

The Long Term Care Infection Prevention Role in Promoting Quality Care and Reducing Rehospitalizations

Educational Article

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In this time of unprecedented budget deficits, control of Medicare spending has become a priority in the United States. The Centers for Medicare and Medicaid Services reported that Medicare spending grew 6.2% to \$554.3 billion in 2011, or 21 percent of total National Health Expenditure.¹ One area that is currently receiving a major focus to assist in decreasing Medicare spending is avoidable rehospitalizations. Approximately 20 percent of Medicare beneficiaries are discharged from the hospital to a skilled nursing facility (SNF). Research has shown that almost one-fourth of Medicare beneficiaries discharged from the hospital to a SNF are readmitted to the hospital within 30 days at a cost of \$4.34 billion dollars in 2006. The Medicare Payment Advisory Committee (MedPAC) states that up to 76 percent of all rehospitalizations that occur within 30 days in the Medicare population may be avoidable. The Institute for Healthcare Improvement (IHI) has stated, “Avoidable hospitalizations and rehospitalizations are frequent, potentially harmful and expensive, and represent a significant area of waste and inefficiency in the current delivery system.”⁴

With hospitals beginning to have financial penalties for readmissions, there is growing urgency for solutions to the issue of avoidable rehospitalizations. However, SNFs do not have the same financial incentives to reduce rehospitalizations as hospitals do and in some situations, the payment systems actually incentivize SNFs for residents to be hospitalized. One report states, “Multifaceted strategies will be needed to address the current incentives for hospitalization if we are to improve nursing home care and prevent unnecessary hospitalizations, with their related complications and costs.”³

The IHI has developed a *How-to Guide: Improving Transitions from the Hospital to Skilled Nursing Facilities to Reduce Avoidable Rehospitalizations*.² The IHI guide focuses on interventions for improving transitions from the hospital to the SNF. The IHI

acknowledges that failures in care coordination between the hospital and the SNF fall into two main categories: those that relate to care within the SNF and those that relate to care provided during the transition from the hospital to the SNF. The IHI guide focuses on the transition between the hospital and the SNF rather than care within the SNF.

In this article, the focus is on one aspect of care within the SNF—processes and infection prevention program assessments that may be able to decrease rehospitalizations. This article will discuss three strategies that may be widely applied to SNFs with the expectation of minimizing healthcare associated infections (HAIs) in SNFs and subsequent rehospitalizations. The efficacy of these measures in the SNF setting, in most cases, is not proven by prospective controlled studies but is based on infection control logic, adaptation of hospital experience, and field experience.

Reduce Infections, Reduce Readmissions

Intuitively it seems that if infections are reduced, rehospitalizations may be reduced, although it must be acknowledged that readmissions are very complex and are caused by many acute problems and diagnoses. One study has found a strong link between healthcare associated infections (HAIs) and patient readmission after an initial hospital stay. The findings, published in the June 2012 issue of *Infection Control and Hospital Epidemiology*, the journal of the Society for Healthcare Epidemiology of America (SHEA), suggest that reducing such infections could help reduce readmissions, considered to be a major driver of unnecessary healthcare spending and increased patient morbidity and mortality.⁸ This study focused on patients with clinical cultures positive for specific organisms (MRSA, VRE or *C. difficile*) after more than 48 hours following hospital admission. Those patients were

40 percent more likely to be readmitted to the hospital within a year and 60 percent more likely to be readmitted within 30 days than patients with negative or no clinical cultures. Based on such information, it is clear that appropriate care transition and communication between the sending and receiving facilities is imperative to arm the SNF with information relating to the past or present colonization or infection. That information can then be incorporated into care planning for the resident with a clear goal of recognizing, treating and/or preventing infection and thus preventing rehospitalization. The CDC has recognized the importance of clear communication in care transition and has promoted the use of an Inter-facility Infection Control Transfer Form to be completed by the referring facility and given to the receiving facility. This form has been developed to share specific information relating to infections and colonization [Figure 1].

