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Addressing Social Determinants of Health in Community-Based Palliative Care

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ABSTRACT

Background and Objectives: Addressing social determinants of health (SDOH) in the medical community has recently started; however, there is yet to be a standardized format for addressing the social needs of patients. Consequently, a protocol was developed to address SDOH to increase screening rates, social work referrals, and capture depression reimbursement.

Methods: The quality improvement project was implemented using the Plan-Do-Study-Act framework at an urban Community-Based Palliative Care organization in the Midwestern United States. Participants included office staff and 140 patients (two separate sets of 70 randomly selected patients pre/post-implementation). A protocol was developed for screening 11 SDOH using an already existing tool (SDOH wheel) in the electronic health record (EHR). Screening indicated if patients were at low, moderate, or high risk for each SDOH component and the need to refer to social workers. Reimbursement for depression, a component of SDOH, was captured. The QI project measures included: total number of patients and components screened, social work contacts made, and depression screening reimbursement for three months pre/post-implementation.

Results: There was a statistically significant increase in the number of patients (n= 70, $p < 0.0001$, Fisher's exact test), number of components screened ($\chi 2$: 49.6827, $p < 0.0001$) and social work contacts ($\chi 2$: 5.1225, $p < 0.0236$) three-month post implementation. Total reimbursement for depression increased from $0 to $90 post-implementation.

Conclusion: The protocol for screening and documenting SDOH improved screening rates, social work referrals, and depression reimbursement for vulnerable populations in a Community-Based Palliative Care setting.

Keywords: Quality improvement, social determinants of health, community-based palliative care, screening, social work contacts, referrals, community programs, community resources.

INTRODUCTION

As the U.S. population continues to age due to improved medical interventions, life expectancy has increased, but more people suffer from advanced life-threatening chronic conditions and require end-of-life care (Cruz, 2017; United Nations, 2019). The aging population now has more chronic conditions and there are significant economic consequences (United Nations, 2019). Individuals with at least five chronic conditions makeup 12% of the population but account for 41% of total healthcare spending (Buttorff, Ruder & Bauman, 2017). Of the Medicare beneficiaries who died in 2015, almost two-thirds were hospitalized during the last 90 days, and 29% were admitted to an intensive care unit (ICU) during the last 30 days of life (Yosick et al., 2019).

Community-Based Palliative Care

Palliative care can efficiently manage the costly needs of patients with advanced illnesses (Bernstein & Singh, 2019). Community-Based Palliative Care (CBPC) meets the needs of patients with advanced chronic illness at home and offers those near the end of life the best chance of maintaining the highest quality of life for the lengthiest time possible (Dhiliwal & Muckaden, 2015; Institute of Medicine [IOM], 2015). Yosick et al. (2019) found that palliative care's interdisciplinary team significantly reduced medical costs by 20% and resulted in a 33% in reduction in hospital admissions by addressing the patient's physical, spiritual and psychosocial symptoms associated with life-threatening conditions in the community. Palliative care providers are recognizing the importance of addressing non-medical challenges facing patients at home, which affects their quality of life. Some of these non-medical challenges are social determinants

of health.

Social Determinants of Health

Social determinants of health (SDOH) are conditions in which people live, work, and play that impact their health (Park, Roubal, Jovaag, Gennuso, & Catlin, 2015). The SDOH are a significant factor in high-cost care as people with unmet social needs are more likely to have frequent emergency department (ED) visits and hospitalizations (Berkowitz et al., 2015). Evidence supports the IOM's panel of measures for screening SDOH, which include the following: food insecurity, unstable housing, transportation problems, financial resource strain, substandard education, stress, depression, physical activity, tobacco use, alcohol use, social isolation, and intimate partner violence (Giuse et al., 2017). Addressing social determinants of health (SDOH) in the medical community has recently started; however, there is yet to be a standardized format for addressing the social needs of patients and many social need variables are not discretely represented in the electronic health record (EHR) (Hatef et al., 2020; Winden, Chen, Monsen, Wang, & Melton, 2018).

Clinical Practice Question

Will implementing a standardized process for assessing social determinants of health in the electronic health record increase screening rates, social work contacts, and initial depression reimbursement in the Community-Based Palliative Care organization?

Project Aims

The quality improvement project aimed to implement a protocol for addressing SDOH to increase screening rates, social work contacts, and initial depression reimbursement in the CBPC organization.

Model to Examine Social Determinant of Health

The Chronic Care Model was chosen to explore the phenomenon as it guides high-quality chronic disease management within primary care and improves patients' outcomes (Wagner, 1998). Three model concepts essential for the project included decision support, community resources, and self-management support. The SDOH wheel in the EHR was the decision support tool for this project because it helped organize data and facilitated decision-making when using the protocol to address SDOH needs. The social work contacts/referrals facilitated connections with community programs to help patients access community resources and facilitate participation in community programs with the end goal of encouraging self-management support.

Organizational Assessment

The Burke and Litwin model of organizational performance and change (1992) was chosen as the foundation of this organizational assessment because it has a multifaceted perspective on factors that influence change. A SWOT (strengths, weaknesses, opportunities, and threats) analysis also guided the organizational assessment (Table 1). The organization was a CBPC program that was part of an extensive health care system. Key stakeholders included patients, nurse practitioners (NP), registered nurses (RN), social workers, managers, and directors of the CBPC. Patients were the number one stakeholders as the project was centered around meeting their social needs. Providers (NPs, MDs, social workers) constantly communicated with the project manager regarding organizational needs. Charts were audited to collect data on pre-project SDOH assessment documentation.

The CBPC organization was relatively new and had been addressing SDOH since its inception four years ago; however, there was no standardized process for assessing SDOH components, including depression screening, an integral component of SDOH. There was a loss

of revenue in staff not consistently screening for depression. Moreover, when social needs were assessed, it was at the staff's discretion, and information was sometimes lost in the provider's notes. There was an existing SDOH wheel (Figure 2) in the organization's EHR (EPIC), which is a screening tool that, when used, captures patients' social needs in a more organized way. However, this screening tool (SDOH wheel) was not consistently used by staff, and so there was an opportunity to implement a screening protocol that encouraged optimal use of the screening tool (SDOH Wheel).

Table 1. *Organizational SWOT Analysis of the CBPC organization*.

Strengths	**Weaknesses**
• **Part of an extensive healthcare system.** • **Qualified leadership team interested in SDOH (DNPs, MDs, social workers).** • **A common goal to improve patient's quality of life and outcomes.** • **Flexible work climate and culture open to change.** • Historically, the organization has mentored DNP students who implemented projects.	• **No protocol or standardized process for assessing SDOH as it's a new organization.** • **Partnering with community-based resources has been a work in progress** • COVID-19 pandemic: home visits only when necessary. • Overlap of services with other departments
Opportunities	**Threats**
• **Other departments can learn from** the formal **structure to the social work role.** • **A coordinated HER documentation captured by other departments.** • **Reimbursement options: initial depression screening** • **Potential partnerships with community-based programs** • **A way to capture the market share: referrals to and from the CBPC organization**	• **COVID-19 pandemic: 15 % rate in ED visits and rapid change that could affect project implementation.** • Social workers may be overwhelmed with too many referrals. • Providers may leave to other departments or organizations with more standardize processes.

METHODS

Setting

The quality improvement project was implemented using the Plan-Dt-Study-Act (PDSA) framework and implementation strategies at an urban CBPC organization in the Midwestern United States.

Model/Framework for Implementation

The PDSA cycle is part of the IHI Model used for accelerating change within organizations (IHI, 2019). The PDSA cycle was used to evaluate if the utilization of the protocol for EHR SDOH assessment as a quality improvement initiative would increase screening rates, social work contacts (to connect patients to community resources), and reimbursement for initial depression screenings. As part of the protocol, providers used the SDOH wheel (Figure 2) in the EHR as a tool for assessing eleven social needs. Each step of the project using the PDSA cycle is detailed under the section on implementation strategies aligned with the PDSA cycle.

Subjects

The subjects for this project were patients and clinical staff of the CBPC program. Data were collected via chart review on 140 patients regarding SDOH screenings conducted by staff (2 Registered Nurses [RNs], 8 Nurse Practitioners [NPs], 2 social workers, 2 Medical Doctors [MD]). The billing department staff provided a report on depression reimbursement.

Intervention: Implementation Protocol

SDOH Wheel. The protocol started with providers (NP, social workers, MD, RN) locating both new and established patients' SDOH wheel (Figure 2) in the EHR. During routine visits, providers were encouraged to screen 11 SDOH components for new or established patients with greater than one-year since prior screening using the SDOH wheel tool. Each

patient has the potential to be screened for 11 SDOH components. Components were the 11 number of SDOH that make up the wheel for each patient. These components included depression, tobacco use, alcohol use, financial resource strain, food insecurity, transportation needs, physical activity, stress, social connections, and intimate partner abuse and housing (added in December 2020). After screening for depression, a component of SDOH, providers added the reimbursable Current Procedural Therapy (CPT) code 96127.

Figure 1. *Protocol for Addressing SDOH.*

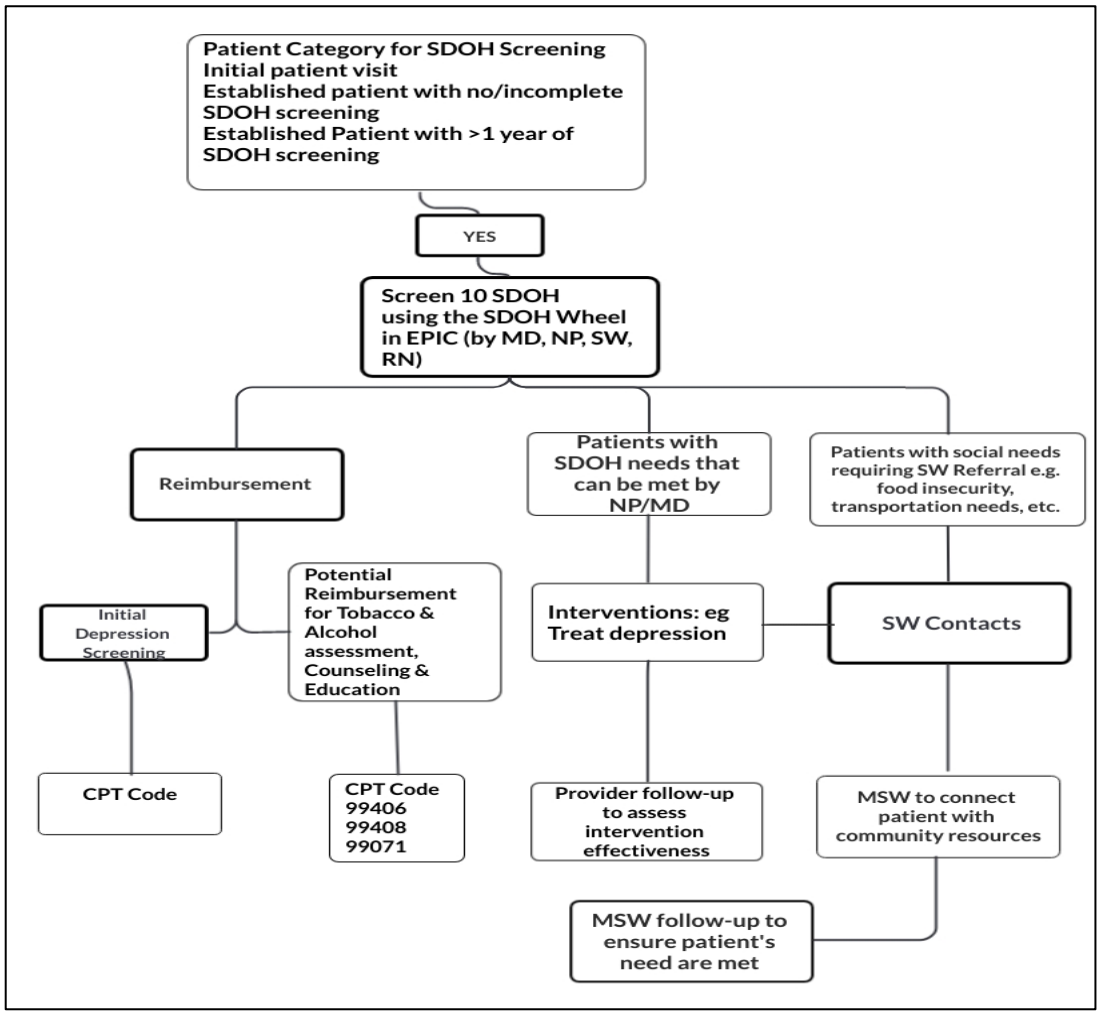
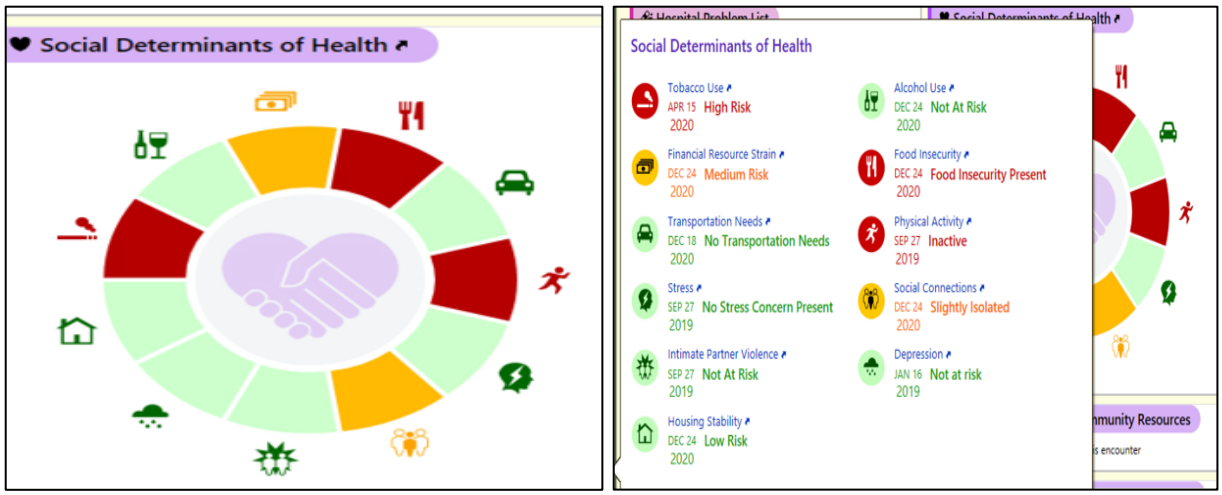


