Lessons Learned: A Mixed Methods Analysis of Barriers to Swing Bed Utilization in Critical Access Hospitals in Montana

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Abstract

Purpose: Critical access hospitals (CAHs) provide access to care and economic stability to rural

regions. At times rural populations need higher-level health care from distant urban-based acute care hospitals (ACHs), distancing them from their social network.

Sample/Method: This paper evaluates potential barriers to transferring patients back to CAH swing beds for restorative care through formative interviews with staff from both ACHs and CAHs. Four CAHs also completed workflow analytics to identify process factors that impede timely transfer of patients from ACHs to CAH swing beds.

Findings: Thematic messages included a lack of consensus about swing bed eligibility criteria and delay in response from CAHs on transfer requests. Workflow analytics identified numerous opportunities to improve efficiency in transfer requests. Results showed an average of 217.5 hours were required from time of transfer request to when the patient arrived to the CAH.

Conclusions: Educational programs are underway to help address these knowledge deficiencies and process barriers.

Keywords: Critical access hospital (CAH), Rural, Swing beds

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Rural populations in the US suffer disproportionate rates of disease and access to care (Amey, Miller, & Albrecht, 1997; Blair et al., 2006; Higginbotham, Moulder, & Currier, 2001; Liff, Chow, & Greenberg, 1991; Monroe, Ricketts, & Savitz, 1992). Elder rural populations, already known for high rates of poverty and low educational levels, experience more medical conditions and greater functional limitations than their urban counterparts (Congdon & Magilvy, 1998a, 1998b). This known phenomena is compounded by the distant access to tertiary medical care when needed (Calonge, 2001), and further complicates discharge planning for these

patients, especially when they require skilled-care to maximize the probability of re-stabilized health.

Most transition care processes at (primarily) urban-based acute care hospitals (ACHs) involve in-patient or transfers to skilled nursing facilities (SNFs) within the urban setting. Indeed, approximately 20 percent of Medicare beneficiaries alone are discharged to SNFS, with an average length-of-stay of 27 days (Grabowski, 2010; Herndon, Bones, Kurapati, Rutherford, & Vecchioni, 2011). For a rural and frontier patient, this lengthens the time away from one's community, family, and social network, potentially impairing the restorative process. Repeated research has found a strong sense of independence by rural elders and an influential family support network that may influence the decision-making process to seek care that is distant from one's home (Craig, 1994; Johnson, Weinert, & Richardson, 1998; Magilvy, Congdon, & Martinez, 1994). Older rural populations depend on family and their social network during time of acute or advanced chronic care (Long & Weinert, 1991), and one qualitative study found that many of these individuals consider transition of care away from home as "crises", and decisions were often made "hastily"(Magilvy & Congdon, 2000). Receiving restorative care at a CAH allows individuals to be re-immersed within their social network and families and, in most cases, easily transition back to their primary care home.

While CAHs serve an important role in providing acute care in rural/frontier areas, they remain underutilized in transitional and skilled-care from ACHs (Schlenker & Shaughnessy, 1989). This is a lost opportunity to bring patients closer to their communities, and, simultaneously, assist in the stability of the CAHs by using vacant hospital beds (Magilvy & Congdon, 2000). Indeed, many CAHs struggle financially in the US as a result of high rates of empty beds (Li, Schneider, & Ward, 2007; Schlenker & Shaughnessy, 1989). In the late 1980's

approximately 9% of covered SNF admissions in the US were to small, rural hospitals or CAHs known as swing beds that participate in Centers for Medicare and Medicaid Services (CMS) and have approval to provide post-hospital care (Silverman, 1990). In Montana, a decidedly rural state with 45 of its 56 counties considered 'frontier' based on population density (Montana Department of Public Health & Human Services, 2011), the status of CAHs has enormous impact both on local economy and resident health status. While swing-bed utilization rates in the state are variable, the service is still not self-supporting and many CAHs in Montana no longer offer SNFs (since 2003, approximately 15 CAH-based SNFs have closed). Efforts must be made to sustain CAHs as research has demonstrated the substantial economic impact they have in rural counties through tax generation and workforce development (Ona & Davis, 2011).

