Doctoral Dissertations   Graduate Research and Creative Practice

5-1-2023

Reducing Medical Errors for Patients with Substance Use Disorders with a Medical Information Card

Michael V. Hughes

Title: Reducing Medical Errors for Patients with Substance Use Disorders with a Medical

Information Card

Authors: Michael V. Hughes BSN, RN, Donna Rinker DNP, MSN, RN, FNP-BC, PMHNP, and

Dianne Slager DNP, MSN, FNP-BC

Author Affiliation: Kirkhof College of Nursing, Grand Valley State University

Corresponding Author: Michael V. Hughes BSN, RN

Email: hughemic@mail.gvsu.edu

Submission Type: Quality Improvement

Abstract

Background

Approximately 98,000 Americans perish annually due to medical errors and adverse events associated with the limited access to or incomplete pertinent patient health information (Centers for Disease Control and Prevention [CDC], 2022; Obrien et al., 2021). Pertinent patient health information includes patients' allergies, current medications, current medical diagnosis, blood type, insurance, and emergency contact. The purpose of this project was to examine the efficacy in using File of Life cards in reducing medical errors among patients with substance use disorders (SUDs), and the perception of patients and healthcare providers ease of use, satisfaction of using the File of Life cards, and improving medical decision making and preventing errors.

Method

A two-month quality improvement project was conducted at a clinic in the Northern Midwest. Patients were individually educated about and received a File of Life card during their Medication Assistance Treatment (MAT) appointments. Questionnaires were distributed to patients and the healthcare staff. Patients' electronic health records (EHRs) were analyzed to determine the number of times they visited the local ED and the number of reported medical inconsistencies or errors during this QI project's implementation.

Results

Among patients, 16% used their cards and 100% perceived the cards easy to use and useful with their care. Two patients visited the local ED and no medical errors were reported. Among healthcare providers, 100% perceived the cards easy to use, 87% considered the cards

useful with medical decision making, 93% considered the cards useful in preventing medical errors, and 0% encountered any of the patients that received the cards.

Conclusion

File of Life cards may improve medical decision making and decrease medical errors. They may help improve patients' overall satisfaction and confidence with their healthcare. However, no statistical analysis was conducted due to no pre-qualitative data, short duration, and small sample size. Therefore, a larger sample size, and longer duration of time is needed to confirm these findings.

Introduction

Medical errors are responsible for the deaths of approximately 440,000 Americans annually (Carver et al., 2022). The Institute of Medicine (IOM) ranks medical errors the third leading cause of death in the United States (U.S.) after heart disease and cancer (Carver et al., 2022; CDC; 2022; Obrien et al., 2021). A medical error is defined as any preventable adverse effect that occurs in healthcare. Medical errors may include adverse drug reactions, improper transfusions, misdiagnosis, falls, burns, pressure ulcers, mistaken patient identities, and administration of the wrong medication (Carver et al., 2022; CDC; 2022). Medical errors cost the U.S. economy approximately $50 billion each year (Karaca & Moore, 2020; Leamy et al., 2019; Suen et al., 2021). These costs are associated with lost income, lost productivity, disability, criminal justice, healthcare, and loss of human life.

Major causes of medical errors include the failure to diagnose, making an incorrect diagnosis, failure to evaluate and consider all available clinical information, delays in treatment, and poor communication (Carver et al., 2022; Garnick et al., 2019). These causes are attributed to pertinent patient health information missing from the electronic health records (EHRs) for

healthcare providers (Carver et al., 2022; Garnick et al., 2019). Approximately 6% of patients in primary care settings experience a medical error annually (Khoo et al., 2015). During patient hospitalizations, approximately 54% of patients identified at least one discrepancy in their patient health information (Oh et al., 2022). Direct patient access to their health information and the availability of these patients to provide corrections on their medical data are rarely available as only half of the population in the U.S. have access to their health information (Khoo et al., 2015; Oh et al., 2022). Thus, improving available, accessible, and quality of patient health information across the continuum of care is needed to improve patient outcomes.

According to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) individuals with the diagnosis of substance use disorders (SUDs) experience higher rates of adverse events and medical errors than the general population (American Psychiatric Association [APA], 2021). The health disparities among this vulnerable population utilize acute care services at a higher rate than the general population for emergency needs including drug overdoses, mental illnesses, and trauma (Suen et al., 2021). Individuals with a history of SUDs comprise approximately 10% (9.3 million) of all annual emergency room visits, and 12% (1.4 million) of all annual hospitalizations in the U.S. (Suen et al., 2021). Overdose deaths from misusing a substance have increased by approximately 28.5% since 2020, and there are approximately 110,000 deaths from a drug overdose in the U.S. each year (Beeber, 2018; CDC, 2022; Garavito & Bjork, 2022; Suen et al., 2021; & Venkatesh, 2022).

Approximately 20.1 million Americans require treatment for their SUDs each year but only 10% to 30% of these individuals receive services for treatment (Beeber, 2018; Degan et al., 2021; & Saini et al., 2022). Barriers that prohibit these individuals from obtaining treatment for their SUDs include limited available healthcare resources, stigma associated with SUDs, low

health literacy, lack of readiness and not seeing treatment as a need, and the lack of accurate and current patient health information (Ali et al., 2020; Degan et al., 2019; Garnick et al., 2019; Ho et al., 2022; Leamy et al., 2019; Rangeley et al., 2021; Saini et al., 2022).

The implementation of a patient health information card is a unique and simple intervention used to help improve the accessibility and availability of pertinent patient health information to improve patient outcomes. A study by Reis et al. (2013) concluded that the use of these cards improved patients' health literacy, treatment adherence, and continuity of care. McBride et al. (2014) study found the implementation of patient health information cards improved patients' health literacy, communication and collaboration among healthcare providers, and overall improved the care of patients diagnosed with heart failure. The research by Dash & Pickering (2017) concluded that the implementation of these cards improved patients' sense of empowerment and healthcare providers' medical decision making. The findings of Leamy et al., (2019) study further supported the implementation of patient health information cards improved patients' health literacy and treatment adherence. Sandhu et al. (2021) study concluded that implementation of these cards improved patients' knowledge for antibiotic use and prevented adverse drug reactions.

Despite these promising outcomes, there is limited research available that focuses on the implementation of these cards for individuals with the DSM-5 diagnosis of SUDs. Therefore, a quality improvement (QI) project was implemented at a healthcare clinic in the Northern Midwest to examine the efficacy of patient health information cards in reducing medical errors, perceptions of usefulness in improving medical decision making, and ease of use among the patients and healthcare providers.

Methods

Setting

A QI project was implemented during a two-month period at an independent multi-interdisciplinary Federally Qualified Healthcare Clinic (FQHC) in the Northern Midwest. Services rendered at this clinical site include primary care, medical and behavioral health services, and medication assisted treatment services (MATs).

Participants

Patients

Adults aged 18 years of age and older with the DSM-5 diagnosis of SUD enrolled in the clinical site's MAT program (n = 61) were included in this QI project. The participants reported gender as male and female in the medical record and the documented diagnosis of SUD included opioid use disorder and alcohol use disorder.

Healthcare Staff

All healthcare providers employed at the healthcare clinic were enrolled for this QI project. Providers at the clinic include physicians, nurse practitioners, social workers, and behavioral health counselors. Other healthcare staff included registered nurses, and medical assistants.

Intervention

The primary intervention used during this QI was a patient health information card known as File of Life (See Appendix A). File of Life cards were endorsed by the American Red Cross, the National Sheriff's Association, and the National Council on Aging for distribution to vulnerable population groups including the elderly and homeless population (File of Life, 2022). This card, measured 5 inches by 9 inches, was selected to provide accurate and current pertinent

patient information. Pertinent information included patients' emergency contacts, current medications, current medical conditions, known allergies, primary care provider, and medical insurance(s).

Project Objectives/Plan

Each File of Life card was individually completed by the Doctor of Nursing Practice (DNP) student at the clinical site. The DNP student used the clinical site's EHR to assist in the completion of each card. The DNP student collaborated with the MAT nurse in the distribution of File of Life cards to patients enrolled in the program. During each patient's scheduled appointments in the MAT program, the DNP student met with each patient individually and educated them about the cards and QI project. Verbal consent was obtained from each patient before the card's distribution. Each patient was informed that confidentiality will be maintained and no patient identifiers will be collected or used.

Educational material was provided to the patients (see Appendix B). This education material included benefits for first responders, benefits for emergency department (ED) staff, and benefits for patients. Patients were instructed to carry their cards with them and to present them to healthcare professionals involved with their care. The patients were also informed that they may use their card as their own reference to further understand what medications they are currently on and what comorbidities have been diagnosed.

Measures

The number of patients going to the ED for acute care and reported medical errors were analyzed by an audit of the EHR at the beginning of the QI project that identified the gaps in care and significance in implementing the project. Patient and healthcare staff outcomes were measured at the clinical site during this QI project.

Patient Outcomes

Patient outcomes were measured using a paper questionnaire (see Appendix C). Measures included patient satisfaction with the amount of information on the cards, confidence communicating with healthcare providers, rate of using their cards when meeting with healthcare providers, satisfaction with their healthcare after receiving the cards, perceived usefulness of the cards in their overall care, and if the patients would recommend these cards to others.

Healthcare Staff Outcomes

Healthcare staff outcomes were measured with a paper questionnaire (see Appendix D). Outcomes included the ease of use of the cards, satisfaction with the amount of patient information on the cards, number of patients with the cards seen for office visits, perceived usefulness of the cards with medical decision making and preventing adverse events, and willingness to implement these cards in their current practice.

Paper Questionnaires

Paper questionnaires were the primary means of assessing the impact of the intervention among patients and the healthcare staff. Most of the questions on the questionnaires were in binary format to obtain specific and very clear meaningful answers from the respondents. Binary format was also selected to increase the likelihood of respondents completing the questionnaires due to the ease of binary questions, decrease the time for respondents to complete the questionnaires, and decrease the likelihood of interrupting the workflow due to the high turnover environment. These questionnaires were distributed by the DNP student and MAT nurse to patients that received the File of Life cards during their subsequent follow up appointments in the MAT program. The DNP student met individually with each member of the healthcare staff at the clinical site and educated them about the File of Life cards. The same education material

provided to patients was also provided to the healthcare staff. Paper questionnaires were also provided to the healthcare staff to be completed on their own time.

Ethics Approval

The Institutional Review Board of Grand Valley State University determined that this is a QI project rather than research.

Results

A total of 41 out of 61 patients enrolled at the clinical site's MAT program were encountered and educated about the File of Life cards during this QI project. A total of 37 patients were agreeable to receive the File of Life cards, and a total of four patients refused to receive a card. A total of 10 patients were effectively dropped out of the MAT program during this QI project. There were no encounters with the remaining 10 patients because they either did not show up for their scheduled MAT appointments or their appointments were scheduled outside of the timeframe of this QI project.

A total of 25 questionnaires were administered to patients who received a File of Life card. Questionnaires were not administered to 12 patients who received the File of Life cards likely due to their follow up appointments with their primary care providers scheduled after the completion of this QI project. A total of 16 responses to questionnaires were acquired from the 19 total clinical site's healthcare staff.

Patient Outcomes

Characteristics of the Patients

A total of 37 patients enrolled at the clinical site's MAT program received the File of Life cards. Twenty-seven (73%) of these patients were diagnosed with opioid use disorder, and 10 (27%) were diagnosed with alcohol use disorder (see Appendix E). Twenty (54%) were males

and 17 (46%) were females (see Appendix E). None of these patients were aged 18 to 19 years old, four (11%) were aged 20 to 29 years old, 12 (32%) were aged 30-39 years old, 14 (38%) were aged 40 to 49 years old, five (14%) were aged 50 to 59 years old, and two (5%) were aged 60 and older (see Appendix E).

Satisfaction with Information on Cards

A total of 24 patients were satisfied with the amount of information included on the File of Life cards. One patient had no opinion. Overall, 96% of patient responders were satisfied with the amount of information on the cards (see Appendix F).

Confidence after Receiving Cards

A total of 24 patients felt more confident communicating with healthcare providers after receiving their File of Life cards. One had no opinion. Overall, 96% felt more confident communicating with healthcare providers after receiving their cards (see Appendix F).

Rate Using Cards when Meeting with Healthcare Professionals

A total of four patients (16%) used their cards when meeting with other healthcare professionals in the local community during this QI project. A total of 21 (84%) did not use their cards during this QI project. Overall, 16% of patients used their cards when they met with other healthcare professionals in the local community during this QI project (see Appendix F).

Satisfaction with Healthcare After Receiving the Cards

A total of 21 patients (84%) were satisfied with their healthcare after receiving their cards during this QI project. Four patients had no opinion. Overall, 84% were satisfied with their healthcare after receiving their cards (see Appendix F).

Perceived Usefulness of the Cards

All 25 responses found the cards useful with their overall care. Hence, 100% of patients found the cards useful with their healthcare (see Appendix F).

Recommend Use of Cards to Others

A total of 24 patients (96%) would recommend the use of the File of Life cards to others. One patient would not recommend the use of the cards. This is possibly due to that one patient interpreting the question differently. Overall, 96% of patients would recommend the use of the cards to others (see Appendix F).

Rate of Emergency Department Visits

Total number of patients enrolled in the clinical site's MAT program that were seen in the ED over a 12-month period (October 2021 to October 2022) was 22. Two patients that received the File of Life cards reported to the local ED during this QI project.

Reported Medical Errors

Ten medical errors or medication inconsistencies were found in the EHRs among patients in the clinical site's MAT program seen in the local ED over a 12-month period (October 2021 to October 2022). This indicates approximately 50% of patients enrolled in the clinical site's MAT program with documented local ED visits experienced a medical inconsistency or medical error over a 12-month period. No medical errors were reported during this QI project from mid-January to mid-March 2023 (see Appendix G).

Healthcare Staff Outcomes

Perceived Ease of Use

All 16 healthcare staff responses found the File of Life cards easy to use and understand. Hence, 100% of healthcare staff responses found the cards easy to use (see Appendix H).

Satisfaction with Information on the Cards

All 16 healthcare staff responses were satisfied with the amount of information on the cards. Hence, 100% of healthcare staff were satisfied with the amount of information on the cards (see Appendix H).

Perceived Usefulness with Medical Decision Making

A total of 14 healthcare staff members found the File of Life cards useful with medical decision making. Two responders did not find the cards useful with medical decision making. Therefore, 87% of responders found the cards useful with medical decision making (see Appendix H).

Perceived Usefulness with Preventing Medical Errors

A total of 15 healthcare staff members found the File of Life cards useful with preventing adverse events and medical errors. Only one responder did not find the cards useful with preventing medical errors. Overall, 93% of the healthcare staff surveyed found the cards useful with preventing medical errors (see Appendix H).

Encounters with Patients with the File of Life Cards

There were no encounters with patients that received the File of Life cards reported on the questionnaires by the clinical site's healthcare staff (see Appendix H).

Willingness to Implement Cards in Practice

All 16 healthcare staff members were willing to implement the File of Life cards in their current practice. Hence, 100% of the healthcare staff were willing to implement the File of Life cards (see Appendix H).

Additional Comments

Additional comments made on the questionnaire by the healthcare staff regarding the File of Life cards were overall favorable. Feedback received by the healthcare staff included the recommendation for a condensed or smaller size card for ease in the patient always carrying the cards in their possession.

Discussion

The File of Life cards were perceived favorably by the patients and healthcare staff. Most patients were overall satisfied with the cards, felt more comfortable communicating with healthcare professionals, were satisfied with their healthcare after receiving their cards, found the cards useful with their overall care, and would recommend the use of these cards to others. These findings from the questionnaires confirm the results from previous studies that the implementation of patient health information cards improves patient satisfaction and confidence with their care. Dash & Pickering (2017) found that most patients felt more knowledgeable and more confident communicating their healthcare needs to their providers, and healthcare professionals surveyed found the cards useful with medical decision making. Studies by McBride et al. (2014), Khoo et al. (2014), Leamy et al. (2019), and Sandhu et al. (2021) also found that the implementation of these cards improved patient satisfaction and patient adherence. Therefore, the results from the questionnaires demonstrate that the implementation of the File of

Life cards is clinically significant for patients' satisfaction with their overall care and confidence with their care.

All the healthcare staff members surveyed at the clinical site were satisfied with the amount of patient information available on the File of Life cards. They found the cards easy to use and understand and were willing to implement the cards in their current practice. Eighty-seven percent of the healthcare staff perceived the cards useful with medical decision making, and 93% perceived the cards useful with preventing medical errors. These findings confirm the results from previous studies. The results from the questionnaires demonstrate that the implementation of the File of Life cards is clinically significant in improving medical decision making and reducing medical errors. However, none of the healthcare staff surveyed encountered the patients that received the File of Life cards. This is most likely due to the onset of distributing the File of Life cards at the clinical site, and the limited duration of time to the patients' scheduled follow up appointments that would occur after the completion of the QI project. Another factor considered included the patient's failure to present the File of Life cards to the healthcare providers during their scheduled follow up appointments.

These results demonstrate that the File of Life cards is a useful tool and potential intervention for patients with the DSM5 diagnosis of SUDs to improve the accessibility and availability of accurate patient health information to prevent medical errors and improve medical decision making. Patients having these cards on hand enables healthcare professionals to have access to accurate and current patient health information to be used for optimal decision making during their point of care. The implementation of the File of Life cards may also help improve patients' overall satisfaction and confidence with their overall healthcare. This is possibly due to their having access to their own pertinent patient health information, improving their confidence

to communicate their healthcare related needs to healthcare professionals, and achieving their healthcare needs.

During this QI project, two patients who received the File of Life cards went to the local ED for acute care services, and 16% of the patients surveyed used their cards when meeting with other healthcare professionals in the local community. There were no reported medical errors on the patients' EHRs. These results make the File of Life cards clinically significant in preventing medical errors. However, additional factors need to be taken into consideration. These include the local ED staff's perceived usefulness of the File of Life cards in improving medical decision making and reducing medical errors, and the number of patients that presented their File of Life cards to the healthcare staff at the local ED. The ED staff's perception of the File of Life cards is important because medical errors are more likely to occur during times when acute care services are indicated (Oh et al., 2022). Therefore, more research is needed to confirm if the File of Life cards helps reduce medical errors.

Limitations

No statistical analysis could be conducted given that there was no pre-qualitative data, the short duration of the QI project, and the small sample size. One of the barriers that occurred at the onset of the project included eliminating a questionnaire to the healthcare providers at the local ED to assess their perceived ease of use and usefulness of the File of Life cards and assessment of the number of patients presenting the File of Life cards with ED visits.

Majority of the questions in the patient and healthcare staff questionnaires were in binary format. This increases the risk for acquiescence response bias. Acquiescence bias is the tendency for a respondent to agree with a statement without considering the content of the question or responding to questions to try to please the researcher (Santalla-Banderali & Alvarado, 2022).

Therefore, future studies may consider adding more neutral responses to questionnaires to help reduce this risk.

