CARE COORDINATION IN MANAGING POPULATION HEALTH

A Thesis

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Abstract

Introduction:

Care coordination is one of the important steps for providing safe, quality care, reducing health care costs, improving outcomes by specifically supporting self-care, managing medications, promoting safe practices, and reducing health acquired conditions, use of emergency department for care, and re-admissions to hospital and potentially avoidable hospitalizations. In the National Strategy for Quality Improvement in Healthcare Report to Congress, "promoting effective communication and coordination of care is one of six priorities to advance the triple aim of better care, healthy people and communities, and affordable care (AHRQ, 2011).

Although there are many definitions of care coordination and transition management, one thing is certain: patients, especially those with complex chronic conditions, need a guide/map and customized care coordination to navigate the complex healthcare system. There are numerous initiatives underway in the United states to accomplish this. I will highlight the relationship between care coordination interventions, and quality and safety outcomes for patients and families.

Aim:

We are trying to bring attention and focus on the important role the nursing profession plays in improving patient's experience and outcomes. Nurses are best positioned at the center of information exchanges and play critical through their routine interventions. Tasks that are often perceived as simple routine tasks, like: care planning, medication reconciliation, communications with the patient and

other professionals, discharge instructions and education, are the very foundation of the successful care coordination intervention.

Method:

Interviews and case studies, as well as published literature were reviewed.

Results:

Studies show that nurses are an integral part of the care coordination that have shown to improve patient's experiences, reduced negative outcomes like hospital readmissions, avoidable hospitalizations, and reduce health care cost.

Conclusion:

Care coordination is at the center and can be considered a key solution for providing safe, quality care, reducing healthcare costs, improving outcomes, specifically supporting self-care, managing medications, promoting safe practices, and reducing health acquired conditions, use of emergency department's for care, and re-admissions to hospitals. Recognizing care coordination in nursing is essential for advancing and promoting this profession's contribution and assuring that quality and cost goals are met.

Care Coordination: Closing the Gap

Following is one of the examples of care of one of the patients in the last month of her life that highlights the importance of care coordination in my mind. It helps me in my work for helping people and my views about what nurses and health professions should remember about the power and the role of coordination in improving patient's experience and outcomes. I start my presentation with a story to explain why I believe care coordination is an integral part in improving health care quality and safety.

A patient presented in a healthcare setting. Patient A.A., I was told by her daughter and nurse friend, was a vibrant and confident woman. At 85, she often shared stories around her risk-taking adventures; she was the one to take her young grandson canoeing for the first time in a swamp in Florida, apparently surrounded by alligators. Daughter stated it was pretty typical of her. The patient A.A. lived for a number of years with several chronic diagnoses, including leukemia and heart failure. She took her illnesses in stride, took her prescribed medications (most of the time), and remained very active. Like many other individuals her age we often see as health care professionals, she was selective about what she chose to understand and do about her chronic conditions and was purposely ignoring the information that was an obstacle to her staying positive and active.

Her daughter reported, one day everything changed. A.A. started having pain and shortness of breath and a variety of other symptoms. Her primary care physicians followed her lead and focused on non-invasive treatment and palliative care. A.A. turned to her daughter who in turn turned to nurse friend to help them interpret her symptoms, to intervene with growing list of physicians and specialists, and to advocate for her needs and preferences – all of the things one would expect as part of patient-centered care coordination. As A.A.'s health and ability to care for

herself deteriorated, her daughter spent more and more time talking with her friends and neighbors who were concerned about her and with the professionals caring for her.

One particular event stood out as a moment when her daughter and friend nurse realized that all their efforts and experience in caring and advocating made little difference in making the system work for patient A.A. One day A.A. called her daughter from her physician office saying he wanted to hospitalize her. She was convinced that if she went into the hospital she would not come out. So the daughter and nurse friend sprang into action. The daughter and friend convinced her doctor to initiate home care and oxygen treatment. And then waited and waited. The physician's office closed for the weekend. There was no follow-up, home care was not initiated, and no oxygen was delivered. And thus, the daughter and her nurse friend became just like every other family member who tries to make the system work for their loved ones – lost, frustrated, and frightened.

Care coordination as I will attempt to show in this paper should be the glue that makes the healthcare system coherent and safe place. Without it, people we care about, people who serve as nurses and other health professionals have great difficulty navigating from provider to provider, from setting to setting. It truly is possible to get "lost in the system" over-and-over again, particularly in the large systems that are not connected and providers who do not communicate with each other. Connections, communications, integration, patient-centeredness, these are the elements that are so important to the patient experience and to achieving goals for quality and safety.

