

Scoping and Testing Rural Acute Care at Home: A Simulation Analysis

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SUPPLEMENT

Sample landscape analysis

Rural Counties- Utah State County classification^a (1)

County	County Population Estimate (2017) ^b	% Pop in Poverty ^c	County health rankings ^d (2)	Utah Health Improvement Index ^e (3)	RUCA ^f (County)	Primary Care Clinics/Independent Providers (4)	Acute Care Hospital	Does Hospital provide Emergency Services ?	FAR ^g (Zip)	EMS Super Rural (Zip) ^h
Uintah	35,150	11.66	Health outcomes: 24; Health factors: 26	Average HII (101.46)	8,5,4	Basic Medical Clinic 84078; Valley Family Clinic 84078	Ashley Regional Medical Center, 84078	Yes	2	Yes
							Uintah Basin Medical Center (partnership with Intermountain), 84066	Yes	2	Yes
Summit	41,106	8.41	Health outcomes:2 Health factors: 2	Low HII (88.67)	10,7,4,2	Coalville Health Center 84017;Kamas Health Center 84036; UUHC Redstone Health Center 84098	Park City Hospital (Intermountain) 84060	Yes	0	Yes
Wasatch	32,106;	8.22	Health outcomes: 2; Health factor: 6	Low HII 90.67	4	Wasatch Medical Clinic 84032, Intermountain Heber Valley Clinic 84032; several independent providers	Heber Valley Hospital (CAH), 84032	Yes	0	Yes
							Utah Valley Hospital, 84604	Yes	0	No
Carbon	20,295	14.13	Health outcomes: 27; Health Factors: 20	High HII-109.61	4,5	Several private PCP providers; The Family Clinic 84501; Castle Country Family Medicine 84501; Carbon Medical	Castleview Hospital, 84501	Yes	2	Yes

						Service Association 84520; Helper Clinic 84526				
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Note: Counties listed are examples and do not necessarily represent where mock admissions were performed

^a County classifications: Frontier (6 or fewer persons per square mile); Rural (more than 6 but less than 100 persons per square mile); Urban (100 or more persons per square mile)

^b U.S Census Bureau Estimates, 2017

^c U.S Census Bureau Estimates, 2017

^d County health rankings-Health outcomes: the overall rankings in health outcomes represent how healthy counties are within the state, the healthiest county in the state is ranked #1. The ranks are based on two types of measures: how long people live and how healthy people feel while alive; Health Factors: the overall rankings in health factors represent what influences the health of a county. They are an estimate of the future health of counties as compared to other counties within a state. The ranks are based on four types of measures: health behaviors, clinical care, social and economic, and physical environment factors.

^e The Utah Health Improvement Index (HII): Developed by the Utah Department of Health, the HII is a composite measure of social determinants of health by geographic area. The higher the index, the more improvement the area needs

^f Rural-urban commuting code area codes

^g Frontier and remote area codes

^h Centers for Medicare & Medicaid Services (CMS) ambulance fee schedule

Mock admission cases

Case 1. Male in his 70s with HF notes weight gain and new dyspnea on exertion over last 2 weeks. He notes significant dietary indiscretion leading up to his weight gain. He has tried following his doctor's instructions to double his furosemide, but he continues gaining weight and becoming more breathless. He has a new 4 pillow orthopnea. No chest pain, cough, fevers, chills, nausea, vomiting, or diarrhea.

Case 2. Female in her 80s with COPD notes shortness of breath, newly increased sputum production, and worsening cough for the past 4 days. She notes a preceding upper respiratory tract infection obtained likely from her spouse. She struggles with making it from her living room to her kitchen due to shortness of breath. Her sputum remains clear. No chest pain, fevers, chills, nausea, vomiting, or diarrhea.

Clinician post-discharge interview guide

1. Please share with me your experience during the home hospital admission. Walk me through from admission to discharge.

Admission:

Probe: What went smoothly? What could have gone better?

