5-2023

A Systematic Literature Review on Long-Term Care Quality Improvement Initiatives in the United States

Daisy D. Pang
University of Nebraska Medical Center

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Daisy D. Pang, Public Health Administration and Policy

Committee:

Dr. David W. Palm, PhD (Chair)

Stephen M. Peters, MA (Committee Member)

Dr. Jungyoon Kim, PhD (Committee Member)

Dr. Hyo Jung Tak, PhD (Committee Member)

Abstract

As the number of people 65 and older increases due to the baby boomer population, there will be a greater demand for long-term care (LTC) services. Quality improvement in LTC is essential to ensure positive health outcomes, patient satisfaction, and reduction in healthcare costs. The purpose of this systematic literature review is to identify the current quality initiatives for LTC in the United States and evaluate the outcomes, effects, and values of each quality initiative identified to support the claim that current the quality initiatives have a limited effect on quality improvement in LTC settings. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach was used to determine which peer-reviewed journal articles were going to be included. After analyzing the journal articles, the quality initiatives identified included implementing increasing the use of advanced practice registered nurses (APRNs), increasing staff training and education, improving communication between healthcare providers, incorporating telehealth for palliative care, providing online long-term care resources, and implementing infection prevention and control programs. These quality initiatives showed positive results in decreasing emergency room visits, decreasing catheter-acquired urinary tract infections (CAUTIs), decreasing hospitalizations, and increasing Medicare star ratings. A few recommendations surrounding the need for having standardized quality initiatives and measures, increasing research on the effects of the current initiatives, increasing funding, and changing health policies were incorporated to improve the current issues surrounding quality improvement initiatives in LTC.

Introduction

Long-term care (LTC) includes a variety of services for people who are unable to perform basic activities of daily living on their own. Such activities include bathing, dressing, eating, and moving around. Those who need long-term care are typically the elderly, the disabled, or people who have serious health conditions such as heart attack or stroke. Long-term care can be provided in different settings such as home-based care, community-based care, and facility-based care (National Institute on Aging, 2017). As the population in the United States continues to get older, long-term care is going to be an important part of the health care system. According to the U.S. Census Bureau, data shows that the 65 and older population has been rapidly growing since 2010 due to the aging of the "Baby Boomers" born between 1946 and 1964 (2021). It also states that the national median age has grown from 37.2 years in 2010 to 38.4 years in 2019 (2021). Additionally, as part of the ACA mandate, CMS-certified nursing homes will be required to implement a program to improve quality of care (Mills et.al., 2018).

With the growing need of LTC services and the lack of quality care in these facilities, the purpose of this systematic literature review is to identify the current quality initiatives for nursing homes in the United States. The aim of this paper is to evaluate the outcomes, effects, and values of each quality initiative identified to support the claim that current quality initiatives have a limited effect on quality improvement in LTC settings. The two questions that will guide my paper are:

1. What initiatives are currently in place to improve quality in nursing homes in the United States?
2. What are the health outcomes of nursing home residents due to the implementation of quality improvement initiatives?

Background

According to The World Bank, 57 million people, 17% of the world's population was 65 and older in 2021(World Bank, 2022). It was also estimated that the number would almost double to 95 million by 2060 (Mather et al., 2015). As these older adults develop serious health conditions and are unable to care for themselves, they will need to seek out nursing home care. As of 2021, there is about 1.1 million people in nursing facilities in the United States and that number is expected to grow (Kaiser Family Foundation, 2022).

LTC provides a range of health care and personal care services. The services offered typically include nursing care, 24-hour supervision, daily meals, and assistance with everyday activities. Nursing homes may also provide rehabilitation services, such as physical therapy, occupational therapy, and speech therapy. Although some people stay at a nursing home for a short time after being hospitalized, most nursing home residents live there permanently because their medical condition may require constant care and supervision. ("Residential facilities, assisted living, and nursing homes", 2017).

Payers for long term care

The common payers for LTC facilities include Medicare, Medicaid, Veterans Affairs (VA) insurance, and private LTC insurance. Medicare is a federally funded program and offers health care coverage for people 65 years or older, people with disabilities, and people who have end-stage renal disease requiring dialysis or a kidney transplant (U.S. Centers for Medicare & Medicaid Services, 2021). Medicare coverage is very limited for nursing homes as it only provides coverage up to 100 days in a skilled nursing facility if the patient is hospitalized for a minimum of three days and requires skilled nursing for the injury or illness they were

hospitalized for (U.S. Centers for Medicare & Medicaid Services, 2022). With this rule, LTC facilities may not want to accept patients with Medicare, and it promotes patients to continue to have poor health so that their care is covered by Medicare.

