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Registered nurse-led annual wellness visits in rural health clinics: A program evaluation of a new role

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Registered Nurse-Led Annual Wellness Visits in Rural Health Clinics:

A Program Evaluation of a New Role

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FACULTY COMMITTEE:

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Dedication Page

I wish to dedicate this work to my husband and 3 daughters who have unwaveringly supported me as I have gone through my higher educational journey. I also dedicate it to my parents who instilled in me a strong work ethic and a desire to learn which has allowed me to pursue new knowledge. Finally, I specifically dedicate my work to my mother who was an early casualty from Covid-19, and thus is not able to see the fruits of my work, but I know she would be proud of me.

Acknowledgments

I wish to acknowledge my entire HRSA grant team who helped to create the care model used for this important work. Dr. Erika Metzler Sawin (Project Director) and Ben Dolewski (the system Regional Clinic Director) as well as Anne-Callie Skillman and Theresa Gillenwater (RN Preceptors), and the staff in the partnering Rural Health Clinics were integral people in creating the RN roles explored in this work. I also acknowledge Dr. Jeffrey Feit, who was a flexible and creative practicum preceptor who allowed me to explore population health concepts in the health system. Finally, I acknowledge Dr. Jeannie Corey, my project advisor, for her tireless guidance and support in the creation of this work.

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Abstract

The passage of the Patient Portability and Affordable Care Act had a goal of increasing access for preventive care. The Medicare Annual Wellness Visit (AWV) has been a free yearly, comprehensive preventive care opportunity for most Medicare beneficiaries since 2011. Because of the time intensive nature of these visits, the overall national completion rate for them has been low as providers often perceive time and resource constraints. Registered Nurses (RNs) have the skill set to complete these visits with minimal provider involvement. Rural residents often face health care access barriers and outcome disparities, and Rural Health Clinics (RHCs) are a resource intended to increase access to health care in these disparate areas, but Registered Nurses are an underused resource in this setting. This program evaluation examined the impact of RN-led AWVs on preventive care completion in 5 RHCs in northwestern Virginia. These visits increased access to primary care while closing gaps in screening and preventive care including breast and colon cancer screenings with 66.7% and 45.8% completion rates after the visit. The visits also demonstrated emergency department encounters and hospital admission rates (19.9% and 8.8%) that were lower than the 2018 Medicare national average (27% and 15%). Potential role sustainability was demonstrated with the new generated income (approximately $45,000 in 6 months) and productivity for the clinic.

Keywords: Annual Wellness Visit, Rural Health Clinic, Primary Care, Registered Nurse, Preventive Care

Introduction and Purpose

In 2019, a Health Resources Services Administration Grant (HRSA) sponsored program hired two Registered Nurses (RNs) to train for and demonstrate full scope primary care nursing roles. They were introduced to and immersed in 5 Rural Health Clinics (RHCs) in a rural Virginia county to help manage patient care needs and expand access for both preventive and chronic illness care. The RNs created population health initiatives, managed care transitions and complex care needs, and offered free patient education and counseling visits. The RNs also initiated a new model of shared provider encounters, including Annual Wellness Visits (AWVs). A literature search demonstrated that the role creation and impact of RN interventions specifically in RHCs has not been comprehensively explored, therefore a program evaluation of this role through the lens of the AWV was conducted to determine if there were positive patient and clinic impacts as well as reveal opportunities for program improvement.

Annual Wellness Visit

The Annual Wellness Visit is a free yearly service for Medicare beneficiaries. The visits were created in 2010 by the Affordable Care Act and first offered as a member benefit in January 2011. The objectives of these visits include: addressing health maintenance, assessing for risk factors, and creating a health wellness plan each year. Per the Centers for Medicare and Medicaid Services (CMS, 2022b) there are three basic requirements for the AWV: updating of the medical record with health history and medication review; health risk assessment including vital signs and health screenings; and subsequent goal setting or creation of a plan of care. Risk screenings include vision, hearing, fall risk, depression and cognition. The preventive and chronic care needs

assessment includes needed vaccinations and United States Preventive Services Task Force (USPSTF) recommendations for cancer screenings, bone fracture risk assessment, and disease screenings (including hepatitis), as well as chronic disease gaps in care. Advance directive status and education is also addressed. This service can be offered once each calendar year.

AWVs have been shown to improve vaccination rates, screenings and closure of patient care gaps (Camacho et al., 2017). They also are associated with decreased hospital visits (Beckman et al., 2019). The national rate of completion for AWVs has been consistently low. A 2014 study found that only 15.6% of patients who were eligible to receive an AWV received one (Ganguli et al., 2017). This low rate of completion has historically been true in the partnering RHCs. Because AWVs can be time-consuming providers have historically been resistant to complete them as part of their routine care. In non-RHC settings RNs can complete AWVs independently, but RHC reimbursement requires a provider face-to-face encounter for billing and visit closure.