Infections also occur in SNFs that are not related to prior infections or to the prior hospitalization. SNFs are required by the Centers for Medicare and Medicaid Services (CMS) regulations to have a comprehensive infection prevention program that includes surveillance for healthcare associated infections as well as implementation of appropriate treatment and other measures to prevent transmission of infections. The most common healthcare associated infections in long term care facilities are shown in Table 1. SNFs generally have policies and programs in place to prevent these and other infections from developing. There has been success in several areas in infection prevention in SNFs including the decrease in use of indwelling catheters over the past few decades and the subsequent decrease in risk of urinary tract infections.

An important issue for preventing infections in all healthcare facilities is appropriate hand hygiene. Following publication of the CDC Hand Hygiene Guidelines in 2002, SNFs were slower to implement use of alcohol handrubs as a common hand hygiene practice than acute care facilities. After resolution of fire and resident safety issues, SNFs have embraced the use of alcohol handrubs, thus enhancing their hand hygiene programs. Other national standards of practice have also been heeded and implemented in SNFs including national guidelines for prevention of catheter associated urinary tract infections; prevention of central line associated bloodstream infections; *C. difficile*, norovirus, and multi-drug resistant organism guidelines; and many others. Collectively all of these measures have the potential to prevent infections and subsequent rehospitalizations.

Develop an Annual Written Infection Prevention Plan and Risk Assessment

Many SNFs develop or update an annual written infection prevention plan. As part of this plan, a community and facility risk assessment should be done. The risk assessment facilitates the SNF's determination of infection prevention priorities and development of goals and strategies to minimize risks to the residents and the facility. It also helps the facility to develop an appropriate plan for infection surveillance that focuses on priority infections. Such a plan is required for Joint Commission accredited SNFs and is also included in CMS nursing facility regulations. As part of that plan and risk assessment, SNFs may consider incorporating a review of HAIs that frequently lead to rehospitalization. Strategies could then be developed for early identification of those infections, early intervention, and a focus on strategies that may prevent the need for rehospitalization [Figure 2].⁸

Implement an Antimicrobial Stewardship Program

CMS regulations require that SNFs have a process in place for review of antimicrobial use. Many facilities have a two-step process. The first line of review is when the nurse receives the culture and sensitivity. If the resident is already on an antibiotic, the nurse reviews the sensitivity to see if the organism is sensitive to that antibiotic. If the organism is not sensitive, the nurse notifies the physician to see if an order change should be made. The second line of review is when the pharmacist does medical record review for individual residents. If the pharmacist sees any irregularity in the use of a specific drug, dosing, adverse events, side effects, or contraindications, the physician will be notified. Both of these activities are important in providing the best care for the resident and may potentially prevent issues that may require rehospitalization.

Although many SNFs have the above listed processes in place, not all SNFs have a comprehensive antimicrobial stewardship program. A comprehensive program would focus on care for a specific resident but also on the appropriateness of facility-wide antimicrobial use. The Infectious Diseases Society of America (IDSA) has stated:

“Antimicrobial stewardship refers to coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy, and

route of administration. Antimicrobial stewards seek to achieve optimal clinical outcomes related to antimicrobial use, minimize toxicity and other adverse events, reduce the costs of health care for infections, and limit the selection for antimicrobial resistant strains. Currently, there are no national or coordinated legislative or regulatory mandates designed to optimize use of antimicrobial therapy through antimicrobial stewardship. Given the societal value of antimicrobials and their diminishing effectiveness due to antimicrobial resistance, IDSA supports broad implementation of antimicrobial stewardship programs across all health care settings (e.g., hospitals, long-term care facilities, long-term acute care facilities, ambulatory surgical centers, dialysis centers, and private practices).⁹

In April 2012, a Policy Statement on Antimicrobial Stewardship was published by the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), and the Pediatric Infectious Diseases Society (PIDS).⁹ This paper states, "...during the last decade there has also been a dramatic drop in the development and approval of new antibacterial agents. The antimicrobial armamentarium has been depleted and our ability to treat infectious diseases has been severely compromised. Resistant infections not only result in increased morbidity and mortality but also dramatically increase healthcare costs." This policy statement also urges a strengthening of United States' efforts to improve prevention and control efforts, including the adoption of antimicrobial stewardship programs in all U.S. healthcare facilities.