I want to highlight the role of nurses in making care coordination the centerpiece of an effective, timely, efficient, and safe healthcare system. Certainly, nursing is

not alone in this effort. Many other professionals, including social work and medicine, stand side-by-side but we will continue to focus on the role of nursing.

Nurses are best positioned at the center of information exchanges in every modality possible: face-to-face, by telephone, by email, through telehealth, and, of course, through the health record. Nurses are often referred to as the “hub” or “switchboard” of health care, the reference is to nurses’ vital work assuring that patient’s needs and preferences are heard and integrated in the plan of care and that each person involved in the patient’s care has the information needed to address them. The communication work that nurses do – and there is much of it-is core to effective care coordination. Coordination cannot happen without timely flow of accurate and meaningful information.

Frail and elderly, and other at-risk populations, are very vulnerable to gaps in communication and care planning as they move across the diverse providers and settings. Assessing risk, which all nurses do as soon as they meet and interact with patients and families, is foundational to all care coordination activities.

One of the first steps in nursing care is to conduct a comprehensive assessment of the physical and social needs and issues patients are likely to confront in caring for themselves. Increasingly, we recognize multitude of problems and needs, such as multiple chronic conditions or lack of support systems or resources, which place individuals at risk for adverse quality outcomes. All patients, but particularly those at risk of poor outcomes, need extensive and often complicated transmits of information between providers within a single setting and across setting.

Recognizing Care Coordination in the Nursing Practice

Many basic nurses care coordination activities are routinely performed in our day-to day activities. Below is a list of common components of care coordination (Lamb 2014) that include the set of activities like risk assessment, care planning, communication across providers and settings, and monitoring to ensure that patients' needs are being met in an efficient and timely way. Most of the healthcare professionals are familiar with these activities and often refer to them as "the right care, at the right time, and the right place, at the right cost."

Below are activities we often come across in efficient health care settings and nursing practices. The following examples and descriptions emphasize the features of care coordination activities and can help nurses to become more aware of when we are doing them.

Nurse is coordinating care when…

- Work with patients and families to identify their goals and preferences
- Identify patients who do not have the needed skills or services to care for themselves
- Communicate with patients, families, and team members about the plan of care
- Get the needed people and services involved to keep the plan of care on track and timely
- Monitor that needed services have been identified, arranged, and delivered
- Assist patients and families to prepare a list of questions for upcoming visits with their primary care providers or specialists
- Assist the family and other caregivers involved in understanding the disease, health literacy and expectations

- Work with family and other caregivers with understanding the goals, prognosis, advanced directives

I would like to refer to one of the definitions of care coordination provided by the Agency for Health Care Research and Quality (McDonald et. al., 2010):

> *Care coordination is the deliberate organization of patient care activities between two or more participants (including the patient) involved in patient's care for facility the appropriate delivery of health service. Organizing care includes marshalling of personal and other resources needed to carry out all required patient care activities and is often managed by the exchange of information among participants responsible for different aspects of care.*

Key Components of Care Coordination

Identifying Patients at Risk

One of the first steps in nursing care is to conduct a comprehensive assessment of the physical and social needs and issues patients are likely to confront in caring for themselves. Often healthcare professionals have to deal with multiple and complex problems and needs, such as multiple chronic conditions or lack of support system, systems or resources, which place individuals at risk for adverse quality outcomes. For instance, there is strong evidence that older individuals with multiple comorbid conditions and a history of multiple hospital admissions are much more likely to be hospitalized again than older individuals who do not have these characteristics. They, like other at-risk populations, are very vulnerable to gaps in communication and care planning as they move across diverse providers and settings. Assessing risk, which all nurses do as soon as they meet and interact with patients and families, is foundational to all care coordination activities.

Communicating accurate and meaningful patient centered information

All patients, but particularly those at risk of poor outcomes, need extensive and often complicated release of information between providers within a single setting and across settings. As noted earlier, nurses are often at the center of information exchange in every modality possible: face-to-face encounters, by telephone, by email, more frequently now by telehealth, and of course through healthcare record.

Coordinating Care through Partnership with Patients and Families

Effective care coordination requires communication, collaboration, and a sense of accountability among the care team members. Several definitions of care coordination exist, and each of them emphasizes the central principles of

communication, transparency, and cooperation (McDonald et al.,2010, 4-10; NQE, 2006).