Another limitation was the short duration of implementation. The two-month period for this QI project may not have provided adequate time for all the patients that received the File of Life cards to meet with other healthcare professionals involved in their plan of care. This is apparent since none of the primary care providers surveyed at the clinical site encountered any of the patients that received the File of Life cards. Therefore, a longer timeframe for implementation of these cards and measuring the outcomes may be indicated for future studies.

Conclusion & Implications for Practice

The File of Life cards were perceived favorably among the patients and healthcare staff surveyed at the clinical site. Most of the patients at the clinical site were satisfied with the amount of information on the cards, felt more confident communicating their healthcare needs with healthcare professionals, perceived the cards useful with their overall healthcare, and were satisfied with their overall healthcare after receiving their cards. Most of the healthcare staff at the clinical site perceived the cards easy to use and understand, were satisfied with the amount of information on the cards, perceived the cards useful with medical decision making and preventing errors, and were willing to implement these cards in their current practice. There is an opportunity for further study to assess the usefulness of these patient health information cards among acute care professionals and further determine if these cards are effective in improving medical decision making and preventing medical errors especially in acute care settings.

The File of Life cards may improve medical decision making and reduce medical errors among patients diagnosed with SUD. The File of Life cards help improve the availability and accessibility of pertinent patient health information. They may help improve patients' overall

satisfaction and confidence with their healthcare. Given no statistical analysis could be

conducted given no pre-qualitative data, short duration of the QI project, and small sample size,

more research is indicated to further determine if the implementation of the File of Life cards

helps reduce medical errors and improves medical decision making.

References

Ali, M. M., Nye, E., & West, K. (2020). Substance use disorder treatment, perceived need for treatment, and barriers to treatment among parenting women with substance use disorder in US rural counties. *The Journal of Rural Health*, 38(1), 70-76. doi: 10.1111/jrh.12488

American Psychiatric Association (APA). (2021). *Diagnostic and statistical manual of mental disorders, TR (DSM-5TR)*. Washington, DC

Beeber, L. S. (2019). Mental health issues and substance use in the United States: Pulling the power levers. *Journal of the American Psychiatric Nurses Association*, *25*(1), 19-26. doi: 10.1177/1078390318811572

Carver, N., Gupta, V., & Hipskind, J. E. (2022). Medical error. *StatPearls [Internet]*. https://www.ncbi.nlm.nih.gov/books/NBK430763/

Centers for Disease Control & Prevention (CDC). (2022). U.S. overdose deaths in 2021 increased half as much as in 2020 – But are still up by 15%. https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2022/202205.htm

Dash, I., & Pickering, G. T. (2017). Improving post-operative communication between primary and secondary care: The wound closure information card. *Primary Health Care Research & Development*, *18*, 92-96. doi: 10.1017/S1463423616000050

Degan, T. J., Kelly, P. J., Robinson, L. D., & Deane, F. P. (2019). Health literacy in substance use disorder treatment: A latent profile analysis. *Journal of Substance Abuse Treatment*, 96, 46-52. doi: 10.1016/j.jsat.2018.10.009

File of Life. (2022). File of life. https://www.thefileoflife.org

Karaca, Z., & Moore, B. J. (2020). Costs of emergency visits for mental and substance use disorders in the United States, 2017. Agency for Healthcare Research and Quality.

https://www.hcup-us.ahrq.gov/reports/statbriefs/sb257-ED-Costs-Mental-Substance-Use-Disorders-2017.jsp

Khoo, E. M., Sararaks, S., Lee, W. K., Liew S. M., Cheong, A. T., Samad, A. A., Maskon, K., & Hamid, M. A. (2015). Reducing medical errors in primary care using a pragmatic complex intervention. *Asia Pacific Journal of Public Health*, 27(6), 670-677. doi: 10.1177/1010539514564007

Garavito, D. M. N., & Bjork, J. M. (2022). Impulsivity and reflective thinking in veterans seeking care for substance use disorder. *Substance Use & Misuse, 57*(10), 1563-1571. doi: 10.1080/10826084.2022.2096237

Garnick, D. W., Horgan, C. M., Acevedo, A., Lee, M. T., Panas, L., Ritter, G. A., & Campbell, K. (2019). Rural clients' continuity into follow-up substance use disorder treatment: Impacts of travel time, incentives, and alerts. *The Journal of Rural Health*, *36*(2), 196-207. doi: 10.1111/jrh.12375

Leamy, K., Thompon, J., & Mitra, B. (2019). Awareness of diagnosis and follow up care after discharge from the emergency department. *Australasian Emergency Care*, *22*, 221-226. doi: 10.1016/j.auec.2019.08.004

McBride, A., Burey, L., Megahed, M., Feldman, C., & Deaton, C. (2014). The role of patient-held alert cards in promoting continuity of care for heart failure patients. *European Journal of Cardiovascular Nursing*, *13*(1), 71-77. doi: 10.1177/1474515113478531

Obrien, P., Henke, R. M., Schaefer, M. B., Lin, J., & Creedon, T. B. (2021). Adverse events among adult Medicaid enrollees with opioid use disorder and co-occurring substance use disorders. *Drug and Alcohol Dependence*, 221. doi: 10.106/j.drugalcdep.2021.108555

Oh, A. L., Tan, A. G. H. K., & Chieng, I, Y. Y. (2022). Detection of medication errors through

    medication history assessment during admission at general medical wards. *Journal of*

    Pharmacy Practice, *35*(3), 407-412. doi: 10.1177/0897190020987127

Rangeley, J. L., Zeller, T. A., Beachler, T., Litwin, A. H., Clark, A., & Stem, J. (2021). The

    impact of the disease model of substance use disorder on evidence-based practice

    adoption and stigmatizing attitudes: A comparative analysis. *Pain Management Nursing*,

    22(5), 616-622. *doi: 10.106/j.pmn.2021.03.004*

Reis, P. G. T. A., Nakakogue, C., Nakakogue, T., Nasr, A., Tomasich, F. D. S., & Collaco, I. A.

    (2013). Guidelines for discharge: Do standardized cards help in patient understanding?

    Rev Col Bras Cir, *40*(4), 335-341. doi: 10.1590/s0100-69912013000400014

Sandhu, P., Singh, S., Soualhi, A., & Tanwar, H. (2021). Improving antimicrobial stewardship in

    an acute medical unit (AMU) during patient discharge following introduction of an

    antimicrobial information card. *American Journal of Infection Control*, *49*, 355-360. doi:

    10.1016/j.ajic.2020.08.014

Saini, J., Johnson, B., & Qato, D. M. (2022). Self-reported treatment need and barriers to care for

    adults with opioid use disorder: The US national survey on drug use and health, 2015 to

    2019. *American Journal of Public Health*, *112*(2), 284-295. doi:

    10.2105/AJPH.2021.306577

Santalla-Banderali, Z., & Alvarado, J. M. (2022). Factorial structure of individual performance

    questionnaire (version 1.0) revisited: Evaluation of acquiescence bias. *PLoS ONE*, 17(7),

    1-21. doi: 10.1371/journal.pone.0271830

Suen, L. W., Makam, A. N., Snyder, H. R., Repplinger, D., Kushel, M. G., Marlene, M., &

    Nguyen, O. K. (2021). National prevalence of alcohol and other substance use disorders

among emergency department visits and hospitalizations: NHAMCS 2014-2018. *Journal of General Internal Medicine*, *37*, 2420-2428. doi: 10.1007/s11606-021-07069-w

Venkatesh, A. K., Janke, A. T., Kinsman, J., Rothenberg, C., Goyal, P., Malicki, C., D'Onofrio, G., Taylor, A., & Hawk, K. (2022). Emergency department utilization for substance use disorders and mental health conditions during COVID-19. *Plos ONE*, *17*(1), 1-12. doi: 10.1371/journal.pone.0262136

Appendix A

File of Life Card

KEEP INFORMATION UP TO DATE !!
Review At Least Every Six Months !

MEDICAL DATA REVIEWED AS OF   MO.   YR.

Name: _____   Sex: M F

Address: _____

Doctor: _____   Phone #: _____

Preferred Hospital: _____

EMERGENCY CONTACTS

Name: _____   Phone #: _____

Address: _____

Name: _____   Phone #: _____

Address: _____

MEDICAL DATA
Use pencil for ease in making changes.

Special Conditions/Remarks: _____

Medication	Dosage	Frequency

Pharmacy: _____   Phone: _____

Date of Birth: _____

Blood Type: _____   Religion: _____

Health Care Proxy on file at: _____

Living Will on file at: _____

© FILE OF LIFE   SEE BACK OF CARD FOR ADDITIONAL INFORMATION

Use pencil for ease in making changes

Recent Surgery: _____   Date: _____

Do you have an EMS-NO CPR Directive or a DNR form ?
YES ☐   NO ☐   Where is it located ?

MEDICAL CONDITIONS
Check all that exist

☐ No known medical conditions   ☐ Hemodialysis
☐ Abnormal EKG   ☐ Hemolytic Anemia
☐ Adrenal Insufficiency   ☐ Hepatitis-Type [   ]
☐ Angina   ☐ Hypertension
☐ Asthma   ☐ Hypoglycemia
☐ Bleeding Disorder   ☐ Laryngectomy
☐ Cancer   ☐ Leukemia
☐ Cardiac Dysrhythmia   ☐ Lymphomas
☐ Cataracts   ☐ Memory Impaired
☐ Clotting Disorder   ☐ Myasthenia Gravis
☐ Coronary Bypass Graft   ☐ Pacemaker
☐ Dementia ☐ Alzheimer's ☐   ☐ Renal Failure
☐ Diabetes/Insulin Dependent   ☐ Seizure Disorder
☐ Eye Surgery   ☐ Sickle Cell Anemia
☐ Glaucoma   ☐ Stroke
☐ Hearing Impaired   ☐ Tuberculosis
☐ Heart Valve Prosthesis   ☐ Vision Impaired
☐ Other: _____

ALLERGIES

☐ Aspirin   ☐ Insect Stings   ☐ Penicillin
☐ Barbiturate   ☐ Latex   ☐ Sulfa
☐ Codeine   ☐ Lidocaine   ☐ Tetracycline
☐ Demerol   ☐ Morphine   ☐ X-Rays Dyes
☐ Horse Serum   ☐ Novocaine   ☐ No Known Allergies
☐ Environmental: _____
☐ Other: _____

MEDICAL INSURANCE

Med Ins Co: _____

Policy #: _____

Other Med Ins Co: _____

Policy #: _____

Medicaid #: _____   Medicare #: _____

Appendix B

File of Life Card Educational Material

What **FILE OF LIFE** means

♡♡♡♡♡♡♡♡♡♡♡♡

Benefits to first responders
- Faster help for citizens in emergencies.
- Instantly know medical history of patient.
- Corrective treatment can begin at once.

Benefits to hospital emergency staff
- On arrival, data is immediately available to medical staff.
- No wasted time getting information from confused patient.

Benefits to each individual
- Peace of mind knowing they will have prompt and quality care.
- Easy access to potentially life-saving information.
- Assurance that proper persons will be notified quickly.

Member
National Sheriff's Association
National Council on Aging
NCOA

FILE OF LIFE®
A personal medical home file
prepared for emergency first responders

Instructions for using the **FILE OF LIFE®**

- Fill out the medical card and be sure the information is accurate and legible. If necessary, have someone assist you.

- Use pencil where you fill in the medications and where you date the card to allow future updates.

- When completed, place the file on the outside face of your refrigerator.

- Keep all medical data up to date.

- Whenever there is a change in medications or dosage be sure to change it on your card and redate the card.

- Take the file with you when you visit your doctor.

Appendix C

Patient Questionnaire

<div style="border: 1px solid black; padding: 1em;">

<u>Patient Questionnaire</u>

1. Are you satisfied with the amount of information included in the card?

   Satisfied   *Not Satisfied*   *No Opinion*

2. After receiving your patient health information card, do you feel more confident communicating your healthcare needs and working with healthcare providers?

   Yes   *No*   *No Change*

3. Have you used your patient health information card when meeting with healthcare professionals involved with your care?

   Yes   *No*

   If Yes, how many healthcare professionals did you present your card to? _____

4. How satisfied are you regarding your healthcare after receiving your patient health information card?

   Satisfied   *Not Satisfied*   *No Opinion*

5. Do you consider the patient health information card useful with your healthcare?

   Yes   *No*

6. Would you recommend to family members and/or friends to carry their own patient health information card?

   Yes   *No*

</div>

Appendix D

Healthcare Staff Questionnaire

Healthcare Staff Questionnaire

1. Do you find the File of Life cards easy to understand and use?

   Yes   *No*

2. Are you satisfied with the information presented on the File of Life cards?

   Yes   *No*

3. Did any of your patients present a File of Life card to you?

   Yes   *No*

4. Did you find the File of Life cards useful with documentation and/or medical decision making?

   Yes   *No*

5. Do you believe the File of Life cards are useful in preventing adverse events/medical errors?

   Yes   *No*

6. Are you willing to fill out and pass out a File of Life card to new patients and/or update patients' File of Life cards during your shift?

   Yes   *No*

Comments on the File of Life cards:

Appendix E

Patient Demographics: Type of Substance Use Disorder, Sex, and Age Ranges
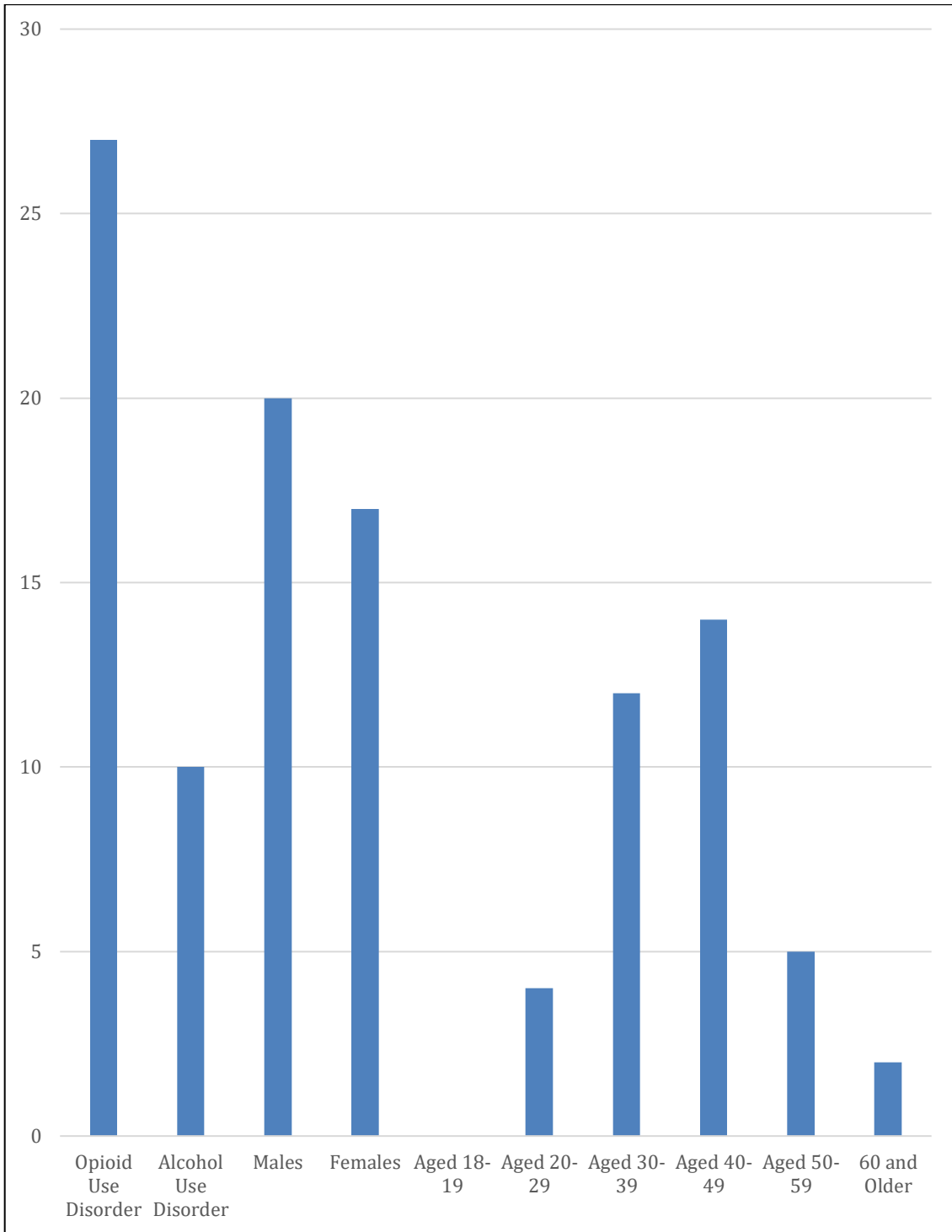
Appendix F

Patient Results from Patient Questionnaire
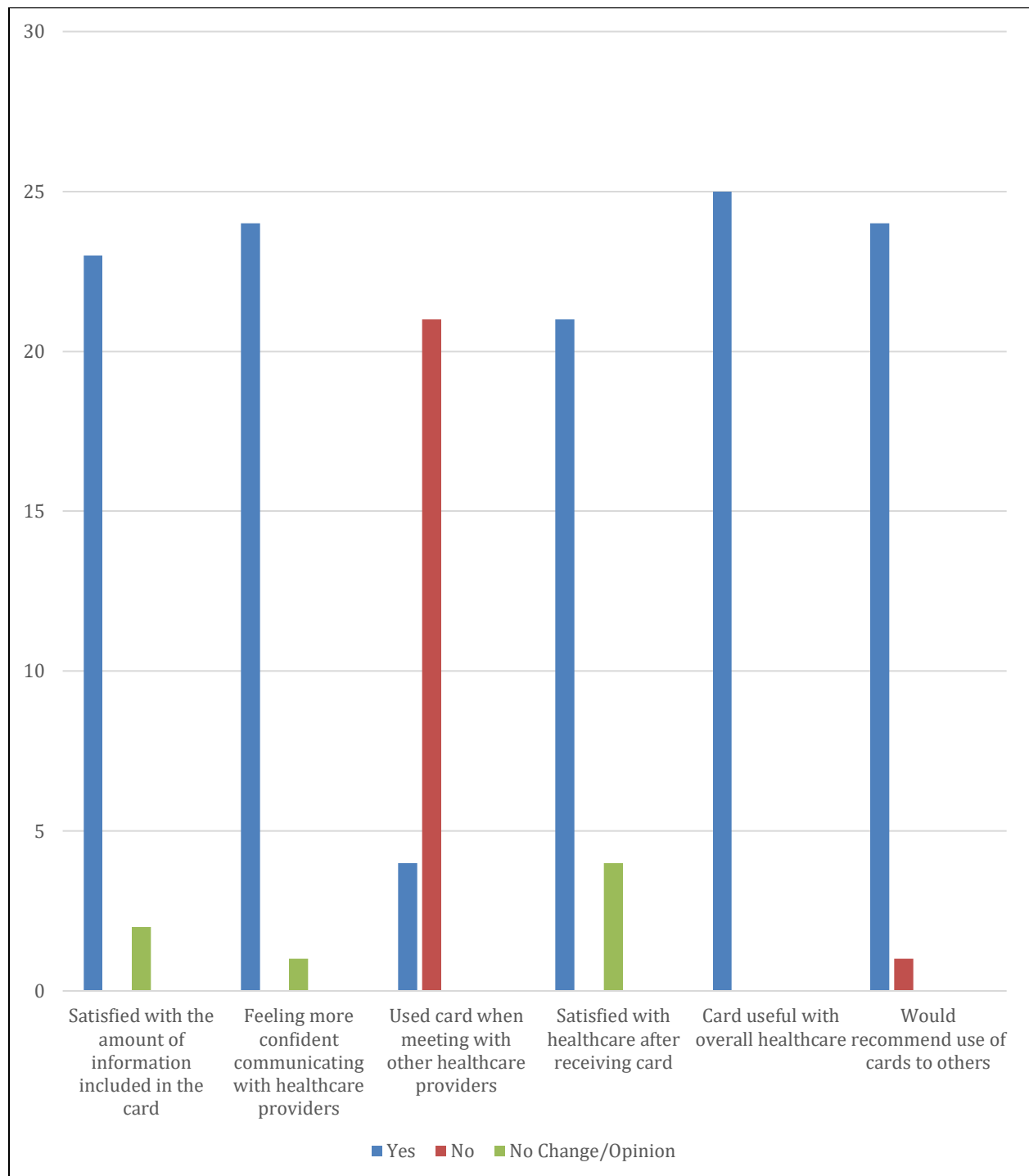
Appendix G

