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Improving Access to Non-Pharmacologic Integrative Pain Management Modalities in Sickle Cell Disease (SCD) inpatients

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Abstract

Background: Evidence suggests that non-pharmacologic therapies complement and work synergistically alongside traditional pharmacologic therapies for chronic pain and have a beneficial impact on the intensity of pain, improved quality of life and functional status. Sickle Cell Patients have complex pain and often feel stigmatized due to pain seeking behaviors. This project evaluates the effect of a clinical initiative stewarded by nurses and managed in the electronic health record. The project aims to improve access to preferred modalities for integrative pain management among hospitalized Sickle Cell Disease (SCD) inpatients.

Methods: The nurses received e-learning and in-person training on the use of the chronic pain screening questions, care plan and orderset. They were asked to explore the impact of implicit bias on their nursing practice. Patients screening in for complex pain receive a brief interview to determine their preferences. The patient can request integrative nursing therapies and mulitdisiplinary consults from the team. The individualized integrative nursing therapies and multidisciplinary consults are delivered during the inpatient stay to the patient.

Analysis: The team will look at the patients that opted in to receive integrative therapies, nursing careplan and what consults they chose to receive and if the consults were completed during the admission. The knowledge and attitudes of the nurses will be evaluated through pre and post questions. The opinions and satisfaction of the patients will be assessed by survey prior to discharge. Post-implementation nurses will evaluate the usefulness and feasibility of the process.

Results: Nurses were open to assessing personal implicit bias and in utilizing strategies to mitigate bias. The vast majority of patients were interested in receiving the integrative therapies and multidisciplinary consults. The patients expressed high levels of satisfaction with nurse attention to their preference for care. Murses rated the new program and documentation in the Electronic Health Record as feasible for use.

Conclusions: SCD patients who screened in for complex pain were interested in learning about integrative therapies and accessing them during inpatient hospital admission. Bedside nurses were impacted by working with patients as partners and sustainment of the program is planned with an ongoing Integrative Nursing Fellowship.

Introduction:

Problem Description:

Sickle Cell Disease (SCD) is a genetic hematological disorder that affects more than 7 million people globally (Williams, Silva, Simmons & Tanabe, 2017). It is estimated that 50% of adults with SCD experience chronic pain affecting their activities of daily living on most days (Williams et.al., 2017). In addition to chronic pain SCD patients experience acute pain episodes from vaso-occlusive crises that further complicate pain management (Williams et., al. 2017). Research supports that taking into consideration patient preferences and increasing access to non-pharmacological treatments for chronic pain, improves the quality of healthcare (Thompson-Lastad, Gardiner & Chao, 2019). Despite this evidence, there is a lack of multidisciplinary non-pharmacologic integrative therapies and access to pain-related specialty care for hospitalized patients.

At Boston Medical Center (BMC), SCD patients are often hospitalized for pain related to vaso-occlusive crises but have limited access to integrative multidisciplinary therapies that may help them to better self-manage chronic pain. Individual consults for physical therapy or social work, for example, are placed as needs are identified by various members of the healthcare team, but there is no systematic method of assessing patient preference to receive integrative therapies or other pain-related referrals for specialty care such as psychiatry, social work, physical therapy, or chaplain services. A systems-level approach is needed to address this patient care gap and to improve access and facilitate better quality of care for SCD patients.

Available Knowledge:

Chronic pain currently adversely affects the quality of life of more than 116 million adults in the United States (U.S.) (Clark, Bauer, Vitek & Cutshall, 2019). Over half of all inpatients experience acute pain during hospitalization (Garland, Baker, Larsen, Riquino, Priddy, Thomas, Hanley…et. al., 2017). The prevalence of persistent pain in the U.S. population was determined to be a staggering 52.9% in a National Health and Aging Trends Study among patients 65 years and older (Morone, Greco, Moore, Rollman, Lane, Morrow, Glynn & Weiner, 2016). The back was the most prevalent site of discomfort and identified in 30.3% of those studied (Morone, et al., 2016). Adults with chronic pain exhibited decreased physical functional abilities when compared with those without pain (Morone et. al., 2016). The impact of pain is felt throughout virtually all levels in society. Pain burdens the individual, families, the healthcare system, employers and the entire community (Tick, Nielsen, Pelletier, Bondakhar, Simmons, Glick... et., al. 2018). Hospital-based pain management is complex and affected by a number of factors including patient perceived helplessness, lack of knowledge and access to non-pharmacologic interventions and significant time delays in analgesic administration (Garland et.al., 2017).

Opioid medications have been the primary modality used for treatment of moderate to severe pain and non-steroidal medications for mild to moderate pain. Opioid medications are ineffective at managing chronic pain and can lead to addiction (Clark, Bauer, Vitek & Cutshall, 2019). The Joint Commission (TJC) now requires the integration of non-pharmacologic treatment options into usual care to better meet the needs of adults experiencing chronic pain (Clark et al., 2019). Multiple studies have concluded that clinical results from traditional treatment are often unsatisfactory and that there are multiple adverse effects associated with both non- steroidal anti-

inflammatory drugs (NSAIDS) and opioid medications (Morone et al., 2016). Opioids are tied to serious side effects, including respiratory depression, decreased gastrointestinal motility, delirium, addiction, increased length of stay and higher costs (Papathanassoglou, Hadjibalassi, Miltiadous, Lambrinou, Papastavrou, Paikousis & Kyprianou, 2018). There has been in recent years an increasing epidemic of prescription opioid abuse including a drastic increase in the numbers of overdose deaths nationally (Clark, Bauer, Vitek & Cutshall, 2019).

Evidence supports the use of non-pharmacologic integrative measures to complement traditional pharmacologic approaches to pain management. Integrative therapies such as Reiki, mindfulness, aromatherapy, music, meditation, deep breathing, spiritual care, pastoral care, palliative care, social work, and addiction services are evidence-based and may add value and improve the experience in SCD inpatients at BMC (Boston Medical Center Sickle Cell Steering Committee, 2020). Integrative health care combines traditional medical care with complementary health approaches and improves the quality of care by taking into consideration patient preferences and by increasing access to non-pharmacological treatments for chronic pain (Thompson-Lastad, Gardiner & Chao, 2019). Over one-third of adults in the United States currently employ complementary health approaches to manage their symptoms of chronic disease (Thompson-Lastad et. al., 2019). Studies have shown that non-pharmacologic and integrative therapies complemented and worked synergistically alongside traditional pharmacologic therapies in the treatment of pain (Tick, Nielsen, Pelletier, Bonakdar, Simmons, Glick et al., 2018). The most common integrative therapies requested were massage, mindfulness, meditation, yoga, Reiki, spiritual care, guided imagery and music (Tick et al., 2018)). These therapies resulted in a statistically significant beneficial impact on the intensity of pain, opiate usage, improved quality of

life and functional status in participants (Tick et al., 2018)). Studies supported the notion that integrative therapies were safe, easy to adopt and efficacious with virtually no adverse events reported in the studies.

Integrative nursing practice pairs nicely with the holistic interventions utilized for the non-pharmacologic management of chronic pain. Within any disease process there is always a place for the assessment and promotion of health care regarding comfort needs in the context of wellness, autonomy and freedom from physical pain (Krinsky, Murillo & Johnson, 2014). The three forms of comfort as outlined by Kolcaba are relief, ease and transcendence. "Patients experience a sense of relief when their individual comfort needs are met. Patients are at ease in situations that enable them to be calm or content. The comfort state of transcendence occurs when a person rises above their challenges" (Figueiredo, de Melo Fialho, Mesquita, Mendonca, Rodrigues & de Fatima de Silva, 2018). The use of integrative therapies is well documented in fact a large scale study of chronic pain patients Bruckenthal et al. (2016) found that 73% of adults with persistent pain reported using an integrative therapy to support their self-care regimen. Mindfulness therapies such as yoga, massage and heat therapy were the most frequently reported. Taylor et. al. (2019) conducted a two year effort to determine utilization of various types of integrative therapies. The most frequent use was meditation followed by acupuncture, guided imagery and yoga. This study was of young veterans with a rate of 27% with previous or current integrative use suggesting a great potential to augment use through education efforts. Illueca & Doolittle, (2020) were able to demonstrate an association between pain relief and prayer in a comprehensive review of the literature (Illueca, M. & Doolittle, B.R., 2020).

Multiple studies point to efficacy and satisfaction with integrating complementary pain management strategies in the care of adults with SCD (Simmons, Williams, Silva, Keefe, Tanabe, 2019). There is a dire need for better management for pain during admission to the hospital for SCD crisis. The readmission rate for SCD is on average 50%. Meaning that 50% of hospital admissions for SCD are return admissions within 1 month of index admission discharge (Thompson & Eriator, 2014). On a survey of 227 SCD inpatients 91.6% indicated that they had used complementary integrative therapies within the last six months to control pain with prayer being the most predominant modality (Thompson et. al., 2014). There are sociocultural aspects that impact negatively the reliable assessment of people with SCD. Pain is a subjective measure and this impedes accurate assessment. To maximize the assessment of pain effective communication between patients and health-care professionals is essential. Sociocultural barriers (economic status, race, ethnicity, language), can compromise that communication (Wright & Adeosun, 2009). Participation in care and shared decision making can also be negatively impacted by sociocultural factors. Patients from different backgrounds from their health care providers are less willing to communicate their pain (Wright et al., 2009).

Racial and ethnic disparities in pain control are persistent, multifactorial, and include patient, provider and system level barriers (Anderson et. al., 2009). Chronic condition management as in SCD relies on a trusting relationship between the patient and the health care team. The breakdown of that trust may influence patients' ability to manage their pain (Wright et al., 2009). Failure to partner with patients with SCD and involve them as experts in their own care and in making decisions about their care reduces their capacity for self-management, autonomy and efficacy. Repeated experiences of controlling behaviors by health-care providers can further

breakdown a patient's trust leading to mounting anxiety and angst worrying about receiving adequate treatment for pain (Wright et.,al.).

Perception of pain is a subjective and highly individualized experience driven by somatic and sensory nociceptive pain pathways arising from cognitive and emotional higher brain regions (Sagi, Argueta, Kiven & Gupta, 2020). Activation of the descending neuro-modulatory pathway via integrative and complementary non-pharmacological interventions is a promising potential approach to reducing pain and improving outcomes in SCD (Sagi et al., 2020). Mindfulness, relaxation, hypnosis, and cognitive behavioral therapy (CBT) have all been shown to be effective in alleviating chronic pain (Sagi et., al. 2020). A 30-minute hypnosis session alone was shown to decrease the level of pain reported and improve the threshold and tolerance for pain in patients experiencing pain with SCD (Sagi et al., 2020). Virtual reality program immersion also showed an improvement in the overall pain experience in patients with SCD experiencing vaso-occulsive crisis (Sagi et. Al., 2020). Additionally, a randomized controlled trial of yoga in hospitalized pediatric sickle cell patients in crisis found that those who completed a single 30 min guided yoga session had a greater reduction in mean pain score when compared to the control group (Sagi et al., 2020). Integrating perception-based and mind-body therapies may support comprehensive treatment of SCD crisis in inpatients decreasing both chronic and acute pain (Sagi et., al. 2020)

Rationale:

Non-pharmacologic approaches are increasingly being utilized by the general public to manage chronic, acute and total pain (Tick, Nielsen, Pelletier, Bonakdar, Simmons, Glick et al., 2018). Total pain is described as a combination of factors affecting a persons perception of their pain. The complex pain nursing care plan connects patients to the care that is avalable in the

hospital while inpatient and refers the patient to outptient resources upon discharge. Currently there is no system in place to offer this multidiciplinary specialty care. As a result these consults often do not get placed or reach the patient during their admission.

Comfort theory is a middle range theory developed by Katherine Kolcaba (2003) that's foundational core elements are based on Nightingale's environmental principles of providing care. (Krinsky, Murillo & Johnson, 2014). Comfort theory includes four contexts of comfort physical, psycho-spiritual, environmental and sociocultural (Krinsky, Murillo & Johnson, 2014). Explicit applications of Kolcaba's comfort theory with the addition of integrative pain management to daily practice will benefit both patient outcomes for physical pain and addiction treatment and prevention and in nursing practice (Figueiredo, de Melo Fialho, Mesquita, Mendonca, Rodrigues & de Fatima de Silva, 2018). The complex pain nursing care plan structure aligns nicely with Kolcaba's theory of comfort which states total pain contexts include physical, psycho-spiritual, enviromental and socio-cultural. Integrative therapies address physical pain as well as to improve the other contexts with better efficacy than a traditional pharmacologic approach (Krinsky et., al. 2014). Total pain is the combination of multiple factors affecting the perception of pain. These factors can be better addressed for SCD inpatients with implementation of the nursing complax pain careplan that connects them to the evidence-based care that will support holisic healing and increase satisfaction with care.

Explicit applications of comfort theory can benefit both patient outcomes and nursing practice (Figueiredo, de Melo Fialho, Mesquita, Mendonca, Rodrigues & de Fatima de Silva, 2018). Nurses are involved in the management of patient care in the vast majority of healthcare settings.

Nurses have the most contact and time at the bedside with patients are viewed as trustworthy and are the "coordinators" of patient care during hospitalizations. They discuss the pain care plan with patients daily and assess for pain using a pain scale at least every four hours. This makes nurses best positioned to steward the individualized multidisciplinary care plan. Multidisciplinary integrative therapies can be consulted and explained by nurses and others on the team in the inpatient setting and applied to patient care. Multidisciplinary therapies will better address physical pain as well as to improve the other contexts in the total pain experience with better efficacy than a traditional pharmacologic approach. Multidisciplinary integrative therapies are low risk, cost effective and complement traditional pain management methods nicely. One study aimed to create a Sickle Cell Wellness Clinic (SCWC). This space created an opportunity for caregivers and patients to engage with the healthcare team on coping skills, spirituality, healthy living, essential oils, nutrition, massage, hydration, pain management, psychology, physical therapy and relaxed breathing (Junghans-Rutelonis, Moquist, Blaylark, Anderson & Brown, 2020). The SCWC had positive results. Providers benefitted with the opportunity to collaborate more regularly with the multidisciplinary team, patient and caregiver feedback was positive, patients had increased follow-up appointment engagement and enjoyed being introduced to new modalities (Junghans-Rutelonis et. Al., 2020).

Nurses, given their emphasis on holistic care are in the unique position to lead the transformation of chronic pain management to a patient-centered, self-care approach that integrates non-pharmacologic therapies into care at the bedside (Bruckenthal, Marino & Snelling, 2016). Nurses are better equipped than others on the multidisciplinary team to assess total pain and translate comfort theory to practice at the bedside. Caring, compassion, therapeutic presence

and listening are valuable skills that should not be overlooked. Integrative therapies address physical pain as well as to improve the other contexts with better efficacy than a traditional pharmacologic approach. Integrative therapies are low risk, cost effective and complement traditional pain management methods nicely. Doing this work across the continuum of nursing practice will help to preserve the caring essence of nursing.

Specific Aims:

The overarching aim is to implement and evaluate the impact of an individualized nursing care plan that includes clinical pathways to improve access to common integrative non-pharmacologic treatments and pain-related specialty care employed in the management of chronic pain for hospitalized patients. The purpose is to provide equitable access to integrative therapies and multidisciplinary consults. The nursing and multidisciplinary team seek to partner with SCD adults as experts in the management of their pain. To allow them to choose the types of non-pharmacologic care they will receive based on their individual preferences.

There are four specific aims:

- Ensure compliance and consistent use of screening question and complex pain nursing care plan
- Improve nursing staff awareness of implicit bias, strategies to mitigate bias, knowledge of SCD pathophysiology, pharmacological treatment, available resources, patient website, complex pain care plan components and assess feasibility of use of new process in EHR.
- Improve patient satisfaction with inpatient care, nursing attention to preferences for specialized care
- Improve access to non-pharmacologic integrative pain consults during inpatient admission for SCD

Methods:

Context:

Boston Medical Center (BMC) is a 512 bed academic medical center. BMC is one of four designated organizations in the United States to receive National Institute Health (NIH) large scale grants to research opioid addiction treatment. The patients who receive care at BMC are diverse with over half are living below the poverty threshold making BMC the largest Safety Net hospital in New England. From March 2019 through February 2020, BMC treated at least 295 patients with SCD (BMC Sickle Cell Steering Committee data, 2020). A review of operational metrics revealed several areas in need of improvement including pain management, readmission rates, medication adherence, no show rates for appointments, screening rates and patient experience. There is a need to increase multidisciplinary communication and collaboration in order to build trust witrh patients who feel stigmatized. There is a need to partner at a deeper level with patients and include their preferences while designing care. BMC leaders are committed to move our patients "Upstream" to break down the barriers that limit our patient's potential, advancing racial health equity by purposefully reconstructing systems to meet patient goals. Nurses and healthcare providers may be unaware that they harbor implicit biases that can contribute to health care disparities in minority, stereotyped and stigmatized populations (Narayan, 2019). Patients experience a feeling of relief when their individualized preferred comfort needs are met. Patients are more comfortable in situations that enable calmness and safety. Transcendence of pain occurs when an individual rises above their perceived challenges (Figueiredo, de Melo Fialho, Mesquita, Mendonca, Rodrigues & de Fatima de Silva, 2018).