Medicaid is a federal and state funded program that provides health insurance for low-income families, pregnant women, children, and individuals receiving Supplemental Security Income (SSI). Since Medicaid is both a state and federal program, eligibility of coverage can differ based on requirements of the different states. Additionally, Medicaid will only pay for nursing home services that are provided in a licensed nursing home and certified by the state as a Medicaid Nursing Facility (Medicare.gov, n.d.). Despite all the requirement to be eligible for Medicaid, Medicaid is the largest payer of nursing home services in the United States. In 2016, it was estimated that 62 percent of people in nursing homes had Medicaid as their primary payer (Harrington et.al., 2018).

The VA offers coverage for long-term care services in nursing homes to sick or disabled veterans if they are signed up for VA health care, need a specific service to help with ongoing treatment and personal care, and the service is available near them ("Geriatrics and Extended Care", 2022). The VA only covers care provided by facilities run by the VA or by state or community organizations that are inspected and approved by the VA. A co-pay for the services given may be required depending on the resident's VA service-connected disability status and income. If the resident has other health insurance policies besides Medicare, they will be billed and can potentially reduce the co-pay from the VA.

In addition to government funded LTC insurance, private LTC insurance is another type of insurance that LTC residents have. It can help pay for various long-term care services including both skilled and non-skilled care. Long-term care insurance can vary depending on the

plan and coverage, and some policies may cover only nursing home care, but others may include coverage for other services such as adult day care and assisted living (Medicare.gov, n.d.). With the varied means for the aged to receive LTC, from private care, public care, and home care, there is often no standard of quality to measure due to the many forms of LTC. Due to the varied options for care and LTC insurance, it can create inconsistent quality measures and standards.

Conditions and living standards

It is common for nursing homes to see large numbers of infections and injuries acquired by their residents. A few examples of infectious outbreaks in nursing homes include pneumonia, influenza, hepatitis B, norovirus, Clostridioides difficile (C. diff), urinary tract infections (UTIs), and streptococcus ("Serious Infections and Outbreaks Occurring in LTCFs", 2020). Falls are one of the most common injuries in nursing home facilities in which approximately half the population in nursing homes fall annually ("The Falls Management Program: A Quality Improvement Initiative for Nursing Facilities", 2017). Additionally, about 1 in 3 of those who fall will fall more than once in a year. These infections and injuries can lead to serious conditions that reduce quality of life, ability to function, and negatively impact healthcare outcomes.

Importance of quality care

Because of these risks, it is critical for nursing home facilities to provide high quality care. The World Health Organization (WHO) defines quality of care as the degree to which health services increase the likelihood of desired health outcomes. It also states that quality health care should be effective, safe, and people centered (n.d.). According to the Agency for Healthcare Research and Quality, "Poor quality care leads to sicker patients, more disabilities, higher costs, and lower confidence in the health care industry" ("The challenge and potential for

assuring quality health care for the 21st century", 2018). A few reasons for poor quality are due to underuse, overuse, misuse, and variation in use of health care services. All these reasons contribute to the need to improve the quality of care in nursing homes in the United States to improve health outcomes and reduce healthcare costs.

Methods

The databases used in this systematic literature review included Medline, PubMed, and CINALH. The key words used for the database search included nursing home care, quality improvement, health outcomes, and patient satisfaction. These key terms were selected to identify the most peer-reviewed journal articles that identified various quality improvement initiatives in nursing homes and discussed the health outcomes of those initiatives. Patient satisfaction was included in the key terms because patient satisfaction is a key factor in influencing the quality of care received and the health outcomes of LTC residents. Table 1 breaks down the databases and key terms used to identify peer-reviewed academic journals.

Table 1
Databases and Key Terms

Databases:
Medline, PubMed, and CINALH
Key Terms:
"Nursing home care"
"Quality improvement" and "nursing homes"
"Nursing homes" and "health outcomes"
"Nursing homes" and "patient satisfaction"

A search criterion was first established to ensure the quality and consistency of the literature reviewed. Inclusion and exclusion criteria were identified to narrow down the number of articles that would be the most useful for this literature review (see table 2). The literature used in this review was limited to academic peer-reviewed journals and publications that were published from January 2017 to January 2023. The peer-reviewed journals were also reduced to studies done in the United States and written in the English language. Both quantitative and

qualitative studies were included in the literature review. The most important criterion was that the publication needed to discuss the health outcomes of the quality initiatives.

