

Spring 2019

The impact on cost, quality, and patient satisfaction when delivering care to acutely ill adults in an at-home care model versus an inpatient hospital setting.

Franchesca M. Adams
University of New Hampshire, Durham

Follow this and additional works at: <https://scholars.unh.edu/honors>

Part of the [Cardiovascular Diseases Commons](#), [Community Health and Preventive Medicine Commons](#), [Endocrine System Diseases Commons](#), [Geriatric Nursing Commons](#), [Health and Medical Administration Commons](#), [Patient Safety Commons](#), [Public Health and Community Nursing Commons](#), and the [Respiratory Tract Diseases Commons](#)

Recommended Citation

Adams, Franchesca M., "The impact on cost, quality, and patient satisfaction when delivering care to acutely ill adults in an at-home care model versus an inpatient hospital setting." (2019). *Honors Theses and Capstones*. 453.
<https://scholars.unh.edu/honors/453>

This Senior Honors Thesis is brought to you for free and open access by the Student Scholarship at University of New Hampshire Scholars' Repository. It has been accepted for inclusion in Honors Theses and Capstones by an authorized administrator of University of New Hampshire Scholars' Repository. For more information, please contact nicole.hentz@unh.edu.



At-Home Care for Acutely Ill Adults

Franchesca Adams, HMP Student Researcher, Anne Jamieson, J.D., MBA, RN



Background

The Triple Aim is a method of improving the patient's care experience and the health of the population, while reducing the per capita cost of health care; through delivery of the right care, to the right patient, at the right time¹. When determining the "right time" of care, the focus should be aimed at finding the best site of service. Accounting for nearly 18% of the United States' GDP, healthcare costs have reached an unsustainable growth rate. The citizens of the United States have been forced to ask, "How can I afford healthcare?" These ever growing costs can only be addressed and examined with the following question in mind: "How can we make health care more affordable?"

Intervention

Historically, physicians in the US delivered care to their patients by making home visits. Over time, the healthcare delivery system evolved and the care setting shifted, primarily to inpatient hospital care. With hospitals as the primary site of acute care an increase in healthcare expenses resulted due to the high overhead costs associated with professional fees and the many services provided at each organization. Acute care is provided to patients suffering an episode of an illness that was onset suddenly and potentially the cause of an underlying chronic condition. Based on trials conducted using an at-home care delivery model, the costs associated with acute care episodes have been found to be 52% lower than those associated with traditional inpatient hospital stays¹. In addition, these trials found no significant change in care giver burden⁴⁻⁵, however, there is evidence to suggest improved functionality and safety for the patients^{1-3,6}.

Purpose

To assess the feasibility of an at-home care model for acutely ill adults seeking care at Critical Access Hospitals (CAHs).

Methods

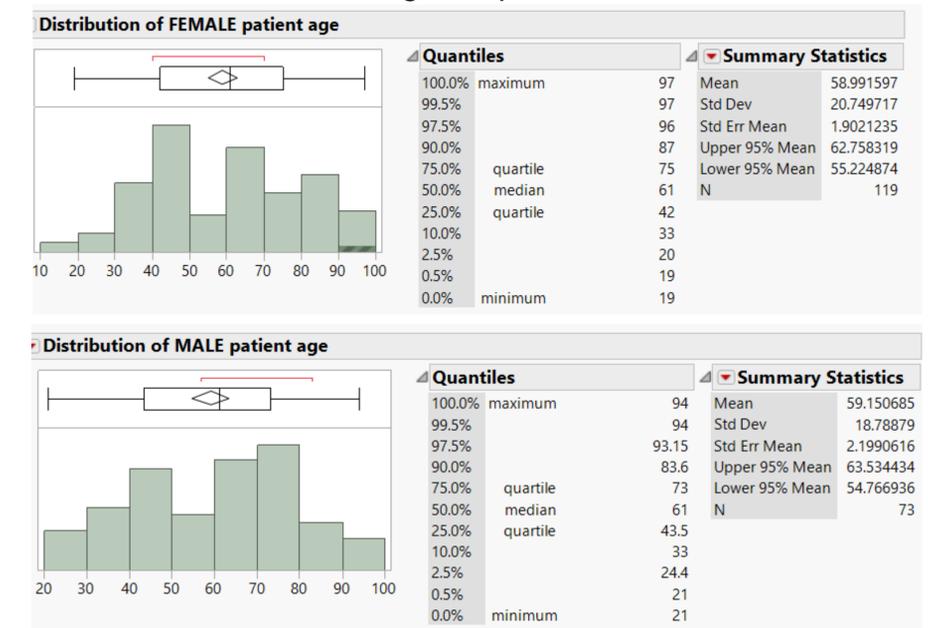
De-identified hospital coded inpatient data was analyzed to determine whether or not this model is feasible for Critical Access Hospitals (CAHs). A critical access hospital is allowed a maximum of 25 licensed beds. Critical access designation is assigned to rural area hospitals. These organizations have been deemed necessary to their community residents, who would otherwise have no access to emergency services. The data included patients presenting at the emergency department, who were then admitted for inpatient acute care for the following conditions: congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), asthma, dehydration, and cellulitis. Data analysis included utilization and volume levels, demographic characteristics, average length of stay (ALOS), disposition codes (site discharged to), and readmission rates. (Admissions) N= 192 (Date range: January 4, 2017-February 22, 2019)