Figure 2. *SDOH Wheel & SDOH Sidebar in the EHR (EPIC).*



Characteristics of the SDOH Wheel. Screening indicated if patients were at low, moderate, or high-risk for each SDOH component based on their responses to screening questions and the need for provider intervention or referral to the social work. An SDOH or component risk indicated a cause for concern based on a patient's response. A low-risk component was displayed as a green color on the wheel and indicated no cause for concern since the patient was not in need or the component had no negative impact on the patient's health. Moderate risk was displayed as a yellow color on the wheel, indicating that the patient had a modest need for the component or that the SDOH was less likely to affect the patient and that they may need follow-up evaluation by the provider. High-risk components were displayed in red color and signaled immediate cause for concern, warranting provider intervention or social work referral.

Social Work Contacts/Referrals. The SDOH risk characteristics were important in determining patient priority for social work referral. Contacting or referring to social work was prioritized for patients with high-risk components only so social work interventions (counseling, therapy) could be started, or patients could be connected to community programs to address

their social needs. Not all high-risk components required referrals to social workers, advance care providers (NP, MD) could intervene (e.g., prescribe/titrate anti-depressants) in some instances.

Implementation Strategies Aligned with PDSA Cycle

The implementation strategies from Powell et al. (2015) aligned with the PDSA cycle were used to implement the project:

A. Planning Stage: The organization was assessed for readiness, barriers, and facilitators through organizational assessment and SWOT analysis. The assessment was performed through staff discussions, emails, and meetings to determine barriers and facilitators to project implementation. Clinical staff was engaged through meetings, emails, and discussions. The project manager visited another site to assess SDOH best practices to guide the development of the protocol. Clinical staff were shadowed to observe previous SDOH assessments. The project manager developed a new protocol/workflow process through collaborative (staff discussions) efforts with staff.

B. Do Stage: A protocol/workflow map to guide staff was distributed during the implementation phase to facilitate screening SDOH and referring to social workers. The project manager shadowed clinicians and engaged in monthly meetings to use the protocol screening tool (SDOH wheel). Clinical staff were consistently engaged via monthly meetings and discussions. Patient charts were audited, protocol reexamined to fit into staff workflow, and feedback relayed to staff.

C. Study: Chart audits and the billing report were used to collect data, and results were distributed to the staff project and site team. The protocol was reexamined, and a step-by-

step process for documenting depression screening and coding was developed and distributed to staff to facilitate documentation using the CPT code 96127.

D. Act: Final collected data were analyzed for statistical significance and shared with the project team. It was determined that more staff engagement and facilitation are needed to improve documentation of coding for depression screening to increase reimbursement.

Data Collection and Analysis

The EHRs of 70 random patients were audited for three-months (August, September, October) in 2020 before implementation to examine SDOH screening rates. After implementing an SDOH protocol, the EHR of another 70 random patients was audited for three months (11/5/2020 to 2/5/2021). Data on social work contacts were collected from the Palliative Care Quality Network (PCQN) pre-and post-implementation. Data on depression reimbursement using code 96127 was collected from the billing department pre-and post-implementation. Descriptive statistics were used to describe the sample, while Chi-square and Fisher's Exact test were used to determine statistical significance for pre-and post-implementation data.

Ethical Considerations

The Institutional Review Board for the organization deemed the project a quality improvement project. Only de-identified data was stored and collected outside of the organization's shared drive to protect patient and organization privacy.

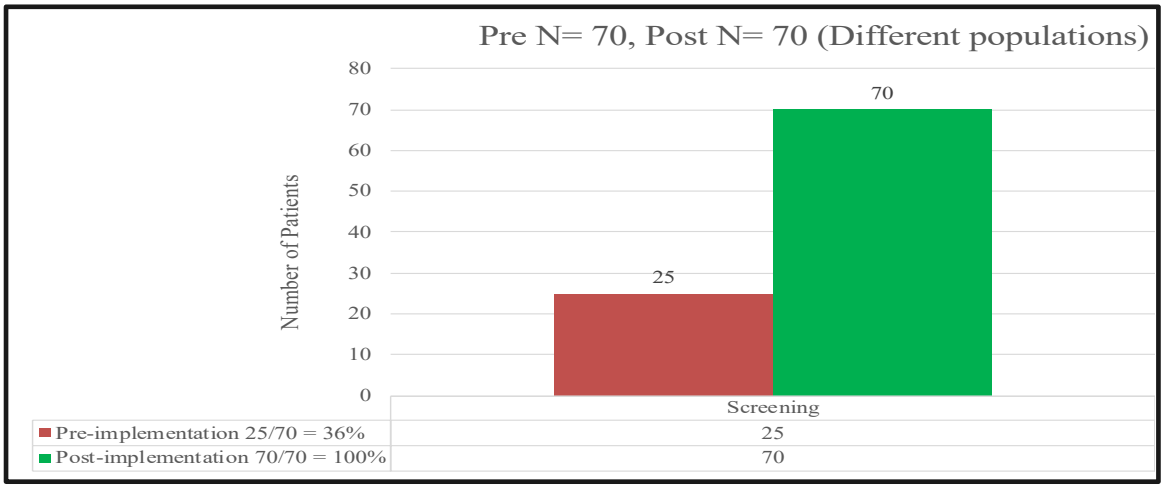
RESULTS

Number of Patients Screened

In total, 140 EHRs of patients were examined (different populations of n=70 pre and n= 70 post). As shown in Table 2, the number of patients screened for at least one SDOH component before implementation was 25 (n=70) and 70 (n=70) after implementation. After

implementation of the SDOH protocol, the number of patients screened for SDOH significantly increased (n= 70, $p < 0.0001$, Fisher's exact test) by 64% from 36% pre-implementation to 100% post-implementations.

Table 2. *Results: Number of Patients Screened*



Total Number of Components Screened

Table 3 shows the total number of components for all patients screened pre-and post-implementation was 27 (4%) and 261 (34%). There was a statistically significant increase in the total number of components screened post-implementation ($\chi 2$ test statistic: 49.6827, p <0.0001). Table 4 shows components screened also increased by month over three months post-implementation (11/5/2020 to 2/5/2021 [Nov = 29, Dec = 60, Jan = 127, Feb 1 to 5 = 45]). For Table 4, Although February had 45 components screened, the month is not reflected on the graph because implementation only went through 2/5/21 when implementation ended for this PDSA cycle. The purpose of having Table 4 was to capture components screened over a whole month. An average of one component was screened for each patient during the three months of pre-implementation. The only social needs or SDOH components assessed pre-implementation were depression and tobacco. There was an average of four components screened for each patient

post-implementation. The most common SDOH components assessed were tobacco, depression, transportation, financial resource strain, and food insecurity. The least components screened were housing and intimate partner violence.

Table 3. *Results: Total Number for Components Screened*

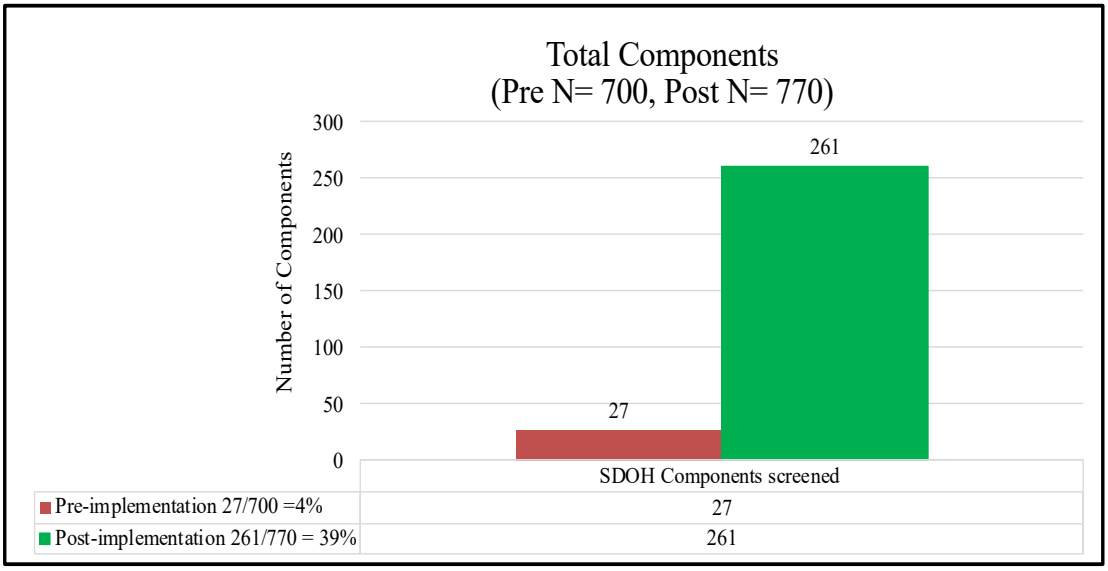
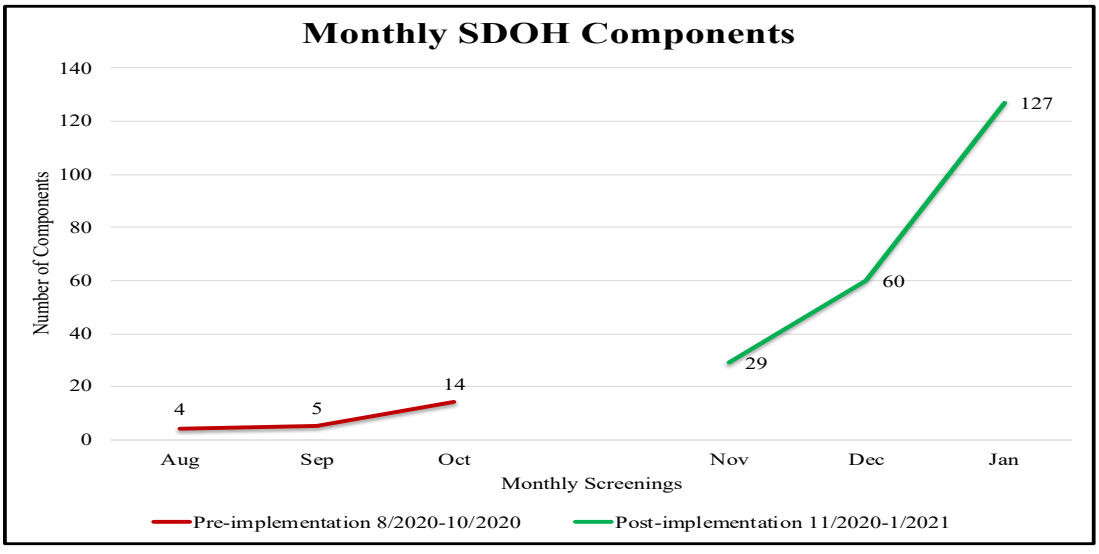


