Avoiding Nursing Home to Hospital Transfers

Rethinking Avoidability

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Studies describing avoidable hospital transfers for nursing home (NH) residents suggest rates vary between 30% and 70%, often citing poor communication, limited resources, patient/family preference, and adverse events as underlying causes.[1-3] Adverse events, defined as harm resulting from the delivery of care, are particularly concerning because by definition they are often preventable events.[4] The Office of the Inspector General identified harm related to adverse events affected one-third of Medicare skilled nursing facility residents, including events resulting in $2.8 billion in hospitalization costs.[4]

OVERVIEW OF THE MISSOURI QUALITY INITIATIVE

In an effort to reduce avoidable hospital transfers, the Missouri Quality Initiative (MOQI) is part of a larger Centers for Medicare & Medicaid Services initiative to reduce avoidable hospitalizations. The MOQI used a multifaceted intervention that included advanced practice registered nurses (APRNs) working directly with 16 individual NHs to improve the use of the Interventions to Reduce Acute Care Transfers (INTERACT) III processes for early illness identification and management, health information exchange through technology, and advanced care planning.[5]

The MOQI APRNs worked directly with residents, families, physicians, nursing staff, and leaders to influence evidence-based resident care by modeling best practices for decisions about care delivery and early illness recognition, clinical decision-making, and health care team communication. APRNs did not have collaborative practice agreements in place to write orders even though they had advanced practice credentialing due to constraints in Missouri collaborative practice rules.[6] The APRNs also worked with an expert MOQI support team that included a care transitions coach, INTERACT/quality improvement (QI) coach, health information coordinator, medical director, and NH research team with expertise in care delivery, technology implementation, and QI.[5] Nursing homes in the MOQI achieved a 30% reduction in all-cause admissions over the 2.75 quarters of full implementation. The percentage of unavoidable transfers decreased from 64% to 47% for the same period.[7] In another study, unavoidable transfers are noted to be as high as 76%,[8] indicating that the MOQI program likely influenced how clinicians think about transfer avoidability. Additional details about the MOQI model can be found at Rantz et al.[7]

APRNs influenced rates of avoidable hospitalizations by reviewing all care transfers using a slightly adapted Quality Improvement Tool for Acute Care Transfers (ACT) Version 3.0.[5,9] The ACT tool categories included (*a*) new or worsening signs or symptoms, (*b*) abnormal laboratory or test results, (*c*) factors that influenced the decision to transfer, (*d*) actions taken to manage the transfer, (*e*) description of the condition change, (*f*) outcome of the transfer, and (*g*) identify areas of improvement related to the transfer.[9] In

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addition to these categories, 2 open text questions about transfer details were included in the ACT tool completion: (*a*) what was the resident change in condition leading to the transfer and (*b*) how the change was managed. The purpose of this article is to describe the occurrence of potential adverse events that were present at the time of transfer.

RESEARCH DESIGN AND METHODS

This was a retrospective qualitative analysis of 650 hospital transfers occurring between October 2016 and June 2018. The sample, randomly selected from 1900 total transfers occurring during that time frame, was representative of transfers from the 16 NHs participating in the MOQI project. Data included open text responses recorded by APRNs as part of the ACT tool completion describing 2 aspects of the transfer: (1) resident change in condition leading to the transfer and (2) how the change was managed prior to the transfer.

Two PhD-prepared nurse researchers and a research assistant conducted content analysis. The basis for coding was an a priori coding framework of a previously published adverse event trigger tool used for skilled nursing facilities.[4] The original trigger tool, consisting of 27 codes specific to care triggers (eg, acute mental status change, falls, and infections), 19 medication triggers (eg, abnormal electrolytes and glucose less than 50), and 3 procedure triggers (eg, postprocedure complications), was modified for this analysis. For example, we omitted codes such as emergency department visit and transfer to acute care hospital or observation unit since all narratives related to transfers and modified codes such as infection to include infection type. We also added codes specific to insistence/request to transfer and out-of-facility transfers since these were known to exist in the data. Fifty-three codes were used in the analysis.

Narrative APRN texts were placed into a Microsoft Excel spreadsheet for analysis. The team coded approximately 30 narratives together to ensure consistency of coding, and then the research assistant independently assigned codes to the remaining narratives. It was possible for multiple codes to be assigned to each narrative. Once initial coding was complete, all 3 members reviewed the assigned codes as a team until they achieved agreement. The team then organized coded texts into 5 broader categories: acute/chronic condition changes, incident/accidents/injuries, facility-acquired infections, insistence on transfer, and transfer out of the facility.