Number of medical errors reported pre-and-post implementation of the File of Life cards
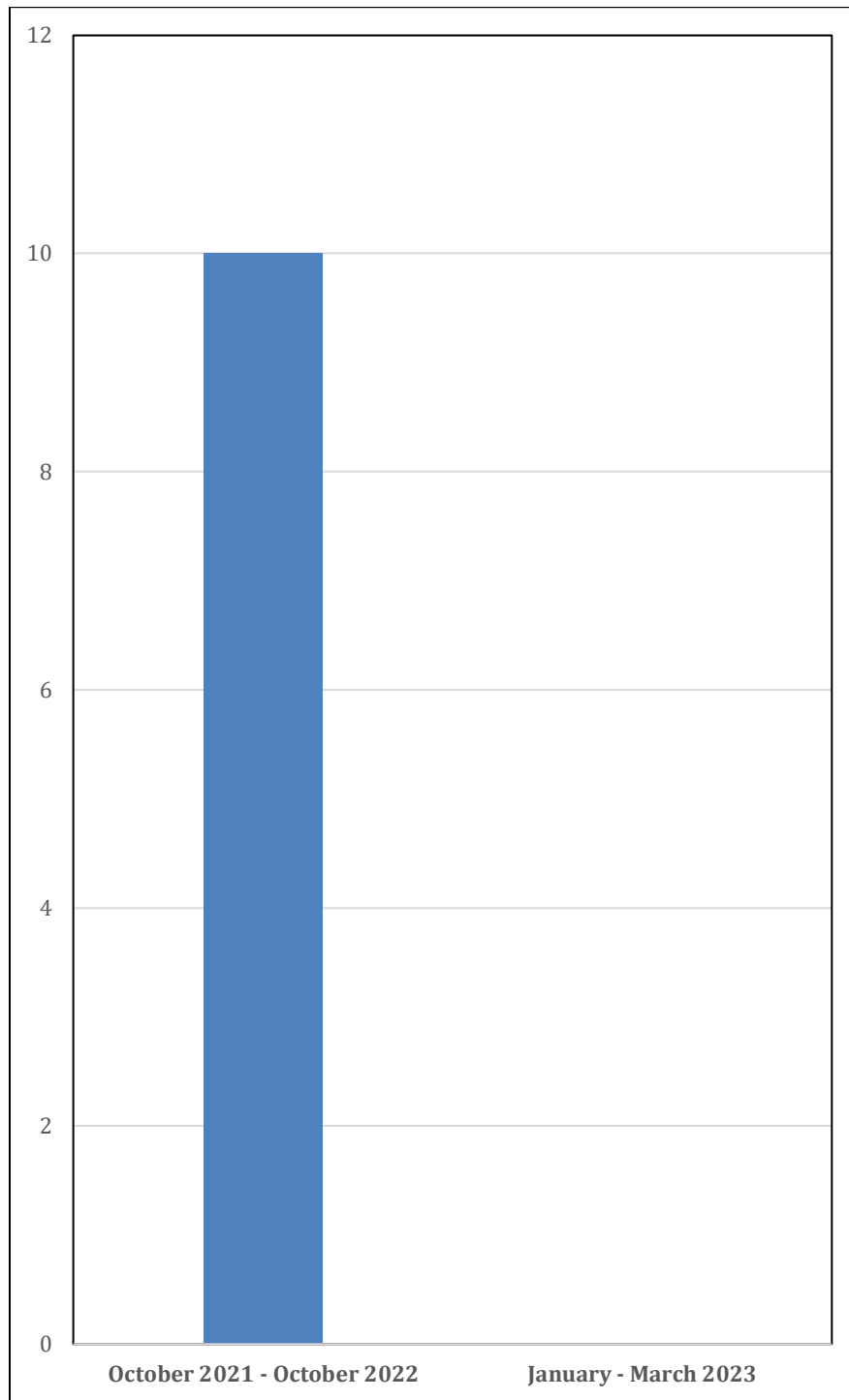
Appendix H

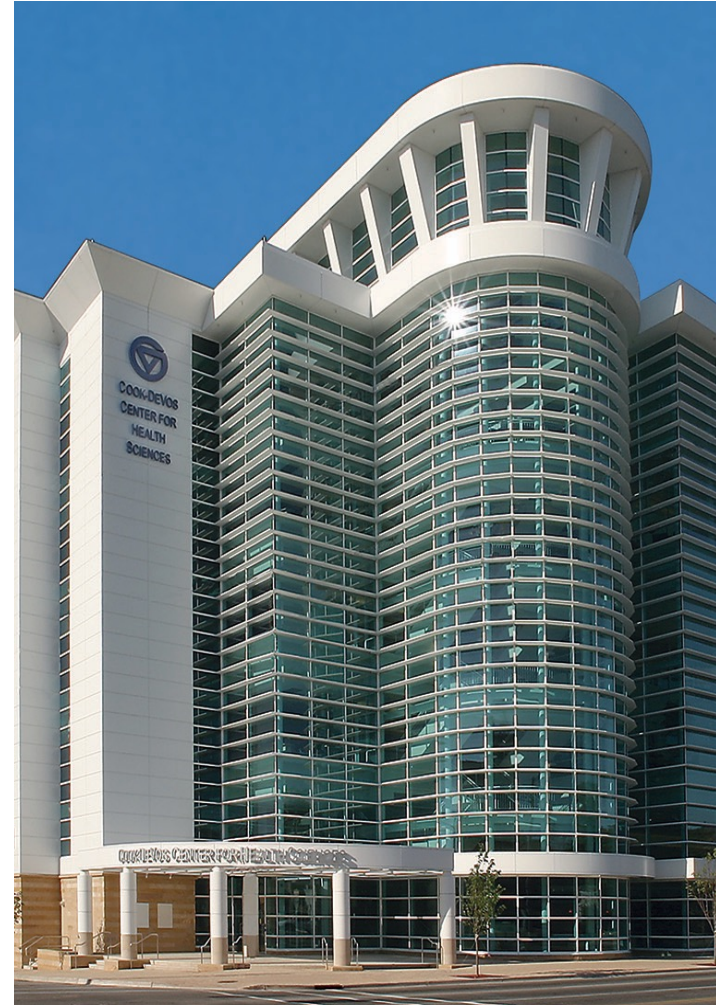**Healthcare Staff Results from Healthcare Staff Questionnaire**
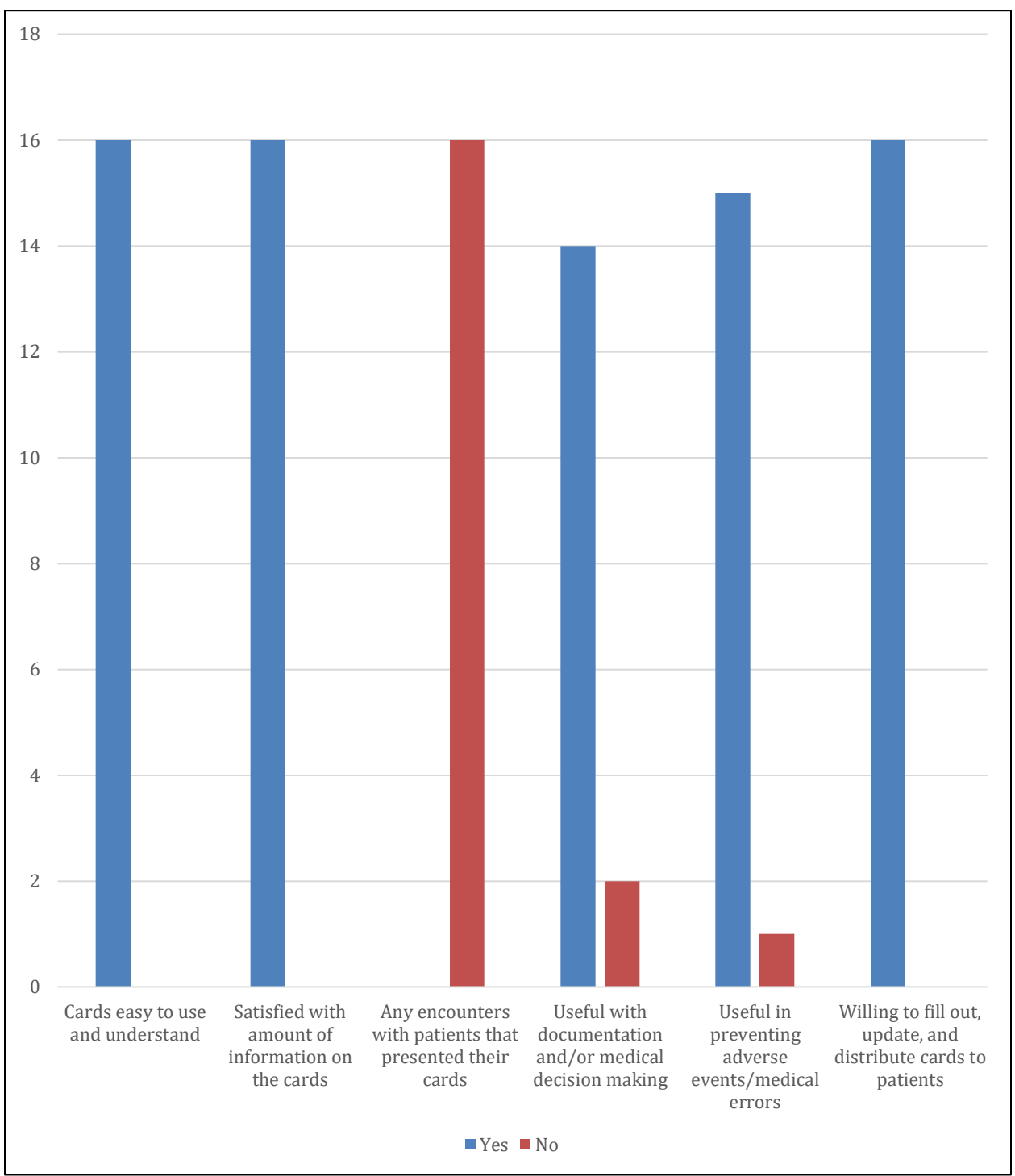
Acknowledgements

- Primary Advisor: Dr. Donna Rinker DNP, MSN, FNP-BC, PMHNP

- Secondary Advisor: Dr. Dianne Slager DNP, MSN, FNP-BC

- Clinical Site Mentor: Dr. Jennifer Bowling DNP, AGNP-C

- Clinical Site Leadership

- Clinical Site Healthcare Staff

- Local ED Manager: Tori Sykes, MBA, BSN

GRAND VALLEY
STATE UNIVERSITY
KIRKHOF COLLEGE
OF NURSING

Objectives for Presentation

1. Discuss medical errors and adverse events associated with the limited access to and incomplete patient health information for individuals with substance use disorders.

2. Review the results from the organizational assessment conducted for a healthcare clinic located in the Northern Midwest.

3. Review the results from the literature review regarding medical errors associated with the limited access to and incomplete patient health information, barriers for receiving treatment and the continuation of healthcare, and potential benefits from implementing a patient health information card.

4. Discuss the project plan including identifying the key stakeholders, framework used, implementation strategies, and outcomes to measure.

5. Discuss the results from the intervention, limitations, implications in future practice, and sustainability.

Introduction – Background

- Total of **440,000 deaths in the United States (U.S.) due to medical errors and adverse events** (Carver et al., 2022; CDC, 2022; Obrien et al., 2021).

- **98,000 Americans perish annually** due to medical errors/adverse events associated with **limited access to or incomplete patient health information** (CDC, 2022; Obrien et al., 2021).

- Medical errors costs the U.S. **$50 billion annually** (Leamy et al., 2019; Suen et al., 2021).

- **Individuals with substance use disorders (SUDs)** experience **higher rates of adverse events and medical errors** (Leamy et al., 2019; Suen et al., 2021).

- Approximately **110,000 overdose deaths** in the U.S annually (Beeber, 2018; CDC, 2022; Garavito & Bjork, 2022; Suen et al., 2021; Venkatesh, 2022).

- **Overdose deaths increased by 28.5% since 2020** (Beeber, 2018; CDC, 2022; Garavito & Bjork, 2022; Suen et al., 2021; Venkatesh, 2022).

- Only **10% to 30% of individuals with SUD receive adequate treatment annually** (Beeber, 2018; Degan et al., 2021; Saini et al., 2022).

Organizational Setting

- **Independent multi-interdisciplinary clinic in the Northern Midwest**
- **FQHC**
- ***Providers:***
  - 1 Physician
  - 5 NPs
  - 1 Social Worker
  - 5 Counselors
  - 4 Nurses
  - 7 MAs
- ***Services Rendered***: Primary Care, Medical and Behavioral health services, Medication Assisted Treatment (MAT)
- ***Clientele***:
  - 83% low-income
  - 52% at or below poverty
  - 47% on Medicaid
  - 10% no insurance
  - 7% homeless

Organizational Framework

Causal Model of Organisational Performance and Change, Burke-Litwin

External environment

Leadership

Mission and Strategy

Organisational culture

Management practices

Feedback

Structure

Systems

Work unit climate

Task requirements and Individual skills

Motivation

Individual needs and values

Individual, group and organisational performance

Feedback
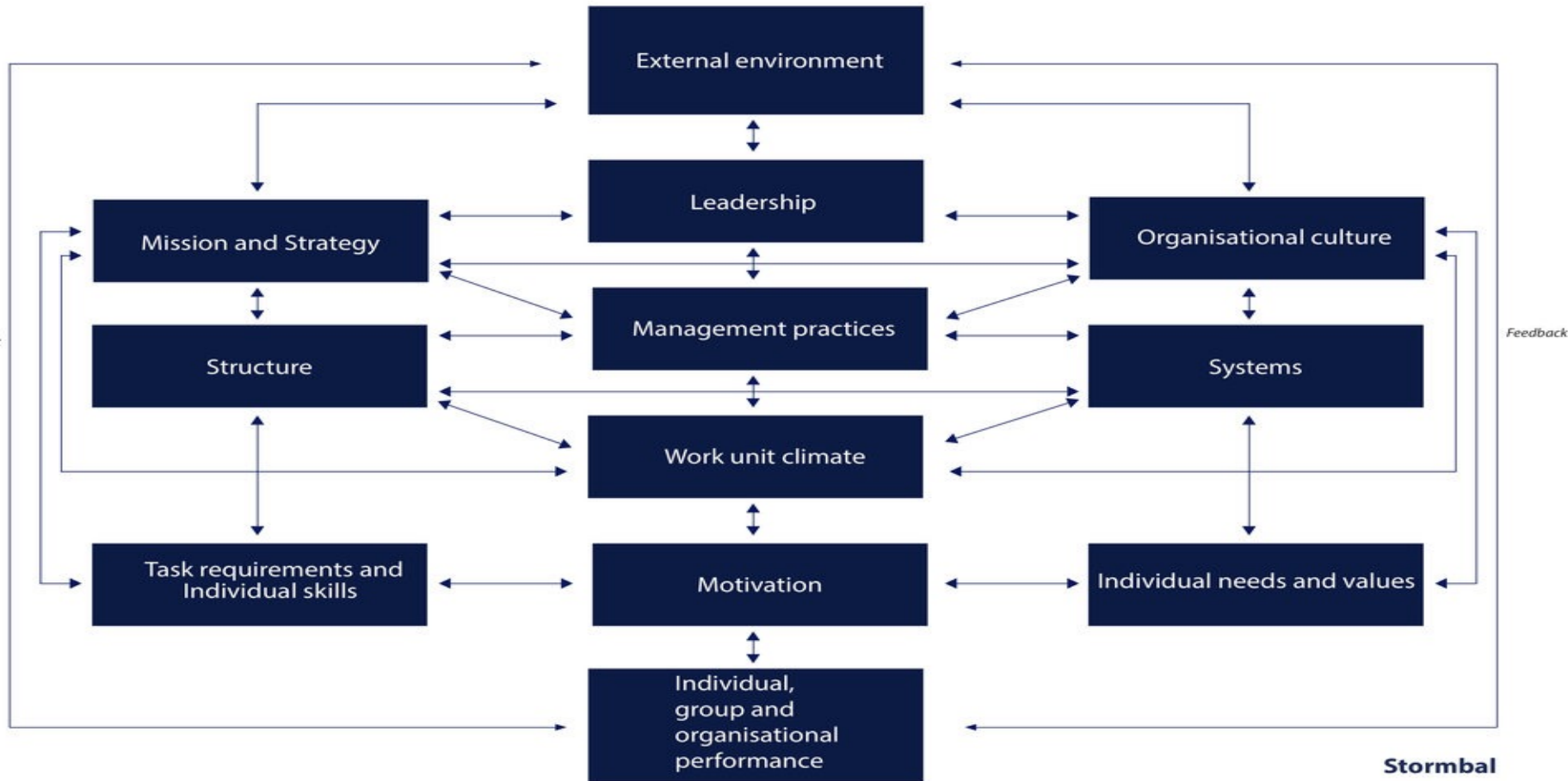
Stormbal

Based on: Causal Model of Organisational Performance and Change, Warner Burke, George Litwin, 1992 # Stormbal # Diederik J. Zunneberg / #djz14018e # 2014

(Burke & Litwin, 1992)

SWOT Analysis

Strengths

- FQHC status
- Primary and behavioral health –medical home
- NCQA Recognized Patient-Centered Medical Home
- Health Resources and Services Administration Health Center Quality Leader
- Mission, goals, and values clearly described
- Environment that promotes safety for patients and staff
- *Continuously seeks quality improvement*
- Treats the patients as partners
- *Healthcare staff committed to help the underserved*
- *Values the delivery of optimal care*
- Promotes the professional growth of the healthcare staff

Weaknesses

- *Healthcare staff require extra time looking up patient data from different resources due to the use of different EHRs and/or missing patient information which decreases the amount of time spent with patients*

- *No common standard for recording and exchanging patient information between other healthcare organizations*

- *EHR data occasionally is incomplete or contains errors or omissions for some patients*

- *Some patients have no health information available when they present for primary and/or emergency care*

Opportunities

- *Improve the quality of care and safety for patients with SUDs*
- *Reduce incidence of medical errors and medically induced adverse events*
- *Reduce/prevent delays in emergency treatments*
- *Reduce unnecessary healthcare costs*
- *Improve patient satisfaction with their care*
- Grants and incentives available as a FQHC based on quality attainment
- Improving quality documentation increases opportunity to capture incentive dollars from payors

Threats

- *Multiple competing healthcare organizations in the Northern Midwest*

- *Reduction in grants and incentives based on quality measure reporting*

Contextual Elements

- Some patients with a history of SUDs receiving care at the healthcare clinic located in the Northern Midwest have a limited or lack of knowledge of their own personal health history.