There are many barriers to achieving effective coordination, including but not limited to, lack of time of the busy professionals involved, differences in workflow, difficulties associated with obtaining reimbursement for the time spent, confidentiality and privacy issues, differences in practice/setting and specialties' vocabularies and acronyms, and data transfer technology interference and IT compatibilities issues.

Identifying Members of the Care Team

Delivery of care coordination services that positively effects patient care and outcomes involves making connections in one set of service providers engaged in facilitating the delivery of appropriate health care and supporting services to meet an individual patient's needs. Every patient's health team is unique; it has its own purpose, size, set of core members, operational settings, and methods of communication.

The team engaged in coordinating care can be as simple as a primary care provider connecting the patient with the specialist. However, for adults with multiple chronic conditions in children with special health care needs, with their complex and often lifelong need for special services, integrated and multidisciplinary teams must work together to coordinate care.

Coordinating in-home care in an array of health care systems and providers, school services, and community resources can become a full time job. Data from one of the national survey shows that 24% of parents of children with special health care need spent over 5 hours a week coordinating care, and over half of those spent more than 11 hours each week. These families clearly need help, with 42%

reporting they are not getting the care coordination services they need (NS-CSHCNs, 2009-2010).

The patient/child and family's role at the center of this complex interconnected team requires their active engagement in the care coordination process; they are often the only ones with connections to all the different components. However, they often lacking the critical skills needed and required education and support.

This is one of important steps of the care coordination process and one of the stepping-stones of population health management.

Working effectively as a Team

Effective team collaboration in delivering care coordination services is absolutely required for success. Practice shows that optimal patient and family-centered outcomes are the result of relationships in which patients and their families participate in a trusted partnership with their primary care provider and a supportive, proactive health care team. One of the fundamental starting points for care coordination team is to clearly identify the roles and responsibilities for each team member . However, because of the wide variety of circumstances under which care coordination will be implemented, the delivery of care coordination services needs also to be to be flexible and vary depending on location, type, timing, intensity, and duration, etc. Care providers also must consider cultural preferences. Innovative approaches, in addition to mentioned earlier flexibility are essential, anything from traditional face-to-face visits to other less traditional encounters, like telehealth, that optimize the use of resources and maximize value for families and providers (Antonelli, 2009).

Managing the plan of care

We need to acknowledge that there is a difference between a plan of care that is simply a document that meets regulatory requirements and one that is a living, breathing tool to address patient needs and preferences. Translating the care plan into integrated action plan for patients, family, health professional, and community programs is the central work of care coordination and where the work of nurses is most vital and likely to be most invisible. The typical care plan in any efficient and patient-centered outcome practices usually includes the interplay of numerous providers and actions related to patient education, medication monitoring and management, diagnostic workups and follow-up, and referrals. Nurses are doing care coordination each and every time they monitor how the plan of care is being implemented between and across providers, initiate activities to assure that the patient and his or her family's needs have been heard and incorporated, that the resources needed to activate the plan, from insurance and transportation to availability of services are in place, and then the intended outcomes are achieved.

Preparing for Transitions

As patients and their families move from one provider to another or across settings, as they do at hospital discharge, it is a particularly vulnerable time for care to get fragmented and disorganized.

In nursing, we often recognize this time as one in which patients can easily “fall through the cracks”, when important information may not be communicated and patients may not have the resources needed to take care of themselves or negotiate the leap from one setting to another . They often fall into the “black hole” between providers and settings. As a result, they may lose important time and step in the

healing process, in the belief that they can care for themselves, and suffer preventable adverse events.

Attention to these vulnerable transitions, often seen referred to as transitional care, is an important aspect within care coordination. We often see that attending to these important times has significant pay-off in terms of reducing hospitalization and medication errors, and improving the patients experience and outcomes.

Nurses are an integral part of care coordination and in various and sometimes specialized roles often work with different populations, like high risk children or adults, over long period of time and many often focus on transitions between settings.

Typically, long term care coordination is reserved for individuals with complex health and social needs who require extensive communication among providers and close integration of services. With the introduction of incentives for reducing avoidable hospitalizations, there has been a substantial increase in the number of various care coordination roles focused on transitional care, such as health coaches and navigators.