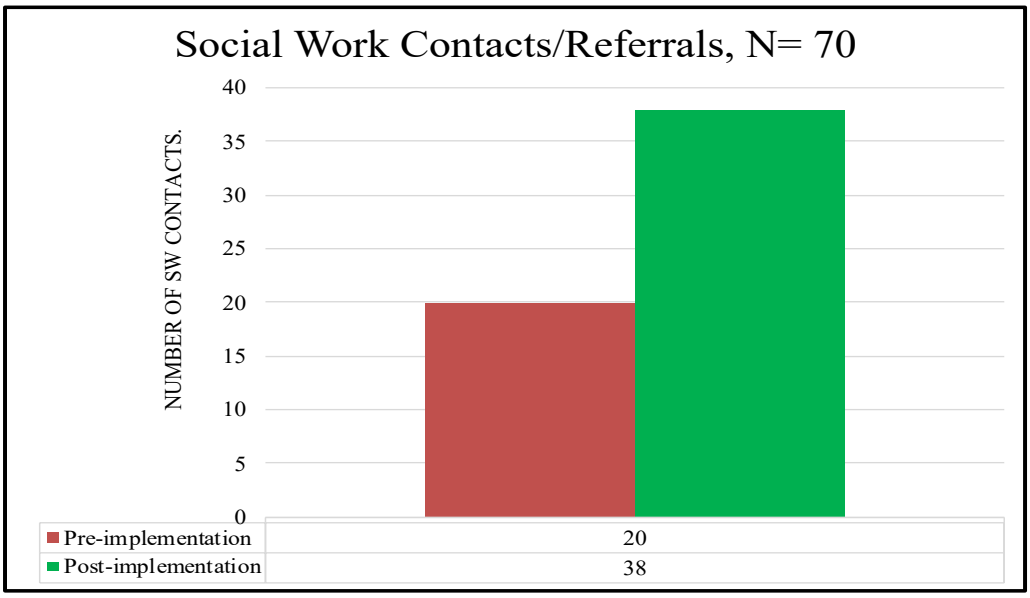
Table 4. *Results. SDOH Component Monthly Screenings*



Social Work Referrals/Contacts

Table 5 shows the number of social work contacts made for screened pre-and post-implementation patients significantly increased from 20 and 38, respectively ($\chi 2$ test statistic: 5.1225, $p < 0.0236$). The PCQN data entry did not indicate which patients or SDOH components social workers were contacted. The contacts or referrals to social workers were made when patients were at high-risk for at least one social need and the provider was unable to meet that need. Referrals or contacts were made to social workers to either intervene or connect patients to community resources. Only 4 (15%) components were high-risk during pre-implementation, while 52 (20%) components were high-risk. During post-implementation, 59% (154) and 21% (55) were low-risk and moderate-risk components. The details of all results, including SDOH risks, are summarized in Table 7.

Table 5. *Results: Total Number of Social Work Referrals*

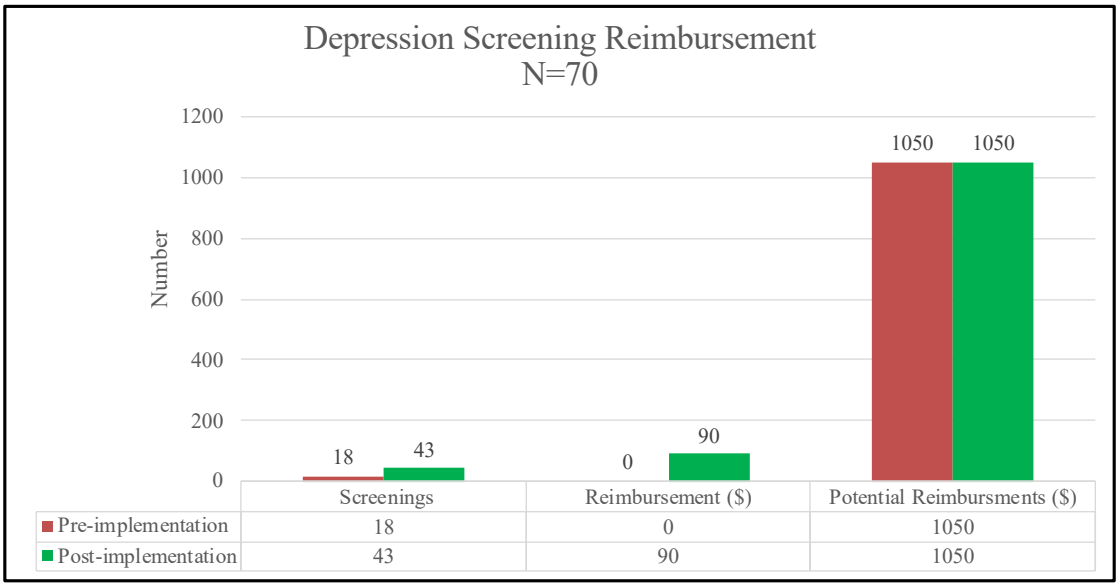


Depression Screening Reimbursement

Table 6 shows the number of patients screened for depression pre-and post-implementation was 18 and 43, respectively. Though 18 patients pre-and 43 patients post-

implementation were screened, the documentation of CPT code 96127 was omitted pre-implementation, with a resulting reimbursement of $0. After implementation, six of the 43 patients screened charts had the CPT code documented, resulting in $90 ($15 reimbursement per patient) reimbursement. The potential for depression screening reimbursement with proper coding of services rendered would have been $1,050. The increase in reimbursement started 1/23/2021, after the depression screening/coding discussion/meeting.

Table 6. *Results: Depression Screening Reimbursement*



The details of all results, including the number of patients, total components, average components, SDOH risks, monthly components, depression reimbursement, and social work contacts, are summarized in Table 6.

Table 6: *Summary of Results*

	Pre-implementation 8/1-11/1/20 Components to be screened for each patient =10 Sample = 70	**Post-implementation 11/5-2/5 Components to be screened for each patient=11 Sample = 70 (different from Pre-implementation Sample)**	**Statistical Analysis Based on Project Objectives.**
Number of patients screened	25 Percentage 25/70= 36%	70 Percentage 70/70= 100%	Fisher's exact test two-sided p-value is <0.0001, which is less than 0.05 indicating statistical significance difference.
Total number of components screened	27 Percentage of components screened= 27/700= 4%	261 Percentage of components screened= 261/770= 34%	(χ2 statistic: 49.6827, p-value: <0.0001
	Total components that should be screened = 70 patients*10 components = 700 components	Total components that should be screened= 70 patients* 11 components= 770 components	
Average number of components screened	1	4	N/A
Number of High-risk components	4	52	N/A
Number of Medium-risk components	0	55	N/A
Number of Low-risk components	23	154	N/A
Components screened by month	July= 4 Aug= 4 Sep= 5 Oct= 14	Nov= 29 Dec= 60 Jan = 127 8 days into Feb (45)	N/A
Number of Depression screenings	18	43	N/A
Depression reimbursement based on CPT code 96127	$ 0	$ 90 dollars (6 patients screened after 1/21/21 * $15)	N/A
Social work contacts (referred at least once)	20	38	(χ2 test statistic: 5.1225, p-value: 0.0236

DISCUSSION

The project aims were to determine if implementing a protocol for addressing SDOH would increase screening rates, social work contacts, and initial depression reimbursement for the first PDSA cycle. The project's first aim was accomplished as screening rates increased significantly by 64% for patients screened and 23% for the total SDOH components screened in the first PDSA cycle of three months. There was an increase from an average of one to four components screened per patient. Previous evidence from another study had also shown that a standardized protocol for SDOH increases screening rates and detects social challenges (high risks components) interfering with the patient's care plan (Berkowitz et al., 2015; Kay, 2020). Success in screening rates was accomplished through consistent staff facilitation and engagement during staff meetings. Step-by-Step workflow and protocol for addressing SDOH were explained during monthly meetings and distributed to staff via email to facilitate the SDOH assessment process.

The second aim of the project to increase social work contacts made after patients are screened was accomplished as there was an increase from 20 to 38 contacts. Though a significant number of social work contacts increased post-implementation, only 38 social work referrals/contacts were made for 70 patients, and 261 components were screened. The total number of components screened does not warrant a social work referral. Though the PCQN entry where data was collected did not indicate the nature of social work referrals related to SDOH risks, referrals were to be made based on high-risk components identified. There were more low-risk (154) and moderate-risk (55) social needs identified than high-risk (52) post-implementation. When a patient's screening indicated a low or moderate risk for a social need, no referral was needed. After implementation, the higher number of low-risk and moderate risk

components compared to high-risk components could explain relatively small social work contacts. Furthermore, not all high-risk components trigger and social work contact/referral; sometimes, the provider intervened, or the patient refused social work involvement. Written steps to the protocol for addressing SDOH were distributed to staff via email and meetings to engage staff and facilitate social work referrals within the organization.

The third aim of the project to capture the increase in reimbursement for PHQ-9 depression screening was achieved. The billing report indicated an increase ($0 to $90) in revenue from depression screening. There was no depression reimbursement during the pre-implementation period. Furthermore, even after implementation, there were only six patients billed for depression. This billing occurred after the educational meeting on depression screening/coding in January. During the first two months of implementation, there was an identified need for depression screening/coding education. In a previous study, Lewis, Whelihan, Navarro, & Boyle (2016) found that inadequate knowledge regarding the proper coding of SDOH led to a loss of reimbursement and revenue for a clinic. Many staff voiced concerns during monthly meetings on not being familiar with the process. Consequently, the project manager discussed with staff and wrote down steps to improve depression screening and coding to facilitate learning. Previous evidence showed that implementing a protocol for depression screening increased reimbursement (Fowler, 2019). Although there is a need for improvement in documenting the coding for depression screening to improve reimbursement, the depression screening discussion and education led to increased coding and subsequent reimbursement for January 2021.

The main expenses for implementing the project came from staff time. Estimated revenue came from the reimbursement at $15 per patient for depression screening using the Patient

Health Questionnaire (PHQ-9) post-implementation. If the CPT code 96127 were used for all PHQ-9 screenings of 70 patients, potential revenue generation would be $1,050 post-implementation. Furthermore, addressing SDOH can potentially increase cost savings by reducing frequent Emergency Department (ED) visits and hospitalizations. It is worth noting that in saving a patient from an ED visit and hospitalization, there is a potential estimated cost savings of $1,389 and $11,700, respectively (America's Debt Help Organization, 2020). Schickedanz et al. (2019) found that screening and addressing SDOH through social work referrals significantly ($p<0.001$) decreased total healthcare utilization (ED visits, inpatient setting).

Limitations

During pre/post-implementation, 11 patients with very advanced life-threatening conditions and high-risk needs passed away and were removed from the sample data. They were replaced with new randomly selected patients. While this loss did not affect any project aims, it could have played a part in the higher number of low/medium risk needs compared to the number of thigh-risk needs.

