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Naloxone Education to Improve Distribution in Primary Care: A Quality Improvement Project

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Naloxone Education to Improve Distribution in Primary Care: A Quality Improvement Project

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A DNP project submitted in partial fulfillment of the requirements for

the degree of Doctor of Nursing Practice

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This is to certify that the DNP Project Final Report by

Joanna Boback, BSN, RN

has been approved by the DNP Project Team on

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for the Doctor of Nursing Practice degree

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This project could not have come to fruition without the support of the Federally Qualified Health Center in Connecticut with the stakeholders and staff who gave me the opportunity to develop and implement this project within their organization.

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Abstract

Significance and Background: Opioid overdose is a major public health problem in the United States. The Centers for Disease Control and Prevention (CDC) developed guidelines for prescribing opioids which have not been widely integrated into practice. These guidelines specify co-prescribing naloxone with opioids as a form of harm reduction. A policy to reflect these recommendations was needed to guide prescribing at a Federally Qualified Health Center (FQHC) in Connecticut to increase low naloxone prescribing rates. Evidence supported the use of provider education to increase prescribing rates.

Purpose: Deliver education to providers across the health system on best practices related to prescribing naloxone and to implement a naloxone prescribing policy to reflect these practices. Compare naloxone prescribing rates pre and post provider education.

Methods: Plan-Do-Study-Act. *Plan:* A naloxone prescribing policy was developed at the FQHC. Educational presentation was developed. *Do:* An educational session was conducted followed by one-on-one educational sessions. Voiceover presentation and educational materials were disseminated to providers with an additional brief presentation at a provider meeting. *Study:* Data was gathered on prescribing patterns of naloxone and opioids, as well as co-prescribing rates. *Act:* Present data to organizational stakeholders.

Outcome: Over the twenty-two-week implementation period, there were a total of 1,125 opioid prescriptions written reflecting a 16% decrease, 260 naloxone prescriptions written indicating a 356% increase, and a total of 55 patients were co-prescribed an opioid with naloxone, representing an increase of 1,275%, almost 14-fold from baseline data. Providers across multiple disciplines, internal medicine, behavioral health, and obstetrics and gynecology

prescribed the naloxone prescriptions, with 41% (n=107) of the prescriptions written by providers who received one-on-one education.

Discussion: The implementation of a naloxone prescribing policy disseminated through group and individual educational sessions increased naloxone and co-prescriptions of naloxone with an opioid, while decreasing opioid prescriptions. Educational sessions were geared at stigma reduction as well as identification of overdose risks and ways to normalize naloxone, promoting a therapeutic patient-provider relationship.

Keywords: naloxone, provider education, co-prescribing, harm reduction, opioid, overdose.

Problem Identification, Development of Clinical Question, and Evidence Review

Background and Significance of Problem

In the United States, opioid overdose has been identified as a major public health problem. In 2019, there were nearly 71,000 deaths from drug overdose, and 70% of those deaths involved an opioid. Opioids include prescription medications used to treat pain, as well as illicit drugs such as heroin (Centers for Disease Control and Prevention [CDC], 2021). Overdose can occur among individuals who use opioids for chronic pain, individuals who unintentionally misuse their prescription opioids or take them with other medications, such as benzodiazepines, as well as in individuals who use illicit drugs (Substance Abuse and Mental Health Services Administration [SAMHSA], 2018). The recent introduction of illicit fentanyl, which is between 50 to 100 times more potent than morphine, has posed a risk to individuals with opioid use disorder (OUD) due to its increased and widely variable potency. Opioid naïve individuals who may use other illicit drugs laced with fentanyl, such as marijuana or cocaine, are also at risk for overdose (CDC, 2021).

Several factors place individuals at increased risk for opioid overdose, including age 65 years or older, those with renal or hepatic insufficiency, substance use disorder, mental health conditions, those with a prior history of overdose, and those who have been abstinent following substance use disorder treatment and detoxification (Dowell et al., 2016; SAMHSA, 2018). The Centers for Disease Control and Prevention developed guidelines for prescribing opioids for chronic pain in an effort to improve communication between provider and patients regarding the risks and benefits of opioid therapy for chronic pain, improve the effectiveness and safety of opioids used for pain, and reduce the risks of opioid therapy (Dowell et al., 2016). These guidelines serve as best practice regarding prescribing opioid therapy. Specific recommendations

for harm reduction include co-prescribing naloxone with opioids for chronic pain (Dowell et al., 2016). Naloxone is an opioid antagonist that binds to opioid receptors and blocks the effects of opioids thereby reversing opioid overdoses (SAMHSA, 2022). Co-prescription is especially important when factors which increase overdose risk are present, such as opioid dosages greater than or equal to 50 MME/day, concurrent benzodiazepine use, history of substance use disorder, or history of prior overdose (Dowell et al., 2016). Based on these guidelines, there are several states which have made this practice mandatory, and while Connecticut is not currently one of them, co-prescription can be implemented at the organizational level through education and a change in policy (Stein et al., 2021).

Description of Local Problem

Prior to the initiation of this project, a Federally Qualified Health Center (FQHC) in Southwestern Connecticut did not have a policy in place to support prescription of naloxone to patients on opioids or who have other previously discussed risk factors. The FQHC serves the Greater Bridgeport area with 19 satellite and full-service locations. There were 1,576 opioid prescriptions written at the FQHC between October 1, 2018 and September 30, 2019 with only 32 naloxone prescriptions written in 2019 within the entire health center. In Connecticut in 2019, there were 1,200 drug overdose deaths, 94% of which were related to opioids (Connecticut State Department of Public Health, n.d.).

Organizational Priority

This project had the support of the Chief Medical Officer at the FQHC. The proposed idea was discussed and was deemed to align with current organizational priorities and current Alternatives to Opioids for Pain (ALTOP) grant affiliations in conjunction with Sacred Heart University, Davis and Henley College of Nursing and the FQHC.

Focused Search Question

In primary care providers (P), does naloxone education (I) compared to no education (C) affect naloxone prescribing patterns (O)?

Evidence Search

External Evidence

A search of the following databases was conducted: CINAHL, Medline and PubMed. The keywords searched were, Narcan, naloxone, education, training, in-service, professional development, academic detailing, provider education, prescribers, physicians, nurse practitioners, doctors, and prescription. Limits/filters for all database searches included, English language and published between 2016-2022. Inclusion criteria for article selection was adult population, naloxone education to providers, and naloxone prescription. Search terms and results of individual database searches are included in Appendix A.