This quality improvement (QI) project is a single site effort in an organization that has struggled historically to manage pain during admission in the SCD population. SCD patients have very high readmission rates and longer lengths of stay than most other subsets of patients. They also predominantly identify as Black or Brown further complicating concerns for health equity. Bias in clinical decision making has been implicated at BMC and occurs when Black patients are less likely than White patients to be given pain medication or pain treatments. This disproportionately affects patients undergoing a vaso-occlusive crisis, which can trigger severe pain. Internal data suggests that this problem may exist at BMC as Black patients were found less likely than White patients to be prescribed pain medication in the ED for lower back pain – 17% vs. 26%. Black patients often face longer wait times in the ED which disproportionately affects patients undergoing a vaso-occlusive crisis. At BMC, the median door to triage time is one minute longer for black patients than white patients (for patients with pain as the chief complaint). Stress can act as a trigger of vaso-occlusive crises in SCD the number one reason for hospitalization. Boston-level data shows that Black residents are much more likely than white residents to be subjected to racial discrimination, which could lead to chronic stress. Perceived discriminatory experiences have been associated with an increased burden of pain in minority patient populations supporting the idea that pain experience varies among racial and ethnic groups (Haywood, Diener-West, Strouse, Carroll, Bediako, Lanskron…et. al., 2014).

BMC has a robust QI department and conducts research at all levels of the organization. There is a dedicated team of providers focused on quality improvement and research equity. SCD patients have identified to leadership the need for integrative therapies to complement their usual care. They have identified additional resources available to oncology patients that are not easily

accessible or readily available to them. There was an automated telephone repository available for SCD patients to offer comments which are then categorized into themes for review by the sterring committee. Common themes include feeling stigmatized around perceived pain seeking behaviors, under treatment of and receiving decreased resources for treatment of their pain, need for education amongst their staff care givers, and distrust or disconnect from care team. The steering committee is involved in the planning of interventions to address the identified gaps in care.

Nursing leadership at the organization is supportive of innovation and evidence-based practice. Several years prior to this initiative an Integrative Nursing Council was formed with the goal of engaging frontline nurses in the development of policies and procedures to support the delivery of non-pharmacologic evidence-based nursing interventions to treat the mental well-being and pain of patients and staff at the medical center. Nursing has initiated the assembly of a Pain Taskforce that is multidisciplinary and is engaged in collaboration with the Integrative Nursing Council to develop strategies to mitigate pain and meet established guidelines in pain management. The teams developed a standardized process to ensure the nursing management of complex pain algorithm is clear and concise. We used the model for improvement plan-do-study-act to support rapid cycle iteration of the standard nursing pain management process. Input was sought from experts and revised based on feed back from patients, front-line nurses, and leaders. The teams have collaborated extensively to develop the following methods for this quality improvement initiative.

Everett Rogers change theory is focused on the steps to make change in a complex organizational or business setting. Rogers examines organizational processes and commonly dynamics that occur when a change is to be implemented. Rogers defines five unique stages that

are integral to change adoption, the completion of all stages are crucial to the success of the implementation of a new process. This change theory will serve as the guiding framework for this QI initiative.

The five stages are:

1. **Knowledge** is learning about and understanding the functions of the change.
2. **Persuasion** is when the end user determines the potential value of adopting the change.
3. **Decision** stage determines whether an innovation will be adopted or rejected, involve stakeholders for better success.
4. **Implementation** is the process of putting the implementation into practice. For this Quality Improvement (QI) initiative we will utilize the Plan-Do-Study-Act cycle as described by the Institute for Healthcare Improvement (IHI).
5. **Confirmation** stage is when the participants evaluate whether the individual criteria outlined in the initial stages has been met confirming the value of sustaining the change.

Improvement Interventions:

Overview

The QI project will include implementation of an individualized pain care plan in the EHR and corresponding education to staff registered nurses assigned to SCD unit on assessment of pain and preferences for treatment. Patients will be screened on admission, and those who express an interest in integrative therapies or pain-related specialty care AND report that pain interferes with their activities of daily living (ADLs) on most days will be offered a pain care plan. Once the care plan is initiated, the nurse will perform a full pain history and assessment of preferences for care.

The nurse will then send the appropriate referrals based on patient preferences which can include both nurse-delivered integrative therapies and specialty consults. Nursing staff will be active members of the implementation and analysis of this project and educated utilizing both an e-learning and live format by clinical nurse educators and champions from the Integrative Nursing Council. The nurse training will include a comprehensive e-learning with an didactic exercise explaining the role of healthcare provider implicit/unconscious bias in heathcare disparities, an approximately 37 minute video of BMC SCD patients describing both positive and negative historical experiences and what nurses and others on the team can do to improve their experience. Didactic training will be provided on pathphysiology and pharmacological treatment of pain and crisis in SCD. The nurses will learn about stigma that exists in treatment of SCD patients. The training explained screening for inclusion and the practical impementation of the new complex pain care plan, patient work-sheet, patient website, nursing orderset and Get to Know poster (appendix. J, I and K). Each nurse on the unit will be checked off in person by a nurse educator as competent in the steps of the processes relevant for implementation. The nurse educator will verify the nurse is aware of the steps for proper documentation of the patient care that will needed for conducting the subsequent retrospective chart review. This information will be provided to RNs by their clinical nurse lead (principal investigator), nurse manager and clinical nurse educator and through written pre and post-test administered as exploration of implicit bias and evaluation of the e-learning module outcomes. The EHR methods necessary to document and order these integrative nursing interventions and consults will be skill validated. The nurse will recieve live training on how to conduct the standardized process for and meet the specific aims of the patient pain history interview. Emphasis will be placed on committing to sit at eye level with the patient, utilizing

prescence, empathy, and deep listening skills (commit to sit). Nurses will be surveyed post-implementation to evaluate their experience with implementing the componenets of the complex pain care plan. They will be asked to identify barriers to implementation as well as any balancing measures like nurse or multidisciplinary care provider burden.

Initial Patient Screening:

As part of the nursing admission process to the SCD unit, during the first 24 hours all patients will be screened for pain interference in activities of daily living and interest in integrative therapies or multidisiplinary consults using the following 2 items:

1. Does pain affect your ability to carry out your activities of daily living on most days? AND if YES
2. Would you like to discuss and receive additional therapies for your pain during your stay?

If a patient says yes to both questions the nurse will initiate the complex pain care plan.

The first step in the pain care plan is for the RN to complete a pain history by interviewing the patient. For non-english speaking patients a medical interpreter will be utilized to assist the RN to conduct the interview. The nurse is asked to sit at eye level to conduct the interview. The RN will review a standard worksheet with the patient. This worksheet is given to the patient as a paper handout (Appendix I) and lists available resources for the patient. The patient is asked to describe individual preferences for pain management and nursing care during history taking. The patient can request integrative nursing therapies reiki, aromatherapy with essential oils, music, deep breathing exercises, meditation, guided imagery, mindfulness, yoga and mulitdisiplinary consults

PT/OT, Social Work, Palliative Care, Pastoral Care, Patient Advocacy, Inpatient Addictions, Pet Therapy, Integrative Medicine from the nurse during the interview or at any point during the admission when they become interested in expanding their care to include additional measures. The nurse will provide a brief introduction to therapies and consults by offering a patient facing website that describe the therapies and consults the nurse then answers any questions the patient may have. The integrative nursing therapies include reiki, music, meditation, mindfulness, guided imagery C.A.R.E. channel, aromatherapy, deep breathing exercises, yoga, pet therapy, ice/heat, special positioning requests. The options for pain-related specialty consults include pastoral care, palliative care, physical therapy, occupational therapy, Social Work, patient advocacy, psychiatry, integrative medicine, acute pain and inpatient addicition services. The RN will explain to the patient what to expect next and provide a timeline for the consults, and/or therapies to be delivered. The patient will be given the opprtunity for questions.

Once the plan of integrative care and support is agreed upon during the RN/patient interview the RN puts the plan into motion by ordering the requested integrative therapies and consults. The RN will also communicate with multidisciplinary care team and order those therapies and consults elected by the nurse and patient in the electronic health record (EHR). The patient answers this set of questions during the pain interview with the RN:

1. What triggers your pain?
2. What helps your pain?
3. What does not work for pain relief?
4. What is your pain goal?

The answers to these four questions are commnicated to the multidisiplinary team in a note placed in the electronic health record and during multidisiplinary rounding on the units. The team including, registered nurses, MDs, Chaplains, Physical Therapists, Social Workers, Nursing Assistants, Psych providers, Music Therapists and others will then be better able to individualize the care they give to the patient based on their stated preferences and goals. Regardless of whether a patient has a nursing care plan they will continue to recieve paharmacologic treatment per usual care.

Evaluation of the QI Project:

A mixed-methods approach will evaluate the impact of this QI project. The evaluation period will begin once the pain care plan is deployed in the electronic health record and continue for a until the patient is discharged. The eligibility period for selection will be all SCD admissions that occur during the 12 week study period. All patients admitted to the SCD unit during this 12-week period will be part of the project evaluation.

The team can then assess the completion rate of the consults by auditing the requests placed for each individual service in the electronic health record (EHR). The completion of the consult will be veryified by the prescence of a documented note from the provider in the EHR. The multidisciplianary consults ordered in the EHR and received by the patient during a single ionpatient admission will be collected through weekly retrospective reviews in the EHR and collated quantitatively into categories (e.g. pastoral care, social work, psychiatry, addictions, acute pain, palliative, music, reiki, pet therapy and aromatherapy).

The primary nurses on the unit or the principal investigator will conduct qualitative interviews of at least 15-20 patients discharged during the 12-week period who chose to recieve the pain care plan during their admission. Those conducting interviews will collect data on a tablet through Survey Monkey and the patients will be asked standard questions assessing their satisfaction with care (Appendix M.). These interviews will take place prior to discharge and at least 72 hours post-admission in order to give adequate time for the patient to experience care. The likelihood that any additional therapies/consults could be received by the patient in less than 72-hour inpatient stay is low, so those patients will not be interviewed. The post -interview will be conducted within 24 hours of planned discharge by a trained RN who will collect qualitative data from the patients using a standard set of survey questions to determine which integrative therapies/consults they selected; which were delivered; and their satisfaction with the delivered therapies/consults during their inpatient stay. Patients will also be asked if they have any suggestions for additional pain management strategies that could be offered as part of the plan. A set of questions assessing feelings of empowerment or control of their pain, and whether or not they would opt to have the pain care plan and whether they would opt to have the same therapies in a future hospital admission if offered.. Additionally they will be asked to rate communication with the RNs that cared from them overall on a likert scale, their overall satisfaction with their care on a likert scale and to rate the quality of the nursing pain interview and worksheet for pain on a likert scale.

Measures:

The evaluation of the study interventions will be both quantitative and qualitative. The RN members of the nursing Integrative Council and principal investigator will audit the EHR to determine what proportion of SCD patients who are admitted during the project opted to recieve

the Integrative Therapies. Next of those who opted in what modalities did the patients choose to recieve, and did the therapy or consult get completed during their admission. The team will look at the qualitative responses of the participants during a discharge interview which will be completed 1-2 days prior to anticipated discharge. Patients who have an admission lasting less than 72 hours will be excluded from the interview. Medical interpreters will be utilized to support uniformity of understanding during the pre-discharge interview in non-english speaking patients. The goal will be to survey 15- 20 patients durign the project period. Then there will be a feasibility and ease of use survey for the nurses at the end of the 6 months.

Analysis:

Descriptive statistics will be used to characterize the patients admitted to the SCD unit during the 6 month period. The team will evaluate the characteristics of patients who meet the eligibility. The study team will look at the number of all consults requested to the number that were completed. The chart will be retrospectively reviewed to characterize the different types of integrative therapies that were requested by the patients. The QI team will determine if those therapies ordered for the patient were recieved during his/her admission,.

The exit interview with the patient will determine how the patients rated the communication with their nurse, their perceptions on the overall admission, integrative therapies and consults they received, and the quality of the nursing interview. Asking about the quality of the nursing interview will assess the quality of the interactions with nursing. Length of stay will be recorded during the study period for each particpant. This will help the team determine eligibility for interview and whether patient recieved careplan on admission.

Ethical Considerations:

Ethical considerations for this study included the provision that all SCD patients admitted during the study period are screened and offered the interventions. It would be unethical to offer evidence-based care to only a subset of SCD patients. The need and basis for offering these resources was identified by patients themselves. There is an ethical (and legal) obligation of the organization to provide equitable care to its patients in an effort to decrease health care disparities. BMC has identified specific equity goals including treating the patient as expert in their illness and partnering with patients to create an evironment of shared decision making. BMC aims to develop a culture of trust through creation of a model for care that emphasizes personhood, dignity and the belief that the person comes first and that disease comes second. These principles are well aligned with those of bioethics such as beneficience, autonomy, justice non-maeficence and equity (ANA Code Of Ethics, 2015).

From the start, nursing as a discipline has been focused on the whole person and integrative healing. This concept was emphasized in the early work of Florence Nightingale who recognnized the integral nature of the person-environment system (Kreitzer & Koithan, Integrative Nursing; p.3, 2014). The quality improvment team also thought it important to make this plan available to other patients who are not SCD patients but who screen in with the same questions as having complex pain. These patients throughout the hospital will be offered this intervention but will not be included in this studies analysis. The inclusion of non-english speaking patients in all aspects of the study is in an effort to provide equitable care to the diverse patient population seen at BMC.

Results:

Nurse data was collected as part of the initial steps to support the implementation of the nursing care plan for complex pain and it's linked components in the electronic health record (EHR). The nurse data was extracted from an electronic learning module assigned in April 2021 that outlined the QI project to the nurses who would be impacted by implementation. The education included asking the nurses to begin by reviewing an article *Adressing Implicit Bias in Nursing: A Review* (Narayan, 2019). The learners (n=154) were then asked to complete a pre-test exploring their perceptions of level of personal implicit bias and to then consider how their biases may affect care of their patients.

Table 1. To what degree are you affected by your personal bias when caring for a SCD patient?

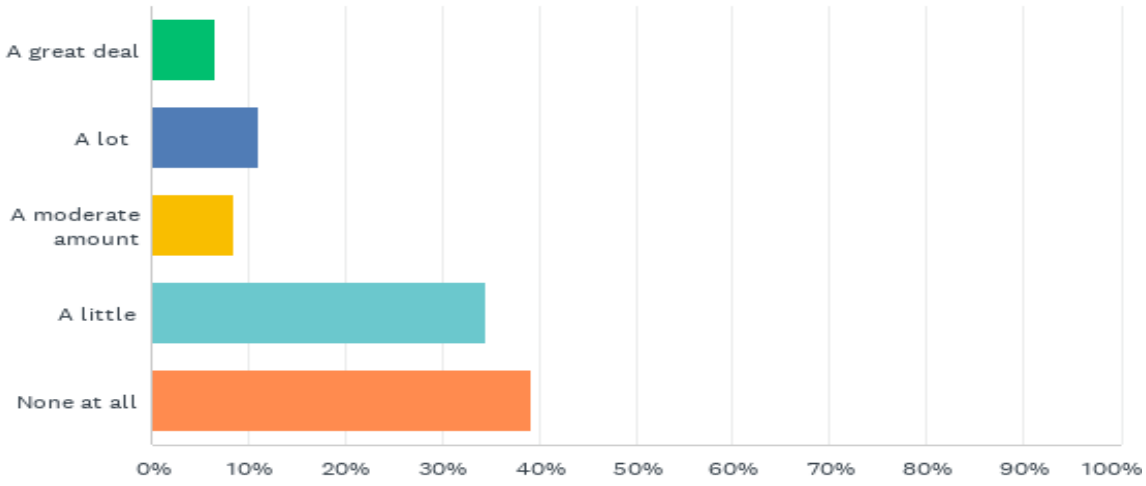


Table 2. What strategies from the article resonated with you most as useful? Please check all that apply.