The current gap of utilization includes the lack of knowledge by ACHs of the accessible swing bed services offered by CAHs. This available service also goes unrecognized by eligible patients as this service or option is not offered. Little is known about the factors that impede the utilization of swing beds in CAHs for restorative care and there has been scarce research on the topic. The intent of this mixed-methods quality improvement program was to elucidate the opinions of key personnel in the discharge and admission processes of ACHs and CAHs in Montana and apply LEAN methods to conduct workflow analyses in an effort to identify process barriers.

Methods

Mineral Regional Health Center in Superior, MT received a Health Care Innovation Award from Center for Medicare and Medicaid Innovation (CMMI) in July 2012 to form the Center for Frontier Medicine Innovations and Research with the mission to improve the health and well-being of Montana residents. The Center for the Advancement of Healthcare Education

and Delivery Institutional Review Board (IRB) determined the research reported here to be exempt (IRB00009003). Montana, with 99.7% of its land mass designated as rural ("2010 Census Urban and Rural Classification and Urban Area Criteria," n.d.), is served by 46 Critical Access Hospitals (CAHs) and 9 Acute Care Hospitals (ACHs), 25 of which were partners on the Montana CMMI program. For the current program, formative interviews were conducted with case management directors and case manager staff at the two ACHs and with the directors of nursing, case managers, and key nursing staff from two CAHs to assess their understanding about the swing bed program and its appropriate use, swing bed criteria, and their usage and experiences in transferring patient to CAH swing beds. This convenience sample was selected by sending invitations to the CMMI program CAH partners, of which two agreed to participate, one from each side of the state. The two ACH serving the same general catchment community areas as the two CAHs also agreed to participate. Group and individual interviews were conducted by the Montana CMMI program's Chief Clinical Officer (CCO). Interviews were prompted by only 5 open-ended questions including, "What do you know about Swing Beds?"; "What type of patients are suitable for transfer for Swing Bed care?"; "What are the criteria for Swing Bed transfers/admittance?"; "What are your perceived benefits of using Swing Beds?"; "What are the barriers or reasons for not using Swing Beds?". All interviews were captured with manual notes and were transcribed and reviewed to ensure accuracy of the information. Any clarifications were made directly with the interviewees after the interviews. The CCO and another staff member independently reviewed the data highlighting themes and messages based on the root questions listed above. These were then compiled and categorized by the research team to identify barriers and opportunities related to swing bed use by ACHs.

Workflow and time-point analyses were then performed in five CAHs (two of which participated in the interviews described above) using LEAN Healthcare West methods. Again, these 5 CAHs represent a convenience sample and agreed to participate. CAH case managers or nursing supervisors responsible for patient transfer completed data entry sheets to document various specific elements in each of the 6 process categories, the time to complete each process category, and the time to progress to the next process category (i.e., waiting time). These 6 categories included (1) contact by ACHs, (2) determine swing bed availability, (3) evaluate admitting criteria for swing bed use, (4) identify an accepting physician, (5) schedule the transfer, and (6) admit to the CAH swing bed. An event was defined as being contacted by an ACH for a potential transfer to a CAH swing bed. Elements of each process category were then determined and documented. Minimum, maximum, and average times to complete each process category, and the transition between each process category, were analyzed using value stream mapping by eVSM software.

Results

Formative Interviews

Individual and group interviews were conducted with 22 directors of nursing, care management, and discharge planning staff members in 2 CAHs and 2 ACHs. These interviews resulted in four overarching themes discussed below.

Benefits of bringing patient closer to home. The general consensus was that there was value to bringing patients closer to home for their remaining post-acute care needs. There was an understanding of the importance of having patients closer to families and their social networks. Interviewees sensed this was important and preferred by patients.