Rural Health Clinics

RHCs were created by Congress in 1977 as an innovative resource to help expand access to health care in rural American communities. RHCs get enhanced federal reimbursement for core healthcare services, and are required to employ non-physician providers such as Nurse Practitioners (NPs) or Physician Assistants (PAs) to provide care at least 50% of the time. The cost reporting and billing framework of RHCs is provider-centric and complex, and it encourages the hiring of less expensive clinical support staff to manage very complex patients. RHCs also have strict billing structures as well as definitions of providers and visits which can receive CMS reimbursement. In many non-

RHC primary care settings RNs often have robust roles in triage, care management, managing care transitions and managing population health initiatives, but most RHCs do not traditionally utilize RNs as part of a care team because of their cost, opting instead for less expensive clinical support staff including Medical Assistants (MAs) and Licensed Practical (or Vocational) Nurses (LPN/LVNs).

Literature Review:

A background literature review was completed specifically for care models and outcomes of non-provider AWV delivery as well as general AWV access or disparities, and evidence of preventive care completion or general positive impact of these visits. Cinahl and PubMed searches using the search terms “Annual Wellness Visit (s)” or “AWV” from 2011 to 2021 in academic journals were completed in the fall of 2021. Few studies were found specific to RN-led AWV models as well as on long-term outcomes of the AWV. Some studies did address impact and disparities in AWV. The overall outcome of this review demonstrated an overall lack of studies on RN primary care roles and no studies were found with a specific focus on these roles in federally designated Rural Health Clinics.

Research on general primary care RN roles and their potential and realized outcome impacts has demonstrated the need for and importance of innovative, holistic, patient-centered care models which integrate and elevate the RN skill set and scope of practice. Flinter et al. (2017) explored exemplar, high-functioning primary care practices and found that they utilized more RNs than typical practices in well defined, top of scope roles with positive impacts on outcomes, access and satisfaction (RN and provider). These authors suggest that care models will need to shift from acute care (hospital) to

community and primary care-focused approaches to care that elevate team-based care which includes the RN as an integral team member. A 2022 systematic review by Lukewich et al. (though not just in the United States) found that RNs in primary care roles (both independent and collaborative) did positively impact patient outcomes and "that outcomes resulting from care provided by primary care RNs are comparable and complementary to care provided by other primary care providers, specifically with respect to chronic disease prevention and management, smoking cessation, and wellness counseling" (p. 30). More recently, Beebe and Myers (2022) advocated for more robust care models with RN role utilization on primary care teams, allowing for RNs to truly work at top of scope, and the creation of reimbursement models which focus more on value and outcomes.

Purpose

The purpose of this PRECEDE-PROCEED program evaluation was to explore the outcomes of an RN-led AWV intervention on AWV completion numbers as well as preventive care gap closures after the introduction of two primary care RNs to the RHCs and initiation of a new AWV program. The evaluation and outcomes will help to inform the patient care impact and financial sustainability of RN roles in Rural Health Clinics.

Background: Evaluation Framework and Theoretical Model

PRECEDE-PROCEED Framework

The PRECEDE-PROCEED framework for health program planning and evaluation was created in 1974 (PRECEDE) and 1991(PROCEED) by Doctors Green and Kreuter (2005). This framework has historically been used to assess community or public health needs and associated interventions with eight steps, or phases, which guide the

evaluation process (see figure 1). The creators of this framework further described other opportunities for PRECEDE-PROCEED in a variety of settings including hospitals, clinics and provider offices to assess population health programs and to encourage the assessment of need and "missed opportunities" in healthcare settings, not just at a patient level but at a population level (Green & Kreuter, 2005, p. 411). The Rural Health Information Hub (n.d.-a) is an online data-base and resource center for working in rural settings with rural populations, and lists this framework in its evidence-based tool kits for rural health promotion initiatives and subsequent evaluation. Each of the framework's eight phases of assessment (social, epidemiologic, educational/ ecological, administrative/ policy), implementation, and then evaluation (process, impact, outcome) were addressed in this project as they pertain to the setting of RHCs, and the creation of top of scope RN roles in this setting with specific attention given to the AWV.

Phase One: Social Assessment

In 2019 there were five RHCs in a rural Virginia county which were owned and managed by a local Critical Access Hospital (CAH). The CAH and the clinics are a part of a regional health care system which owns and operates six hospitals as well as many outpatient clinics in three states, including approximately 25 RHCs. At the time of the RN role creation, the aforementioned RHCs employed full and part-time providers and clinical staff, specifically: eight MDs and DOs (four part-time), 11 NPs (3 part-time), one PA and many LPNs and MAs who provide clinical support. At the time of the phase one assessment, a total of 10 RN case managers, or "navigators" were being utilized system-wide in some clinics for care coordination, Chronic Care Management (CCM), and some

transitional care management but historically there was no RN presence in the five partnering clinics.

