Physician-Focused Payment Model Technical Advisory Committee
LOI: Environmental Scan & Relevant Literature

Personalized Recovery Care, LLC (PRC)
Letter Dated: 8/4/2017
Letter Received: 8/8/2017

The Marshfield Clinic and Personalized Recovery Care, LLC or "PRC" is a joint venture between Marshfield Clinic Health System, Inc. and Contessa Health, Inc. Marshfield Clinic is the largest private group medical practice in Wisconsin and one of the largest in the United States. Contessa Health operates home hospitalization programs to manage episodic risk initiatives. PRC proposes "Home Hospitalization: An Alternative Model for Delivering Acute Care in the Home." The PRC program allows the patient to be treated at home instead of the hospital while still having their care overseen by a physician. The PRC program is available to patients of Marshfield Clinic in Marshfield. The use of a telehealth system allows physicians and nurses to monitor the patients' health while at home.

PRC proposes to launch this model for Medicare Fee-For-Service patients at Marshfield Clinic, with the goal of expanding it to physicians and settings across the country. In the proposed model, physicians could provide hospital level care delivery to Medicare fee-for-service beneficiaries in their homes for a meaningful number of medical and surgical conditions. The PRC operators' goals are to:

1) improve health care quality by providing hospital level care in the comfort of the patient's home, while
2) changing the reimbursement for participating physicians by making them accountable for the quality and spend throughout a 30-day episode of care.

The PRC Operators would receive an episodic payment for hospital-level care and related transitional services that would not be tied to an index admission to an acute care facility. From this payment, the PRC Operators would be responsible for all related care delivered to the patients over a 30-day episode. The PRC Operators would be required to meet select clinical quality metrics to be eligible to receive savings generated from the program. The episodic rate would be calculated in advance as a discount to the historical benchmark for comparable episodes.

Key Search Terms

AIM Program; CMS Sutter Health; Comprehensive Health Care; Contessa Health; COPD Hospital at Home; Cost; Cost Of Health Care; Economic Benefit; In-Patient Hospital Care; Johns Hopkins Hospital at Home; HF Hospital at Home; Home-Based Healthcare; Home Health; Home Hospitalization; Hospital at Home Acute Care; Hospital at Home; Hospital-at-home care; Hospital at Home Model; Hospital at Home Programs; Hospital at Home Trial Home-Based Healthcare Marshfield Clinic Health System; Managed Care; Medical Home; Medicare; Medicare-managed care; Mobile Acute Care Team; Mount Sinai Health System; New Care Delivery Models; Organization And Delivery Of Care; Presbyterian Healthcare Services

Research Task	Section	Contents
Environmental Scan	Section 1	Key documents, timely reports, grey literature, and other materials gathered from internet searches (8).
Relevant Literature	Section 2	Relevant literature materials (6).
Related Literature	Section 3	Related literature materials (4).
References	Section 4	References to relevant and related literature.

Section 1. Environmental Scan

Environmental Scan		
Key words: AIM program; Sutter Health		
Organization	**Title**	**Date**
Centers for Medicare & Medicaid Services (CMS), NORC at University of Chicago	HCIA Complex/High-Risk Patient Targeting: Third Annual Report Addendum	4/7/2017
Purpose/Abstract		
Background: This is third annual report of the evaluation of the Health Care Innovation Award (HCIA) Complex/High-Risk Patient Targeting (CHRPT) portfolio by NORC at the University of Chicago, under contract with the Center for Medicare & Medicaid Innovation (CMMI). Findings for 23 awardees that serve patients with multiple chronic conditions (MCC) who are at high risk for hospitalization, re-hospitalization, emergency department (ED) visits, or nursing home stays. Sutter Health Corporation's Advanced Illness Management (AIM) ***Summary:*** In page 160 of the addendum, evaluators discuss the Sutter Health Advanced Illness Management (AIM) program. The AIM program seeks to coordinate care across multiple care settings (hospital, home health, provider offices, on-call triage) for late-stage patients and their caregivers. AIM provides home-based transitional and palliative care and counsels patients and families to encourage hospice use and decrease use of acute care. Consistent with findings presented in NORC's Third Annual Report, the AIM intervention is associated with statistically significant reductions in Medicare total cost of care for beneficiaries in the last 30 days of life, likely attributable, in part, to the statistically significant decrease seen in hospitalizations and despite an increase in ED visits during the same time period. The AIM program's emphasis on coordinating care across settings to enable beneficiaries to live stably and safely at home and supporting a seamless transition to hospice for many of their enrollees appears to be successful for this group of enrollees. A significant increase in ED visits may reflect the high acuity of beneficiaries; AIM may be more effective in preventing hospitalizations. In addition, findings may be confounded by unmeasured frailty or physical functioning among AIM enrollees. Finally, the cross-sectional design and short period of time being examined (30 days) limit the robustness of the study design, making this analysis more exploratory than definitive.		
Additional Notes/Comments		
CMS Health Care Innovation Award webpage Health Affairs 2011: Changing The Conversation In California About Care Near The End Of Life This resource was included due to relevance to the Marshfield Health Clinic LOI and interest from PTAC during the September public meeting.		