Internal Evidence

A report generated by Quality Assurance from the electronic health record between April 1, 2021 to March 31, 2022 showed that only 57 naloxone prescriptions were written throughout the FQHC. During the same time period, there were 1,339 opioid prescriptions written at the FQHC. This does not, however, consider those individuals at risk for overdose due to reasons other than opioid therapy for chronic pain.

Evidence Appraisal Summary

Seven studies were selected for evidence inclusion after appraisal with the Rapid Critical Appraisal Tools (Melnyk & Fineout-Overholt, 2019). This evidence includes one level I: systematic review, one level II: randomized control trial, two level III: nonrandomized control trials, one level IV: cohort study, and two level VI: one program evaluation and one quality

improvement project. All seven articles showed an increase in naloxone prescriptions following the intervention of provider education, providing supportive evidence in the use of this intervention. Of these articles, two studies (level I and level III) showed a decrease in opioid related emergency room visits and one study resulted in a decrease in the opioid dose prescribed to patients (level III). Three studies showed an increase in prescribed confidence related to opioid prescribing (level I, level III, and level IV) and one study showed an increase in self-reported naloxone prescribing rates (level III). One study (level IV) measured an increase in prescriber knowledge related to opioid prescribing, while another (level III) showed no change, although those participants displayed a high baseline knowledge base in the preintervention survey. The evidence summary table and outcome synthesis table are attached as Appendix B, Table B1, B2, and B3.

Project Plan

Project Goals

1. Identify best practices related to reducing the risk of death from opioid overdose in primary care.
2. Develop a naloxone prescribing policy aimed at opioid co-prescription and at-risk population identification guided by current guidelines and evidence.
3. Implement the naloxone prescribing policy at the Federally Qualified Health Center and measure changes in naloxone prescribing patterns.

Context

The project setting included all Internal Medicine departments as well as Mental Health departments across all of the FQHC locations in Bridgeport, Connecticut. The participants included the providers within those departments as well as the adult patients receiving services.

Project Team Members and Roles

The Chief Medical Officer at the FQHC reviewed and approved of the proposed project, the naloxone policy, and all educational materials related to the project, serving as a practice expert. The practice mentor helped with the implementation of the project onsite. The Project Coordinator of the ALTOP Grant at the FQHC supported this project and assisted with coordinating project members' roles. The Quality Assurance team at the FQHC reviewed the project plan to ensure it met the quality improvement standards of the organization. Susan DeNisco DNP, APRN, FNP-BC, FAANP, is a Professor of the Family Nurse Practitioner/Doctor of Nursing Practice at Sacred Heart University, an Internal Medicine provider at the FQHC, and DNP project faculty advisor.

Key Stakeholders and Buy-in

The key stakeholders at the FQHC include the Chief Medical Officer, the Quality Assurance team, as well as the Internal Medicine and Behavioral Health providers and patients. The project leader created awareness and interest among many of the stakeholders by highlighting advantages or anticipated impact and discussing compatibility of the project (Cullen et al., 2018). Key evidence from the literature review was distributed to stakeholders during the project proposal. Additionally, a clear presentation of the proposed changes and the roles of the stakeholders was discussed. The project leader described the overarching purpose of the project, project goals, and the methodology supported by evidence. The implementation of a clear naloxone policy with a supplemental presentation and provider and patient handouts was done in an effort to reduce the risk of opioid overdose deaths in the population served.

Framework

The Institute for Healthcare Improvement's (IHI) Model for Improvement was used as a guide to implement this change through the use of the Plan-Do-Study-Act (PDSA) cycle (Institute for Healthcare Improvement [IHI], n.d.). The project aim, which was to increase the naloxone distribution to at-risk patients through provider education, identified what was trying to be accomplished. To know if a change was an improvement, the number of patients who were prescribed naloxone were compared pre and post-intervention and analyzed for improvement.

Plan Phase

The first PDSA cycle was planned to include identifying the stakeholders and people involved in the process, as well as identifying the scope and scale of the project. The project leader was tasked with the formulation of a naloxone policy which was to be presented for approval prior to project initiation. Additional project presentation materials and patient geared handouts would also be submitted for approval.

Do Phase

The implementation process was proposed to begin with the project leader presenting to internal medicine and behavioral health providers regarding naloxone prescribing. Electronic health record (EHR) alerts were planned to be worked into the EHR to prompt providers to co-prescribe naloxone with opioid prescriptions and to assist them in identifying high risk patients who could benefit from this medication. Four educational group training courses, lasting about 30 minutes each, were to be provided across both specialties of internal medicine and behavioral health during their respective lunch hour. A patient education handout was also projected to be discussed during this time. This handout was intended for providers to give to their patients along with a naloxone prescription. The patient handout would include signs of an

overdose, how to administer naloxone, immediate after care following naloxone administration, as well as harm reduction.

Study Phase

Data collection for this project required the assistance of the Quality Assurance team in compiling reports for naloxone prescribed during specific time periods. This was planned to be analyzed every two weeks post provider teaching. The project leader would review the data to analyze the outcomes and determine if improvements were being made in naloxone prescribing patterns. In this phase, the team would be able to see if the PDSA cycle went according to plan, if the project prediction was accurate, and any other observations that may have occurred as a result (IHI, n.d.).

Act

The last step in this PDSA cycle involved deciding what to do next, as the first PDSA informs the plan for the second PDSA (IHI, n.d.). Here, the project leader would revise the policy, provider education, or any other processes that have been deemed to hinder the progress of the project.

Possible Barriers to Implementation

Barriers to implementation were thought to include limited provider time, stigma associated with substance use disorder, resistance to change, and legal liability concerns associated with prescribing naloxone. Plans to address barriers included incorporating naloxone sets into the medication prescribing module within the EHR for easy prescribing, addressing stigma during the provider presentation, educating on the importance of naloxone, explaining the need to change prescribing patterns, as well as explaining the use of naloxone as harm reduction versus encouraging opioid misuse.