The COVID-19 pandemic affected initial project implementation as the CBPC staff prioritized frequent educational sessions on COVID-19 and related guidelines than assessing SDOH within the organization. Also, some of the staff had time off from work after contracting COVID-19 and new employees were hired during this period. Consequently, the protocol needed to be thoroughly explained during the first two months of implementation, which slowed down the project progress. Furthermore, the staff was not knowledgeable about the depression screening/coding for the first two months of implementation until they were worked through the

process during an educational session. Lastly, the PCQN lacked information regarding SDOH components (high-risk) that trigger social work referrals/contacts.

CONCLUSION

Prescribing medications for symptom management and discussing care goals achieves very little if the SDOH needs of patients with advanced chronic health conditions are not addressed. When SDOH needs of such vulnerable populations are not addressed, patients may not have adequate housing, transportation, income, and food, which could negatively affect their health, contribute to frequent ED visits and reduce cost savings. Addressing SDOH is still gaining momentum in the medical setting, and there is yet to be a standardized format for addressing patients' social needs. The protocol for screening and documenting SDOH improved screening rates, social work referrals, and depression reimbursement for vulnerable populations in a Community-Based Palliative Care setting.

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Addressing Social Determinants of Health in Community-Based Palliative Care

Mary Chenge, BSN, RN, DNP Student

DNP Final Project Defense

4/15/2021

GRAND VALLEY STATE UNIVERSITY
KIRKHOF COLLEGE OF NURSING

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    - Stacey Vanderklok MSW, Manager
    - Angela Kinch, Business & Development Manager
    - Morgan Kochajda-Watkins, DNP, RN
    - Andrea Giffel, DNP, RN

Objectives for Presentation

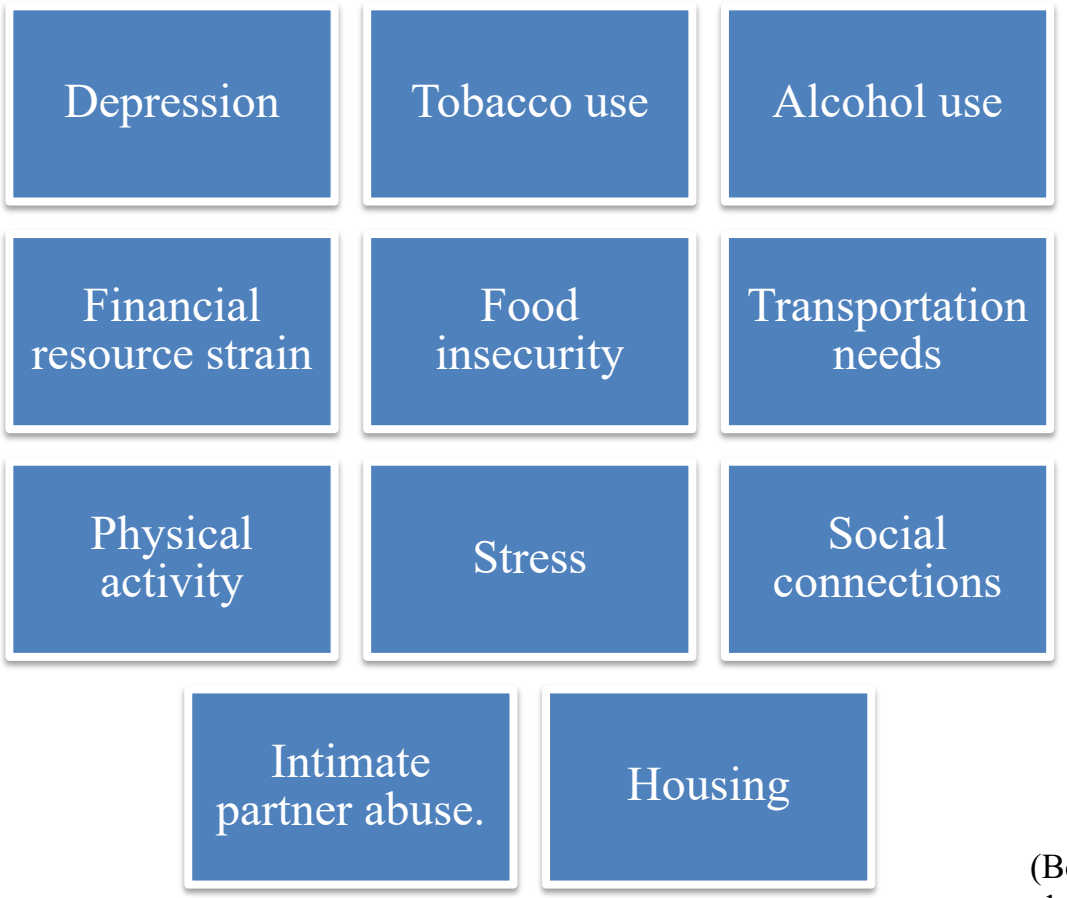
1. Discuss the phenomenon of social determinants of health (SDOH) in palliative care and identify the clinical problem.
2. Identify the organizational needs and review literature support for addressing SDOH.
3. Describe the project design, data collection, and implementation strategies.
4. Review project results and implications.
5. Discuss Doctor of Nursing Practice (DNP) Essentials during project.
6. Obtain approval of the project defense

Introduction to the Clinical Phenomenon

- Increased life expectancy & aging population in the US (Buttorff, Ruder & Bauman, 2017; Cruz, 2017; UN, 2019; Yosick et al., 2019)
  - Chronic conditions & advanced illnesses
  - Frequent hospitalizations
  - Significant economic consequences

- Community-Based Palliative Care (CBPC) can effectively manage this population (IOM, 2015; WHO, 2018; Yosick et al., 2019)
  - Reductions in total medical costs & hospital admissions
  - Need to address non-medical challenges affecting quality of life

Clinical Phenomenon: Social Determinants of Health (SDOH)



- People with unmet social needs have frequent ED & hospital visits
- Evidence supports screening & addressing SDOH

(Berkowitz et al., 2015; Giuse et al., 2017; Park et al, 2015)

Model to Examine Phenomenon: Chronic Care Model

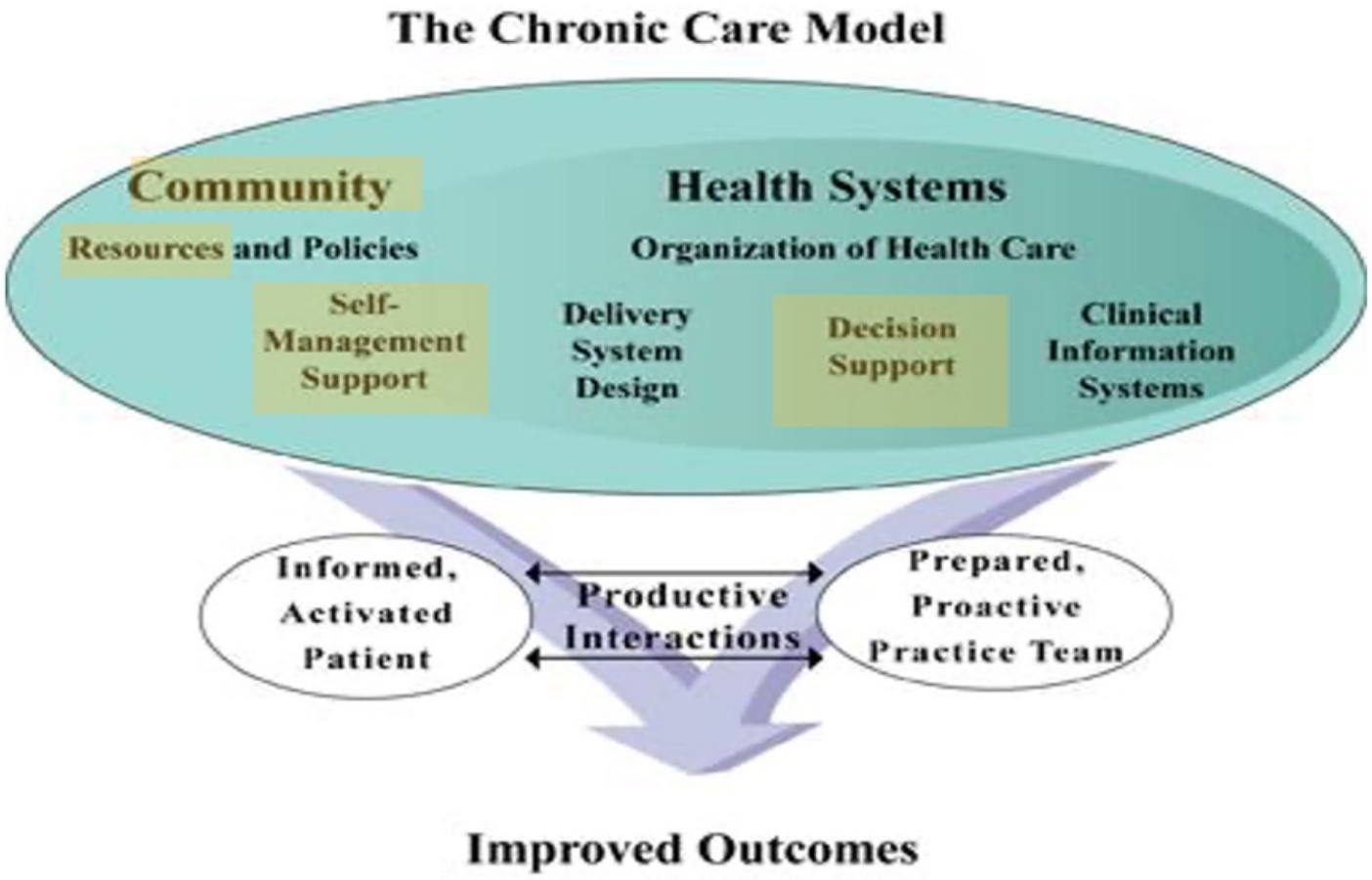


Figure 1. The chronic care model. Retrieved from http://www.improvingchroniccare.org/index.php?p= The_Community&s=19

Current State of the Community Based Palliative Care (CBPC)

No protocol for assessing and documenting all 11 SDOH

No consistent screening for SDOH & depression billing, which is a component of SDOH

- SDOH 25/70 patients screened
- 18/70 screened for depression, 0$ billing
- 20 SW contacts/referrals

Key Stakeholders

- Division Chief of Hospice/CBPC
- Director of Hospice/CBPC
- Business and Program Development Manger
- Clinical manager of Hospice/CBPC
- NPs
- RNs
- SWs
- **Patients**