FINDINGS

The Table depicts findings from the 650 transfer narratives according to the 5 categories: (1) acute/chronic condition changes (n = 352), (2) incident/accidents/injuries (n = 292), (3)

Table. Categories of Transfer Conditions/Events

Category	Occurrence
Acute/chronic condition change	*352*
Acute mental status change	156
Pain, increased pain medication use	95
High/low body temperature	80
Abnormal laboratory report (electrolytes, low hemoglobin/hematocrit)	32
Incident/accident/injury	*292*
Fall with/without injury	78
Fall without injury	37
Mental health with behavior incident	30
G-tube replacement, postprocedure complication	56
Potential ADE (hypoglycemia, vitamin K, elevated INR)	11
Care related	62
Facility-acquired infection	*72*
Cellulitis/wounds	24
UTI	22
Respiratory (pneumonia, influenza)	20
Other (*Clostridium difficile*, abscess)	6
Insistence/request to transfer	*136*
Resident/Family	111
Physician/Provider	25
Out-of-facility transfer	*45*
Physician/provider	23
Dialysis	16
Family	6

Abbreviations: ADE, adverse drug event; INR, international normalized ratio; UTI, urinary tract infection.

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facility-acquired infections (n = 72), (4) insistence on transfer (n = 136), and (5) transfers occurring outside of the NHs (n = 45). Each narrative often contained 2 or more codes. Each category includes a description of the assigned codes along with salient APRN quotes supporting the codes. Of the 53 original codes, only 19 codes were included in the results since many of the codes did not explicitly appear in the narrative data. The codes in the Table reflect the final codes and the frequency with which they occurred.

Acute/chronic condition change

Acute/chronic condition change included narratives describing mental status change, pain, changes in body temperature, and abnormal laboratory values within the broader context of acute illness onset. The narratives added detail about the physical condition driving the decision to transfer. For example, mental status changes included increased confusion, delirium, and the resident being lethargic or drowsy. These codes frequently co-occurred with descriptions of new or worsening pain (eg, chest, back, or musculoskeletal pain), falls, body temperature changes associated with suspected infection, and/or abnormal laboratory results (eg, low hemoglobin and electrolyte imbalance).

Incidents/accident/injuries

Incidents/accidents/injuries included narratives describing falls, behavioral incidents, procedure complications, and care delivery. Fall-related injuries included head injuries, bleeding, lacerations, increased pain, and/or known or suspected fractures. Falls without injuries typically co-occurred within narratives about signs/symptoms of acute illness onset. Behavioral incidents included residents who were aggressive toward others, attempted to elope from the facility, or were showing signs of increased agitation including physical or verbal aggression; these often occurred along with references for acute psychiatric evaluation. Codes for procedure complications most often referenced gastrostomy tube (GT) replacement due to dislodgement, accidentally pulled out by resident or staff or for becoming clogged. References to onsite GT replacement were either unsuccessful or not attempted.

Narratives about potential adverse drug events (ADEs) included references to hypoglycemia requiring glucagon administration or included more complex scenarios such as described by this APRN: "resident had high blood sugar earlier in the day, then became unresponsive and blood sugar 27 was given glucagon … blood sugar remained low and 911was called." Other potential ADEs included references to elevated international normalized ratio levels and the administration of vitamin K.

Other care delivery narratives included care within the NH as well as outside of the NH. Nursing home care issues included treatments ordered but not initiated, inadequate or absent assessment, not being able to provide services in the NH, or injuries resulting from staff leaving resident unattended or related to equipment use. Care delivery outside of the NH included delays from outside agencies (eg, laboratory and radiology) or wrong diagnoses while in the emergency department resulting in a return transfer.

Facility-acquired infections

Facility-acquired infections included narratives about cellulitis/wound infections, urinary tract infections, respiratory infections, and others such as *Clostridium difficile* and abscesses. For the majority of infections, diagnosis and treatment initiation occurred in the NH, and in some narratives APRNs described symptoms worsening despite treatment. However, the majority of infection codes co-occurred with family member requesting or insisting on transfer irrespective of condition improvement.