Sustainment

Implementation strategies must be fostered and continually reassessed based on the data gathered from initial implementation in order to maintain the practice change. The team initially responsible for the implementation of the change may be tasked with promoting continued use throughout the FQHC locations. Continuing to monitor specific quality indicators related to the project and maintaining skills through training and education with the ongoing support of organization leaders and stakeholders is vital for sustainability (Cullen et al., 2018; Hailemariam et al., 2019). Creating a naloxone prescribing policy ensures that all new employees receive the associated training and education. Additionally, incorporating the change into a policy provides the FQHC the opportunity to update the policy based on the most recent research during routine policy updates.

Dissemination

The purpose of dissemination is to raise awareness, educate, and engage internal and external stakeholders (Agency for Healthcare Research and Quality [AHRQ], 2014). Internal dissemination was planned to be in the form of updates during ALTOP team meetings, company emails, and newsletters as a way to provide encouragement and recognition to staff involved in the evidence-based practice change. External dissemination informs the community, other health care organizations and other professionals who may be interested in achieving similar results. This is done after findings are analyzed to ensure data and conclusions are sound. External dissemination was planned to be achieved through social media posts and community meetings related to the opioid epidemic. Formally, the results of this project can be disseminated externally at conference presentations or through manuscript submission for peer review and publication (AHRQ, 2014).

Estimated Timeline

The estimated timeline for project completion (Appendix C) reflects the project plan, anticipated completion of various aspects of the project, as well as major tasks.

Review for Ethical Considerations

This project has been presented to the ALTOP team, with approval gained from the team as well as the Chief Medical Officer of the FQHC. This project meets the criteria for a quality improvement project based on the DNP quality improvement checklist (Appendix D). Additionally, Institutional Review Board exemption was granted on May 11, 2022, following exemption request submission to Sacred Heart University (Appendix E).

Project Implementation, Evaluation, Return on Investment

Project Implementation

An eleven-week implementation phase began on October 3, 2022 through December 18, 2022. This phase was initiated with the development of a naloxone co-prescribing policy (Appendix F) which was approved by the CMO and presented during a virtual educational in-service for all providers at the FQHC. This one-hour virtual in-service was recorded and sent to those who attended, as well as to those who expressed interest in attending but were not present, along with a post-attendance survey. In-person, one-to-one education was provided on two occasions following the in-service. These were conducted by the project leader at three locations with the FQHC where nine providers were met with individually for 5 to 20 minutes, and educational material was left for several providers who were unavailable to meet with the project leader. This educational material was also emailed with a voiceover educational presentation to all providers. The purpose of the individual sessions was to establish rapport with providers across multiple locations, introduce the naloxone co-prescribing policy, and provide education

regarding at risk patients, and allow for open discussion and questions to be answered. Lastly, the project leader attended a monthly provider virtual meeting where a condensed, five-minute educational session was provided to all in attendance. Due to a low response rate of the initial survey, an email was sent to all providers after the implementation period with a teaching recap, educational materials, as well as the voiceover presentation in an effort to reinforce teaching and as an attempt to collect additional qualitative data. During the implementation process, some barriers were encountered which resulted in deviations from the original project plan.

Barriers to Implementation

New Electronic Health Record

The organization acquired a new electronic health record in August 2022 which resulted in ongoing staff training and meetings. This period of transition overlapped with the project implementation. During this time, organizational priorities were in line with the EHR transition, so outside data requests were put on hold as quality staff learned and became accustomed to the system. This resulted in a delay in obtaining data on prescribing patterns until after the completion of the implementation phase. Data during the implementation phase could not be monitored in an ongoing manner as originally planned. This led to the inability to track data and prescribing rates in real time, assess the effectiveness of the educational sessions, and complete multiple PDSA cycles.

Electronic health alerts were originally planned to notify providers of the need to co-prescribe naloxone when prescribing an opioid. However, these alerts could not be worked into the new EHR system prior to the implementation phase due to competing organizational priorities and time constraints. This alert would have provided an additional point of care reminder for busy providers, allowing them the opportunity to determine if naloxone prescribing

is warranted at that specific time. Additionally, the project leader's clinical rotations at the FQHC had ended prior to the implementation of the project, so access to the new EHR was not established. This resulted in the project leader relying on the practice mentor to clarify which features were present in the EHR related to prescribing functions, morphine milligram equivalent (MME) calculator, overdose assessments and risk scoring, and prescription monitoring and reporting system access and integration.

Lack of Unit Champions

The project implementation occurred across the entire health system due to the importance of co-prescribing and the ability to connect with all providers virtually. This presented a geographical challenge, as it was not possible for the project leader to follow up in person individually with all providers across several locations. Additionally, it was not feasible to assign a unit champion across multiple sites in each department due to a period of EHR transition, varying staffing patterns and responsibilities, as well as time involved in training. The practice mentor did serve as a unit champion of one busy internal medicine unit, however his daily roles and responsibilities were extensive with higher priorities during this time.

Post-Attendance Survey

The post attendance survey was sent to all staff in attendance during the live presentation. It was also sent to those who expressed interest but could not attend, along with a recording of the presentation. It was determined through participant feedback that the survey did not allow for questions to be skipped, nor was there a nonapplicable choice available for selection. The questions were geared towards prescribers, preventing the participation of other, non-prescribing clinical staff. Based on this feedback, the survey was revised to gather participants' professional titles and to include a nonapplicable option to allow for broader participation.

Evaluation

After the initial implementation period of eleven weeks, October 3, 2022 to December 18, 2022, data was provided by the data analyst to reflect the number of naloxone prescriptions written during this period. In order to assess sustainment of the educational intervention, the data collection period was extended by eleven weeks, December 19, 2022 to March 1, 2023. The data obtained during both the initial implementation period and the post implementation period to assess sustainability, included the total number of opioids written during the same time period, the number of naloxone prescriptions prescribed alone and with an opioid, as well as which providers wrote the prescriptions.

Process Measures

The process measures included introducing the naloxone co-prescribing policy and providing educational sessions in order to integrate the policy into practice and assist providers in identifying at risk patients. The educational sessions included valuable information for providers regarding risk factors associated with opioid overdose and best practices, such as checking Prescription Monitoring Program (PMP) and calculating morphine milligram equivalents (MMEs) when prescribing opioids. Stigma associated with substance use and naloxone was addressed, and tips were provided on how to start conversations with patients regarding their overdose risk with the goal of normalizing naloxone. Community resources for uninsured patients were included to aid providers in caring for their uninsured patients in the most cost-effective manner.

