHA)
- American Medical Association (AMA)
- Guidelines International Network (GIN) International Guidelines Library
- National Institute for Health and Care Excellence (NICE)
- Scottish Intercollegiate Guidelines Network (SIGN)
- Veterans Administration/Department of Defense Clinical Practice Guidelines

Clinical Trial Sources

- ClinicalTrials.gov
- ScanMedicine

Ovid MEDLINE Search Strategy

1946 to May 9, 2025
Dates searched (number of results): May 12, 2025 (1,269); June 13, 2025 (17)

1	home care services, hospital-based/
2	hospital* at? home*.ti,ab,kf.
3	"hospital* at? the? home*".ti,ab,kf.
4	hospital* in? home*.ti,ab,kf.
5	"hospital* in? the? home*".ti,ab,kf.
6	"home hospital*".ti,kf.
7	in home hospital*.ab.
8	home base* hospital*.ti,ab,kf.
9	((hospital base* or hospital* care* or hospital* healthcare* or hospital* health care* or hospital* level care) adj2 home*).ti,ab,kf.
10	((home hospital* unit? or home hospital* ward?) not nursing home hospital*).ti,ab,kf.
11	(virtual adj (hospital* or unit? or ward?)).ti,ab,kf.
12	or/1-11
13	adaptive clinical trials as topic/
14	clinical trials as topic/
15	clinical trials, phase i as topic/
16	clinical trials, phase ii as topic/
17	clinical trials, phase iii as topic/
18	clinical trials, phase iv as topic/
19	comparative effectiveness research/
20	controlled clinical trials as topic/
21	cross-over studies/
22	double-blind method/
23	early termination of clinical trials/
24	multicenter studies as topic/
25	random allocation/
26	exp randomized controlled trials as topic/
27	single-blind method/
28	adaptive clinical trial.pt.
29	clinical trial.pt.
30	clinical trial, phase i.pt.
31	clinical trial, phase ii.pt.
32	clinical trial, phase iii.pt.
33	clinical trial, phase iv.pt.
34	controlled clinical trial.pt.
35	equivalence trial.pt.
36	multicenter study.pt.

37	pragmatic clinical trial.pt.
38	randomized controlled trial.pt.
39	random*.ti,kf.
40	((clinical or controlled or crossover or cross-over or equivalence or noninferior* or non-inferior* or pragmatic or randomi#ed) adj3 (study or studies or trial*)).ti,ab,kf.
41	((single* or double* or triple* or treb* or quad*) adj3 (blind* or mask*)).ti,ab,kf.
42	(2 arm* or two arm* or 3 arm* or three arm* or 4 arm* or four arm* or 5 arm* or five arm*).ti,ab,kf.
43	(phase 1* or phase i* or phase 2* or phase ii* or phase 3* or phase iii* or phase 4* or phase iv*).ti,ab,kf.
44	or/13-43
45	exp budgets/
46	exp "costs and cost analysis"/
47	economics/
48	exp economics, dental/
49	exp economics, hospital/
50	exp economics, medical/
51	economics, nursing/
52	economics, pharmaceutical/
53	exp "fees and charges"/
54	exp models, economic/
55	economics.fs.
56	(budget* or cost* or economic* or expenditure? or expense? or financ* or fiscal* or funding or price? or pricing or pharmacoeconomic* or pharmaco-economic*).ti,kf.
57	((budget* or cost* or economic* or expenditure? or expense? or financ* or fiscal* or price? or pricing or pharmacoeconomic* or pharmaco-economic*) adj2 (analy* or benefi* or estimate* or model* or unit or utilit*)).ab.
58	(value adj2 (monetary or money)).ti,ab,kf.
59	medicaid/
60	"centers for medicare and medicaid services, u.s."/
61	dual medicaid medicare eligibility/
62	medicaid*.ti,ab,kf.
63	or/45-62
64	clinical decision rules/
65	exp clinical protocols/
66	consensus/
67	exp consensus development conferences as topic/
68	critical pathways/
69	exp guidelines as topic/
70	health planning guidelines/
71	consensus development conference.pt.

72	consensus development conference, NIH.pt.
73	guideline.pt.
74	practice guideline.pt.
75	guideline?.ti,kf.
76	((committee or executive) adj2 (recommendation* or statement* or summar*)).ti,kf.
77	(consensus adj2 (document* or paper* or recommendation* or report* or statement*)).ti,kf.
78	(joint adj2 (document* or recommendation* or statement*)).ti,kf.
79	((policy or position) adj2 (paper* or statement*)).ti,kf.
80	((clinical or critical or practice) adj2 (path? or recommendation? or standard?)).ti,kf.
81	or/64-80
82	exp meta-analysis as topic/
83	systematic reviews as topic/
84	exp technology assessment, biomedical/
85	meta-analysis.pt.
86	systematic review.pt.
87	(metaanaly* or meta analy* or metaregression* or meta regression*).ti,kf.
88	((scoping or systematic* or umbrella) adj2 (overview? or review?)).ti,kf.
89	((evidence or quantitative) adj2 (review? or synthes*)).ti,kf.
90	(technology adj (appraisal* or assessment*)).ti,kf.
91	cinahl.ab.
92	cochrane.ab.
93	embase.ab.
94	medline.ab.
95	psyc?info.ab.
96	pubmed.ab.
97	scopus.ab.
98	sociological abstracts.ab.
99	web of science.ab.
100	or/82-99
101	and/12,44
102	and/12,63
103	and/12,81
104	and/12,100
105	or/101-104
106	(baboon? or bovine? or canine? or cat? or chimpanzee? or chinchilla? or cow? or dog? or feline? or goat? or hens or macque? or mice or monkey? or (mouse adj2 model?) or murine? or ovine or pig? or porcine or (non-human adj2 primate?) or sheep or rabbit? or rat or rats or rattus or rhesus or rodent? or swine or zebrafish).ti.
107	105 not 106
108	limit 107 to english language

Cochrane Database of Systematic Reviews (CDSR) and Cochrane Central Register of Controlled Trials (CENTRAL) via the Cochrane Library Search Strategy

CDSR: Issue 5 of 12, May 2025
CENTRAL: Issue 4 of 12, April 2025
Date searched (number of results): May 12, 2025 (CDSR: 17; CENTRAL: 721, after results from trial registries removed)

1	[mh ^"home care services, hospital-based"]
2	("hospital at home"):ti,ab,kw
3	("hospitalization at home"):ti,ab,kw
4	("hospitalisation at home"):ti,ab,kw
5	("hospital at the home"):ti,ab,kw
6	("hospitalization at the home"):ti,ab,kw
7	("hospitalisation at the home"):ti,ab,kw
8	("hospital in home"):ti,ab,kw
9	("hospitalization in home"):ti,ab,kw
10	("hospitalisation in home"):ti,ab,kw
11	("hospital in the home"):ti,ab,kw
12	("hospitalization in the home"):ti,ab,kw
13	("hospitalisation in the home"):ti,ab,kw
14	(home NEXT hospital*):ti,kw
15	("in home" NEXT hospital*):ab
16	(home NEXT base* NEXT hospital*):ti,ab,kw
17	(((hospital NEXT base*):ti,ab,kw OR (hospital* NEXT care*):ti,ab,kw OR (hospital* NEXT healthcare*):ti,ab,kw OR (hospital* NEXT health NEXT care*):ti,ab,kw OR (hospital* NEXT "level care"):ti,ab,kw) NEAR/2 home*:ti,ab,kw)
18	(((home NEXT hospital* NEXT unit?):ti,ab,kw OR (home NEXT hospital* NEXT ward?):ti,ab,kw) NOT ("nursing home" NEXT hospital*):ti,ab,kw)
19	(virtual:ti,ab,kw NEAR/1 (hospital*:ti,ab,kw OR unit?:ti,ab,kw OR ward?:ti,ab,kw))
20	[OR #1-#19]

Policy Sources and Search Terms

We searched the Centers for Medicare & Medicaid website and Medicare Coverage Database for coverage policies, regulatory guidance, and local and national coverage determinations focused on Hospital at Home programs and services. We also searched the Medicaid State Waivers List for states with approved, pending, or rejected section 1115 waivers that included coverage of Hospital at Home services. In addition, we searched the websites of the state Medicaid programs and health plans listed below using terms such as *hospital at home*, *acute hospital care at home*, or *hospital in home*. Searches were conducted May 15–20, 2025, and August 3–13, 2025, and updated for a final time on October 20, 2025.

State Medicaid Programs

- California Medicaid
- Florida Medicaid
- Massachusetts Medicaid
- New Jersey Medicaid
- New York Medicaid
- North Carolina Medicaid
- Oregon Medicaid and the HERC coverage guidance (including topics under consideration)
- Pennsylvania Medicaid
- Texas Medicaid
- Washington Medicaid and the Washington Health Technology Assessment Program coverage determinations (including topics under consideration)

Health Plans

- Aetna
- Anthem Blue Cross and Blue Shield
- Cigna
- Fidelis Care
- Healthfirst
- MetroPlusHealth
- Molina Healthcare
- UnitedHealthcare

Appendix B. Detailed Inclusion and Exclusion Criteria

Table B1. Detailed Inclusion and Exclusion Criteria

Study Component	Inclusion	Exclusion
Populations	• Adult and pediatric (less than 18 years of age) patients eligible to receive health care from an admission avoidance or early discharge Hospital at Home service	

Interventions	• Hospital at Home service that provided active treatment by health care professionals, for a limited period of time, in a patient's home for a condition that would otherwise require acute inpatient care, and included the following elements:
	  ○ Service associated with a hospital that was responsible for the program
	  ○ Daily in-home or remote physician visits
	  ○ Daily in-home nurse visits
	  ○ Nurse or physician available 24/7 for any urgent or emergent situation
	  ○ Monitoring of patient's vitals
	  ○ Provision of pharmaceuticals
	  ○ Provision of laboratory services
	  ○ Provision of radiology services
		• Services providing long-term care
		• Services provided in outpatient settings or after discharge from the hospital
		• Self-care by the patient in their home (e.g., self-administration of an intravenous infusion)
		• Services providing obstetric care
		• End-of-life care

Comparators	• Standard care provided in a hospital setting	
Outcomes	Critical • Admission or readmission to in-hospital care • Serious adverse events (e.g., mortality, health care-associated infections, medical errors) Important • Length of stay in hospital and Hospital at Home program • Standardized measures of patient-reported health status (e.g., quality of life, general and disease-specific health status, psychological health) • Patient satisfaction • Validated measures of caregiver burden (e.g., Carer Strain Index) • Cost and cost-effectiveness	
Timing and follow up	• Minimum follow up of 1 month after the end of the intervention period	• Less than 1 month of follow up after the end of the intervention period

Study Component	Inclusion	Exclusion
Setting	• Studies conducted in patient's home or usual place of residence • Studies conducted in countries categorized as *very high* on the Human Development Index (KQ1–KQ2) • Studies conducted in the US, or using US-based health systems data (KQ3)	• Sessions conducted in inpatient setting • Studies conducted in countries not categorized as *very high* on the Human Development Index (KQ1–KQ2) • Studies not conducted in the US, or not using US-based health systems data (KQ3)
Study design	KQ1–KQ2 • Randomized controlled trials • Registry studies for harms only KQ3 • Comparative studies and economic evaluations • Cost-effectiveness analyses • Economic modeling studies • Studies published within past 5 years KQ4 • Evidence-based clinical practice guidelines that provide specific treatment recommendations • Guidelines published or updated within past 5 years	• Studies without a comparator • Studies without extractable data • Uncontrolled studies • Proof-of-principle studies (e.g., program development or modification) • Retrospective studies unless otherwise noted
Sample size	• Minimum sample size of 20 participants per group within study	• Studies with fewer than 20 participants per group within study
Publication type	• Peer-reviewed publication of primary study results • Published in the English language • Ancillary publications with additional comparative follow up	• Abstracts, conference proceedings, posters, editorials, letters • Studies not formally peer reviewed (i.e., preprint publications) • Studies published in languages other than English • Studies for which full text cannot be found • Duplicate publications of the same study that do not report different outcomes or follow-up times, or single-site reports from published multicenter studies

Appendix C. Additional Methods

Participant Characteristics and Association With Outcomes

When discussing risk and protective factors or variables in statistical models in Center research products, in almost all cases, we are referring to associations of participant characteristics with outcomes, and not causation of outcomes. This is important because participant characteristics, such as race and ethnicity, serve as proxy or surrogate measures for underlying etiological factors not measured or evaluated in analyses. Etiological factors that might cause differences in outcomes for subgroups of participants could include systemic racism or other forms of systemic discrimination, stress, poverty, housing instability, or epigenetics. For example, by describing any differences in outcomes by race and ethnic groups, we are noting observed associations; these associations are not caused by biological determinants of being Black, White, or Hispanic.

Risk of Bias

Table C1. Risk-of-Bias Assessment: Randomized Controlled Trials

Domain	Domain Elements[a]
Randomization	• An appropriate method of randomization is used to allocate participants or clusters to groups, such as a computer random number generator • Baseline characteristics between groups or clusters are similar
Allocation concealment	• An adequate concealment method is used to prevent investigators and participants from influencing enrollment or intervention allocation
Intervention	• Intervention and comparator intervention applied equally to groups • Co-interventions appropriate and applied equally to groups • Control selected is an appropriate intervention
Outcomes	• Outcomes are measured using valid and reliable measures • Investigators use single outcome measures and do not rely on composite outcomes, or outcome of interest can be calculated from composite outcome • The trial has an appropriate length of follow-up and groups are assessed at same time points • Outcome reporting of entire group or subgroups is not selective
Masking (blinding) of investigators and participants	• Investigators and participants are unaware (masked or blinded) of intervention status
Masking (blinding) of outcome assessors	• Outcome assessors are unaware (masked or blinded) of intervention status
Intention-to-treat analysis	• Participants are analyzed based on random assignment (intention-to-treat analysis)
Statistical analysis	• Participants lost to follow-up unlikely to significantly bias results (i.e., complete follow-up of ≥ 80% of participants overall and nondifferential, ≤ 10% difference between groups) • The most appropriate summary estimate (e.g., risk ratio, hazard ratio) is used • Paired or conditional analysis used for crossover RCT • Clustering appropriately accounted for in a cluster-randomized trial (e.g., use of an intraclass correlation coefficient)

Domain	Domain Elements[a]
Other biases (as appropriate)	• List others in table footnote and describe, such as: o Sample size adequacy o Interim analysis or early termination o Recruitment bias, including run-in period used inappropriately o Use of unsuitable crossover intervention in a crossover RCT
Interest disclosure	• Disclosures of interest are provided for authors/funders/commissioners of study • Interests are unlikely to significantly affect study validity
Funding	• There is a description of source(s) of funding • Funding source is unlikely to have a significant impact on study validity

Note. [a] *The elements included in each domain are assessed and rated as yes, no, unclear, or not applicable based on performance and documentation of individual elements in each domain. The overall risk of bias for a study is assessed as high, moderate, or low based on assessment of how well overall study methods and processes were performed to limit bias and ensure validity.*
Abbreviation. RCT: randomized controlled trial.