While many of the individuals in transitional care roles continue to be nurses, several new programs were developed where individuals from diverse professionals, paraprofessional can carry out selected care coordination activities. Expansions of the medical assistant roles, for instance, are intended to fulfill some care coordination functions in the absence of nurses. Also, community health workers are being engaged in coordinating needs of disadvantaged and minority patients and populations to link them to appropriate and accessible care. Nurses providing general care in all settings need to remember how they are "frontline" to most coordination activities and link the care coordination activities of other more specialized care

coordination roles, as well as with the an interprofessional team of providers, within and across care settings. Hand-off between general and specialized care coordination functions are an important element of effective care for patients and families that can dramatically improve patients experience and outcomes.

One of the newer roles for nurses, the care manager role, is relatively new to the nursing jobs in most primary care settings. In the past, many practices were “tiered” and physician-centric systems where nurses have not practiced to the full extent of their licenses. Many nurses in primary care settings are unaccustomed to taking time from their busy practice settings to review and reflect on their work with patients, furthermore they may not be able to work through barriers to improve patient without systems processes, and education about specific intentional coordination activities. Nurses often refer to their work as “what we do”, rather than recognizing care coordination activities for the care processes they entail and the skill required to do them well, they minimize the central importance of their work to the team and the patients they serve.

Providing special education and even clinical mentor could be very helpful. Once recognized as such, strategies for improving the quality and efficiency of delivering these components can be generated through collaborative learning discussions and specialized trainings.

The Practice of Nurse Care Coordination

Nurses are positioned in every sector of healthcare to provide leadership promote, advance and improve care coordination. Nurses at almost every point of care, in specialized care coordination roles, in management, and informal leadership positions all have the opportunity to bring attention to the basic and important care coordination activities performed by the nursing profession. As described above, care coordination is an important process. Nurses in various settings perform risk assessment, communicate across settings, collaborate with fellow team members, participate in care planning with patients and family members, and plan for a smooth discharge. Nurse care coordination transcends settings. For example, nurses can be assigned to oversee patient transition from the hospital to home or to long- term care rehabilitation and sub-acute care; nurses often plan and connect chronically ill or functionally limited patient to community resources according to their ongoing needs (Marek, Popejoy, Petroski, & Rantz, 2006; Skilling & MacLeod, 2009).

Care coordination function and Use of Technology to support Care Coordination Function

Many providers apply population health management strategies in their care coordination role as a primary care nurse care manager. In the past, the nurse had to find each person with diabetes through record review and create a manual system for tracking appointments. Now, the nurse uses an automated system that flags all patients with diagnosis of diabetes for regular primary care visits and quarterly laboratory appointments for HemoglobinA1C testing. Rather than spend time searching for patients' information, the nurse concentrates on analyzing the information and working with patients and members of the care team to develop an

effective care plan. The implementation of the electronic health record made a great contribution to system , structural, and process changes that support affective care coordination.

Effects of Care Coordination Activities on Health Outcomes and Cost

Care Coordination Models: Targeting Outcomes

Over the years, several care coordination models have been developed recognizing that coordinating care for individuals with chronic conditions and or complex health care needs. Models were intended to prevent the costly consequences of poor management, and improve the short- and long-term quality outcomes for various populations. These models included interventions targeted at achieving outcomes associated with effective care coordination.

One of the popular and well known models of care coordination, the *Guided Care Model* (Boult, 2008), illustrates how different care coordination interventions may be associated with quality in safety outcomes.

This model promotes a systematic, planned, team approach toward health and illness with patients at the center of care delivery playing an active role in interactions leading to positive patients' outcomes, improved quality of care. The descriptions of the model includes an overview of expected outcomes and care coordination interventions, as well as an explanation of the relationships between the care coordination interventions and quality and safety outcomes.

The Guided Care Model, led by Dr. Chad Boult, is a program that integrates multiple interventions and delivers care through nurse-physician care partnership to successfully manage chronically individuals 65 years and older. Targeted outcomes in this model are:

-An increase in patient physical and mental health, quality of care, and satisfaction with care

-A decrease in caregivers strain, costs, health, and quality of care

-An increase in primary care practice satisfaction and organizational dynamics on the part of staff

-An increase in RN job satisfaction in addition to reduction in preventable rehospitalizations (Boult, 2008)

In this model, most of the care coordination interventions were delivered by a RN based in the primary care setting. The RN visited hospitalized patients within two days of admission to the hospital and two days prior to discharge; then followed the patient into the home to monitor and support self-care practices. Unlike other transitional care models that wre usually time-limited, this primary care-based model offered continiuty and an ongoing relationship with chronically ill adults.