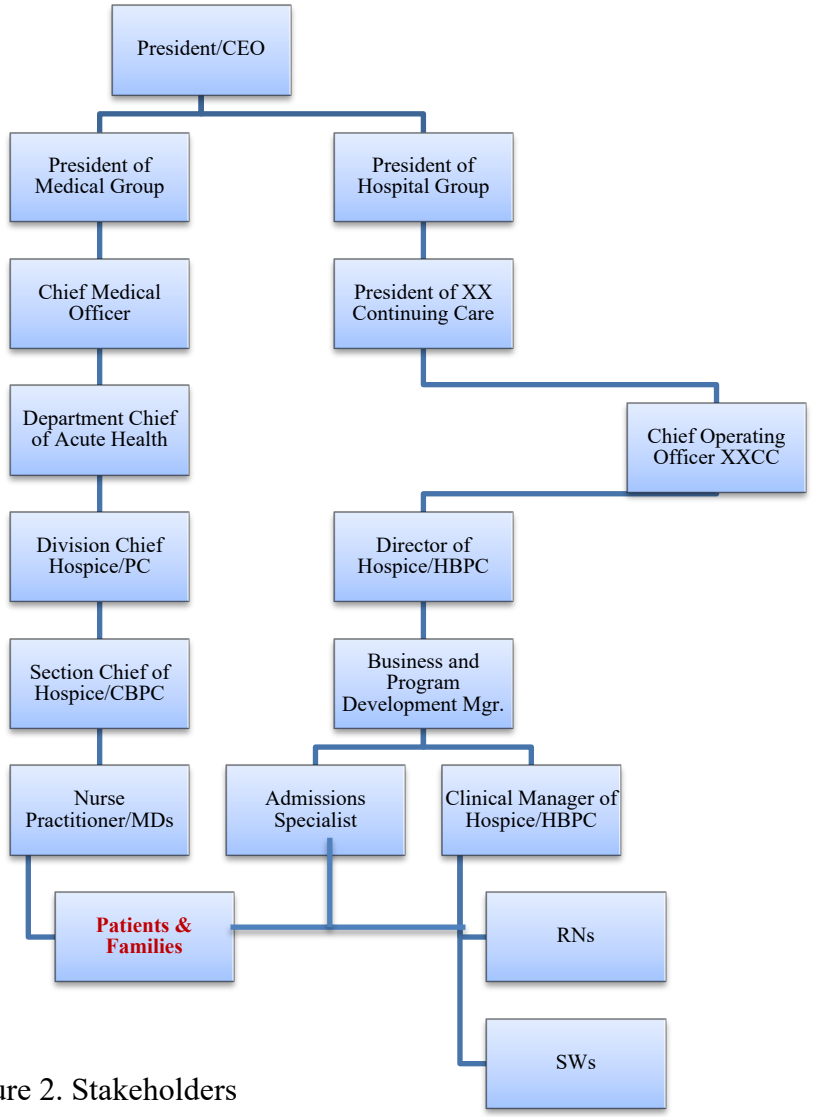


Figure 2. Stakeholders

SWOT Analysis

Strengths	Weaknesses
• **Part of an extensive healthcare system.** • **Qualified leadership team interested in SDOH (DNPs, MDs, MSWs).** • **A common goal to improve patient's quality of life and outcomes.** • **Flexible work climate and culture open to change.** • Historically, the organization has mentored DNP students who implemented projects.	• **No protocol or standardized process for assessing SDOH as it's a new organization.** • **Partnering with community-based programs has been a work in progress** • COVID-19 pandemic: home visits only when necessary.
Opportunities	**Threats**
• **A coordinated EHR documentation captured by other departments.** • **Reimbursement for depression screening** • **Potential partnerships with community-based programs will capture market share**	• COVID-19 pandemic: 15 % rate in ED visits and rapid change that could affect project implementation. • **SW could be overwhelmed with too many referrals** • Providers may leave to other departments or organizations with more standardize processes.

Clinical Practice Question

- Will implementing a standardized process for assessing social determinants of health in the electronic health record increase screening rates, social worker contacts and depression reimbursement in the Community-Based Palliative Care organization?

Literature Evidence for Project

- Standardized process for screening using the EHR (Buitron et al., 2019; Friedman & Banegas, 2018; ;Kay, 2020; Schickedanz et al., 2019)
  - Organizes SDOH documentation
  - Increases screenings, appropriate referrals & referral tracking/follow-up.
- Increases reimbursement: Depression screening (Dostal & Boerding, 2019; Fowler, 2019)
- Interventions: utilizing SWs to facilitate referrals to community programs to meet needs has long-term health outcomes of decreased ED visits, hospitalizations and cost-savings (Berkowitz et al, 2015; Fiori et al., 2020; Schickedanz et al., 2019)

Project Methodology

Methods

Project Type: QI

Setting: CBPC

Evaluation Method: Pre/Post comparison of SDOH screenings, SW contacts & depression reimbursement.

Participants: Patients & Providers of the CBPC

- 70 patients were randomly selected pre-implementation
- Another 70 patients randomly selected post-implementation.

Source of information: patient charts, billing report & Palliative Care Quality Network (PCQN) data report (SW contacts).

Purpose/Aim

A quality improvement project to:

- Implement a protocol for screening and documenting SDOH in the Electronic Health Record to increase screening rates.
- Increase SW contacts/referrals (to address the social needs of patients screened).
- Capture reimbursement for depression screening, which is an integral component of SDOH.

Project Objectives & Timeline

1. Develop a protocol for addressing SDOH between 9/1/2020-10/31/2020.
2. Initiate staff monthly informational meetings on SDOH protocol plan between 8/1/2020-3/31/2021.
3. Record the number of pre-implementation SDOH screenings and SW contacts done between 8/1/2020-11/1/2020.
4. Capture pre-implementation reimbursement for depression screening between 8/1/2020-11/1/2020.
5. Record the number of SDOH screenings and SW contacts to patients at 3-months post-implementation between 11/5/2020-2/5/2021.
6. Record the number of depression screenings at 3-months post-implementation between 11/5/2020-2/5/2021.
7. Complete statistical analysis of 3 months pre/post-implementation data by 3/31/2021.
8. Distribute quality improvement project findings and sustainability plan to the project site and GVSU faculty mentors by 4/30/2021.

Implementation Framework—Plan-Do-Study-Act

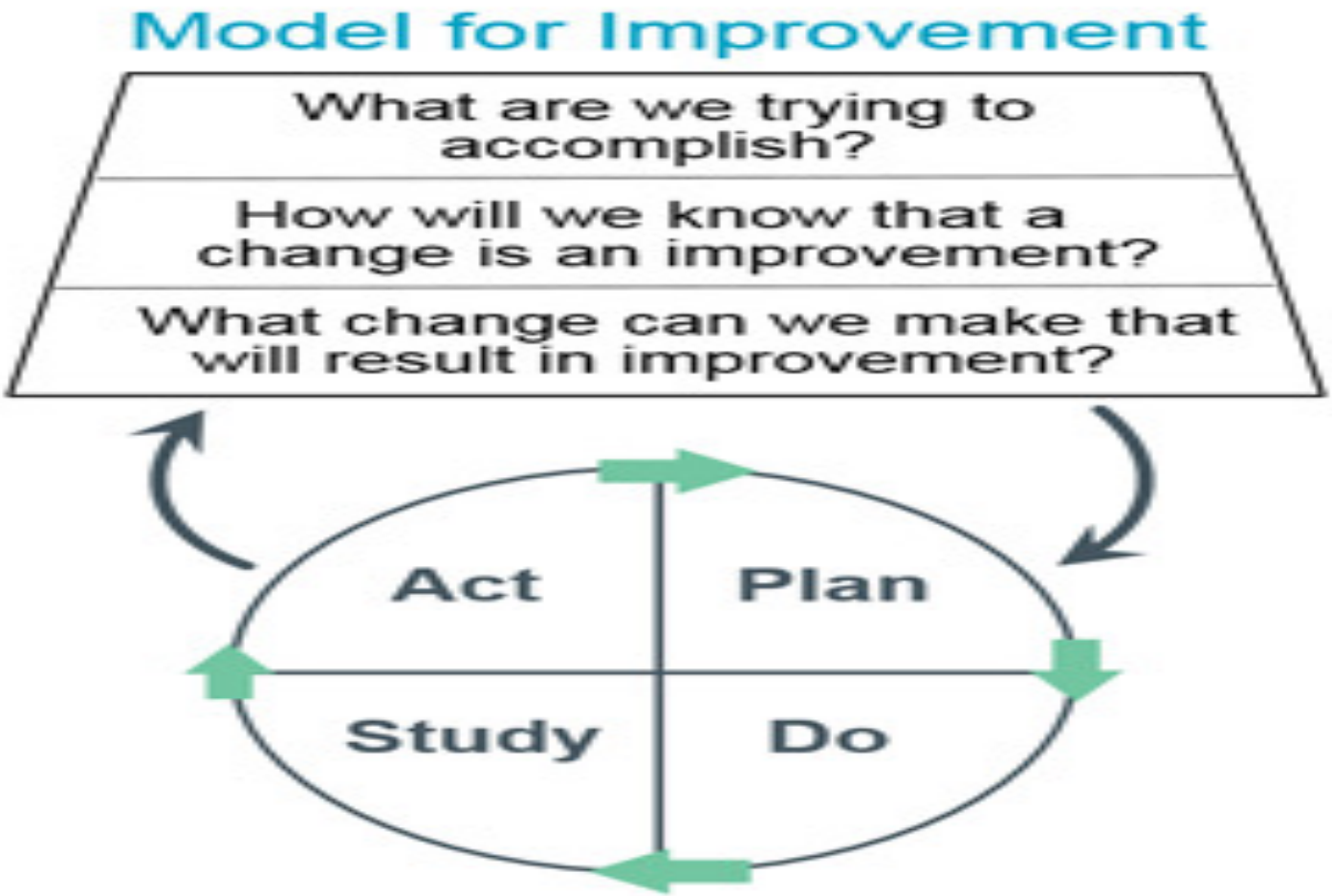


Figure 4. The Improvement Guide: A Practical Approach to Enhancing Organizational Performance, by G. L. Langley, R. Moen, K. Nolan, T. Nolan, C. Norman, L. Provost, 2009, Jossey-Bass Publishers, p. 21. Copyright 2018 by the Institute for Healthcare Improvement.

SDOH Protocol Approach to the Plan-Do-Study-Act

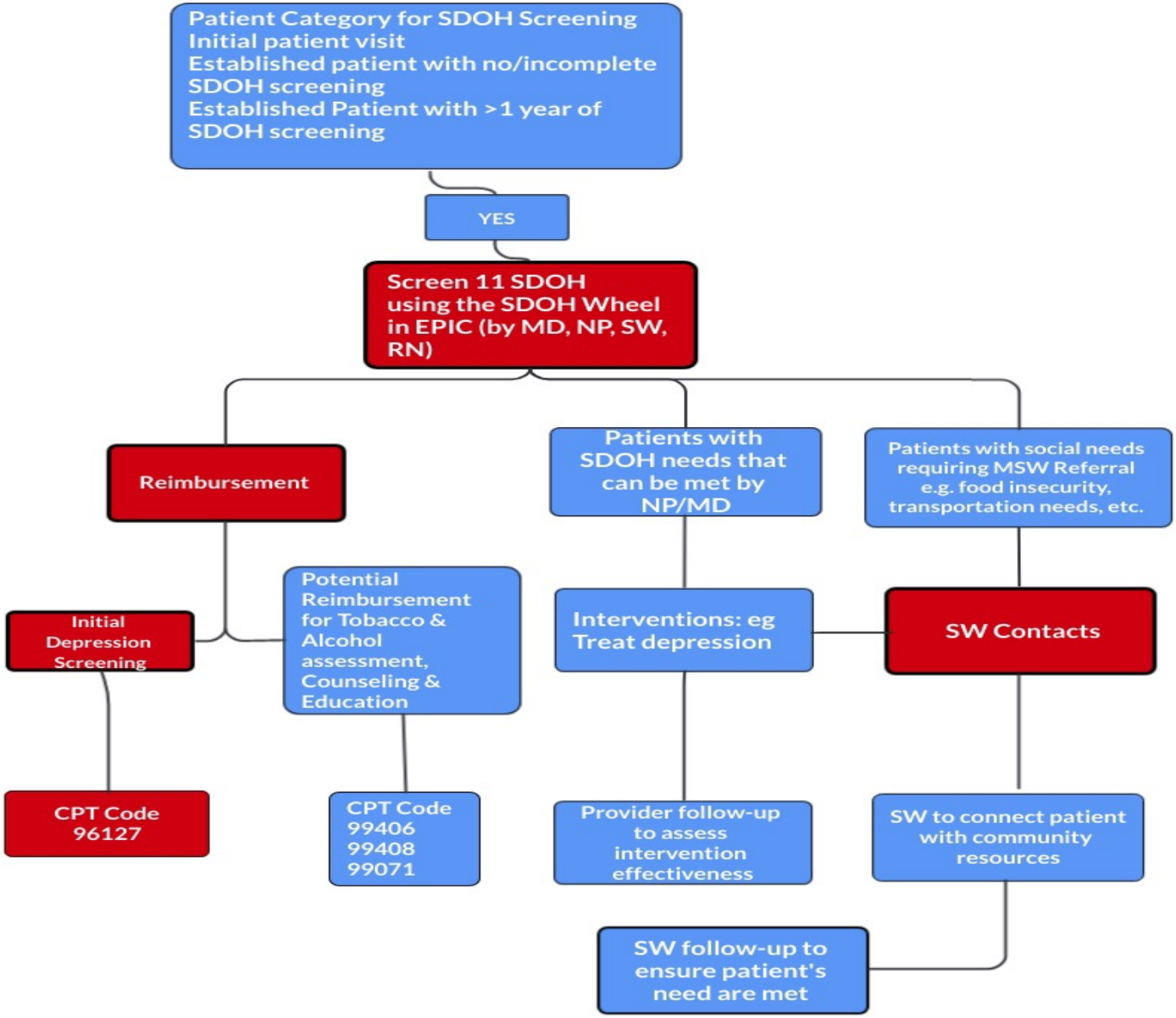


Figure 5. SDOH Protocol by DNP Student

11 Social Determinants of Health Wheel with Components in EPIC

11 Components

- Depression
- Tobacco use
- Alcohol use
- Financial resource strain
- Food insecurity
- Transportation needs
- Physical activity
- Stress
- Social connections
- Intimate partner abuse.
- Housing