Parameter	CHF/COPD	Diabetes	Asthma	Dehydration	Cellulitis	Total
Volume by condition	44	44	32	21	51	192
Male patients	20	8	9	11	25	73
Female patients	24	36	23	10	26	119
ALOS (days)	2-3 days	2-3 days	2-3 days	1-2 days	3-4 days	-
Maximum LOS (days)	6 days	9 days	6 days	6 days	8 days	-
Most freq. disposition code	Home	Home	Home	Home	Home	-
Rate of 30/45 day readmissions	1	21	4	0	2	29

Medicare Inpatient Encounters FY 2018 (Community Level NH Hospital)		
Encounter-MS DRG	Encounter-MS DRG Desc	Avg Enc NPSR
202	BRONCHITIS ASTHMA W CC/MCC	\$ 6,246
204	RESPIRATORY SIGNS SYMPTOMS	\$ 5,467
293	HEART FAILURE SHOCK W/O CC/MCC	\$ 4,337
602	CELLULITIS W MCC	\$ 9,156
637	DIABETES W MCC	\$ 8,656

Results

Several United States trials have found success in lowering the cost per acute care episode, while maintaining quality of care and patient satisfaction, when testing an at-home care model. After examining each facet involved in this type of care delivery—at the community hospital level—and assessing the capabilities of CAHs, there is the potential to lower both the cost per episode of care and the number of readmissions associated with an original episode of care.



Implications for Practice and Policy

Delivering acute care for adults in the home allows the provider to see, first-hand, how the patient's life style choices are impacting their health outcomes as well as their ability to comply with treatment measures. Traditional inpatient care does not afford the care team this opportunity because the hospital is a controlled environment. At-home care models are not currently utilized within the US healthcare system, however, they are widely implemented internationally³. Many US trials have been successfully conducted studying this care delivery model, although one recurring issue is reimbursement. As our healthcare system shifts from volume to value-based care, there is an opportunity to establish a bundled payment model for acute care delivered in the patient's home setting⁷⁻⁸.

[1] Levine, David M., et al. "Hospital-Level Care at Home for Acutely Ill Adults: a Pilot Randomized Controlled Trial." *Journal of General Internal Medicine*, vol. 33, no. 5, 2018, pp. 729-736. doi:10.1007/s11606-018-4307-z. [2] "Hospital Compare Quality of Care Profile Page." *Medicare.gov - the Official U.S. Government Site for Medicare*, www.medicare.gov/hospitalcompare/profile.html#profTab=1&ID=301308&state=NH&lat=0&lng=0&name=VALLEY%20REGIONAL%20HOSPITAL&Distn=0.0. [3] Cryer, Lesley, et al. "Costs For 'Hospital At Home' Patients Were 19 Percent Lower, With Equal Or Better Outcomes Compared To Similar Inpatients." *Health Affairs*, vol. 31, no. 6, 2012, pp. 1237-1243. doi:10.1377/hlthaff.2011.1132. [4] Landers, Steven, et al. "The Future of Home Health Care." *Home Health Care Management & Practice*, vol. 28, no. 4, 2016, pp. 262-278. doi:10.1177/1084822316666368. [5] Markkanen, Pia, et al. "Safety Risks Among Home Infusion Nurses and Other Home Health Care Providers." *Journal of Infusion Nursing*, vol. 40, no. 4, 2017, pp. 215-223. doi:10.1097/inan.0000000000000227. [6] NATIONAL AND STATE HEALTHCARE ASSOCIATED INFECTIONS PROGRESS REPORT: Centers for Disease Control and Prevention, 2016, pp. 23-24. NATIONAL AND STATE HEALTHCARE ASSOCIATED INFECTIONS PROGRESS REPORT [7] Federman, Alex D., 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*, vol. 178, no. 8, 2018, p. 1033. doi:10.1001/jamainternmed.2018.2862. [8] Board, Neville, et al. "A Randomised Controlled Trial of the Costs of Hospital as Compared with Hospital in the Home for Acute Medical Patients." *Australian and New Zealand Journal of Public Health*, vol. 24, no. 3, 2000, pp. 305-311. doi:10.1111/j.1467-842x.2000.tb01573.x.