Environmental Scan

Keywords: Marshfield Clinic Health System

Organization	Title	Date
Marshfield Clinic Health System (MCHS)	PTAC Proposal Public Comment: Letter of Support to PTAC for a Physician-Focused Payment Model (PFPM) for Hospital at Home Plus (HaH-Plus)	4/17/2017

Purpose/Abstract

Background: MCHS submitted a letter of support to PTAC expressing support of the Mount Sinai's proposal for a 30-day care and payment bundle for Hospital at Home Plus (HaH-Plus).
Summary: The letter of support emphasized MCHS own efforts to operate a home hospitalization program with a comparable 30-day care and payment bundle. MCHS supported Mount Sinai's HaH-Plus model as they believe has the ability to improve patient experiences and clinical outcomes while reducing costs. As MCHS continue to operationalize and expand their program, they see first-hand how the lack of an effective payment mechanism for fee-for-service Medicare prevents provider networks from enrolling the volume of eligible patients required to sustain optimal cost efficiencies.

Additional Notes/Comments

The public comment submitted by MCHS is located on page 1 of the PDF file.

Environmental Scan

Key words: Marshfield Clinic Health System; Contessa Health; Home Hospitalization

Organization	Title	Date
Marshfield Clinic Health System (MCHS)	Marshfield Clinic Health System, Contessa Health create Partnership to operate a Home Hospitalization Program	7/21/2016 Accessed: 8/14/2017

Purpose/Abstract

Background: On July 21, 2016 Marshfield Clinic Health System (MCHS) and Contessa Health announced a new partnership to operate a Home Hospitalization Program for members of Security Health Plan.

Summary: The Home Hospitalization Program powered by Contessa Health will allow patients to receive hospital-level care in the comfort of their homes at a prospective bundled rate.

Under guidance of Contessa Health's clinical and administrative protocols, Marshfield Clinic physicians will be able to provide Security Health Plan members with in-home care for acute medical conditions. The partnership will initially focus on providing services in the Marshfield service area. MCHS and Contessa Health plan to expand to the broader Wisconsin market, enabling residents across the state to receive high-quality care, in a convenient and cost-effective manner, in their homes.

Additional Notes/Comments

Marshfield Clinic Personalized Recovery Care Program: https://www.marshfieldclinic.org/Services/personalized-recovery-care-program

New Medical Life Sciences: Mount Sinai and Contessa Health join hands to extend hospital-level care at home program

Modern Healthcare: Innovations: Bringing hospital-level care home

Environmental Scan

Key words: Hospital at Home; Hospital at Home Model; Medicare; Presbyterian Healthcare Services

Organization	Title	Date
The Commonwealth Fund	The Hospital at Home Model: Bringing Hospital-Level Care to the Patient	8/22/2016

Purpose/Abstract

Background: The hospital at home model offers patients who need to be hospitalized the option of receiving hospital-level care at home for conditions that can be safely treated there. Patients who require hospitalization for conditions with well-defined treatment protocols, such as congestive heart failure and chronic obstructive pulmonary disease. Patients often are more comfortable receiving care in a familiar home environment. For the frail and elderly in particular, hospital stays can pose a variety of health threats, including delirium, infections, and falls. Hospitals also have high fixed costs.
Summary: This case study is one in an ongoing series examining programs that aim to improve outcomes and reduce costs of care for patients with complex needs, who account for a large share of U.S. health care spending. This case study is focused on the Presbyterian Healthcare Services Hospital at Home model in Albuquerque, New Mexico. The following items are discussed: clinical characteristics of hospital at home patients, how to the program identifies appropriate patients, extended home visits, rapid response from the medical team, continuum of care, and financing. Additionally, the lessons learned include: challenge associated with finding the right staff, the need to draw a critical mass of patients in order to support the required staffing and infrastructure, and payment and medical culture may be barriers for spreading this model.