Table C2. Risk of Bias Assessment: Nonrandomized Studies

Domain	Domain Elements[a]
Participant selection	For cohort studies: • The 2 groups being studied are selected from source populations comparable in all respects other than factor under investigation, or statistical adjustment is used appropriately to achieve this • The study indicates how many of people asked to take part did so in each of the groups being studied • The likelihood some eligible participants might have the outcome at the time of enrollment is assessed and considered in analysis • Fewer than 20% of individuals or clusters in each arm of the study dropped out before the study was completed For case-control studies: • Cases and controls are clearly specified and defined, with inclusion and exclusion criteria applied appropriately • Cases may be selected by meeting inclusion criteria; controls may be selected by meeting inclusion criteria and then matched to cases • Sampling selection (ratio of cases to control) is justified • Cases and controls are selected from same population and same timeframe; when all cases and controls are not selected from same population, they are randomly selected • Among cases, investigators confirm that exposure occurred before the development of the disease being studied and/or the likelihood that some eligible participants might have outcome at the time of enrollment is assessed and considered in analysis
Intervention	• The assessment of exposure to intervention is reliable • Exposure level or prognostic factors are assessed at multiple times across length of study, if appropriate • For case-control studies, assessors of (intervention) exposure status are unaware (masked or blinded) to the case or control status of participants, and there is a method to limit the effects of recall bias on assessment of exposure to intervention

Domain	Domain Elements[a]
Control	• Control condition represents an appropriate comparator
Outcome	• There is a precise definition of outcomes used • Outcomes are measured using valid and reliable measures, evidence from other sources is used to demonstrate that the method of outcome assessment is valid and reliable • Investigators use single-outcome measures and do not rely on composite outcomes, or outcome of interest can be calculated from composite outcome • The study has an appropriate length of follow up for the outcome reported and groups are assessed at the same time points • Outcome reporting of the entire group or subgroups is not selective • When patient-reported outcomes are used, there is a method for validating the measure
Masked outcome assessment	• Outcome(s) assessment is made blindly with respect to exposure status. Where outcome assessment blinding is not possible, there is recognition that knowledge of exposure status could have influenced outcome assessment. • For case-control studies: assessors of exposure status are unaware (masked or blinded) of case or control status of participant
Confounding	• The main potential confounders are identified and considered in study design and analysis
Statistical analysis	• Comparisons are made by exposure status between full participants and those who dropped out or those lost to follow up • If groups were not followed for an equal length of time, analysis is adjusted for differences in length of follow-up • All major confounders are adjusted for using multiple variable logistic regression or other appropriate statistical methods • Confidence intervals (or information used to calculate them) are provided • For case-control studies that use matching, conditional analysis is conducted or matching factors are adjusted for in analysis
Other biases (as appropriate)	• List others in table footnote and describe • Sample size adequacy
Interest disclosure	• Disclosures of interest are provided for authors/funders/commissioners of study • Interests are unlikely to significantly affect study validity
Funding source	• There is a description of source(s) of funding • Funding source is unlikely to have a significant impact on study validity

Note. [a] The elements included in each domain are assessed and rated as yes, no, unclear, or not applicable based on performance and documentation of individual elements in each domain. The overall risk of bias for a study is assessed as high, moderate, or low based on assessment of how well overall study methods and processes were performed to limit bias and ensure validity.

Table C3. Risk of Bias Assessment: Economic Modeling Studies

Domain	Domain Elements[a]
Target population	• Target population and care setting are described • The basis for any target population stratification is described and justified, previously identifiable subgroups are identified • If no subgroup analyses were performed, the reasons are justified
Perspective	• Analytic perspective (e.g., societal, payer, etc.) is stated and justified
Time horizon	• Time horizon(s) used in analysis are described and justified
Discount rate	• Discount rate used for costs and outcomes is stated and justified
Comparators	• Selected comparators are described and justified • Competing alternatives appropriate and clearly described
Modeling	• Model structure (e.g., scope, assumptions made) is described and justified • Model diagram provided, if appropriate • Model validation is described (may involve validation of different aspects such as structure, data, assumptions, and coding and different validation models such as comparison with other models) • Data sources listed and assumptions for use justified • Statistical analyses are described
Effectiveness	• Estimates of efficacy/effectiveness of interventions are described and justified • The factors likely to have an impact on effectiveness (e.g., adherence, diagnostic accuracy, values, preferences) are described and an explanation of how these were factored into analysis is included • The quality of evidence for the relationship between intervention and outcomes, and any necessary links, is described
Outcomes	• All relevant outcomes are identified, measured, and valued appropriately (including harms/adverse events) for each intervention, any information/assumptions made are justified and provided • Any quality-of-life measures used in modeling are described and use justified • Any other outcomes that were considered but rejected are described with rationale for rejection • Ethical and equity-related outcomes are considered and included when appropriate
Resource use/ costs	• All resources used are identified, valued appropriately, and included in analyses • Methods for costing are reported (e.g., patient level) • Resource quantities and unit costs are both reported • Methods for costing time (e.g., lost time, productivity losses) are appropriate and a justification is provided if time costs are not considered
Uncertainty	• Sources of uncertainty in analyses are identified and justification for probability distributions used in probabilistic analyses is given • For scenario analyses, values and assumptions tested are provided and justified

Domain	Domain Elements[a]
Results	• All results are presented in a disaggregated fashion, by component, in addition to an aggregated manner • All results are presented with undiscounted totals before discounting and aggregation • Natural units are presented along with alternative units (e.g., QALYs) • The components of incremental cost-effectiveness ratio (ICER) are shown (e.g., mean costs of each intervention in numerator and mean outcomes of each intervention in denominator) • Results of scenario analyses, including variability in factors such as practice patterns and costs, are reported and described in relation to reference (base) case
Interest disclosure	• Disclosures of interest are provided for authors/funders/commissioners of study • Interests are unlikely to significantly affect study validity
Funding source	• There is a description of source(s) of funding • Funding source is unlikely to have a significant impact on study validity

Note. [a] The elements included in each domain are assessed and rated as yes, no, unclear, or not applicable based on performance and documentation of individual elements in each domain. The overall risk of bias for a study is assessed as high, moderate, or low based on assessment of how well overall study methods and processes were performed to limit bias and ensure validity.
Abbreviations. ICER: incremental cost-effectiveness ratio; QALY: quality-adjusted life year.

Table C4. Methodological Quality Assessment: Clinical Practice Guidelines

Domain	Domain Elements[a]
Rigor of development: evidence	• Systematic literature search meets quality standards for a systematic review (i.e., comprehensive search strategy with, at a minimum, 2 or more electronic databases) • The criteria used to select evidence for inclusion is clear and appropriate • The strengths and limitations of individual evidence sources and the overall quality of body of evidence are assessed
Rigor of development: recommendations	• Methods for developing recommendations are clearly described and appropriate • There is an explicit link between recommendations and supporting evidence • The balance of benefits and harms is considered in formulating recommendations • The guideline has been reviewed by external expert peer reviewers • The updating procedure is specified within the guideline or in related materials (e.g., specialty society website)
Editorial independence	• There is a description of funding source(s) and funder(s) views are unlikely to have influenced guideline content or validity • Disclosures of interests for guideline panel members are provided and are unlikely to have a significant impact on overall validity of guideline (e.g., a process for members to recuse themselves from participating on recommendations for which a significant conflict is provided)
Scope and purpose	• Objectives specifically described • Health question(s) specifically described • Target population(s) for guideline recommendations is specified (e.g., patients in primary care) and target users for guideline (e.g., primary care clinicians)

Domain	Domain Elements[a]
Stakeholder involvement	• Relevant professional groups represented • Views and preferences of target population(s) sought (e.g., clinicians and patients)
Clarity and presentation	• Recommendations are specific and unambiguous • Different management options are clearly presented • Key recommendations are easily identifiable
Applicability	• Advice and/or tools on how recommendation(s) can be put into practice is provided • Description of facilitators and barriers to its application is provided • Potential resource implications are considered • Criteria for implementation monitoring, audit, and/or performance measures based on guideline are presented

Note. [a] The elements included in each domain are assessed and rated as yes, no, unclear, *or* not applicable *based on performance and documentation of individual elements in each domain. The overall risk of bias for a study is assessed as* high, moderate, *or* low *based on assessment of how well overall study methods and processes were performed to limit bias and ensure validity.*

GRADE (Grading of Recommendations Assessment, Development and Evaluation)

Table C5. GRADE System for Rating the Certainty of Evidence for Outcomes

GRADE Rating	Plain Language Description	Detailed Category Description
High	New research is very unlikely to change our understanding of the relationship between this outcome and the health technology.	Center researchers are very confident that the estimate of the effect of the intervention on the outcome lies close to the true effect. Typical sets of studies are RCTs with few or no limitations, and the estimate of effect is likely stable.
Moderate	New research may change our understanding of the relationship between this outcome and the health technology.	Center researchers are moderately confident in the estimate of the effect of the intervention on the outcome. The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is different. Typical sets of studies are RCTs with some limitations or well-performed nonrandomized studies with additional strengths that guard against potential bias and have large estimates of effects.
Low	New research is likely to change our understanding of the relationship between this outcome and the health technology.	Center researchers have little confidence in the estimate of the effect of the intervention on the outcome. The true effect may be substantially different from the estimate of the effect. Typical sets of studies are RCTs with serious limitations or nonrandomized studies without special strengths.
Very low	New research is very likely to change our understanding of the relationship between this outcome and the health technology.	Center researchers have no confidence in the estimate of the effect of the intervention on the outcome. The true effect is likely to be substantially different from the estimate of effect. Typical sets of studies are nonrandomized studies with serious limitations or inconsistent results across studies.
Not applicable	There is no research to report.	Center researchers did not identify any eligible articles.

Source. Adapted from 2 publications about GRADE.[165,166]
Abbreviations. GRADE: Grading of Recommendations, Assessment, Development, and Evaluations; RCT: randomized controlled trial

Appendix D. Included Studies

Table D1. Included Studies by Key Question

Clinical Evidence (KQ1) and Harms (KQ2)
Maniaci et al. Safety in a hybrid hospital-at-home program versus traditional inpatient care: A pragmatic randomized controlled trial. J Hosp Med. 2025;(21):21.
Levine et al. Hospital-level care at home for acutely ill adults: a randomized controlled trial. Annals of Internal Medicine. 2020;2(172):77-85. Ancillaries • Moss et al. Caregiver burden in a home hospital versus traditional hospital: A secondary analysis of a randomized controlled trial. Journal of the American Geriatrics Society. 2024;1(72):286-289. • Levine et al. Hospital-level care at home for acutely ill adults: a qualitative evaluation of a randomized controlled trial. Journal of General Internal Medicine. 2021;7(36):1965-1973.
Cai et al. Evaluation of the Cincinnati Veterans Affairs Medical Center Hospital-in-Home Program. Journal of the American Geriatrics Society. 2018;7(66):1392-1398.
Echevarria et al. Home treatment of COPD exacerbation selected by DECAF score: a non-inferiority, randomised controlled trial and economic evaluation. Thorax. 2018;8(73):713-722. Ancillary • Dismore et al. What are the positive drivers and potential barriers to implementation of hospital at home selected by low-risk DECAF score in the UK: a qualitative study embedded within a randomised controlled trial. BMJ Open. 2019;4(9):e026609.
Federman et al. Association of a Bundled Hospital-at-Home and 30-Day Postacute Transitional Care Program With Clinical Outcomes and Patient Experiences. JAMA Internal Medicine. 2018;8(178):1033-1040. Ancillary • Siu et al. Health equity in Hospital at Home: Outcomes for economically disadvantaged and non-disadvantaged patients. Journal of the American Geriatrics Society. 2022;7(70):2153-2156.
Cai et al. Evaluation of a hospital-in-home program implemented among veterans. American Journal of Managed Care. 2017;8(23):482-487.
Tibaldi et al. Hospital at home for elderly patients with acute decompensation of chronic heart failure: a prospective randomized controlled trial. Archives of Internal Medicine. 2009;17(169):1569-75.
Ricauda et al. Substitutive "hospital at home" versus inpatient care for elderly patients with exacerbations of chronic obstructive pulmonary disease: a prospective randomized, controlled trial. Journal of the American Geriatrics Society. 2008;3(56):493-500.
Richards et al. Home management of mild to moderately severe community-acquired pneumonia: a randomised controlled trial. Med J Aust. 2005;5(183):235-8.
Ricauda et al. Home hospitalization service for acute uncomplicated first ischemic stroke in elderly patients: a randomized trial. Journal of the American Geriatrics Society. 2004;2(52):278-83.
Sartain et al. Randomised controlled trial comparing an acute paediatric hospital at home scheme with conventional hospital care. Archives of Disease in Childhood. 2002;5(87):371-5.
Davies et al. "Hospital at home" versus hospital care in patients with exacerbations of chronic obstructive pulmonary disease: prospective randomised controlled trial. BMJ. 2000;7271(321):1265-8.
Wilson et al. Randomised controlled trial of effectiveness of Leicester hospital at home scheme compared with hospital care. BMJ. 1999;7224(319):1542-6. Ancillary • Wilson et al. Patient and carer satisfaction with 'hospital at home': quantitative and qualitative results from a randomised controlled trial. British Journal of General Practice. 2002;474(52):9-13.