The clinic leadership consisted of lead physicians, clinic managers (one non-clinical and one LPN) and site coordinators (mostly LPNs). Regional and system clinic management was comprised of non-clinical, business and leadership-oriented professionals with general clinical oversight from the Vice President of Medical Affairs. There has historically not been a system organizational structure which clearly linked the primary care nursing staff to an RN leader. Educational support in the clinics has been largely overseen by a part-time hospital-based RN who ensured required clinic competencies were up to date such as mock codes, and the site coordinators ensured that RHC competency requirements, such as point of care testing, were up to date each year. All non-provider clinic staff have traditionally reported to the clinic managers. Overall, the clinic system, including the partnering RHCs tended to have a provider-centric culture. Because providers have been the primary source of income generation through fee for service reimbursement, innovative models of team-based care without a clear revenue stream to offset cost have not been explored. Until an academic partnership was established with the system and supplied two grant-funded registered nurses created to work in the five RHCs, only less expensive clinical staff positions existed for clinical support. The overall clinic culture was one that did not understand the RN scope of practice and one which referred to all clinical staff, including the MAs, as “nurses”.

Phase Two: Epidemiological, Behavioral & Environmental Assessment

More than 46 million Americans, or 15 percent of the U.S. population live in rural areas (Centers for Disease Control [CDC], 2020). Rural Americans have many health-

related disparities and often have limited access to healthcare resources including health education, care management and comprehensive chronic illness and preventive care (Rural Health Information Hub, n.d.-b). Per Healthy People (2020), access to healthcare is important for: overall physical, social, and mental health status; disease prevention; detection, diagnosis, and treatment of illness; quality of life; avoiding preventable deaths; and life expectancy. The northwestern Virginia rural county where this work was completed was (and continues to be) both a medically underserved area (MUA), and health professional shortage area (HPSA) so access to all health care can be challenging for people living in this county, which is surrounded by mountains and has limited resources including transportation. A Community Health Needs Assessment (2019) is completed collaboratively every three years by the partnering health system and Critical Access Hospital and this gives insight into the disparities and challenges in this rural county. The county is designated as rural, has an aging population of approximately 25,000, and has many poor health indicators as well as low preventive care rates. Per Ganguli et al. (2018), practices in rural areas and those caring for underserved and sicker populations were less likely to provide Annual Wellness Visits. In the year prior to the initiation of RN led AWVs, the partnering clinics completed very few of these preventive visits (less than 50 in 2018 per an electronic health record report).

Phase Three: Educational & Ecological Assessment

Pre-disposing

Historically, providers have not embraced the value of the AWV (in the U.S. or in the assessed rural Virginia county). In the partnering RHCs, clinical support staff were generally unaware of the AWV, did not traditionally offer AWVs, and did not clearly

understand its exact role and value for Medicare patients. Similarly, Medicare patients have not always understood the purpose or the goals of the AWV. As a result of this knowledge gap, when an AWV was completed, providers often felt compelled to do more than was needed or required for an AWV visit with acute or chronic care needs being addressed during this wellness focused visit. This knowledge gap led to provider AWV resistance, as well as RHC AWV billing challenges when the wellness visit turned into a problem-focused visit or a physical exam. There was also a clinical and leadership education gap on the scope of practice for RNs (specifically assessment, nursing diagnosis and subsequent planning, and patient education) and their potential care roles which could positively impact outcomes and productivity. There are new care model opportunities that can help to meet clinical expectations as providers face an evolving culture of value-based care, and new productivity requirements for reimbursement.

Enabling

New health system requirements and expectations based in preventive and chronic care gap closure, value-based care incentives, and focus on interventions that generate income while positively impacting care provided an opportunity for new, innovative care models. These new models included the creation of new primary care workflows, including an RN-led AWV pilot. To allow for this pilot, new processes were created including the creation of an RN schedule, a scheduling protocol, and a standard clinic workflow based in Medicare visit requirements.

Reinforcing

When looking for opportunities to reinforce this new program for clinic leadership and providers, the results could be viewed favorably through the lens of

improved productivity (measured with Relative Value Units or RVUs) as well as increased clinic reimbursement. Patients would ideally experience higher satisfaction with their care through increased access and healthcare engagement opportunities via the AWV. This satisfaction would also come from patients (and providers) knowing that all their well-care was being addressed and not just their acute or chronic care needs. Furthermore, patients and clinic leadership could see positive impacts from improved patient outcomes as measured by increased vaccinations and health screenings as well as decreased hospital admissions. A final reinforcement would be better general understanding of the RN role and scope of practice as opportunities to help with the Triple Aim (or even the Quadruple Aim) in the primary care setting.

Phase Four: Administrative & Policy Assessment/ Intervention Alignment

In 2018 an academic partnership was established with a local rural health system including HRSA grant funding which introduced a new enhanced primary care RN role to the RHCs with the goals of educating registered nursing students pursuing their Bachelor of Science in Nursing (BSN) on primary care concepts and demonstrating top of scope practice. Because no RNs were employed in the RHCs to precept students, two RNs were hired by the grant and contracted by the health system to work full time in the clinics, but the RNs had no expense impact for the system. As the RN role and job description were being created, all clinic provider and leadership stakeholders were interviewed for wants and needs in this new RN role. The grant team, including a Partnership Liaison, created these roles, and hired two BSN RNs. The liaison created a specialized orientation plan to prepare for this new role within RHC, and the health system that aligned with regulatory guidelines.