A one hour virtual educational session was conducted, followed by individual one-to-one education on two occasions to nine providers across three locations within the FQHC. This was followed by a voiceover presentation and educational materials emailed to all providers and a

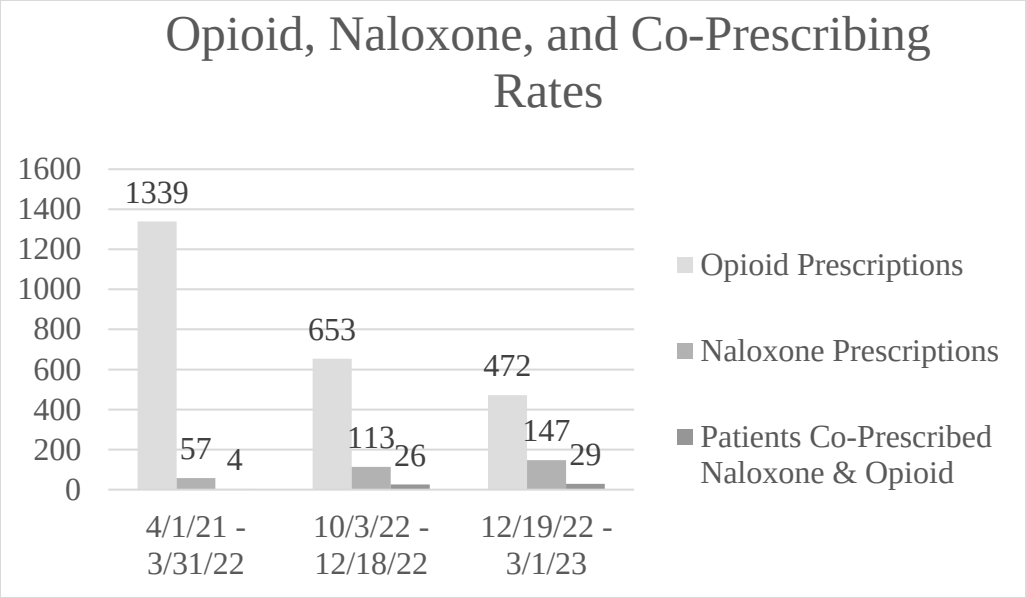
brief virtual presentation at a monthly provider meeting. Lastly, a teaching recap was sent to all providers containing previously discussed material.

Outcome Measures

Outcome measures for this project included the number of naloxone and opioid prescriptions written during the initial project implementation period as well as the following eleven weeks to assess for sustainment. Additionally, post-education survey results were evaluated to assess the effectiveness of the education through quantitative and qualitative findings.

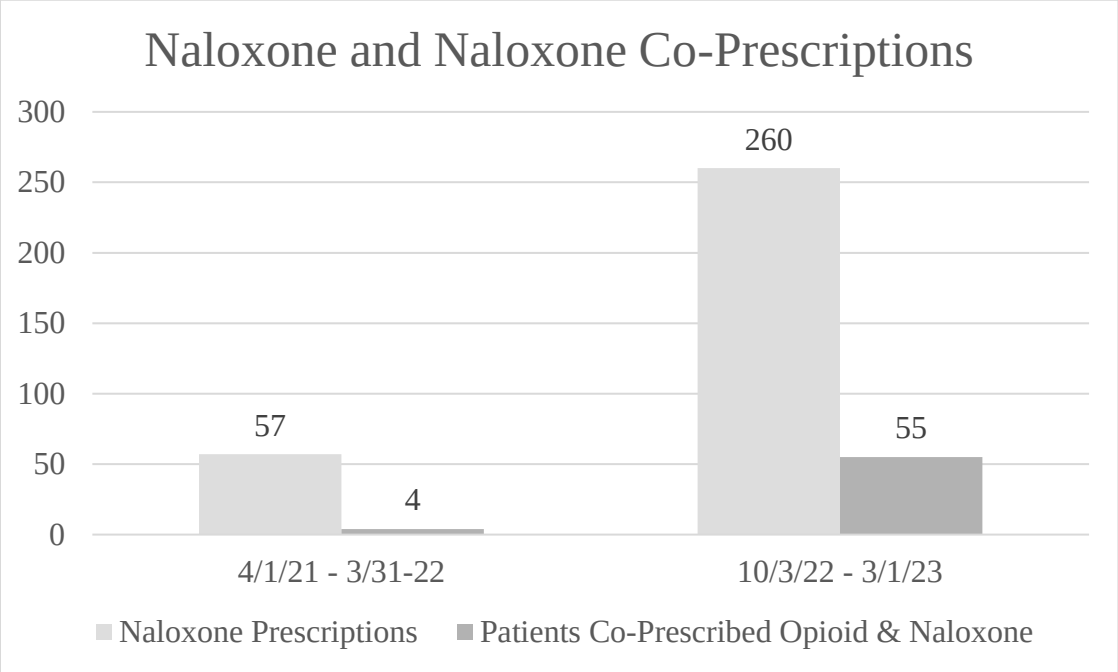
Pre-implementation data was provided by the data analyst to reflect recent prescribing practices at the FQHC over a period of twelve months, from April 1, 2021 to March 31, 2022. During this time, there were 1,339 opioid prescriptions written and 57 naloxone prescriptions written. Additionally, four patients were co-prescribed naloxone with an opioid. After the initial eleven week implementation period, from October 3, 2022 to December 18, 2022, there were 653 opioid prescriptions written, 113 naloxone prescriptions written, and 26 patients were co-prescribed naloxone with an opioid. This reflects a 98% increase in naloxone prescribing rates, a 550% increase in co-prescribing rates and a 51% decrease in opioid prescribing rates during the initial implementation period. During the sustainability period of December 19, 2022 to March 1, 2023, there were 472 opioid prescriptions written, 147 naloxone prescriptions written, and 29 patients were co-prescribed naloxone with an opioid (see Figure 1).

Figure 1. *Opioid, Naloxone, and Co-Prescribing Rates*



Over the twenty-two-week period, there were a total of 1,125 opioid prescriptions written reflecting a 16% decrease, and 260 naloxone prescriptions written which is a 356% increase. A total of 55 patients were co-prescribed an opioid with naloxone, representing an increase of 1,275%, almost 14-fold (see Figure 2).