- Lack of or limited available patient healthcare information when patients present to the healthcare clinic located in the Northern Midwest.

- Patients with a history of SUDs receiving care at the healthcare clinic located in the Northern Midwest utilizing the ED at a high rate.

- Errors and/or omissions of patient health information on the EHR.

- EHRs vary among the clinic located in the Northern Midwest and the local ED.

- Reported delays in treatment and medication discrepancies when patients report to the local ED.

- Patients' poor follow up and treatment adherence.

Clinical Practice Question

For adults aged 18 years of age and older with the DSM-5 diagnosis of substance use disorders, will the provision of a personalized health information card decrease medical errors and adverse events among this primary care practice?

Literature Review: Purpose/Aims

- Review the evidence that supports the significance of medical errors and adverse events related to limited access to or incomplete patient health information.

- Review the evidence that supports the decrease and/or prevention of medical errors and adverse events with the use of a personal health information card.

- Review the evidence that supports improving health outcomes among the substance misuse population with the use of a personal health information card.

Literature Review: PRISMA Figure

- **Databases**
  - CINAHL
  - PubMed
- **Keywords**
  - Substance use disorder
  - Preventing Medical Errors
  - Preventing Adverse Events
  - Continuity of Care
  - Electronic Health Records
  - Patient health information cards
- **Inclusion Criteria**
  - Printed in English
  - Dates: 2010-2022
  - Peer-Reviewed
  - Focus on barriers for receiving care for individuals with SUDs, improving continuity of care and preventing medical errors
  - Primary Intervention: Patient health information card

PRISMA Figure

Identification

Records identified from CINAHL & PubMed:
(n = 1,715)

Screening

Records after duplicates removed
(n = 1,689)

Records screened
(n = 1,689)

Records excluded
(n = 1,539)

Reports assessed for eligibility
(n = 150)

Reports excluded:
No focus on improving continuity of care, medical errors, or preventing adverse events, (n = 35)
No implementation of a patient health information card (n = 97)
Outside date (n = 8)

Included

Studies included in review
(n = 10)

Synthesis of Results from Literature Review: Medical Errors

- **Electronic health records (EHRs) are prone to errors and omissions**:
  - *6% of patients in primary care settings* experience medical errors/adverse events (Khoo et al., 2015).
  - *54% of patients during their hospitalizations* identified at least one discrepancy in their patient health information (Oh et al., 2022).

- **Major causes of Medical Errors =** ***Missing Patient Information***
  - *Failure to diagnose or incorrect diagnosis*
  - *Failure to evaluate and consider all available clinical information*
  - *Delays in treatment*
  - *Poor communication among providers, patients, and families* (Carver et al., 2022; Garnick et al., 2019)

- **Approximately, only** *half of the U.S. population have access to their own health information* (Oh et al., 2022).

GRAND VALLEY STATE UNIVERSITY KIRKHOF COLLEGE OF NURSING

Synthesis of Results from Literature Review: Substance Use Disorders

- **Individuals with SUDs utilize acute healthcare services at a _higher rate_ than the general population:**
  - *10% (9.3 million) of all annual ED visits*
  - *12% (1.4 million) of all annual hospitalizations*
    (Suen et al., 2021)

- **Barriers for obtaining treatment and accurate patient health information** for individuals with SUDs are:
  - *Limited access to and availability of healthcare and human resources*
  - *Public stigma associated with SUDs*
  - *Low health literacy*
  - *Lack of readiness and not seeing treatment as a need*
  - *Lack of accurate patient health information*
    (Ali et al., 2020; Degan et al., 2019; Garnick et al., 2019; Ho et al., 2022; Leamy et al., 2019; Rangeley et al., 2021; Saini et al., 2022)

GRAND VALLEY STATE UNIVERSITY KIRKHOF COLLEGE OF NURSING

Synthesis of Results from Literature Review: Perceived Benefits of Implementing Patient Health Information cards

- **Improve access to accurate and current patient health information**

- **Prevent adverse events**

- **Prevent delays in emergency treatment**

- **Improve treatment adherence**

- **Positive Patients' views:**
  - **Empowering**
  - **Prevents or reduces delays in treatments**
  - **Improve health literacy**
  - **Improve communication/collaboration**
  - **Improve overall satisfaction with healthcare**

- **Positive Healthcare providers' views:**
  - **Improve access to pertinent health information**
  - **Identify errors on the EHR and reduce incidence of adverse events**
  - **Improve medical decision making**

(Dash & Pickering 2017; Khoo et al. 2014, Leamy et al., 2019; McBride et al. 2014; Reis et al. 2013; Sandhu et al. 2021)

GRAND VALLEY
STATE UNIVERSITY
KIRKHOF COLLEGE
OF NURSING

Model for Phenomenon: Social Cognitive Theory
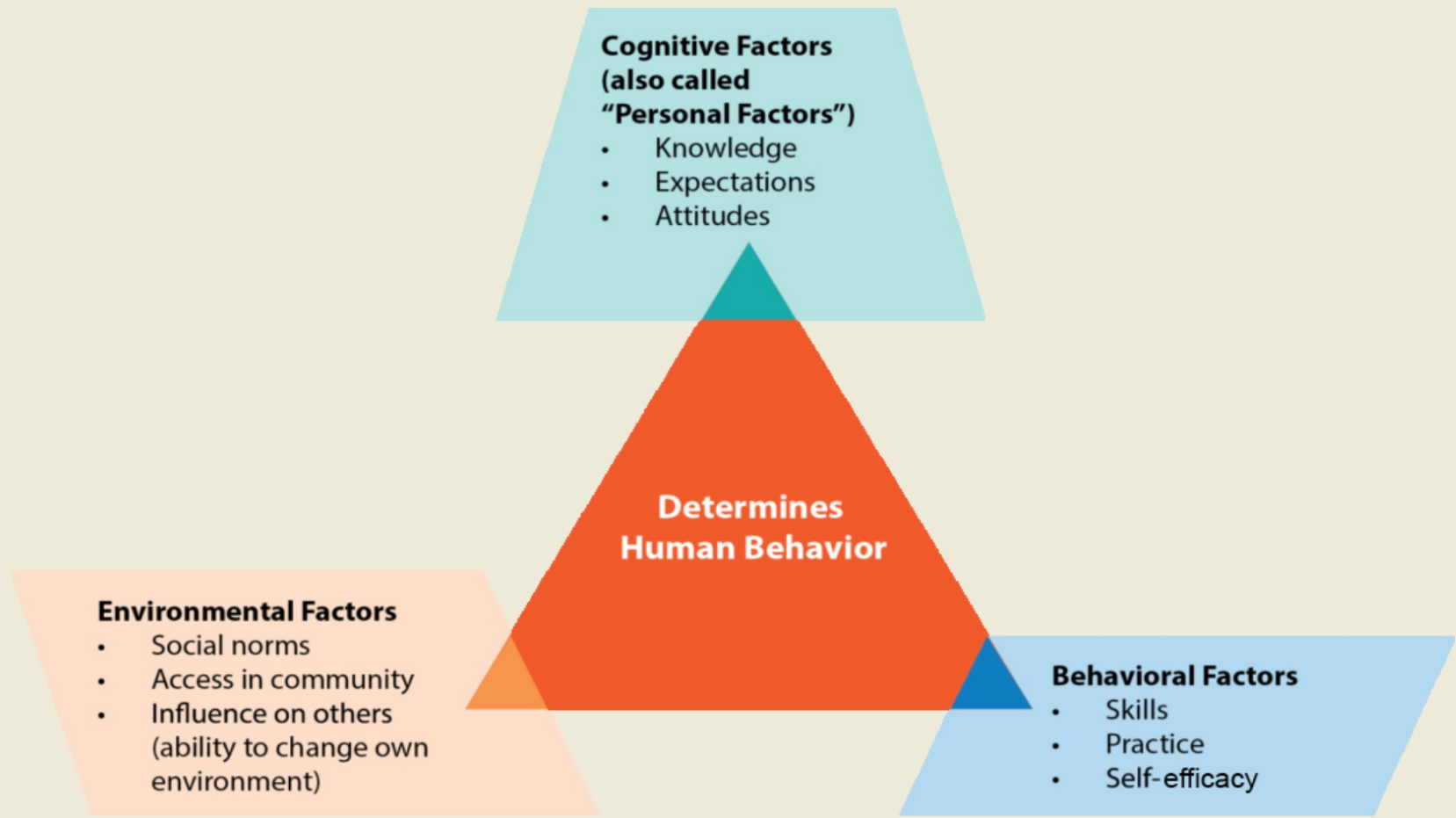
(Eslami et al., 2018)

PROJECT PLAN

Purpose and Project Type

- **Purpose:**

   The purpose of this quality improvement project is to help prevent adverse events for patients with the DSM-5 diagnosis of SUD with a personal and complete health information card.

- **Project Type: Quality Improvement Project**

   Develop a personalized health information card for patients with SUD in the primary care clinic to be utilized for health care needs in the community.

Participants/Stakeholders
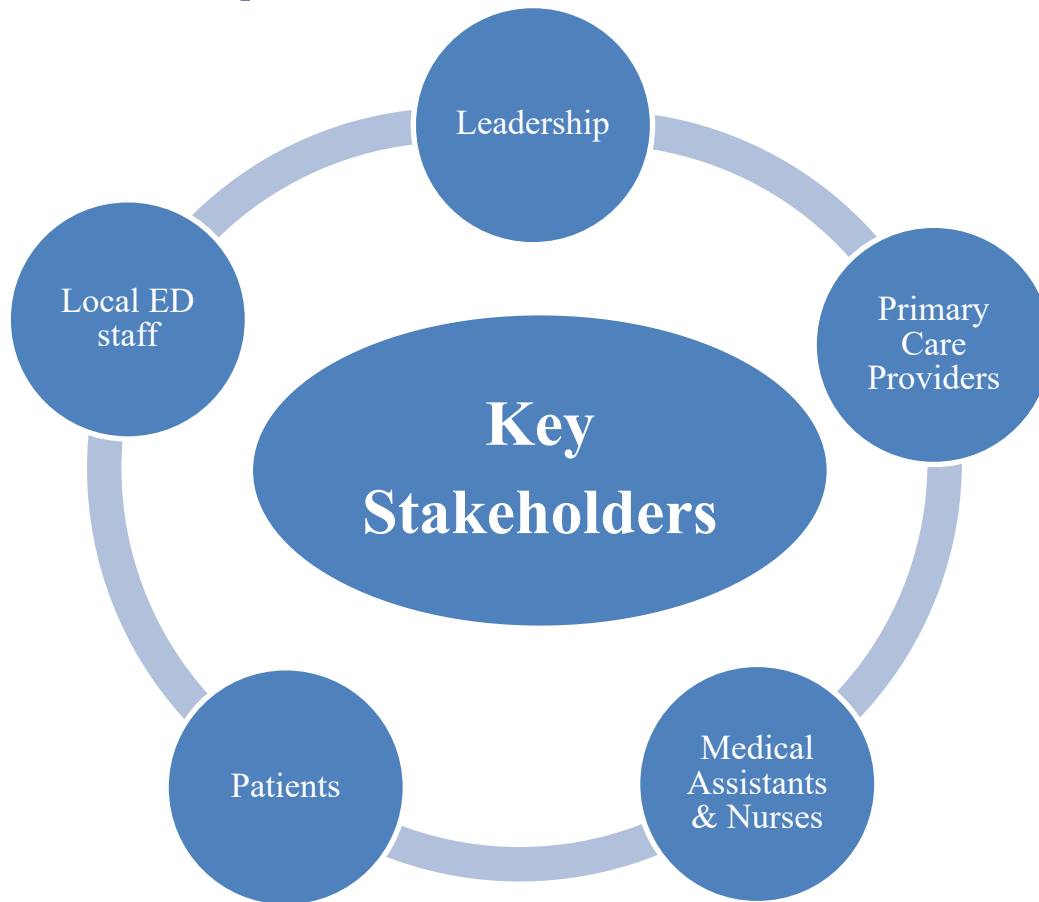
Methods: Implementation Model

(Friesen et al., 2017)

Project Objectives

1. Develop a personalized health information card to be implemented at the clinical site located in the Northern Midwest by January 2023.

2. Obtain a registry report of SUD patients enrolled in the clinical site's medication assistance treatment (MAT) program, that is de-identified within the practice seen in the ED within the last 12 months (October 2021 to October 2022) by November 30, 2022.

3. Complete an analysis from the EHR visit of the medication discrepancy among SUD patients in the clinic's MAT program seen in the emergency room within the last 12 months (October 2021 to October 2022) by November 30, 2022.

4. Educate and dispense the personal health information card to patients in the clinic's MAT program by January 2023.

5. Dispense questionnaires to patients that received their personal health information cards at their subsequent follow up appointment to evaluate their perceived usefulness of the cards by February 2023.

6. Educate the local ED healthcare staff and the clinical site's healthcare staff about the patient health medication cards by February 2023.

7. Dispense questionnaires to the healthcare staff at the local ED to evaluate their perceived use and usefulness of the cards, and the number of patients they encountered that presented cards to them by March 2023.

8. Dispense questionnaires to the healthcare staff at the clinical site to evaluate their perceived use and usefulness of the cards by March 2023.

9. Obtain findings, analyze results, and disclose findings by April 2023.

GRAND VALLEY STATE UNIVERSITY KIRKHOF COLLEGE OF NURSING

Implementation Strategies: Practice Question Phase

1. ***Organizational Assessment /SWOT Analysis***

   – Mission, culture, values, beliefs, protocols

   – Clientele, services rendered, MAT program

   – Identify stakeholders: Patients, providers, clinical site leadership, medical assistants, ED staff

   – Staffing, equipment

   – Accreditation: FQHC, NCQA

2. ***Define Problem***

   – Higher ED utilization by individuals with SUDs

   – Encountered errors and/or omissions of patient health information on EHR

   – Varying EHRs among the clinic and ED

   – Delays in treatment and medication discrepancies

   – Poor follow up and treatment adherence

3. ***Form Practice Question for research***

   – *For adults aged 18 years of age and older with substance use disorders, will the provision of a personalized health information card decrease medical errors and adverse events among this primary care practice?*

Implementation Strategies: Evidence Phase

4.   *Research phenomenon of interest*

   –   Impact of medical errors as a national health problem

   –   Identify barriers for obtaining treatment and accurate patient health information

5.   *Research current literature for addressing phenomenon of interest and the Practice Question*

   –   Improving the availability and accuracy of patient health information

   –   Preventing medical errors

   –   Reducing delays in treatment

   –   Improving medical decision making

6.   *Appraise the Level and Quality of Evidence*

7.   *Summarize the Evidence in the Literature Review*

8.   *Develop Recommendations*

GRAND VALLEY STATE UNIVERSITY KIRKHOF COLLEGE OF NURSING

Implementation Strategies: Translation Phase

9. *Inform Opinion Leaders and obtain support for project*
   - Present findings from lit. review, obtain leadership support
   - Visit Local ED site; Educate purpose of QI project; obtain support from ED manager and staff
10. *Engage with Stakeholders*
11. *Create Action/Implementation Plan*
    - Educate about and distribute the patient health information cards to patients during their scheduled appointments
    - Develop a workflow process
12. *Obtain Supplies for Implementation*
    - Patient health information cards/File of Life
    - Develop Questionnaires
13. *Implement Action Plan/Pilot Study*
14. *Evaluate Outcomes/Results*
15. *Report Outcomes to Stakeholders*
16. *Disseminate Findings*

Evaluation & Measures

	Concepts Measured	Tools Used
Patient	Satisfaction with information on cards	Paper Questionnaire
	Confidence with care	Paper Questionnaire
	Rate using cards with other providers	Paper Questionnaire
	Would recommend use of cards to others	Paper Questionnaire
	Satisfaction with healthcare	Paper Questionnaire
	Perceived usefulness	Paper Questionnaire
	ED visits/Hospitalizations	Electronic Health Record
	Reported medical errors	Electronic Health Record
Healthcare Staff	Ease of use	Paper Questionnaire
	Perceived usefulness: Preventing errors & improving medical decision making	Paper Questionnaire
	Willing to implement	Paper Questionnaire
	Number of patients encountered with the card	Paper Questionnaire

Budget of Project

Potential Costs of Adverse Events/ED/Hospitalization	
Average cost of 1 ED visit per person with SUD	$500
Average cost of 1 hospitalization per person with SUD	$12,000
Average cost of medical errors resulting in patient harm due to missing health information per person	$58,000
Average cost of treatment for overdoses per patient	$5,500
Total Potential Cost without Implementation	**$76,000**

Expenses for Implementation of Project	
Nurse Practitioners (Clinical site) $60/hour for Education/Training est. 2 hours, Total 5 NPs	$600
Physicians (Clinical site) $105/hour for Education/Training est. 2 hours, Total 1 Physician	$210
Medical Assistants (Clinical site) $19/hour for Education/Training est. 2 hours, Total 7 MAs	$266
Registered Nurses (Clinical site) $30/hour for 2 hours, Total 4 RNs	$240
CEO (Clinical site) $250/hour for est. 1 hour meeting for project	$250
CMO (Clinical site) $207/hour for est. 2 hours meeting for project	$414
Registered Nurses (ED) $30/hour for Education est. 2 hours total, Total 29 RNs	1,740.00
Nursing Assistants (ED) $19/hour for Education est 2 hours total, Total 16 Nas	608.00
ED Manager $39/hour for est 2 hour meeting	78.00
Conference room (Clinical site) $70/hr for education/training (2 meetings)	$140
Lost revenue due to education/training time ($171 per visit; 6 patient visits lost)	$1,026
Cost of Supplies: Patient health information cards/File of Life ($0.30/card) and paper questionnaires ($0.12 per paper); est 50 patients participate	$21
DNP Student Project Time $33/hr (est 115 hours)	$3,375
Computer cost (average laptop cost $500); 1 laptop computer	$500
Total Expenses	**$9,468**
Potential Net Savings	**$66,532**

(Karaca & Moore, 2020; Venkatesh et al., 2022)

Timeline

May-June 2022
- Organizational Assessment
- Assess readiness for change
- Identify barriers
- SWOT Analysis
- Engage stakeholders and build Coalition
- Form Practice Question

September 2022
- Patient health information card/File of Life obtained
- Inform opinion leaders
- Meet with implementation advisors

November 2022
- Meet with local ED Manager and staff
- Leadership support and letters of approval for project obtained
- Create action plan

December 2022
- IRB Submission
- Obtain registry report
- Analysis from EHR visit of the reported medication discrepancies and errors

February 2023
- Begin distribution of patient surveys
- Meeting for evaluation
- Begin staff education

April 11, 2023
- Disclosure of findings

End of project

June - July 2022
- Research phenomenon of interest and solutions
- Appraise the level and quality of evidence
- Summarize evidence in literature review & develop recommendations

October 2022
- Develop patient and ED healthcare staff questionnaires
- Collaborate with stakeholders

Presentation of Project Proposal

November 29, 2022

January 2023
- IRB Approval obtained
- Meeting for implementation
- Begin distribution of healthcare cards

March 2023
- Distributed healthcare staff surveys
- Statistical analysis

Project Implementation

Pre-Implementation ED Visits & Reported Medical Errors

- **Total number ED visits by patients (n = 259) receiving care at the clinic throughout a 12-month period (October 2021-October 2022).**

- **Total number of patients (n = 46) with the DSM5 diagnosis of SUD seen in the local ED receiving care at the clinic throughout a 12-month period (October 2021-October 2022).**

- **Total number of patients (n = 22) enrolled in the clinic's MAT program seen in the ED in a 12-month period (October 2021-October 2022).**

- **Total number of errors or medication inconsistencies reported on the EHR among patients (n = 10) in the clinic's MAT program seen in the ED throughout a 12-month period (October 2021-October 2022).**

- ***Approximately half of patients enrolled in the MAT program experienced a medical inconsistency or medical error when going to the local ED.***

Implementation

- Patient health information cards were completed by the DNP student and given to patients with the DSM5 diagnosis of SUD during their scheduled follow up MAT appointments only at the clinical site.