RHC regulatory, billing, and cost-based reimbursement requirements are complex and complicated to execute. Providers who may bill CMS for RHC services include MDs/ DOs, NPs, PAs, Certified Nurse Midwives, Clinical Psychologists, and Licensed Clinical Social Workers (CMS, 2022a). All other care is considered "incident to" these provider services (CMS, 2022a, p.13). RHCs are required to offer basic acute and preventive care services, which can include AWVs. Because of the way that the cost based All Inclusive Rate (AIR) in provider-based RHCs is calculated, these clinics historically keep costs low where ever possible except for providers which are able to sustain their own roles with reimbursable visits. This has created hiring practices with a focus on lower cost clinical staff which has not historically included RNs.

Value-based care is becoming an expectation from third party payers in all primary care settings, including RHCs, as these payers expect to see proof of effective, evidence-based care. RHCs have historically not been required to routinely report on quality related outcomes, so they have not traditionally utilized workflows or resources to meet all value-based care expectations. More emphasis has been put on holistic care interventions, such as the AWV, as an opportunity to comprehensively address preventive and chronic care needs in Medicare beneficiaries. With high rural provider turnover and challenges in rural provider recruitment, finding the time and resources to provide these visits in RHCs has been challenging. In traditional primary care settings, AWVs can be done independently by RNs, but in RHC settings a provider must have face-to-face patient contact to submit a charge for this, or any visit which is reimbursed at the AIR.

Phase Five: Implementation

In early 2019, after the grant team worked with the RHC stakeholders, a job description was created for two top of scope primary care RN roles, and these nurses were hired and trained to work full time in the clinics. The RNs were oriented to the health system, the five clinics, the clinic staff and the providers. As part of their education and orientation plan, the RNs were trained on AWV requirements as well as potentially helpful AWV skill sets including Motivational Interviewing, screening tools, preventive care and vaccination guidelines, and strategies for addressing advance directives. As the RNs were on-boarded to the system, the clinic and grant teams worked with electronic health record (EHR) team to create a dedicated RN primary care schedule template while also ensuring the an AWV template existed. The EHR team also created a dedicated inert code to track RN care. After researching and confirming AWV requirements, the Partnership Liaison and the RNs collected all appropriate screening tools and visit supplies.

Through staff meetings and individual interactions, the grant liaison educated all providers and clinic staff on the goals and requirements of the AWV as well as the new RN role. An AWV recruitment script as well as talking points for providers and clinical staff were created and shared in the clinics to start scheduling interested, eligible patients and these patients were then put on the newly created RN schedule. The wrap-around visit was created to be initiated by the RN who completed the required elements of the AWV and then the RN then flipped the patient over to that provider on the clinic schedule for the required elements for visit wrap-up and billing. The visit did not decrease provider capacity for non-AWV visits.

The AWV workflow was very detailed and precise. When the patient arrived at the clinic and checked in for the visit, the AWV protocol began as the RN roomed patient, followed the visit protocol and template, and completed and documented all required parts of AWV including screenings, medication reconciliation, advance directive discussion, goal setting, and referrals for appropriate preventive or follow-up care. At the end of the visit the RN consulted an on-site available provider (physician, NP or PA) regarding the visit findings or concerns, and the provider then visited the patient to confirm the assessment and plan of care and enter the billing code. The patient left the visit with a personalized care plan and goals, and an understanding of any chronic and acute care needs to be addressed in future visits. One month after the visit, the RN accessed the EHR to determine if the patient had completed follow-up care and recommended screening tests or referrals. If this care had not been scheduled or completed, the RN contacted the patient via phone or EHR messaging to ensure access to and understanding of the recommendations.

Phase Six: Process Evaluation

The Plan, Do, Study, Act (PDSA) model was utilized to assess: the utility of the scripts and patient recruitment strategies, the ease of patient scheduling, the flow of the patient visits with the RN using tools and an EHR template, the ease of visit closure by the provider, and the overall workflow for AWV pilot. Adjustments were made to the workflow as the PDSA demonstrated a need for change. The grant liaison had ongoing clinic stakeholder conversations with the RNs, providers, leadership and the schedulers to determine barriers to workflow, issues or frustrations, and any potential regulatory or billing issues. The RNs tracked visit numbers, interventions and completed care in a

secure database to allow for capture of any RN generated income for the clinic. The RNs and liaison also met regularly with third party payers and monitored online performance platforms to track AWV completion rates.

Phase Seven: Impact Evaluation

The impact evaluation was completed through an EHR assessment of all RN led AWVs from July through December 2019. This time-period was chosen because it was after both RNs had been well-established in their roles, but before the Covid-19 pandemic had closed the clinics and interrupted clinic workflows as well as access to recommended screenings (such as mammography and colonoscopy). Internal Review Board approvals were obtained from both the partnering health system and James Madison University to complete the necessary chart reviews to assess for completed preventive care interventions, specifically: colorectal cancer (CRC), breast cancer, bone density, cognition, fall risk, and depression screenings, and pneumonia vaccine completion. An EHR report was generated by the health system's analytics department for AWVs completed in the five clinics during the study time period. A spreadsheet was created for documenting care delivered during the visit as well as follow-up care in the 6 months after the visit. Each patient chart was reviewed using this data collection spreadsheet (see Table 1).