Additional Notes/Comments

Environmental Scan

Key words: Marshfield Clinic Health System

Organization	Title	Date
Marshfield Clinic Health System (MCHS)	MCHS Public Comment: CMS-5517-P: Notice of Proposed Rulemaking on Merit-Based Incentive Payment System and Alternate Payment Model Incentives under the Medicare Physician Fee Schedule	6/23/2016

Purpose/Abstract

Background: Marshfield Clinic Health System (MCHS) submitted a public comment to the Centers for Medicare & Medicaid Services on CMS-1644-P Medicare Program: Merit-Based Incentive Payment System and Alternate Payment Model Incentives under the Medicare Physician Fee Schedule Notice of Proposed Rulemaking ("Proposed Rule"), which implements the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA).

Summary: The MCHS public comment supports MACRA and moving Medicare payment for physician services to a value-based formula that focus on quality, resource use, clinical practice improvement, and meaningful use of certified EHR technology. MCHS encouraged CMS to take active steps to create alignment between the objectives and quality measures within the Medicaid and Medicare programs. Additionally, MCHS expressed concern by proposals to provide MIPS performance feedback at yearly intervals only, a timeframe which is inadequate for seniors, ongoing quality improvement efforts. MCHA provided comments on CMS's proposed implementing policies on the following: Merit-based Incentive Payment System (MIPS); Provider Identifiers; MIPS Quality performance category; Data Submission Method; Exceptions and Special Cases; MIPS Resource use performance category; MIPS Advancing Care Information performance category; MIPS Clinical Practice Improvement Activities (CPIA) performance category; and MIPS composite scores and payment adjustment.

Additional Notes/Comments

Environmental Scan

Key words: Mount Sinai Health System; Mobile Acute Care Team; CMS Mobile Acute Care Team; Hospital at Home Programs; Hospital at Home Trial; Johns Hopkins Hospital at Home

Journal	Title	Date
Harvard Business Review	A Vision for "Hospital at Home" Programs	12/21/2015 Accessed on: 9/21/2017

Purpose/Abstract

Background: Bruce Leff, MD, the author of this article, is one of the originators of John Hopkins's Hospital at Home (HaH) Program and spear headed an early pilot study of HaH in 1997.
Summary: In this article, Dr. Leff explains how HaH works, the various research and initiatives surrounding HaH, and the obstacles and opportunities facing future implementation of HaH. In general, a candidate for HaH is usually identified in the emergency department (ED) where a physician determines that the patient requires hospital admission; thus, making the individual eligible for HaH. The physician will then evaluate the patient and mobilize the necessary HaH services before transferred to their home. Over the course of a few days, nurses and the physician will visit the patient until deemed fit for discharge. Since the earliest pilot study of HaH in 1997, the aforementioned process has been one of the most studied innovations in health care. There are obstacles to implementing HaHs, the greatest one being the lack of payment mechanism in fee-for-service Medicare; however, if supported by systems that have visionary leaders and the will to align the hospital, the providers (including ED personnel), and the payer, HaH can prove to be a successful alternative to hospital care.

Additional Notes/Comments

For more information on Dr. Leff's Hospital at Home at Johns Hopkins, please use the following link to their website: http://www.hospitalathome.org/

Environmental Scan

Key words: Managed Care; Organization And Delivery Of Care; Cost Of Health Care; Hospital At Home New Care Delivery Models

Journal	Title	Date
Health Affairs	Costs For 'Hospital At Home' Patients Were 19 Percent Lower, With Equal Or Better Outcomes Compared To Similar Inpatients	6/1/2012

Purpose/Abstract

Background: In 2008, Albuquerque, New Mexico-based Presbyterian Healthcare Services adapted the Hospital at Home® model developed by the Johns Hopkins University Schools of Medicine and Public Health to provide acute hospital-level care within patients' homes. The program expanded its coverage in November 2010 to include commercial health-plan members through a bundled-payment rate reimbursing for the total care provided.