Costs (KQ3)
Saenger et al. Cost of home hospitalization versus inpatient hospitalization inclusive of a 30-day post-acute period. Journal of the American Geriatrics Society. 2022;5(70):1374-1383.
DeCherrie et al. Hospital at Home services: An inventory of fee-for-service payments to inform Medicare reimbursement. Journal of the American Geriatrics Society. 2021;7(69):1982-1992.
Levine et al. Hospital-Level Care at Home for Acutely Ill Adults: A Randomized Controlled Trial. Annals of Internal Medicine. 2020;2(172):77-85. [Also included under KQ1]
Guidance and Recommendations (KQ4)
Levine et al. Practice Standards for Acute Hospital Care at Home. Journal of the American Geriatrics Society. 2025;(29):29.
American Medical Association. The state of hospital at home models: key considerations and opportunities. 2023.
British Society for Heart Failure. Position statement on virtual wards. 2023.
National Institute for Health and Care Excellence (NICE). Suspected acute respiratory infection in over 16s: assessment at first presentation and initial management. NICE. 2023
National Institute for Health and Care Excellence (NICE). Acute respiratory infection in over 16s: initial assessment and management including virtual wards (hospital at home). NICE. 2023.
National Institute for Health and Care Excellence (NICE). Virtual ward platform technologies for acute respiratory infections: early value assessment. October 2023.
Healthcare Improvement Scotland et al. Hospital at home: guiding principles for service development. January 2020.

Appendix E. Excluded Studies

Table E1 lists the publications that were excluded during full text review and the primary reason for exclusion. There may be multiple reasons for exclusion for any given publication, and the table lists only the most influential reason for exclusion.

Table E1. Studies Excluded During Full Text Screening

Reference Information	Reason for Exclusion
Achanta et al. Home hospital heart failure admissions are an opportunity to optimize guideline-directed medical therapy. Journal of Cardiac Failure. 2024;30(1):115-116.	Intervention
Adams et al. Initial Findings from an acute hospital care at home waiver initiative. JAMA Health Forum. 2023;4(11):e233667.	Follow up
Aimonino et al. The home hospitalization service of elderly patients with ischemic stroke: follow-up study. European journal of neurology. 2000;7 (Suppl 3):111-112.	Unable to locate
Anonymous. Hospitals at home. Lancet. 1977;2(8046):1016.	Publication type
Arias-de la Torre et al. Early-discharge and admission-avoidance hospital-at-home programs: outcomes and associated factors. Emergencias. 2019;31(6):440-441.	Intervention
Birgy et al. Assessment of non-inferiority of a hospital-at-home care pathway for patients with acute heart failure: fIL-EAS-ic. Archives of cardiovascular diseases. 2025;118(1):S26-S27.	Publication type
Cai et al. Association of costs and days at home with transfer hospital in home. JAMA Network Open. 2021;4(6):e2114920.	Intervention
Calvo et al. Class imbalance impact on the prediction of complications during home hospitalization: a comparative study. Annual International Conference of The IEEE Engineering In Medicine And Biology Society. 2019;2019:3446-3449.	Aim
Caplan et al. Does home treatment affect delirium? A randomised controlled trial of rehabilitation of elderly and care at home or usual treatment (The REACH-OUT trial). Age & Ageing. 2006;35(1):53-60.	Intervention
Caplan et al. Effect of hospital in the home treatment on physical and cognitive function: a randomized controlled trial. Journals of Gerontology Series A-Biological Sciences & Medical Sciences. 2005;60(8):1035-8.	Intervention
Caplan et al. Hospital in the home: a randomised controlled trial. Medical Journal of Australia. 1999;170(4):156-60.	Intervention
Caplan et al. Hospital in the home: a randomised controlled trial. Age and ageing. 1997;26(Suppl 1):44.	Unable to locate
Clapin et al. Home-based versus inpatient management of children newly diagnosed with type 1 diabetes (T1D). Pediatric diabetes. 2015;16:84.	Publication type
Coast et al. Conceptual and practical difficulties with the economic evaluation of health services developments. Journal of Health Services & Research Policy. 2000;5(1):42-8.	Publication type
Coast et al. Hospital at home. BMJ (Clinical research ed.). 1998;317:1651-1652.	Publication type
Collins et al. Feasibility study for early supported discharge in adults with respiratory infection in the UK. BMC pulmonary medicine. 2014;14():25.	Study design
Cook et al. People with chronic obstructive pulmonary disease exacerbations prefer early discharge, then treatment at home. BMJ. 2019;364:k5339.	Publication type
Cool et al. Oncologic home-hospitalization delivers a high-quality and patient-centered alternative to standard ambulatory care: results of a randomized-controlled equivalence trial. JCO Global Oncology. 2021;7:1564-1571.	Intervention

Reference Information	Reason for Exclusion
Cool et al. An observational pilot study to evaluate the feasibility and quality of oncological home-hospitalization. European Journal of Oncology Nursing. 2019;40:44-52.	Intervention
Cotton et al. Early discharge for patients with exacerbations of chronic obstructive pulmonary disease: a randomized controlled trial. Thorax. 2000;55(11):902-6.	Intervention
Dark et al. A randomized trial of 'hospital at home'. Health Affairs. 2012;31(9):2152.	Publication type
Darlow et al. Impact of a randomized controlled trial upon the development of a hospital-at-home service. Journal of orthopaedic nursing. 1998;2(3):153-159.	Intervention
Davies et al. A prospective randomised controlled trial of hospital at home versus hospital care in patients accepted for admission with exacerbations of COPD. European respiratory journal. 2000;16(Suppl 31):412s.	Unable to locate
Davis et al. "Hospital at Home" versus hospital care in patients with exacerbations of chronic obstructive pulmonary disease: prospective randomised controlled trial. Revista portuguesa de pneumologia. 2001;7(2):163-165.	Non-English
Dhalla et al. Effect of a postdischarge virtual ward on readmission or death for high-risk patients: a randomized clinical trial. JAMA. 2014;312(13):1305-12.	Intervention
Dickson et al. Hospital in the home: a randomised controlled trial. Medical Journal of Australia. 1999;171(2):109-1O.	Publication type
Donald et al. Gloucester hospital-at-home: a randomized controlled trial. Age & Ageing. 1995;24(5):434-9.	Intervention
Echevarria et al. Hot DECAF: a RCT comparing home treatment and inpatient care in COPD exacerbations selected by low risk DECAF score. Thorax. 2016;71:A69.	Publication type
Emme et al. The impact of virtual admission on self-efficacy in patients with chronic obstructive pulmonary disease - a randomised clinical trial. Journal of Clinical Nursing. 2014;23(21-22):3124-37.	Intervention
Foley et al. Potential impact of hospital at home on postoperative readmissions. American Journal of Managed Care. 2021;27(12):e420-e425.	Study design
Gardner et al. Comprehensive Geriatric Assessment in hospital and hospital-at-home settings: a mixed-methods study. NIHR Journals Library. Health Services and Delivery Research. 2019;03:03.	Aim
Gregory et al. Effectiveness of home or hospital initiation of treatment at diagnosis for children with type 1 diabetes (DECIDE trial): a multicentre individually randomised controlled trial. BMJ open. 2019;9(12):e032317.	Intervention
Gunnell et al. How great a burden does early discharge to hospital-at-home impose on carers? A randomized controlled trial. Age & Ageing. 2000;29(2):137-42.	Intervention
Hansson et al. Hospital-based home care for children with cancer: feasibility and psychosocial impact on children and their families. Pediatric Blood & Cancer. 2013;60(5):865-72.	Intervention
Harris et al. The effectiveness, acceptability and costs of a hospital-at-home service compared with acute hospital care: a randomized controlled trial. Journal of Health Services & Research Policy. 2005;10(3):158-66.	Intervention
Healthcare Improvement Scotland et al. Older people/acute adult hospital at home services. 2024.	Publication type
Helena et al. Hospital-based home care for children with cancer – health related quality of life and the psychosocial impact on the family. Pediatric blood & cancer. 2012;59(6 supplement); 44th Congress of the International Society	Publication type

Reference Information	Reason for Exclusion
of Paediatric Oncology (SIOP), 5th–8th October, London, United Kingdom):1121 [PS003].	
Hernandez et al. Integrated care services: lessons learned from the deployment of the NEXES project. International Journal of Integrated Care [Electronic Resource]. 2015;15:e006.	Aim
Hernandez et al. Home hospitalisation of exacerbated chronic obstructive pulmonary disease patients. European Respiratory Journal. 2003;21(1):58-67.	Intervention
Hernandez et al. Impact of home hospitalization on treatment compliance in COPD patients. European respiratory journal. 2001;18(Suppl 33):207s.	Unable to locate
Hindley et al. Comprehensive geriatric assessment in hospital or at home? the role of clinician uncertainty in recruitment to a randomised controlled trial. Age and ageing. 2018;47:iii14.	Publication type
Huffam et al. Out of hospital treatment of patients with melioidosis using ceftazidime in 24 h elastomeric infusors, via peripherally inserted central catheters. Tropical Medicine & International Health. 2004;9(6):715-7.	Intervention
Hughes et al. A randomized trial of Veterans Administration home care for severely disabled veterans. Medical Care. 1990;28(2):135-45.	Intervention
Ibrahim et al. Efficacy and safety of intravenous ceftriaxone at home versus intravenous flucloxacillin in hospital for children with cellulitis (CHOICE): a single-centre, open-label, randomised, controlled, non-inferiority trial. The Lancet Infectious Diseases. 2019;19(5):477-486.	Intervention
ilson et al. [sic] Management of acute conditions in hospital or hospital at home: a randomised controlled trial. 2001.	Unable to locate
Ince et al. A randomized controlled trial of home monitoring versus hospitalization for mild non-alcoholic acute interstitial pancreatitis: a pilot study. Pancreatology. 2014;14(3):174-8.	Intervention
Jafary et al. Comparison home care service versus hospital-based care in patients with diabetic foot ulcer: an economic evaluation study. Journal of diabetes and metabolic disorders. 2020;19(1):445-452.	Setting
Jakobsen et al. Home-based telehealth hospitalization for exacerbation of chronic obstructive pulmonary disease: findings from "the virtual hospital" trial. Telemedicine Journal & E-Health. 2015;21(5):364-73.	Intervention
Jakobsen et al. Hospital-admitted COPD patients treated at home using telemedicine technology in The Virtual Hospital Trial: methods of a randomized effectiveness trial. Trials [Electronic Resource]. 2013;14:280.	Intervention
Kaymaz et al. Hospital-at-home for chronic obstructive pulmonary disease exacerbation: Will it be an effective readmission avoidance model? The clinical respiratory journal. 2021;15(7):716-720.	Intervention
Keil et al. NC Medicaid's early experience with a hospital at home program during the public health emergency. North Carolina Medical Journal. 2024;85(2):114-116.	Intervention
Lee et al. Efficacy and cost-effectiveness analysis of post-acute care for elderly patients with hip fractures. Journal of the Formosan Medical Association. 2022;121(8):1596-1604.	Intervention
Levine et al. Remote vs. in-home physician visits for hospital-level care at home: a randomized clinical trial. JAMA Network Open. 2022;5(8):e2229067.	Comparator
Levine et al. Predictors and reasons why patients decline to participate in home hospital: a mixed methods analysis of a randomized controlled trial. Journal of General Internal Medicine. 2022;37(2):327-331.	Outcomes

Reference Information	Reason for Exclusion
Levine et al. Hospital-level care at home for acutely ill adults: a pilot randomized controlled trial. Journal of General Internal Medicine. 2018;33(5):729-736.	Population
Levine et al. Remote physician care for home hospital patients: a randomized controlled noninferiority trial. Journal of general internal medicine. 2021;36(SUPPL 1):S48.	Publication type
Levine et al. Predictors and reasons why patients decline to participate in high tech and novel sites of care: a home hospital experience. Journal of general internal medicine. 2018;33(2):304.	Publication type
Levine et al. Hospital-level care at home for acutely ill adults: a randomized controlled trial. Journal of general internal medicine. 2018;33(2):221-222.	Publication type
Levine et al. Hospital-level care at home for acutely ill adults: a qualitative evaluation of a randomized controlled trial. Journal of general internal medicine. 2019;34(2):S241-S242.	Publication type
Levine et al. Hospital-level care at home for acutely ill adults: a pilot randomized controlled trial. Journal of general internal medicine. 2017;32(2):S209-S210.	Publication type
Low et al. Applying the integrated practice unit concept to a modified virtual ward model of care for patients at highest risk of readmission: a randomized controlled trial. PLoS ONE [Electronic Resource]. 2017;12(1):e0168757.	Intervention
Makela et al. The work of older people and their informal caregivers in managing an acute health event in a hospital at home or hospital inpatient setting. Age & Ageing. 2020;49(5):856-864.	Intervention
Mas et al. Hospital-at-home Integrated Care Programme for the management of disabling health crises in older patients: comparison with bed-based Intermediate Care. Age & Ageing. 2017;46(6):925-931.	Intervention
Mather et al. Myocardial infarction: a comparison between home and hospital care for patients. British Medical Journal. 1976;1(6015):925-9.	Intervention
McMahon et al. Is hospital-in-the-home (HITH) treatment of bacterial endocarditis safe and effective? Scandinavian Journal of Infectious Diseases. 2008;40(1):40-3.	Intervention
Melin et al. Health outcomes of post-hospital in-home team care: secondary analysis of a Swedish trial. Journal of the American Geriatrics Society. 1995;43(3):301-7.	Intervention
Mendoza et al. 'Hospital at home' care model as an effective alternative in the management of decompensated chronic heart failure. European Journal of Heart Failure. 2009;11(12):1208-13.	Intervention
Miro et al. Frequency, profile, and outcomes of patients with acute heart failure transferred directly to home hospitalization from emergency departments. Revista Clinica Espanola. 2021;221(1):1-8.	Intervention
Miron-Rubio et al. Economic burden of skin and skin structure infections due to Gram-positive bacteria in patients on hospital at home-based outpatient parenteral antibiotic therapy (OPAT). Revista Espanola de Quimioterapia. 2023;36(3):291-301.	Study design
Misplon et al. Onco@home: comparing the costs and reimbursement of cancer treatment at home with the standard of care. Archives of Public Health. 2024;82(1):95.	Setting
Mogensen et al. Admission rates in a general practitioner-based versus a hospital specialist based, hospital-at-home model: ACCESS, an open-labelled randomised clinical trial of effectiveness. Scandinavian Journal of Trauma, Resuscitation & Emergency Medicine. 2018;26(1):26.	Comparator