- Patients enrolled in the MAT program were educated about the patient health information cards by the DNP student. They are to carry their cards and present them to any other healthcare professionals in the local community.

- Patient questionnaires were distributed by the DNP student and MAT nurse. Questionnaires were completed by the patients during their scheduled face-to-face follow up after receiving their cards.

Implementation

- Healthcare staff were educated about the cards by the DNP student during one-on-one encounters.

- Healthcare staff questionnaires were distributed by the DNP student and completed by the staff members at their convenience.

- Visits were made to the local ED by the DNP student in collaboration with the ED manager and the ED staff were educated about the cards.

Ethical Considerations

- **Protection of confidentiality & HIPAA Compliance**
  - **No patient and healthcare staff identifiers were collected or used on surveys and EHRs**

- **All work was done in the office. Data saved and locked on the computer used at the clinic which requires username and password.**

- **All data destroyed at the end of the project**
  - **Electronic data will be deleted**
  - **Paper data will be shredded**

- **GVSU IRB determination/approval obtained**

GRAND VALLEY
STATE UNIVERSITY
www.gvsu.edu

Date: February 09, 2023

To: ✖✖✖✖✖✖✖✖✖✖✖✖✖
From: Office of Research Compliance & Integrity
Project Title: Improving the Continuity of Care for Patients with Substance Use Disorders with a Medical Information Card
Project Number: 23-203-H
Submission Type: IRB Research Determination Submission

Action: Not Research
Effective Date: February 09, 2023
Review Type: Administrative Review

Thank you for your submission of materials for your planned scholarly activity. It has been determined that this project does not meet the definition of research* according to current federal regulations. The project, therefore, does not require further review and approval by the IRB.

Scholarly activities that are not covered under the Code of Federal Regulations should not be described or referred to as "*research*" in materials to participants, sponsors or in dissemination of findings. While performing this project, you are expected to adhere to GVSU's code of conduct and any discipline-specific code of ethics.

A summary of the reviewed project and determination is as follows:
The purpose of this quality improvement project is to prevent medical errors/adverse events for patients with the DSM-5 diagnosis of substance use disorders (SUDs). It involves the distribution of a patient health information card that contains patients' individual medical conditions, allergies, current medications, and emergency contact information. This quality improvement project is designed to improve medical care being provided to patients; it is not designed to create new generalizable knowledge. Therefore, it does not meet the federal definition of research and IRB oversight is not needed.

This determination letter is limited to IRB review. It is your responsibility to ensure all necessary institutional permissions are obtained prior to beginning this project. This includes, but is not limited to, ensuring all contracts have been executed, any necessary Data Sharing Agreements and Material Transfer Agreements have been signed, and any other outstanding items are completed.

If you have any questions, please contact ✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖✖ Please include the project title and project number in all correspondence with our office.

*Research is a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge (45 CFR 46.102 (d)).

Patient Health Information Card/File of Life

KEEP INFORMATION UP TO DATE !!
Review At Least Every Six Months !

MEDICAL DATA REVIEWED AS OF ___ MO. ___ YR.

Name: _____ Sex: M F

Address: _____

Doctor: _____ Phone #: _____

Preferred Hospital: _____

EMERGENCY CONTACTS

Name: _____ Phone #: _____

Address: _____

Name: _____ Phone #: _____

Address: _____

MEDICAL DATA
Use pencil for ease in making changes.

Special Conditions/Remarks: _____

Medication	Dosage	Frequency

Pharmacy: _____ Phone: _____

Date of Birth: _____

Blood Type: _____ Religion: _____

Health Care Proxy on file at: _____

Living Will on file at: _____

© FILE OF LIFE   SEE BACK OF CARD FOR ADDITIONAL INFORMATION

Use pencil for ease in making changes

Recent Surgery: _____ Date: _____

Do you have an EMS-NO CPR Directive or a DNR form ?
YES ☐   NO ☐   Where is it located ?

MEDICAL CONDITIONS
Check all that exist

- ☐ No known medical conditions
- ☐ Abnormal EKG
- ☐ Adrenal Insufficiency
- ☐ Angina
- ☐ Asthma
- ☐ Bleeding Disorder
- ☐ Cancer
- ☐ Cardiac Dysrhythmia
- ☐ Cataracts
- ☐ Clotting Disorder
- ☐ Coronary Bypass Graft
- ☐ Dementia ☐ Alzheimer's ☐
- ☐ Diabetes/Insulin Dependent
- ☐ Eye Surgery
- ☐ Glaucoma
- ☐ Hearing Impaired
- ☐ Heart Valve Prosthesis
- ☐ Other:

- ☐ Hemodialysis
- ☐ Hemolytic Anemia
- ☐ Hepatitis-Type [   ]
- ☐ Hypertension
- ☐ Hypoglycemia
- ☐ Laryngectomy
- ☐ Leukemia
- ☐ Lymphomas
- ☐ Memory Impaired
- ☐ Myasthenia Gravis
- ☐ Pacemaker
- ☐ Renal Failure
- ☐ Seizure Disorder
- ☐ Sickle Cell Anemia
- ☐ Stroke
- ☐ Tuberculosis
- ☐ Vision Impaired

ALLERGIES

- ☐ Aspirin
- ☐ Barbiturate
- ☐ Codeine
- ☐ Demerol
- ☐ Horse Serum
- ☐ Environmental:

- ☐ Insect Stings
- ☐ Latex
- ☐ Lidocaine
- ☐ Morphine
- ☐ Novocaine

- ☐ Penicillin
- ☐ Sulfa
- ☐ Tetracycline
- ☐ X-Rays Dyes
- ☐ No Known Allergies

☐ Other:

MEDICAL INSURANCE

Med Ins Co: _____

Policy #: _____

Other Med Ins Co: _____

Policy #: _____

Medicaid #: _____ Medicare #: _____

(File of Life, 2022)

Benefits & Instructions for File of Life

Patient Questionnaire

Patient Questionnaire

1. Are you satisfied with the amount of information included in the card?

   Satisfied   *Not Satisfied*   *No Opinion*

2. After receiving your patient health information card, do you feel more confident communicating your healthcare needs and working with healthcare providers?

   Yes   *No*   *No Change*

3. Have you used your patient health information card when meeting with healthcare professionals involved with your care?

   Yes   *No*

   If Yes, how many healthcare professionals did you present your card to? _____

4. How satisfied are you regarding your healthcare after receiving your patient health information card?

   Satisfied   *Not Satisfied*   *No Opinion*

5. Do you consider the patient health information card useful with your healthcare?

   Yes   *No*

6. Would you recommend to family members and/or friends to carry their own patient health information card?

   Yes   *No*

Healthcare Staff Questionnaire

Healthcare Staff Questionnaire

1. Do you find the File of Life cards easy to understand and use?

   Yes   **No**

2. Are you satisfied with the information presented on the File of Life cards?

   Yes   **No**

3. Did any of your patients present a File of Life card to you?

   Yes   **No**

4. Did you find the File of Life cards useful with documentation and/or medical decision making?

   Yes   **No**

5. Do you believe the File of Life cards are useful in preventing adverse events/medical errors?

   Yes   **No**

6. Are you willing to fill out and pass out a File of Life card to new patients and/or update patients' File of Life cards during your shift?

   Yes   **No**

Comments on the File of Life cards:

Project Hurdle

- Questionnaires and data for the local ED staff utilization was not collected for this project due to a barrier related to IRB requirements and time in completing the project.
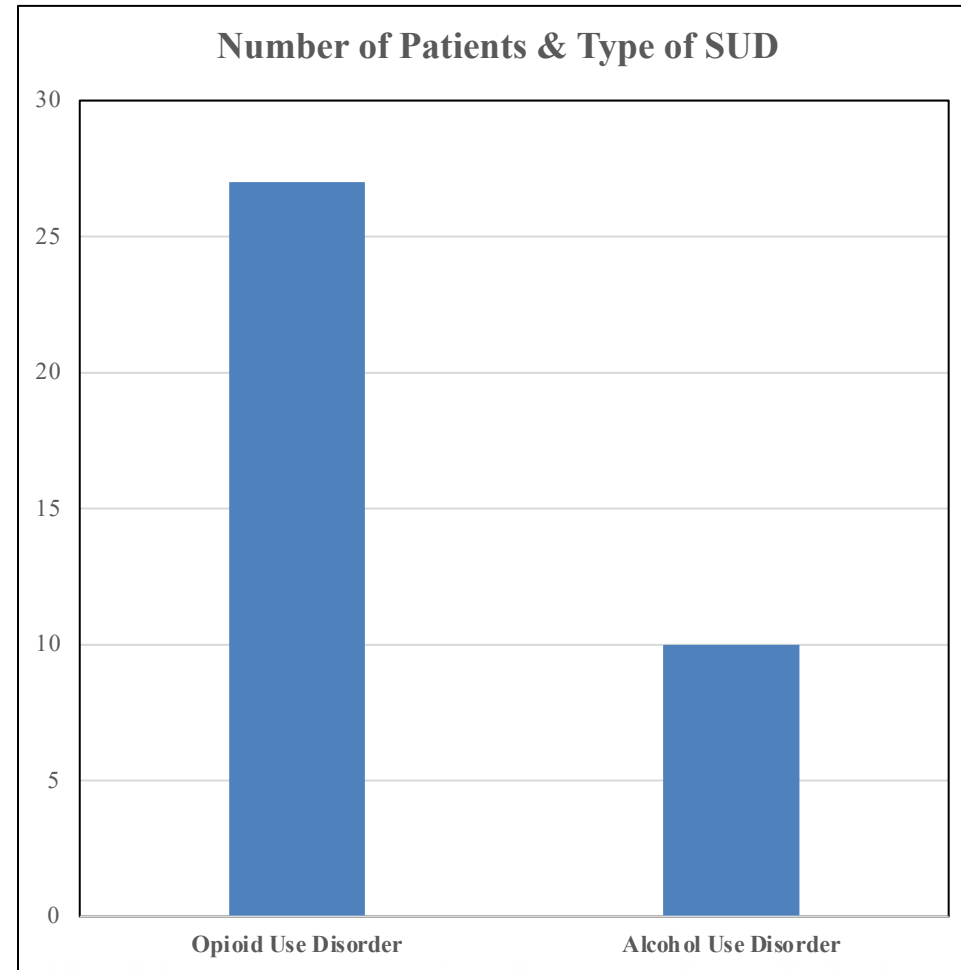
Patient Results

GRAND VALLEY
STATE UNIVERSITY.
KIRKHOF COLLEGE
OF NURSING

Patient Characteristics

- **Individuals aged 18 and older with the DSM 5 diagnosis of SUD.**

- **Total number of patients (n = 61) enrolled in the clinic's MAT program at the beginning of the QI Project.**

- **Total number of patient (n = 41) encounters.**

- **Total number of patients (n = 37) agreeable to receive a card.**

- **Total number of patients (n = 4) that refused.**

- **Total number of patients (n = 10) dropped out of the MAT during the QI project.**

- **Total number of patients (n = 10) not encountered.**

Patient Characteristics

- OUD (n = 27)
- AUD (n = 10)

Number of Patients & Type of SUD

(Bar chart: Opioid Use Disorder ≈ 27, Alcohol Use Disorder = 10; y-axis 0–30)

Patient Characteristics

- Males (n = 20)
- Females (n = 17)
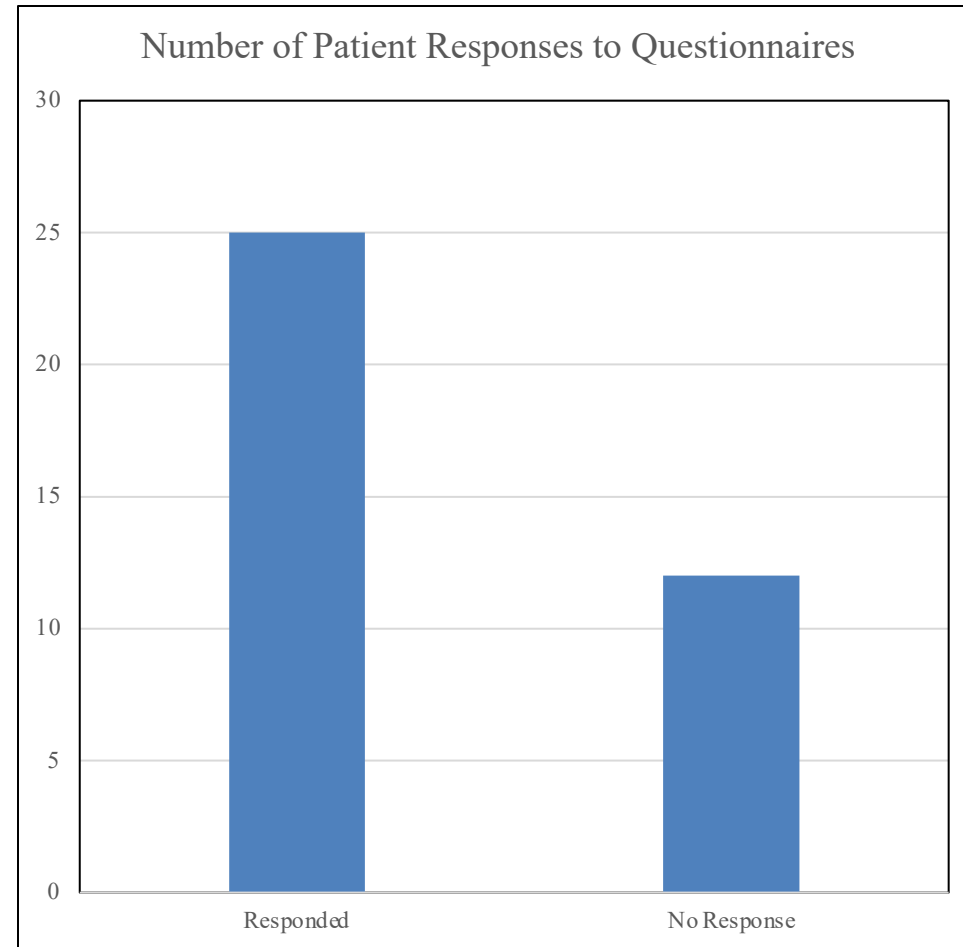

Number of Patients According to Sex
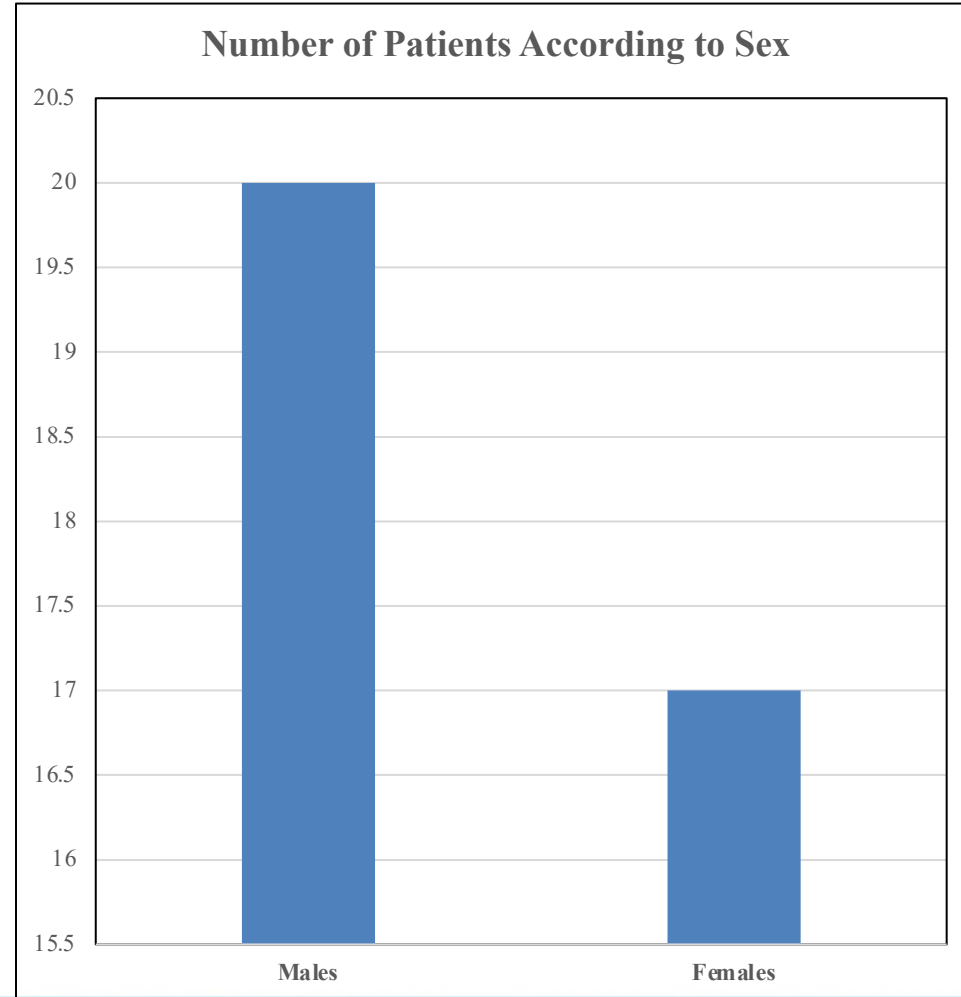
Patient Characteristics