Summary: This article summarizes the results of Presbyterian Healthcare Services' adaption of Hospital at Home covering topics such as the designated program population, program components, program results, and implementation considerations. The program has shown patients with comparable or better clinical outcomes compared with similar inpatients, and they show higher satisfaction levels. Available to Medicare Advantage and Medicaid patients with common acute care diagnoses, this program achieved savings of 19 percent over costs for similar inpatients. These savings were predominantly derived from lower average length-of-stay and use of fewer lab and diagnostic tests.

Additional Notes/Comments

Environmental Scan

Key words: Hospital at Home model; Medicare-managed care; hospital-at-home care

Journal	Title	Date
Canadian Medical Association Journal	Defining and disseminating the hospital-at-home model	1/20/2009

Purpose/Abstract

Background: The hospital, which is the "gold standard" for the delivery of acute medical care, is not an ideal care environment for many patients. Iatrogenic events such as nosocomial infections, pressure sores, falls and delirium are common. New functional impairment commonly occurs during hospital stay. Suboptimal transitions in care at the time of hospital discharge also occur, contributing, ironically, to readmission to hospital. Furthermore, hospital care is very expensive.

Summary: The key points highlighted in this commentary include:

(1) Hospital-at-home care is generally defined as the community-based provision of services usually associated with acute inpatient care;

(2) Many disparate models have been developed under the hospital-at-home label, leading to difficulties in evaluating their effectiveness;

(3) Admission avoidance or substitutive hospital-at-home models are associated with reductions in mortality at 6 months and other benefits;

(4) Hospital-at-home care faces substantial dissemination barriers;

(5) Program development and implementation requires dedicated resources and may take as long as 1 year to establish;

(6) Hospital-at-home care may be most successful as 1 element in a portfolio of models for keeping certain patients out of the acute care hospital, treating those who must be admitted effectively and safely, and helping patients transition out of hospital effectively.

Additional Notes/Comments

Section 2. Relevant Literature

Relevant Literature		
Key words: Hospital At Home; Economic Benefit; In-Patient Hospital Care		
Journal	**Title**	**Date**
The Cochrane Database Systematic Review	Early discharge hospital at home	6/26/2017

Purpose/Abstract

Background: Early discharge hospital at home is a service that provides active treatment by healthcare professionals in the patient's home for a condition that otherwise would require acute hospital inpatient care. This is an update of a Cochrane review.
Objectives: To determine the effectiveness and cost of managing patients with early discharge hospital at home compared with inpatient hospital care.
Search methods: The authors searched the following databases to 9 January 2017: the Cochrane Effective Practice and Organisation of Care Group (EPOC) register, Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, Embase, CINAHL, and EconLit. We searched clinical trials registries.
Selection criteria: Randomised trials comparing early discharge hospital at home with acute hospital inpatient care for adults. We excluded obstetric, pediatric and mental health hospital at home schemes.
Data collection and analysis: The authors followed the standard methodological procedures expected by Cochrane and EPOC and used the GRADE approach to assess the certainty of the body of evidence for the most important outcomes.
Results: The review authors found 32 studies, six of which are new for this update. In total, 4746 people from twelve countries participated in those studies. The intervention was mainly delivered by hospital outreach services and community-based services. Most of the studies were well designed and conducted. The studies looked at the effect of these services in patients with different types of conditions: patients who had a stroke, older patients with different types of medical conditions and patients who had surgery. These studies show that, when compared to in-hospital care, early discharge hospital at home services probably make little or no difference to patient health outcomes or being readmitted to hospital, yet probably decreases hospital length of stay. Patients who receive care at home might be more satisfied and less likely to be admitted to institutional care. There is little evidence of cost savings to the healthcare system of discharging patients home early to hospital at home care.
Conclusions: Despite increasing interest in the potential of early discharge hospital at home services as a less expensive alternative to inpatient care, this review provides insufficient evidence of economic benefit (through a reduction in hospital length of stay) or improved health outcomes.

