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Quality Measures for Critical Access Hospital Swing-Bed Patients

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Key Findings:

Quality measures relevant for CAH swing-bed patients include:

- Two outcome measures (discharge status of swing-bed patients and 30-day follow-up status after a swing-bed stay)

- Two functional status measures (risk-adjusted change in self-care and mobility scores between admission and discharge for CAH swing-bed patients)

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Background

The Medicare swing-bed program allows rural hospitals with fewer than 100 beds to use their inpatient beds either for acute care or skilled nursing facility (SNF)-level swing-bed care.[1] Swing-bed services provided in rural Prospective Payment System (PPS) hospitals are paid for under the SNF PPS, while Critical Access Hospitals (CAHs) receive cost-based reimbursement for swing-bed services. Currently, approximately 90% of CAHs and 60% of rural PPS hospitals nationally provide swing-bed services.[2,3]

PPS hospitals are required to collect patient data and provide it to the Centers for Medicare & Medicaid Services (CMS) using the swing-bed Minimum Data Set (MDS), a tool for implementing standardized assessment and facilitating care management, which is a subset of the MDS used in SNFs. However, CAHs are exempt from this requirement. The lack of nationally comparable swing-bed quality measure data for CAHs creates two problems. First, CAHs are not uniformly able to demonstrate the quality of care provided to their swing-bed patients or compare it to national benchmarks. Second, the lack of quality data for their swing-bed services limits the ability of CAHs to participate in alternative payment models involving post-acute care, since organizations need outcome data to select appropriate partners.

Swing-bed quality of care has received little attention since a 1990 study compared the quality of care in SNFs and swing-beds.[4] Recent studies have focused on the cost of swing-bed care[5,6] and on comparing swing-bed and SNF patient characteristics and diagnoses.[7] Swing-beds also have not been included in recent national quality measurement efforts. The Improving Medicare Post-Acute Care Transformation Act of 2014 (IMPACT) requires post-acute providers, including Long-Term Care Hospitals (LTCHs), Skilled Nursing Facilities (SNFs), Home Health Agencies (HHAs), and Inpatient Rehabilitation Facilities (IRFs), to submit standardized and interoperable patient assessment data that will facilitate coordinated care, improved outcomes, and overall quality comparisons, but does not include CAH swing-beds. Similarly, the National Quality Forum (NQF) Measure Application Partnership project to select post-acute and long-term care quality measures focused on SNFs, HHA, hospice, IRFs, and LTCHs, but did not address swing-beds.[8]

Purpose

The purpose of this study was to identify measures that can be used to assess the quality of care provided to CAH swing-bed patients with the goal of having these measures endorsed by the National Quality Forum and used by policymakers to help assess the value of CAH swing beds.

Approach

This qualitative study included identification of a comprehensive list of quality measures currently being used in post-acute care settings; an email survey of State Office of Rural Health (SORH) and Flex Program staff; a series of key informant interviews with CAH networks, CAHs, and consultant groups; an online survey of CAH quality experts; and further revision of measure specifications in collaboration with health care consultants. The University of Minnesota Institutional Review Board determined that the study was exempt from review.

A comprehensive list of quality measures currently being used in post-acute care settings was identified through a review of the literature on swing-bed services and quality measurement in related health care settings, and review of websites, reports, and quality measure databases of key organizations involved in quality measurement and improvement such as CMS, the National Quality Forum, and the Joint Commission. The list included quality measures that CMS requires rural PPS hospital swing-bed programs and SNFs to report.

SORH directors and Flex Program directors were sent an email survey asking for the hospital systems, networks, or individual hospitals in their state involved in quality measurement and improvement efforts focused on swing-bed services. Based on the survey results and input from members of the University of Minnesota Rural Health Research Center Expert Work Group, the research team identified and interviewed key informants in several states about CAH swing-bed quality efforts. The respondents included three CAH networks that represent a total of 89 CAHs in Illinois, New York State, and West Virginia; four consultant groups working with CAHs in several additional states on swing-bed quality issues; and CEOs, quality improvement staff, and nurse managers who are responsible for swing-bed services at 11 CAHs and two rural PPS hospitals located in 12 different states.

The purpose of the interviews with the CAH networks, consultant groups, and individual CAHs was to under-stand how CAHs are currently assessing the quality of care provided to swing-bed patients in their facilities, the resources they have available for quality measurement and challenges they face, and to obtain the respondents' perceptions about the types of quality measures they would find useful for measuring CAH swing-bed care. The key informant interview data were summarized and analyzed to identify common themes, including CAHs' motivations to assess swing-bed quality and challenges measuring CAH swing-bed outcomes.

Based on the assessment of quality measures being used in other post-acute care settings and results of the key informant interviews, the study team selected a preliminary set of CAH swing-bed quality measures. An online survey was then conducted to seek additional input from 14 CAH quality experts on the preliminary set of measures, with a particular focus on obtaining input on outcome and functional status measures. Thirteen individuals with expertise in CAH quality issues responded to the online survey, including SORH/ State Flex Program staff, health care consultants who work with CAHs, quality improvement staff at rural hospital networks, and representatives of the National Rural Health Association, a state hospital association, and a Quality Improvement Organization. Their responses regarding the usefulness of the measures and data collection instruments informed the final selection of measures.

