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A Behavioral Intervention Checklist to Reduce Re-Hospitalizations in Residents with Mental Illness

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Executive Summary

Introduction of the Problem

Long-term care services are comprised of both institutional and non-institutional settings designed to meet the unique and complex needs of individuals generally requiring extended support for physical, cognitive, and mental disabilities (Harris-Kojetin et al., 2019). Comprised of skilled nursing, assisted living, residential care, adult day care and home health services; long-term care services have undergone a substantial transformation over the past decades as increasing numbers of individuals with severe mental illness (SMI) with associated behavioral or neuropsychiatric conditions have been placed in this environment (Fullerton et al., 2009; Grabowski et al., 2009; Hua et al., 2021; Molinari et al., 2017; Orth et al., 2020).

As the utilization of long-term care services has increased so has the associated costs rising from an estimated 88 billion to over 168 billion from 2000 to 2018 (Centers for Disease Control and Prevention, 2019). Inside of the demographic shifts and increased costs is the inherent need to manage the impact of serious mental illness and its impact on care. The presence of mental illness was found to be associated with a greater likelihood of worsening functional disability, poor health outcomes, increased use of emergency services, lower quality of care, and increased hospitalization rates (Grabowski et al., 2009, 2010; Orth et al., 2019, 2020; Rahman et al., 2013). The resulting significant impact of mental illness within long-term care has necessitated the introduction of initiatives to reduce the cost and quality burden.

The purpose of this project is to determine if an evidenced based pre-hospitalization behavioral intervention checklist, used during a behavioral crisis, would result in a reduction of rehospitalization rates in a psychiatrically focused skilled nursing facility. This quality improvement project has the potential of providing staff with standardized approaches to use to

intervene and deescalate behavioral manifestations of mental illness, thus reducing unnecessary use of higher cost resources or transfers to higher and more costly levels of care.

Literature Review

Mental illness and their associated behavioral manifestations have become an increasingly important issue within the long-term care setting. According to Orth et al. (2020) the current prevalence estimates of mental illness in long-term care settings ranges from 65% to 90% or all residents. The constellation of disorders includes dementia with neuropsychiatric disorders, depression, anxiety, and SMIs such as schizophrenia and bipolar disorders (Rahmen et al., 2013). These conditions are commonly known to increase the burden of care by affecting the underlying cost of care, quality of care, and stress to caregivers. Rahman et al. (2013) found that increases in the proportion of residents with SMI were associated with higher rates of hospitalizations, lower staffing levels and an increased number of quality concerns. Kim et al. (2013) identified that increased numbers of individuals with mental illnesses led to poorer long term outcomes including the increased use of physical restraints. Jester et al. (2020) showed that facilities with higher proportions of mental illness scored consistently lower on quality measure compared to other facilities.

As the cost of care has increased substantially the emphasis on controlling such expenditures has become a hallmark of the Centers for Medicare and Medicaid Services (CMS) agenda. Reducing avoidable hospitalizations is seen as a priority. Cost estimates suggest that avoidable or unnecessary hospitalizations and rehospitalizations exceed 17 billion dollars annually (Amritphale et al., n.d.; Balogh et al., 2018; Basnet et al., 2018; Benjenk & Chen, 2018; Boaz et al., 2017; Chandra et al., 2019; Clark et al., 2017; Horney et al., 2017; Hudson, 2019; Intrator et

al., 2004; LaMantia et al., 2010; Ouslander et al., 2010; Temkin-Greener et al., 2019; Vasilevskis et al., 2017; Zhanlian Feng et al., 2018).. Mental illnesses such as schizophrenia consistently rank in the top ten reasons for avoidable or unnecessary hospitalizations/rehospitalizations.

The impact of mental illness within the long-term care population cannot be understated. Aside from quality issues the cost to the health care system is enormous. Long-term care settings are often considered to be unprepared and ill-quipped to handle the complexity of behavioral health needs for many reasons including inconsistency and/or lack of staffing, lack of education and knowledge, and lack of access to behavioral health resources (Molinari et al., 2017; Muralidharan et al., 2019; Orth et al., 2019, 2020). While it is largely understood that mental illness has a significant impact in quality and cost within long-term care less is known specifically about the impact of mental illness on hospitalization rates as this is often studied in relation to other conditions. Bejenk and Chen (2018) looked at methods to reduce readmissions and found that post-discharge interventions such as case management, education and validation of medication adherence were effective methods but were more directed towards community dwelling individuals outside of long-term care. O’Connell et al. (2018) like Bejenk and Chen (2018) looked at community dwelling individuals with SMI and found that peer engagement and support reduced rehospitalizations and improved continuity of care. The relative lack of research-based interventions specific to mental illness in long-term care calls into question the utility of such interventions but brings attention to the need for more research or quality improvement efforts.