Additional Notes/Comments

This article is an update to the 6/20/2005 version entitled *Hospital at home versus in-patient hospital care*

Relevant Literature

Key words: Cost; Home Health; Home Hospitalization

Journal	Title	Date
Journal of Emergency Medicine	Survey and Chart Review to Estimate Medicare Cost Savings for Home Health as an Alternative to Hospital Admission Following Emergency Department Treatment	12/1/2016

Purpose/Abstract

Background: Almost 70% of hospital admissions for Medicare beneficiaries originate in the emergency department (ED). Research suggests that some of these patients' needs may be better met through home-based care options after evaluation and treatment in the ED.
Objective: The authors sought to estimate Medicare cost savings resulting from using the Home Health benefit to provide treatment, when appropriate, as an alternative to inpatient admission from the ED.
Methods: This is a prospective study of patients admitted from the ED. A survey tool was used to query both emergency physicians (EPs) and patient medical record data to identify potential candidates and treatments for home-based care alternatives. Patient preferences were also surveyed. Cost savings were estimated by developing a model of Medicare Home Health to serve as a counterpart to the actual hospital-based care.
Results: EPs identified 40% of the admitted patients included in the study as candidates for home-based care. The top three major diagnostic categories included diseases and disorders of the respiratory system, digestive system, and skin. Services included intravenous hydration, intravenous antibiotics, and laboratory testing. The average estimated cost savings between the Medicare inpatient reimbursement and the Home Health counterpart was approximately $4000. Of the candidate patients surveyed, 79% indicated a preference for home-based care after treatment in the ED.
Conclusions: Some Medicare beneficiaries could be referred to Home Health from the ED with a concomitant reduction in Medicare expenditures. Additional studies are needed to compare outcomes, develop the logistical pathways, and analyze infrastructure costs and incentives to enable Medicare Home Health options from the ED.

Additional Notes/Comments

Relevant Literature

Key words: Mobile Acute Care Team; Hospital at Home Programs; Hospital at Home Trial; Johns Hopkins Hospital at Home; Hospital at Home Acute Care; COPD Hospital at Home; HF Hospital at Home

Journal	Title	Date
Medical Care	Health Care Provider Evaluation of a Substitutive Model of Hospital at Home	9/1/2009

Purpose/Abstract

Objective: To evaluate Hospital at Home (HaH), a substitute for inpatient care, from the perspectives of participating providers.
Research Design: Multivariate general estimating equations regression analyses of a patient-specific survey of providers delivering HaH care in a prospective, nonrandomized clinical trial.
Subjects: Eleven physicians and 26 nurses employed in 3 Medicare-Advantage plans and 1 Veterans Administration medical center.
Measure: Problems with care; benefits; problem-free index.
Results: Case response rates were 95% and 82% for physicians and nurses, respectively. The overall problem-free index was high (mean 4.4, median 5, scale 1-5). "Major" problems were cited for 14 of 84 patients (17%), most relating to logistic issues without adverse patient outcomes. Positive effects included quicker patient functional recovery, greater opportunities for patient teaching, and increased communication with family caregivers. In multivariate analysis, the problem-free index was lower for nurses compared with physicians in one site; for patients with cellulitis; and for patients with a higher acuity (APACHE II) score. HaH physicians and nurses differed in their judgments of hours of continuous nursing required by patients.
Conclusions: The health care provider evaluation of substitutive HaH care was positive, providing support for the viability of this innovative model of care. Without provider support, no new model of care will survive. These findings also provide insight into areas to attend to in implementation. Organizations considering adoption of the HaH should monitor provider views to promote quality improvement in HaH.

Additional Notes/Comments

Relevant Literature

Key words: Mobile Acute Care Team; Hospital at Home Programs; Hospital at Home Trial; Johns Hopkins Hospital at Home; Hospital at Home Acute Care; COPD Hospital at Home; HF Hospital at Home

Journal	Title	Date
Journal of the American Geriatrics Society	Comparison of Functional Outcomes Associated with Hospital at Home Care and Traditional Acute Hospital Care	9/1/2009