The policy statement recommends that all facilities develop an antimicrobial stewardship program modeled after the IDSA and SHEA "Guidelines for Developing an Institutional Program to Enhance Antimicrobial Stewardship."¹⁰ These guidelines include eleven specific evidence-based recommendations for an antimicrobial stewardship program. Implementation in a SNF may require modification especially since many SNFs do not have access to an infectious disease physician, the consulting pharmacist may not have infectious disease training, and the facility using a reference laboratory may not have the same degree of contact and communication with the laboratory as an acute care facility. However, the guideline states that elements of the guideline may need to be chosen based on the resources available to the facility.

A comprehensive antimicrobial stewardship program will require additional time and resources in the SNF but the IDSA/SHEA guideline states that "these programs have consistently

demonstrated a decrease in antimicrobial use (22%–36%), with annual savings of \$200,000–\$900,000 in both larger academic hospitals and smaller community hospitals." In addition, it tells us that the combination of effective antimicrobial stewardship with a comprehensive infection control program has been shown to limit the emergence and transmission of antimicrobial-resistant bacteria. A secondary goal of antimicrobial stewardship is to reduce health care costs without adversely impacting quality of care.¹⁰

Collect and Analyze Data on Readmissions Due to Infections

Facilities may consider using a process improvement team to analyze the rates and types of infections leading to rehospitalization. The IHI Guide proposes use of a model for improvement that includes use of the Plan-Do-Study-Act (PDSA) cycle to conduct small tests of change. However, SNFs have quality improvement processes already in place that may be used in assessing and planning for change relating to rehospitalizations. As part of the process improvement activities, communication within the SNF as well as between the SNF and the hospitals will be important as they work toward a common goal. Each of the organizations will be able to contribute useful information to the process.

Use Available Resources

Multiple resources are available to assist facilities to develop and implement a program to reduce avoidable rehospitalizations. The IHI *How-to Guide: Improving Transitions from the Hospital to Skilled Nursing Facilities to Reduce Avoidable Rehospitalizations*, as previously mentioned is one such tool. Another important resource for the SNF is Interventions to Reduce Acute Care Transfers (INTERACT). The INTERACT Quality Improvement Program is designed to assist front line staff in early identification, assessment, communication, and documentation about acute change in resident condition. It includes tools and strategies for use in long term care facilities.

Facilities throughout the U.S. have been able to significantly reduce avoidable hospitalizations using these resources. The tools and resources may be accessed at www.interact2.net.

Summary

Skilled nursing facilities play a large and valuable role within the healthcare arena. With SNFs being a major provider of care to Medicare recipients and with the present national thrust to decrease Medicare spending, SNFs are being called upon to participate in implementing spending reductions. Preventing avoidable rehospitalizations is one area that has been identified as an aspect of the care process that may be improved. Healthcare associated infections comprise one of many reasons that residents in SNFs are rehospitalized. The infection prevention program within the SNF can work with facility leaders in implementing an effective process to minimize avoidable rehospitalizations due to infections.

References

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FIGURE 1

Inter-facility Infection Control Transfer Form
 This form must be filled out for transfer to accepting facility with information communicated prior to or with transfer. Please attach copies of latest culture reports with susceptibilities if available.