Figure 6. Johns Hopkins Physicians. (2019). Best Practice. Retrieved from https://www.hopkinsmedicine.org/office-of-johns-hopkins-physicians/best-practice-news/a-new-way-to-document-social-determinants-of-health

Social Determinant Components & Risks

Components are the number of the SDOH screened for each patient

- Pre-implementation screening: 1 patient needs screening for 10 components
  - 70 patients need 70 x 10 = 700 components
- Post-implementation screening: 1 patient needs 11 components
  - 70 patients need 70 x 11= 770 components
  - (Housing was added Jan)

Component Risk: cause for concern based on patient responses and if there is a need for SW referral/contact

- Low risk: no negative impact on patient. No need for referral.
- Moderate: less likely to affect patient but may need follow-up eval by provider
- **High risk: signal immediate cause for concern & warrant provider intervention or SW contacts/referral.**

Implementation of the Protocol

Implementation Strategies (Powell et al., 2015)	Implementation of Protocol	Framework Alignment
Assess for readiness and identify barriers and facilitators	SWOT analysis, staff meetings, EHR review	Plan
Stakeholder Engagement	Staff meetings and discussions Emails	Plan Do
Visit other sites	Discussions and meetings with staff at other sites	Plan
Shadow other clinicians	Observations of clinical staff (NPs, SW) Support SDOH wheel use	Plan Do
Develop and implement tools for quality monitoring	Discussions with staff on workflow process Workflow map/protocol developed & distributed to staff to facilitate SDOH wheel use	Plan Do
Workflow adjustments.	Review EHR documentation Discussions with staff on needed changes Develop & distribute depression screening & coding steps education	Do Study
Facilitation	Discussions with staff, meetings & emails Write out protocol steps for staff to understand	Do Study
Purposely reexamine implementation effort	Emails & meetings Review EHR documentation using the SDOH Wheel Adjust workflow process	Do Study Act
Audit and provide feedback	Staff meetings, discussions & emails Collect EHR documentation data (SDOH screenings, SW contacts) & depression reimbursement (Billing report) Distribute results	Do Study Act

Evaluation/Measures of the Protocol

Three Measures	Source	Measurement Analysis
1. SDOH Screening rates a. Increase in the number of patients screened for SDOH b. Increase in the total number of SDOH components screened. c. Increase in average number of components screened for each patient. d. Common components screened	EHR Audit	Pre-post 3-month implementation screenings rates. a. Fischer's Exact test b. Chi-Square c. Average: Descriptive statistic d. Counted.
2. Increase in number of SW contacts to patients.	Palliative Care Quality Network (PCQN) data report	a. Chi-square test Pre-post 3-month
3. Increase in depression screening reimbursement based on the CPT code 96127 included in documentation	Billing department report.	Pre-post 3-month implementation depression reimbursements.

Ethical Considerations

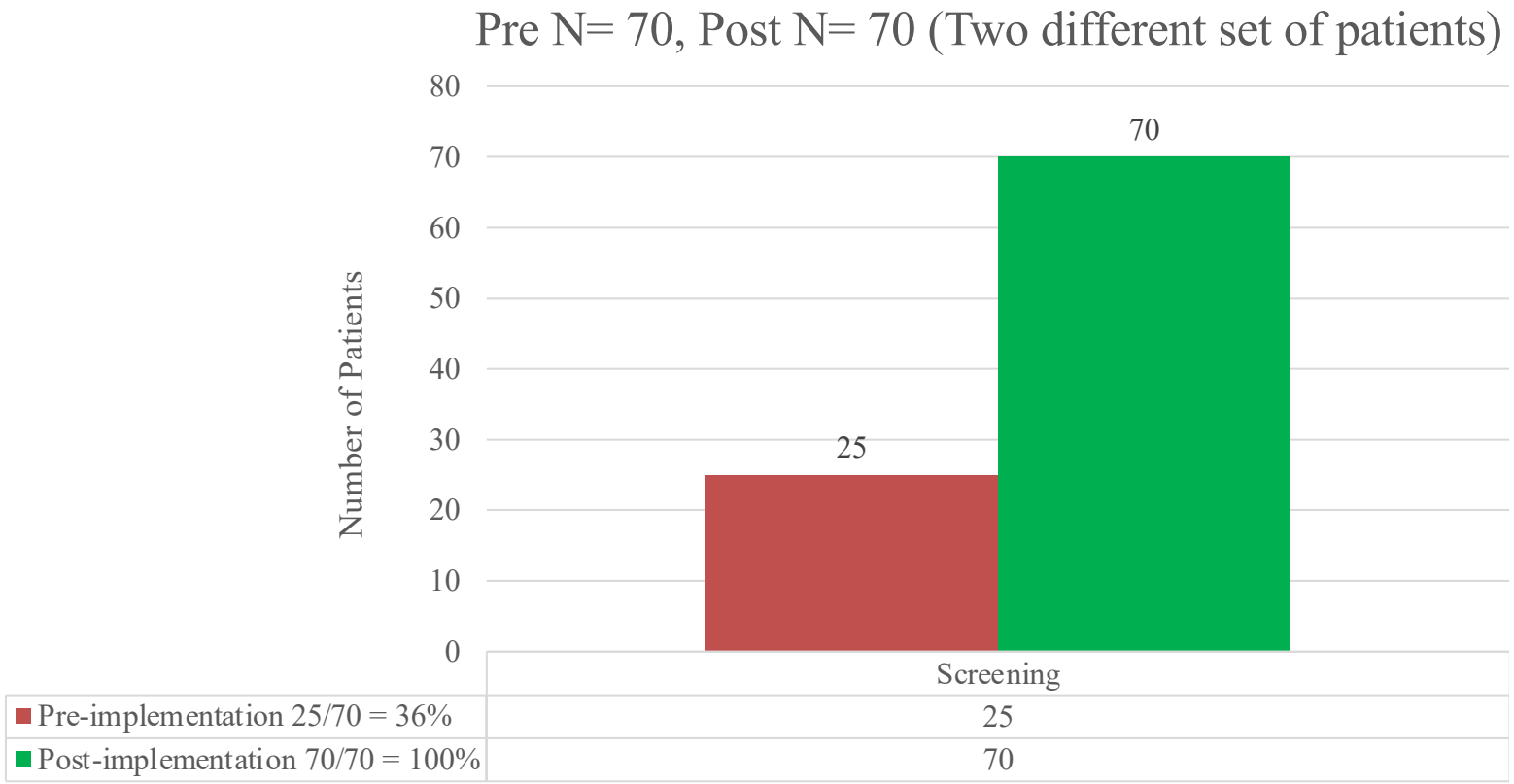
- Patient information was protected, and student was compliant with HIPAA.
  - CITI training
  - Organizational Laptop

- IRB determination was completed by the institution's review board.

- De-identified data was collected and stored on the organization's m/drive and shared will GVSU project team and statistician.

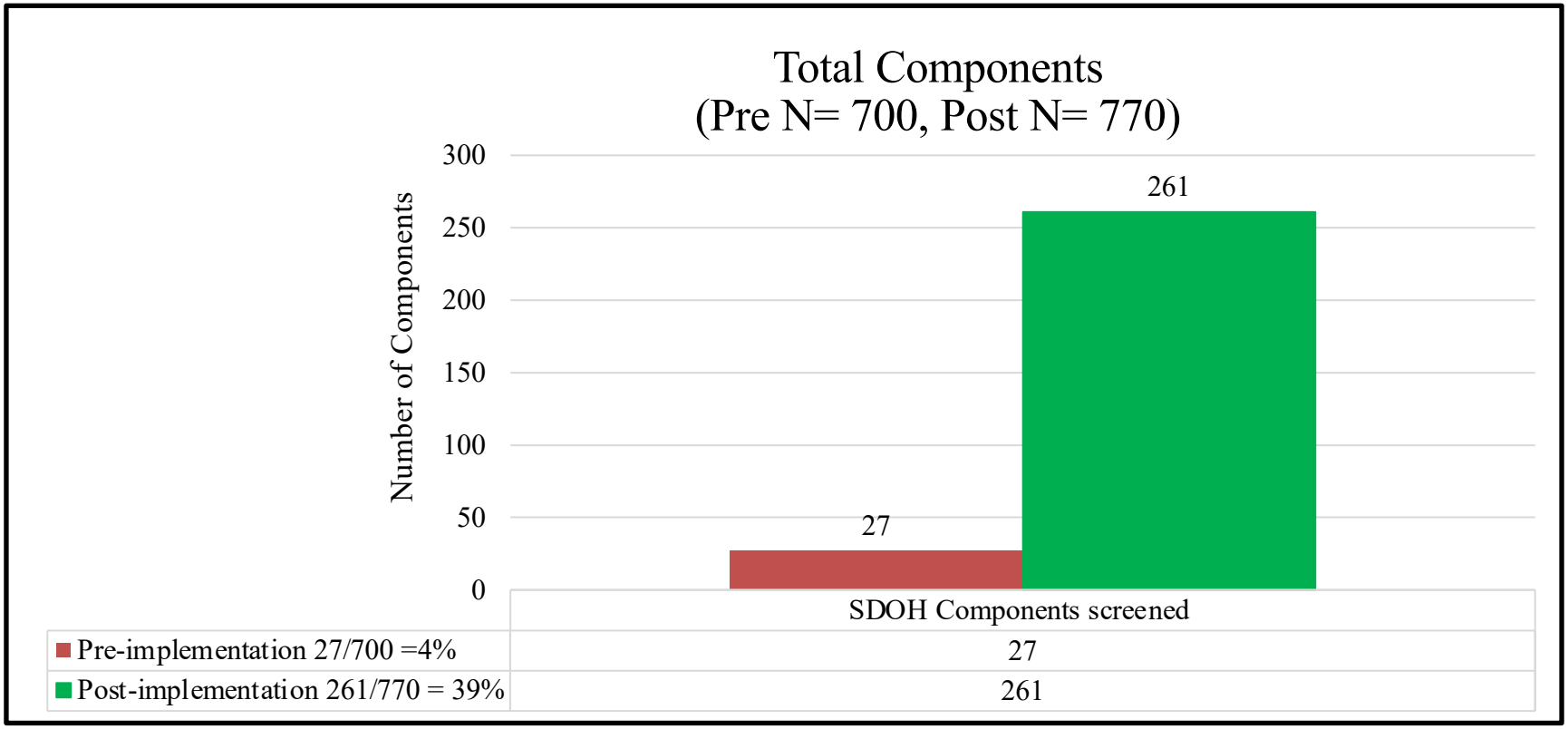
Results

Results 1a. Number of Patients Screened



- Strategy: Staff engagement, facilitation & audit review
- Fischer's Exact test, two-sided *P* value < 0.0001 (0.05 level of significance)
- 64% significant increase in the number of patients screened for SDOH