Figure 2. *Naloxone and Naloxone Co-Prescriptions*



Of the total 260 naloxone prescriptions written over the 22-week period, 175 (68%) were written by internal medicine providers, 79 (31%) were written by behavioral health providers, and 6 (1%) were written by obstetrics and gynecology (see Figure 3). In total, the naloxone prescriptions were written by 33 providers; 17 medical doctors (MD) (52%), one doctor of osteopathic medicine (DO) (3%), 12 nurse practitioners (APRN) (36%), two physician associates (PA) (6%), and one certified nurse midwife (CNM) (3%) (see Figure 4).

Figure 3. *Naloxone Prescriptions by Specialty*

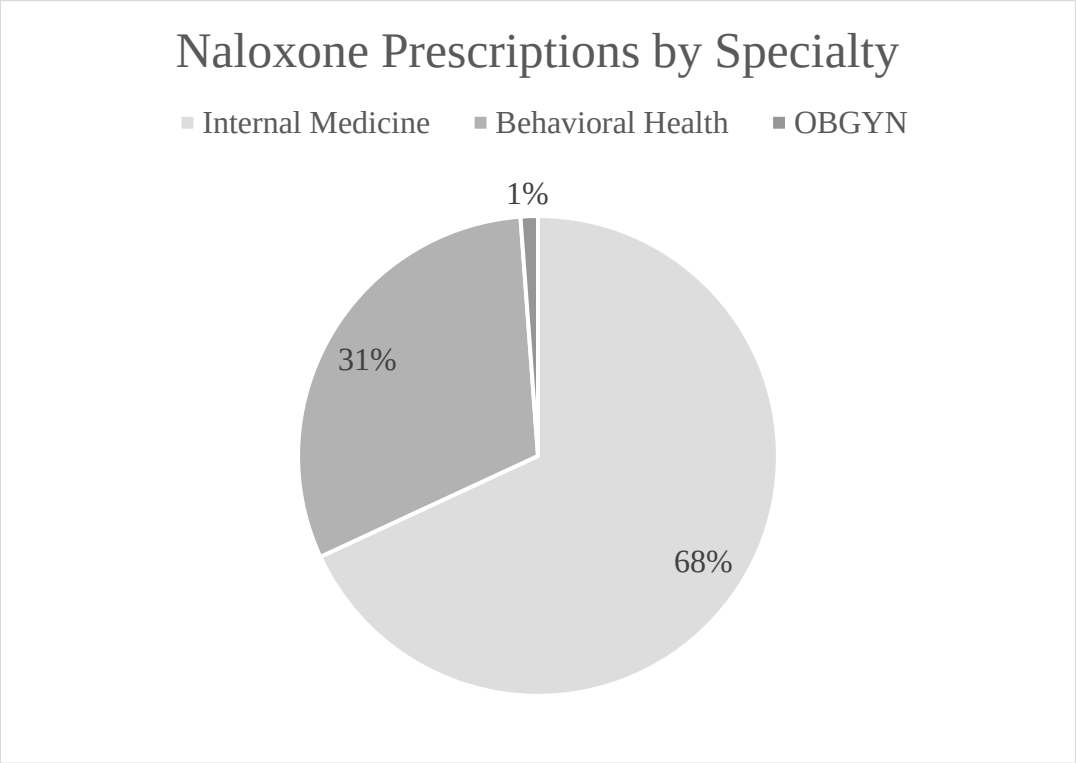
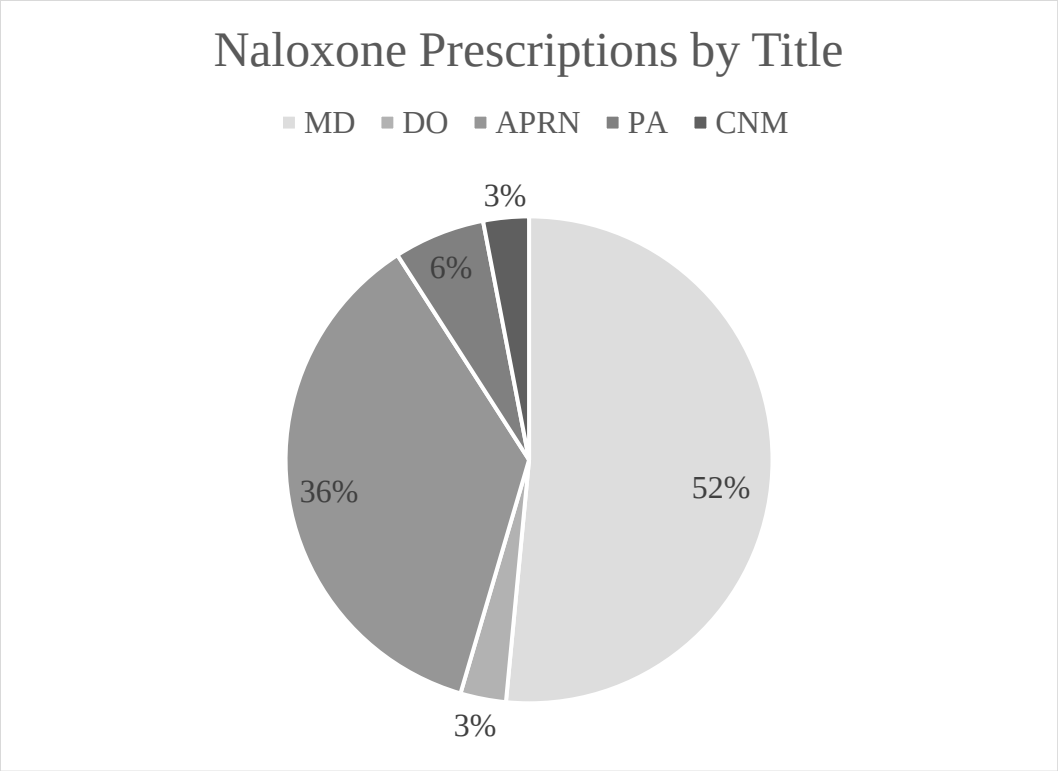