Purpose/Abstract

Objectives: To compare differences in the functional outcomes experienced by patients cared for in Hospital at Home (HaH) and traditional acute hospital care.
Design: Survey questionnaire of participants in a prospective nonrandomized clinical trial.
Setting: Three Medicare managed care health systems and a Veterans Affairs Medical Center.
Participants: Two hundred fourteen community-dwelling elderly patients who required acute hospital admission for community-acquired pneumonia, exacerbations of chronic heart failure or chronic obstructive pulmonary disease, or cellulitis, 84 of whom were treated in HaH and 130 in an acute care hospital.
Intervention: Treatment in a HaH care model that substitutes for care provided in the traditional acute care hospital.
Measurements: Change in activity of daily living (ADL) and instrumental activity of daily living (IADL) scores from 1 month before admission to 2 weeks post admission to HaH or acute hospital and the proportion of groups that experienced improvement, no change, or decline in ADL and IADL scores.
Results: Patients treated in HaH experienced modest improvements in performance scores, whereas those treated in the acute care hospital declined (ADL, 0.39 vs −0.60, P=.10, range −12.0 to 7.0; IADL 0.74 vs −0.70, P=.007, range −5.0 to 10.0); a greater proportion of HaH patients improved in function and smaller proportions declined or had no change in ADLs (44% vs 25%, P=.10) or IADLs (46% vs 17%, P=.04).
Conclusion: HaH care is associated with modestly better improvements in IADL status and trends toward more improvement in ADL status than traditional acute hospital care.

Additional Notes/Comments

Relevant Literature

Key words: Hospital at Home; Hospital at Home Model; Medicare;

Journal	Title	Date
Canadian Medical Association Journal	Avoiding hospital admission through provision of hospital care at home: a systematic review and meta-analysis of individual patient data	1/20/2009

Purpose/Abstract

Background: Avoidance of admission through provision of hospital care at home is a scheme whereby health care professionals provide active treatment in the patient's home for a condition that would otherwise require inpatient treatment in an acute care hospital. We sought to compare the effectiveness of this method of caring for patients with that type of in-hospital care.
Methods: Authors searched the MEDLINE, EMBASE, CINAHL and EconLit databases and the Cochrane Effective Practice and Organisation of Care Group register from the earliest date in each database until January 2008. Authors included randomized controlled trials that evaluated a service providing an alternative to admission to an acute care hospital. They excluded trials in which the program did not offer a substitute for inpatient care. Authors performed meta-analyses for trials for which the study populations had similar characteristics and for which common outcomes had been measured.
Results: Researchers included 10 randomized trials (with a total of 1327 patients) in our systematic review. Seven of these trials (with a total of 969 patients) were deemed eligible for meta-analysis of individual patient data, but we were able to obtain data for only 5 of these trials (with a total of 844 patients [87%]). There was no significant difference in mortality at 3 months for patients who received hospital care at home (adjusted hazard ratio [HR] 0.77, 95% confidence interval [CI] 0.54-1.09, p = 0.15). However, at 6 months, mortality was significantly lower for these patients (adjusted HR 0.62, 95% CI 0.45-0.87, p = 0.005). Admissions to hospital were greater, but not significantly so, for patients receiving hospital care at home (adjusted HR 1.49, 95% CI 0.96-2.33, p = 0.08). Patients receiving hospital care at home reported greater satisfaction than those receiving inpatient care. These programs were less expensive than admission to an acute care hospital ward when the analysis was restricted to treatment actually received and when the costs of informal care were excluded.
Interpretation: For selected patients, avoiding admission through provision of hospital care at home yielded similar outcomes to inpatient care, at a similar or lower cost.

Additional Notes/Comments

This article is mentioned in the Commonwealth Fund the Presbyterian Healthcare Services Hospital at Home case study.

Relevant Literature

Key words: Mobile Acute Care Team; Hospital at Home Programs; Hospital at Home Trial; Johns Hopkins Hospital at Home; Hospital at Home Acute Care; COPD Hospital at Home; HF Hospital at Home

Journal	Title	Date
Annals of Internal Medicine	Hospital at Home: Feasibility and Outcomes of a Program To Provide Hospital-Level Care at Home for Acutely Ill Older Patients	12/6/2005