Table 2

Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
Results/Outcomes	• Quality improvement in resident care • Improvement in health outcomes • Increase patient satisfaction	• No change in quality improvement • Decrease in quality • Negative health outcomes
Publication Type	• Full articles • Academic journal articles • Peer-reviewed journals • Quantitative • Qualitative	• Non-academic journal articles or publications • Abstracts only
Publication Date	• Published after 2017	• Published before 2017
Language/Geography	• Studies done in the United States • English language	• Studies done outside the United States • Non-English language

Literature Search Strategy

After the search criteria were established, the key terms were searched and filtered in each of the databases. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach was used to identify and exclude publications that did not meet the established criteria. The first search included all publications that resulted from each keyword search. Then, the publications were filtered by the publication type, publication day, location of the publication, and language. After they were narrowed down by the search criteria, the titles

and abstracts of each journal article were reviewed to identify which publications could potentially be included in the literature review. The full text of the journal articles that met all the criteria was read to determine which studies would ultimately be used.

Results

The initial literature searches from Medline, PubMed, and CINALH resulted in 19,015 articles. After filtering the initial searches with the established criteria (see Table 2), 2,120 articles were identified to meet the criteria. After removing duplicate articles, 56 articles were reviewed by title and abstract to identify the potential articles that would be included in the literature review. Of the 56 articles, only 11 articles discussed successful quality initiatives in LTC setting with positive health outcomes. Figure 1 below shows the PRISMA breakdown of the literature search for this systematic literature review.