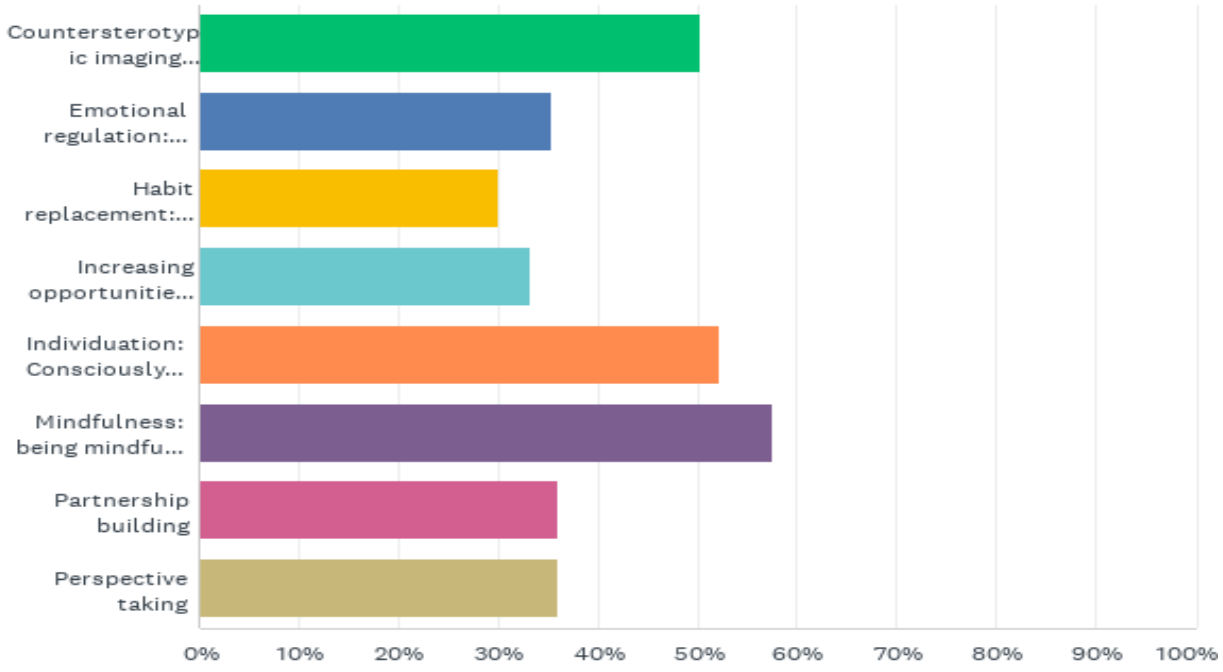
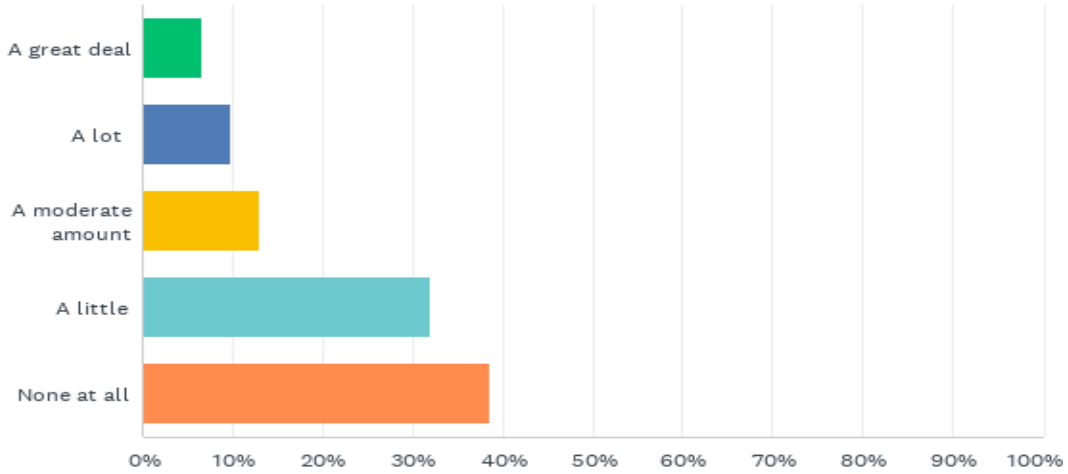


Table 3. To what degree do you feel that you unconsciously stereotype SCD patients as pain medication seeking?



It was interesting to learn that many nurses were unfamiliar with the strategies to mitigate the impact of personal implicit bias on patient care. The nurses were most familiar with the concept of using perspective taking to build empathy and compassion. The top 3 strategies that resonated with learners were Mindfulness, Countersterotypic Imaging and Individuation. 62% of nurses surveyed did acknowledge that personal biases may affect the care they deliver to patients with SSD, 42% of nurses did not acknowledge that implicit bias affected their nurisng care of patients with Sickle Cell Disease.

The next component of the electronic learning was a didactic activity that only the inpatient nurses were asked to complete. The Emergency Room nurses completed a seperate version of part 2 (not releavent to this project). The inpatient module included a focus on pathophysiology, pharmacology, inpatient acute management of SSD chest crisis, splenic sequesttration and pain in care of the SSD patient. In addition there was a module that outlined the screening quesitons for complex pain, nursing care plan for complex pain, patient handouts, website, integrative therapies and consults available, interview process and flow sheet rows for utilizing the nursing orderset for integrative therapies. The particpants also were asked to watch a video of SSD patients from their organization that described their lived experiences navigating being a patient and the challenges and successes that most resonated in their care. Participants (n=93) were asked to complete a post-test that was scored and had a minimum pass rate of 80%. The post-test asked questions that related to each section of the module and also asked general questions on the nurses perception of the impact the specific components of the education activity would have on their nursing pratice and care of SSD patients in the future. The average score for the post-test was 83% with a median score of 88%. The e-learning was completed by approximately 86% of nurses assigned. Of the

14% who were incomplete some had completed the majority of the course but not the course evaluation for conatct hours.

Table. 4: To what degree will the patient videos that showed BMC patients describing their experiences impact your approach to nursing care of SCD patients.

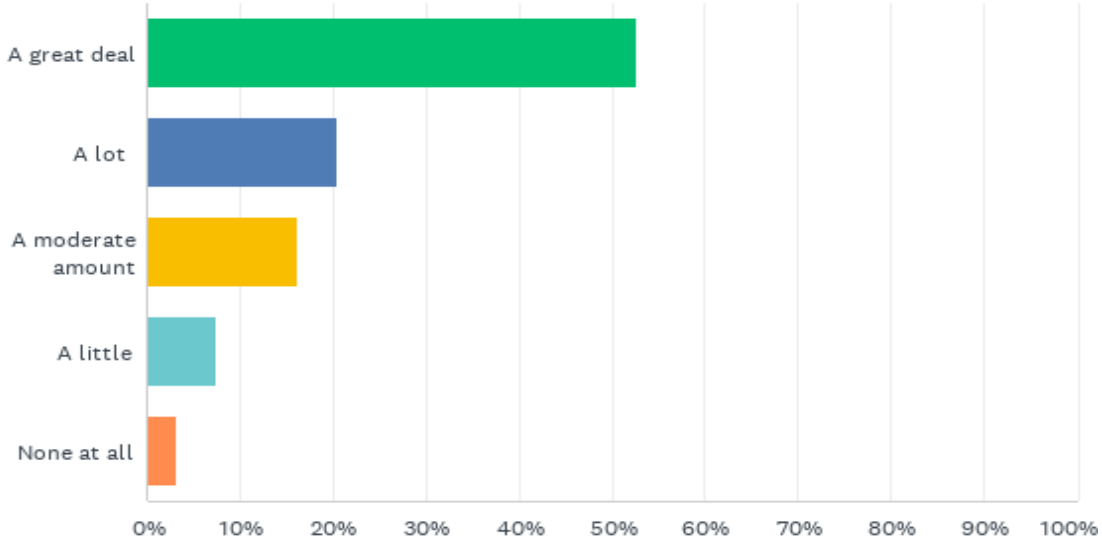
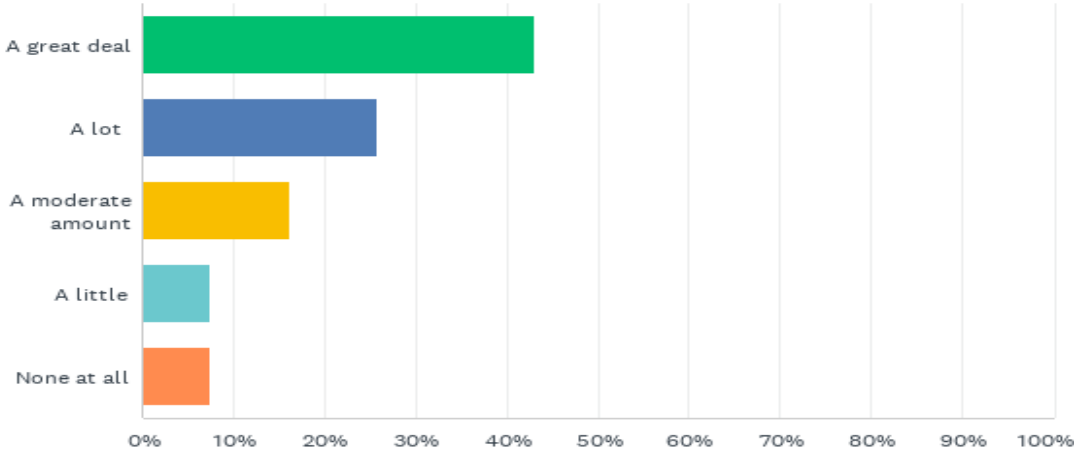
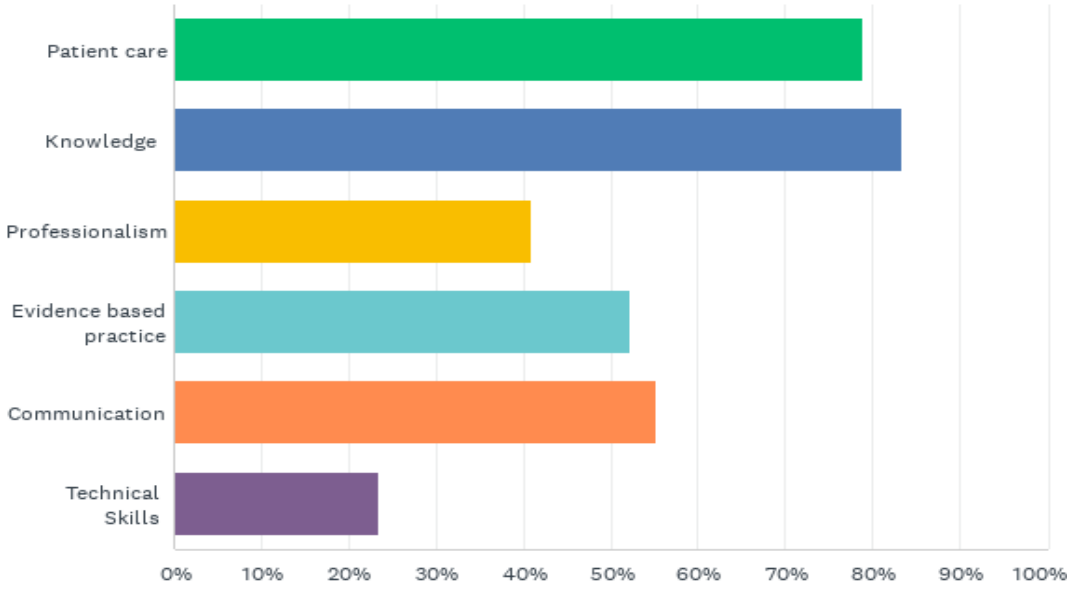


Table 5. To what degree will the Addressing Implicit Bias in Nursing article impact your approach to nursing care of SCD patients?



Participants were asked to evaluate the entire SSD Complex Pain course which included the article, pre-test activity, didactic module and post test. They were able to recieve 3.5 nursing contact if they completed the entire course and evaluation. There were 133 course evalautions (including both emergency department and inpatient responses). The nurses were educated in daily huddles during the weeks of go-live in July/August 2021. There were three Top 5 Communications that were released to communicate the go-live and provide Tip Sheets for documenting the new process for screening patients for complex pain, adding the nursing care plan, introducing the patient website QR code, flowsheet rows and nursing orderset for Integrative Therapies.

Table 6. Please identify which of the following areas you think will improve as a result of this course.

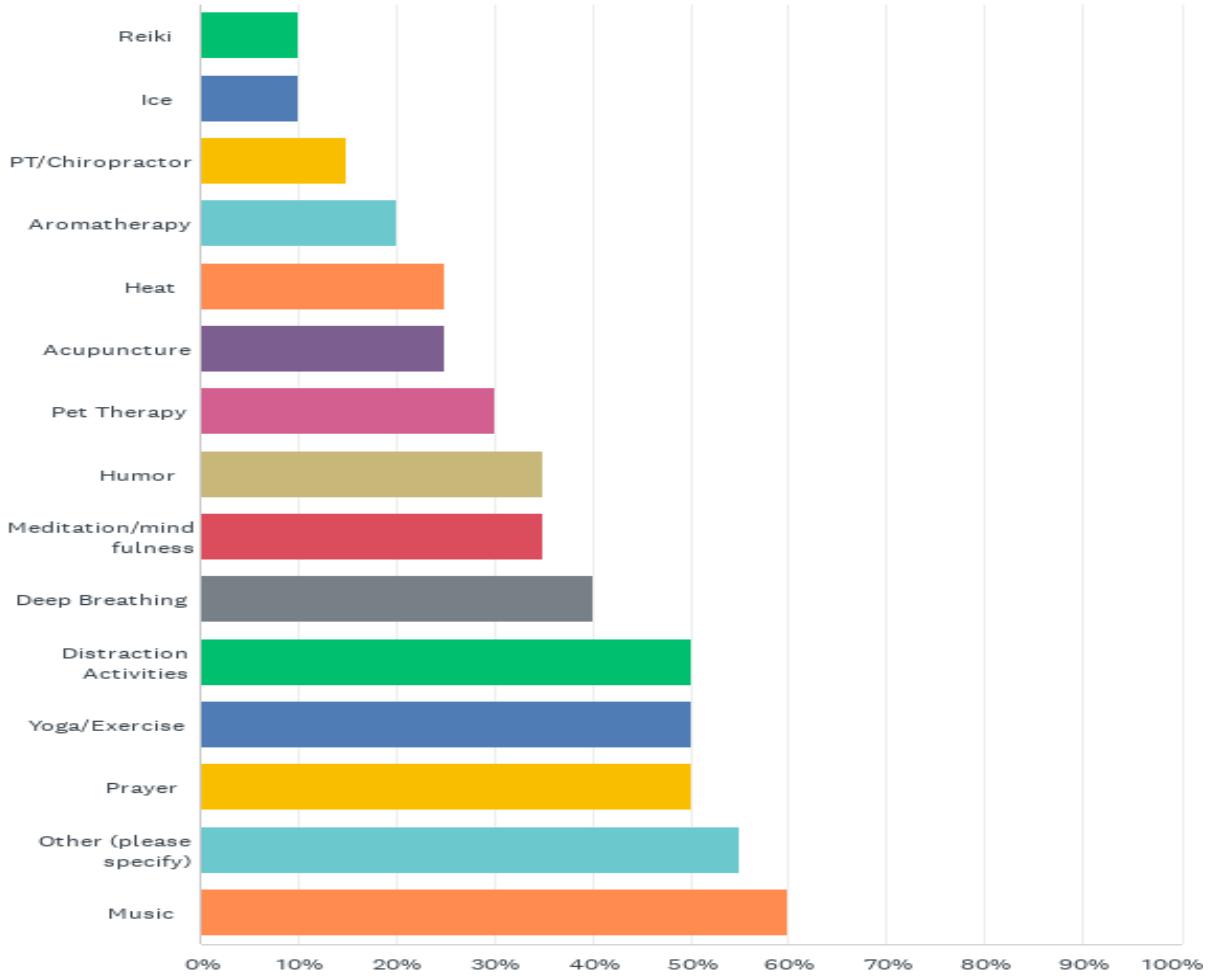


SSD patients who screened in for complex pain were interviewed by nurses (n=23) to determine what integrative therapies and consults they had tried in the past and what integrative

therapies and consults would they be interested in trying or learning more about during their admission. If the patient was interested (N=20) they were included and were further interviewed by the nurse. They were also introduced to the QR code by the nurse to access they patient website to learn more about the therapies and where to go to practice with the use of recorded videos some modalities (prayer, yoga, deep breathing, guided imagery, meditation, humor).

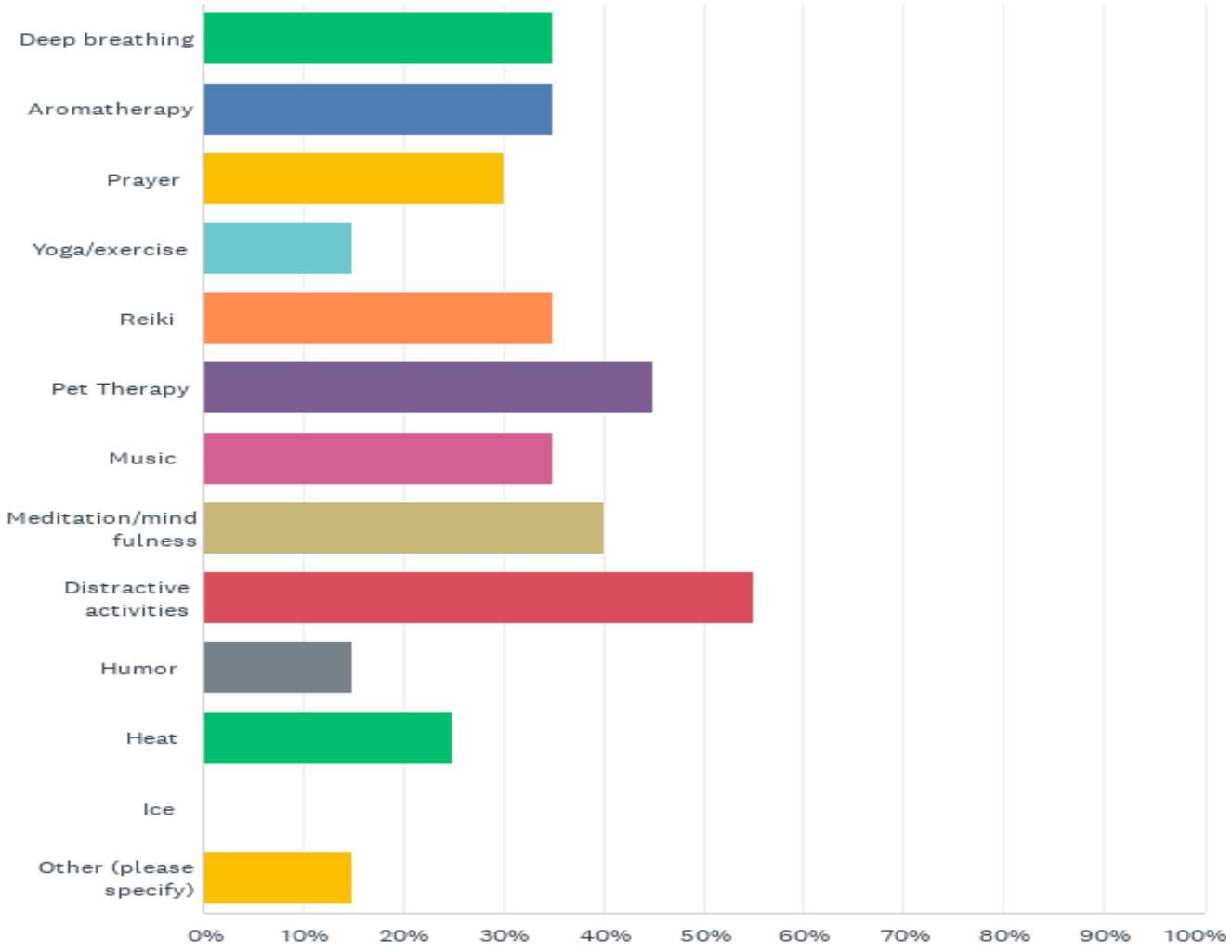
The patients who opted in to learn more and recieve integrative therapies or consults (n=20) has a mean age of particpants was 29 (range 21-49). There were more males 75% than females 25%. Males (n=15) females (n=5) . Two of the 3 participants who opted out were female. The admitting diagnosis (chief complaint) was sickle cell crisis in 90% of particpants, 85% were english speaking and 15% listed Haitian Creole as their primary language. The location of the patients was distributed between medical surgical units and the intensive care unit (ICU) 60% were located on the hematology/oncology unit, 20% were on family medicine and 15% in ICUs and remaining 5% on a general medical/surgical unit. All participants were of African descent with various ethnic backgrounds. The religion of patients was looked at and 55% listed a Chrisitanity based religion while 45% listed none on their admission. The participants were asked what integrative therapies or consults had they tried previous to this hospital admission.