Probe: What would you adjust or change?

Probe: How could we improve logistics for home hospital deployment?

Daily rounds:

Probe: What went smoothly? What could have gone better?

Probe: What would you adjust or change?

Probe: How could we improve logistics for daily rounds?

Discharge:

Probe: What went smoothly? What could have gone better?

Probe: What would you adjust or change?

Probe: How could we improve logistics for home hospital discharge?

Probe: What surprises were there during your home hospital admission? Can you talk a little about those?

Probe: Discuss how easy or hard it was to work with other members of the team. Why was that?

Probe: How hard was it to use the technology?

2. If this had been a real admission, would care have been delivered effectively and safely? Why or why not?

Probe: What were the biggest challenges to providing care to a home hospital patient?

Probe: How could you have done it differently?

Probe: How well were you able to deliver the care you wanted remotely? Did you have any concerns about patient safety – if so, please describe.

Probe: Did you have challenges with equipment malfunction, communications, connectivity at any point during the home hospital process? If so, please describe what happened and how it was resolved.

Probe: What sort of technologies or capabilities would make you more effective?

5. What did you like best about providing care through home hospital?

Probe: How did you feel your relationship with the patient and their caregiver(s) differed in the home hospital setting vs. typical inpatient care?

Probe: How did you feel about traveling to/from the patient's home?

6. In your opinion, was the patient's and caregiver(s) experience optimal in the home hospital setting? Why or why not?

7. After your experience with this mock admission, what sort of training or support do you think would be helpful for clinicians providing home hospital in rural areas?

8. Is there anything else you think we should know about your home hospital experience?

Patient and Caregiver post-discharge interview guide

1. Please share with me your experience during the home hospital admission. Walk me through from admission to discharge.

Let's start with the admission process:

Probe: What went smoothly? What could have gone better?

Probe: What would you adjust or change about the admission process?

Probe: (*challenges/difficulties*) How could the home hospital team have made the admission process better for you?

Probe: How comfortable were you during your admission, physically and emotionally? How did it feel to have a care team in your home?

Let's talk about your home hospital stay after admission, including check-ins with your care team:

Probe: (Both patients and caregivers): How did you feel about your relationship with your clinician while in the home hospital? How did this relationship differ (if at all) from being in the hospital?

Probe: How comfortable were you during your admission? How did it feel to have a care team in your home? What could the team have done to be more sensitive to your home?

Probe: (Both patients and caregivers): How did you feel about the daily rounds with your clinician being done at home?

What about 'on-call' visits or phone calls? What did you like or not like about these check-ins being done at home?

Probe: How did it feel to be monitored in your home? Were you comfortable? Why or why not? Any concerns about monitoring (i.e. the equipment malfunctioned)?

Probe: How hard was it to use the technology the team brought?

Let's talk about the discharge process:

Probe: What went smoothly? What could have gone better?

Probe: What would you adjust or change about the discharge process?

Probe: (*challenges/difficulties*) How could the home hospital team have made the discharge process better for you?

Probe: How did it feel to be discharged directly to your home? What did you like about it? What didn't you like?

2. In general, how did you feel about receiving hospital care in your home?

Probe: How do you feel getting care in your home compares to the regular hospital?

Probe: What is your comfort level with receiving care remotely?

Probe: What was the quality of care like?

Probe (For patients): How safe did you feel receiving hospital care in your home? Why did you feel safe or unsafe?

Probe (For caregivers): How comfortable did you feel about your family member being cared for at home? How safe did you feel your family member was in home hospital?

3. For the patient who has a caregiver: How do you think the person who takes care of you would be affected by your home hospitalization?

Probe: (*more/less burdened*) How could we improve that?

4. What were the benefits to being hospitalized at home? What were the challenges?

5. What other improvements would you make to home hospital?

6. If you were to ever be hospitalized in the future, would you choose home hospital or regular hospital? Why?

7. Is there anything else you think we should know about your home hospital experience

References

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