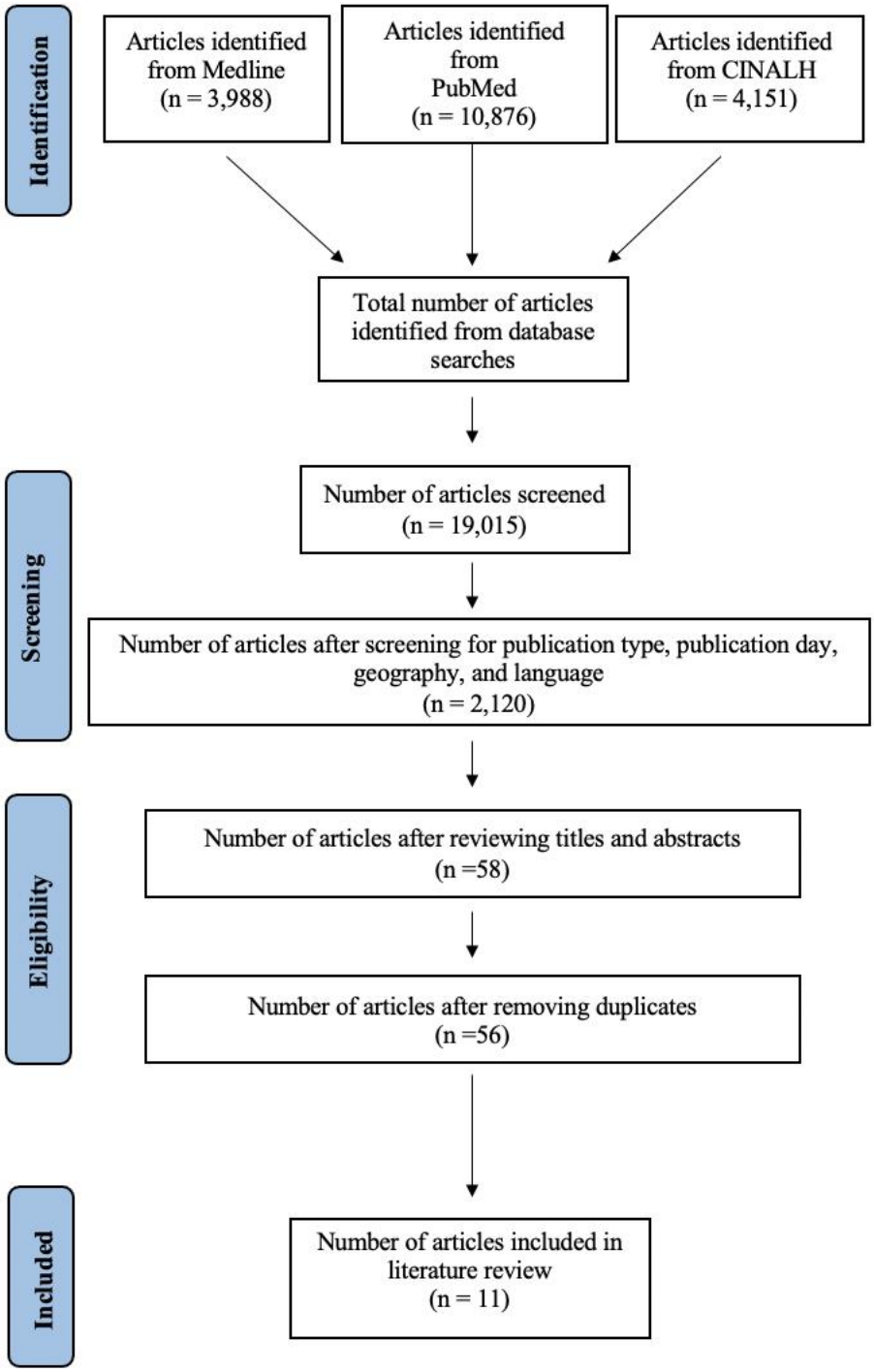

Figure 1. PRISMA breakdown of how articles were chosen.

After reviewing each of the 11 articles, the different themes associated with the quality initiatives were identified. The themes pursued in the articles included implementation of quality improvement (QI) frameworks, communication, teamwork, use of advance practice registered nurses (APRNs), cost effectiveness, staffing shortages, infection control, staff training and education, telehealth, online resources and tools, emergency preparedness, and clinical documentation (see Table 3). From these themes, the common quality initiatives to purse the improvement of these themes included increasing the use of APRNs, increasing staff training and education, improving communication between healthcare providers, incorporating telehealth for palliative care, providing online long-term care resources, and implementing infection prevention and control programs.

Table 3.

Themes associated with each peer-reviewed journal article

Title	Author(s)	Themes
A National Implementation Project to Prevent Catheter-Associated Urinary Tract Infection in Nursing Home Residents	Mody, L., Greene, M. T., Meddings, J., Krein, S. L., McNamara, S. E., Trautner, B. W., Ratz, D., Stone, N. D., Min, L., Schweon, S. J., Rolle, A. J., Olmsted, R. N., Burwen, D. R., Battles, J., Edson, B., & Saint, S.	• Infection prevention and control • Staff education and training
APRN-Conducted Medication Reviews for Long-Stay Nursing Home Residents	Vogelsmeier, A., Popejoy, L., Crecelius, C., Orique, S., Alexander, G.L., & Rantz, M. (2017).	• Use of APRNs • Medication errors
Call to action: APRNs in U.S. nursing homes to improve care and reduce costs	Rantz, M. J., Birtley, N. M., Flesner, M., Crecelius, C., & Murray, C.	• Use of APRNs • Cost effectiveness • Staffing shortage

Design of a Nursing Home Infection Control Peer Coaching Program	Wittenberg, G. F., Reddy, A., Gifford, D. R., McLaughlin, M. M., Leung, V., & Baier, R. R.	• Infection prevention and control • Staff training/education • Teamwork
Development of a Palliative Telehealth Pilot to Meet the Needs of the Nursing Home Population.	Baxter, K. E., Kochar, S., Williams, C., Blackman, C., & Himmelvo, J.	• Telehealth • Staffing shortage
Economic Evaluation of a Catheter-Associated Urinary Tract Infection Prevention Program in Nursing Homes	Hutton, D. W., Krein, S. L., Saint, S., Graves, N., Kolli, A., Lynem, R., & Mody, L.	• Infection prevention and control • Staff training/education • Cost effectiveness
Impact of Nurse Practitioner Care of Nursing Home Residents on Emergency Room Use and Hospitalizations	Bakerjian, D., & Dharmar, M.	• Use of APRNs
Implementation of Florida Long Term Care Emergency Preparedness Portal Web Site, 2015–2017	Blake, S. C., Hawley, J. N., Henkel, A. G., & Howard, D. H.	• Online resources/tools • Emergency preparedness • Communication
Improving Communication in Nursing Homes Using Plan-Do-Study-Act Cycles of an SBAR Training Program	Kay, S., Unroe, K. T., Lieb, K. M., Kaehr, E. W., Blackburn, J., Stump, T. E., Evans, R., Klepfer, S., & Carnahan, J. L.	• Staff training/education • Communication • Teamwork • Clinical documentation
Nursing Home Infection Control Program Characteristics, CMS Citations, and Implementation of Antibiotic Stewardship Policies: A National Study.	Stone, P. W., Herzig, C. T., Agarwal, M., Pogorzelska-Maziarz, M., & Dick, A. W.	• Infection prevention and control • Staffing shortage • Staff training/education