Guidelines for determining open gaps in patient care were per the 2019 United States Preventive Services Task Force recommendations (e.g. biennial mammography for females age 50 to 75), and the health system's internal 2019 pneumonia vaccine metric. Each RN-led AWV encounter was also examined for positive depression, fall risk and cognitive screenings and any follow-up intervention ordered for these positive screens

was tallied. Finally, the number of emergency department (ED) visits and hospital admissions for 6 months after the visit were assessed. These results were compared against average national Medicare beneficiary ED and hospital visit rates.

Phase Eight: Outcome Evaluation (Results)

Over 6 months, from July to December of 2019, the two RNs led 181 AWVs. The average patient age was 73.9 years. 108 of the patients were female (59.7%), and 73 (40.3%) male, and all of the patients were white. Per the AWV protocol, the RNs completed a thorough medication reconciliation, conducted screenings, assessed for gaps in care, created a patient-centered care plan and provided patient education. They reported all pertinent information to the provider who then saw the patient and closed the visit.

Depression screenings (Patient Health Questionnaire-9) were completed on all but one of the patients by the RNs. 10 of those screens (5.6%) were positive and providers placed a referral for three of those for a follow-up assessment. 179 patients received cognitive screenings via the Mini-Mental Status Exam (MMSE). 28 of the screens (15.6%) were positive and of those 11 referrals were placed for further evaluation (six declined a referral). The RNs also completed 178 fall risk screenings via the Timed Up and Go (TUG) test with 35 positive screens (19.7%). Of the 35 positive fall screens 16 were referred for further evaluation or intervention such as physical therapy (three declined referral). Three of the ED visits were fall related. See Figure 2 for results.

CRC was needed by 24 patients and 11 (or 45.8%) completed this screening within 6 months of the AWV. One additional colonoscopy was scheduled but cancelled due to pandemic shutdowns. 24 females were due for breast cancer screening and 16 of

them (66.7%) completed mammography within 6 months of their AWV visit. 23 women needed osteoporosis screening and 10 (43.5%) completed a screening bone scan within 6 months. Finally, 27 patients were found by the RNs to be due for a pneumonia vaccine, and 11 (40.7%) completed this vaccination within 6 months of their visit. See Figure 3 for results.

Advance directive completion at visit and 6 months after visit were also assessed during the chart review with 140 patients found to need this document in their EHR, but only three were added after 6 months. Other screening completions noted in the nursing documentation included hepatitis C screening (n=7, one was positive) and lung cancer screening (n=4). One patient was noted to have a significant medication discrepancy, and one had a diabetic foot exam completed during the visit. Two patients were also referred for RN education to manage their chronic illness as part of their care plan.

Each of the 181 charts was assessed for hospital encounters (both inpatient admissions and ED visits) within 6 months of the AWV date. 16 of those patients (8.8%) had at least one hospital admission. The national Medicare hospital admission rate average for 2018 was 15% (CMS, n.d.). 36 or 19.9% of the patients had at least one ED encounter as compared to the 2018 national Medicare average of 27% (CMS, n.d.).

The income generated by the RN visits (calculated by number of visits multiplied by the estimated local AIR of $250) was calculated for role sustainability with $45,250 in new generated income for these 6 months of visits. Productivity for the clinics and participating providers who closed the AWVs were measured via Relative Value Units (RVUs) generated and the total was 271.5 (1.5 per visit) total RVUs, though this total may be conservative, as the initial AWV is much higher (2.4 RVUs). These RVUs were

in addition to the providers' own generated productivity per their regular schedule. The health system did not allow for measuring satisfaction for specific care interventions, so direct AWV satisfaction could not be measured in this program evaluation. General, overall clinic patient and provider satisfaction would have ideally been compared from 2018 to 2019 but, due to system changes with inconsistent data migration, this data was no longer available per the Regional Clinic Director.

Conclusion

The Institute for Healthcare Improvement (IHI, n.d.) encourages that prospective health interventions utilize the Triple Aim framework which gives clear guidance that all healthcare should: improve the health of populations, improve patient care experiences (including both quality and satisfaction) and reduce the per capita cost of care This program evaluation of 5 RHC's in Virginia, determined that 181 AWV's were completed over 6 months in 2019 as compared to less than 50 for the entire previous year. This demonstrates a significant increase in access to preventive and well care services for rural residents served by the RHCs and supports progress toward the Triple Aim related to population health. Specific population health metrics including CRC screening, mammography completion, and pneumonia vaccinations are measured by the partnering health system to assess for quality of care through provider completion of evidence-based care, which is also patient centered and comprehensive, as well as safe and effective.