Table 7: Home Integrative Therapies



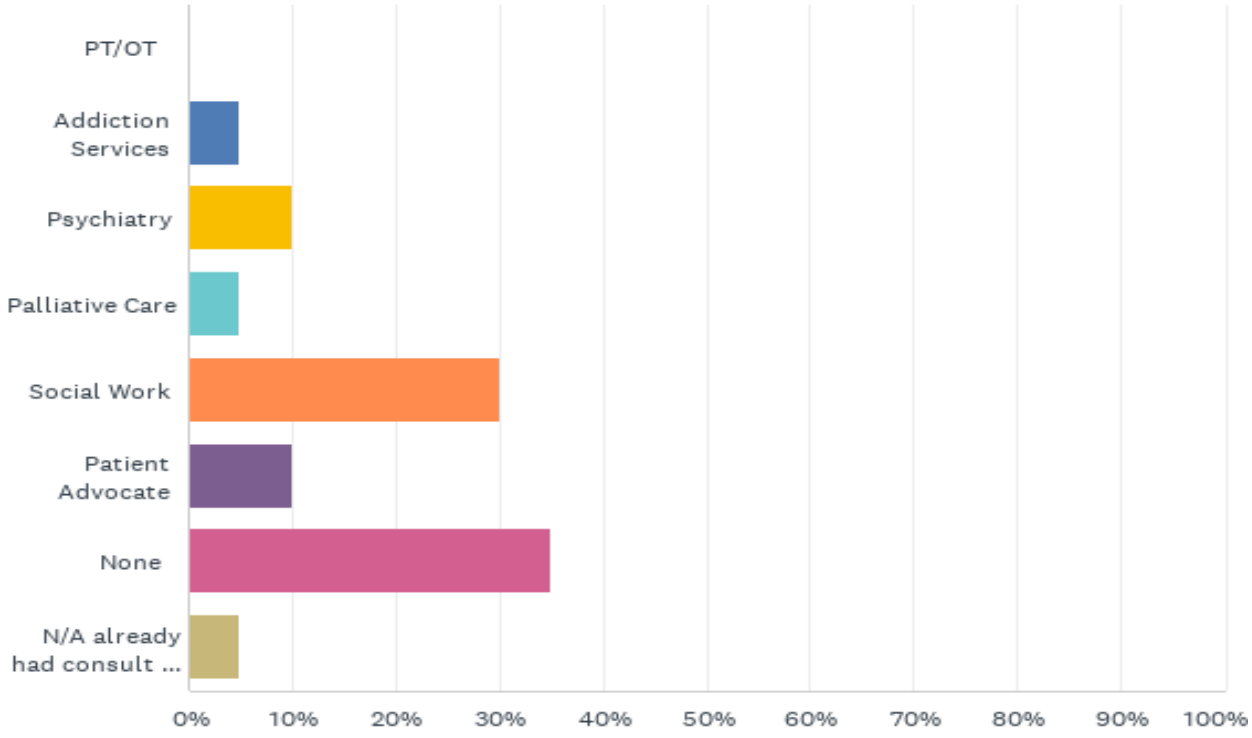
The 23 paricipants were asked if they were interested in trying a non-pharmacologic integrative therapy or consult during this admission, 20 were interested in trying either an integrative therapy or consult during their admission. Patients were overall very interested in learning about and revieving integrative therapies, 20 out of 23 opted into the program. Nineteen of those patients were surveyed post program and 18 had accessed the patient website.

Table 8: Admission Integrative Therapies



The particpants were asked what Multidisciplinary Consult(s) they might be interested in pursuing during this admission.

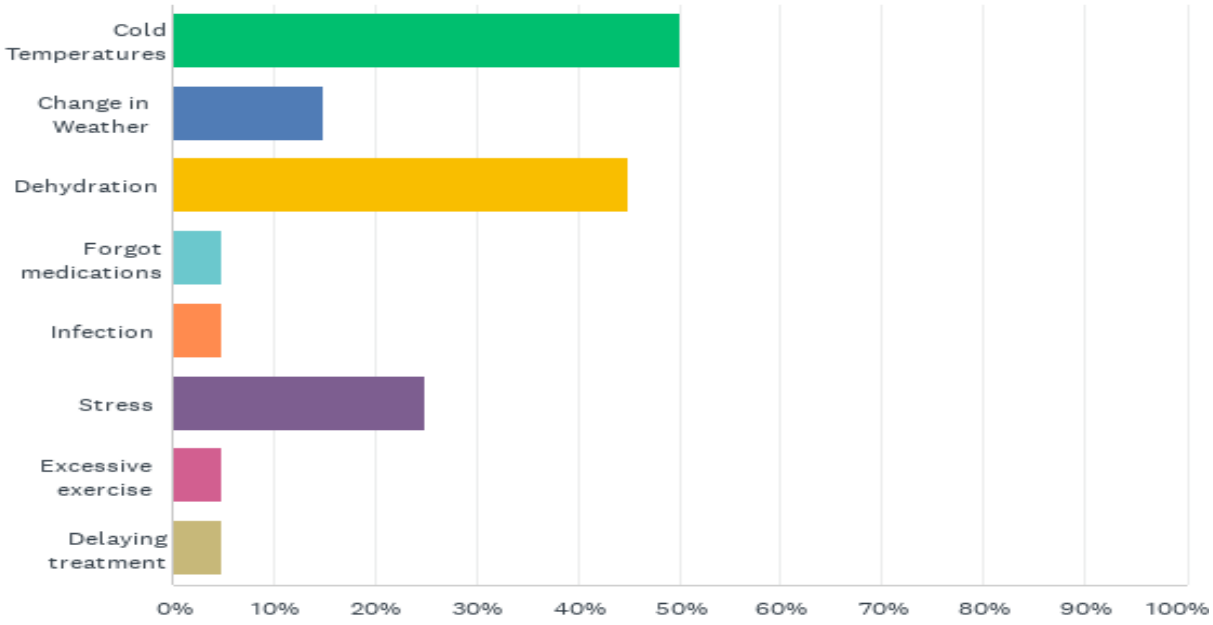
Table 9: Multidisciplinary Consults



The QI project team analyzed the percentage of particpants who recieved their requested integrative therapies prior to discharge (75%). Of the multidisciplinary consults requested 10 out of 12 were recieved (83%). The participants were asked to identify their most common trigger(s) for pain. Also they were asked what helped with most with their pain. The most prevalent answers for triggers were changes in weather and cold temperatures while the most common for what helped was medications, transfusions and hydration. However three of respondents listed an integrative therapy as most helpful meditaion, music and deep breathing respectively. They were

also asked to describe their functional goals for pain management the most common answer to get discharged home, to be able to enjoy family and to live a normal life.

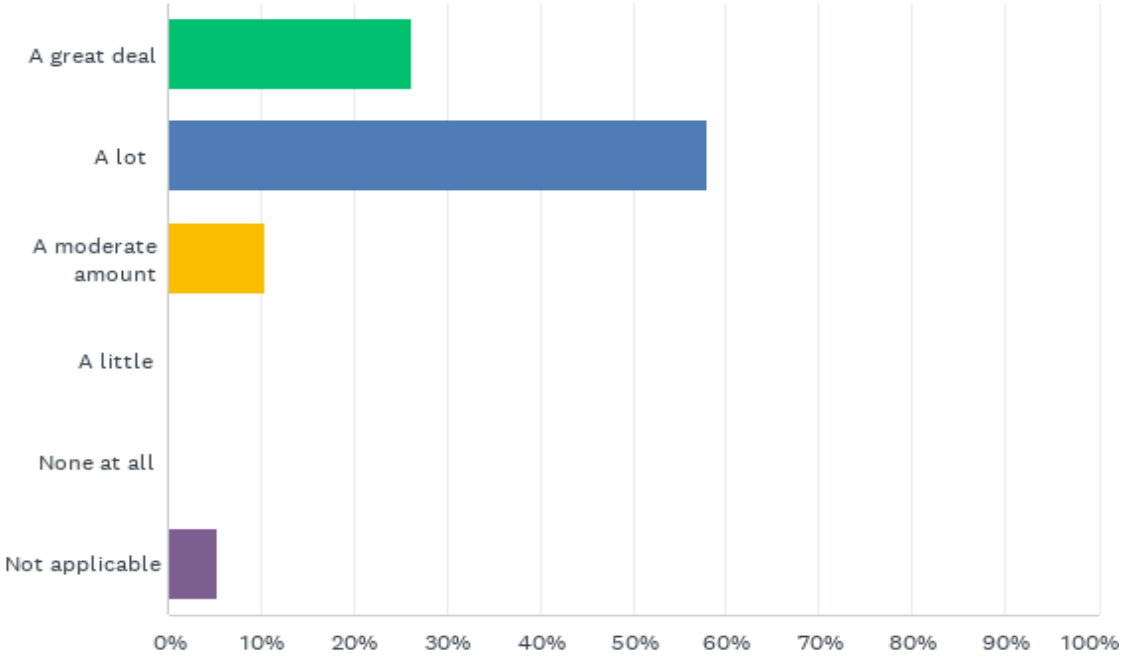
Table 10: Triggers for Pain



Participants (n=19) were asked to complete a pre-discharge survey assessing their qualitative input on the components of the complex pain nursing care plan. There was one patient who was not included as he declined the survey prior to discharge. Particpants were asked during this admission how often was your pain well conrolled 3 were always satisfied, 10 were usually satisfied and 6 were sometimes satisfied? They were asked how satisfied were they with the way the hospital staff responed to their pain, 10 patients were very satisfied, 8 were satisfied and 1 patient was neither satisfied nor dissatisfied. When asked how often nurses treated them with compassion and respect 16 responed always with 3 responding usually. The participants were also asked to how

often did your nurses listen carefully to them about their pain and 10 stated always with 9 responding usually. When asked how often did nurses eaplain your paln of care in a way you can understand 9 responded always, 9 responed usually and 1 participant responded sometimes. How often did nurses listen carefully to you about your pain preferences 10 responded always and 9 responded usually. The website for complex pain management was accessed by 18 out of the 19 total participants surveyed.

Table 11: How Useful was the Website for Complex Pain?



Particpants were asked to give suggestions for ways to improve the patient website for complex pain with the most common answers being to add videos, music, patient stories, more therapies and lastly one particpant asked for a device to access the website to be provided. When asked what they liked most about the patient website responses included ease of use, videos, meditations, music, deep breathing, reiki, yoga and pet therapy. When asked how satisfied they were with the therapy they recieved 13 said they were very satisfied and 6 said they were satisfied. When asked

what they would add to their individualized plan for pain management there was a wide range of responses including acupuncture, massage, meditation, talk therapy, art and games, aromatherapy yoga, and reiki. The nurses who routinely provide integrative therapies such as Reiki and Aromatherapy from the Integrative Nursing Council were surveyed 6 months post-implementation on their perceptions on the ease of use of the new documentation platform in the EHR impact of integrative therapies on patient care, feasibility of delivering intrgrative therapies to patients and strategies used to mitigate personal implicit bias. Their were 26 nurse respondents from a group of 71 nurses surveyed who were a combination of volunteers from the aromatherapy and reiki system distibution list and the integrative nursing council. They recieved the survey by email and responses were anonymous.

Table 12: To what degree have you made efforts to address your personal implicit biases during patient care?

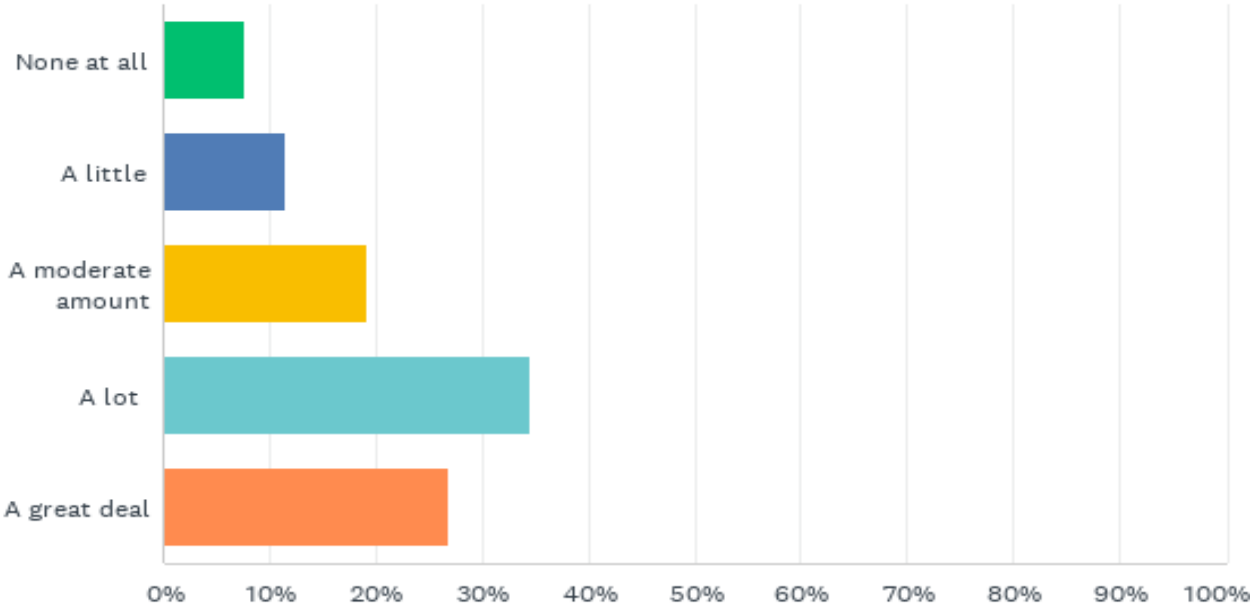


Table 13: Which strategies did you find helpful in addressing your own personal biases?

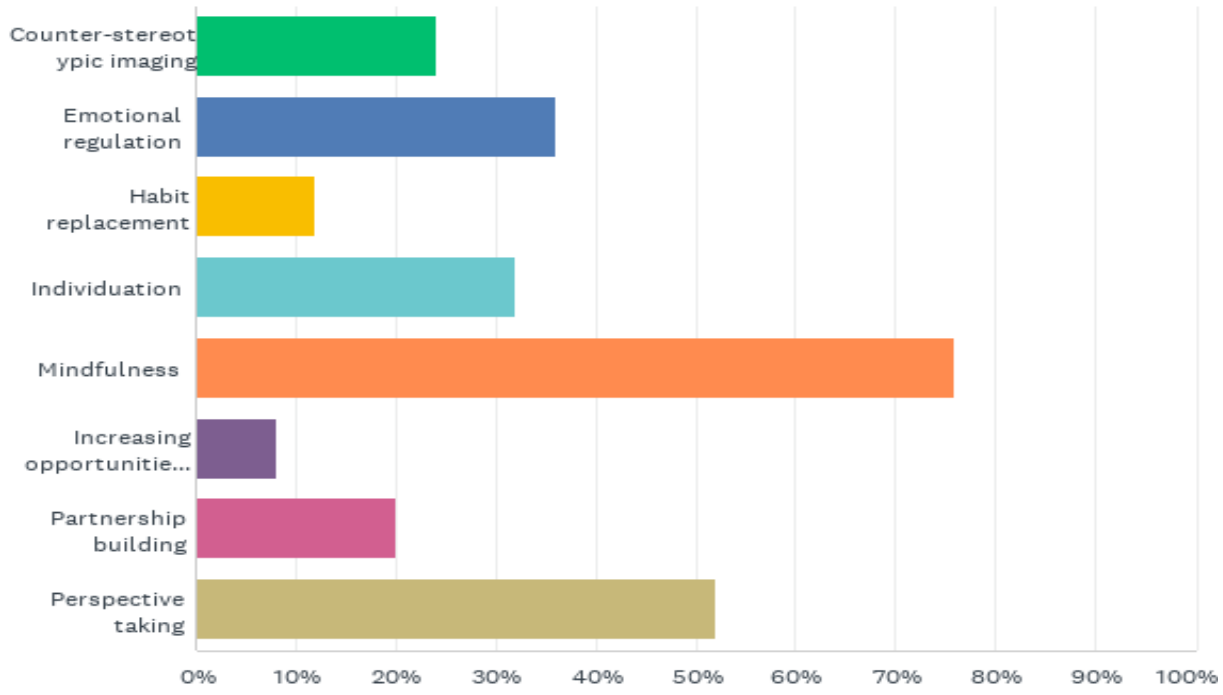


Table 14: How effective is the Get to Know poster in getting to know the patients.