Purpose/Abstract

Background: Acutely ill older persons often experience adverse events when cared for in the acute care hospital.
Objective: To assess the clinical feasibility and efficacy of providing acute hospital-level care in a patient's home in a hospital at home.
Design: Prospective quasi-experiment.
Setting: 3 Medicare-managed care (Medicare + Choice) health systems at 2 sites and a Veterans Administration medical center.
Participants: 455 community-dwelling elderly patients who required admission to an acute care hospital for community-acquired pneumonia, exacerbation of chronic heart failure, exacerbation of chronic obstructive pulmonary disease, or cellulitis.
Intervention: Treatment in a hospital-at-home model of care that substitutes for treatment in an acute care hospital.
Measurements: Clinical process measures, standards of care, clinical complications, satisfaction with care, functional status, and costs of care.
Results: Hospital-at-home care was feasible and efficacious in delivering hospital-level care to patients at home. In 2 of 3 sites studied, 69% of patients who were offered hospital-at-home care chose it over acute hospital care; in the third site, 29% of patients chose hospital-at-home care. Although less procedurally oriented than acute hospital care, hospital-at-home care met quality standards at rates similar to those of acute hospital care. On an intention-to-treat basis, patients treated in hospital-at-home had a shorter length of stay (3.2 vs. 4.9 days) ($P = 0.004$), and there was some evidence that they also had fewer complications. The mean cost was lower for hospital-at-home care than for acute hospital care ($5081 vs. $7480) ($P < 0.001$).
Limitations: Possible selection bias because of the quasi-experimental design and missing data, modest sample size, and study site differences.
Conclusions: The hospital-at-home care model is feasible, safe, and efficacious for certain older patients with selected acute medical illnesses who require acute hospital-level care.

Additional Notes/Comments

Section 3. Related Literature

Related Literature		
Key words: Hospital at Home; Home-Based Healthcare; Home Hospitalization		
Journal	**Title**	**Date**
Western Journal of Emergency Medicine	Perspectives on Home-based Healthcare as an Alternative to Hospital Admission After Emergency Treatment	5/15/2017
Purpose/Abstract		
Introduction: The study objective was to explore emergency physicians' (EP) awareness, willingness, and prior experience regarding transitioning patients to home-based healthcare following emergency department (ED) evaluation and treatment; and to explore patient selection criteria, processes, and services that would facilitate use of home-based healthcare as an alternative to hospitalization. ***Methods:*** The authors provided a five-question survey to 52 EPs, gauging previous experience referring patients to home-based healthcare, patient selection, and motivators and challenges when considering home-based options as an alternative to admission. In addition, three focus groups and four interviews were conducted. ***Results:*** Of participating EPs, 92% completed the survey, 38% reported ordering home-based healthcare from the ED as an alternative to admission, 90% ranked cellulitis among the top three medical conditions for home-based healthcare, 90% ranked "reduce unnecessary hospitalizations and observation stays" among their top three perceived motivators for using home-based care, and 77% ranked "no existing process in place to refer to home-based care" among their top three perceived barriers. Focus group and interview themes included the need for alternatives to admission; the longer-term benefits of home-based healthcare; the need for streamlined transition processes; and the need for highly qualified home-care staff capable of responding the same day or within 24 hours. ***Conclusion:*** The study found that EPs are receptive to referring patients for home-based healthcare following ED treatment and believe people with certain diagnoses are likely to benefit, with the dominant barrier being the absence of an efficient referral process.		
Additional Notes/Comments		

Related Literature

Key words: Hospital at Home

Journal	Title	Date
Respiratory Care	"Hospital at Home" for Neuromuscular Disease Patients With Respiratory Tract Infection: A Pilot Study	12/1/2013

Purpose/Abstract

Background: The "hospital-at-home" model may provide adequate care without an adverse effect on clinical outcome, and is generally well received by users. Our objective was to compare hospital-at-home and in-patient hospital care for neuromuscular disease (NMD) patients with respiratory tract infections.

Methods: The authors conducted a prospective randomized controlled trial in a university teaching hospital offering secondary care service to a population of approximately 500,000. We recruited selected NMD patients with respiratory tract infection for whom hospital admission had been recommended after medical assessment. Hospital-at-home was provided as an alternative to in-patient admission. The main outcome measures were need for hospitalization, treatment failure, time to recovery, death during the first 3 months following exacerbation, and cost of patient care.