While interventions directed towards managing mental health and behavioral problems withing long-term care are limited the application of other quality improvement efforts to this problem may prove beneficial. Ouslander et al. (2014) under federal regulatory reform efforts

introduced “Interventions to Reduce Acute Care Transfers” or INTERACT as a method to address not only quality issues surrounding care and care transitions of institutionalized individuals but to address the excessive cost associated with hospitalizations. The core elements of this initiative were recognition of acute conditions before they required advanced care, improved communication with providers and improved documentation of care with the intent of improving decision making at the point of care (Huckfeldt et al. 2018; Ouslander et al., 2014). The use of the communication and decision-making tools associated with the INTERACT initiative demonstrated a 36% reduction in avoidable hospitalizations which was statistically significant ($p \leq 0.001$) (Ouslander et al., 2014). Kane et al. (2017), using a combination of training modalities while implementing the INTERACT toolset showed an overall reduction in hospitalizations, avoidable hospitalizations, emergency room visits. A despite the lack of a statistically significant outcome the benefits of such interventions were seen as promising opening the door for further examination.

In expanding the literature review in the context of the project additional review of relevant information as it pertains to the use of toolsets, prompts and interventions like INTERACT demonstrated the relative acceptance and validity of cognitive prompts such as checklists as methods to close the gap on limited knowledge, cognitive bias and teamwork failures when managing various conditions (Innocenti and Stefanone, 2021). In studies by Idahosa and Kahn (2012), Johnston and Magnan (2019), and Latzman et al. (2022) conducted in the context of ICU ventilator management, fall prevention and anesthetic practice respectively it was shown that checklists had the power to demonstrate statistically significant improvements in care, enhanced communication, improved outcomes and reduced mortality.

Project Method

This quality improvement project involved the development of a evidenced-based interventional checklist for direct care staff to utilize to respond to behavioral manifestations of mental illness with the intent to deescalate and treat active symptoms thus reducing unnecessary transfers or hospitalizations. The DNP project was determined to be IRB-exempt via Southern Illinois University at Edwardsville as it was deemed quality improvement, collected no specific patient identifiable health information and did not require individual patient interaction.

The project was conducted in several phases at a single psychiatrically focused long-term care facility. The initial phase was started in January 2023 with the collection of three months of baseline hospitalization and rehospitalization rates through retrospective chart review using the established INTERACT standardized “Hospital Rate Tracking Tool 2022”. During this period staff were provided with repeated training via on site power point programs specific to the management of behavioral conditions in the context of utilizing the developed interventional checklist. The second phase was commenced in April 2023 where the behavioral intervention checklist was implemented. Facility direct care staff continued to receive a minimum of weekly support and coaching in its application and use in actual patient scenarios. Training continued on a weekly basis for new staff due to greater than expected turnover. Data was collected throughout the three-month implementation period until the end of June 2023 to evaluate the impact of the behavioral intervention checklist.

Evaluation

The initial intent of the project was to measure the impact of the behavioral intervention checklist on hospitalization/rehospitalization rates over a 90-day period. Paired sample t-test

showed a weak statistically significant improvement in re-hospitalization rates ($p < 0.04$) with an overall reduction in the overall 90-day mean pre-intervention from 16.53% to 0% in the post-intervention mean. Over concerns that the interventional checklist was often time used successfully and potential transfers were not considered or even had not been documented a secondary measure was considered, tracked, and calculated. Lost census days due to hospitalization as a measure of the effectiveness of the interventional checklist was determined to be a viable method to evaluate the effectiveness of the intervention in situations where it was used but transfer was never initiated or considered. In this case the mean for lost census days from the pre-intervention period to the end of the post-intervention period dropped from 8.79 days per 1000 resident days to 1.55 days per 1000 resident days and was determined, through paired sample t-testing to be statistically significant ($p < 0.01$).

Additionally, the perceived effectiveness of the interventional checklist was evaluated through interview with direct care staff after utilization. While limited inferences can be made due to the nature and frequency of its use, it was determined by 100% of respondents to be easy to utilize but in only 76.9% of cases was it thought to be effective in preventing hospital transfers.

While the results of this quality improvement project suggest the use of an interventional checklist to reduce rehospitalizations did have a positive impact there were limitations that would require consideration. Limited sample size and the inability to identify the use of the checklist in each behavioral exacerbation where hospitalization or transfer was considered but did not occur limited data analysis as to its actual impact on care. The limited time frame and use in only one facility would also limit more representative results of the significance of the intervention.

Impact on Practice

The purpose of this project was to introduce a behavioral intervention checklist with the intent of reducing the relative negative impact of hospitalizations. Long-term care staff are expected to manage a wide array of complex, chronic and acute conditions including mental illness with limited knowledge, resources, and support. The use of checklists, algorithms, or care paths have been established and the implication of a validated behavioral intervention checklist would be to improve the overall quality of care through the ready access to evidenced based protocols to support knowledge gaps, improve response time and improve confidence and autonomy. Ultimately it would be expected that cost would be reduced through the reduced need for advanced levels of care such as the reduction of unnecessary transfers or hospitalizations as demonstrated.

Conclusion

This project met the primary goal for which it was intended. The development and implementation of a behavioral checklist for use in managing the behavioral manifestations of psychiatric illness demonstrated a positive effect on rehospitalization rates and more so on lost census days when considering the use of the checklist in situations where hospital transfer did not occur. Additionally, it was perceived positively by direct care nursing staff who utilized the tool. This quality improvement project demonstrates the need for further examination of the checklist and its impact on quality of care through modified project design, formal research methods and expanded sampling. The access and consistent use of checklists and algorithms in complex care areas such as long-term care is promising.

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