Request/insistence to transfer

Request/insistence to transfer included narratives about family/resident as well as provider requests and/or insistence to transfer. Family insisting or demanding transfers frequently occurred when concerned about worsening symptoms such as infections, suspected injuries related to falls, or behavior change. However, at other times, family insistence occurred despite improved symptoms. Family insistence also occurred when the family "didn't believe we were doing enough" or perceived there were not sufficient resources to manage the resident. Families also insisted on transfers in conflict with previously agreed-upon goals of care such as the decision to cancel hospice. For example, one APRN wrote: "Family removed resident from hospice and wanted her evaluated, treated, and have a G-tube inserted." In other narratives, providers gave families a choice to transfer

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suggesting NH staff ask about family preference. Resident requests to transfer related to concerns about change in condition sometimes occurring after the resident refused care. For example, one APRN commented the resident "refused dialysis then [complained of] not feeling well … requesting to go to the [emergency department]." In another narrative, a resident called 911 without staff knowledge, citing he was not feeling well.

Provider requests to transfer often related to primary care provider and/or on call provider requests for emergency department evaluation and treatment despite staff attempts to recommend managing the resident in the NH. In some narratives, providers refused to let resident stay at facility, insisting they transfer for follow-up. In addition, specialists such as psychiatrists, nephrologist, and wound specialists requested transfer when NH staff contacted them about change in resident condition and/or follow-up to test results.

Out-of-facility transfers

Out-of-facility transfers included narratives about transfers when residents were out for provider appointments, dialysis, and/or home visits with family. The majority of transfers from provider appointments or from dialysis treatment centers occurred when the resident was perceived to be different from baseline including mental status change, shortness of breath, or dizziness, or for a worsening condition for which they were being treated. Transfers when out with family related to falls or symptoms such as dizziness or pain. However, in one narrative, the APRN commented: "Family took resident to [emergency department] for [second] opinion without facility's knowledge." In most narratives, NH staff were unaware at the time of transfer.

DISCUSSION

These findings support studies suggesting potential adverse events may underlie hospital transfers[2-4]; however, this analysis provides additional insight in why transfers related to potential adverse events might occur. Although acute/chronic illness onset such as mental status change occurred most frequently, these often co-occurred with accidents such as falls or onset of facility-acquired infections. Incidents such as aggressive resident behavior resulted in transfers mostly likely due to risk of harm. From the data we were unable to determine underlying cause of the aggressive behaviors (eg, acute illness onset) or if the behavior could have managed in the NH without transfer. However, since transfers for behavior change were most often for acute psychiatric care, it is likely risk of harm rather than actual harm or acute illness was the NH staff greatest concern. Transfers for potential ADEs were limited to a few references about abnormal laboratory values or the use of vitamin K or glucagon. According to the Office of Inspector General report,[4] approximately 37% of adverse events related to medication use, suggesting potential ADE-related events were likely unknown. Care issues both within and outside the NH such as the inability to replace a GT as well as lack of communication about transfers occurring outside the facility provide insight into limited NH resources and poor communication.[1-3]

Insistence by family, residents, or providers to transfer may be difficult to influence. Insistence to transfer despite the NH's ability to manage the resident's condition, particularly when the resident is improving, may reflect lack of trust between families/providers and NH staff. Jacobson et al[10] found family perceptions about transfers related in part to concerns about NH's capacity to give appropriate care. For these reasons, it might be useful to explore NH leadership or medical director approaches to educating families and providers about the NH's capacity to manage resident care. However, of most concern were the narratives reporting a reversal of hospice care and the initiation of potentially unwanted treatment. Of equal concern were situations where residents refused treatment such as dialysis, yet later demanded hospitalization. These situations both indicate the need for structured care discussions with residents and families so that care is appropriate to the resident's goals and values.

CONCLUSION

Our findings suggest that avoidable transfer rates may be higher than previously reported. This is especially true when considering transfers resulting from incidents/accidents occurring in the NH, as well as family and/or provider insistence on transfers related to resident conditions that might otherwise be managed in the NH. When present, advanced directives should guide discussions about intervention so that care is

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consistent with the resident's stated wishes. In addition, NH should consistently follow up with providers or settings that transfer residents without first talking to the NH, as such transfers may not be warranted. Reducing avoidable hospital transfers of NH residents may require not only improving care, but also improving communication between critical stakeholders including residents/families, providers, and staff within the NH setting.

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