Specific guided care nurse interventions included:

-Assessing patients needs and preferences

-Creating an evidenced-based care guide

-Monitoring the patient proactively

-Supporting chronic disease disease self management

-Educating and supporting caregivers

-Communicating with all external care and service providers

-Facilitating smooth transitions between sites of care

-Facilitating access to community services (Boult, 2008)

In this model, proactively assessing needs, creating a plan, and supporting monitoring and management, thought to be the core factors influencing target quality and cost outcomes (please see table below as illustration of the Relationship between Care Coordination interventions, process goals, and outcomes, Lamb, 2013)

Care Coordination Interventions	Process Goals	Care Coordination Outcomes (examples)
Monitoring and Coaching	85% of patients have contact each month for monitoring and coaching	Physical and mental health quality of life Patient satisfaction
Caregiver support	At least 75% of caregivers contacted once every three months	Caregiver satisfaction Caregiver strain
Education on advanced directives	100% of patients have written advance directives	Service use Patient and family satisfaction
Communication with members of health care team	Contact with each team member every two months	Medication adherence Provided satisfaction
Transitional care	100% of hospitalized patients visited within two days of admissions 100% of hospitalized patients seen at home with two days of discharge	Reduction in hospital readmissions Reduction in hospital costs

Another example of the effective use of care management and care coordination could be found in the state of New York, specifically its initiative on reducing avoidable hospitalization stays.

Changing the way we think about and use our hospitals is essential component of the state (and national) quality agenda in the United States. In spite of years of effort to shift attention and resources from acute care to primary prevention and health promotion, hospitals have continued to consume most of the health care resources. Today, there is a concentrated effort on a state and national level to align healthcare

policy, clinical practice, and innovative use of technology to reduce unnecessary hospital admissions and re-admissions.

There were, and still are, a great range of hospital and community-based care coordination programs that are being used to reduce avoidable hospitalization, improve outcomes and safe cost and nurses paly an important role in this process.

I would like to highlight one of the national initiatives focusing on overuse of hospital services--particularly when it comes to preventable hospital re-admissions or potentially avoidable hospitalizations.

Care Coordination Activities and Related Programs to Reduce Avoidable Hospitalizations

A preventable or potentially avoidable hospitalization (PAH) or re-admission is defined as an admission related to previous admission which could have been avoided. These hospitalizations could have been avoided because the condition could have been prevented or treated outside of an inpatient hospital setting. According to Center for Medicare and Medicaid Services (CMS), reducing the number of these events has been identified as a promising way to improve care and lower health care costs (CMS Medicare-Medicaid Eligible Beneficiaries Analysis 2016).

Conditions that can be addressed in an ambulatory setting such as pneumonia, chronic obstructive pulmonary disease, congestive heart failure, asthma, and diabetes are examples of conditions that can be treated more safely and effectively in the primary care setting and at a lower cost. Preventing hospital readmissions is a complex issue and current estimates of preventable readmissions range from a low of 5% too high of 79% of initial hospital admissions, depending on how preventable re-admission was defined and measured. In general, re-admission rates have been around 19% in the U.S. (van Walraven, Bennett, Jennings, Austin, & Forster, 2011). This suggests that about two in 10 patients admitted to U.S. hospital could have been safely managed in the community. Twenty six percent (26%) of all hospitalizations were identified as potentially avoidable (CMS 2009).

Admitting or re-admitting patients who do not need to be hospitalized increases the risk of exposure to adverse outcomes including infections, falls, and medication errors (Office of Inspector General, 2010).

Unnecessary hospitalizations are also extremely expensive. Patients admitted with conditions that could have managed in the ambulatory setting in the community accounted for $4.4 million hospitalizations, $29 billion in total costs, and 10% of total hospital expenditure for the period between 1999 and 2005 (Boutwell et.al., 2009). Medicare spending for inpatient admissions as a result of re-admission was $17.5 billion in 2010. Given these figures, it is not surprising that the Centers for Medicare and Medicaid Services (CMS) instituted penalties for 30-day readmissions in 2013 for three of the most common ambulatory sensitive conditions: heart attack, heart failure, and pneumonia.

