APN ROLE IN DECREASING READMISSIONS

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**Introduction**

 As health care continues to expand to accommodate the needs of today’s population, medical facilities are left with a large burden: to balance the increase in the cost associated with caring for patients with the decrease in private insurance and government program reimbursement. In order to combat this growing issue, many health care institutions have focused on identifying areas for improvement: decreasing the amount of hospital acquired infections, reducing the number of pressure related wounds obtained during hospitalization, and most importantly, reducing the number of patient readmissions within thirty days post discharge.

Postel, Frank, Barry, Satou, Shemin & Benharash (2014) conducted a study to illustrate the direct cost of readmission to an institution without insurance reimbursement. They concluded that over a twelve-month period, unplanned thirty-day patient readmissions cost a medical facility a total of $812,600, with individual patient costs averaging $144,000 (p. 1005). Following the readmission penalty a net loss of $11,950 per patient was found to exist (Postel et. al., 2014, p. 1005). This financial burden carries a significant impact; it reduces the amount of resources available to the staff, negatively affects the level of patient care, and in some cases forces facilities to close and leave communities without adequate health care. Further highlighting the scale of financial burden that 30-day readmissions cause, Robinson, Esquivel, & Vlahov (2012) list a cost of $17.4 billion in readmissions alone in 2004 (p. 338). To date, much research has focused on the causes of readmissions along with interventions aimed at decreasing them. Despite the gains made thus far, there remains a large gap to be filled regarding the role Advanced Practices Nurses (APNs) can play in care coordination and care transition in an effort to decrease readmission rates. Not only will a reduction of readmissions benefit institutions financially but will also serve to improve patient outcomes, reduce complications and potentially reduce the strain medical institutions face today.

 Imogene King’s theory of mutual goal setting and mutually working towards that goal paves the way for APNs filling the role of care coordination and care transition (1981). This particular role is one that previous studies have shown to have varied outcomes while certainly leaving much to be researched. Omstein, Smith, Foer, Lopez-cantor, & Soriano (2011) concluded the importance of transition-of-care programs based on qualitative feedback from involved parties. This particular study utilized APNs based on their extensive clinical experience and lower cost than physicians, leaving a large gap to be filled with further research (Omstein, Smith, Foer, Lopez-Cantor, & Soriano, 2011, p. 545).

**Method**

 A review of the literature was conducted to determine current research findings regarding associated factors and programs designed to reduce 30-day readmissions within various populations. The analysis performed focused on articles with the most up-to-date evidence-based research. The purpose of the literature review is to demonstrate the current factors influencing 30-day readmissions, along with determining the gap in care coordination and transition in which APNs can be of help.

 Articles for the review were acquired through PubMed, CINAHL plus full text, Google Scholar, Cochrane Review and Medline. Inclusion criteria of English language, articles published within the previous ten years, and keywords of “30-day readmission”, “follow-up” and “prevention”. Further refinement of articles found was achieved with addition of the terminology; cost, economics, Medicare, reducing, and penalties.

**Review of Literature**

Theoretical Framework

Imogene King’s theoretical concepts and theory of goal attainment can be applied to help understand the need which exists in care coordination and transition. Her theory underscores the importance of patient and provider collaboration to achieve mutually set goals (1981). A major element of her theory, the interpersonal system, is when two individuals can successfully “come together in a health care organization to help and to be helped to maintain a state of health that permits functioning in roles” (King, 1981, p. 142). The concepts within this system are that of interaction, transaction, and communication with an assumption that without collaboration between the individuals, progress toward goal attainment cannot be achieved (King, 1981). This element can be successfully applied towards the various interventions focusing on reducing 30-day readmissions when providers begin to see the pivotal role they play within the relationship.

Furthermore this theory underscores the importance of collaboration and responsibility in order to be able to successfully set and achieve goals. In the absence of goal setting and collaboration, 30-day readmission rates will continue to be prevalent with significant patient and financial implications within the medical community. Therefore when two individuals work together towards the goal of avoiding/reducing 30-day readmissions differences in readmission rates should be noted. Of note, this particular problem is one in which the APN, due to clinical background and education, is in the optimal position to affect in a positive manner.

**Literature Review**

 Coller, Klitzner, Lerner, & Chung (2013) conducted a retrospective cohort study to determine whether missing a primary care provider (PCP) follow-up after hospital discharge correlates to higher 30-day readmission rates. A total of 5065 pediatric patients discharged from Mattel Children’s Hospital within a two year period and a stay over 24 hours were included in the study (Coller et al., 2013). A comparison of 30-day readmission rates was made between patients that followed-up with their primary care provider and those that did not (Coller et al., 2013). The results were surprising and showed that patients whom followed-up with their primary care provider had higher readmission rates than those who did not with a P value of .035 which holds statistical importance (Coller et al., 2013). Despite the surprising finding, this particular study disproves the association that PCP follow-up has with decreasing readmission rates (Coller et al., 2013). The authors conclude that additional studies are needed to understand the transition from inpatient to outpatient care (Coller et al., 2013).