These same metrics are tracked by third party payers as part of their Healthcare Effectiveness Data and Information Set (HEDIS) measures which are used to determine shared savings reimbursement. HEDIS measures are used to evaluate whether care is efficient, cost effective and patient centered. If system-wide care meets the pre-set goals,

then the system gets part of the shared savings as a monetary disbursement. Furthermore, the opportunity for fiscal gain through appropriate risk capture via Hierarchical Condition Category (HCC) coding as well as eventual requirements to address social determinants of health as discussed by the American Academy of Family Physicians (n.d.) will also contribute to increased shared savings and can be facilitated by RN assessment during the AWV. An RN has the skillset to help direct a provider to capture diagnoses not always addressed during routine follow-up or acute care visits to create a more accurate patient risk assessment. Finally, the visits generated income for the clinics to help with role sustainability, and the potential savings from early diagnosis through screenings and preventive care as well as a reduction in hospital encounters means better quality of life for the patient, fewer hospital acquired conditions, and decreased chance of readmission.

Depression, fall and cognitive screenings and bone density screenings and their related interventions are patient centered as they both can positively impact patient outcomes. Falls and injury sequelae often lead to decreased quality of life (including pain and decreased independence), hospital admissions, surgery, or even death. Safety education and referrals for further intervention can mean fewer fall or osteopenia related injuries. Cognitive assessment and related referrals and interventions can identify concerns, potential resources, and a plan of care. Regular depression screening can allow for identification of needed interventions and referrals for mental health services. Prina et al. (2015) found that depressive symptoms increase hospitalization rates, length of stay and overall cost of care, so early diagnosis and treatment can greatly impact all three arms of the Triple Aim. Finally, pneumonia vaccines are important to prevent

community acquired pneumonia and related complications and so increased vaccination rates can improve individual and community health outcomes.

The two RNs embedded in the RHCs were primarily hired to precept students and demonstrate top of scope practice in primary care, so their impact observed in this pilot has far greater potential. If an RN were hired into this role with 100 percent of their time focused on creating and enacting evidence-based models of care to positively impact access and outcomes such as Chronic Care Management, transitional care, Behavioral Health Integration, lifestyle counseling, chronic disease management, triage and other clear RN roles, the impact and sustainability could be far greater that this program evaluation has demonstrated.

This pilot has informed a new model of RN care navigation at the system level. A former RN preceptor has used the data generated by this evaluation to create a new RN Navigator job description to include AWVs as part of the sustainability argument for the expanded role, especially when embedded in RHCs. The opportunities for direct income generation for the visits and downstream shared savings were part of the pro-forma created to expand the scope of RN-led care to more reflect the model described in this program evaluation.

RHCs serve a disparate population and often have limited resources to supply holistic, patient-centered, non-acute care. RHCs have staffing mix limitations because of reimbursement structures and RNs, though not typically utilized have the skill set to bridge gaps in care with the initiation of AWVs. A policy analysis by Switzer et al. (2021) discussed the value of creating reimbursement opportunities for RN roles in RHCs and this program evaluation has supplied real data that can add to a limited body of

knowledge about RN care in RHCs and RN-led AWVs and will inform the health system about the effectiveness and potential sustainability of this role. Finally, both the IHI (n.d.) and the Institute of Medicine's (2011) Future of Nursing Report have compelled primary care redesign that focuses on continuity and care transitions across settings, preventive care, and using RNs at top of scope practice to have an important role in this redesign. This evaluation was a means to explore patient and clinic outcomes from an RN led, evidence-based intervention and serves as a foundational assessment to guide continued scholarly exploration of registered nursing interventions and care opportunities in a variety of primary care settings.