Results: Among 59 consecutive NMD patients eligible for the study, 53 met the criteria for hospital-at-home. Twenty-six subjects were randomized to home care and 27 to hospital care. No significant differences were found in treatment failure (8/26 vs 13/27, P = .19), time to recovery (8.9 ± 4.6 vs 9 ± 8.9 d, P = .21), or mortality at 3 months (3/26 vs 4/27 deaths, P = .42) between the groups. Hospital-at-home failure was independently correlated with type of NMD (P = .004) with an odds ratio of failure of 17.3 (95% CI 2.1 to infinity) for subjects with amyotrophic lateral sclerosis. The total and daily direct cost of patient healthcare was significantly lower for the subjects who were successfully treated at home, compared to the hospitalized individuals.

Conclusions: Hospital-at-home is an effective alternative to hospital admission for selected NMD patients with respiratory tract infections.

Additional Notes/Comments

Related Literature

Key words: Comprehensive Health Care; Medical Home; Hospital at Home

Organization	Title	Date
Journal of the American Geriatrics Society	Successful Models of Comprehensive Care for Older Adults with Chronic Conditions: Evidence for the Institute of Medicine's "Retooling for an Aging America" Report	12/1/2009

Purpose/Abstract

Objective: To help inform efforts to overhaul the ailing U.S. healthcare system, including those related to the "medical home," models of comprehensive health care that have shown the potential to improve the quality, efficiency, or health-related outcomes of care for chronically ill older persons were identified.
Methods: Using multiple indexing terms, the MEDLINE database was searched for articles published in English between January 1, 1987, and May 30, 2008, that reported statistically significant positive outcomes from high-quality research on models of comprehensive health care for older persons with chronic conditions. Each selected study addressed a model of comprehensive health care; was a meta-analysis, systematic review, or trial with an equivalent concurrent control group; included an adequate number of representative, chronically ill participants aged 65 and older; used valid measures; used reliable methods of data collection; analyzed data rigorously; and reported significantly positive effects on the quality, efficiency, or health-related outcomes of care.
Findings: Of 2,714 identified articles, 123 (4.5%) met these criteria. Fifteen models have improved at least one outcome: interdisciplinary primary care (1), models that supplement primary care (8), transitional care (1), models of acute care in patients' homes (2), nurse–physician teams for residents of nursing homes (1), and models of comprehensive care in hospitals (2).
Conclusion: Policy makers and healthcare leaders should consider including these 15 models of health care in plans to reform the U.S. healthcare system. The Centers for Medicare and Medicaid Services would need new statutory flexibility to pay for care by the nurses, social workers, pharmacists, and physicians who staff these promising models.

Additional Notes/Comments

Related Literature

Key words: Home Health Care; Hospital at home;

Journal	Title	Date
Journal of the American Geriatric Society	Satisfaction with Hospital at Home Care	7/26/2006

Purpose/Abstract

Objectives: To examine differences in satisfaction with acute care between patients who received treatment in a physician-led substitutive Hospital at Home program and those who received usual acute hospital care.
Design: Survey questionnaire of participants in prospective, nonrandomized clinical trial.
Setting: Three Medicare-managed care health systems and a Department of Veterans Affairs Medical Center.
Participants: Two hundred fourteen community-dwelling elderly patients who required acute hospital admission for community-acquired pneumonia, exacerbation of chronic heart failure, exacerbation of chronic obstructive pulmonary disease, or cellulitis, 84 of whom were treated in Hospital at Home and 130 in the acute care hospital.
Intervention: Treatment in a Hospital at Home model of care that substitutes for treatment in an acute care hospital.
Measurements: A 40-question survey measuring nine domains of care for patients and a 37-question survey measuring eight domains of care for family members.
Results: A higher proportion of patients were satisfied with treatment in Hospital at Home than with the acute care hospital in eight of nine domains, and this difference was statistically different in four domains. Hospital at Home patients were more likely than acute hospital patients to be satisfied with their physician (adjusted odds ratio (AOR)=3.84, 95% confidence interval (CI)=1.32–11.19), comfort and convenience of care (AOR=6.52, 95% CI=1.97–21.56), admission processes (AOR=5.90, 95% CI=2.21–5.76), and the overall care experience (AOR=2.98, 95% CI=1.08–8.21). Family members of patients treated in Hospital at Home were also more likely to be satisfied with multiple domains of care.
Conclusion: Hospital at Home care was associated with greater satisfaction than acute hospital inpatient care for patients and their family members. These findings support further dissemination of the Hospital at Home care model.

Additional Notes/Comments

Section 4. References

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