Results 1 b. Total Number of SDOH Components



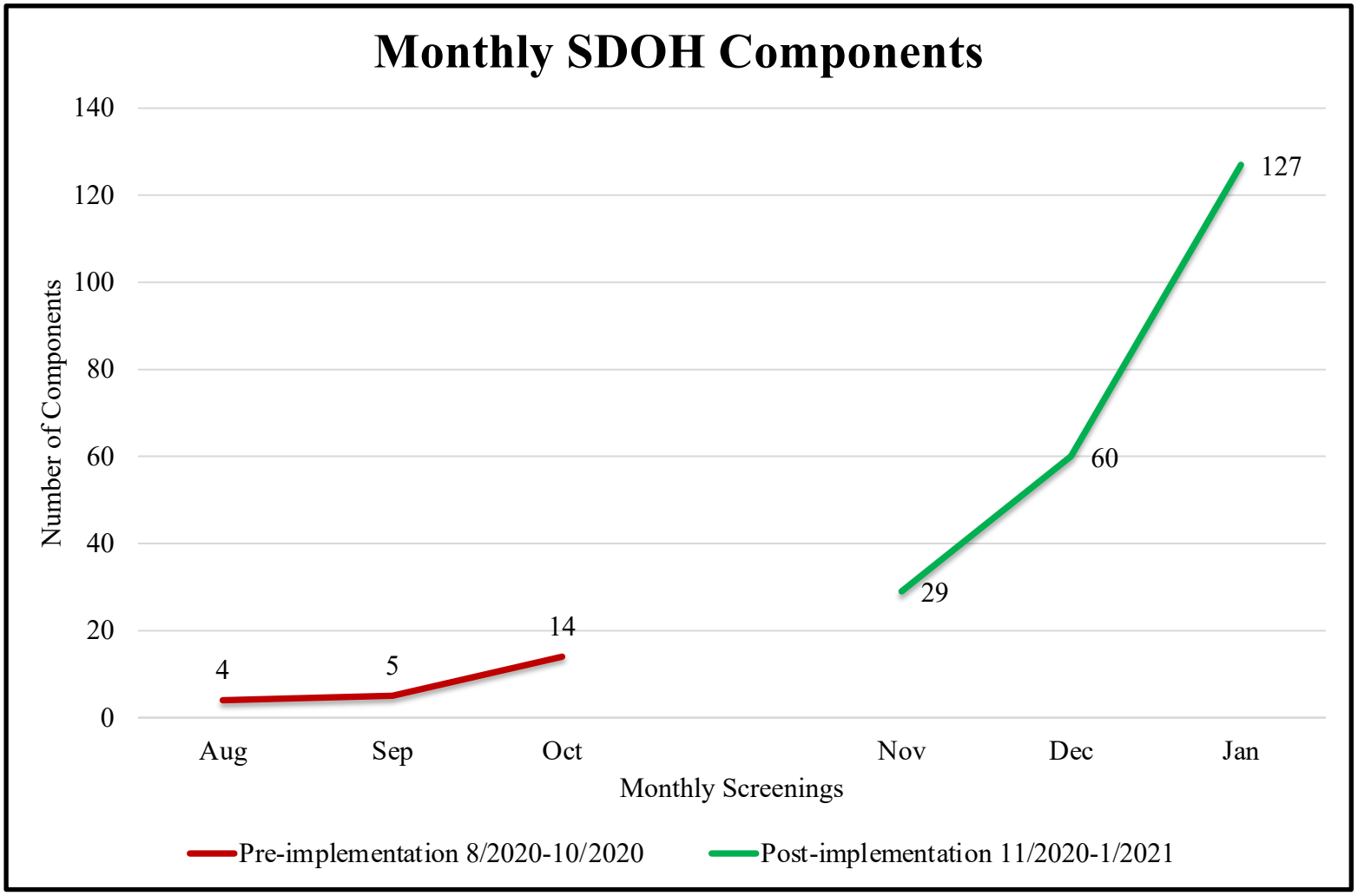
Strategy: Staff engagement, facilitation & chart audit

Chi-Square test statistic: 49.6827, *P* value <0.0001 (0.05 level of significance)

35% significant increase in the total components screened

234 more components screened

Results: 1 b. Total SDOH Components Screened by Month



Results: 1 c. Average Number of Components Per Patient

Strategies: Staff engagement, facilitation & chart audit

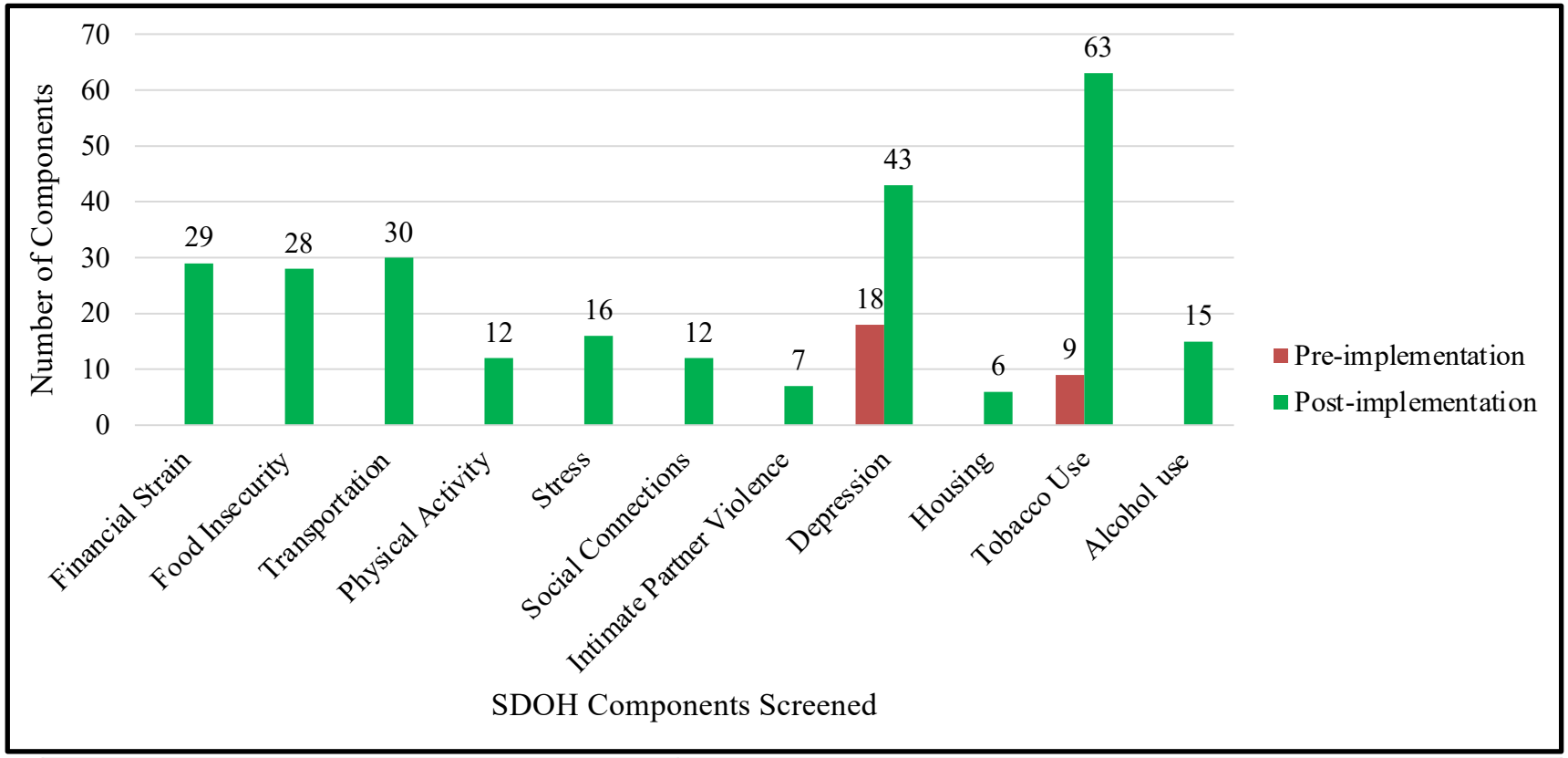
Descriptive statistic: Average

There was increase in the average number of components screened per patient

Pre-implementation: **1 component per patient**

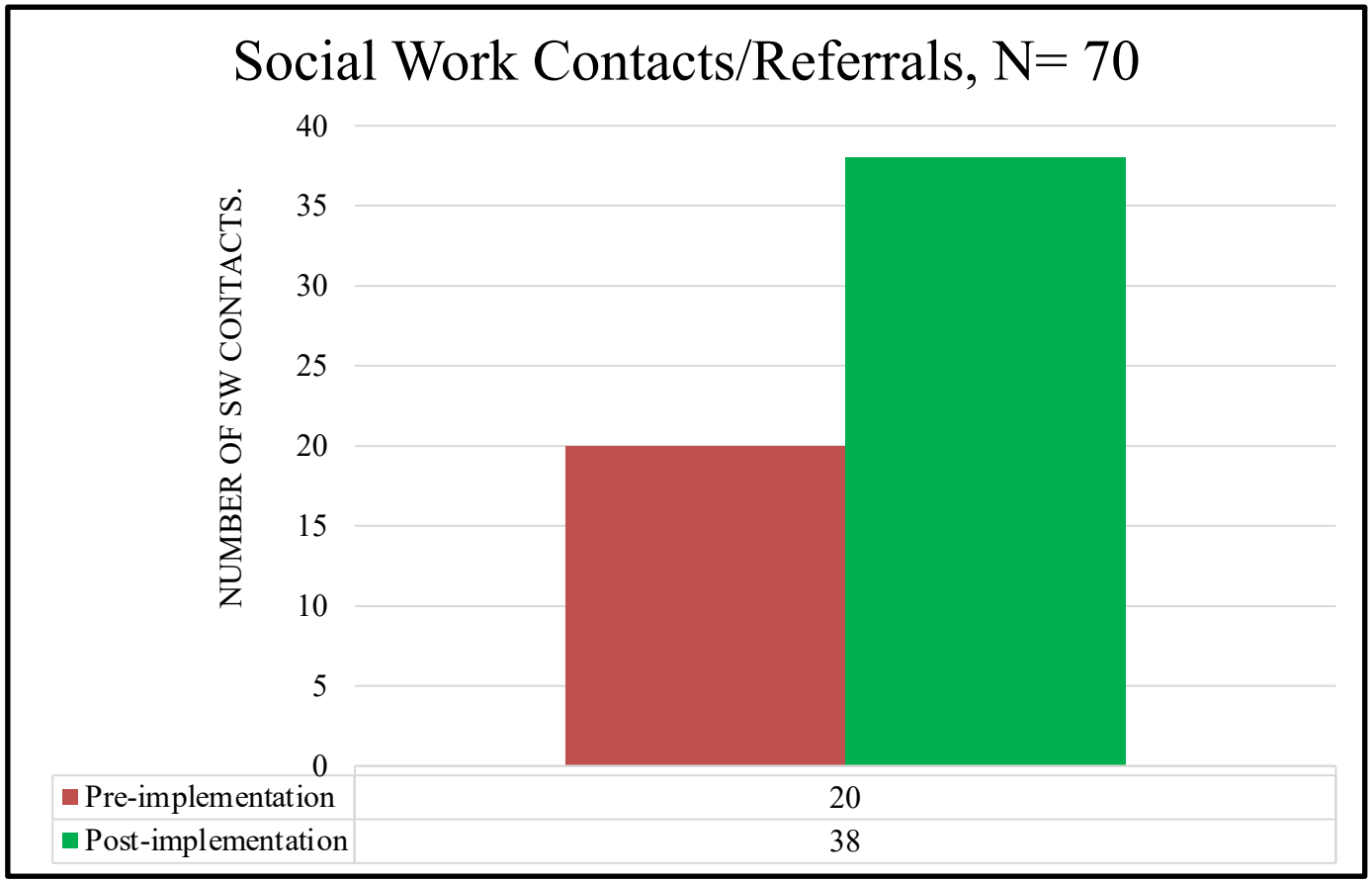
Post-implementation: **4 components per patient**

Results 1d. Most Common Components Screened



Pre-implementation	Post-implementation
1. Depression	1. Tobacco use
2. Tobacco use	2. Depression
3. None (only 2 screened)	3. Transportation