Figure 4. *Naloxone Prescriptions by Title*

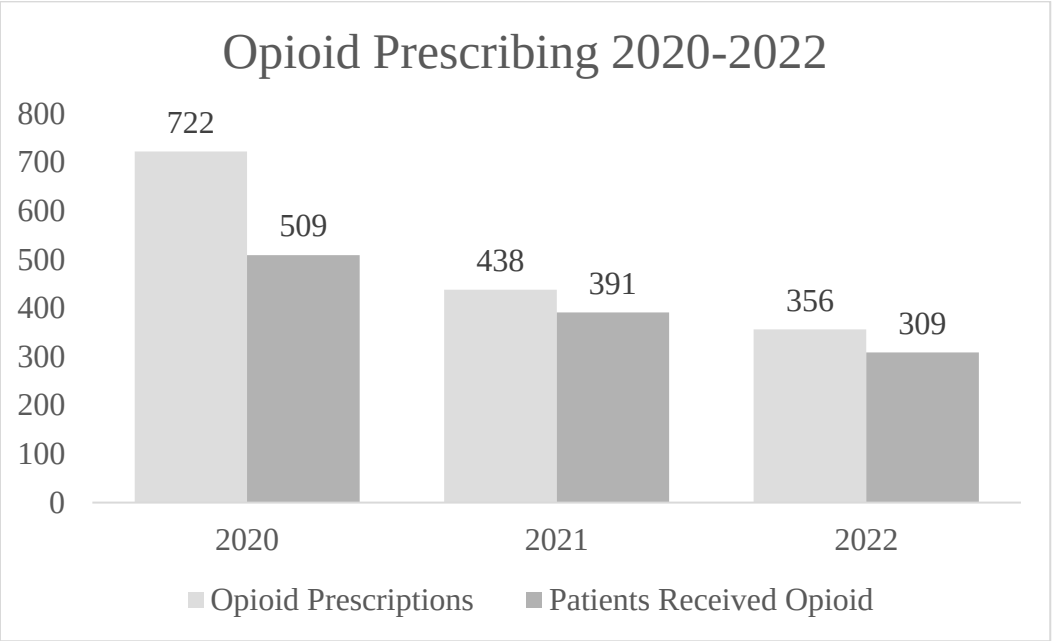


Of the nine providers who received individual one on one education, seven providers prescribed 107 (41%) of the total 260 naloxone prescriptions, ranging from two to 43 prescriptions individually. These seven providers make up 21% of the 33 total providers who prescribed naloxone during the implementation period.

Over the last four years, other students' quality improvement projects have been supported under the ALTOP grant at the FQHC. Although these projects have had different focuses, a common theme was leading initiatives on alternatives to opioids for chronic pain. These projects may have also influenced naloxone prescribing due to this focus on opioids. Data from the ALTOP grant reflects a decrease in opioid prescriptions, not including refills, since 2020. There were 722 prescriptions written for 509 patients in 2020, 438 prescriptions written for 391 patients in 2021, and 356 prescriptions written for 309 patients in 2022 (see Figure 5). This represents a total decrease of 51% in opioid prescriptions from 2020 to 2022 and a decrease of

39% in the number of patients who received an opioid prescription. It should be noted that the visit volume remained relatively stable at about 142,000 in 2020, 138,000 in 2021, and 144,500 in 2022.

Figure 5. *Opioid Prescribing 2020-2022*



Post-Education Survey

Quantitative Findings

The first post-presentation survey was sent electronically following the first educational in-service; this yielded eleven respondents. Participants were sent follow up emails as reminders to participate in the surveys. Due to limited responses, a naloxone education recap was sent to all providers, along with a voiceover power point presentation of the same educational material with another survey link which yielded two additional responses. Of the thirteen total respondents, five were nurse practitioners, four were social workers, one was a licensed professional counselor, one was a licensed marriage and family therapist, and two did not disclose their profession. Of the five providers that responded (n=5), 60% stated they always check the

Prescription Monitoring Program (PMP) prior to prescribing a narcotic, while 20% reported they usually check PMP, and another 20% reported they rarely check PMP. Sixty percent of the providers indicated they had previously prescribed naloxone (See Figure 6 and Figure 7).

Figure 6. *Self-Reported Prescription Monitoring Program Usage*

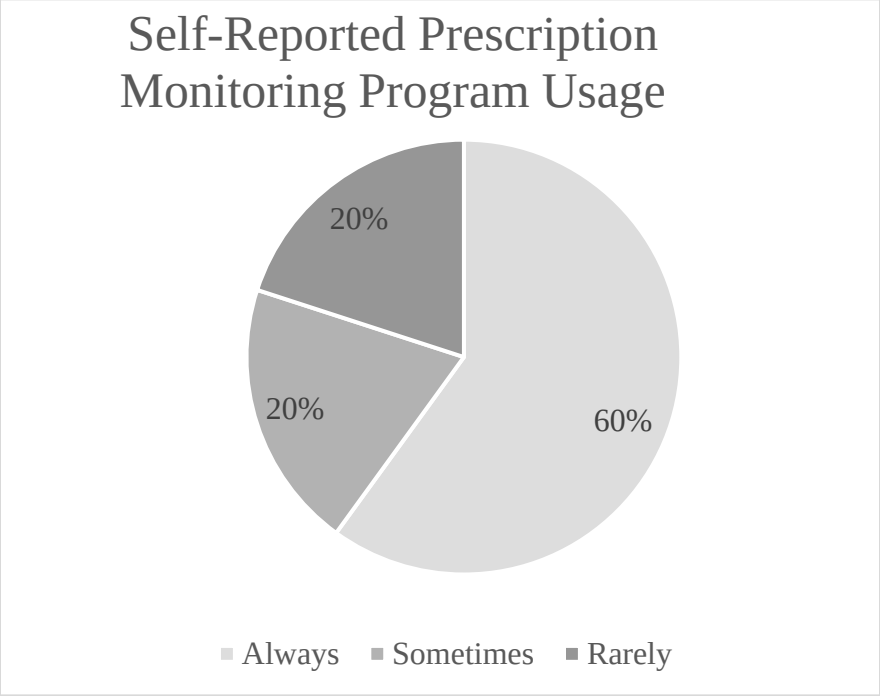
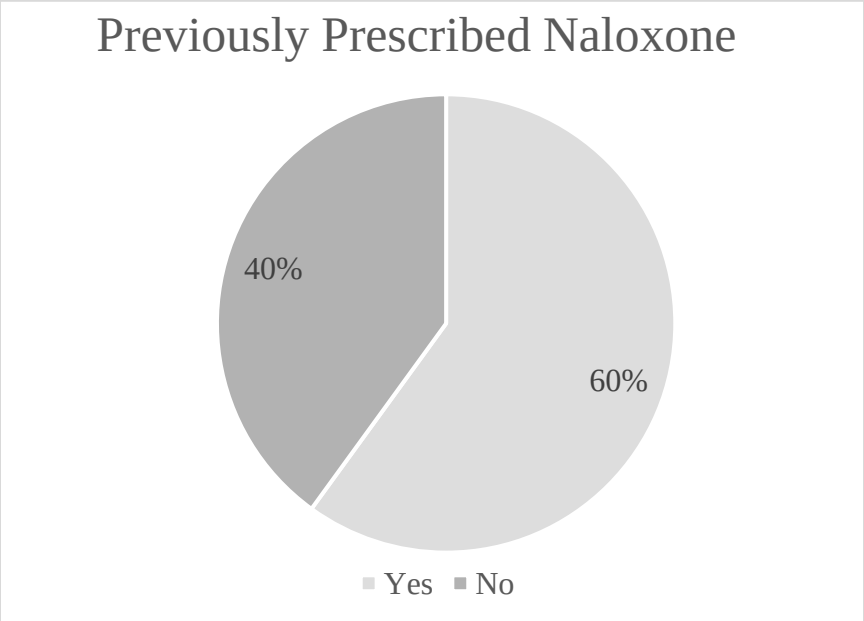