Results of the Missouri Quality Initiative in Sustaining Changes in Nursing Home Care: Six-Year Trends of Reducing Hospitalizations of Nursing Home Residents	Vogelsmeier, A., Popejoy, L., Canada, K., Galambos, C., Petroski, G., Crecelius, C., Alexander, G.L., & Rantz, M.	• Implementation of QI framework • Teamwork • Use of APRNs

Use of advance practice registered nurses (APRNs)

With a decline in physicians specializing in geriatrics, implementation of full-time APRNs in nursing homes would be beneficial to reduce unnecessary hospitalization for nursing home residents by providing a focus on care delivery, early illness detection, acute illness management, medication review, and systems change (Vogelsmeier et.al., 2021). In addition to a reduction in hospitalization, APRN care in nursing homes can reduce emergency room visits and Medicare expenditures. Care provided by APRNs has been shown to be cost effective, safe, and results in positive health outcomes and increased patient satisfaction (Rantz, et.al., 2017). A study involving a 5% random sample of all nursing homes in the United States, showed that patients nurse practitioner (NP) involvement (mean = 2.1) had fewer emergency department (ED) visits with a mean of 1.1 less visits compared with physician only care (mean = 3.2) (Bakerjian & Dharmar, 2017). This study shows that NPs, a type of APRN, can significantly reduce the use of the ED and acute hospitalizations by improving the health of residents during routine visits.

An additional study described how APRNs conducted medication reviews for long-stay nursing home residents and made recommendations for medication order changes to physicians. During the two-year study, 50% of the 19,629 reviews resulted in a recommendation for order

change by APRNs and 82% of those changed recommendations (n=8037) occurred (Vogelsmeier et.al., 2017). This study resulted that due to the advanced pharmacology education and daily presence of APRNs in nursing homes, it ensures that the prescribed medications align with the health goals of the residents and reduces the potential for harm due to the need of medication adjustments and/or discontinuation.

Staff training and education

Continuous education and ensuring staff are up to date on current practices, procedures, and policies are crucial to providing quality care for nursing home residents. Staff training and education are typically incorporated into nursing homes when new programs and quality improvement initiatives are created. When a nursing home infection control peer coaching program was introduced into nursing homes in Connecticut, an infection preventionist worked to identify peer coaches within staff members to provide real-time feedback on infection control practices (Wittenberg et.al., 2023). Peer coaches had the role of educating co-workers on infection control practices and provided corrections or praises when needed. Another study evaluating the impact of a catheter-associated urinary tract infection (CAUTI) prevention program created an interactive educational program for reducing multidrug-resistant organisms (MDRO) and device-associated infections and promoting proper hand hygiene (Hutton et.al., 2018). This education resulted in a 31% reduction in all clinically diagnosed CAUTIs and 8.7 fewer CAUTIs per nursing home per year.

Communication between healthcare providers

Improving communication between healthcare providers can reduce errors and improve the quality of care given to patients in nursing homes since incomplete communication can cause

negative outcomes. A situation-background-assessment-recommendation (SBAR) training program was implemented in Indiana nursing homes to improve communication surrounding changes in the residents 'conditions and improve nursing documentation (Kay et.al, 2022). SBAR is a tool intended to help improve clinical communication and to promote nurses to make recommendations based on assessments and patient background. Establishing a standard handoff communication tool improves patient safety by decreasing the risk for incomplete, inaccurate, and delayed information.

One change that was made in the training program was adapting the standard SBAR into the Optimizing Patient Transfers, Impacting Medical Quality, and Improving Symptoms: Transforming Institutional Care (OPTIMISTIC) program is in partnership with the CDC. The OPTIMISTIC adaptation is more beneficial for nursing homes because it allows for geriatric and palliative care trained registered nurses and nurse practitioners to collaborate with nursing home facilities to improve early recognition of condition changes, transitions to and from the hospital, and advanced care planning. Although there were no specific outcome values, the implementation of this quality improvement initiative led to an increased use of the SBAR tool, improved documentation, and increased the collaboration between healthcare providers in the participating nursing homes. It was also successful in reducing hospitalizations and hospital transfers for long-term care residents (Kay et.al, 2022).