- Age Ranges
  - 18-19 years (n = 0)
  - 20-29 years (n = 4)
  - 30-39 years (n = 12)
  - 40-49 years (n = 14)
  - 50-59 years (n = 5)
  - 60+ (n = 2)

Number of Patients Based on Age
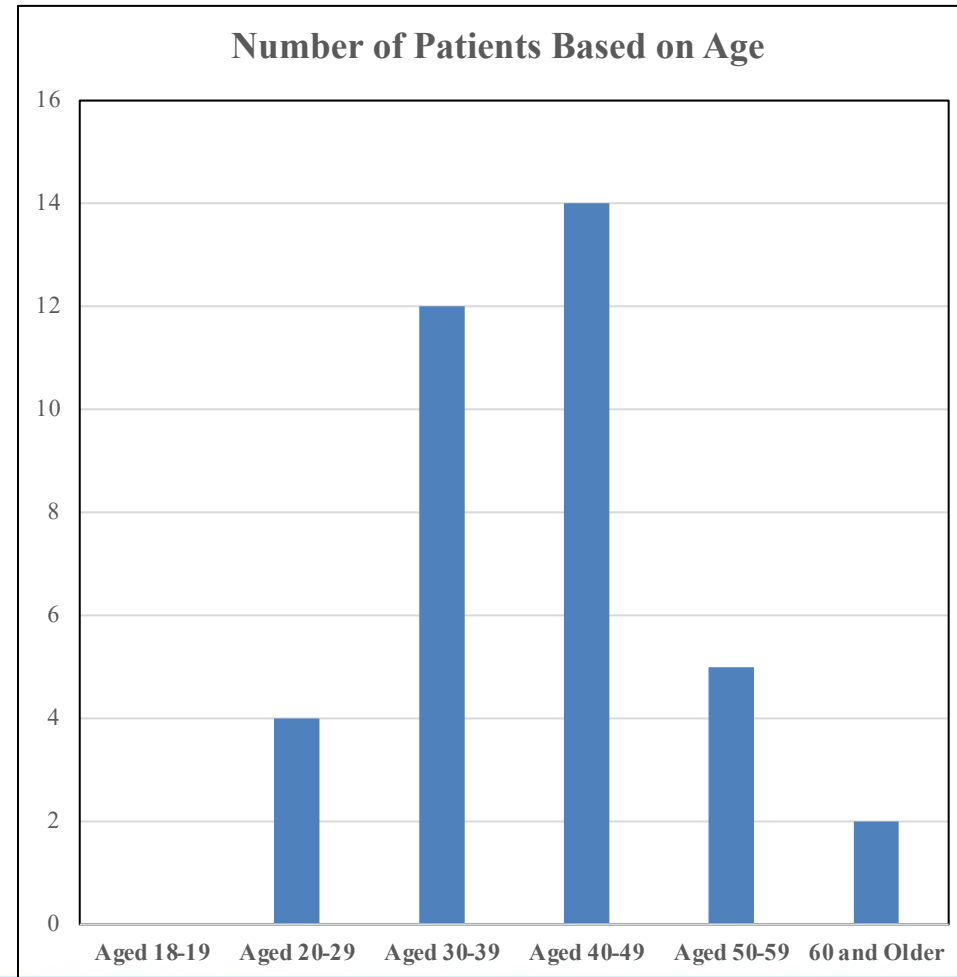
Results: Number of Patient Responses to Questionnaires

- Responded (n = 25)
- No Response (n = 12)

Number of Patient Responses to Questionnaires

Results: Number of Patients Satisfied with the Amount of Information Included in the Card

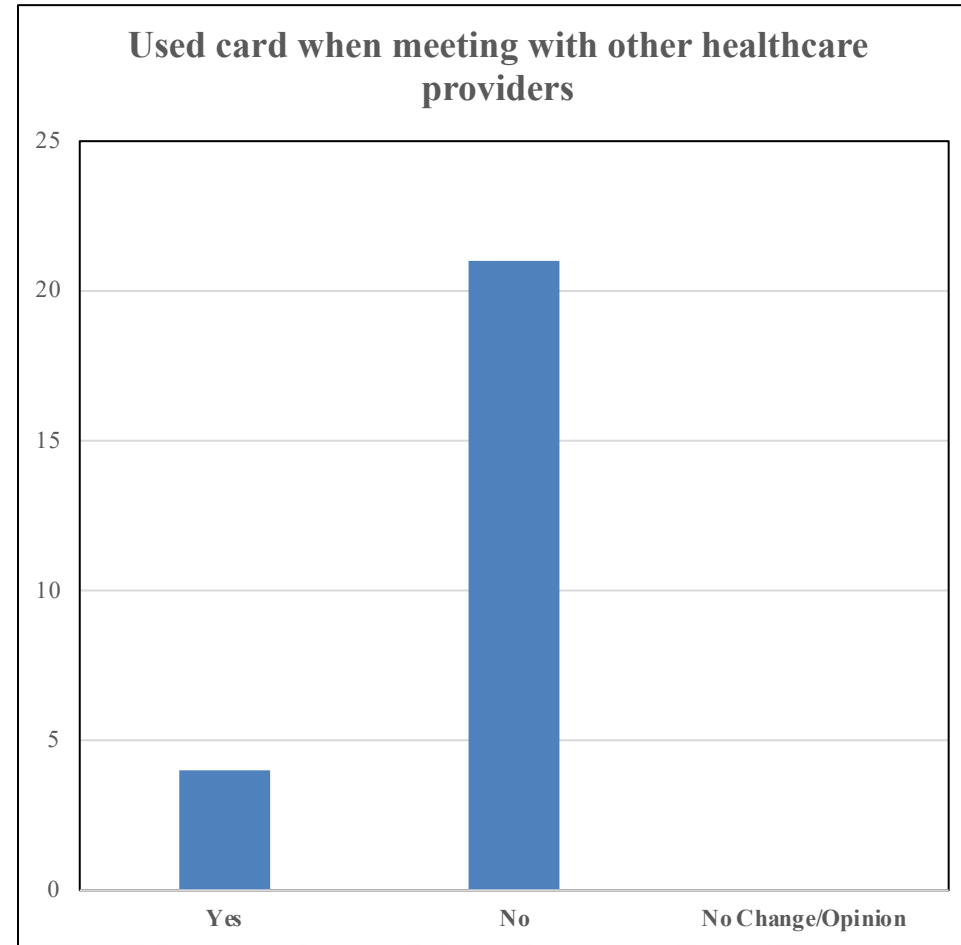- Satisfied (n = 24)
- No opinion (n = 1)
- *96% satisfied*

Satisfied with the amount of information included in the card
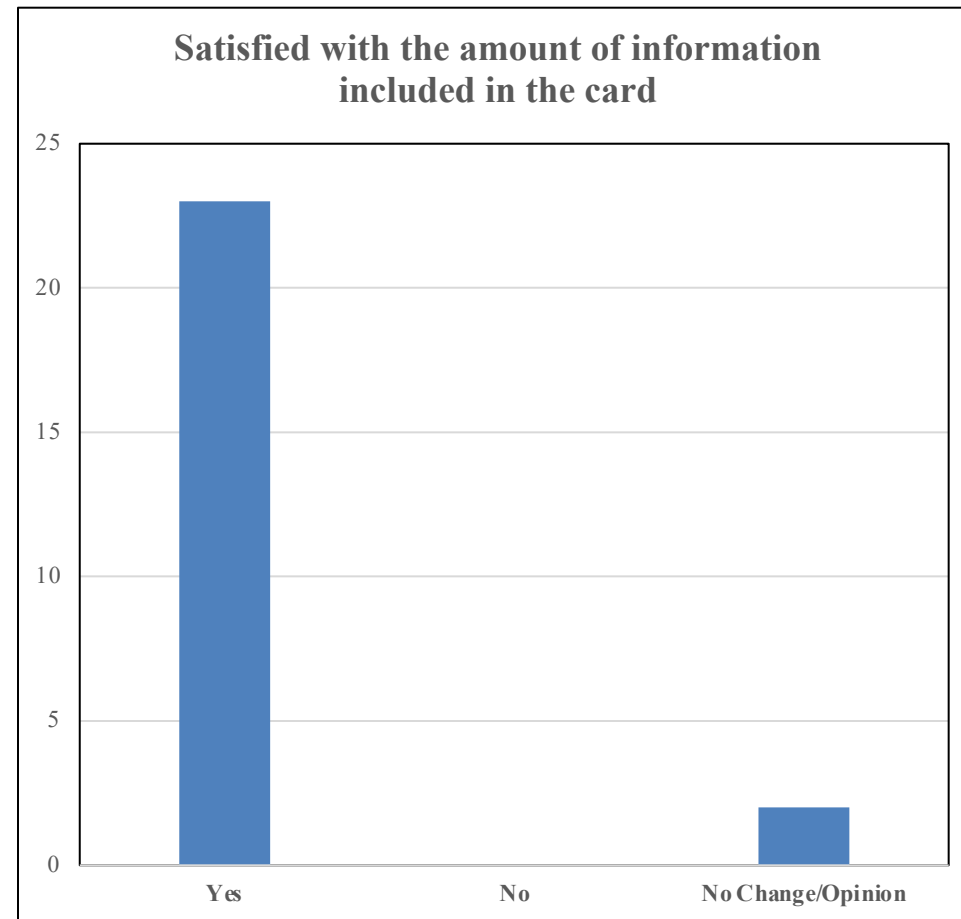
Results: Number of Patients Feeling more Confident Communicating with Healthcare Providers

- Feeling more confident (n = 24)
- No change (n = 1)
- ***96% confident***

**Feeling more confident communicating with healthcare providers**
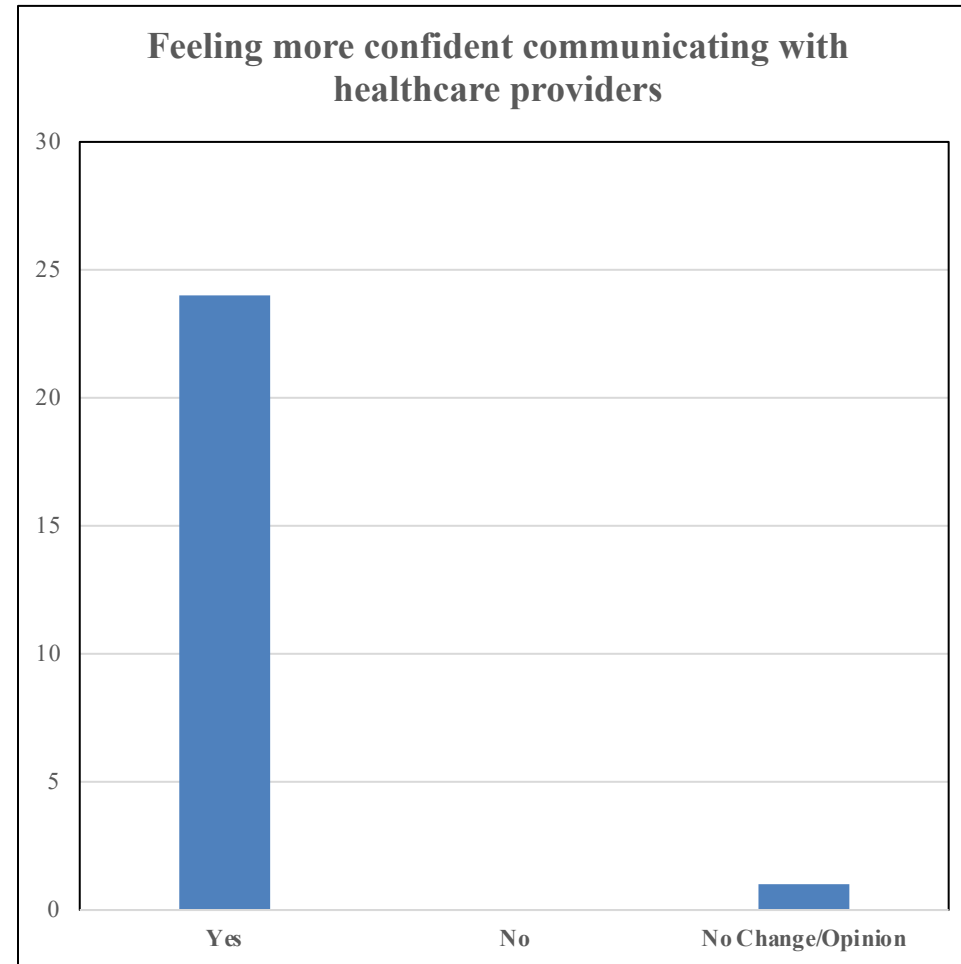
Results: Number of Patients Using Cards with Other Healthcare Providers

- Used their cards (n = 4)
- Did not use their cards (n = 21)
- *16% used their cards*

Used card when meeting with other healthcare providers

Results: Number of Patients Satisfied with Healthcare After Receiving Cards

- Satisfied (n = 21)

- No change/opinion (n = 4)

- *84% satisfied*

Satisfied with healthcare after receiving card

GRAND VALLEY
STATE UNIVERSITY
KIRKHOF COLLEGE
OF NURSING
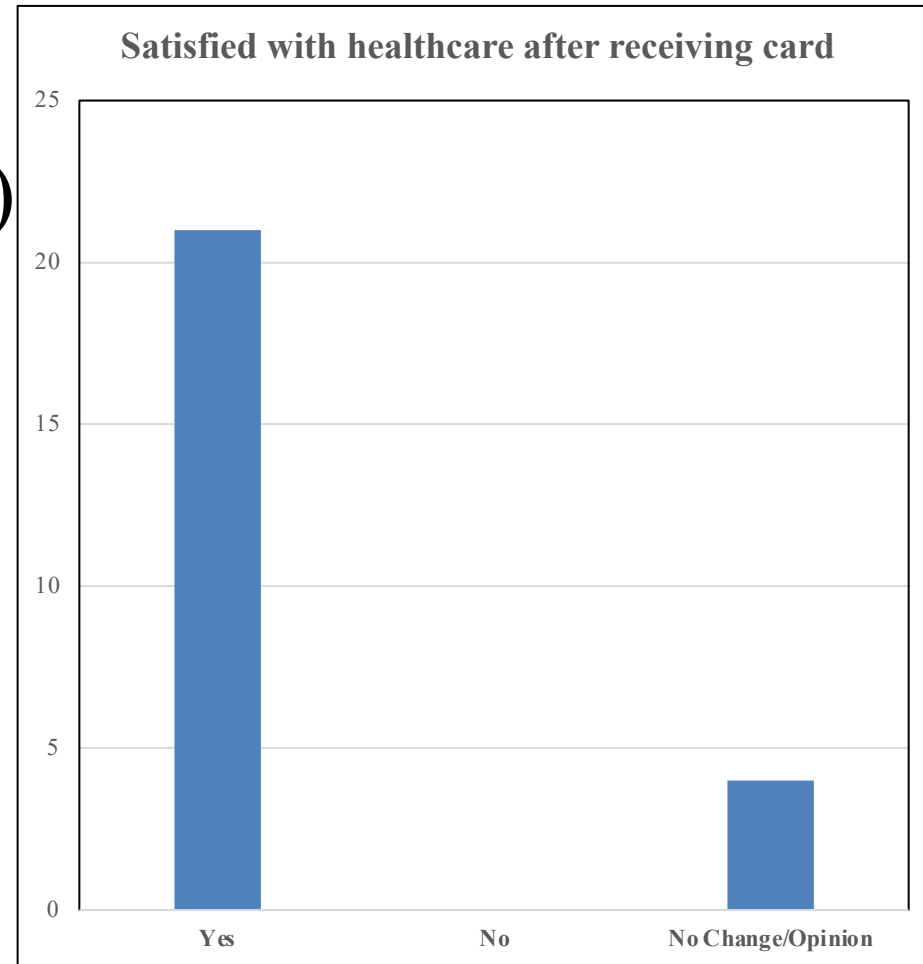
Results: Number of Patients Finding Cards Useful with Overall Care

- Perceived cards useful (n = 25)
- ***100% perceived the cards useful with their overall care***

**Card useful with overall healthcare**
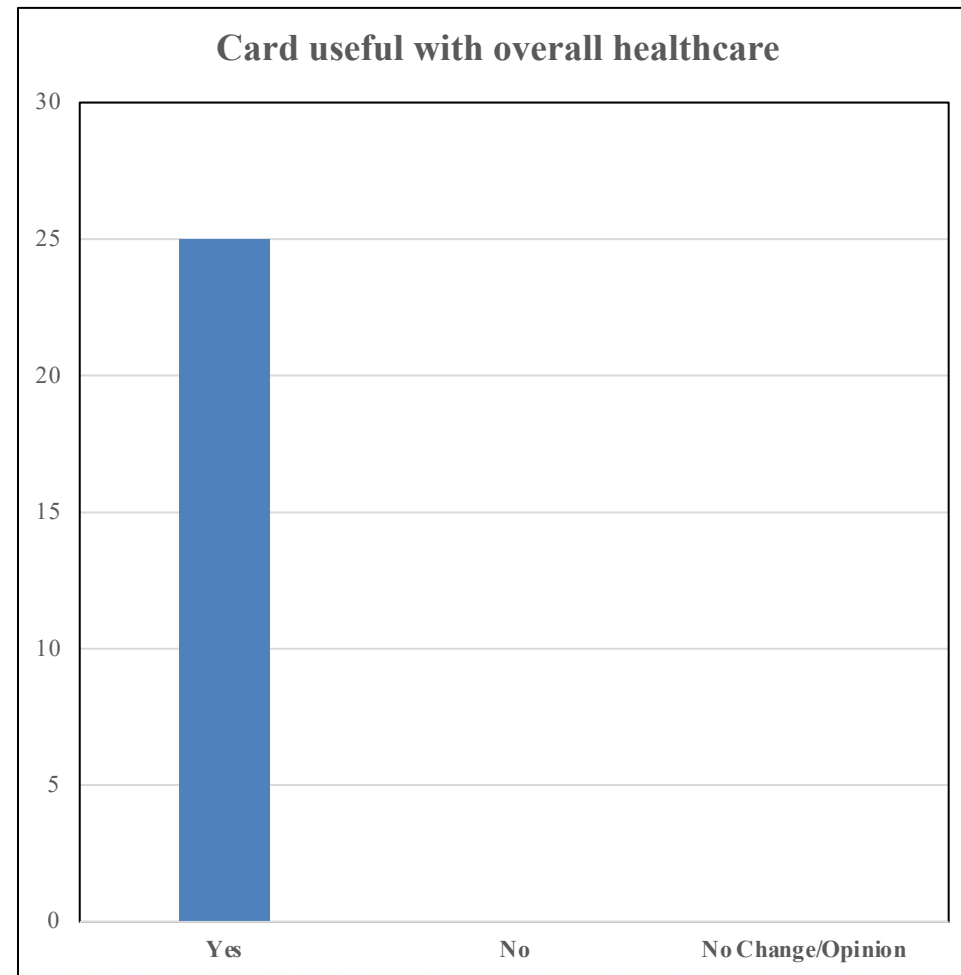
Results: Number of Patients that Recommend Use of Cards to Others