Center for Medicare & Medicaid Services (CMS) identified highly prevalent conditions associated with Potentially Avoidable Hospitalizations in 2009. According to Chronic Conditions Warehouse the statics were the following: Congestive Heart Failure accounted for 21.1% of admissions;

Pneumonia 12.9%; COPD/Asthma 19.6%;

Urinary Tract Infections 15.1%;

Dehydration 10.7%;

Other 20.5% (Centers for Medicare & Medicaid Services (2013).

Due to the serious nature and cost implications of unnecessary admissions, related to these highly prevalent conditions, a payment incentive programs has been introduced; hospitals and their community partners began implementing new processes and programs to reduce re-admissions.

The national focus on reducing hospitalizations, more than any other outcome, has pushed care coordination into the national quality spotlight. Well known care

coordination programs were re-discovered and refined. Programs were developed based on combinations of care coordination interventions developed over many years.

Below there are two of many programs with a focus on care coordination interventions that were initiated within several U.S. hospitals to reduce subsequent hospital re-admissions. Some of these programs continued into post-acute and long-term care settings for a period of time, such as 30 or 60 days. The most common care coordination interventions within these hospital-initiated programs were early identification of risk for re-admission, patient education, medication reconciliation, and timely discharge communication to the next point of care (Hess et al., 2010; Jack et al., 2015; Koehler et al., 2009).

Transitional Care for the Elderly (Naylo et al., 2004): The goal of the transitional care model is to improve health outcomes and reduce hospital re-admissions for individuals with multiple chronic conditions, including Congestive Heart Failure. In this model, an advanced practice nurse-initiated discharge planning during the hospital stay. The advanced practice nurse visited the patient and family in their homes within 24 hours of discharge and weekly for the first month post discharge. There was a minimum of eight home visits per patient during the 12 weeks of the program, during which the nurse paid special attention to symptom management. The results of numerous studies testing this model had found reductions in readmission rates (104 vs. 162 at 52 weeks) with overall decline in hospital costs ($7636 vs. $12,481) and improved quality of life (at 12 weeks) for patients in the intervention group compared to the control group.

Discharge Education and Utilization in Heart Failure (Koelling, Johnson, Cody, & Aaronson, 2015): This program focused on reducing hospital readmissions for individuals hospitalized with Heart Failure. All patients received standardized

written discharge instructions from staff nurses including information about medication, diet, daily weights, activity, and follow-up appointments. Patients in the intervention group also received an hour-long, one-on-one teaching session with the nurse educator who explained & showed the physiology of Heart Failure and how diuretics work. Specific instructions about sodium and fluid restrictions were provided along with a copy of Heart Failure treatment guidelines written in layman's terms. An emphasis was placed on the rationale for self-care behaviors. A referral was made by the discharge planning nurse with electronic record provided to the home care service to follow the patient in the community. Patients who received the intervention had fewer deaths and hospitalizations (50 vs. 74 patients), a shorter length of stay during subsequent hospitalizations (34 vs. 54 days) and had a lower risk of re-hospitalizations for Heart Failure. (16 vs. 33 patients) during the 180-day follow-up period. Intervention patients had a lower cost of care by $2,823 per patient.

Hospitals were not alone in addressing the challenge of potentially avoidable hospitalizations (PAH) and quickly realized that they cannot be effective without their partners in the community.

The programs listed below were initiated in the *community setting* and had a goal of keeping patients as healthy as possible in various independent settings, in order to avoid unnecessary admissions and re-admissions. The most common care coordination interventions within community settings included patient education regarding medication and self-management strategies, as well as a nurse facilitated communication among members of the patients' health care team.

Care Transitions (Coleman, Perry, Chalmers, & Min, 2006): The goal of this program was to encourage older adults and their caregivers to have a more active role during care transition leaving the hospital for the community, thereby reducing

readmissions. This program was led by registered nurses, partnered with advanced practice nurse, referred to as a care transition coach, helped the patient with medication management, instructed on the use of the personalized health record, educated on signs and symptoms of worsening disease, and encouraged appropriate primary and specialist follow-up. This study found lower rates of a readmissions in intervention patients at 30 days (8.3 vs. 11.9), and 90 days (16.7 vs. 22.5). Also, a reduction in hospital cost ($2,058 vs. $2,546).