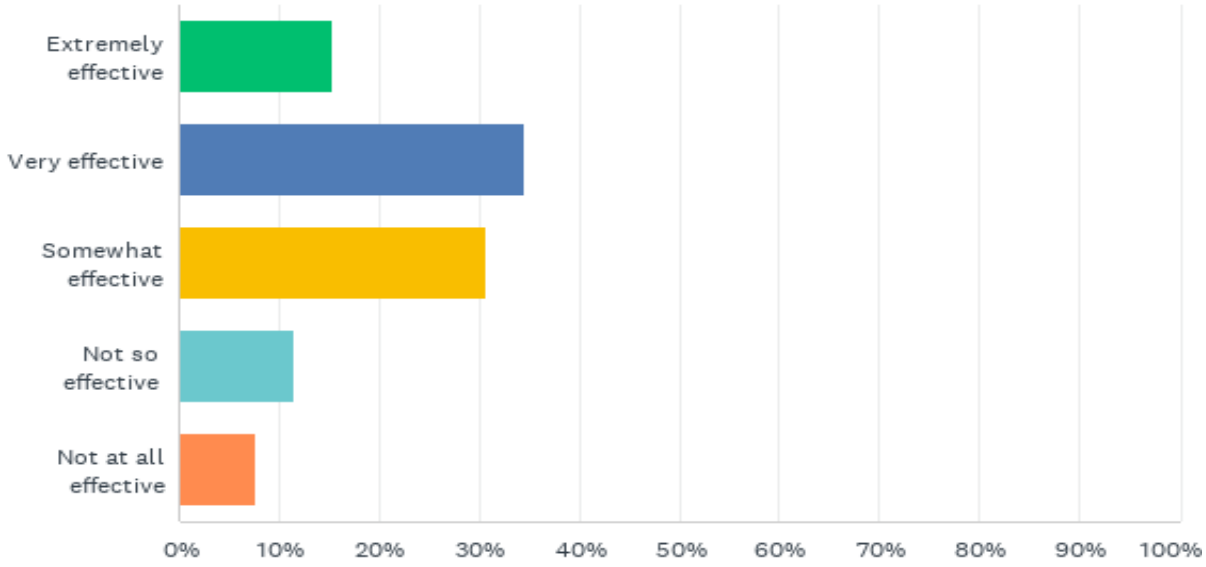


Table 15: How feasible is the use of the use of the Get to Know poster with the patients?

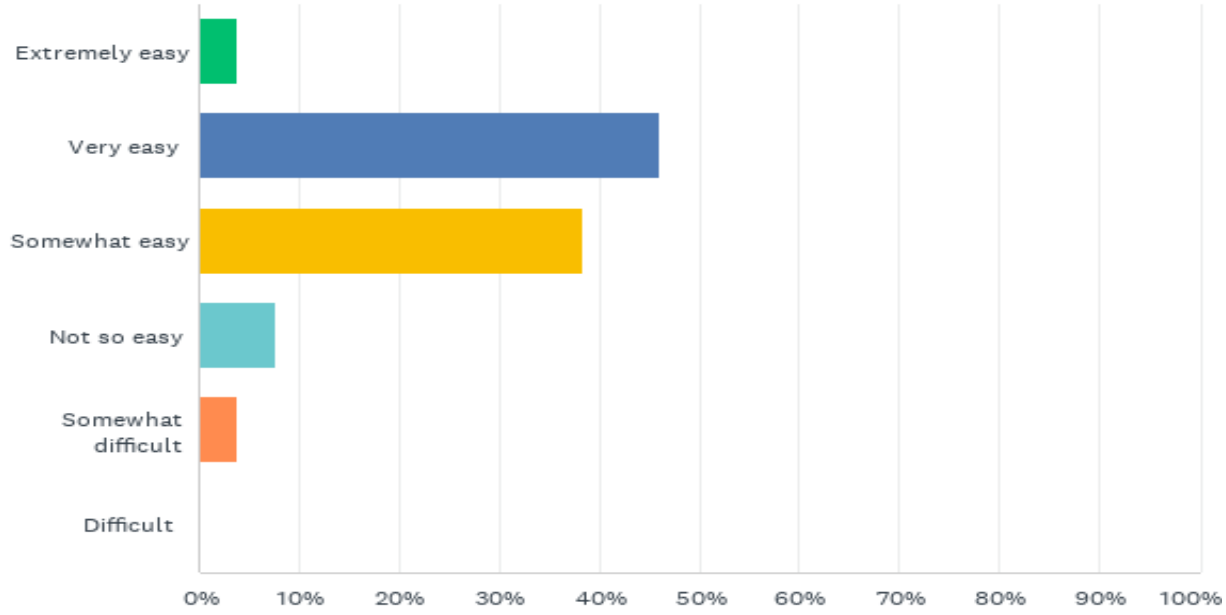


Table 16: How effective do you feel the screening questions for the complex pain nursing protocol are at identifying patients in need?

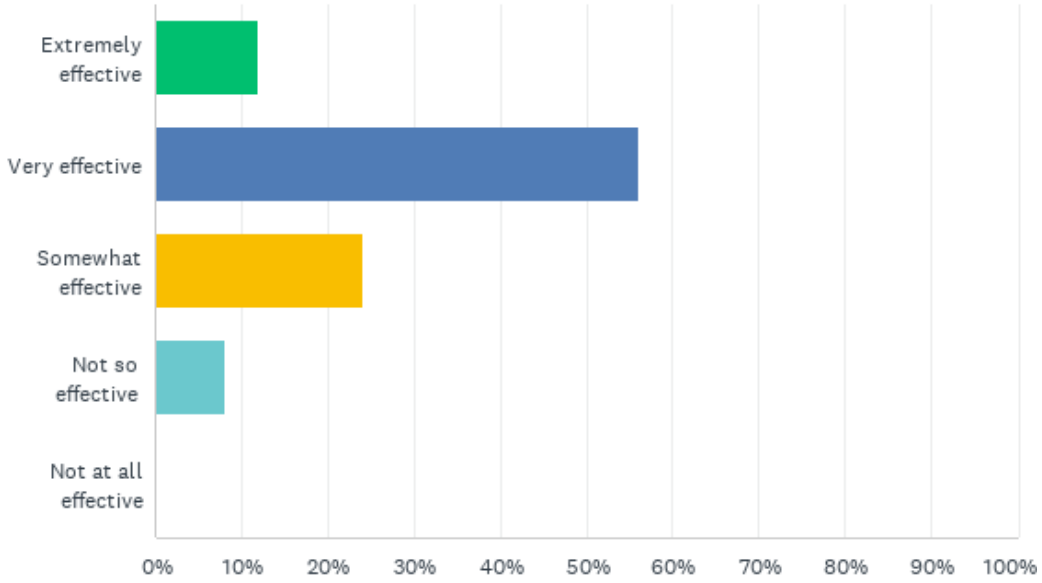


Table 17: How effective do you think the complex pain nursing care plan and pain interview are in identifying the preferences of the patient and in improving access to Integrative Therapies?

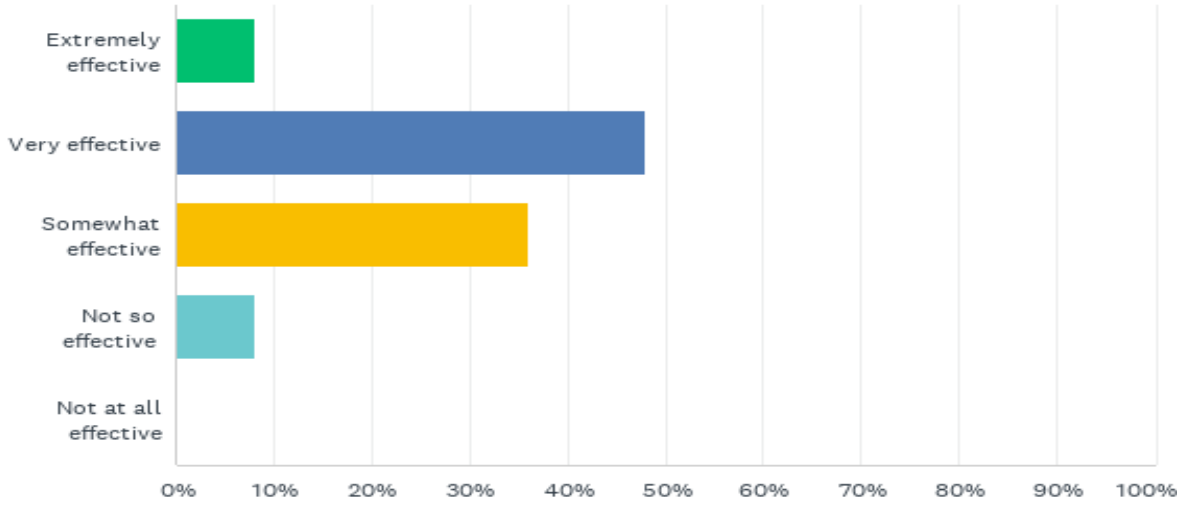


Table 18: How feasible (ease of use) is the Complx Pain Nursing Care Plan and nursing orders with the patients?

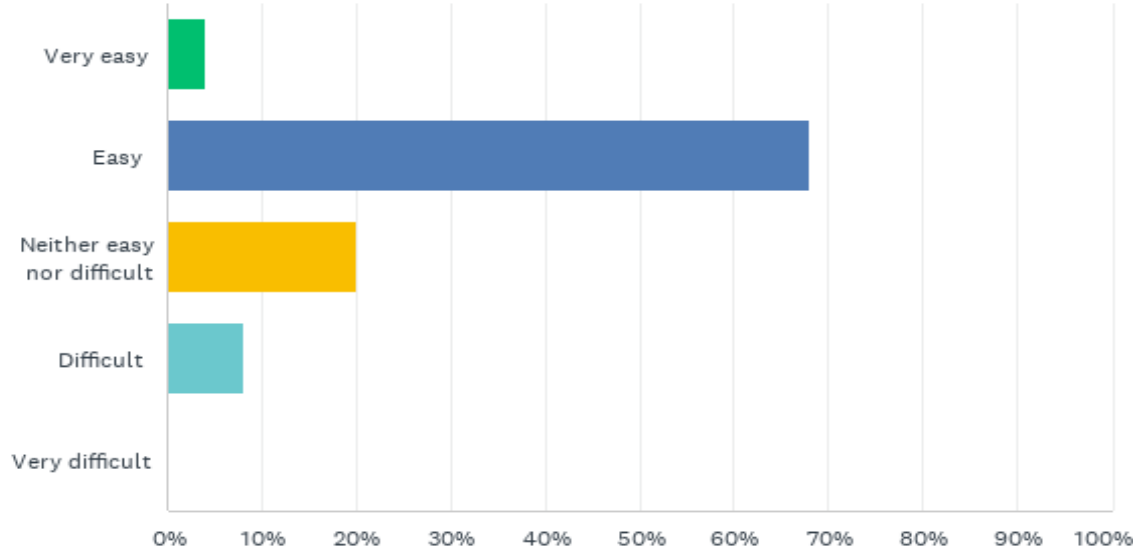


Table 19: How feasible (ease of use) is the use of the pain worksheet as a handout to guide the discussion with the patients?

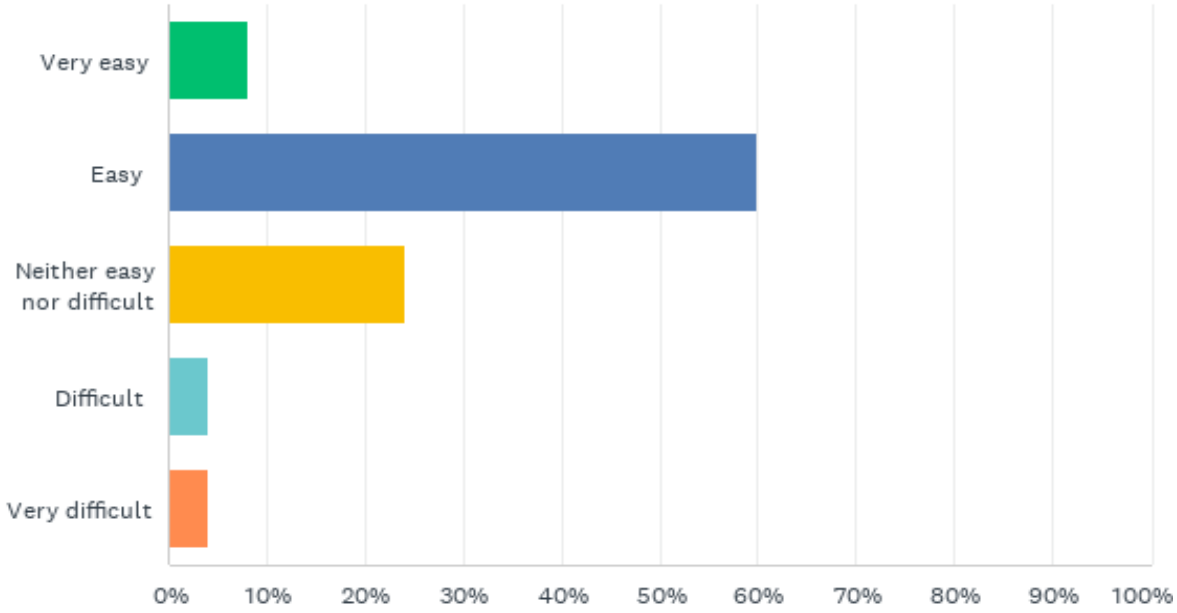


Table 20: How well did the Complex Pain Nursing Careplan components fit into your workflow?

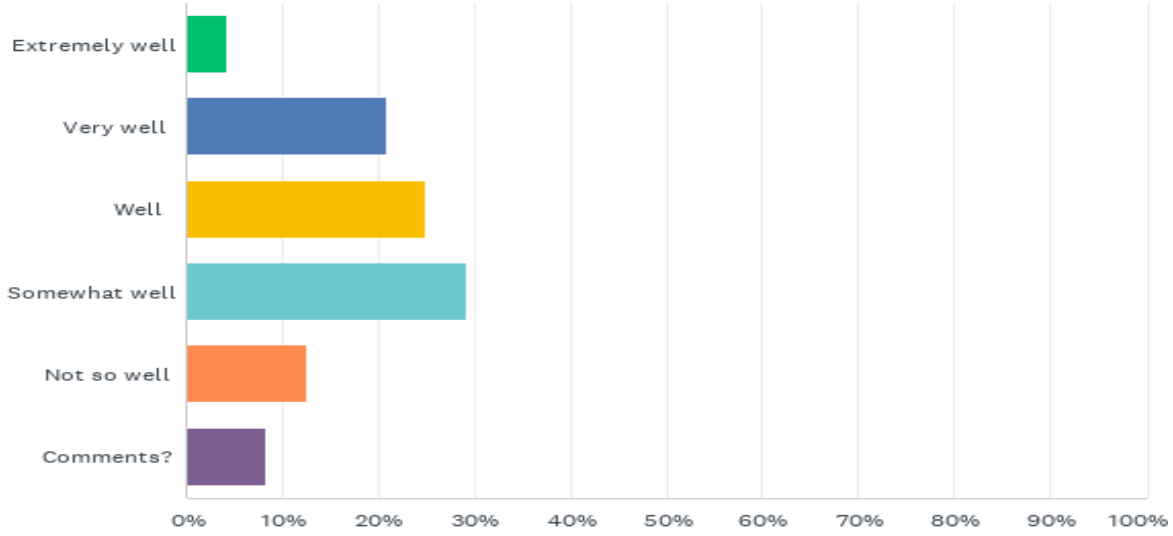
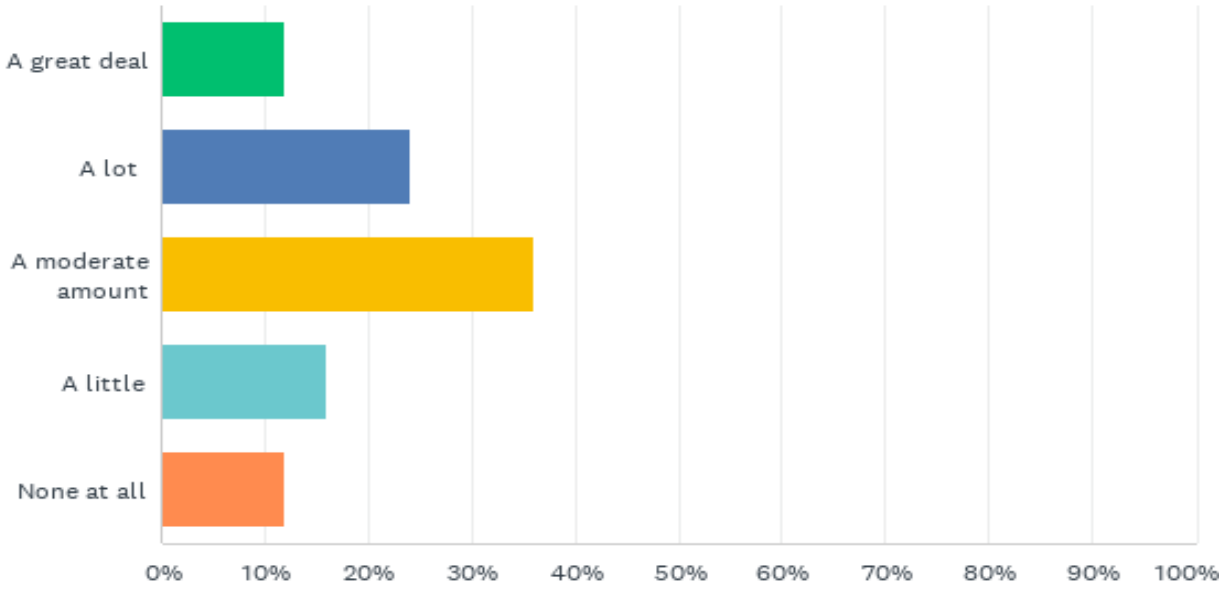


Table 21: To what degree did the Complex Pain Nursing Care Plan components create an effecient workflow in the Electronic Health Record?