- Would recommend (n = 24)
- Would not (n = 1)
- ***96% recommend these cards to others***

Would recommend use of cards to others
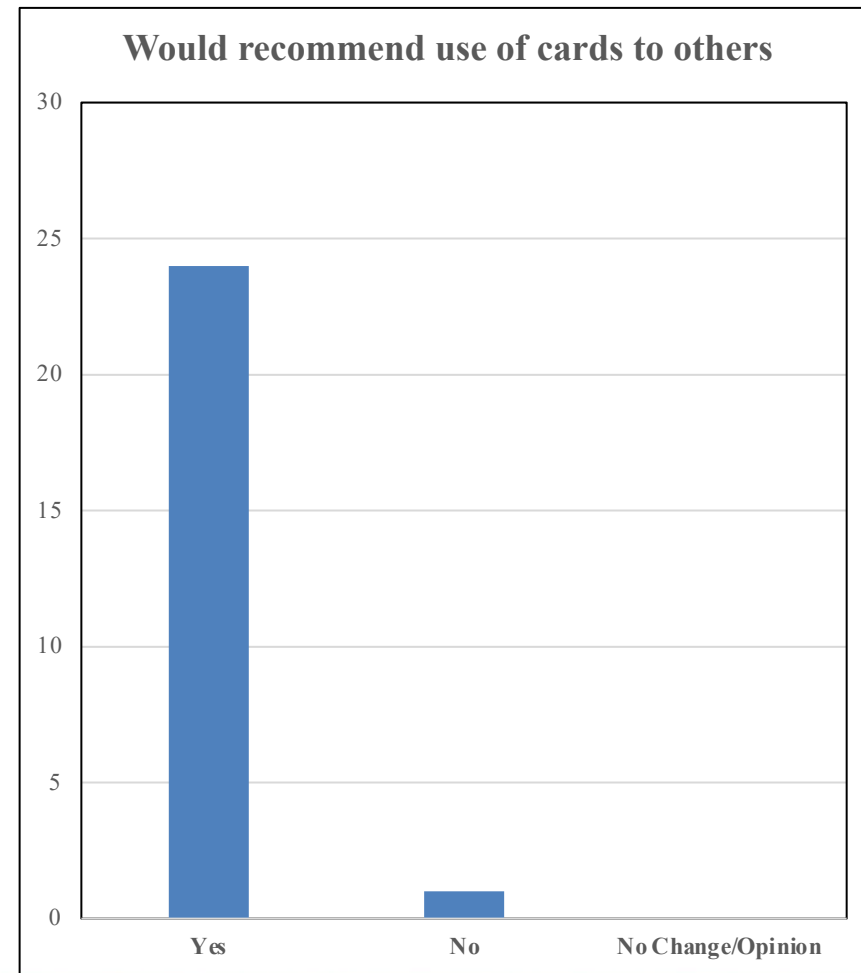
Results: Post ED visits & EHR Inconsistencies/Reported Medical Errors

- **Total number of patients (n = 2) enrolled in the MAT program seen in the ED since this project's implementation (January – March 2023).**

- **Total number of reported medical errors (n = 0) or inconsistencies reported on the EHR during this QI project's implementation (January – March 2023).**
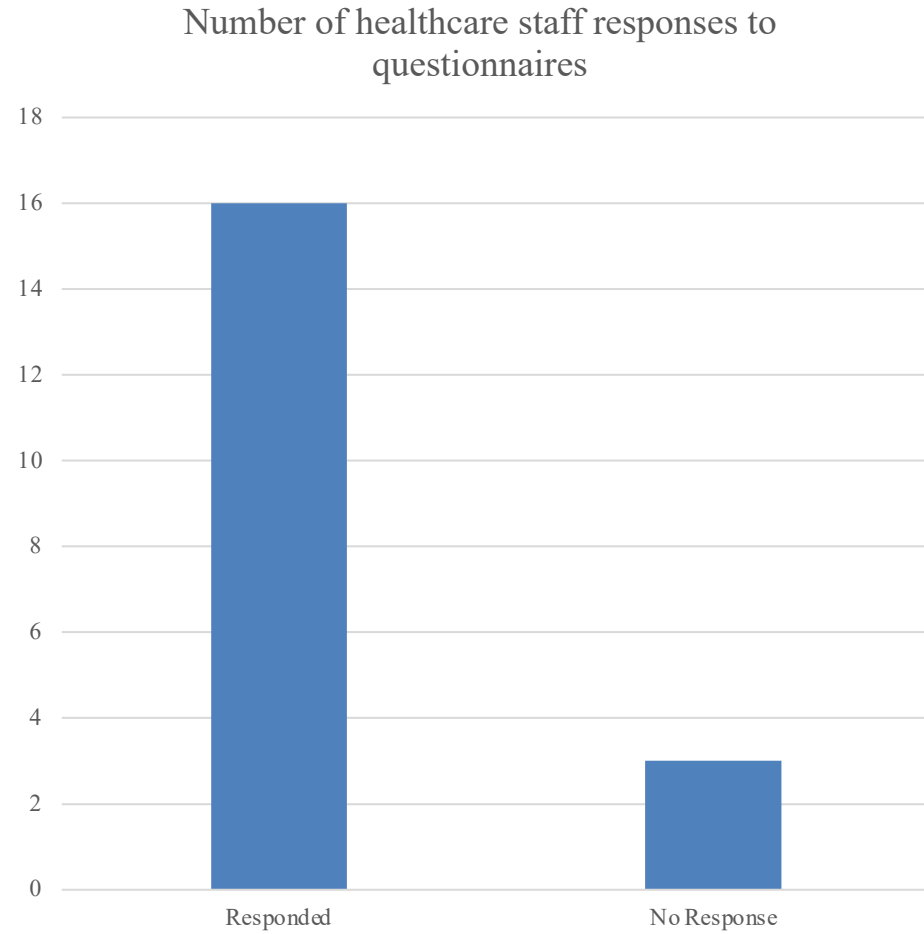
Number of Medical Errors Reported

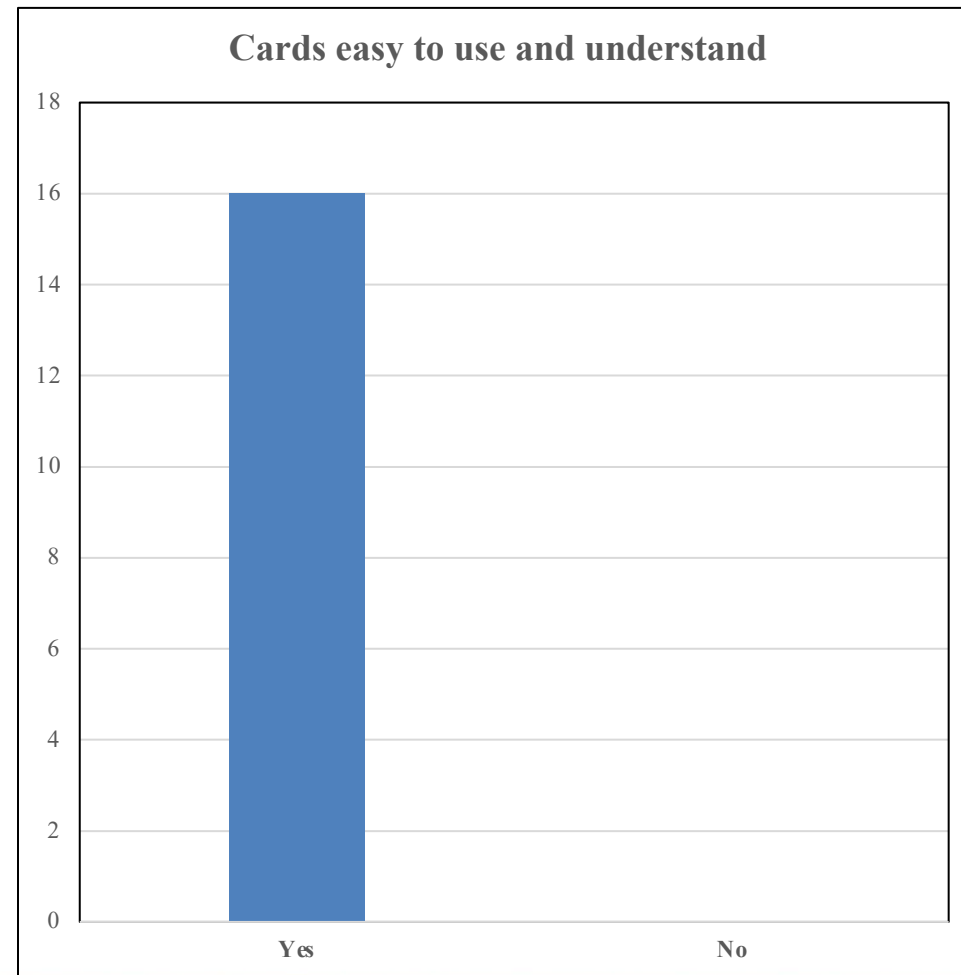October 2021 - October 2022   January - March 2023
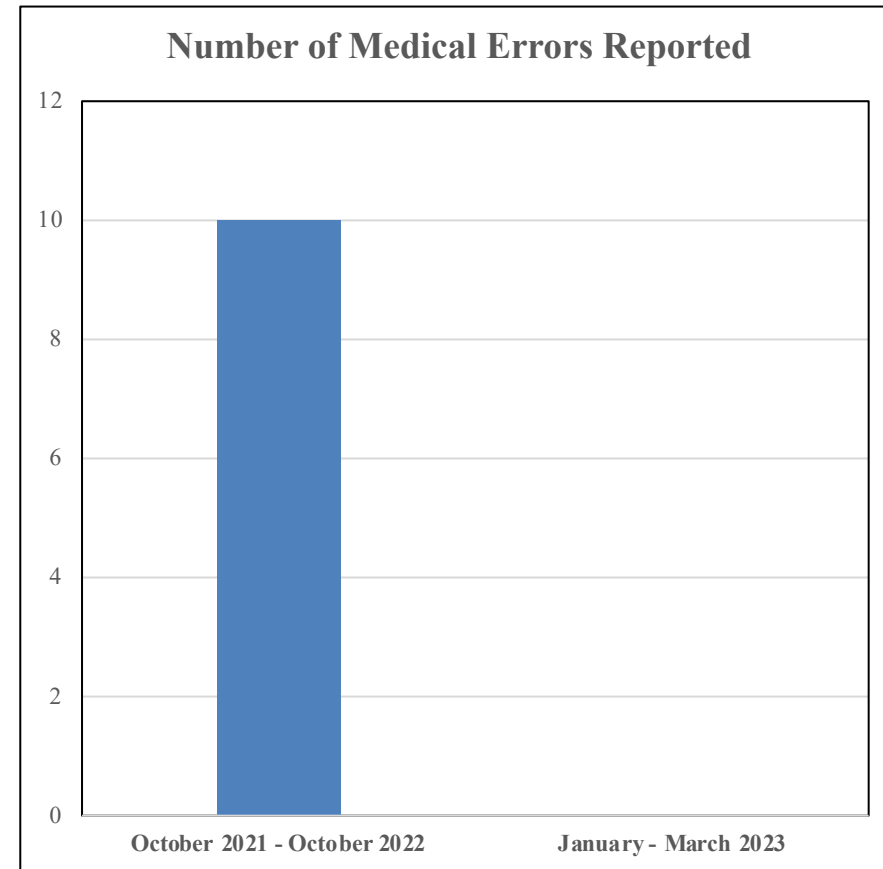
Healthcare Staff Results

Results: Number of Healthcare Staff Responses to questionnaires

- Responses (n = 16)

- No response (n = 3)

Number of healthcare staff responses to questionnaires

Results: Number of Healthcare Staff Finding the Cards Easy to Use and Understand

- Found the cards easy to use (n = 16)

- *100% found the cards easy to use and understand*

Cards easy to use and understand

A bar chart showing the value 16 for "Yes" and 0 for "No", with the y-axis ranging from 0 to 18.

GRAND VALLEY STATE UNIVERSITY KIRKHOF COLLEGE OF NURSING

Results: Number of Healthcare Staff Satisfied with the Amount of Information on the Cards

- Satisfied with amount of information (n = 16)

- *100% satisfied with the amount of information on the cards*


Satisfied with amount of information on the cards
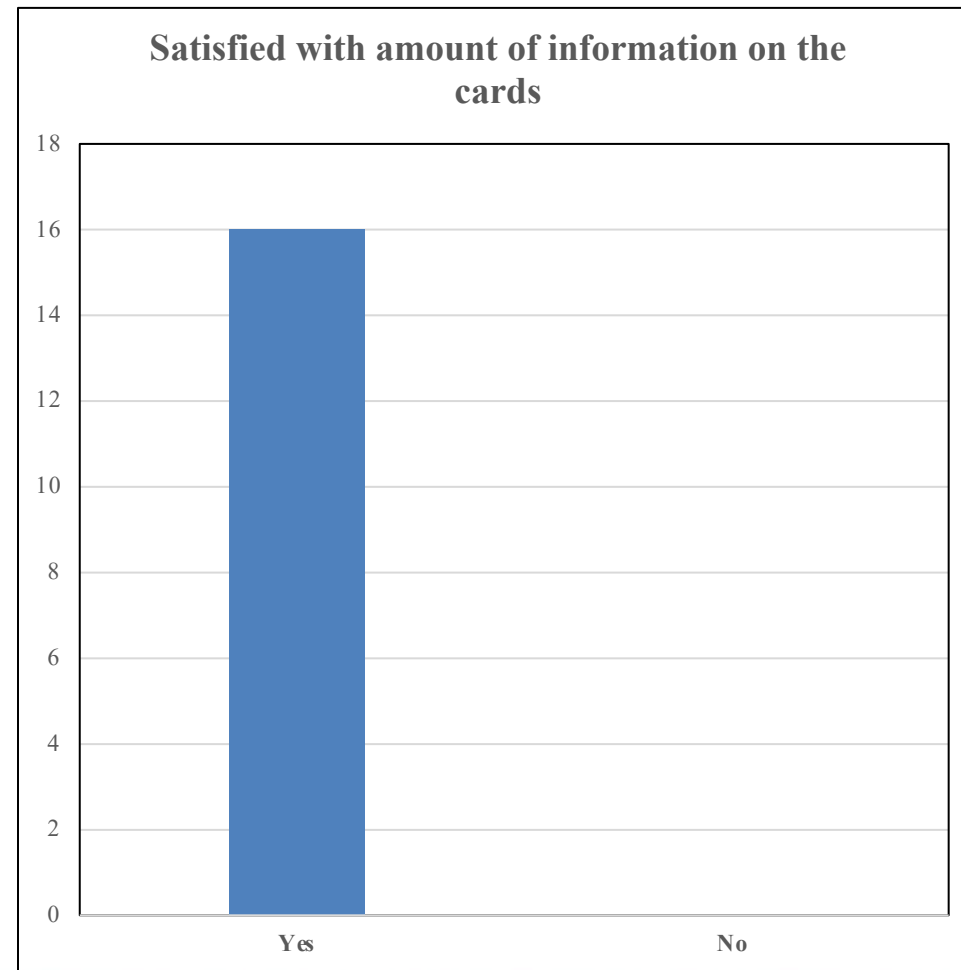
Results: Number of Healthcare Staff Encountering Patients with Cards

- Number of encounters (n = 0)
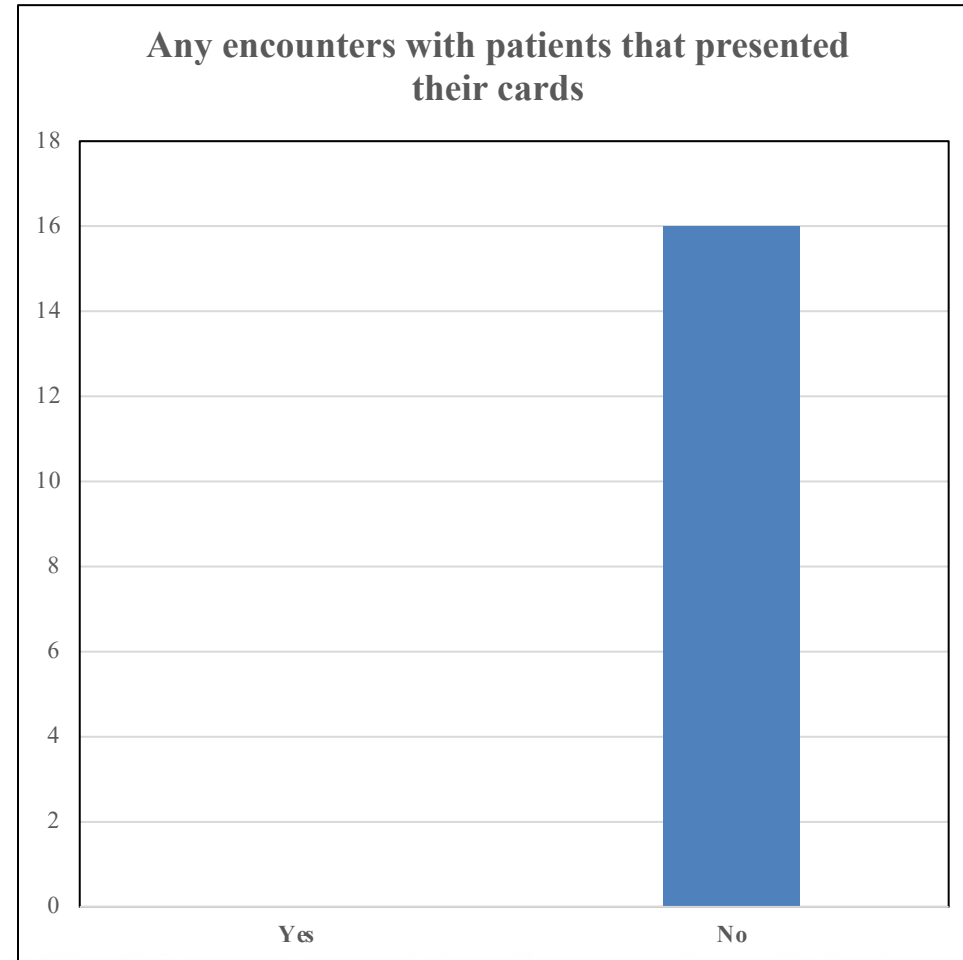
**Any encounters with patients that presented their cards**

Results: Number of Healthcare Staff Finding the Cards Useful with Documentation and/or Medical Decision making

- Useful (n = 14)

- Not useful (n = 2)