Understanding of swing bed criteria. Discussions about swing bed admission criteria were assessed and compared against formal criteria set by CMS (Table 1).

Table 1

*Swing Bed Admission Criteria**

1. Be ordered by a physician
2. Require the skills of technical or professional personnel
3. Be furnished directly by, or under the supervision of, such personnel
4. Be provided on a daily basis for a condition:
    a. For which the beneficiary received inpatient hospital or inpatient Critical Access Hospital (CAH) services; **or**
    b. Which arose while the beneficiary was receiving care in a swing bed hospital for which he or she received inpatient hospital or inpatient CAH services.

*Source: Code of Federal Regulation, 42 CFR 409.31 [48 FR 12541, Mar. 25, 1983, as amended at 58 FR 30666, May 26, 1993; 68 FR 50854, Aug. 22, 2003; 70 FR 45055, Aug. 4, 2005]

There was a significant lack of consensus in both knowledge of swing bed criteria for admission and their interpretation. For example, many believed that if a patient did not have a condition that required rehabilitation therapy performed by a physical therapist (PT), occupational therapist (OT), or speech therapist, then the patient did not qualify for swing bed care and needed to be discharged either to home or to a nursing home to receive nursing care. Another disconnect was related to the acuity of the patient and the appropriateness to be transferred to a swing bed. At the ACH, patients were deemed appropriate for post-acute care following their minimum 3-day stay. However, upon receiving the patient at the CAH, the CAH staff evaluated and determined the patient as still needing acute care and, therefore, admitted to

acute care instead of swing care. This misunderstanding created a readmission statistic for the ACH, exacerbating the communication barriers between the two organizations.

Services available at swing bed CAHs. There was also a general lack of understanding of the significant heterogeneity in services provided by CAHs. A large amount of post-hospitalization care needed is secondary to orthopedic-based procedures such as knee and hip replacements, requiring formal PT/OT. Many CAHs lack PT/OT providers. On the other hand, swing beds are often overlooked as a source for restorative care including nutritional support and strengthening. Paradoxically, these are services that most CAHs can offer as these are delivered by nurses.