Discussion of Results:

The specific aims for this QI project were to ensure compliance and consistent use of the process measures including the screening questions and complex pain nursing care plan. The screening questions were used with 100% of the patients 22 out of 23 patients said yes to the screening question about pain and 20 out of 23 patients opted to receive integrative therapies. The next goal was to improve nursing staff awareness of personal implicit bias. Over 60% of nurses surveyed acknowledged that bias affected their care of patients with SCD. Nurses were able to mean score of 88% on the post-test which evaluated knowledge on the rationale for QI project, pathophysiology in SCD, pharmacological and nursing treatment, available resources including the new complex Nursing Care Plan and methods to improve communication with the multidisciplinary team. 95% of participants responded that the course prepared them with the steps

needed to develop an individualized patient centric pain management plan. 94% stated they feel competent to discuss the pathophysiology of SSD and manisfestations of acute crisis. 92% felt competent to describe pharmacologic strategies for treatment and painmanagement in SSD. 95% felt competent to list available rescources for management of pain in SSD. 90% stated they were able to reflect on their own personal implicit bias as a result of the course. 86% felt that particpation in the course would impact their nursing practice in the future.

Lastly the aim was to improve patient satisfaction with attention to preferences for care and access to non-pharmacologic integrative pain interventions. 95% of participants responded that they feel staff took their preferences into account a great deal or a lot of the time. 100% of particpants were either very satisfied or satisfied with their nursing care this admission. The percentage of participants who received their requested Integrative Therapies prior to discharge (75%). Of the multidisciplinary consults requested 10 out of 12 were received (83%). 100% were either very satisfied (26%) or satisfied (74%) with the overall care that they recieved while in the hospital. 95% of participants stated they would choose to use the Complex Pain Program again if they were readmitted to the hospital. Post-implementation the majority of bedside nurses felt that use of the components in the EHR were feasible as part of their regular workflow. The majority rated the impact of the complex pain nursing care plan and pain interview in identifying the preferences of the patient and in improving access to integrative therpaies as extremely effective or very effective.

Interpretation/Next Steps:

The Complex Pain Care Plan and it's components overall were well recived by patients, bedside nurses and leadership. In the first 4 months post go-live (August-November 2021) the patient

website was accessed a total of 1289 times. The site was identified by nursing leaders as valuable to patients and families as a resource. There were improvments made to the flow in the EHR. The QR code for the patient website was added as a feature on the patients communication board (Whiteboard) in all medical-surgical rooms. Education of multi-disciplinary leaders and the Sickle Cell Steering Committee members produced enthusiasm and support for this nurse-led innovative program. Nurses demonstrated a neeed for continued education on integrative therapies and support at the bedside to spread the culture change hospital-wide. The Integrative Nursing Council got the buy-in from senior nursing leaders to plan and implement an Integrative Nursing Fellowship. There was an application process conducted to select the first fellows. The fellows were a combination of new to practice defined as less than two years (3) and experienced (2). The Integrative Nurse Fellows activites are supervised by a nurse educator and the fellows spend 12 hours a week each of dedicated time on fellowship activities. Fellowship activities include conducting complex pain interviews with patients, delivering integrative therapies to patients, educating staff about the program and offfering integrative therapies to nurses for use in self-care. This structure went live in March 2022 and has been recieved with enthusiasm by patients, bedside nurses and multidisciplinary leaders.

Limitations:

There were several factors that served as barriers to the implementation of this quality improvement project. The project was implemented during a global pandemic. There was a nursing staffing crisis with high levels of burnout in the exising staff. Nurses were overwhelmed with caring for COVID-19 patients and thus less able to offer integrative therapies. There were large numbers of traveler nurses employed as temporary staff during the pandemic who had not

recieved the training for integrative therapies, implicit bias and care of the patient with SCD. There was an unprecedented turnover rate of all staff during the pandemic. The isolation of patients during the pandemic due to infection control risk led to a decrease in the feasibility of offering certain integrative therapies (e.g. pet therapy, reiki). There was a higher than usual percentage of novice nurses staffing the inpatient units. Novice nurses are often task oriented, struggle with documentation in the EHR and time management and are not as experienced or versed in integrative therapies or as saavy in communication with patients regarding chronic pain. There was a shift of the EHR to crisis documentation during a COVID surge that allowed staff to document less to save critical time during staffing shortages due to sick calls and turnover. Nurse educators were focused on crisis education such as Personal Protective Equipment, COVID patient care and documentation. The QI team needed to pause the delivery of many integrative therapies and collection of data from patients during the surge.

Summary:

SCD patients who screened in for complex pain were very interested in learning about integrative therapies and in accessing them during inpatient hospital admission. The patient website for education and practice integrative therapies was well recieved.

Nurses were highly impacted by the patient videos depicting patients experiences during hospital care as sickle cell patients. Nurses were receptive to training about implicit bias and stigma. Nurses found the paltform to document and order integrative therapies feasible to use. They rated the usefulness of the Get To Know poster high. Nurses stated the biggest barriers they encountered were time, the amount of documentation overall that they do, language and cultural differences between the patients and themselves. Some also commented that more education on the actual

integrative nursing therapies and continued utilization of the platform is needed for both staff and patients to promote use. Also recommended was to add the resource of a dedicated group of nurses to deliver the integrative therapies to both staff and patients.

Conclusions:

The new platform to offer nursing integrative therapies to all admitted patients with SCD who screened in for complex pain was successfully implemented on inpatient units as a nurse driven initiative. It is challenging for staff nurses to deliver the integrative therapies in addition to delivering usual patient care. More education is needed on the integrative therapies platform in the EHR as well as on the integrative therapies themselves. The team is investigating the implementation of an Integrative Nursing Fellowship to further educate staff and patients about this initiative as well as to implement the nursing integrative therapies to patients screening in for complex pain hospital wide.

Funding:

Funding was provided by the nursing depatment at BMC for education of the nurses involved in this project. This nursing education includes reiki and aromatherapy classes and the course that introduced staff nurses to the project. There was also funding provided to support the inforantion technology (IT) build of the platform for nursing integratve therapies in the EHR. The nursing education team also supported the printing expense of education materials for both nurses and patients. The nursing leadership division led by a supportive Chief Nursing Officer funded the hours of pay for nurses to participate in the Integrative Nursing Council and Pain Taskforce. Data analysts were funded by the IT department to create reports to be utilized for the analysis of project outcomes.

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Appendix: Attachments

Exhibit A. Synthesis of Evidence Table

What non-pharmacologic integrative strategies have been shown to improve chronic pain?

Number of studies	Intervention	Significant outcomes	Level of evidence
a) Lee, 2017	Exercise Tai Chi vs. Physical Therapy (PT)	Total mindfulness score was associated with mental and physical quality of life.	a) 1, (n= 80)
b) Clark, 2019 c) Garland, 2017 d) Howarth, 2019 e) LaCour, 2015 f) Lestaquoy, 2017 g) Mehl-Medrona, 2016 h) Morone, 2016 i) Nathan, 2017 j) Papthanassoglou, 2018 k) Saha, 2016 l) Simmons, 2019 m) Volker Busch, 2012	Mindfulness-based interventions	Improved pain scores/intensity, pain disability, pain incidence, quality of life, quality of sleep and in some studies decrease in opiate usage. Multiple studies demonstrated feasibility to adopt integrative interventions across varied settings. The way of breathing (deep and slow) positively influences pain perception	b) 1 (n= 244) c) 1 (n= 1220) d) 1, (n= 147) e) 1, (n=109) f) 3, (n= 20) g) 1, (n= 207) h) 1, (n= 282) i) 1, (n= 66) j) 1, (n= 60) k) 2, (n= 310) l) 1, (n= 34) m) 1. N=16
n) Rogers-Melnick, 2018	Music	Music therapy produced significant improvements in pain intensity and mood scores	n) 1, (n= 60)
o) Dezutter, 2011 p) Illueca, 2020	Prayer	The effect of prayer on pain tolerance, and re-appraisal was significant, prayer had a positive impact on mental health	o) 2, (n= 202) p) 2, (n= 9)
q) Baldwin, 2017 r) McManu, 2017 s) Thrane, 2017	Reiki	In level 1 and level 3 studies Reiki group showed significant reductions in pain, respiration blood pressure and anxiety levels. 8 Out of 13 studies showed reiki to be more effective than placebo.	q) 1, (n= 46) r) 3, (n= 13) s) 3, (n= 33)
t, Cooksley q, Lackan	Aromatherapy	Systematic review and Meta-Analysis to assess effectiveness of Aromatherapy on pain	

Exhibit B. PICO

Will implementation of a structured nursing care plan improve access to multidisciplinary non-pharmacologic pain management modalities?

Exhibit C. Microsystem Map

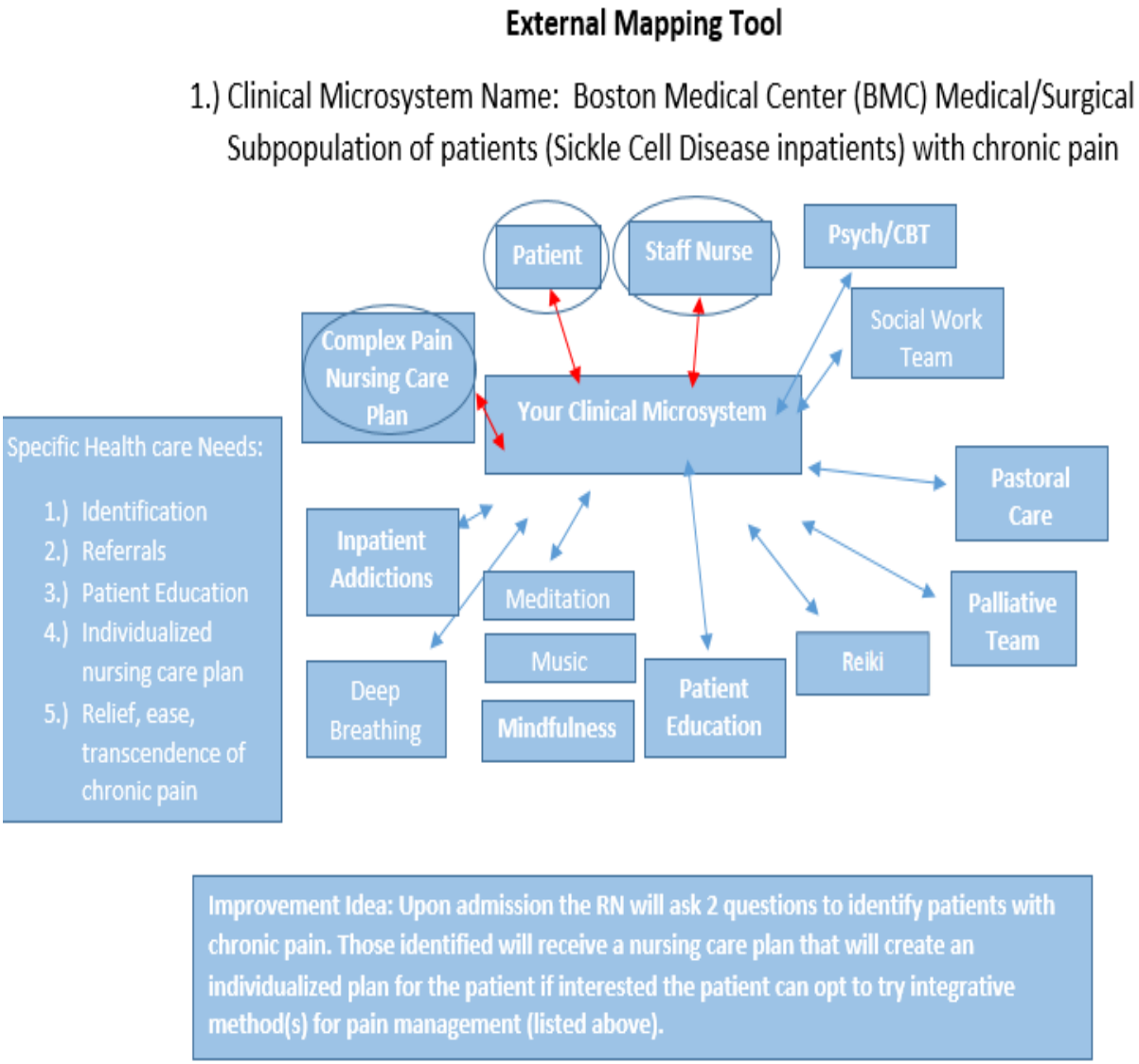

Exhibit D. Fishbone Diagram

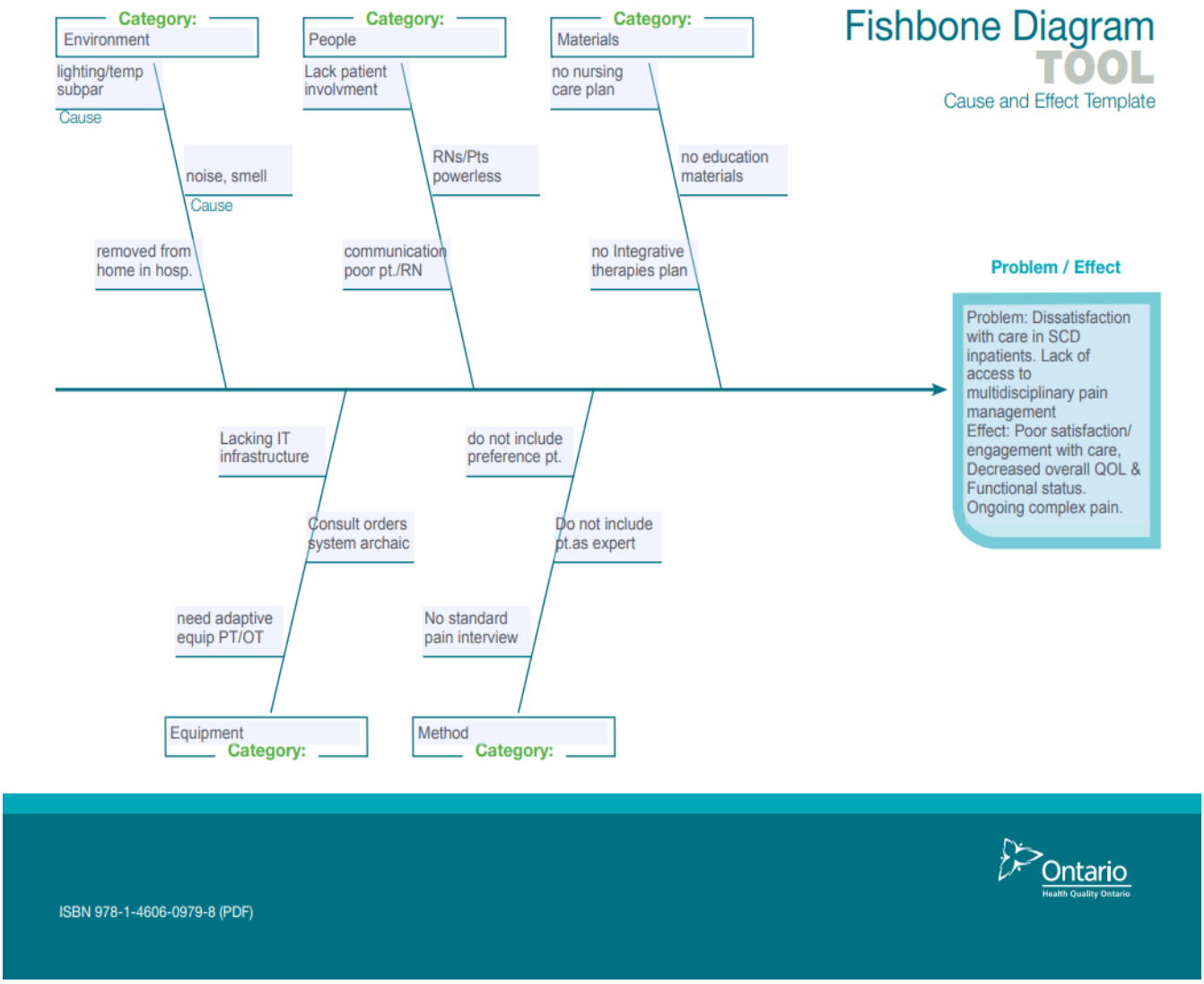

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Exhibit E. Force Field Analysis