- ***87% perceived the cards useful with medical decision making***
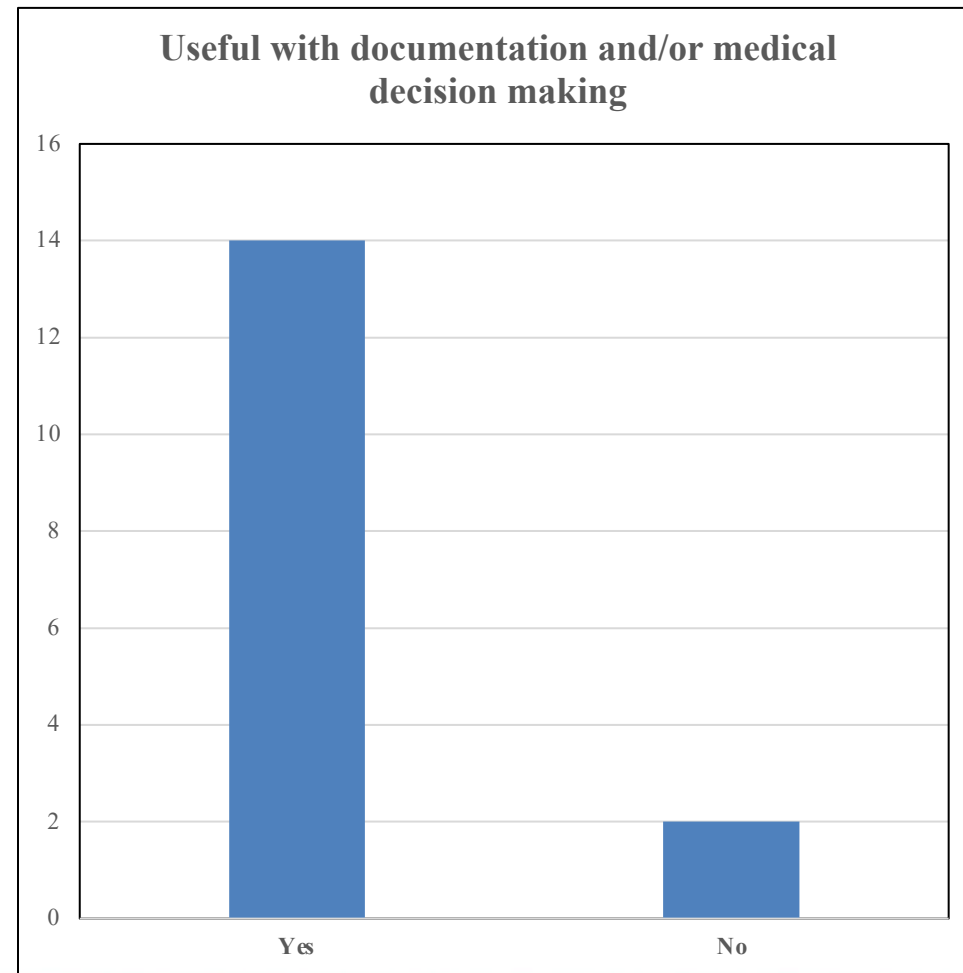
**Useful with documentation and/or medical decision making**

Results: Number of Healthcare Staff Finding the Cards Useful with Preventing Adverse Events/Medical Errors

- Considered the cards useful (n = 15)

- Did not find the cards useful (n = 1)

- *93% perceived the cards useful with preventing medical errors*

Useful in preventing adverse events/medical errors
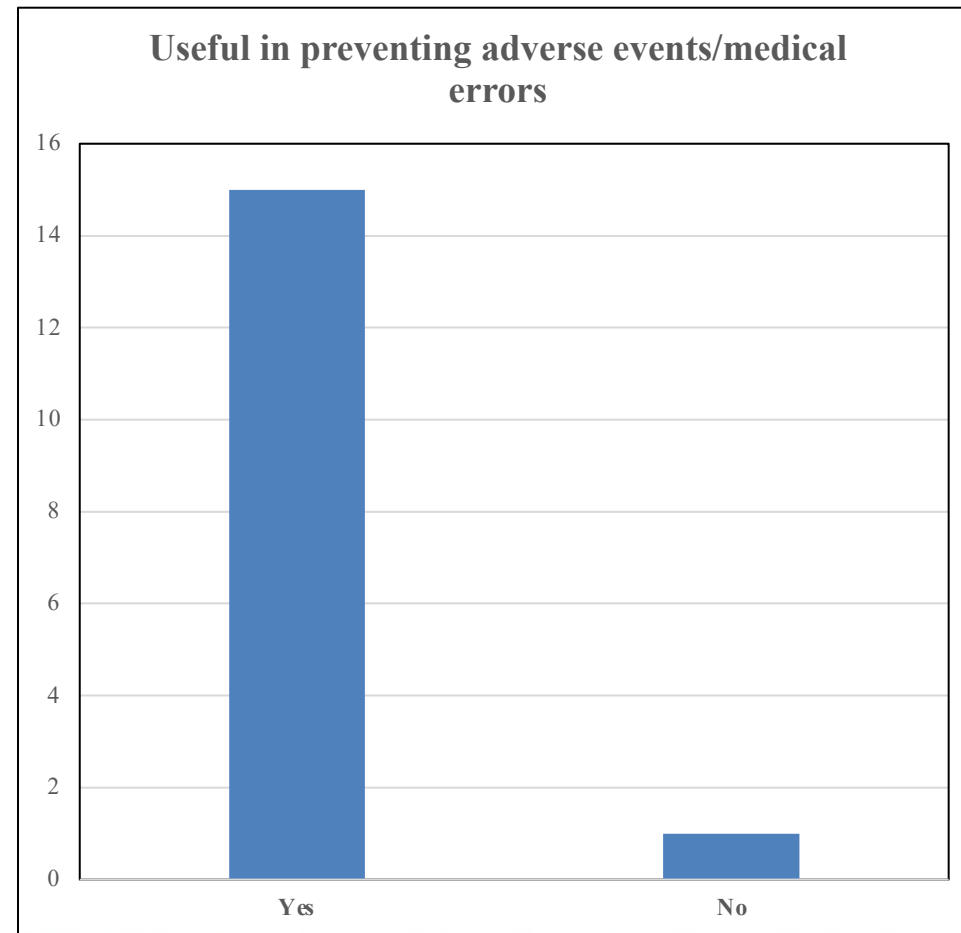
Results: Number of Healthcare Staff Willing to Implement the Cards

- Willing to implement (n = 16)

- *100% willing to implement the cards in their practice*

Willing to fill out, update, and distribute cards to patients
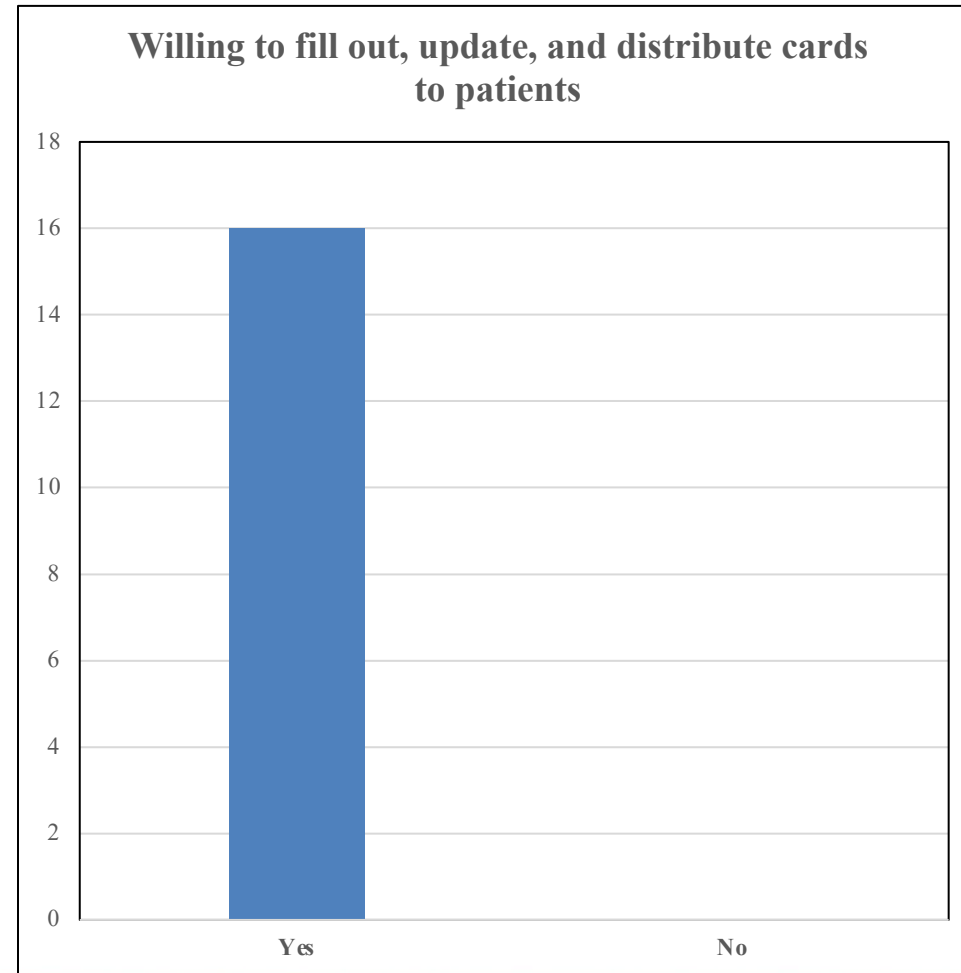
Discussion

- SUD patients and healthcare staff perceived the File of Life cards favorably, useful, and willing to implement.

- No medical errors were reported during this QI project.

- 16% of the patients used the cards when meeting with other healthcare professionals – unknown if they used it in the ED.

- None of the clinical site's healthcare staff surveyed encountered any patients that presented them the card.

- File of Life cards is a potential intervention to improve the availability and accessibility of pertinent patient health information to prevent medical errors and improve medical decision making.

- File of Life cards may also help improve patient's overall satisfaction and confidence with their care.

Limitations

- No statistical analysis could be conducted given no pre qualitative data, short duration of the QI project, & small sample size.

- New IRB requirements for local ED staff: Unable to obtain the perceived usefulness and number of patient encounters with the File of Life cards from the local ED staff.

- Acquiescence bias may have been a factor.

- Short duration of the QI project limited adequate time for these patients to use their cards.

GRAND VALLEY
STATE UNIVERSITY
KIRKHOF COLLEGE
OF NURSING

Implications of Practice

- File of Life cards may improve medical decision making and decrease medical errors.

- File of Life cards help improve the availability and accessibility of pertinent patient health information.

- File of Life cards may help improve patients' overall satisfaction and confidence with their care.

- Due to this QI project being supported by stakeholders, additional data can be collected by the QI team. Longer duration of distributing cards and observation is needed.

Sustainability

- MAT nurses willing to continue the File of Life cards.

- Continued organizational leadership support.

- Continued staff education.

- Healthcare staff witnessing and understanding the perceived benefits.

- Develop procedure and standardize the practice.

Dissemination

- Presentation of results to the organizations leadership and staff.

- Potential sharing of this QI project to the FQHCs annual conference.

- Submission of manuscript to Scholarship/Journal.

DNP Essentials Reflection

Essential II	Essential VI	Essential VII
Organizational and Systems Leadership for Quality Improvement and Systems Thinking	*Interprofessional Collaboration for Improving Patient and Population Health Outcomes*	*Clinical Prevention and Population Health for Improving the Nation's Health*
• Organizational Assessment & SWOT Analysis • Development of QI project to improve patient and organizational outcomes	• Communication & collaboration with clinical site's interprofessional leadership and healthcare staff • Assumed leadership for QI project • Communication & collaboration with local ED staff	• Identified medical errors as a major healthcare concern for SUD patients • Prevent medical errors for SUD patients • Improve access to accurate and current patient health information

Conclusion

- **Medical errors continue to be a major healthcare concern.**

- **Individuals with SUDs have a *higher risk* for experiencing medical errors.**

- **Limited access to accurate and current patient health information is a major cause of medical errors.**

- ***File of Life card has the potential to:***
  - **Improve healthcare professionals' medical decision making**
  - **Prevent/reduce medical errors/adverse events**
  - **Prevent delays in emergency treatment**
  - **Improve patients' overall satisfaction with their care**

- ***Longer duration of distributing patient health information cards and observation is needed to confirm these findings.***

References

Agarwal, M., & Agarwal, S. (2022). Tragedy of errors – An analysis of human factor in medical errors. *Journal of Clinical & Diagnostic Research*,) *14*(7), 1-3. doi: 10.7860/JCDR/2020/44554.13841

Beeber, L. S. (2019). Mental health issues and substance use in the United States: Pulling the power levers. *Journal of the American Psychiatric Nurses Association*, *25*(1), 19-26. doi: 10.1177/1078390318811572

Burke, W.W. & Litwin, G.H. (1992). A causal model of organizational performance and change. *Journal of Management, 18*(3), 523-545. doi: 10.1177/014920639201800306

Carver, N., Gupta, V., & Hipskind, J. E. (2022). Medical error. *StatPearls [Internet]*. https://www.ncbi.nlm.nih.gov/books/NBK430763/

Centers for Disease Control & Prevention. (2022). U.S. overdose deaths in 2021 increased half as much as in 2020 – But are still up by 15%. https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2022/202205.htm

Dash, I., & Pickering, G. T. (2017). Improving post-operative communication between primary and secondary care: The wound closure information card. *Primary Health Care Research & Development*, *18*, 92-96. doi: 10.1017/S1463423616000050

Eslami, A. A., Norozi, E., Hajihosseini, M., Ramazani, A. A., & Miri, M. R. (2018). Social cognitive theory as a theoretical framework to predict sustained abstinence 6 months after substance use treatment. *Journal of Substance Use*, *23*(3), 300-306. doi: 10.1080/14659891.2017.1394382

File of Life. (2022). File of life. https://www.thefileoflife.org

Friesen, M. A., Brady, J. M., Milligan, R., & Christensen, P. (2017). Findings from a pilot study: Bringing evidence-based practice to the bedside. *Worldviews on Evidence-Based Nursing*, *14*(1), 22-34. doi: 10.1111/wvn.12195

Karaca, Z., & Moore, B. J. (2020). Costs of emergency visits for mental and substance use disorders in the United States, 2017. Agency for Healthcare Research and Quality. https://www.hcup-us.ahrq.gov/reports/statbriefs/sb257-ED-Costs-Mental-Substance-Use-Disorders-2017.jsp

GRAND VALLEY
STATE UNIVERSITY
KIRKHOF COLLEGE
OF NURSING

References

Khoo, E. M., Sararaks, S., Lee, W. K., Liew S. M., Cheong, A. T., Samad, A. A., Maskon, K., & Hamid, M. A. (2015). Reducing medical errors in primary care using a pragmatic complex intervention. *Asia Pacific Journal of Public Health*, *27*(6), 670-677. doi: 10.1177/1010539514564007

Hailemariam, M., Bustos, T., Montgomery, B., Barajas, R., Evans, L. B., & Drahota, A. (2019). Evidence-based intervention sustainability strategies: A systematic review. *Implementation Science*, *14*(57). doi: 10.1186/s13012-019-0910-6

Garavito, D. M. N., & Bjork, J. M. (2022). Impulsivity and reflective thinking in veterans seeking care for substance use disorder. *Substance Use & Misuse, 57*(10), 1563-1571. doi: 10.1080/10826084.2022.2096237

Garnick, D. W., Horgan, C. M., Acevedo, A., Lee, M. T., Panas, L., Ritter, G. A., & Campbell, K. (2019). Rural clients' continuity into follow-up substance use disorder treatment: Impacts of travel time, incentives, and alerts. *The Journal of Rural Health*, *36*(2), 196-207. doi: 10.1111/jrh.12375

Leamy, K., Thompon, J., & Mitra, B. (2019). Awareness of diagnosis and follow up care after discharge from the emergency department. *Australasian Emergency Care*, *22*, 221-226. doi: 10.1016/j.auec.2019.08.004

McBride, A., Burey, L., Megahed, M., Feldman, C., & Deaton, C. (2014). The role of patient-held alert cards in promoting continuity of care for heart failure patients. *European Journal of Cardiovascular Nursing*, *13*(1), 71-77. doi: 10.1177/1474515113478531

Obrien, P., Henke, R. M., Schaefer, M. B., Lin, J., & Creedon, T. B. (2021). Adverse events among adult Medicaid enrollees with opioid use disorder and co-occuring substance use disorders. *Drug and Alcohol Dependence*, 221. doi: 10.106/j.drugalcdep.2021.108555

Oh, A. L., Tan, A. G. H. K., & Chieng, I, Y. Y. (2022). Detection of medication errors through medication history assessment during admission at general medical wards. *Journal of Pharmacy Practice*, *35*(3), 407-412. doi: 10.1177/0897190020987127

GRAND VALLEY
STATE UNIVERSITY
KIRKHOF COLLEGE
OF NURSING

References

Powell, B. J., Waltz, T. J., Chinman, M. J., Damschroder, L, J., Smith, J. L. Matthieu, M. M., Proctor, E. K., & Kirchner, J. A. (2015). A refined compilation of implementation strategies results from the expert recommendations for implementing change (ERIC) project. *Implementation Science*, *10*(21), 1-14. doi: 10.1186/s13012-015-0209-1

Rangeley, J. L., Zeller, T. A., Beachler, T., Litwin, A. H., Clark, A., & Stem, J. (2021). The impact of the disease model of substance use disorder on evidence-based practice adoption and stigmatizing attitudes: A comparative analysis. *Pain Management Nursing*, *22*(5), 616-622. *doi: 10.106/j.pmn.2021.03.004*

Reis, P. G. T. A., Nakakogue, C., Nakakogue, T., Nasr, A., Tomasich, F. D. S., & Collaco, I. A. (2013). Guidelines for discharge: Do standardized cards help in patient understanding? *Rev Col Bras Cir*, *40*(4), 335-341. doi: 10.1590/s0100-69912013000400014

Sandhu, P., Singh, S., Soualhi, A., & Tanwar, H. (2021). Improving antimicrobial stewardship in an acute medical unit (AMU) during patient discharge following introduction of an antimicrobial information card. *American Journal of Infection Control*, *49*, 355-360. doi: 10.1016/j.ajic.2020.08.014

Saini, J., Johnson, B., & Qato, D. M. (2022). Self-reported treatment need and barriers to care for adults with opioid use disorder: The US national survey on drug use and health, 2015 to 2019. *American Journal of Public Health*, *112*(2), 284-295. doi: 10.2105/AJPH.2021.306577

Suen, L. W., Makam, A. N., Snyder, H. R., Repplinger, D., Kushel, M. G., Marlene, M., & Nguyen, O. K. (2021). National prevalence of alcohol and other substance use disorders among emergency department visits and hospitalizations: NHAMCS 2014-2018. *Journal of General Internal Medicine*, *37*, 2420-2428. doi: 10.1007/s11606-021-07069-w

Venkatesh, A. K., Janke, A. T., Kinsman, J., Rothenberg, C., Goyal, P., Malicki, C., D'Onofrio, G., Taylor, A., & Hawk, K. (2022). Emergency department utilization for substance use disorders and mental health conditions during COVID-19. *Plos ONE*, *17*(1), 1-12. doi: 10.1371/journal.pone.0262136

GRAND VALLEY STATE UNIVERSITY KIRKHOF COLLEGE OF NURSING

Questions???