Reference Information	Reason for Exclusion
Montalto et al. Medically-managed Hospital in the Home: 7 year study of mortality and unplanned interruption. Australian Health Review. 2010;34(3):269-75.	Intervention
Mooney et al. Evaluation of Oncology hospital at home: unplanned health care utilization and costs in the Huntsman at Home real-world trial. Journal of Clinical Oncology. 2021;39(23):2586-2593.	Comparator
Moss et al. Family caregiver burden in a home hospital versus traditional hospital: a secondary analysis of a randomized controlled trial. Journal of General Internal Medicine. 2023;38:S245.	Publication type
Ojoo et al. Patients' and carers' preferences in two models of care for acute exacerbations of COPD: results of a randomised controlled trial. Thorax. 2002;57(2):167-9.	Intervention
Olesen et al. Cost-effectiveness of hospital-at-home and fecal microbiota transplantation in treating older patients with *Clostridioides difficile*. Clinical Infectious Diseases. 2025;17:17.	Intervention
O'Neil et al. Cost and utilization outcomes in Huntsman at Home, a novel oncology hospital at home program. Journal of the American Medical Directors Association. 2024;25(4):610-613.	Comparator
Ong et al. Savings through telemedicine: initial data from a hospital-at-home program. Value in Health Regional Issues. 2025;45:101046.	Setting
Onyebueke et al. Program evaluation on hospital in home (HIH) program for veterans with chronic spinal cord injury. Journal of spinal cord medicine. 2017;40(5):620-621.	Publication type
Palacios Garcia et al. Impact of clinical ultrasound in patients with heart failure treated in home. Medicina Clinica. 2022;159(9):420-425.	Aim
Pelaez-Sanchez et al. Cost analysis of oncological outpatient neurosurgery under general anesthesia with hospital-at-home-based postoperative care. World Neurosurgery. 2025;193:1002-1007.	Setting
Peters et al. Effect of varying the time frame for COOP-WONCA functional health status charts: a nested randomised controlled trial in Bristol, UK. Journal of Epidemiology & Community Health. 1998;52(1):59-64.	Intervention
Pouw et al. Hospital at Home care for older patients with cognitive impairment: a protocol for a randomised controlled feasibility trial. BMJ Open. 2018;8(3):e020332.	Publication type
Pouw et al. Hospital at home care for older patients with cognitive impairment and an acute medical illness. 2017.	Publication type
Rasoul et al. Economic evaluation of the Liverpool heart failure virtual ward model. European Heart Journal Quality of Care & Clinical Outcomes. 2025;11(2):197-205.	Setting
Richards et al. Patient-reported use of health service resources compared with information from health providers. Health & Social Care in the Community. 2003;11(6):510-8.	Outcomes
Richards et al. Randomised controlled trial comparing effectiveness and acceptability of an early discharge, hospital at home scheme with acute hospital care. BMJ. 1998;316(7147):1796-801.	Intervention
Rieger et al. A neonatal early discharge and home support programme: shifting care into the community. Journal of Paediatrics & Child Health. 1995;31(1):33-7.	Intervention
Rodgers et al. Early supported hospital discharge following acute stroke: pilot study results. Clin Rehabil. 1997;11(4):280-7.	Intervention

Reference Information	Reason for Exclusion
Ryan et al. Cannula complications using elastomeric infusers in Hospital in the Home. JAC-antimicrobial Resistance. 2020;2(3):dlaa033.	Comparator
Sanchez Marcos et al. Safety and efficiency of discharge to home hospitalization directly after emergency department care of patients with acute heart failure. Emergencias. 2023;35(3):176-184.	Non-English
Schou et al. Telemedicine-based treatment versus hospitalization in patients with severe chronic obstructive pulmonary disease and exacerbation: effect on cognitive function. A randomized clinical trial. Telemedicine Journal & E-Health. 2014;20(7):640-6.	Intervention
Shen et al. Home heart hospital associated with reduced hospitalizations and costs among high-cost patients with cardiovascular disease. Clinical Cardiology. 2024;47(6):e24302.	Intervention
Shepperd et al. is comprehensive geriatric assessment admission avoidance hospital at home an alternative to hospital admission for older persons? A randomized trial. Annals of Internal Medicine. 2021;174(7):889-898.	Intervention
Shepperd et al. A multi-centre randomised trial to compare the effectiveness of geriatrician-led admission avoidance hospital at home versus inpatient admission. Trials [Electronic Resource]. 2017;18(1):491.	Publication type
Shepperd et al. Randomised controlled trial comparing hospital at home care with inpatient hospital care. II: cost minimisation analysis. BMJ. 1998;316(7147):1791-6.	Setting
Shepperd et al. Randomised controlled trial comparing hospital at home care with inpatient hospital care. I: three month follow up of health outcomes. BMJ. 1998;316(7147):1786-91.	Intervention
Shepperd et al. Hospital at Home admission avoidance with comprehensive geriatric assessment to maintain living at home for people aged 65 years and over: a RCT. NIHR Journals Library. Health and Social Care Delivery Research. 2022;01:01.	Intervention
Shepperd et al. A randomised controlled trial comparing hospital at home with in-patient hospital care. 1998.	Unable to locate
Singh et al. Is comprehensive geriatric assessment hospital at home a cost-effective alternative to hospital admission for older people? Age & Ageing. 2022;51(1):06.	Intervention
Stevens et al. Hospital and home chemotherapy for children with leukemia: a randomized cross-over study. Pediatric Blood & Cancer. 2006;47(3):285-92.	Intervention
Suwanwela et al. Comparison of short (3-day) hospitalization followed by home care treatment and conventional (10-day) hospitalization for acute ischemic stroke. Cerebrovasc Dis. 2002;13(4):267-71.	Intervention
Taylor et al. Economic considerations for hospital at home programs: beyond the pandemic. Journal of General Internal Medicine. 2021;36(12):3861-3864.	Publication type
Thomas et al. Hospital in the home: a randomised controlled trial. Medical Journal of Australia. 1999;171(2):110-1.	Publication type
Tibaldi et al. A randomized controlled trial of a home hospital intervention for frail elderly demented patients: behavioral disturbances and caregiver's stress. Archives of Gerontology & Geriatrics - Supplement. 2004;(9):431-6.	Follow-up
Tibaldi et al. A randomized clinical trial on the efficacy of an early discharge to a hospital at home service of elderly patients with acute decompensation of severe chronic heart failure. Giornale di gerontologia. 2013;61(2):78-85.	Non-English
Tiberg et al. Cost-effectiveness and cost-utility analyses of hospital-based home care compared to hospital-based care for children diagnosed with type 1	Intervention

Reference Information	Reason for Exclusion
diabetes; a randomised controlled trial; results after two years' follow-up. BMC Pediatrics. 2016;16:94.	
Tiberg et al. Metabolic control, healthcare satisfaction and costs 1 month after diagnosis of type 1 diabetes: a randomised controlled trial of hospital-based care vs. hospital-based home care. Pediatric Diabetes. 2012;13(8):625-31.	Intervention
Tiberg et al. Children diagnosed with type 1 diabetes: a randomized controlled trial comparing hospital versus home-based care. Acta Paediatrica. 2012;101(10):1069-73.	Intervention
Tiberg et al. A randomised controlled trial comparing hospital based and hospital based home care when a child is newly diagnosed with type 1 diabetes. Pediatric diabetes. 2011;12:75.	Publication type
Tiberg et al. Comparison of hospital-based and hospital-based home care at diabetes onset in children. European diabetes nursing. 2014;11(3):70-74.	Intervention
Tsiachristas et al. Should I stay or should I go? A retrospective propensity score-matched analysis using administrative data of hospital-at-home for older people in Scotland. BMJ Open. 2019;9(5):e023350.	Intervention
Utens et al. Informal caregiver strain, preference and satisfaction in hospital-at-home and usual hospital care for COPD exacerbations: results of a randomised controlled trial. International Journal of Nursing Studies. 2014;51(8):1093-102.	Intervention
Utens et al. Patient preference and satisfaction in hospital-at-home and usual hospital care for COPD exacerbations: results of a randomised controlled trial. International Journal of Nursing Studies. 2013;50(11):1537-49.	Intervention
Utens et al. Early assisted discharge with generic community nursing for chronic obstructive pulmonary disease exacerbations: results of a randomised controlled trial. BMJ Open. 2012;2(5).	Intervention
Van Donk et al. Routine replacement versus clinical monitoring of peripheral intravenous catheters in a regional hospital in the home program: A randomized controlled trial. Infection Control & Hospital Epidemiology. 2009;30(9):915-7.	Intervention
Vianello et al. "Hospital at home" for neuromuscular disease patients with respiratory tract infection: a pilot study. Respiratory Care. 2013;58(12):2061-8.	Intervention
von Koch et al. A randomized controlled trial of rehabilitation at home after stroke in Southwest Stockholm: outcome at six months. Scand J Rehabil Med. 2000;32(2):80-6.	Intervention
Walsh et al. Safety and Cost-Effectiveness of Hospital at Home in Patients with COVID-19. Southern Medical Journal. 2025;118(3):177-180.	Intervention
Wedzicha et al. Management of COPD exacerbations: a European Respiratory Society/American Thoracic Society guideline. Eur Respir J. 2017;49(3).	Publication date

Appendix F. Risk of Bias Assessment

Table F1. Risk of Bias in 10 RCTs, Part 1

Study Lead Author, Year	Appropriate Randomization Method	Adequate Allocation Concealment Method	Blinding of Study Analysts	Appropriate Length of Follow up	Single Outcome Measures Reported	Intention-to-Treat Analysis	Most Appropriate Summary Statistic Used	Similar Between-Group Baseline Characteristics
Maniaci et al. 2025[32]	Yes	Unclear	No	Yes	Yes	Yes	Yes	yes
Levine et al. 2020[31]	Yes	Yes	No	Yes	Yes	Yes	No	Yes
Echevarria et al. 2018[29]	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	Unclear
Tibaldi et al. 2009[36]	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	Yes
Ricauda et al. 2008[34]	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	Yes
Richards et al. 2005[35]	Yes	Yes	Unclear	Yes	Yes	No	Yes	Yes
Ricauda et al. 2004[33]	Yes	Unclear	Unclear	Yes	Yes	Yes	Yes	Yes
Sartain et al. 2002[25]	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Davies et al. 2000[28]	Yes	Yes	Unclear	Yes	Yes	Yes	No	Yes
Wilson et al. 1999[37]	Yes	Yes	Unclear	Yes	Yes	Yes	No	Yes

Table F1. Risk of Bias in 10 RCTs, Part 2

Study Lead Author, Year	Loss to Follow Up Unlikely to Bias Results	Disclosures of Interest for All Authors	Description of Funding Source	Results Applicable to Purpose of Report	Overall Risk of Bias
Maniaci et al. 2025[32]	No	Yes	Yes	Yes	Moderate Overall a well-done pragmatic study. No description of allocation concealment and no blinding of analysts (participants and researchers could not be blinded). There is a high rate of patient exclusion (people whose condition changed after randomization and were no longer eligible, or who were discharged between randomization and start of intervention), but the researchers over-enrolled to address this issue and conducted a sensitivity analysis that had the same findings. Nonetheless, some possibility of bias remains.
Levine et al. 2020[31]	Yes	Yes	Yes	No	High Randomization and allocation concealment described. Sample size is based on costs, not on clinical outcomes and enrollment stopped early so they could institute HaH on a wider basis. Analysts and data abstracters were not blinded to group assignment. Basic clinical outcomes are reported without reference to between-group differences, leaving the reader to try to determine if differences are significant from limited information provided.
Echevarria et al. 2018[29]	Yes	Yes	Yes	Unclear	Moderate Mostly well-done study. Unclear if data analysts were blinded to group assignment, sample size was based on cost outcomes (not clinical outcomes), small sample size, no controlling for potential confounders, and some differences across groups in baseline characteristics.
Tibaldi et al. 2009[36]	Yes	Yes	No	Unclear	Moderate Overall a well-done study. No reference to blinding of analysts, no attempt to control for confounding factors, no reference to presence or absence of funding for the study.

Study Lead Author, Year	Loss to Follow Up Unlikely to Bias Results	Disclosures of Interest for All Authors	Description of Funding Source	Results Applicable to Purpose of Report	Overall Risk of Bias
Ricauda et al. 2008[34]	Yes	Yes	No	Unclear	Moderate Overall a well-done study. No reference to blinding of data analysts, no controlling for potential confounders, no reference to funding.
Richards et al. 2005[35]	Unclear	Yes	No	Unclear	High No reference to blinding of analysts, intent-to-treat approach to analysis is not used, very basic information (numbers and percentages), outcomes are not provided in table form, no controlling for potential confounders, no reference to funding.
Ricauda et al. 2004[33]	Yes	No	No	Unclear	High There is relatively little information provided about some of these elements, including no statements regarding disclosures of COIs or funding sources and no explicit description of methods used for randomization and allocation concealment. Very high loss to follow up (35% to 40% of groups had died before final follow up). Some concerns about generalizability.
Sartain et al. 2002[25]	Yes	No	Yes	Yes	Moderate Overall a well-designed study, but lacks information on author conflicts and no reference to blinding of analysts or researchers.
Davies et al. 2000[28]	Yes	Yes	Yes	Unclear	High No reference to blinding of data analysts. Lacks detailed tables or detailed description in text to fully understand how outcomes for the 2 groups compare. Small sample sizes and no adjustment for any confounders.
Wilson et al. 1999[37]	No	Yes	Yes	Unclear	High No reference to blinding of analysts. Spotty reporting of outcome data and some lack of detail. High attrition and no description of handling of missing data. Some doubt about the need for these patients to be hospitalized, if they weren't enrolled in Hospital at Home.

Table F2. Risk of Bias in 3 Observational Studies, Part 1

Study Lead Author, Year	Comparable Groups	Reliable and Consistent Exposure Assessment	Reliable and Consistent Outcome Measure	Blinding of Study Analysts	Appropriate Length of Follow Up	Groups Followed for Equal Time	Comparison by Exposure Status	Adjustment for Confounders	Appropriate Effect Size Used
Cai et al. 2018[26]	Yes	Yes	Yes	No	Yes	Yes	Unclear	Yes	No
Federman et al. 2018[30]	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Yes	Yes
Cai et al. 2017[27]	Yes	Yes	Yes	Unclear	Yes	Yes	No	Yes	Yes

Table F2. Risk of Bias in 3 Observational Studies, Part 2

Study Lead Author, Year	Loss to Follow Up Unlikely to Bias Results	Disclosures of Interest for Authors	Description of Funding Source	Results Applicable to Purpose of Report	Overall Risk of Bias
Cai et al. 2018[26]	Unclear	Yes	Yes	Yes	Moderate Propensity matching of Hospital at Home patients with in-hospital patients accounts for demographic variables, comorbidities, and healthcare use in the 180 days prior to admission. Data drawn from medical records. No reference to handling of missing data, how many records were omitted, and how that might have influenced findings. Results are reported as percentages, without confidence intervals.
Federman et al. 2018[30]	Unclear	Yes	Yes	Yes	Moderate Blinding of analysts is not reported, but given that this is a records-based study that is not expected to contribute much to risk of bias. There is an attempt to control for confounding factors, but a fair amount of missing data required imputation of values and may have an effect of ability to control for confounders. Observational study subject to selection bias. Some significant demographic differences between HaH group and controls (HaH older, less educated, less likely to have Medicare Advantage or private coverage, more likely to have 1 or more pre-acute functional limitations).
Cai et al. 2017[27]	Yes	Yes	Yes	Yes	Moderate Some limitations to the records-based approach, but attempts to control for confounding variables through propensity score matching. No discussion of how missing data were handled, and no CIs reported with outcomes. Limited generalizability to non-VA health systems.