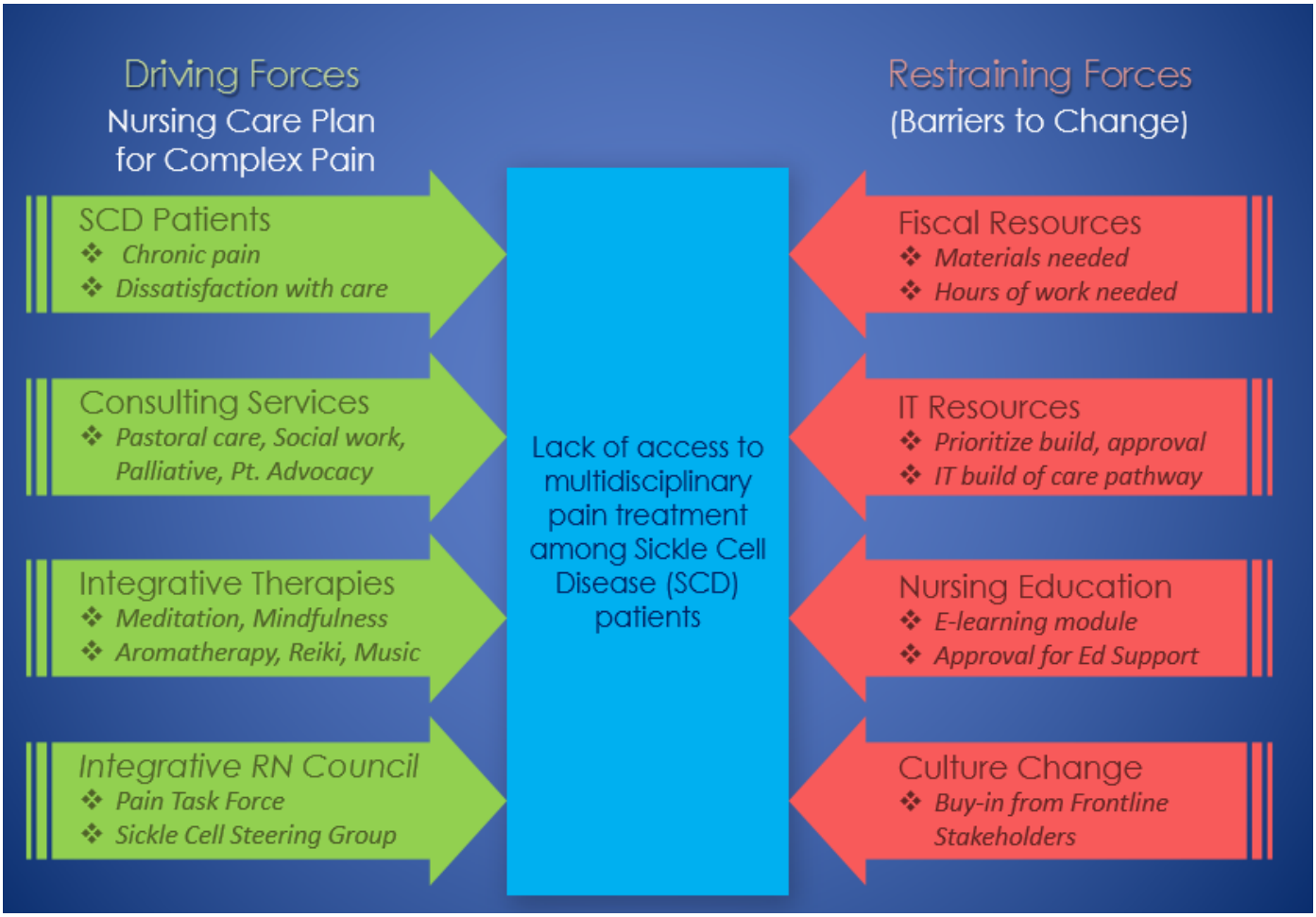
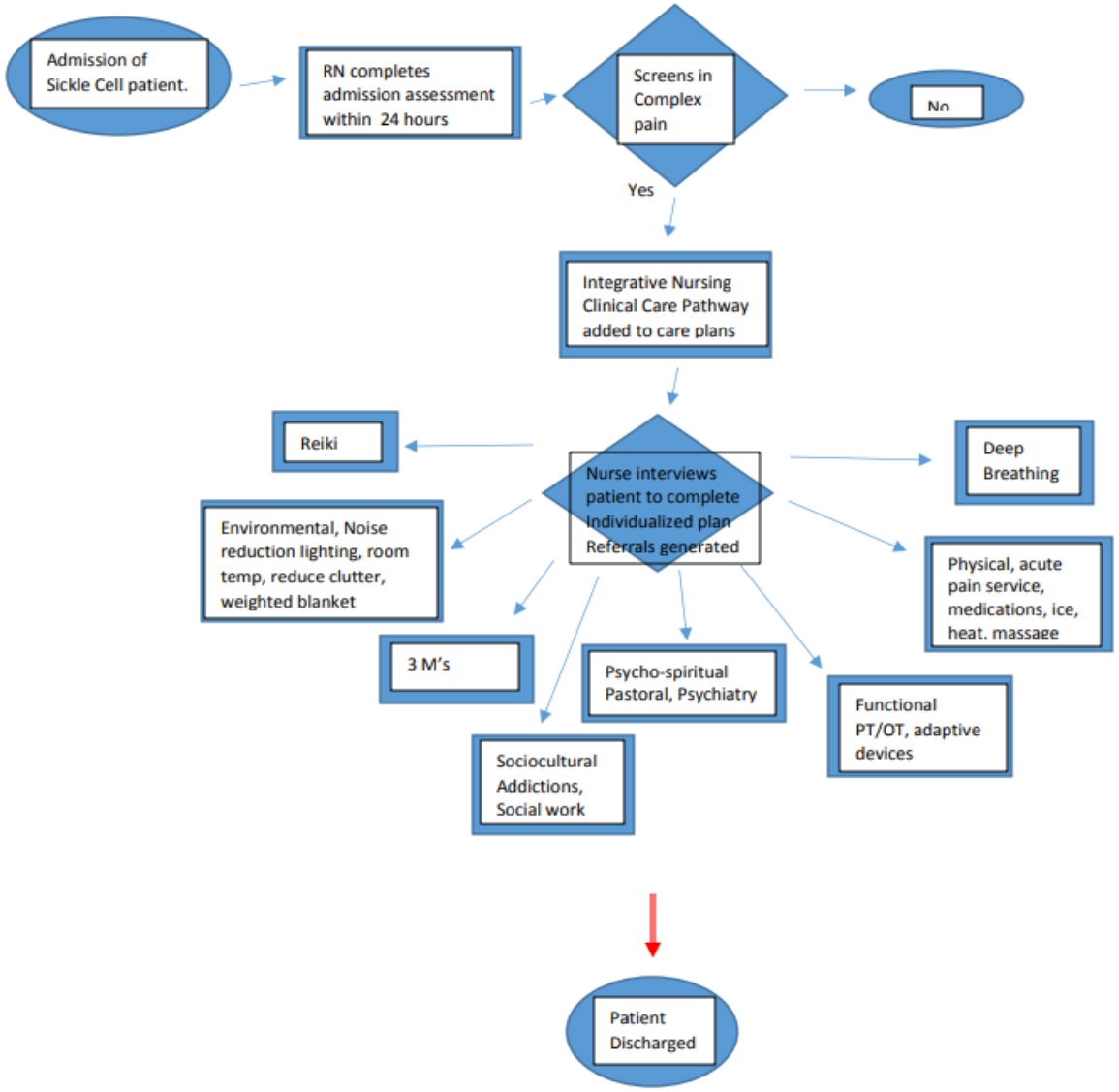


Exhibit F. Intervention Map



*At discharge patient is given resources to continue self-care as well as referrals to Integratve Medicine Outpatient Services at BMC.

Exhibit G. Logic Model

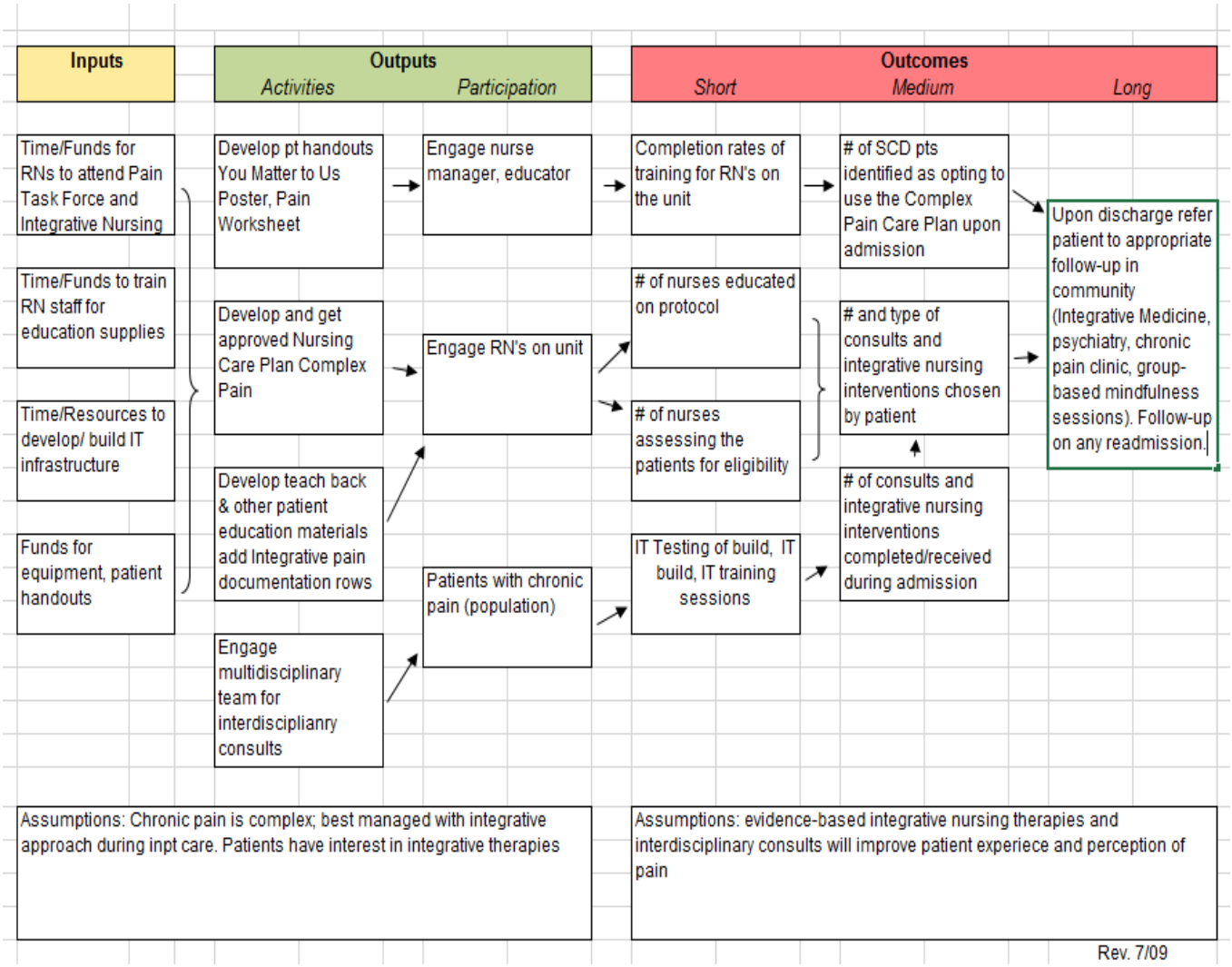


Exhibit H. Measures Table

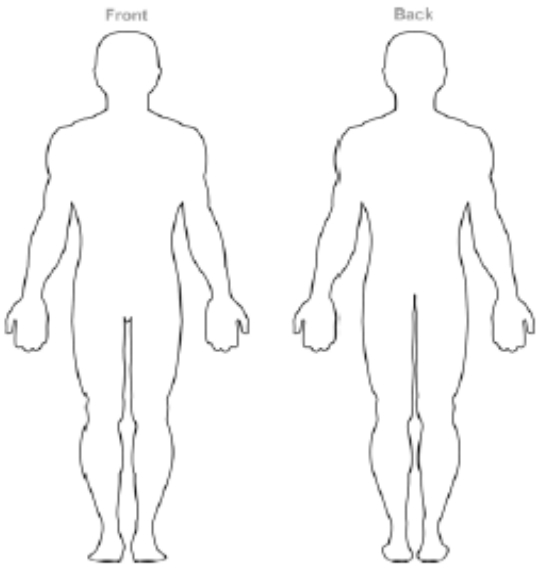
Expected Outcome(s)*	How will you operationalize/measure the outcome?	Where will you get the information?	Will you have a comparison group?	Analysis
Patient: Improve access to multidisciplinary consults	% of patients who receive Nursing Care Plan that screened in for complex pain with Admission navigator questions	Electronic health record in EPIC	No	Will look at number of sickle cell patients who screen in and request multidisciplinary consults
Nurse: Increase knowledge and competency in the use of the Complex Pain care plan, components of protocol	Assign e-learning pre-go live, huddles to let staff know what's coming Post-Survey Monkey survey of nurses using the new system	Workday Send survey to nurses	No	Measure % of nurses who completed e-learning Analysis of pre-test, post-test, and course evaluation results
Patient: Increase access to non-pharmacologic integrative modalities	Integrative Therapies are offered to every patient who screens in for complex pain Measure the % of patients that chose to try an integrative therapy during their admission	Electronic Health Record in EPIC	No	Analysis of % of patients who screened in for complex pain opted to try an integrative modality
Patient: Inpatient Experience	Survey patients pre-discharge to assess qualitative experience of patients who received the Complex Pain Nursing care Plan/Protocol	Survey Monkey	No	Analysis of qualitative responses from Pre- discharge Survey
Care Plan Effectiveness	Assess feasibility of use, and perceived impact of nursing care plan and components of protocol	Survey Monkey	No	Analysis of Qualitative responses from post-implementation nurse survey

Exhibit I. Patient handout complex pain care plan (worksheet)

Complex Pain Form

Pain Location

Place an "X" where you have pain in the diagram below.



Pain History

1. What triggers your pain?
   _____
   _____
   _____
2. What helps your pain?
   _____
   _____
   _____
3. What does not work for pain relief?
   _____
   _____
   _____
4. What is your pain goal?
   _____
   _____
   _____

Coping Skills You Use at Home

Circle all that apply.

Acupuncture	Meditation/mindfulness
Aromatherapy	Positioning
Massage/Chiropractor	Prayer
Deep Breathing	Reiki
Distraction activities	Support Person
Exercise, PT/OT	Pet therapy
Humor	Therapist
Ice/Heat	Yoga
Music	Other_____

Coping Skills You Want to Try this Admission?

Circle all that apply.

Aromatherapy

Deep breathing techniques

Addiction Consult Services

Meditation/ Mindfulness

Music

Pastoral Care (Prayer)

Pet Therapy

Patient Advocacy

Social Work

Reiki

Yoga/exercise (consider PT/OT if needed)

Palliative Care

Psychiatry (depression/anxiety)

Please ask your nurse for a tablet if you don't have a smart phone available to view the Patient Integrative therapies site. You can also use this link: **https://delivr.com/2w4rv**

Exhibit J. Get to Know patient poster

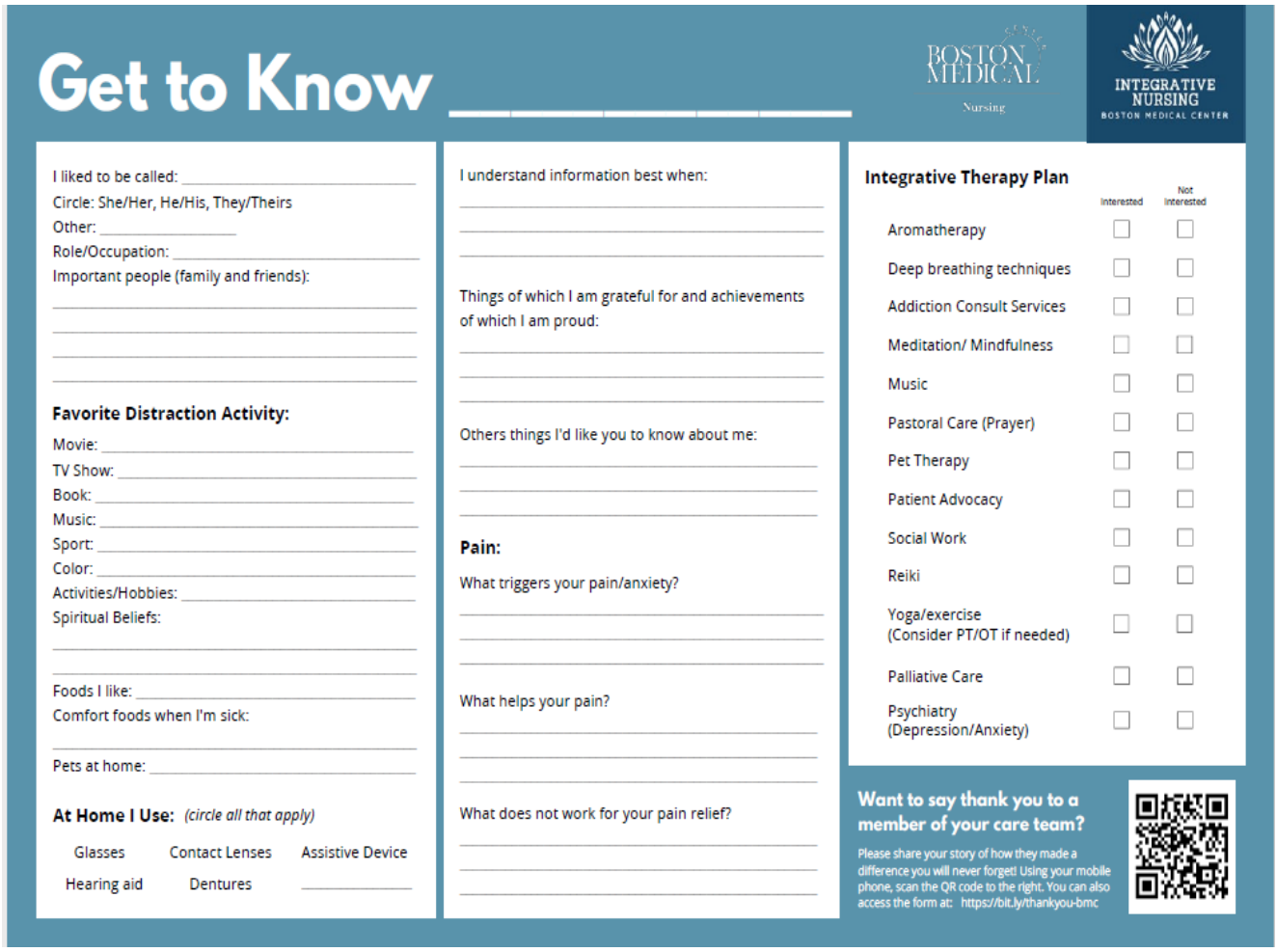


Exhibit K. Complex pain nursing care plan

Care Plan: BMC Complex Pain Management

Goal: Pain management plan will address individualized preference of the patient

Assess type of pain and identify the appropriate pain scale.