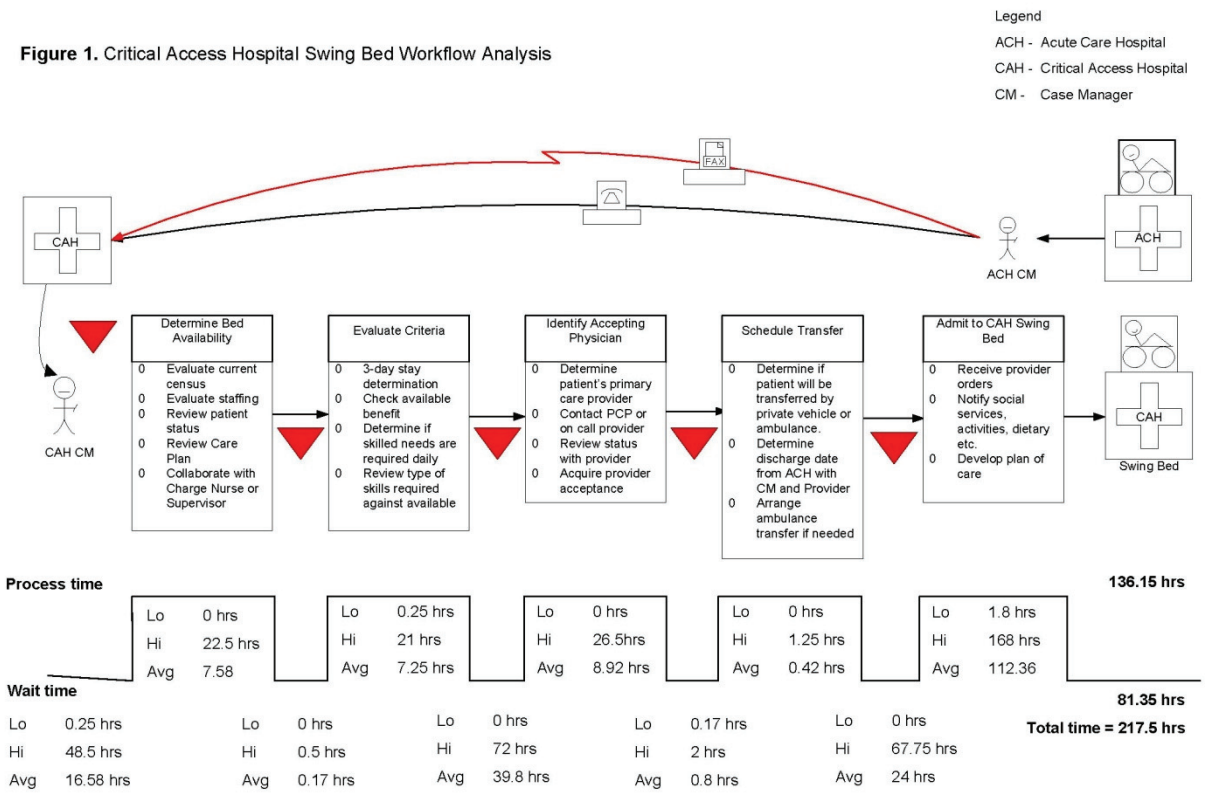
Timeliness of CAH acceptance notification. A clear thematic message from the interviews was a prolonged response from CAHs in either accepting or denying transfer requests. Discharge planning is pressured within ACHs to transfer patients when acute care needs are resolved. These instances result in transferring patients to skilled nursing facilities close to ACHs. Furthermore, if these negative experiences are recurrent, then discharge planners become desensitized and no longer consider CAHs as viable options for post-hospitalization care.

Workflow and Time-Point analyses

Six workflow process categories were identified for swing bed transfer and admission through the interviews. As discussed previously, elements were then identified for each process category as listed in Figure 1. These elements are the steps and processes that occur within each

category.

Figure 1. Critical Access Hospital Swing Bed Workflow Analysis



The average time to complete, and transition between, each process category was calculated for the 4 CAHs. An average of 16.5 hours was required to identify the appropriate decision maker at the CAH by the ACH. Once this contact was made it took over 7 hours on average to determine bed availability and another 7 hours to determine swing bed admission criteria. On average, 40 hours lapsed between determining criteria and starting the process of identifying an accepting physician for the transfer. Once the previous processes were completed, it took approximately 1.5 hours to initiate and start the transfer planning process, and 24 hours for the actual transfer to occur from the ACH to the CAH. In summary it took an average of 217.5 hours to complete all processes to transfer a patient to a swing bed in a CAH.

Discussion

The results of the qualitative and quantitative workflow data provides a better understanding of the barriers and limitations for CAHs to be considered as a source for post-hospital care. A basic understanding of the criteria that qualifies a patient for swing bed care is needed by both CAHs and ACHs. It is difficult to overcome the heterogeneity of services offered by the different CAHs and this can only be addressed by building relationships between CAHs and ACHs. It will require CAHs and ACHs covering overlapping catchment areas to better understand the processes and workflow factors that can complement the services that each organization offers. Outreach by both organizations will be needed if the best interest of the patient is to be considered.