Telehealth for palliative care

Nursing home residents with unclear goals of care are at higher risk of rehospitalization and often experience an increase in poor care at the end of life. However, conversations with residents about illnesses and wishes for care are not happening consistently across nursing home facilities. Time restraints and lack of formal training in advanced care planning, goals-of-care,

and end-of-life discussions are reasons why some nursing home facilities are not providing these services to residents (Baxter et.al., 2021). Making palliative care clinicians who are trained in discussions regarding advanced disease, goals of care, prognosis, and symptom management accessible can improve the goals of care and identify the needs of the residents in nursing homes (Baxter et.al., 2021).

Despite the need for palliative care services, access to these services is inadequate because palliative care clinicians are limited nationwide and found primarily in acute care settings. The implementation of telehealth palliative care is a quality improvement initiative that has been introduced to connect residents to palliative care clinicians remotely through telecommunications (Baxter et.al., 2021). A telehealth palliative care pilot program study done by Baxter et.al., found that of the 21 patients who received palliative care consults, none were hospitalized during the pilot (2021). However, of the 20 consultations that were canceled, 70% were hospitalized. This result shows that the incorporation of telehealth palliative care services can reduce hospitalization.

Online long-term care resources

The availability of online long-term care resources is another quality improvement initiative that has been introduced. One example of online long-term care resources is in the State of Florida. The Florida Long Term Care Emergency Preparedness Portal was created with the help of the Florida Health Care Association (FHCA) and Florida Department of Health (Blake et.al., 2018). The purpose of the portal was to improve disaster preparedness among LTC providers by developing an online tool that strengthens communication and collaboration among the LTC providers, public health organizations, and emergency management communities. The

online tool provides users access to information related to national and state preparedness planning and response, emergency preparedness training, and disaster recovery.

The article did not mention specific values of how the resources have improved health outcomes of nursing home residents. However, it indicated finding from the surveys that nursing home administrators completed (288 responses). The results of the survey showed that approximately 61.7% used the portal at least monthly or occasionally. 71.7% of respondents rated it as a good resource for LTC emergency preparedness planning. Respondents also indicated that although the portal had good information, it was difficult to find key resources.

Infection prevention and control programs

The Centers for Medicare & Medicaid Services (CMS) requires that nursing homes develop an infection control program that includes an antibiotic stewardship component and employs a trained infection preventionist (Stone et.al., 2018). This requirement has influenced the implementation of infection prevention and control programs to improve the quality of care and health outcomes in nursing homes. Infection prevention and control programs are important to implement because it assists facilities in preventing, diagnosing, and managing infections. Nursing homes have a greater need for these programs due to the high-risk population and the large number of shared spaces in nursing homes.

The Agency for Healthcare Research and Quality (AHRQ) funded a national infection prevention project in the nursing home setting to develop and implement interventions to reduce CAUTIs (Mody et.al., 2017). Technical and socioadaptive interventions were combined to educate on infection prevention and control strategies, empower facility teams, and address implementation barriers. Evidence based education on hand hygiene, prompt removal of

unnecessary catheters on admission, catheter maintenance and insertion, reducing inappropriate catheter use, and considering alternatives to indwelling urinary catheters were included in the infection prevention project. CAUTI rates from 368 participating nursing homes decrease from 6.42 per 1000 catheter days prior to the project to 3.33 per 1000 catheter days at the end of the project. 75% of the participating nursing homes reported at least a 40% reduction in CAUTIs in their individual facilities. Additionally, the overall Medicare stars rating among participating nursing homes increased by 0.02 points.

Discussion

In this systematic review, there were six nursing home quality initiatives introduced. Those initiative were to increase the use of APRNs, increase staff training and education, improve communication between healthcare providers, incorporate telehealth for palliative care, provide online long-term care resources, and implement infection prevention and control programs. After identifying the different values of each health outcome (see Table 4), the initiatives with the best outcomes were the use of APRNs, implementing telehealth palliative care services, and increasing infection prevention and control programs. The use of APRNs were successful in reducing the number of ER visits and ensuring the right medications and dosages were given to nursing home residents. This not only improves the health of the residents, but it reduces the costs that residents face from ER visits and the use of unnecessary medications. Implementing telehealth palliative care services is another initiative with one of the best outcomes because the study showed those who participated in palliative care consultations had a 0% hospitalization rate compared to a 70% hospitalization rate for those who had cancelled their consultations during the pilot period. With the use of telehealth palliative care services, it decreases costs associated with having an in-house palliative care service, reduces hospitalization rates, and increases the overall health of the residents.

Table 4.