Table F3. Risk of Bias in Cost Effectiveness Studies, Part 1

Study Lead Author, Year	Target population described and justified	Analytic perspective defined	Time horizon described and justified	Discount rate used for costs and outcomes defined	Appropriate comparators and competing alternatives	Analytic model well defined and justified	Estimates of effectiveness of interventions described	Relevant outcomes identified, measured, and valued appropriately	Resources used in evaluation identified and valued appropriately
Saenger et al. 2022[39]	Yes	Yes	Yes	No	yes	Yes	No	No	Yes
DeCherrie et al. 2021[20]	Yes	Yes	Yes	No	NA	No	No	No	Yes
Levine et al. 2020[31]	Yes	Yes	No	No	Yes	No	Yes	No	Unclear

Table F3. Risk of Bias in Cost Effectiveness Studies, Part 2

Study Lead Author, Year	Sources of uncertainty identified and addressed	Disaggregated results presented	Disclosures of interest	Disclosures of funding source	Generalizability	Overall risk of bias
Saenger et al. 2022[39]	Yes	Partially	Yes	Yes	Unclear	Moderate Well described for what it is, which is a purely payer-focused study which is not interested in quality of life, effectiveness of intervention, or adverse events. Focused purely on constructing 'average' costs for care. Does use sensitivity analysis to test assumptions throughout. Case matches patients (one to many) on demographic and sickness factors and uses logistic regression to account for patient differences, but no subgroup analyses or even any acknowledgment that some patients are sicker or have better or poorer outcomes than others. Notes that results may not be generalizable to hospitals that don't have disproportionate share and medical education-adjusted Medicare payments. Acknowledges that using data from a subset of the original sample could introduce bias.

Study Lead Author, Year	Sources of uncertainty identified and addressed	Disaggregated results presented	Disclosures of interest	Disclosures of funding source	Generalizability	Overall risk of bias
DeCherrie et al. 2021[20]	No	Yes	Yes	Yes	Unclear	Moderate Purely payer- and hospital-focused, with no attention to costs (financial or otherwise) to patients. While Saenger raises more issues about Mt. Sinai's specific Medicare billing situation that highlight the limited generalizability of the results, these are not discussed here and it's not clear if they are even issues in the scenario approach. Detailed description of methods, but not of the analytic framework underlying the modeling. Provides detailed tables on costs in a supplement, in addition to aggregates and mean per patient/per episode costs. As an estimate of maximum allowable charges per service, risk of bias would be low. As a scenario-based studies, risk of bias is higher due to unclear relevance to other hospitals.
Levine et al. 2020[31]	No	No	Yes	Yes	No	High Bare-bones description of the approach to cost analysis and assumptions made. Lack of detail in tables, text, and appendices limit our understanding of their methods, assumptions, and findings. Limited generalizability to other institutions due to limited detail.

Appendix G. GRADE Assessment

Table G1. GRADE Profile for Outcomes of Meta-Analyses

Outcome	Number of Participants and Studies	Study Design	Factors that May Decrease Certainty of Evidence				Summary of Results	CoE
			Risk of Bias	Inconsistency	Indirectness	Imprecision		
Mortality within 30 days of discharge 4 studies in MA N = 2,473	4 studies N =2,473	2 RCTs[31,32] 2 cohort studies[26,27]	Serious (-1) Moderate RoB in 3 contributing studies (and no low risk)	No serious	No serious Different populations, but all met minimum requirements for HaH and addressed general question	Serious (-1) Very wide CIs in some studies	Downgraded 1 level for moderate to high RoB and 1 level for imprecision due to wide CIs	●●○○ Low
Mortality within 90 days of discharge 4 studies in MA N = 878	4 studies N = 878	3 RCTs[28,29,37] 1 cohort study[27]	Serious (-1) Moderate to high RoB in contributing studies	No serious	No serious Different populations, but all met minimum requirements for HaH and address general question. No difference in MA results when limited to 2 studies with COPD populations.	No serious Very wide CI in 1 study and moderately wide in 1, but studies with largest numbers have acceptable CIs	Downgraded 1 level for moderate to high risk of bias in contributing studies	●●●○ Moderate
Mortality within 6 months of discharge 5 studies in MA N = 1,557	5 studies N = 1,557	3 RCTs[33,34,36] 2 cohort studies[26,27]	Serious (-1) Moderate risk of bias in 4 contributing studies (and no low risk)	No serious	No serious Different populations, but same basic level of care and all address main question. No difference in outcomes when limiting MA to studies with adults or with elderly populations.	No serious	Downgraded 1 level for moderate to high RoB in contributing studies	●●●○ Moderate

Outcome	Number of Participants and Studies	Study Design	Factors that May Decrease Certainty of Evidence				Summary of Results	CoE
			Risk of Bias	Inconsistency	Indirectness	Imprecision		
Hospital readmission within 30 days of discharge 5 studies in MA N = 2,969	5 studies N = 2,969	2 RCTs[31,32] 3 observational studies[26,27,30]	Serious (-1) Most studies in MA had moderate RoB (and no low risk)	Serious (-1) Differences across studies in findings of no difference or effect in favor of HaH	No serious Somewhat different populations, but all studies meet basic standard of HaH care and address general question.	No serious	Downgraded 1 level for high to moderate RoB in individual studies and 1 level for inconsistency in whether individual studies found no difference between HaH and usual care or effect in favor of HaH	●●○○ Low
Hospital readmission within 90 days of discharge 4 studies in MA N = 878	4 studies N =878	3 RCTs[28,29,37] 1 observational study[27]	Serious (-1) Moderate to high RoB in contributing studies	No serious No differences between HaH and UC in any study. Limiting MA to 2 studies with COPD populations yielded the same result.	No serious Somewhat different populations, but all studies met basic standard of HaH care and addressed general question	No serious	Downgraded 1 level for moderate to high RoB in contributing studies	●●●○ Moderate

Outcome	Number of Participants and Studies	Study Design	Factors that May Decrease Certainty of Evidence				Summary of Results	CoE
			Risk of Bias	Inconsistency	Indirectness	Imprecision		
Hospital readmission within 6 months of discharge 2 studies in MA N = 205	2 studies N = 205	1 RCT[36] 1 observational study[34]	Serious (-1) Moderate RoB in both studies	No serious Different findings, but explained by different populations	No serious Many things can happen in people's lives over 6 months and neither study controlled for other variables, but we did not downgrade for that	No serious Only 2 RCTs but respectable sample sizes	Downgraded 1 level for moderate RoB in both studies	●●●○ Moderate
ED visit within 30 days of discharge 3 studies in MA N = 1,739	3 studies N = 1,739	2 RCTs[31,32] 1 observational study[30]	Serious (-1) Moderate RoB in 2 studies, high in 1. The largest study, an RCT, had moderate RoB.	No serious	No serious Some differences in populations, but all studies met the minimum standard of HaH and address the key question.	Serious (-1) High heterogeneity (I^2 = 70%) in MA	Downgraded 1 level for moderate to high RoB across studies and 1 level for imprecision related to high heterogeneity	●●○○ Low
Length of stay for adult patients 2 studies in MA N = 209	2 studies N = 209	2 RCTs[29,31]	Serious (-1) 1 study high RoB, 1 moderate	No serious Both studies report longer LOS for HaH compared to UC, but not significantly so	No serious	No serious Only 2 RCTs but decent sample sizes	Downgraded 1 level for moderate to high RoB in contributing studies	●●●○ Moderate

Outcome	Number of Participants and Studies	Study Design	Factors that May Decrease Certainty of Evidence				Summary of Results	CoE
			Risk of Bias	Inconsistency	Indirectness	Imprecision		
Length of stay for older adults patients (≥ 75 years) 2 studies (no MA) N = 224	2 studies N = 224	2 RCTs[33,34]	Serious (-1) 1 study moderate RoB, 1 high	No serious Both reported significantly longer LOS for HaH	No serious	Serious (-1) Very larger standard deviations	Downgraded 1 level for moderate to high RoB and 1 level for indirectness	●●○○ Low
Transfer to long-term care facility upon discharge for older adults patients (≥ 75 years) 3 studies in MA N = 325	3 studies N = 325	3 RCTs[33,34,36]	Serious (-1) 2 studies moderate RoB and 1 high	No serious	No serious Somewhat different populations (COPD, heart failure, stroke), but all involved older adults	No serious	Downgraded 1 level for moderate to high RoB	●●●○ Moderate

Abbreviations. CI: confidence interval; ED: emergency department; GRADE: Grading of Recommendations, Assessment, Development, and Evaluations; HaH: Hospital at Home; LOS: length of stay; MA: meta-analysis; RoB: risk of bias; UC: usual care in hospital.

Appendix H: Description of Coverage Policies

Table H1. Hospital at Home Coverage Policies (Through September 2025 While CMS Waiver Program Was Active)

Health Plan or State	HaH Coverage Status	Relevant Chronological Policy Information and Communication
Health plans		
Aetna	Unclear	No definitive policy information found relating to past coverage of a HaH program or the CMS waiver program. **2024**: Submission form on nonquantitative treatment limitations advised that limitations apply to all inpatient admissions, including HaH.[114] **2025**: Provider guide for services requiring precertification listed HaH as a service requiring precertification.[113]
Anthem (formerly Empire) BlueCross BlueShield	Covered HaH services for commercial and Medicare Advantage with direct connection to CMS waiver program; did not cover for Medicaid and federal employee plans	**2022**: Empire BCBS released policy bulletin announcing acceptance of HaH claims for commercial and Medicare Advantage lines[47]: **Empire to accept Hospital in Home services** *This communication applies to the Commercial and Medicare Advantage programs from Empire BlueCross BlueShield (Empire).* Effective July 1, 2022, Empire recognizes and accepts qualifying claims for acute Hospital in Home (HiH) services through the newly established revenue code 0161. We encourage hospitals or other entities that meet the HiH requirements to reach out to their Empire contractor to get an appropriate participation agreement in place, which will ensure more streamlined processing of HiH claims. The new code enables hospitals to distinguish acute inpatient care in the home for qualifying patients. The code will follow the same guidelines and policies associated with any services performed in an inpatient setting, including but not limited to utilization management. Facilities must comply with all requests from Empire for any information and data related to the HiH services and be an approved, active participant of the CMS Acute Hospital Care at Home Program for Medicare products. All services are subject to the Covered Individual Health Benefit Plan coverage and, if a covered benefit, the benefit will follow the inpatient hospital benefits that apply to services that are performed in a traditional hospital setting, which includes, but is not limited to, any applicable deductibles, copays, and coinsurance. *The following Empire benefit plans are in scope for participation in HiH:* • Empire Commercial • Medicare Advantage (Individual and Group) • Medicare Advantage Special Needs plans, including Dual-Eligible Special Needs (DSNP)

Health Plan or State	HaH Coverage Status	Relevant Chronological Policy Information and Communication
		The following Empire plans are out of scope for participation in HiH: • FEP • Medicaid Note: Covered individuals must express preference for and consent to treatment in the home setting for the HiH program and must be 18 years of age or older. This consent must be documented through a signed consent form. (Sample form available upon request.) Covered individuals may be admitted to the program from the emergency department (for a patient that needs the inpatient level of care) or transferred from the inpatient hospital setting. Facility shall not bill Empire or the covered individual for any items or services provided by the facility in the home setting that typically would not be billed during an inpatient hospitalization. Notify Empire immediately through the utilization management nurse assigned to the HiH case when: • An applicable member is admitted to the HiH program • A member in the program is transferred back to hospital inpatient care or has any other status change in their care plan As with other claims, participating facilities and/or providers may not bill the member for any denied HiH-related charges. Providers who disagree with the claim denial may request a review of the denial using the reconsideration and appeal process outlined in your Empire Agreement and/or as outlined in the applicable Empire provider manual. We will continue to update billing guidance as these programs evolve. **2022**: Empire BlueCross BlueShield announced a broader program for HaH care to help advise hospitals on setting up the model.[115] **2022 and 2023**: Empire BlueCross BlueShield notices reference MCG Health guidelines for HaH care.[116,117]
Cigna	HaH services not covered by Medicare Advantage plans; no information found for commercial plan	**2025**: In-network Medicare Advantage provider guide states[49]: Under the guidelines established by CMS for the Acute Hospital Care at Home program, participation by Medicare Advantage plans is not mandatory. Cigna Medicare Advantage has chosen not to participate in the hospital at home program and, therefore, Revenue Code 0161: Hospital at Home, will not be reimbursed.

Health Plan or State	HaH Coverage Status	Relevant Chronological Policy Information and Communication
Fidelis Care	Unclear	No definitive policy information found relating to past coverage of a HaH program or the CMS waiver program. 2024: Clinical policy manual (commercial plans) for short inpatient stays referenced new occurrence span and revenue billing codes for HaH services under the CMS waiver and American Hospital Association Webpage on HaH programs; no other information provided.[118] 2025: Notice referenced that updated MCG clinical guidelines used by plan include new HaH guideline.[119]
HealthFirst	No information found	N/A
MetroPlus	No information found	N/A
Molina Healthcare	HaH services not covered by commercial insurance plans in other states; unclear if policy extended to New York-based plans	2025: Provider inpatient services document authored for commercial marketplace plans in 15 states (California, Florida, Idaho, Illinois, Kentucky, Michigan, Mississippi, Nevada, New Mexico, Ohio, South Carolina, Texas, Utah, Washington, Wisconsin) states[120]: HOSPITAL AT HOME ALL STATES: Hospital at home is not covered. It is not clear if that policy extends to Molina's New York-based plans (e.g., Medicaid MCO, Essential Plan). 2023 and 2025: Policy documents referenced updated MCG clinical guidelines including HaH.[121,122] 2024: Inpatient revenue code list included HaH code (0161).[123]
UnitedHealthcare	Covered HaH services for Medicare Advantage plans under CMS waiver; did not cover services for commercial plans; only covered for Medicaid MCO plans in states where the agency requires it Removed policy from website after CMS waiver program lapsed at end of September 2025	2025: Former policy through September 2025 stated[48]: **Acute Hospital Care at Home** A program for health care professionals to help more members receive care at a time when many hospitals are overburdened, UnitedHealthcare is accepting the Centers for Medicare & Medicaid Services (CMS) Acute Hospital Care at Home program waiver for qualifying facilities/professionals, and Medicare and Medicaid claims. **Acute Hospital Care at Home overview** In November 2020, as part of Acute Hospital Care at Home, CMS waived a previous Medicare Conditions of Participation requirement. The waiver allows qualifying hospitals to receive inpatient payment for providing acute-level services to Medicare beneficiaries in their homes. Additional information on the program is available on the CMS website. *CMS requirements and waiver process* To meet the standards of a qualifying Medicare claim for the Acute Hospital Care at Home program, facilities must have received a waiver from CMS.