Document the location, severity, and frequency of the pain.

What helps your pain?

What does not work for your pain relief?

What triggers your pain?

What is your pain goal?

Establish acceptable pain goal for patient

Review analgesics and multimodal pain medications as ordered (link analgesic ladder)

Assess pain with change in caregiver during handoff.

Evaluate effectiveness of medications and integrative therapies per pain scale.

Consult with care team if pain control is inadequate.

Goal: Promote sleep

The provider will cluster care, offer eye mask/ear plugs, headphones, assess for sleep rituals and implement if possible (e.g., herbal tea).

Reduce noise

Goal: Provide comfort based on preference of patient and clinical condition

Ice

Heat

Elevation

Position changes to rotate pressure sites

Utilize pillows

Splints/binders

Encourage mobility

Goal: Offer patient education on and deliver non-pharmacologic pain management interventions

Patient will choose modalities they would like to receive.

Meditation

Deep breathing exercises

Care and Guided imagery channel

Music

Prayer

Distraction activities

Use of humor

Aromatherapy

Reiki

Pet therapy

Goal: Consult appropriate referrals

Social work

Pastoral care

Inpatient addiction services

PT/OT

Psych, (anxiety, depression)

Palliative (end of life pain)

Emotional child life (pediatrics)

Patient advocacy

Acute pain service

Exhibit L. E-learning pre, post, and evaluation questions for nurses

Pre-Test (post-Article) Questions

1. Implicit bias is defined as
    1. mental shortcuts that assist people to sum up and respond to situations quickly.
    2. unconscious attitudes that cause unintentional discriminatory behavior.
    3. set ideas that are deliberate and often inaccurate about what someone is like.

2. The Joint Commission and the Institute for Healthcare Improvement (IHI) urge health care providers to evaluate and address disparities
    1. in their personal practices.
    2. among affiliated professional groups.
    3. with their local congressional representatives.

3. The IOM reported that one of the contributing factors to U.S. health care disparities is
    1. scarce health care facilities in underserved communities.
    2. lack of clinician education in thorough assessment and diagnosis.
    3. clinician bias toward patients of racial, ethnic, or cultural minorities.

4. Implicit biases among health care providers are associated with which of the following negative effects on patient care?
    1. delay in discharging patients
    2. less time involved in patient care
    3. lack of referrals for specialty care

5. Stereotypes are often pejorative characterizations of groups of people that are
    1. a result of international travel.
    2. consciously accepted and practiced.
    3. based on limited previous encounters.

6. FitzGerald and Hurst suggested that, compared with the population at large, implicit bias occurred among health care providers
    1. less often.
    2. more often.
    3. at about the same rate.

7. Which of the following self-interventions to mitigate implicit bias is specifically related to mindfulness and perspective taking?
    1. counterstereotypic imaging
    2. partnership building
    3. emotional regulation

8. The IHI recommends reducing bias through individuation, which is
    1. developing relationships with members of a different group.
    2. working with patients as equals toward a common goal.
    3. learning about the personal history of the individual.

9. The key to developing a therapeutic relationship with a patient is in
    1. viewing the patient as a collaborative partner.
    2. providing culturally competent care.
    3. true caring for the patient.

10. Which of the following strategies for mitigating implicit bias challenges nurses to understand what patients are thinking and feeling, thus seeing their illness through their eyes?
    1. individuation
    2. perspective taking
    3. partnership building

11. To what degree are you affected by your personal bias when caring for a SCD patient? (question not scored and anonymous)

    Scale 1-5 A great deal, a lot, a moderate amount, a little, none at all

12. To what degree do you feel that you unconsciously stereotype SCD patients as pain medication seeking? (not scored and anonymous)

    Scale 1-5 A great deal, a lot, a moderate amount, a little, none at all

13. Prior to this course had you heard of counter-stereotypic imaging (recognizing your own bias and purposely looking for members of a group who counter your stereotypical image of the group, replacing biased image with positive one). (question is anonymous and not scored)

    Yes/No

14. Prior to this course have you tried perspective taking as a strategy to provide unbiased care in your nursing practice? (this question is anonymous and not scored).

    Yes/No

15. What strategies from the article resonated with you most as useful? (question is anonymous and not scored). (please check all that apply).
    1. Counter-stereotypic imaging
    2. Emotional regulation
    3. Habit replacement
    4. Individuation
    5. Mindfulness
    6. Increasing opportunities for contact
    7. Individuation
    8. Mindfulness
    9. Partnership building
    10. Perspective taking

Post-Test Questions

1. When and how does sickle cell disease typically get diagnosed?
    a. By blood test, at birth
    b. By blood test in young childhood
    c. By blood test, as a young adult
    d. By autopsy, at death

2. Approximately how many Americans are affected by SCD?
    a. !,000,000
    b. 100,000
    c. 10,000
    d. 7,000,000

3. What are the common symptoms of SCD?
    a. Acute pain, anemia, fatigue, delayed growth, hepatomegaly, acute chest crisis, stroke, vision problems
    b. Fractures, UTI's, pain, opioid dependence, hypertension, shortness of breath
    c. Pain, swelling of joints, hypertension, hemorrhage, liver cirrhosis

4. What is an acute vaso-occlusive crisis?
    a. Abrupt onset of severe pain in any part of the body the results from a vascular occlusion
    b. Abrupt onset of severe pain related to shortness of breath and chest pain
    c. Sickling of RBC's that results in hyperbilirubinemia

5. What triggers Acute vaso-occlusive crisis
    a. Dehydration
    b. Cold temperatures
    c. Infection/illness
    d. Blood clots

6. Symptoms of Splenic Sequestration include:
    a. Heart palpitations, bloating in abdomen, diffuse abdominal pain
    b. Multi-organ failure, splenic enlargement, diffuse right sided abdominal pain
    c. Diffuse left sided abdominal pain, severe anemia, extreme thirst, tachypnea\

7. Acute chest syndrome the most common pulmonary complication in SCD is triggered by:
    a. Fat embolism, stress, infection, dehydration

b. Anemia, hypercoagulation, pain
c. Anemia, hypoxia, pain, noncompliance

8. Therapies used to treat acute chest syndrome include:
    a. antibiotics, ventilation, pain medication, anticoagulants
    b. Immediate pain control, IV fluids, blood transfusion, supplemental oxygen
    c. Bloodletting, NSAIDS, Narcan, PT/OT, antibiotics

9. Hydroxyurea works in SCD by resulting in:
    a. Increased HCT, increased synthesis of nitric oxide, less incidence of vaso-occlusive crisis
    b. Decrease in acute pain, increased mobility, decrease in nitric oxide synthesis
    c. Decrease in chance to pass SCD to unborn child in utero

10. The goal of a loading dose with a PCA is to:
    a. Is to calm the SCD patient down and promote rest
    b. Quickly reach a therapeutic blood concentration of opioid medication
    c. Offset the effect of the Narcan continuous infusion

11. The one hour limit in PCA administration represents:
    a. Maximum dose patient can self-administer per hour
    b. Amount of time allowed between doses
    c. Maximum drug amount that can be delivered during any one-hour period

12. Hydroxyurea is hazardous, cannot be crushed and should be handled with gloves
    a. True
    b. False

13. You will reference the patients clinical treatment care plan found:
    a. In EHR under problem list
    b. In MAR
    c. On left hand column as a note under FYI yellow flag banner

14. Iron Chelators work in SCD treatment to:
    a. Decrease iron overload
    b. Prevent stroke
    c. Treat acute pain

15. The “You Matter to Us” patient poster/worksheet is a way to get to know our patients in general and also in their preference for pain management is:
    a. A worksheet all patients will receive on admission

b. A handout for pediatric SCD patients
c. Only SCD patients will receive this on admission

16. The pain worksheet and complex pain care plan go together and are used to develop and individualized plan to manage the patients pain utilizing integrative therapies and consults.
    a. True
    b. False

17. The nursing FYI in SCD includes 4 questions to address patient preferences for pain treatment and these questions are found on the patient pain handout.
    a. True
    b. False

18. Evidence –based non-pharmacologic options used in the treatment of pain are offered as part of the new complex pain nursing care plan?
    a. True
    b. False

19. The complex pain nursing care plan will be added to the patient when a patient answers yes to both of the new pain questions (located on "You Matter to Us" worksheet and in the nursing admission assessment?
    a. True
    b. False

20. Discharge of SCD patient includes access to enhanced resources, such as home services, follow-up with hematology-oncology, PT/OT, meds to bed, ride home, for the patient aimed at preventing readmissions and better care coordination?
    a. True
    b. False

21. To what degree will the patient videos that showed BMC patients describing their experiences impact your approach to nursing care of SCD patients? (question not scored, anonymous)
    5- Item scale- A great deal-a lot-a moderate amount-a little- none at all

22. To what degree will the Addressing Implicit Bias in Nursing article impact your approach to nursing care of SCD patients? (question not scored, anonymous)

    5- item scale- A great deal-a lot-a moderate amount-a little- none at all

23. How effective do you think the "You Matter to Us" poster will be in getting to know the patients? (question not scored, anonymous)

5- Item scale- Extremely effective, very effective, somewhat effective, not so effective, not at all effective

24. How effective do you think the complex pain nursing care plan and pain interview will be in identifying the preferences for the patient in their non-pharmacologic pain management and in improving access to multidisciplinary pain management? (question not scored, anonymous)

25. Please suggest any additional content needed in this course to improve care of SCD patients? (question not scored, anonymous)

    Comment Box

Course Evaluation for Contact Hours

Boston Medical Center Nursing Continuing Professional Development

Course: Sickle Cell Disease Advanced Education and Pain Management Date:

PLEASE ANSWER each question to receive contact hours.

1. Learning Outcomes? The Participant will

Learning Outcome	Yes	No
Develop an individualized and patient centric pain management plan		

Discuss pathophysiology of sickle cell disease and splenic and pain crisis		
Describe pharmacologic treatment and pain management in SCD		
List the available resources (People, online including the E.H.R)		
Reflect on personal implicit bias in clinical practice		

2. Evaluation of Facilitators:

	Very Effective	Effective	Not Effective
Were the speakers effective in presentation of the material?			

3. Presentations were fair, balanced and free from Bias?: Yes □ No □

If no, please describe:-

4. Were you informed of any commercial support or conflict of interest?

Yes □ No □

5. Do you feel that your attendance at this program will affect your practice in the future?

Yes □ No □

Please identify which of the following areas you think will improve as a result of this course? (Check all that apply)

Patient Care □ **Professionalism** □ **Evidence Based Practice** □

Knowledge □ **Communication** □ **Technical Skills** □

***6.* What impact do you predict participation in this educational experience will have on your professional development, practice or on patient outcomes?**

Please give a specific example of what you will incorporate into your personal practice based on participating in this course**.**

If you do not feel this educational experience will impact your professional development or professional practice, please explain why?

7. Recommendation for Future Presentations, Location and Scheduling:

Exhibit M. Survey questions for patients pre-discharge

1. During this admission how often was your pain well controlled?

Always, Usually, Sometimes, Rarely, Never.

2. How satisfied were you with the way the hospital staff responded to your pain?

1 – Very Dissatisfied; 2 – Dissatisfied; 3 –Neither satisfied nor dissatisfied; 4 – Satisfied; 5 – Very satisfied

3. How often did the nurses treat you with compassion and respect?

Never; Rarely; Sometimes; Usually; Always

4. To what degree did your nurses listen carefully to you about your pain preferences?

Never; Rarely; Sometimes; Usually; Always

5. How often did nurses explain the plan for your care in a way you could understand?

Never; Rarely; Sometimes; Usually; Always

6. Did you access the patient website for complex pain?

Y/N

7. How useful did you find the website overall?

A great deal; a lot; a moderate amount; a little, none at all

8. What suggestions would you make to improve the patient website?
    a. Comment box

9. What did you like most about the patient website?
    a. Comment box

10. I see you chose to use at least one of the following therapies (prayer, reiki, aromatherapy, meditation/mindfulness, music, Pet Therapy) to help cope and manage your pain while in the hospital how satisfied were you with this therapy?

1 – Not at all satisfied; 2 – slightly satisfied; 3 – moderately satisfied; 4 – Very satisfied; 5 – Extremely satisfied

11. If you could add anything to your individualized plan for pain management for the next time you get admitted to the hospital what would it be?
    a. Comment box

12. To what degree do you feel that all staff involved in your care took your preferences into account when deciding what your healthcare needs were?

A great deal; a lot; a moderate amount; a little, none at all

13. In general how satisfied were you with your nursing care during this admission?

1 – Very dissatisfied; 2 –Dissatisfied; 3 – Neither satisfied nor dissatisfied; 4 – Satisfied; 5 – Very satisfied

14. In general how satisfied were you with the care you received while in the hospital?

1 – Very dissatisfied; 2 – Dissatisfied; 3 – Neither satisfied nor dissatisfied 4 – Satisfied; 5 – Very satisfied

15. Would you choose to use the Complex Pain Program (Integrative Therapies) again if you were to be readmitted?

Yes/No

Exhibit N. Survey questions for nurses post-implementation

1. To what degree have your experiences using the new complex pain care plan and integrative nursing orders system impacted the use of non-pharmacologic care of SCD patients?

   Item scale- A great deal-a lot-a moderate amount-a little- none at all

2. To what degree have you made efforts to address your personal implicit biases during patient care?

   5- item scale- a great deal-a lot-a moderate amount-a little- none at all

3. Which strategies did you find helpful in addressing your own personal biases?
   1. Counter-stereotypic imaging
   2. Emotional regulation
   3. Habit replacement
   4. Individuation
   5. Mindfulness
   6. Increasing opportunities for contact
   7. Individuation
   8. Mindfulness
   9. Partnership building
   10. Perspective taking

4. How effective do you think the "You Matter to Us" poster will be in getting to know the patients?

   5- Item scale- Extremely effective, very effective, somewhat effective, not so effective, not at all effective

5. How effective do you think the complex pain nursing care plan and pain interview are in identifying the integrative preferences for the patient and in improving access to multidisciplinary pain management? (question not scored, anonymous)

   5- Item scale- Extremely effective, very effective, somewhat effective, not so effective, not at all effective

6. How effective do you feel the screening questions for the complex pain nursing careplan is at identifying patients in need?

5- Item scale- Extremely effective, very effective, somewhat effective, not so effective, not at all effective

7. How feasilible (ease of use) is the use of the "You Matter to Us" poster with the patients?

   Extremely easy, very easy, somewhat easy, not so easy, somewhat difficult, difficult

8. How feasilible (ease of use) is the use of the Complex pain nursing care plan and nursing orders with the patients?

   Extremely easy, very easy, somewhat easy, not so easy, somewhat difficult, difficult

9. How feasilible (ease of use) is it to order multidisciplinary consults (e.g. Palliative, Acute Pain Service, PT/OT with the patients?

   Extremely easy, very easy, somewhat easy, not so easy, somewhat difficult, difficult

10. To what degree should CNAs get involved in completing the "You matter to Us" poster with patients?

    5- item scale- a great deal-a lot-a moderate amount-a little- none at all

11. How feasilible is the use of the pain worksheet as a handout to guide discussion with the patients?

    Extremely easy, very easy, somewhat easy, not so easy, somewhat difficult, difficult

12. How feasilible is the use of the ordering system for integrative therapies (Reiki, Music, Aromatherapy etc.)?

    Extremely easy, very easy, somewhat easy, not so easy, somewhat difficult, difficult

13. How did the complex pain nursing care plan interview of the patient go when introducing the therapies and determining what therapies patients want to try?

    Extremely well, very well, well, somewhat well, not so well

14. What strategies to mitigate implicit bias did you use in your practice? (question is anonymous and not scored). (please check all that apply).
    1. Counter-stereotypic imaging
    2. Emotional regulation

3. Habit replacement
4. Individuation
5. Mindfulness
6. Increasing opportunities for contact
7. Individuation
8. Mindfulness
9. Partnership building
10. Perspective taking
11.

15. To what degree do you think the complex pain nursing care plan and Integrative Therapies for patients impacts the overall patient experience of your patients that have tried them?

    5- item scale- a great deal-a lot-a moderate amount-a little- none at all

16. How well did the complex pain nursing care plan components fit in your workflow?

    Extremely well, very well, well, somewhat well, not so well

17. To what degree did the complex pain nursing care plan components create an efficient workflow in the electronic health record?

    5- item scale- a great deal-a lot-a moderate amount-a little- none at all

18. What did you especially like about the protocol?

    Comment box

19. What was the biggest barrier you encountered?

    Comment box

20. Please share your suggestions for improvements?

    Comment box