Activities, outcomes, and values of each quality improvement initiative

Initiative	Activity	Outcome	Value
Use of APRNs	• Incorporated the use of daily nurse practitioners in addition to physician visits	• Decreased the number of ER visits • Recommendations lead to a change in medications	• Reduced ER visits from 3.2 to 2.1 visits • 82% of recommendations given to

	• APRNs conduct medication reviews		physicians occurred
Increase staff training and education	• Infection preventionists trained peer coaches on infection control practices to provide serve as a resource and train other staff	• Reduction on CAUTIs	• Clinically diagnosed CAUTIs reduced by 31% • 8.7 fewer CAUTIs per nursing home annually
Improve communication between healthcare providers	• Use of SBAR	• Improved documentation • Increase collaboration between healthcare providers • Decrease hospitalizations/hospital transfers	• N/A
Implement telehealth palliative care	• Piloted a telehealth palliative care program in nursing homes	• Decrease in hospitalization	• 0% hospitalization rate in nursing homes that utilized telehealth palliative care • 70% hospitalization rate in those who cancelled consultation
Incorporate online LTC resources	• Florida LTC Emergency Preparedness Portal	• Increase use in resources	• 61% of nursing home administrators used monthly or occasionally • 71% rated resources as good
Increase infection control and prevention	• AHRQ national prevention program using technical and socioadaptive infection prevention interventions	• Decreased the number of CAUTIs • Increase Medicare stars rating	• CAUTI rate decreased from 6.42 per 1000 catheter days to 3.33 • Overall Medicare stars increase of 0.02 points

Although all these initiatives had a positive impact in one way or another, they produced average outcomes and had limitations to their initiatives. One limitation to the use of APRNs is that Medicare reimbursement for APRNs is negatively affecting nursing homes from implementing this intervention. APRNs can only directly bill Medicare if they are supervised by a physician. If they bill indirectly and care is not provided under a physician, reimbursement from Medicare is only 85% of a physician's rate (Rantz, et.al., 2017). As a result, nursing homes have been reluctant to hire APRNs directly which has reduced the residents' access to timely and quality care. Therefore, this endorsed the need for policy change to increase reimbursement rates for nurse practitioners to promote the use of APRNs in LTC facilities.

A limitation to the implementation of staff training and education to improve quality of care are the lack of feedback given to staff, being short-staffed, and staff not making changes despite the education programs. To successfully implement and see changes from training and education, nursing homes need to be fully staffed for employees to follow through with the education they receive. Also, if there is not continuous check-in to observe if staff are following new practices, procedures, and policies, no improvement will be made if staff are not motivated nor independent. Ultimately, this can lead to a waste of resources, no improvement in the quality of care, and worse patient health outcomes.

The lack of staffing and limited time for quality communication and documentation are barriers to successfully implementing communication tools to improve communication between healthcare providers. Providers are prioritizing seeing more patients than spending time on documentation. Due to this issue, timely and quality documentation for residents is not always being completed, which affects the quality of their health due to incomplete, inaccurate, and delayed handoff of health information to other providers.

Similarly for infection prevention and control programs, one limitation is that nursing homes are understaffed. When nursing homes are understaffed, these programs may become neglected, or healthcare providers may not be able to help with infection management decisions. Another limitation is that older residents may not have the same symptoms as younger adults and their ability to communicate their symptoms to healthcare providers may be difficult (Stone et.al., 2018). This can delay identification of illnesses and care given to residents, resulting in an increase in hospital transfers, increased costs, and negative health outcomes for the nursing home residents.

In addition to the specific limitations for each initiative, there are a few issues identified with the current initiatives in place. One issue is that there is a variety of quality initiatives currently being implemented and piloted. This causes an issue of having no standardized quality initiative that all LTC facilities can implement. The inconsistency with quality measure tools for various types of LTC can also lead to providers possibly continuing to use the same modestly effective initiatives that aren't producing the highest quality of care and health outcomes.

Another issue is that since there is such a variety of quality initiatives, there aren't a lot of studies and academic journals published for each initiative to provide evidence that these initiatives have consistent results. A review by Toles et.al. supports the claim that there is a lack of published information on QI strategies in nursing homes (2021). They state that "little is known about how QI strategies are used in NHs, their effectiveness, or how to replicate or apply proven strategies across settings" (Toles et.al., 2021). They also discuss that QI work in nursing homes are not published and the reviews that are published are 6-15 years old. Additionally, they share that evidence from QI studies often have variations in terminology, outcomes measurement, and how findings are reported across methodologies. This provides support that

there are issues of having limited information regarding quality initiatives in nursing homes, having variations in quality measurements, and having most of the shared studies being completed many years prior.