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		CMS is accepting waiver requests to waive §482.23(b) and (b)(1) of the Hospital Conditions of Participation, which require nursing services to be provided on premises 24 hours a day, 7 days a week, and the immediate availability of a registered nurse for care of any patient. Waiver requests will be divided into 2 categories based on a hospital's prior experience: • Hospitals that have previously provided home acute hospital services to 25+ patients • Hospitals that have either not provided home acute hospital services at all or have provided care to less than 25 patients Please review the complete waiver criteria and process and the list of approved hospitals and health systems. **Please note:** Each hospital certified to provide care to Medicare members has a unique CMS Certification Number (CCN). Each hospital seeking to provide Acute Hospital Care at Home must submit the waiver request under its unique CCN. For example, if a hospital system has 7 hospitals, but only 2 of the hospitals admit patients who use Acute Hospital Care at Home services, 2 separate waiver requests must be submitted. *UnitedHealthcare requirements* Acute Hospital Care at Home services are a covered benefit in the following UnitedHealthcare benefit plans only: • Medicare Advantage • Medicare Advantage Special Needs plans, including Dual Eligible Special Needs (D-SNP) • Group Medicare Advantage • Medicaid plans **only if mandated** by state law or regulations *Plans not included in the program* The following UnitedHealthcare plans are out of scope for participation in the Acute Hospital Care at Home waiver program. Any claims for program services submitted for these plans may be denied: • Individual and Family Plans • Individual and Group Market plans • Medicaid plans not mandated by state law or regulations We will continue to accept qualifying claims for Acute Hospital Care at Home services provided to beneficiaries of these plans through Dec. 31, 2024, as outlined through the Consolidated Appropriations Act. Unless mandated by state regulations, members in Medicaid plans are ineligible for participation. Please review the information below for details. If you have specific billing or claims questions, please contact your provider advocate or network engagement manager. *Additional program information*

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		In addition to meeting all CMS requirements related to the Acute Hospital Care at Home program, qualifying claims must also meet the following UnitedHealthcare criteria:
		• Have an in-network Participation Agreement (contract) with UnitedHealthcare for 1 or more of the in-scope benefit plans noted above
		• Provide evidence-based criteria for inpatient care
		• Notify us immediately when:
		  ○ An applicable member is admitted to the Acute Hospital Care at Home program; or
		  ○ A member in the program is transferred back to inpatient care facility or has any other status change in their care plan; and
		  ○ Notification can be made through the UnitedHealthcare Provider Portal, phone intake or through the utilization management nurse assigned to the Acute Hospital Care at Home case
		• For services provided on or after Aug. 1, 2022, submit claims using the approved Hospital at Home revenue codes for services provided:
		  ○ Occurrence Span Code 82
		  - Title: Hospital at Home Span Code 82 Care Dates
		  - Definition: The from/through dates of a period of hospital at home care provided during an inpatient hospital stay
		  ○ Revenue Code 0161
		  - Subcategory Definition: Room & Board – Hospital at Home
		  - Standard Abbreviation: R&B/Hospital at Home
		Please note:
		• All Acute Hospital Care at Home claims are subject to the UnitedHealthcare standard utilization management process
		• UnitedHealthcare does not cover Acute Hospital Care at Home services provided by non-contracted facilities
		• Observation stays are not eligible for Acute Hospital Care at Home, are not covered by UnitedHealthcare and will not be reimbursed
		• Payment for Acute Hospital Care at Home claims will be handled in accordance with terms in the health care professional's Participation Agreement with UnitedHealthcare
		• If a claim is denied, network (contracted) providers may not bill the member for any Acute Hospital Care at Home-related charges. If you disagree with the claim denial, you may ask UnitedHealthcare to review the denial using the reconsideration and appeal process outlined in your Participation Agreement and in the Provider Administrative Guide.
		• We'll continue to update billing guidance on this page, as necessary, and alert health care professionals when updates are made
		
		October 2025: HaH policy removed from website.[50]

Health Plan or State	HaH Coverage Status	Relevant Chronological Policy Information and Communication
Medicaid		
California	Previously covered HaH services under CMS waiver; but ended coverage in 2023 after state's hospital regulatory agency rescinded its facility flexibility guidance for hospitals to deliver HaH care	**December 2020**: California's Department of Health Care Services issued a bulletin announcing the recent CMS creation of the waiver program, advising that hospitals receiving CMS approval also needed approval from the California Department of Public Health (hospital regulation),[125] and affirming that the California Medicaid program would pay for acute inpatient care for any enrollees (both fee-for-service and managed care) receiving HaH care under the CMS waiver model.[124] Medicaid managed care plans were required to authorize and reimburse hospitals at the same rate as inpatient services delivered in traditional hospital settings. **December 2020 (updated January 2021)**: California's Department of Health Care Services issued a letter to all Medicaid MCO plans with full policy guidance around reimbursing approved hospitals for HaH care provided under the CMS waiver model[59]: **SUBJECT: ACUTE HOSPITAL CARE AT HOME** *PURPOSE*: The purpose of this All Plan Letter (APL) is to provide Medi-Cal managed care health plans (MCPs) with policy guidance regarding hospitals participating in the Centers for Medicare & Medicaid Services' (CMS) Acute Hospital Care at Home program. Revised text is found in italics. *BACKGROUND*: On March 30, 2020, CMS announced the Hospitals Without Walls program, which provides broad regulatory flexibility that allows hospitals to provide services in locations such as ambulatory surgery centers, inpatient rehabilitation hospitals, hotels, and dormitories, which are outside their physical facilities for Medicare and Medicaid. On November 25, 2020, CMS announced the new Acute Hospital Care at Home program, which is designed to increase the capacity of our nation's health care system by providing care to patients outside a traditional hospital setting amid a rising number of COVID-19 hospitalizations across the country. • CMS' enhanced strategy through the Acute Hospital Care at Home program includes the following: • Regulatory flexibilities for hospitals to treat eligible patients in their homes; • Care for patients who require acute inpatient admission to a hospital and who require at least daily rounding by a physician and a medical team monitoring their care needs on an ongoing basis; • Support models of at-home hospital care that have seen prior success in several leading hospitals and health care networks; and • Approved flexibilities under the Acute Hospital Care at Home program are effective for the duration of the COVID-19 Public Health Emergency (PHE). In response to the Acute Hospital Care at Home program announcement, on December 23, 2020, the California Department of Public Health (CDPH) issued All Facilities Letter (AFL) 20-90 for

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		hospitals, establishing state policies and procedures for the creation and oversight of the Acute Hospital Care at Home program. Information about the Acute Hospital Care at Home Program can also be found on DHCS' website, including up-to-date information about California hospitals that have been approved by CMS and CDPH to offer acute hospital care at home services. *POLICY*: For the duration of the Acute Hospital Care at Home program, hospitals that individually apply for and receive CMS waiver approval may provide approved acute care inpatient services to eligible members at home. For MCP network hospitals that are participating in the Acute Hospital Care at Home program, MCPs are responsible for tracking each participating hospital's waiver authorities, as well as the status of each hospital's approved waiver for the duration of the COVID-19 PHE. MCPs are also responsible for authorizing acute care inpatient services at home for members, as medically appropriate, in accordance with this APL, CDPH's AFL 20-90 and applicable CMS guidelines. A hospital's approved waiver must detail how the hospital will meet the Acute Hospital Care at Home program requirements, which include, but are not limited to, the following: • Members will only be admitted to the Acute Hospital Care at Home program from emergency departments and inpatient hospital beds, and an in-person physician evaluation is required prior to starting care at home; • Participating hospitals will be required to have appropriate screening protocols before care at home begins to assess both medical and non-medical factors, including working utilities, assessment of physical barriers, and screenings for domestic violence concerns; • A registered nurse will evaluate each member once daily either in-person or remotely, and two in-person visits will occur daily by either registered nurses or mobile integrated health paramedics, based on the member's nursing plan and hospital policies; and • It is the member's choice to receive these services in the home or the traditional hospital setting, and members who do not wish to receive them in the home will not be required to do so. *Authorization and Reimbursement* As stated above, MCPs are responsible for authorizing acute care inpatient services at home for members, as medically appropriate. Unless otherwise agreed to between the MCP and the provider, MCPs must reimburse hospitals providing inpatient acute care services at home through the Acute Hospital Care at Home Program at the same rate they would if the services were provided in a traditional hospital setting. *Documentation and Reporting Requirements* Hospitals wishing to participate in the Acute Hospital Care at Home program must apply for a waiver through CMS' online portal, wherein they will submit the necessary information to ensure

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		they meet the program's participation criteria. CMS will monitor the Acute Hospital Care at Home program to safeguard members by requiring hospitals to report quality and safety data to CMS on a frequency that is based on their prior experience with the Hospital at Home model. Throughout the duration of the COVID-19 PHE, MCPs must submit a monthly report to DHCS specifying the number of members receiving services in the program in conjunction with the hospitals serving those individuals. The reporting template is in development and will be distributed to MCPs as soon as it becomes available. If the requirements contained in this APL, including any updates or revisions to this APL, necessitate a change in an MCP's existing policies and procedures (P&Ps), the MCP must submit its updated P&Ps to its Managed Care Operations Division (MCOD) contract manager for DHCS review and approval within 90 days of the release of this APL. If an MCP determines that no changes to its P&Ps are necessary, the MCP must submit an email confirmation to its MCOD contract manager within 90 days of the release of this APL, stating that the MCP's P&Ps have been reviewed and no changes are necessary. The email confirmation must include the title of this APL as well as the applicable APL release date in the subject line. MCPs are responsible for ensuring that their subcontractors and network providers comply with all applicable state and federal laws and regulations, contract requirements, and other DHCS guidance, including APLs and Policy Letters. These requirements must be communicated by each MCP to all subcontractors and network providers. **May 2023**: After initially advising Medicaid MCOs that the CMS program was being extended through December 31, 2024, following federal legislation,[126] the California Department of Health Care Services provided notice to Medicaid enrollees that effective May 11, 2023, California Medicaid was no longer participating in the CMS HaH waiver program[60]: In alignment with the California Department of Public Health (CDPH), the Department of Health Care Services (DHCS) has ended the Acute Hospital Care at Home (AHCAH) program, effective May 11, 2023. CDPH rescinded All Facility Letter 20-90 regarding interim guidance for the 2019 Novel Coronavirus (COVID-19), as CDPH does not have statutory authority to license this type of care with the expiration of the state Public Health Emergency (PHE). To align with CDPH's facility licensing requirements, DHCS is no longer participating in the AHCAH program.
Florida	Covered HaH services under CMS waiver program following passage of state law in 2024	**March 2024**: New state law directed Florida's Medicaid agency to seek federal approval to implement a hospital-at-home program aligned with the CMS waiver program.[57] **November 2024**: Florida Agency for Health Care Administration (Medicaid) issued a provider notice to announce that it was reimbursing HaH services for Medicaid enrollees provided by Florida hospitals that were approved by CMS for the waiver program[129]:

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		Florida Medicaid Reimbursement for Acute Hospital Care at Home Program The Agency for Health Care Administration (Agency) is excited to announce that it is enhancing coverage for hospital inpatient services to include reimbursement of Acute Hospital Care at Home programs, making Florida one of the first state Medicaid programs to cover this innovative model of care after the ending of the Federal Public Health Emergency. *The Program* The Acute Hospital Care at Home program operates under a federal individual waiver that waives §482.23(b) and (b)(1) of the Hospital Conditions of Participation for participating hospitals, which require nursing services to be provided on premises 24 hours a day, 7 days a week and the immediate availability of a registered nurse for care of any patient. While patients receive services in their homes, the Acute Hospital Care at Home program still requires patients to need an inpatient hospitalization level of care. Currently, a total of 26 Florida hospitals have been approved by the Centers for Medicare & Medicaid (CMS) to provide Acute Hospital Care at Home program services to Medicare beneficiaries in accordance with the federal individual waiver program. Effective immediately, these hospitals can now be reimbursed by Florida Medicaid for providing these services to Medicaid beneficiaries. *The Program Benefits* Medicaid coverage of Acute Hospital Care at Home program services will allow patients to receive quality care in the comfort of their own homes while reducing costs to the Medicaid program as this program has been shown to reduce the length of patient stays and lower the rate of readmissions. Patients in an Acute Hospital Care at Home program receive routine bedside care from nurses and trained medical professionals and their vitals are continuously checked through remote monitoring. In addition, physician visits can be conducted via telemedicine. Visits may also include mobile integrated health care comprised of pharmacy services and care coordination. The Agency remains committed to bettering care for all Floridians by ensuring Medicaid beneficiaries receive medically necessary services in an environment that best suits their needs. *The Plan* In order to be eligible for Medicaid reimbursement of Acute Hospital Care at Home program services, a provider must: 1. Be an Active Florida Medicaid Provider Type 01 (Hospital) in good standing 2. Be an Active Medicare Provider in good standing 3. Have an approved waiver from CMS regarding the requirements cited in §482.23(b) and (b)(1) of the Hospital Conditions of Participation