Sending Healthcare Facility:

Patient/Resident Last Name	First Name	Date of Birth	Medical Record Number
Name/Address of Sending Facility		Sending Unit	Sending Facility phone
Sending Facility Contacts		NAME	PHONE
Case Manager/Admnsr/SW			Email
Infection Prevention			

Is the patient currently in isolation? NO YES
Type of Isolation (check all that apply) Contact Droplet Airborne Other:

Does patient currently have an infection, colonization OR a history of positive culture of a multidrug-resistant organism (MDRO) or other organism of epidemiological significance?	Colonization or history Check if YES	Active infection on Treatment Check if YES
Methicillin-resistant Staphylococcus aureus (MRSA)		
Vancomycin-resistant Enterococcus (VRE)		
Carbapenem-resistant Enterobacteriaceae (CRE)		
Acinetobacter, multidrug-resistant*		
E. coli, Klebsiella, Proteus etc. w/ Extended Spectrum B-Lactamase (ESBL)*		
Other:		

Does the patient/resident currently have any of the following?

<input type="checkbox"/> Cough or requires suctioning	<input type="checkbox"/> Central line/PICC (Approx. date inserted ___/___/___)
<input type="checkbox"/> Diarrhea	<input type="checkbox"/> Hemodialysis catheter
<input type="checkbox"/> Vomiting	<input type="checkbox"/> Urinary catheter (Approx. date inserted ___/___/___)
<input type="checkbox"/> Incontinence of urine or stool	<input type="checkbox"/> Suprapubic catheter
<input type="checkbox"/> Open wounds or wounds requiring dressing change	<input type="checkbox"/> Percutaneous gastrostomy tube
<input type="checkbox"/> Drainage (source):	<input type="checkbox"/> Tracheostomy

Is the patient/resident currently on antibiotics? NO YES:

Antibiotic and dose	Treatment for:	Start date	Anticipated stop date

Vaccine	Date administered (if known)	Lot and Brand (if known)	Year administered (if exact date not known)	Does Patient self report receiving vaccine?
Influenza (seasonal)				<input type="checkbox"/> YES <input type="checkbox"/> NO
Pneumococcal				<input type="checkbox"/> YES <input type="checkbox"/> NO
Other:				<input type="checkbox"/> YES <input type="checkbox"/> NO

Printed Name of Person completing form	Signature	Date	If information communicated prior to transfer: Name and phone of individual at receiving facility
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FIGURE 2

INFECTION PREVENTION PLAN

This plan has been developed by the Infection Prevention Committee with input and collaboration from the following:

- ◆ Safety Committee
- ◆ Performance Improvement Committee
- ◆ Leadership including Department Managers
- ◆ Medical Director

A risk assessment is a component of this plan. The plan and risk assessment are formally reviewed at least annually and whenever significant changes occur in the elements that affect risk.

RISK ASSESSMENT WORKSHEET

Risk Priority	Low: 1-3 Risk Score				Medium: 4-5 Risk Score				High: 6-9 Risk Score			Risk Score
Risk Event	Probability the risk will occur				Potential Severity if the Risk Occurs				How well prepared is the organization if the risk should occur?			
	High	Med	Low	None	Life-threatening	Permanent Harm	Temporary Harm	None	Poorly	Fairly well	Well	
Value	3	2	1	0	3	2	1	0	3	2	1	
Geographical location and community environment												
Population characteristics												
Infections:												
▪ Urinary Tract												
▪ Respiratory												
▪ Wound and Skin												
▪ Bloodstream												
▪ Other												
Infections with specific significant organisms:												
▪ MRSA												
▪ VRE												
▪ C. difficile												
▪ ESBLs												
▪ KPCs												
Special programs and services:												
Care, treatment and services provided, e.g.:												
▪ Skilled Nursing												
▪ Rehabilitation												
▪ Behavioral Health												
▪ Dementia												
Other Risks:												

TABLE 1: COMMON ENDEMIC INFECTIONS IN LONG-TERM CARE FACILITIES

Site of infection	Frequency/1,000 patient days
Urinary tract	0.46 – 4.4
Respiratory tract	0.1 – 2.4
Skin, soft tissue	<0.1 – 2.1
Gastrointestinal tract	0 – 0.9

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