 Koehler et al. (2009) conducted a randomized controlled pilot study to determine the effect a supplemental care bundle has on the readmission rates of a specific population. Inclusion criteria for the 41 patients were; adults at a University Medical Center between March and June 2007, specific Medicare medical DRGs, age greater than 70, use of five or more medications regularly, three or more chronic comorbid conditions, requiring assistance with 1 or more activities of daily living, and readmission residence at home or an assisted living facility (Koehler et al., 2009). Twenty-one patients, the control, received the usual care provided post discharge whereas twenty received the elderly care bundle at the time of discharge (Koehler et al., 2009). The particular care bundle included one care coordinator and one clinical pharmacist whom saw the patients daily during their hospitalization and were in contact for up to a week post discharge (Koehler et al., 2009, p. 213). Specific criteria within the bundle include medication reconciliation and education, post discharge phone call to confirm things such as medications, medical equipment, home health arrangements, and scheduling of follow-up appointments (Koehler et al., 2009, p. 213). Results at 30-days post discharge showed the intervention was statistically relevant in decreasing readmission rates with a P value of .04 however not statistically relevant at 60-days post discharge being P = 0.52. Limitations to this study included a small sample, use of two local hospitals, incomplete blinding, and a rigorous consent procedure which significantly reduced study participants (Koehler et al., 2009). These findings indicate that care coordination and transition services do provide a significant decrease in readmission rates however leave much to be determined about how to prolong these effects beyond 30-days (Koehler et al., 2009).

 A randomized controlled stratified trial conducted by Linden and Butterworth (2014) looked into the effects transitional care interventions had on 30-day readmission rates within two non-for-profit hospital in the state of Oregon. The study was conducted between June 2010 and November 2012 including 512 congestive heart failure and chronic obstructive pulmonary disease patients with n = 259 control group and n = 253 for the intervention group (Linden & Butterworth, 2014). Interventions included pre-discharge, post-discharge, and bridging components at pre-assigned intervals for up to 90 days following discharge (Linden & Butterworth, 2014). Neither the 30-day post-discharge readmission rates, p = .36, nor 90-day readmission rates, P = .66, had statistical relevance supporting positive effects on transitional care interventions utilized in this study. Despite these negative findings the limitations possibly contributing to the results can be the inability to include home visits or ensuring timely follow-up ambulatory care along with no real geographical variances (Linden & Butterworth, 2014). Of note is the authors conclusion of needing to focus on building “collaborative relationship between hospitals and community-based providers” in an effort to determine new interventions in decreasing high readmission rates (Linden & Butterworth, 2014, p. 791).

 A particularly promising study was conducted by Ornstein at al. (2011) in which two APNs were utilized in a transition care program aimed at reducing readmission rates. Patients included were from Mount Sinai’s medicine and geriatrics departments that met the Medicare definition of homebound and numbered a total of 532 within a two year study period (Ornstein et al., 2011). Utilizing a five-step standardized protocol the APNs saw the patients daily, were involved in the discharge process, and conducted a single post-discharge home visit within 3 weeks (Ornstein et al., 2011). Despite the significant involvement of the APNs readmission rates at 30-days were not statistically significant, P = .71. These findings did not demonstrate LOS or readmission rate differences from pre to post intervention, show the high cost compared to direct reimbursement, and confirms the importance of transition-of-care programs from qualitative feedback. Limitations of this study included the inability of the APNs to follow-up with patients within 48 hours and saw them on average 5 days after discharge, possibly contributing to the high readmission rates (Ornstein et al., 2011). Despite the insignificant quantitative results, qualitative reports confirmed the importance of transition-of-care programs, especially within the chronically ill patient populations (Ornstein et al., 2011). Further research should include transition programs with home visits occurring as close to discharge as possible.

 Costantino et al. (2013) conducted a retrospective descriptive analysis study in which 48,538 patients received post-discharge phone calls aimed at reducing readmission rates. Inclusion criteria was all insured adult patient ages 18-89 from 1/1/2010 through 9/30/2010 who were discharged to home from an acute hospitalization (Costantino et al., 2013). The authors were able to show a significant reduction in readmission rates following intervention with an overall 21.8% reduction, P < 0.0001 showing significant statistical value (Costantino et al., 2013). Secondary findings showed that although hospital readmission were coupled with fewer ER visits, higher physicians office visits occurred (Costantino et al., 2013). Limitations within this study included, variability in timing of post-discharge contact, exclusion of members participating in certain health management programs, and self-selection of participation (Costantino et al., 2013). Based on the study results we can postulate the importance of post-discharge care coordination and transition and conduct future studies to include the use of APNs as a point of contact.