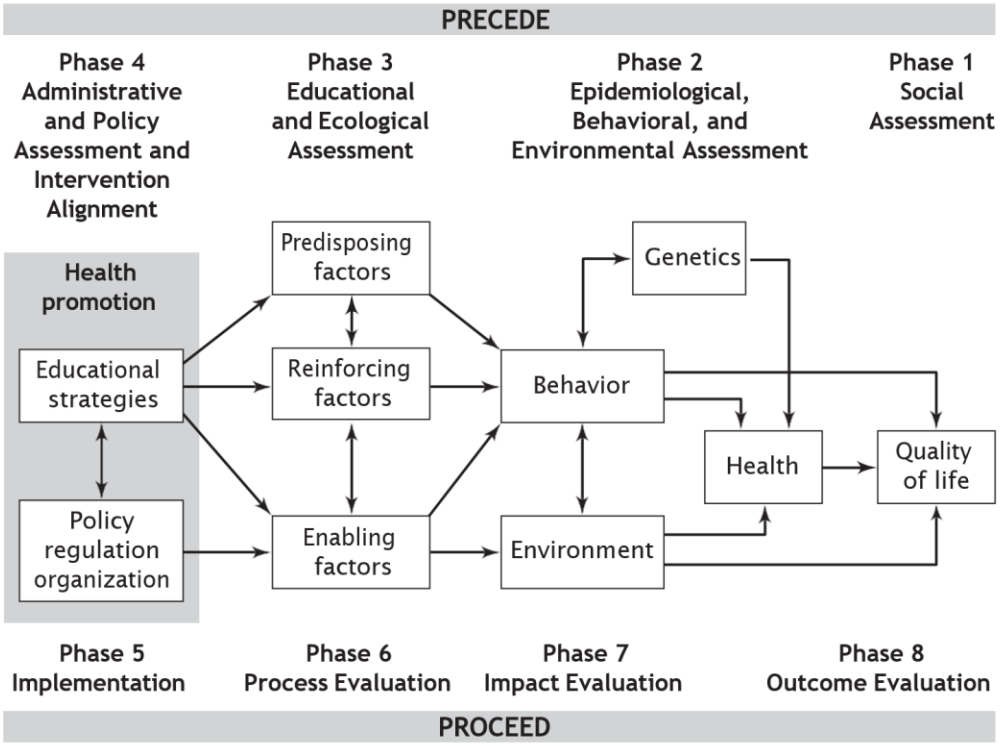
Table1: Sample Data Collection Grid

Age, Race and Gender	Depression Screen Y/N	Screen +Y/N	Fall Risk Screen Y/N	Screen +Y/N	Cognitive Screen Y/N	Screen +Y/N	Referral placed or treatment/ intervention initiated

CRC Gap Y/N	CRC Gap closed (within 6 months) Y/N	Mammo Gap Y/N	Mammo Gap closed (within 6 months) Y/N	Bone density gap Y/N	Bone density gap closed (within 6 months) Y/N

ED Visit (within 6 months) Y/N	Hospital Admission (within 6 months)	Pneumonia vaccination due Y/N	Pneumovax gap closed (within 6 months) Y/N	Advance Directive on chart Y/N	Advance Directive on chart (within 6 months) Y/N

Figure 1: PRECEDE-PROCEED Model



Note: Glanz, K., Rimer, B. K., & Viswanath, K. (Eds.). (2008). *Health behavior and health education: Theory, research, and practice* (4th ed), figure 18-1, page 410. Jossey-Bass. Reprinted with permission.