This systematic literature review had a few limitations relating to the criteria and results identified in the articles included in this literature review. One limitation is that since the studies were limited to studies done in the United States, there were fewer quality initiative identified and there were limited articles to include in this review. Another limitation is that many of the articles were published before 2017, which limited the options that were available to include in this literature review. Also, with the criteria of having studies only with positive outcomes included in the literature review, it possibly could have filtered out other quality initiatives that are currently being used. Lastly, another limitation to this study is that there was a study that did not include values for their outcomes. The study that supported the use of the SBAR tool only indicated improved documentation, increased collaboration between healthcare providers, and a decrease in hospitalizations/hospital transfers. Without specific values of the outcomes, it can affect the accuracy of the comparison of the initiatives included in this literature review.

Recommendations

Many of the quality initiatives included in this literature review provided evidence that there are two main issues with the current quality initiatives in LTC. The first issue is that there is a lack of publications on studies that show the effectiveness of these quality initiatives. The second issue is that there is a large variety of initiatives with no standardized quality initiatives that can be implemented across all LTC facilities. Therefore, it is important for healthcare organizations and providers to allocate more resources and time to identify the best quality initiatives currently in place through studies and determine a standardize quality improvement processes that includes a few qualities improvement options for LTC facilities to incorporate into their organization.

One recommendation is to have a government agency such as the Agency for Healthcare Research and Quality to identify three quality initiatives and conduct multiple studies in LTC facilities across the nation to identify which initiative produces the best health outcomes. A plan, do, study, act (PDSA) model can then be used to implement the chosen initiative into a small group on nursing homes and identify areas of improvement. Once the initiative has been proven to have little to no limitation regarding the success of the initiative, it can be implemented across all the LTC facilities in the nation. After a successful standardized initiative is implemented, other initiatives can be incrementally added to the list of standardized initiatives for LTC facilities to use.

Another recommendation is to implement policy changes and increase funding to support the use of quality improvement initiatives. Without these, healthcare organizations and facilities lack the encouragement to make quality changes and healthcare in the United States will continue to be reactive instead of proactive. If we are reactive, healthcare costs will continue to

rise, patient satisfaction will decrease, and the quality of life will decrease. Although policy changes and additional funding can be challenging, by continuing to provide evidence-based data and results to those who can influence policy development and provide funding for these initiatives, it is possible to increase the practice of quality improvement.

Conclusion

The field of quality improvement in healthcare is important in improving our current healthcare system and advancing the use of public health in the United States. However, there are barriers to the implementation and success of quality improvement initiatives that need to be removed. Some examples of barriers include facilities being short staffed, lack of funding for initiatives, limited education or training, and poor health policies. As more evidence-based data proving the success of quality improvement initiatives become published and standardized quality initiatives are identified, it can greatly improve the quality, delivery, and outcomes of healthcare provided in LTC facilities in the United States. Therefore, this systematic literature review will help to bring awareness to the issues surrounding quality improvement initiatives in long-term care facilities in the U.S. Additionally, it brings awareness to how importance public health's role in implementing quality improvement initiatives that result in being proactive and providing quality care.

Application of Public Health Competencies

The following University of Nebraska Medical Center Master of Public Health competencies were met upon the completion of this systematic literature review:

Foundational Competencies:

MPHF4: Interpret results of data analysis for public health research, policy, or practice

MPHF15: Evaluate policies for their impact on public health and health equity

Concentration Competencies:

HSRAMPH4 - Summarize the legal, political, social, and economic issues that impact the structure, financing, and delivery of health services
within health systems in the US.
HSRAMPH5 - Examine information about health policy issues and problems, and evaluate alternative policy options for these issues.

MPHF4 and MPHF15 were accomplished through identifying and analyzing the outcomes from the long-term care quality initiatives. Each study in the 11 articles included in this systematic literature reviewed were reviewed to determine the common themes (see Table 3) and outcome/values of each initiative (see Table 4). HSRAMPH4 was met though identification of the issues surrounding access, cost, and delivery of healthcare for long-term care residents due to the lack of support, funding, and standardization of quality improvement. Lastly, HSRAMPH5 was met by identifying limitations of the regulations and policies of the quality initiatives and discussing a few recommendations. I recommended to change policies to increase funding on research and implementation of current and new quality initiatives. Another recommendation

was to determine which quality initiatives would result in the best outcomes and to use that research to create a standard quality improvement program across the nation.

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