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		○ For information on how to receive an approved waiver, visit CMS's Acute Hospital Care at Home Resource Page at qualitynet.cms.gov/acute-hospital-care-at-home. ○ Hospitals receiving a waiver will be listed on CMS's Acute Hospital Care at Home Resource page, under Approved Hospital List. 4. Have completed a 'Florida Medicaid Acute Hospital Care at Home Attestation Form'. ○ For Provider Type 01 (Hospital), there is a quick link to the Attestation Form on the Demographic page of your Secure Provider Web Portal at home.flmmis.com. ○ The signatory to the attestation must be an authorized signer identified on the Provider's owner panel. ○ The Provider's Chief Executive Officer, President, or Administrator may sign this attestation. ○ Upload the completed attestation form using the Trade Files Upload Panel via your secured Provider Web portal at home.flmmis.com. - Under Provider File Maintenance, select Acute Hospital Care at Home as the document type and upload the file. ○ The Agency will review your attestation and notify you if your attestation is accepted. Additional information on Acute Hospital Care at Home program requirements in Florida, and the list of current eligible hospitals, is located on quality.healthfinder.fl.gov. *Florida Medicaid Reimbursement of Acute Hospital Care at Home Program Services* The Agency will reimburse eligible providers for Acute Hospital Care at Home program services using the diagnostic related group (DRG) payment, in accordance with the Florida Medicaid Inpatient Hospital Services Coverage Policy, Rule 59G-4.150, regardless of if the inpatient hospital services are provided in the brick-and-mortar hospital setting or through the Acute Hospital Care at Home program. Inpatient Hospital claims for services provided through the Acute Hospital Care at Home program with a First Date of Service on or after July 1, 2024, must include the following accommodation codes: 1. Revenue code 161 (HOSPITAL AT HOME, R&B HOSPITAL AT HOME) 2. Occurrence code 82 (HOSPITAL AT HOME CARE DATES) Revenue code 161 and occurrence code 82 MUST be billed together on the same claim. If they are not billed together, Deny Edit 7010 (OCCURRENCE CODE / REVENUE CODE MISMATCH) will post. **2024 and 2025**: Held public meeting and updated Medicaid inpatient hospital services coverage policy to reflect new service (policy excerpts)[51,130,131]: *1.4 Definitions*

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		1.4.1 Acute Hospital Care at Home A program that allows participating hospitals with an approved waiver from the Centers for Medicare and Medicaid Services to provide inpatient-level care to recipients in their homes. *4.0 Coverage Information* *4.2 Specific Criteria* Inpatient hospital services are those items and services ordinarily furnished by the hospital for the care and treatment of inpatients, including: • Bed and board in a semi-private room, except when private accommodations are medically necessary, only private rooms are available, or for the Acute Hospital Care at Home program as defined in section 1.4.1 *6.0 Documentation* *6.3 Acute Hospital Care at Home* Hospitals participating in the Acute Hospital Care at Home program must make available all federal reporting measures as required under the individual waiver to AHCA upon request. *8.0 Reimbursement* *8.2.2 Acute Hospital Care at Home* Florida Medicaid reimburses for acute hospital care at home services through a DRG methodology. Providers must submit claims for acute hospital care at home services using Revenue Code 0161 and Occurrence Span Code 82.
Massachusetts	Covered HaH services under CMS waiver program	**February 2021**: Massachusetts Medicaid issued a bulletin to acute inpatient hospitals that it would reimburse HaH services delivered by hospitals approved by CMS for the waiver program[53]: **Coverage of and Reimbursement for Hospital-at-Home Services** *Overview* Through the Rate Year 2021 Acute Hospital Request for Applications and Contracts (RY21 RFA), MassHealth communicated its intent to reimburse MassHealth-enrolled acute inpatient hospitals (AIHs) rendering inpatient services in a member's home (Hospital-at-Home Services), contingent upon CMS's approval and MassHealth's publication of subregulatory guidance describing Hospital-at-Home Services and reimbursement. Recently, CMS announced its Acute Hospital Care at Home program, providing time-limited authorization for certain hospitals to render acute inpatient hospital services in a patient's home. CMS has further announced that State Medicaid agencies may claim federal financial participation on services rendered in accordance with CMS's Acute Hospital Care at Home program. As a result, effective for dates of service on or after the date on which CMS has authorized an acute hospital to participate in its Acute Hospital Care at Home program, MassHealth will reimburse such appropriately credentialed AIHs for rendering Hospital-at-Home Services to

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		MassHealth members in accordance with this bulletin and CMS's Acute Hospital Care at Home program. This bulletin describes MassHealth's coverage of and reimbursement for these Hospital-at-Home Services.
		
		Background
		On November 25, 2020, CMS announced its Acute Hospital Care at Home program. To participate in this program, hospitals must apply for and receive two time-limited, hospital-level waivers from CMS of Medicare Hospital Conditions of Participation at 42 CFR 482.23(b) and (b)(1). Per CMS's guidance, these waivers and its Acute Hospital Care at Home program will terminate upon the end of the public health emergency.
		
		Currently, CMS's guidance requires each hospital seeking to participate in this program to agree, among other things:
		• To utilize screening protocols before care at home begins to assess medical and non-medical factors, including working utilities, assessment of physical barriers, and screenings for domestic violence concerns;
		• Not to admit patients to their home without their prior consent to receive inpatient services at their home;
		• To admit patients only from an emergency department or inpatient unit of the credentialed acute hospital following an in-person visit by either a medical doctor (MD) or an advanced practice provider (APP);
		• To provide or contract for, at a minimum, the following services:
		  ○ Pharmacy
		  ○ Infusion
		  ○ Respiratory care including oxygen delivery
		  ○ Diagnostics (labs, radiology)
		  ○ Monitoring with at least two sets of patient vitals daily
		  ○ Transportation
		  ○ Food services including meal availability as needed by the patient
		  ○ Durable medical equipment
		  ○ Physical, occupational, and speech therapy
		  ○ Social work and care coordination
		• To provide certain personnel visits on, at a minimum, a certain cadence, in accordance with all applicable CMS Acute Hospital Care at Home program requirements, including, but not limited to, those relating to hospital standards of care and hospital policies;
		• To provide immediate, on-demand remote audio connection with Hospital at Home staff who can immediately connect either an RN or MD to the patient;
		• To ensure appropriate minimum emergency response times;

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		• To track and, as requested, report unanticipated mortality during the inpatient stay, escalation rate (i.e., transfer back to the acute hospital inpatient from the patient's home during the acute stay), and volume of patients treated at home; • To establish a local safety committee review (similar to a Mortality and Morbidity team, but dedicated to this program) which will review the metrics listed above prior to weekly submission; and • To use InterQual, Milliman, or another accepted patient leveling process to ensure that only patients requiring an acute level of care are treated by this hospital. Additional information on the CMS's Acute Hospital Care at Home program is at: https://www.cms.gov/newsroom/press-releases/cms-announces-comprehensive-strategy-enhancehospital-capacity-amid-covid-19-surge. Additional information on CMS's waiver process, including a portal through which interested hospitals can submit a waiver application, is available at: https://qualitynet.cms.gov/acute-hospital-care-at-home. *MassHealth Coverage of and Reimbursement for Hospital-at-Home Services* Effective for dates of service on or after the date on which CMS has authorized an acute hospital to participate in its Acute Hospital Care at Home program, MassHealth will permit AIHs participating in the CMS Acute Hospital Care at Home program to provide Hospital-at-Home services in a MassHealth member's home in accordance with this bulletin and the CMS Acute Hospital Care at Home program. For such appropriately credentialed hospitals that, as of the date of this bulletin, have already rendered Hospital-at-Home services to a MassHealth member, such hospitals must, within 30 days of the date of this bulletin, and prior to billing MassHealth for such services, submit a copy of CMS's approval of the hospital's Acute Hospital at Home waiver request to MassHealth. For those hospitals that, as of the date of this bulletin, have not yet rendered Hospital-at-Home Services to a MassHealth member, the hospital must, prior to rendering such services to a MassHealth member: • Be authorized by CMS to participate in its Acute Hospital Care at Home program; and • Submit a copy of CMS's approval of the hospital's Acute Hospital at Home waiver request to MassHealth. AIHs rendering Hospital-at-Home Services to MassHealth services must do so: • In accordance with all of the rules governing the CMS Acute Hospital Care at Home program; • In accordance with all regulations, contracts, and subregulatory and subcontractual guidance governing the MassHealth Acute Hospital Program, including the MassHealth Utilization Management Program for Acute Inpatient Hospitals.

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		MassHealth will reimburse AIHs rendering Hospital-at-Home Services in accordance with the Adjudicated Payment Amount per Discharge payment methodology, as described in Section 5.B.1 of the RFA. *Billing Instructions* In order to indicate on a claim for acute inpatient hospital services that such services were provided at the patient's home, the hospital must include on the HIPAA-compliant claim transaction the condition code DR ("Disaster Related") and Revenue Code 0119 ("Room and Board, Private -- Other") in the appropriate fields on the facility claim. **March 2021**: Medicaid agency issued a bulletin to its MCOs requiring them to follow the same reimbursement policies.[132] **June 2021**: Medicaid agency submitted Section 1115 waiver amendment request to CMS requesting ongoing flexibility to reimburse HaH services beyond the end of public health emergency and the CMS waiver program (with the continuing benefit modeled on the CMS waiver structure).[133] In 2022, CMS opted to not approve this request.[134,135] **September 2023**: Medicaid agency updated provider guidance, including new billing codes specific to HaH services.[136] The same changes were made for MCO guidance in April 2024.[52] **September 2023**: Massachusetts Medicaid staff gave a public presentation detailing that there had been approximately 900 HaH admissions among Medicaid members between October 2020 and September 2023 (less than 1% of all hospital admissions for members during that period).[151] By November, the number of admissions had climbed past 1,000.[142] **2024**: Medicaid agency's acute hospital services payment advisory bulletin lists HaH services as part of the definition of "inpatient services."[137] **2024 and 2025**: A state law for improving quality and oversight of long-term care created a task force on acute hospital care that examined opportunities for expanded reimbursement and coverage of services delivered by CMS HaH waiver-participating providers.[140] The subsequent report recommended the expansion of HaH models, including sustaining CMS HaH waivers through Section 1115 waivers, state plan amendments, and state and federal legislation.[141]
New Jersey	Covered HaH services under CMS waiver program following passage of state law in 2023	**July 2021**: The New Jersey Department of Health issued a waiver allowing hospitals to deliver HaH services under the federal waiver program if approved by CMS.[143] **September 2023**: The New Jersey legislature passed a law directing the Department of Health to establish a state program for hospitals to provide HaH services consistent with the CMS waiver program as long as it remained in effect.[58] It also required the New Jersey Medicaid program and other commercial insurers to provide coverage of HaH services.[58]

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		August 2024: The New Jersey Department of Human Services issued a bulletin providing notice that New Jersey Medicaid fee-for-service and MCOs would provide coverage for HaH services delivered under the CMS waiver program[54]: *SUBJECT*: Coverage of Acute Hospital Care at Home Services *EFFECTIVE*: Immediately *PURPOSE*: To provide notice of NJ FamilyCare coverage of Hospital at Home services delivered by eligible NJ FamilyCare hospitals *BACKGROUND*: P.L. 2023, c.163 (N.J.S.A. 26:2H-163 et seq.) provides for NJ FamilyCare coverage for acute care services provided to individuals outside of a hospital's licensed facility, within a private residence designated by that individual, in a program known as "Hospital at Home" In order for a hospital to provide such services and be eligible for reimbursement, the hospital must have an active Acute Hospital Care at Home (AHCaH) waiver approved by the Centers for Medicare and Medicaid Services (CMS) and be authorized by the NJ Department of Health (DOH) to provide such services. DOH has issued a blanket waiver pursuant to the authority of N.J.A.C. 8:43G-2.8 to waive the requirement in N.J.A.C. 8:43G-2.5 that a licensed general hospital only provide services within the hospital's licensed space. CMS created the federal AHCaH initiative in 2020 to enhance hospital capacity during the COVID-19 pandemic. Since then, hospitals continue to have the option to submit requests to CMS to waive 42 C.F.R §482.23(b) and (b)(1) of the Medicare Hospital Conditions of Participation requiring nursing services to be provided on premises 24 hours a day, 7 days a week and the immediate availability of a registered nurse for care of any patient. The AHCaH initiative has been extended through December 31, 2024, under the Consolidated Appropriations Act of 2023. The DOH Division of Certificate of Need and Licensing released updated guidance in December 2023 regarding the State's program for New Jersey hospitals participating in the federal AHCaH program. This newsletter only applies to Hospital at Home services as currently authorized at the federal and state level. If Congress further extends this program after 2024, providers should anticipate that new guidance may be issued. *ACTION*: NJ FamilyCare/Medicaid (NJ FamilyCare) fee-for-service (FFS) program and its managed care partners shall provide reimbursement for Hospital at Home services for eligible hospital providers. *Eligible members* Hospital at Home services are available to all NJ FamilyCare members approved for acute care treatment in a home setting. Approval requires a face-to-face physician evaluation, provided in the emergency department or inpatient hospital setting, during which the provider determines the

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		member can be safely treated in the home setting. Provision of Hospital at Home services must be consistent with the terms of AHCaH. *Process to become eligible to provide hospital at home services for NJ FamilyCare members* To receive NJ FamilyCare reimbursement for Hospital at Home services, eligible hospitals must: 1. Be enrolled in NJ FamilyCare as an acute care hospital, and 2. Provide documentation of an approved federal waiver request by CMS authorizing the hospital to participate in the AHCaH initiative and/or appear on the CMS list of "Approved Facilities/Systems for Acute Care Hospital at Home" found at https://qualitynet.cms.gov/acute-hospital-care-at-home/resources *Federal (CMS) Approval* Eligible hospitals must be authorized to participate in the federal AHCaH initiative. Waiver requests and further information may be found at the CMS website https://qualitynet.cms.gov/acute-hospital-care-at-home. CMS-approved hospitals must maintain compliance with the federal initiative's monitoring and quality requirements. *NJ DOH Approval* Eligible hospitals must also be approved by DOH to provide Hospital at Home services in NJ. For information, please see the NJ Department of Health's Guidance Memorandum issued on 12/6/23 "Participation in the Centers for Medicare & Medicaid Services Acute Hospital Care at Home Program." *Hospital at Home services for NJ FamilyCare members* NJ FamilyCare members cannot be provided Hospital at Home services without their prior consent to receive those services at their home. Hospital at Home services must be provided in a manner compliant with the requirements of the federal Acute Hospital Care at Home initiative as described at https://qualitynet.cms.gov/acute-hospital-care-at-home. NJ FamilyCare shall not utilize more stringent utilization management criteria for Hospital at Home services than when those services are delivered inside of a hospital's licensed facility. *Hospital at Home Billing Procedures* Within FFS and managed care, hospitals must use the following codes on the facility claim to receive reimbursement for Hospital at Home services: • Revenue Code 0161: Hospital at Home, R&B/Hospital at Home • Occurrence Span Code 82: Hospital at Home Care Dates If the patient is admitted to the Hospital at Home program directly from the Emergency Department, the hospital will bill the entire admission using REV 0161 with the occurrence span code of 82. If the patient is transferred from an inpatient setting to the Hospital at Home program, the hospital will bill the appropriate Revenue Code for the inpatient days and the Revenue Code