Another area of opportunity is for CAHs to collectively identify areas of post-hospitalization care that are commonly provided by all CAHs, in an effort to prevent the "desensitization" toward CAHs by discharge planning staff within ACHs. For example, while many CAHs do not have PT/OT, all will have nursing staff that can provide care for many of the necessary post-hospitalization needs. This may include restorative care for malnutrition, strengthening, incontinence, just to name a few. Limited research in the early 1990's highlights this paradox. In one study, most swing bed admissions were for rehabilitation services for post-stroke or orthopedics surgery (Lammers, 1992). Research by Shaughnessy, Schlenker, and Kramer (1990) reported swing beds to be more effective in functional outcomes related to activities of daily living, while nursing home care was best suited for long term care patients with limited rehabilitation potential, such as post-stroke (Shaughnessy et al., 1990). There is limited evidence to suggest that a discordance exits between post-hospitalization needs and what swing bed care can offer. It must be noted that these general observations do not apply to all

CAHs. There are robust CAHs with high-volumes that are able to sustain ancillary services, such PT/OT.

Currently, the Frontier Medicine Better Health Partnership Grant project in Montana is working with a team of clinical experts across CAHs in developing evidence-based restorative care guidelines in the areas of nutrition, incontinence, and strengthening. Once these care guidelines are developed and standardized, the team plans to disseminate and implement a swing bed restorative education program for both CAHs and ACHs. The promise of the proposed educational program is to impact the general understanding about commonly available restorative services offered by CAHs, and align them with evidence-based guidelines that are best suited for swing bed care. The results identified in the current analyses will be useful in assuring the successful implementation of the proposed educational program.

The qualitative interviews did not express concern about the quality of skilled nursing care provided by CAHs. The primary concerns of the ACH interviewees were focused on the processes of the transfer, such as delayed response from CAH, and understanding of swing bed eligibility criteria. There has been mixed results related to swing bed outcomes in the literature. As mentioned above, early studies found swing bed care to be more effective in enhancing functional outcomes and discharge to independent living compared to nursing home care (Shaughnessy et al., 1990). However, in these studies swing bed care was less effective in patients with no rehabilitation potential. Results from a study involving only one CAH in the early 1990's found 11% of patients transferred to swing beds died and 28% were readmitted for acute care (Lammers, 1992). However, this single site study may have skewed results as the average age of swing bed transfer patients was 81.

While interviewees of the program were supportive of bringing patients close to home for their post-acute care needs, none of the discussions mentioned the importance of supporting CAHs in their financial stability. An economic impact analysis by Ona and Davis (2011) determined that rural counties with a CAH had a beneficial impact compared to counties without CAHs. Kentucky CAHs, for example, had a direct employment impact of 3,503 jobs and an income direct impact of $179.5 million. Efforts to enhance working relations between ACHs and CAHs must acknowledge the reciprocal financial impact that both organizations have on one another.

The results of the study have also identified the importance for CAHs to implement process improvement strategies within their organizations. Excessive delays in identifying the appropriate decision maker within CAHs and determining swing bed eligibility criteria highlight the need for process improvements. An educational program, as previously discussed, will assist in defining the processes; however, process strategies must be implemented to ensure that assessment and transfer of patients to swing beds can be promptly and efficiently made. There is pressure on discharge planning staff to transition patients no longer needing acute care to home or to a skilled nursing facility as deemed appropriate. The CAH must be prepared to assess, process, and receive potential transfer requests. Efficient process measures will ultimately benefit the patient who will be closer to home and their social network in a timely manner. Unnecessary delays to receiving restorative care may also impede the healing process needed during the post-acute period.

There are limitations of the program that must be noted. The program was conducted only in Montana, potentially limiting the generalizability of the data. Only four CAHs provided

workflow time analyses data which may also limit the identification of factors impeding the use of swing beds. The methods to collect and analyze data preclude statements of causal effects.

In conclusion, there are knowledge and process factors that must be overcome to increase the use of swing bed care in CAHs, while ensuring high quality care. The impetus for reaching this goal has both patient-level benefits and community-level benefits. Immersing patients back within their social network and community will help dissipate the stress associated with distant care in ACHs (Magilvy & Congdon, 2000). Filling empty beds in CAH will further stabilize the financial status of CAHs, ensuring they continue to be a significant economic factor within the community (Ona & Davis, 2011).

Supporting Agencies

Center for Medicare and Medicaid Innovations

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