

HOSPITAL-LEVEL CARE AT HOME FOR ACUTELY ILL ADULTS IN RURAL SETTINGS: A RANDOMIZED CONTROL TRIAL

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BACKGROUND

PROBLEM: Most home hospital efforts have occurred in urban areas. Whether home hospital has similar efficacy in rural areas, where significant access concerns exist, is unknown.

GOAL: Implement a randomized controlled trial (RCT) of hospital-level care at home in rural areas to see if there are similar outcomes to studies that test the model in urban areas.

METHODS

1. Parallel patient-level RCT: intervention, home; control, hospital. Home patients received two daily visits from RN/EMT-P, one visit from MD, IV infusions, oxygen and other care as needed.
2. Data reported on **cost, patient outcomes, readmission, and escalation of care.** Post-hoc analysis on patients transferred home in <3 days compared to control patients.

RESULTS

- 161 patients (79 home; 82 control) were randomized at 3 sites in the US and Canada
- 63% female, 64.7 mean age (SD, 15.7), 95% White
- Most common diagnoses:
 - COPD – 21%
 - Cellulitis – 13%
 - Pneumonia – 19%
 - Complicated UTI/pyelonephritis – 10%
 - Other infection – 19%
 - Heart failure – 14%
- Mean length of stay for entire hospitalization was 6.7 days (SD, 5.0) for home patients and 5.4 days (SD, 4.4) for control patients

DISCUSSION

- Our results suggest that quality and safety and cost were not compromised during home hospital care.
- Patient experience improved with home hospital care.
- There was no difference in costs between control and home hospital patients.
- Patients transferred home in <3 days* had lower total costs (acute care episode + 30 days post-discharge) than control patients.


Quality and safety
were not compromised
during acute hospital-level care at home in rural settings.


Intervention patients transferred home in <3 days had **27% lower total costs** than control patients.*

88% of home patients said they would recommend their home hospital experience

*Intervention patients transferred home < 3 days are patients who were admitted to the brick-and-mortar hospital (BAM), randomized to home hospital, and transferred to home hospital within 3 days of their admission.

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The Rural Home Hospital Randomized Controlled Trial was funded by the Thompson Family Foundation. Special thank you to our RCT sites: Alberta Health Services, Wetaskiwin, Alberta, CA | Appalachian Regional Healthcare, Hazard, KY, USA | Blessing Health Services, Quincy, IL, USA

PATIENT HEALTH CARE USE

n (%)	All (n=161)	Home (n=79)	Hospital (n=82)	Home <3 days in BAM* (n=40) [†]
LOS, mean (SD)	6.01 (4.72)	6.67 (5.02)	5.38 (4.36)	3.65 (1.75)
30-d Unplanned readmission	22 (13.66)	8 (10.13)	14 (17.07)	3 (7.5)
30-d ED visit or ED observation	30 (18.63)	16 (20.25)	14 (17.07)	7 (17.5)
Lab counts per day, mean (SD)	7.62 (4.38)	6.02 (3.16)	9.16 (4.84)	6.05 (3.82)
30-d Home health utilization, mean (SD)	0.72 (2.45)	0.82 (2.85)	0.61 (2)	0.49 (1.82)
Follow-up appt within 14 days of discharge	74 (55.64)	38 (59.38)	36 (52.17)	18 (54.5)

PATIENT EXPERIENCE

n (%)	All (n=161)	Home (n=79)	Hospital (n=82)	Home <3 days in BAM* (n=40) [†]
Picker patient experience, mean (SD)	12.23 (3.44)	13.41 (2.57)	11 (3.81)	13.56 (2.47)
Global satisfaction, mean (SD)	8.88 (1.54)	9.44 (1.05)	8.34 (1.74)	9.61 (0.77)
Recommend care, mean (SD)	9.05 (1.53)	9.64 (0.80)	8.53 (1.82)	9.77 (0.65)
Net promoter score (%)	65.75	88.41	45.45	88.57

SAFETY EVENTS

n (%)	All (n=161)	Home (n=79)	Hospital (n=82)	Home <3 days in BAM* (n=40) [†]
Escalation to ICU	0	0	0	0
Escalation back to hospital (non-ICU)	6 (3.7)	6 (7.6)	NA	1 (2.5)
Loss of consciousness	0	0	0	0
Death during admission	0	0	0	0
Death within 30-d	0	0	0	0

Values bolded have p-value <0.05

[†]A separate analysis comparing intervention patients who were transferred home within 3 days vs control was conducted



Hospital-level care at home for acutely ill adults in rural settings: A qualitative evaluation of a randomized controlled trial

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BACKGROUND

PROBLEM: Most home hospital efforts have occurred in urban areas. Qualitative outcomes among patients who receive home hospital in rural settings are less understood.

GOAL: Implement a randomized controlled trial of hospital-level care at home in rural areas to see if patient outcomes are similar to urban settings.

METHODS

1. Parallel patient-level RCT: intervention, home; control, hospital.
2. Home patients received two daily visits from RN/EMT-P, one visit from MD, IV infusions, oxygen and other care as needed.
3. Completed interviews with patients to ask about their **experience with home hospital, perceived quality and safety and comfort levels.**

Domain	Results
Perceived comfort	<ul style="list-style-type: none">• Patients appreciated the overall familiarity of being at home and in their own space.• Food delivery was appreciated by the patients but there were suggestions for improvement.• Being at home allowed patients to enjoy their own hobbies and be with their loved ones.
Perceived quality of care	<ul style="list-style-type: none">• Patients felt well cared for by their care team.• All patients when asked said that they would recommend rural home hospital to a family member or friend
Experience with technology	<ul style="list-style-type: none">• Most patients enjoyed the use of technology but there were challenges with initial connectivity and learning to use it.

RESULTS

- 40 interviews completed across three study sites
- 3 domains identified from the qualitative interviews
- Mean age of those interviewed was 67 years (SD = 16.79), 29% were female, 21% lived alone and 100% were white.

CONCLUSION

- Patients **had positive perceived comfort at home** including being with family and friends and in a familiar environment.
- Patients were **satisfied with the quality of care at home and felt that it was effective.**
- Most patients reported **positive use of technology at home.**

"I think the program that you guys started, was amazing. A lot of patients, I believe, would feel more comfortable and more at ease if they would do more of it."

"I loved being able to be home...the care was immaculate. I couldn't have asked for better. I needed to be home because of my brother. Being in the hospital just wasn't an option for me...it was a lifesaver for me, and it was very effective."

"There was people coughing and it was very noisy [in hospital ward] ...It was very positive for me to come home and be in my own home."

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