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		0161 for the days they were in the Hospital at Home program. The Hospital at Home span should be billed along with the Occurrence Span Code of 82. *Hospital at Home Reimbursement* Within FFS, Hospital at Home services will be reimbursed at the same rate as when those services are delivered as an inpatient within the hospital's licensed facility. Within managed care, Hospital at Home services will be reimbursed as established in the contract between the MCO and the in-network hospital. **2024**: Medicaid managed care plans subsequently released their own HaH policies.[112,144]
New York	Not covered under CMS waiver program	**2024 and 2025**: The Governor's executive budgets for fiscal year 2025 and 2026 proposed legislation to essentially codify the CMS Acute Hospital Care at Home waiver program into state law by distinguishing Hospital at Home from home care services and allowing the Medicaid agency to set fee-for-service program reimbursement rates. Neither of the legislative proposals was adopted.[77,78]
North Carolina	Covered HaH services under CMS waiver program following restart of benefit in 2023 after temporarily ending coverage Officially ended coverage at end of September 2025 when CMS waiver program expired	**September 2021**: North Carolina Medicaid announced that it would cover HaH services provided to Medicaid members by CMS-approved hospitals participating in the HaH waiver program through December 2021[145,146]: **Temporary Availability of the Hospital at Home Program** Effective Sept. 1, 2021, the Acute Hospital Care at Home (HAH) program will be available to North Carolina hospitals that have been granted a waiver from CMS and service NC Medicaid beneficiaries. NC Medicaid is planning to implement this program to be effective Sept. 1 through Dec. 31, 2021, unless this flexibility is terminated prior to Dec. 31, 2021. This Bulletin was updated on Dec.10, 2021, in SPECIAL BULLETIN COVID-19 #202: Extension of Hospital at Home Program. This Bulletin is an update to SPECIAL BULLETIN COVID-19 #178: Temporary Provisions for COVID Surge: Post-Acute PA Exceptions and Hospital at Home Program. Effective Sept. 1, 2021, the Acute Hospital Care at Home (HAH) program will be available to North Carolina hospitals that have been granted a waiver from CMS and service NC Medicaid beneficiaries. NC Medicaid is planning to implement this program to be effective Sept. 1 through Dec. 31, 2021, unless this flexibility is terminated prior to Dec. 31, 2021. The Acute HAH program is an expansion of the CMS Hospital Without Walls initiative as a part of a comprehensive effort to increase hospital capacity, maximize resources and combat COVID-19 to keep Americans safe. This program creates additional flexibility that allows for certain health care services to be provided outside of a traditional hospital setting and within a patient's home. CMS guidance for participation in this program can be found on the CMS Acute Hospital Care at

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		Home webpage. Programs that have been granted a waiver by CMS should submit a copy of their CMS HAH waiver to our reimbursement team to qualify for reimbursement at Medicaid.ProviderReimbursement@dhhs.nc.gov. • There are several requirements that a hospital must meet to participate in the HAH program. These include: • Having appropriate screening protocols in place before care at home begins to assess both medical and non-medical factors. • Having a physician or advanced practice provider evaluate each patient daily, either in person or remotely. • Having a registered nurse evaluate each patient once daily, either in person or remotely. • Having two in-person visits daily by either registered nurses or mobile integrated health paramedics, based on the patient's nursing plan and hospital policies. • Having the capability of immediate, on-demand remote audio connection with an Acute HAH team member who can immediately connect either an RN or MD to the patient. • Having the ability to respond to a decompensating patient within 30 minutes. • Tracking several patient safety metrics with weekly or monthly reporting, depending on the hospital's prior experience level. • Establishing a local safety committee to review patient safety data. • Using an accepted patient leveling process to ensure that only patients requiring an acute level of care are treated. • Providing or contracting for other services required during an inpatient hospitalization. It is important to note that patients will only be admitted to the program from emergency departments and inpatient hospital beds, and an in-person physician evaluation is required prior to starting services at home. Eligible hospitals will be reimbursed under the existing NC Medicaid inpatient hospital reimbursement methodology but will need to document the Condition Code of DR twice on their claim to identify patients who are "admitted to home." All claims are subject to audit, and the double entry of the DR condition code is the flag that we will use to verify the location of service is at home. NC Medicaid will study and consider the experience of the HAH model of care during the pandemic to inform future policy direction. Standard Plans are permitted to require notification and review all HAH admissions for medical necessity. **December 2021**: North Carolina Medicaid extended HaH coverage through March 31, 2022.[147] **March 2022:** North Carolina Medicaid decided not to extend its HaH coverage further and allowed it to end on March 31, 2022[148]: Since Sept. 1, 2021, the Acute Hospital Care at Home (Acute HAH) program has been available to select North Carolina hospitals as a tool to manage the COVID-19 surge. The program has been

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		available to hospitals that have been granted a waiver from CMS. The Acute HAH program is an expansion of the CMS Hospital Without Walls initiative as a part of a comprehensive effort to increase hospital capacity, maximize resources and combat COVID-19 to keep Americans safe. The program creates additional flexibility that allows for certain health care services to be provided outside of a traditional hospital setting and within a patient's home. Originally scheduled to sunset on Dec. 31, 2021, NC Medicaid extended the Hospital at Home program through March 31, 2022, due to the Omicron surge. The Hospital at Home program for NC Medicaid (both Medicaid Direct and Medicaid Managed Care) will sunset on March 31, 2022. Please see Special Bulletin COVID-19 #202 for more details on the Hospital at Home program for NC Medicaid. **May 2023**: The North Carolina legislature passed a law extending state regulatory waivers needed for hospitals to continue participating in the CMS waiver program through December 2024[149]; they were subsequently extended until the expiration of the CMS waiver program.[150] **September 2023**: North Carolina Medicaid relaunched its HaH coverage[152]: **Hospital at Home Program Re-Launching for NC Medicaid** During the Public Health Emergency, the Centers for Medicare & Medicaid Services (CMS) instituted the Hospital Without Walls initiative, known in North Carolina as the Acute Hospital Care at Home (HAH) program. Acute HAH was made available temporarily during the early COVID-19 surge as a Medicaid tool to provide relief to hospitals with limited bed capacity. This coverage ended on March 31, 2022. The Department underwent an extensive evaluation of that program to inform future coverage through an External Quality Review Organization (EQRO). The findings from that study will be released publicly and show mixed results compared to other studies of Hospital at Home programs since the inception of this model. There are several factors that result in a more positive outcome with Hospital at Home programs, including a key tenet of successful implementation is the capacity building time required for a hospital to establish the best practices that lead to the best outcomes. hospitals under the current CMS waiver have been working on their programs since the program evaluation completed March 31, 2022, and have provided assurances that their outcomes are equal to that or better than other HAH evaluations nationally. After extensive discussions with CMS, NC health systems, NC Medicaid Standard Plans, and other State Medicaid programs, NC Medicaid will cover Acute HAH under the existing DRG

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		methodology from Nov. 1, 2023, until Dec. 31, 2024, when the CMS Medicare Waiver flexibility is scheduled to end. After that time, if CMS continues to allow this model of care, NC Medicaid anticipates that the reimbursement methodology may shift to a percent of DRG and ultimately into a bundled care value-based care methodology in line with other departmental initiatives to drive population health through shared accountability to outcomes. Future reimbursement details will emerge, and continued coverage past December 2024 will be determined based on a combination of factors including: 1. Long term approval by CMS to continue the model after Dec. 31, 2024, and 2. Analysis of admissions to Acute Hospital at Home from November of 2023 through October of 2024 and positive findings on the resultant outcomes for Medicaid members. Effective Nov. 1, 2023, to bill for Acute HAH, providers should bill DRG claims using revenue code 0161 for room and board and occurrence span code 82. The information in this bulletin applies to both NC Medicaid Direct and NC Medicaid Managed Care. **March 2024**: North Carolina Medicaid staff published an invited commentary with descriptive data from less than 240 members receiving HaH services under the program, based on claims between March 2021 and August 2022.[161] **March 2025**: Coverage of HaH services was extended through March 31, 2025, in line with the federal extension.[153] **June 2025**: Coverage of HaH services was extended through September 30, 2025, in line with the federal extension.[55] **October 2025**: Ended coverage of HaH services starting on October 1, 2025, following expiration of CMS waiver program.[62]
Oregon	Covered HaH services under CMS waiver program during COVID-19 pandemic, but unclear if coverage remained active through September 2025, prior to the end of the CMS program	**September 2022**: Oregon Medicaid released an updated COVID-19 Medicaid provider guidance document detailing services provided under Medicaid during the COVID-19 emergency declaration.[61] The document stated[61]: **Coverage of home care through the Acute Hospital Care at Home waiver:** *For hospitals that receive federal approval to provide acute hospital care at home, hospital care provided at home will be considered an extension of the hospital.* **January 2023**: Oregon Health Authority's public health division last revised guidance on how hospitals can apply to receive approval for delivering HaH services under the CMS waiver program.[154] The guidance specified that the temporary waivers from state regulations could only

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		be renewed "if the COVID-19 pandemic is still impacting hospital services in the month prior to the license expiration," and the temporary license application form link was no longer active in August 2025.[154]
Pennsylvania	No information found on Medicaid coverage of HaH services under the CMS waiver program	N/A
Texas	Covered HaH services under CMS waiver program	**July 2022**: Texas Medicaid released a policy bulletin to its managed care organizations on CMS HaH waiver program and applicable billing codes[56]: **New Occurrence Span Code and Revenue Code for Acute Hospital Care at Home Program** *Last updated on 7/8/2022* *Note*: Texas Medicaid managed care organizations (MCOs) must provide all medically necessary, Medicaid-covered services to eligible clients. Administrative procedures such as prior authorization, precertification, referrals, and claims/encounter data filing may differ from traditional Medicaid (fee-for-service) and from MCO to MCO. Providers should contact the client's specific MCO for details. In November 2020, the Centers for Medicare & Medicaid Services (CMS) launched the Acute Hospital Care at Home Program to provide hospitals expanded flexibility to care for patients in their homes. The National Uniform Billing Committee (NUBC) recently released changes to the valid values acceptable on the Institutional Claim Form. The NUBC has approved two codes used in claims for the Acute Hospital Care at Home Program, which allows patients to obtain acute inpatient care at home. The codes are intended to be used to identify and track the inpatient claims for services provided under the Acute Hospital Care at Home Program. The following codes are effective for claims received on or after July 1, 2022. The codes are as follows: • Occurrence span code 82: Hospital at home care dates • Revenue code 0161: Hospital at home, room and board (R&B)/Hospital at home Occurrence span code 82 will be used to track the "from" and "through" dates of the hospital-at-home care delivered during an inpatient stay. Revenue code 0161 will be used to report the accommodation charges of the at-home care room and board.

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On September 1, 2022, the Texas Medicaid & Healthcare Partnership (TMHP) will update the Texas Medicaid Provider Procedures Manual, Vol. 1, “Claims Filing,” section 6.6.3, “UB-04 CMS-1450 Instruction Table,” to reflect these changes.

Note: Any hospital permitted to have a hospital-at-home designation will bill for services using its facility license and National Provider Identifier (NPI). Claims are to be processed just as they would for regular hospital claims.

For additional information about the emergency rule, reference: GL 22-1000-A Emergency Rule for Hospitals Participating in the Centers for Medicare and Medicaid Services Acute Hospital Care at Home Program During the COVID-19 Pandemic [Amended] (texas.gov).

September 2022: The Medicaid agency subsequently updated its Medicaid provider manual to include the HaH billing codes, which remain in the current manual[155]:

6.6.3 UB-04 CMS-1450 Instruction Table
The instructions describe what information must be entered in each of the block numbers of the UB-04 CMS-1450 paper claim form. Block numbers not referenced in the table may be left blank. They are not required for claim processing by TMHP.

<table>
<tr><th>Block No.</th><th>Description</th><th>Guidelines</th></tr>
<tr><td>35-36</td><td>Occurrence span codes and dates</td><td>For inpatient claims, enter code “71” if this hospital admission is a readmission within seven days of a previous stay. Enter the dates of the previous stay.
For inpatient claims, enter occurrence span code 82 for the “from” and “through” dates of the hospital-at-home care.
For charges of the at-home care room and board, enter revenue code 0161.</td></tr>
</table>
May 2023: The Texas state legislature passed a law codifying a state-led regulatory structure that would allow hospitals to operate HaH programs with standards “at least as stringent” as the CMS waiver program, with approval from CMS and the Texas Health and Human Services Commission.[156,157]
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		October 2025: The Medicaid agency issued a guidance memo to health care providers after the expiration of the CMS HaH waiver program[158]: **Hospital at Home Program Waiver** As allowed by Health and Safety Code Section 241.406 and Texas Administrative Code Title 26 Section 505.81, a hospital may request a waiver to continue to operate their hospitals at home programs as the federal initiative ended on Sept. 30. Hospitals may use Form 3249, Hospital Waiver Request. For questions about Medicaid reimbursement, email MedicaidClaims@hhs.texas.gov. For questions about the hospital at home program, email HCR_PRU@hhs.texas.gov.
Washington State	No information found on Medicaid coverage of HaH services under the CMS waiver program	**2024**: The Washington State legislature passed a bill to establish a formal, state-led regulatory structure for hospitals to provide HaH services.[64] The bill directed the state Department of Health to establish standards "substantially similar" to the federal CMS waiver model, but once rules are established, the state regulatory structure would take precedence.[64] **2024**: Inpatient billing guide produced by state Medicaid agency refers to HaH room and board services as not covered by the agency.[159]

Abbreviations. AHCAH: acute hospital care at home; AIH: acute inpatient hospital; APP: advanced practice provider; CCN: CMS Certification Number; CFR: Code of Federal Regulations; CMS: Centers for Medicare and Medicaid Services; D-SNP: dual eligible special needs; EQRO: external quality review organization; HaH: Hospital at Home; HiH: hospital in home; MCO: managed care organization; NPI: national provider identifier; NUMB: National Uniform Billing Committee; PHE: public health emergency.

Appendix I: Relevant Codes

To delineate and track inpatient claims for services delivered in a Hospital at Home setting under the CMS waiver program, the National Uniform Billing Code approved new billing-related codes that became effective on July 1, 2022[87]:

Occurrence Span Codes

- **82** – Hospital at Home Care Dates (the from/through dates of a period of hospital at home care provided during an inpatient hospital stay)

Room and Board Revenue Code Subcategory

- **0161** – Hospital at Home, Room and Board/Hospital at Home