Figure 2: Risk Screenings Completed and Results

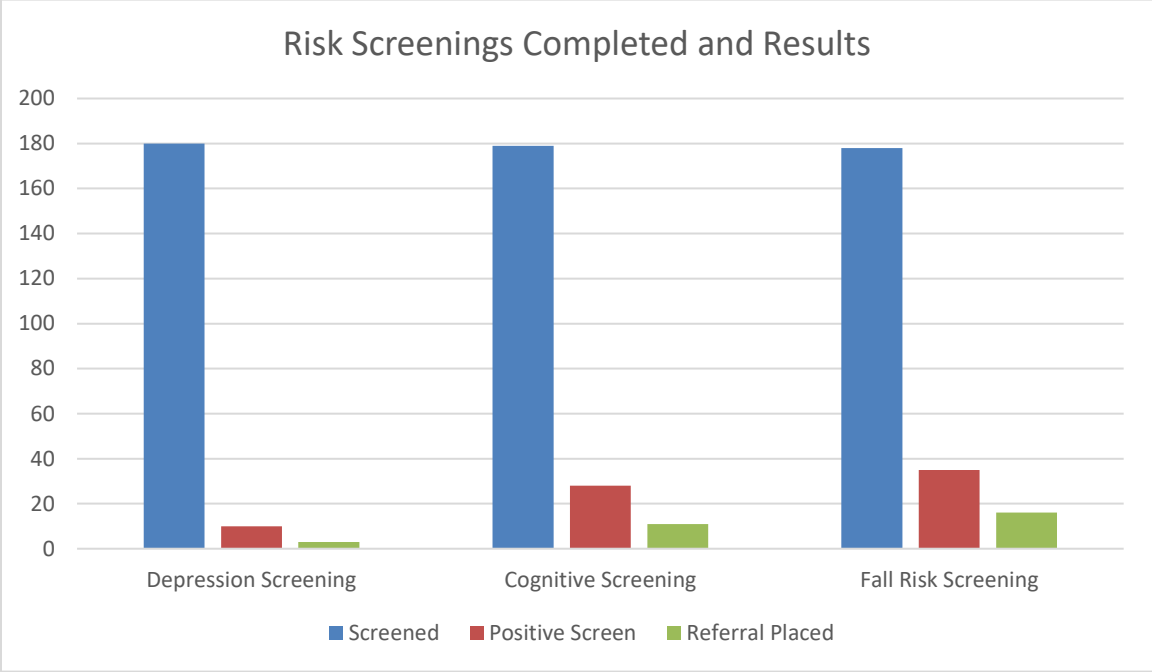


Figure 3: Gaps in Care Addressed by RN

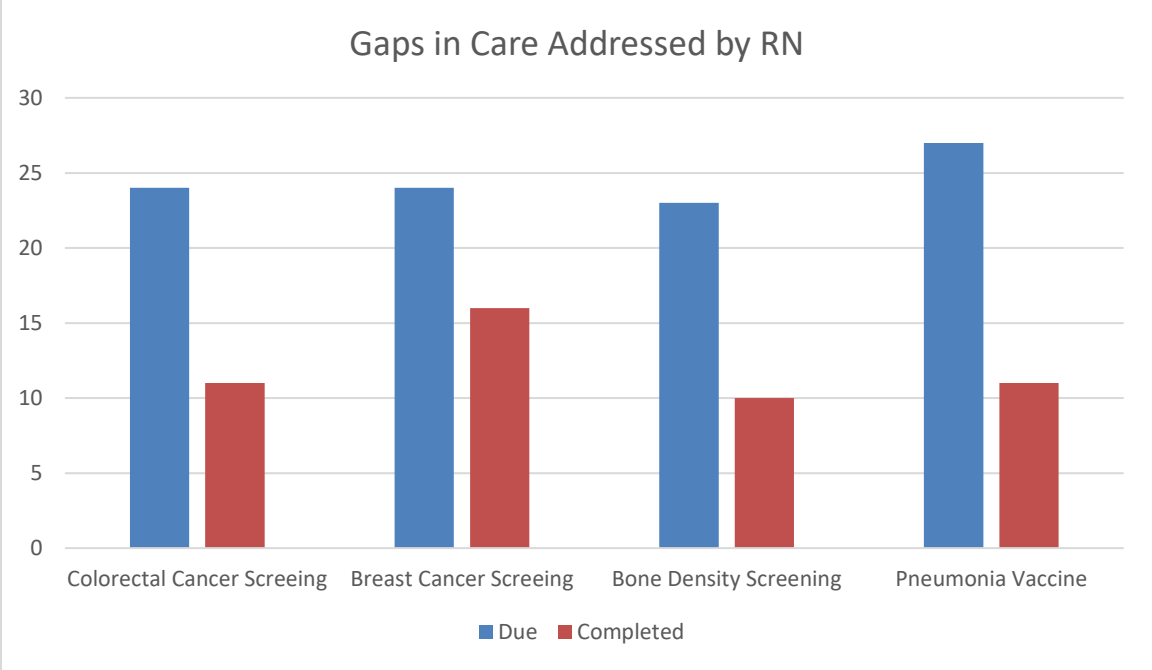
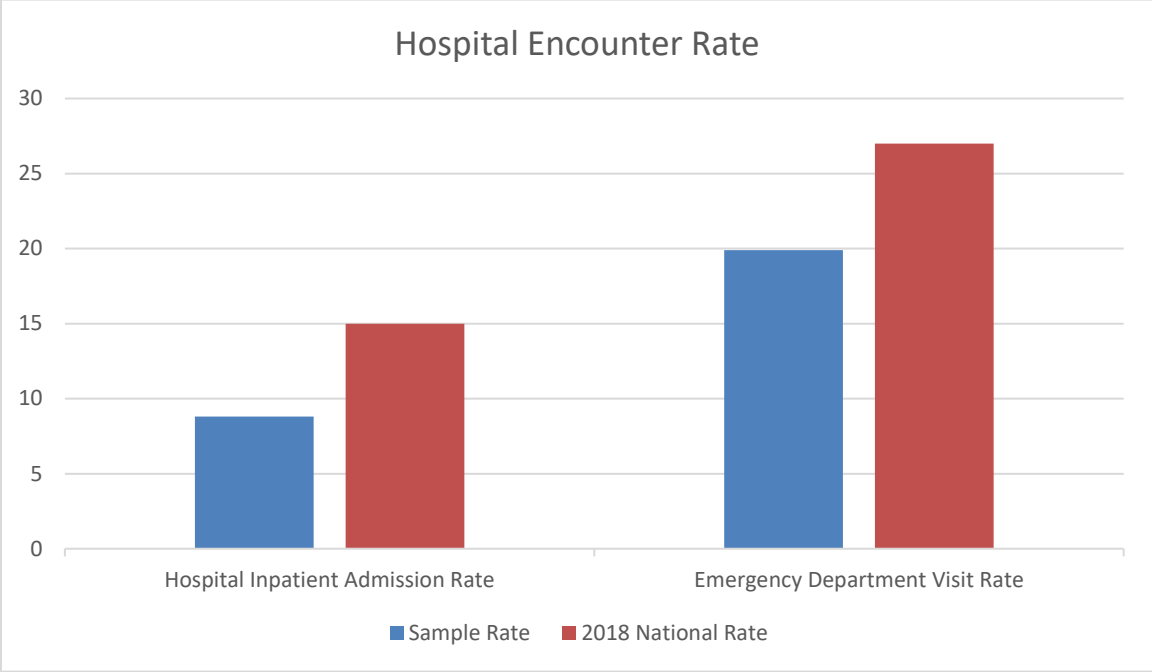


Figure 4: Hospital Encounter Rate



Note: statistical analysis

Hospital Admission Rate: The value of z is -2.1942. The value of p is .02852.

The result is significant at $p < .05$.

Emergency Department Visit Rate: The value of z is 2.0091. The value of p is .04444.

The result is significant at $p < .05$.

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