Results

This study's selection of quality measures for CAH swing-beds focused on outcome and functional status measures for two main reasons. First, outcome and functional status measures were consistent with the interview respondents' reported motivations for assessing CAH swing-bed quality. Second, a focus on outcome and functional status measures aligns with the priorities of the IMPACT Act of 2014, which required CMS to develop and implement quality measures for post-acute settings related to outcomes such as discharge to the community; potentially preventable hospital readmissions; and resource use, as well as measures in five quality domains.[9]

Outcome Measures
Two types of outcome measures were selected for CAH swing-bed patients; discharge of swing-bed patients to the community or prior residence and 30-day follow-up status after a swing-bed stay (Table 1).

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Table 1. CAH Swing-bed Outcome Measures

Outcome	Measures	Data Sources
Discharge disposition	Number and percent of CAH swing-bed patients who resided in the community prior to the swing-bed stay who were: 1) discharged back to the community; 2) transferred to a nursing home; and 3) transferred to a higher level of care. Number and percent of CAH swing-bed patients who resided in a nursing home prior to the swing-bed stay who were: 1) discharged back to the nursing home; 2) transferred to a nursing home; and 3) transferred to a higher level of care.	CAH swing-bed admission and discharge records
	Risk-adjusted rate of discharge to the community for CAH swing-bed patients.	CMS calculation based on Medicare claims data
30-day follow-up status	Number and percent of discharged CAH swing-bed patients who had: an unplanned hospital inpatient stay, another swing-bed stay, an Emergency Department visit, an observation stay, and/or a nursing home stay within 30 days of discharge for: 1) the same or related condition as the swing-bed stay or 2) a new condition different from the swing-bed stay.	Follow-up phone calls to swing-bed patients 30 days post-discharge; CAH hospital inpatient and outpatient admission records.
	Risk-adjusted 30 day unplanned readmission rate for CAH swing-bed patients.	CMS calculation based on Medicare claims data

The key informant interviews indicated that CAHs are informally tracking the discharge disposition of swing-bed patients, but measure definitions and data collection methods vary (e.g., some CAHs define community as home only while others include other types of residences prior to inpatient admission; some CAHs analyze discharge disposition by type of diagnosis, etc.). Similarly, the key informants recognize the importance of reducing unplanned hospital readmissions, and the CAHs are informally tracking whether their discharged swing-bed patients are being readmitted to the CAH, but they are not using a uniform definition of readmissions that includes readmissions to any hospital or risk-adjusting the data.[10] Expert respondents to the online survey confirmed the importance of discharge disposition and readmissions as CAH swing-bed outcome measures, but raised questions about the need for risk-adjustment of rates and the potential difficulty for CAHs of identifying readmissions to other hospitals. In addition, further discussions highlighted the importance of collecting additional information on Emergency Department (ED) visits, observation stays and admissions to nursing homes during a 30-day follow-up period.

For quality improvement purposes, each CAH swing-bed program should track the residence of each swing-bed patient prior to the inpatient admission that usually precedes a swing-bed stay (e.g., community, nursing home, etc.) as well as their discharge disposition after the swing-bed stay (e.g., community, nursing home, return to inpatient acute care, etc.).

For purposes of comparing risk-adjusted discharge disposition rates with other post-acute settings, CMS can calculate risk-adjusted discharge to the community rates annually for CAH swing-bed programs using Medicare claims data, similar to the process used for other post-acute providers. CMS has adopted risk-adjusted discharge to community measures for SNF, IRF, and LTCH settings. These measures define successful discharge to the com-

munity as "discharge to home/self-care with or without home health services," provided the patient does not have an unplanned acute care readmission and remains alive during the 31 days following discharge.[11] These measures are calculated by CMS using Medicare FFS claims data. However, there is no comparable readmission measure calculated specifically for swing-bed patients. It would be useful if CMS calculated the discharge to community measure for CAH swing-bed programs using two years of claims data, as it does for the discharge to community measures adopted for the IRF and LTCH Quality Reporting Programs and is considering for SNFs.

For quality improvement purposes, each CAH swing-bed program should track the number and percent of their discharged CAH swing-bed patients who are readmitted for an unplanned hospital inpatient stay, have an ED visit, and/or an observation stay, either at the CAH or another hospital, or have another swing-bed/SNF admission within 30 days of discharge. The CAH should track whether the readmission, ED visit, or observation stay is for the same/related condition as the swing-bed stay, or a new condition, using a combination of hospital admission records and 30-day follow-up phone calls with discharged patients.

For purposes of comparing risk-adjusted 30-day hospital readmission rates with other post-acute settings, CMS can calculate risk-adjusted readmission rates annually for CAH swing-bed programs using Medicare claims data, similar to the process used for other post-acute providers. CMS currently calculates a hospital-wide all-cause unplanned risk-adjusted readmission rate for each hospital that includes all discharged medical, surgical and gynecological, neurological, cardiovascular, and cardiorespiratory inpatients using Medicare claims data, and reports this measure on Hospital Compare.