Nurse Care Management (Dorr et al., 2006; 2008): This program was designed to sustain health in the community and avoiding rehospitalization. Nurse case managers (as opposed to other profession managers) used a specially designed patient worksheet within an electronic care management tracking system. Nurse care managers made personal visits and telephone calls with patients, communicated with specialist, conducted team meetings, provided assistance with medications, and conduct general coordination activities. Intervention patients had lower mortality (6.2% vs. 10.6%) and rehospitalization (21% vs. 24%) rates one year following the intervention.

Aging in place (Marek, Adams, Stetzer, Popejoy, & Rans, 2010; Marek et al., 2005; 2012): This program was developed at the University of Missouri to test an alternative delivery model of community based, long- term care for Medicare and Medicaid patients. In this program, older adults received care coordination services from a geriatrics-prepared registered nurse under the supervision of an advance practice nurse. All recipients had an individualized home assessment, a personalized plan of care that was reviewed with patients and families no less than once per month during a home visit. Additional RN activities included medication management, and coordination of other services as needed such as physical therapy, homemaking, or personal care. Home visits ranged from weekly to monthly depending on patient's

needs. Patients in this group had better clinical outcomes in pain, dyspnea and activities of daily living at 12 months. Hospital admission and re-admission rates were not measured for this intervention. Total per month Medicare costs were lower in the 12 months following the intervention. In a subsequent study that compared intervention patients with the control in a nursing home group the total Medicaid costs were lower per month ($1591.61) and clinical outcomes in cognition, depression, ADLs at 6 months and at 12 months, as well as incontinence were significantly better in the intervention group resulting in better patients' experience and as a quality-of-life measure.

Early Case Management for Older Adults (Shapiro & Taylor, 2002): The goal of this program was to provide nurse care coordination for low income, at risk, community dwelling elders earlier than it normally would be offered. A registered nurse performed a geriatric assessment during a home visit and created an initial care plan in cooperation with the patient and family. The case manager met with the patient at least once every three months, arranging for a wide variety of services including meal delivery, homemaking tasks, chores, personal care, transportation, and respite care. Patients in the intervention group were 82% less likely to be re-hospitalized or institutionalized than control patients in over the 18-months study.

Community-based Care Transitions: Care Coordination and Value-Based Purchasing (VBP)

Healthcare has been undergoing a transformation that is moving nursing into the forefront of change-- no longer is quantity (the number of billable visits that patient has with the provider, for example) the measure of success in healthcare. Today, one of the central goals in health care is to demonstrate value through improved quality in reduced costs. In order to achieve value, health systems and health care providers are focused on efforts to make sure that the patient receives the right care at the right time, from the right health professional or community resource. At the heart of this work is care coordination. This is where nursing place a pivotal role in both, the hospital and community setting.

The Affordable Care Act of 2010 introduced many new initiatives to improve health care and lower costs. One initiative, Value-Based Purchasing (VBP) , was designed to create incentives for hospitals (first) to improve their performance on selected quality and safety measures. Under the VBP program, hospitals receive an incentive payment for Medicare patients based on how well they perform on quality measures and how much they improve on each measure compared to baseline (CMS fact sheet, 2013).

One of the prominent examples of VBP is hospital readmissions for specific diseases, such as heart failure, acute myocardial infraction, and community acquired pneumonia. Hospitals that improve their admission rates receive an incentive for improved readmissions; hospitals that do not improve their rates are penalized. Hence, most hospitals and health care systems around the US found strategies and put programs to position themselves to succeed in VBP.

VBP programs are also implemented in the community to manage health of special populations, like maternal health, special needs/HIV, managed long-term care patients. One of the most prominent examples is an incentive program in the state of NY to reward providers with low rate of potentially avoidable hospitalizations (PAH). The state recognizes PAH as an inpatient hospitalization that might have been avoided if proper outpatient care was received in a timely manner. Included diagnoses are: anemia, congestive heart failure, electrolyte imbalance, respiratory infection, sepsis, urinary tract infection. Over the four years the state reported overall reduction in potentially avoidable hospitalizations across many providers.

Conclusion

Care coordination continues to be a major strength and contribution of the nursing profession and can be considered as a game changer to the overall quality and safety of the patient care, especially for individuals with complex healthcare needs.

Care coordination is at the center and can be considered a key solution for providing safe, quality care, reducing healthcare costs, improving outcomes, specifically supporting self-care, managing medications, promoting safe practices, and reducing health acquired conditions, use of emergency department's for care, and re-admissions to hospitals. Recognizing care coordination in nursing is essential for advancing and promoting this profession’s contribution and assuring that quality and cost goals are met.

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