Figure 7. *Previously Prescribed Naloxone*



Qualitative Findings

Of the total thirteen survey respondents, 100% agreed that the information presented was useful to their practice at the health center. Following the presentation, 69% of respondents stated they feel very confident in their ability to identify patients at risk for overdose, while 23% stated they feel somewhat confident, and 8% reported feeling not at all confident. Five stated that one of the most effective aspects of the presentation was the specific data to support the need for practice change, five stated the identification of risk factors for overdose was the most effective portion of the presentation, with one social worker stating, “I was also glad to hear the presenter emphasize the need to educate patients about the potential presence of fentanyl in illicit substances purchased on the streets”. Three of the respondents identified effective parts of the presentation to be the inclusion of community resources and the identification of specific pharmacies with naloxone availability.

Return on Investment

Final project expenses included the time of those involved in the project and the cost of printing the provider and patient educational materials. The project leader spent approximately 20 hours developing educational material and about 5 hours delivering group education, as well as individual sessions with providers. The time spent on this project by the Project Coordinator, Quality Improvement Specialist, and Project Mentor was projected to be 5% of each member’s estimated annual salary. Lastly, the cost associated with printing the provider and patient educational materials was about $115. The final project cost was $12,991.16 as shown in Table 1.

Table 1. *Estimated Project* Costs

Personnel Time		**Estimated cost**
DNP Student as Project Leader	$45/hour x 25 hours Educational Material Development: 20 hours Educational Sessions: 5 hours **Total hours: 25 hours**	**$1,125**
Project Coordinator	5% of average annual salary $65,000	**$3,250**
Project Mentor	5% of average annual salary $88,000	**$4,400**
Quality Improvement Specialist	5% of average annual salary $82,000	**$4,100**
Materials		
HP67 Color Ink Cartridge	$17.89 x 2 cartridges for 100 single sided & 100 double sided prints	**$35.78**
Staples HP Multipurpose white 8.5” x 11” one ream (500 sheets)	$9.69 x 0.4= 200 sheets at $3.88	**$3.88**
Staples color printing double sided on white card stock 8.5” x 11”	$1.53 x 50	**$76.50**
Total Estimated Cost		**$12,991.16**

Return on investment cannot be specifically calculated as this project focused on education with the aim to reduce health risks to patients who use opioids and their families. Increasing education, especially related to the stigma associated with opioid overdose and substance use, will help to foster a more therapeutic patient-provider relationship. In this way, it is hoped that patients can feel more comfortable and participate in their healthcare in a more engaging manner to improve overall health outcomes.

Dissemination

Implications of Project Results to Organization and Community

The implementation of a naloxone prescribing policy to reflect the CDC's opioid prescribing guidelines, coupled with educational sessions for providers, was an effective intervention to increase distribution of naloxone and naloxone co-prescribing rates. Increasing naloxone distribution helps to reduce the risks associated with opioid use. Decreasing the stigma associated with substance use and misuse, as well as normalizing naloxone through education assists to further strengthen the provider-patient therapeutic relationship, promoting individualized treatment tailored specifically to each patient.

Dissemination of Project Results Locally and Regionally

Local and regional dissemination are ways to share key findings of the quality improvement project to help guide and inform practice changes within other aspects of the organization as well as within other health systems. A final power point presentation of this quality improvement project was presented for the FQHC team, the ALTOP grant team, and Sacred Heart University members. Additionally, a poster presentation will be completed for the Davis & Henley College of Nursing community highlighting the aspects of the project late April 2023. In order to reach a broader audience, this project will be submitted for poster presentation consideration at the Connecticut Advanced Practice Registered Nurse Society's (CTAPRNS) annual conference and the Association for Multidisciplinary Education and Research in Substance use and Addiction's (AMERSA) 47th annual conference. Another broad method of dissemination planned for this project is manuscript submission to the Substance Abuse journal (SAj) for publication. The SAj serves as the official publication format for AMERSA, focusing

on research, clinical care, education, the delivery of services, and evaluation (Association for Multidisciplinary Education and Research in Substance use and Addiction [AMERSA], n.d.).

Key Lessons Learned

One key lesson learned during the course of this project is the importance of allowing sufficient time for each phase to account for unplanned delays and competing priorities. Being an outside project leader resulted in an increased reliance on internal staff who were already fulfilling demanding job duties during a time of internal organizational change with the adoption of a new EHR. Factoring in additional time to help offset this from the start of the project may have eased the burden on staff and prevented delays in data collection.

A second key lesson learned is brief, individualized educational sessions have a positive effect when combined with group education. Those who received individual education prescribed 41% of the total naloxone prescriptions, raising the possibility that their one-on-one education helped to reinforce the naloxone prescribing policy and served as a reminder of specific teaching points, such as overdose risks. Additionally, mixed confidence in identifying those at risk for opioid overdose in the post-education survey supports continued education. The individualized teaching intervention is something that can be incorporated into the sustainment of this project, as well as applied to and implemented in future educational opportunities for providers to impact change and improve practice.