Results: 2. Social Work Contacts

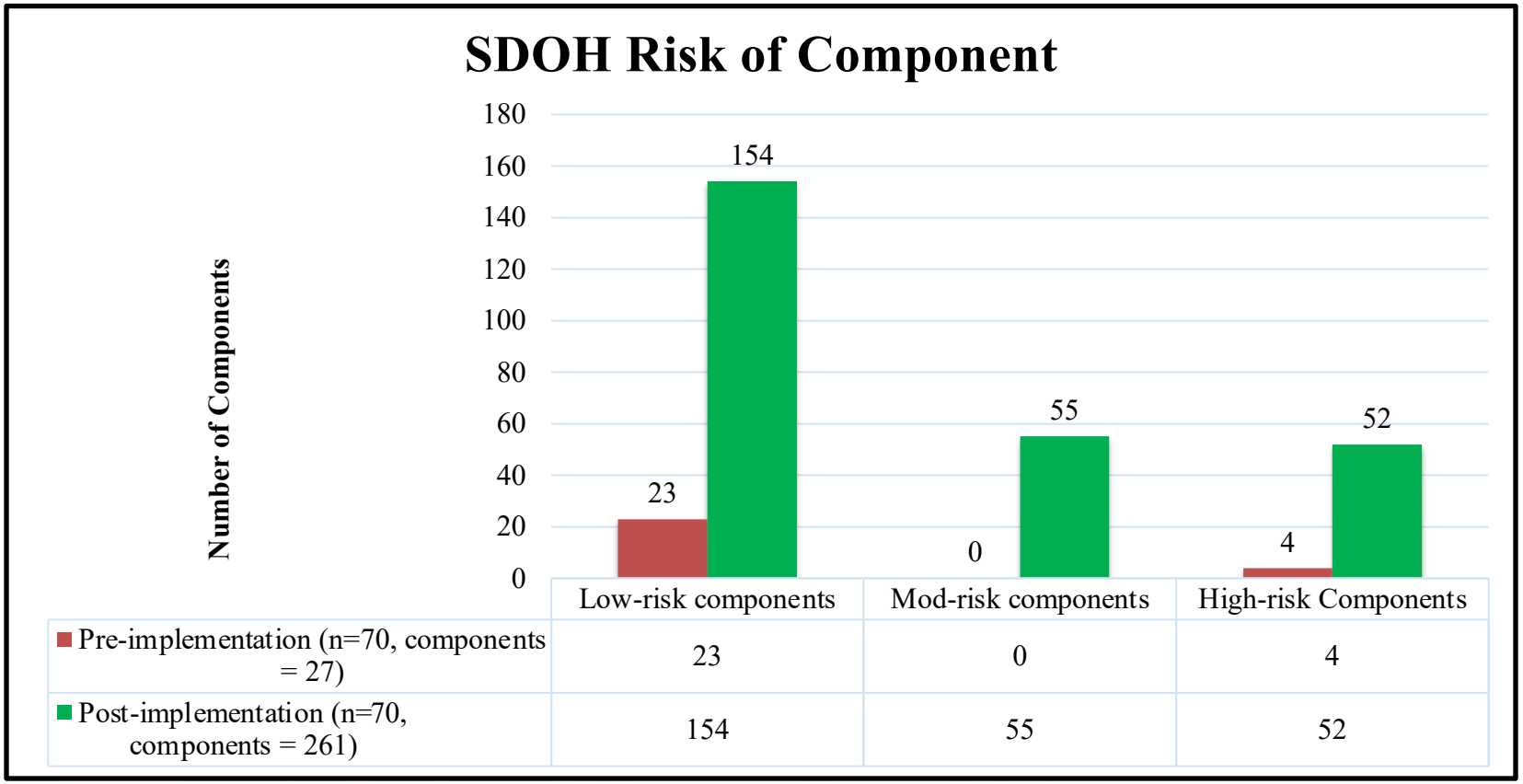


Strategy: Staff engagement, facilitation, chart reviews, PCQN report

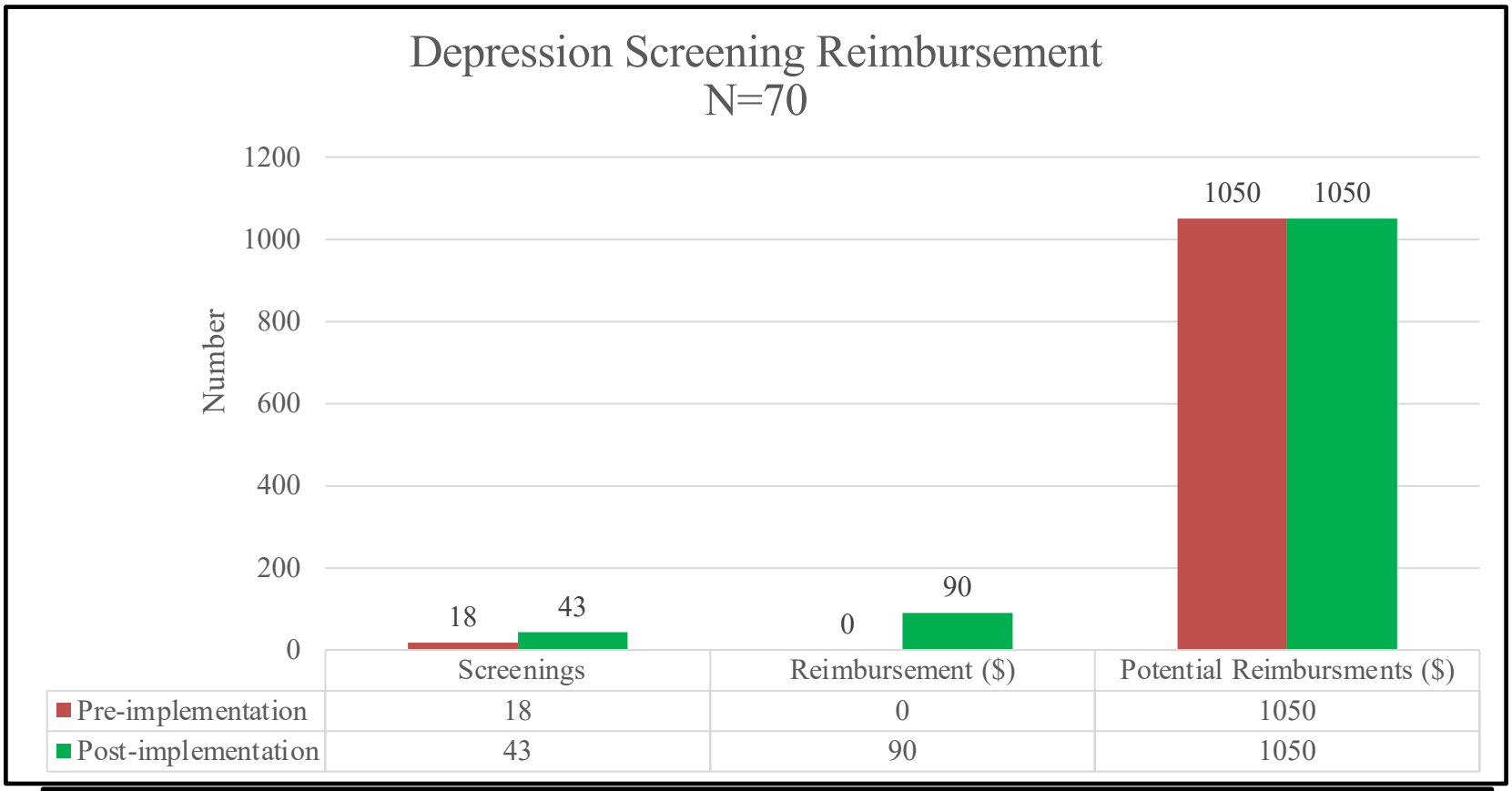
- Chi-Square test statistic: 5.1225, *P* value: 0.0236 (0.05 level of significance)
- Statistically significant increase in SW contacts
- PCQN report did not indicate why SW contacts were made

Explanation: SW Contacts depend on SDOH Risk

- There were higher # of low & moderate risk components = No SW referral/contacts needed
- Not all high-risk components require SW contacts, providers can also intervene
- Some patients refuse SW referrals.



3. Depression Screening Coding Reimbursement



Strategies: Facilitation & workflow adjustments

1 PHQ-9 screening = $15

$90 increase in reimbursement post-implementation based on coding

Potential Reimbursement= $1, 050

Project Budget & Resources

Doctor of Nursing Practice Project Financial Operating Plan

Project Title	
Addressing Social Determinants of Health in Community-Based Palliative Care	
Donated Resources/Savings	
Project Manager Time (in-kind donation)	$10, 500.00
Team Member Time:	
Director of Hospice and Palliative Care	$1, 250.00
Doctoral-prepared Nurse Practitioner (Site Mentor)	$2, 000.00
Doctoral-prepared Nurse Practitioner	$ 480.00
Palliative Care Nurse Manager (Site Lead)	$600.00
Business & Development Manager	$ 520. 00
Consultations	
Statistician	$60.00
Cost mitigation	
Emergency Department Visit (prevention of 1 ED visit)	1,389.00
Hospitalization (prevention of 4.5 days stay Hospitalization for 1 patient)	$11, 700.00
Estimated Revenue	
Potential Post-implementation (PHQ-9 Screenings) on 70 patients. 1 Patient PHQ ($15)	1, 050$
TOTAL INCOME	**$29, 549.00**
Expenses	
Project Manager Time (in-kind donation)	$10, 500.00
Team Member Time:	
Director of Hospice and Palliative Care	$1, 250.00
Doctoral-prepared Nurse Practitioner (Site Mentor)	$2, 000.00
Doctoral-prepared Nurse Practitioner	$480.00
Palliative Care Nurse Manager	$600.00
Business and Development Manager	$ 520.00
Consultations	
Statistician	$60.00
Equipment	
Laptop	$500.00
TOTAL EXPENSES	**$15, 910.00**
Net Operating Plan	**$13, 639.00**

Discussion

- Standardized process for screening SDOH
  - Increases screening rates, social work contacts/ referrals and depression reimbursement.
- Need for improvement in documenting the coding for depression screening to improve reimbursement.
- Opportunity to identify high risk components requiring SW contacts/referrals and connection to community resources.

Limitations

- Removed & replaced 11 patients from the sample population:
  - 8 pre and 3 post-implementation.
  - When a patient dies, their SDOH screening is automatically erased from SDOH wheel.
    - Some of those pre-implementation patients had more SDOH components screening data that was lost after their death.
- COVID-19 interventions prioritized in the organization during implementation period.
- PCQN reports did not indicate nature of SW referrals.

Sustainability Plan

- Use of PDSA cycle to continue testing the protocol (Shepherd, 2019)
  - Site mentor & team: to sustain project
    - Track SW contacts & patient connection with community resources
    - Future DNP student can test other areas of the protocol
      - Coding for depression screening and reimbursement
- Chart audit (Shepherd et al. 2019)
  - Team can track each patient's progress using SDOH Wheel
  - Peer chart auditing
  - After project implementation, team can easily run report in EPIC to check SDOH wheel use.

Conclusion

- The QI project of implementing a protocol for addressing SDOH in the EHR increased screening rates, SW contacts and depression reimbursement in CBPC organization.
- Continuous staff engagement through meetings will facilitate screening.
- Need for improve documentation of coding for depression screening for more reimbursement

DNP Essentials Reflection

DNP Essential:	Achieved by:
I: Scientific Underpinnings for Practice	literature review and using this evidence to support improved screening practices.
II: Organizational and Systems Leadership	Organizational assessment, SWOT analysis, stakeholder engagement/facilitation, sharing findings to leadership team.
III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice	Developing and implementing a protocol for addressing SDOH. Auditing charts, evaluating and analyzing collected data.
IV: Information Systems/Technology	Using EHR for implementing protocol to assess and chart SDOH. SDOH data collection
V: Advocacy for Health Care Policy	Advocated for screening and reimbursement for SDOH of all patients in the organization to improve health outcomes.
VI: Interprofessional Collaboration	Meetings with DNPs, MDs, SWs, RNs, IT and leadership team. Engaged with professionals (managers) at other sites to influence project, discussed processes for depression screening/coding with leadership, acquired report from billing department.
VII: Clinical Prevention and Population Health	Analyzing statistical data on SDOH screenings and improving screenings through staff engagement/facilitation (meetings) and explaining steps to workflow process.
VIII: Advanced Nursing Practice	Completed >1000 hours (clinical and project hours).

Handouts

1. PRISMA figure
2. Literature Review Table of Evidence
3. Timeline
4. SDOH Protocol
5. EPIC SDOH Wheel
6. Implementation of protocol table
7. Education of depression screening/coding
8. Evaluation and Measures Table
9. List of data to be collected from EHR
10. Budget
11. Results Table

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