 Further strengthening the need for APNs in a care coordination and transition programs can be found with the results of a structure case series review conducted by Feigenbaum et al. (2012). The authors looked at 537 readmissions at 18 hospitals in urban and suburban areas from 12/2009 through 06/2010 of patients 18 and older (Feigenbaum et al., 2012). Data review and interviews showed 47% (250) of readmissions assessed as potentially preventable, 11% (55) as very or completely preventable, and 36% (195) as slightly or moderately preventable (Feigenbaum et al., 2012). These results show multifactorial contributions to potentially preventable readmissions that requires a comprehensive approach with monitoring and management, care transition and car coordination, and utilizing existing with new tactics (Feigenbaum et al., 2012). Limitations to this study include multiple reviewers and a quality improvement approach used methods less rigorous than a controlled trial or comparative study (Feigenbaum et al., 2012). This study adds to the importance of APNs within a collaborative role in a care coordination and care transition program aimed at preventing the high number of readmissions assessed by these authors.

 Kirkham et al. (2014) conducted a retrospective cohort study with all patient discharged from two acute care hospitals from January 2010 through December 31st 2011. A collaborative pharmacist-hospital care transition program was implemented in which interventions took place at predischarge, postdischarge, and bridging between hospital and home (Kirkham et al., 2014). The study showed 19,659 unique patients had 26,781 admissions of which 2, 523 results in 30-day readmissions (Kirkham et al., 2014). Among these, patients who did not participate in the program had “twice the odds of readmission within 30 days” (P = .04) and those over 65 years of age had a “sixfold increase” (Kirkham et al., 2014). These findings conclude care transition programs are associated with lower likelihood of readmission, especially in older patients (Kirkham et al., 2014). Limitations of this study include utilization of only two acute care facilities, 20% of readmission were to other facilities, and multiple variables (Kirkham et al., 2014). This particular study not only shows the need for care coordination and care transition, it leaves a gap in determining the effects APNs might have in a role similar to the staff.

 Regalbuto et al. (2014) conducted a prospective cohort study with 145 patients discharge from New York Presbyterian Hospital and Columbia Medical Center from August 1st 2012 through November 19th 2012. Inclusion criteria was a primary diagnosis of decompensated heart failure excluding; dementia, those discharged to location other than home, non English or Spanish speaking patients, and those that received cardiac assistive devices or transplant (Regalbuto et al., 2014). Once discharge instructions were given to each patient, a survey was conducted to determine how well they were received, showing a surprising 10% of patients understanding all six sections (Regalbuto et al., 2014). Patients with a complete understanding of discharge instructions were also shown to have a less likelihood of being readmitted within 30 days, P = .044 (Regalbuto et al., 2014). This study also showed a significant difference in time to readmission between those with a college degree and those without, P = .023, and those who spoke English versus no English, P = .039 (Regalbuto et al., 2014). Limitations of this study include a small sample size and possible survey instrument not being effective tool in capturing patients’ understanding of instructions given (Regalbuto et al., 2014). An APN in this particular role would have the task of not only providing discharge instructions but also evaluating the patients understanding of them and further providing follow-up instructions.

**Conclusion**

 Although many changes have taken place to reduce 30-day readmission rates, efforts to reduce the financial strain on health care institutions continue to move forward. Numerous studies have been performed to determine causes of 30-day readmissions and gaps within the medical field which impact them. Despite these findings there remains a need to bridge patient care from inpatient care to outpatient care in a way that not only reduces resource consumption but prevents costly readmissions. The literature reviewed has shown relevant information regarding the gaps that exist and how they can be fixed. These gaps can be addressed by utilizing the APN in a care coordination and care transition role as shown by the literature above. Coller et al. (2013) concluded that despite PCP follow-ups, readmission rates continued to be high due to numerous implications. From this, one can postulate that readmissions are caused by multifactorial events requiring further investigation, and highlights the need for care coordination and transition. Further findings by Koehler et al. (2009) and Feigenbaum et al. (2012) add to the important role APNs have within the future of care coordination and transition in an effort to improve outcomes and decrease financial implications of 30-day readmission rates.

 Snyderman et al. (2014) discusses numerous strategies that exist which aim at reducing readmission rates. Among them are; timely follow-up appointments, employing follow-up alternatives such as telephone calls, home visits, and bundled interventions (Snyderman et al., 2014). Further strategies such as medication reconciliation to reduce adverse events, make medication adherence as easy as possible, and empowering patients and their families through education (Snyderman et al., 2014). These tasks are all ones APNs have participated in via the clinical setting and may best serve within the role of coordination. Research strengthening the role of APNs in care coordination and transition was conducted by Joo & Hubner (2014). Their findings showed 40% - 50% decreases in readmission rates, 10% - 20% decreases in length of hospital stay, and 40% - 70% reduction in overall aggregate costs (Joo & Hubner, 2014). For this reason, the role of the APN must continue to be examined and improved upon in order to cut costs, improve patient outcomes, and survive the challenges that face healthcare today.

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