Functional Status Measures
Three instruments were initially identified that could potentially be used for calculating CAH swing-bed patient functional assessment measures: 1) the Functional Independence Measure (FIM), 2) Barthel's Index, and 3) the MDS. All three instruments assess patient performance and need for assistance with activities of daily living.[12-17] MDS and FIM are used to classify patients for PPS reimbursement purposes (MDS for Skilled Nursing Facility residents and rural PPS hospital swing-bed patients, and FIM for Inpatient Reha-

bilitation Facility patients). Based on the literature, input from the key informant interviews, and the results of the online survey of CAH quality experts, we narrowed the choice of instruments to MDS and the Shah version of Barthel's Index. We weighed the pros and cons of each instrument, and selected two MDS-based functional status measures: change in risk-adjusted self-care score between admission and discharge for CAH swing-bed patients, and change in risk-adjusted mobility score between admission and discharge for CAH swing-bed patients (Table 2).

The factors that weighed the most heavily in the selection of MDS-based risk-adjusted functional status measures for CAH swing-beds were their alignment with IMPACT goals, their approval by NQF for IRFs, their adoption by CMS for other post-acute settings, the fact that detailed measure specifications and risk-adjustment methods have already been developed, and their ability to allow comparison of outcomes for CAH swing-bed patients with IRF, SNF, and PPS swing-bed patients.

The risk-adjusted mean change in self-care score between admission and discharge for CAH Medicare swing-bed patients discharged from a swing-bed is based on the CMS functional outcome measure adopted for SNFs and IRFs under the IMPACT Act. NQF has endorsed the measure for IRFs as NQF measure #2633, and CMS is also seeking NQF endorsement of the measure for SNFs. The measure uses MDS Section GG elements and addresses the following self-care items: eating, oral hygiene, toilet hygiene, shower/bathing, upper body dressing, lower body dressing, and putting on/taking off footwear. All items are scored based on the level of dependence/assistance required, with a potential score range for the measure of 15 to 90.

The risk-adjusted mean change in mobility score between admission and discharge for CAH Medicare swing-bed patients discharged from a swing-bed is also based on a CMS functional outcome measure adopted for SNFs and IRFs under the IMPACT Act. NQF has endorsed this measure for IRFs as NQF measure #2634, and CMS is also seeking NQF endorsement of the measure for SNFs. The measure uses MDS Section GG elements and addresses the following mobility items: roll left and right, sit to lying, lying to sitting on side of bed, sit to stand, chair/bed-to-chair, ability to transfer to and from a chair (or wheelchair), ability to get on and off a toilet or com-

Table 2. CAH Swing-bed Functional Status Measures

Functional Status	Measures	Data Sources
Improvement in swing-bed patient self-care	Risk-adjusted mean change in self-care score between admission and discharge for CAH swing-bed patients	MDS Section GG, with risk-adjustment data from selected other MDS sections
Improvement in swing-bed patient mobility	Risk-adjusted mean change in mobility score between admission and discharge for CAH swing-bed patients	MDS Section GG, with risk-adjustment data from selected other MDS sections

mode, car transfer, walk 10 feet, walk 50 feet with two turns, walk 150 feet, walk 10 feet on uneven surfaces 1 step (curb), 4 steps, 12 steps, and picking up an object from the floor. All items are coded using a 1-6 rating scale (dependent to independent). All items are scored based on level of dependence/assistance required, with a potential score range for the measure of 15 to 90.[18]

To fairly compare changes in self-care and mobility scores between admission and discharge for CAH Medicare swing-bed patients over time in a CAH, with other CAHs, and with other post-acute settings such as SNFs, it is necessary to risk-adjust the measures.[17] Risk-adjustment requires data elements from the revised MDS Section GG and selected items from other MDS Sections, including: patient age group at admission; primary medical condition category (a checklist of 13 conditions and "other"); whether the patient had major surgery during the 100 days prior to admission; patient's prior level of dependence with regard to self-care, indoor ambulation, and use of stairs; falls history; prior use of devices (e.g., walker, manual wheelchair, etc.); presence and stage of pressure ulcer(s) at admission; cognitive abilities based on Brief Interview for Mental Status (BIMS) score or memory/recall questions; communication impairment; urinary and bowel continence; tube feeding or total parenteral nutrition; and comorbidities (15 hierarchical condition categories).

Next Steps

In April 2018, we began implementing a field test using the swing-bed outcome and risk-adjusted functional status quality measures for CAH swing-bed programs. The field test involves voluntary quarterly reporting of the measures by 131 CAHs in 14 states for 12 months,

analysis of the data, and evaluation of the CAHs' experiences to assess the feasibility of implementing the measures among CAHs nationally. Upon completion of the field test, our goal is to finalize a set of CAH swing-bed quality measures for endorsement by the National Quality Forum and use by CMS and other policymakers to assess the effectiveness of CAH swing beds in a value-based health care environment.

Acknowledgements

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