Lastly, although naloxone prescribing and co-prescriptions rates increased with an overall decrease in opioid prescriptions, it is unclear how many doses of naloxone were used and how many lives were saved as a result of an opioid overdose reversal. Limitations in follow-up and a lack of a reliable reporting system prevent the accurate collection of this information. Despite

this, having naloxone on hand during an opioid overdose increases one's chances of survival by creating an opportunity for intervention.

Sustainability Plan

It was decided to extend the initial implementation phase by eleven weeks in order to assess for sustainability of the project. The creation of a voice over power point presentation containing all of the educational points allows for easy reproducibility, as it can be disseminated to large groups over email or presented live in smaller groups followed by opportunity for questions to be answered in real time. Additionally, the creation of the naloxone co-prescribing policy will aid in the sustainment of change. As part of this policy, providers should be ensuring that patients' naloxone prescriptions are unexpired and renewing these prescriptions as needed. Sustaining a formal policy allows for uniformity of treatment as well as periodic updates to reflect the most current evidence-based guidelines and practices. The staff in-service and educational materials can be maintained in new staff trainings and yearly during staff wide in-services. The in-service and associated educational materials can also be extended to the pain specialists where patients of the FQHC are referred in order to promote safe prescribing to patients in additional healthcare settings.

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Appendix A

Description of Evidence Search

A search of the following databases was conducted: CINAHL, Medline and PubMed. The keywords searched were, narcan, naloxone, education, training, in-service, professional development, academic detailing, provider education, prescribers, physicians, nurse practitioners, doctors, and prescription. Limits/filters for all database searches included, English language and published between 2016-2022. Inclusion criteria for article selection was adult population, naloxone education to providers, and naloxone prescription. Tables 1 through 3 display the search terms and results of the search. The following PICO question used to guide this search: In primary care providers (P), does naloxone education (I) compared to no education (C) affect naloxone prescribing patterns (O)?

Table 1. CINAHL Complete Search Terms and Search Results

Search Terms	Number of hits	Number of title & abstracts reviewed	Number of full-text articles reviewed	Number of articles selected for review without duplicates
Narcan or naloxone	2,315			
Narcan or naloxone AND education	393			
Narcan or naloxone AND education AND prescribers or physicians or nurse practitioners or doctors	79	38	12	12
Narcan or naloxone AND training AND prescribers or physicians or nurse practitioners or doctors	43	13	5	0
Narcan or naloxone AND education AND prescription	133	33	12	5
Narcan or naloxone AND provider education	16	6	3	0
Narcan or naloxone AND academic detailing	11	6	6	1
Narcan or naloxone AND professional development	6	1	1	0
Narcan or naloxone AND in-service AND prescription	156	21	7	1
Narcan or naloxone AND in-service AND prescribers or physicians or nurse practitioners or doctors	82	14	5	0

Table 2. Medline Search Terms and Search Results

Search Terms	Number of hits	Number of title & abstracts reviewed	Number of full-text articles reviewed	Number of articles selected for review without duplicates
Narcan or naloxone	3,832			
Narcan or naloxone AND education	532			
Narcan or naloxone AND education AND prescribers or physicians or nurse practitioners or doctors	117	31	15	2
Narcan or naloxone AND training AND prescribers or physicians or nurse practitioners or doctors	69	10	6	0
Narcan or naloxone AND education AND prescription	156	24	16	2
Narcan or naloxone AND provider education	22	5	3	0
Narcan or naloxone AND academic detailing	18	8	7	1
Narcan or naloxone AND professional development	3	1	1	0
Narcan or naloxone AND “in-service” AND prescription	80	15	5	1
Narcan or naloxone AND “in-service” AND prescribers or physicians or nurse practitioners or doctors	73	11	5	0

Table 3. PubMed Search Terms and Search Results

Search Terms	Number of hits	Number of title & abstracts reviewed	Number of full-text articles reviewed	Number of articles selected for review without duplicates
Narcan or naloxone	5,112			
Narcan or naloxone AND education	773			
Narcan or naloxone AND education AND prescribers or physicians or nurse practitioners or doctors	243	46	18	5
Narcan or naloxone AND training AND prescribers or physicians or nurse practitioners or doctors	252	52	24	1
Narcan or naloxone AND “provider education” AND prescription	4	4	3	2
Narcan or naloxone AND academic detailing	27	10	7	0
Narcan or naloxone AND professional development	22	2	1	0
Narcan or naloxone AND “in-service” AND prescription	1	1	0	0
Narcan or naloxone AND “in-service” AND prescribers or physicians or nurse practitioners or doctors	2	2	0	0

Appendix B

Critical Appraisal and Synthesis

Table B1. *Evidence Summary Table*
PICO question: In primary care providers (P), does naloxone education (I) compared to no education (C) affect naloxone prescribing patterns (O)?

Citation	**Conceptual Framework**	**Design/ Method**	**Sample/Setting**	**Major Variables Studied and Their Definitions**	**Outcome Measurement**	**Data Analysis**	**Findings**	**Level of Evidence/ Quality**	**Quality of Evidence: Critical Worth to Practice**
First Author and Year	**Theoretical basis for study**		**Number Characteristics Exclusion criteria Attrition**	**Independent variables IV1 = IV2 = Dependent variables**	**What scales used - reliability info (alphas)**	**What stats used**	**Statistical findings or qualitative findings**	**Level =**	**Strengths Limitations Risk or harm if implemented Feasibility of use in your practice**
Article 1									
(Behar et al., 2018)	N/A	Systematic review was conducted in PubMed EmBase and CINAHL to assess the acceptability or feasibility of prescribing naloxone in primary care. Articles were appraised by two independent reviewers followed by two analysts. A quality assessment	Sample: 17 articles were selected following the review. 10 were pertaining to naloxone prescribing acceptability, 5 were pertaining to feasibility, 2 were pertaining to both acceptability and feasibility. 14 of the 17 articles included perspectives from prescribers.	IV1= naloxone prescribing programs were used to study to feasibility of naloxone prescribing programs. These programs consisted of training providers to prescribe naloxone, explaining indications for naloxone prescribing, explaining how to fill the prescription, and training providers on how to	N/A	Systematic review	The quality of the reviews varied. 6 articles assessed provider willingness to prescribe naloxone, with 4 indicating that the majority of providers had resistance to prescribing, while the 2 most recent articles in the review (2016 & 2017) indicated the majority of providers were willing to prescribe naloxone. 9 articles assessed concerns related to prescribing naloxone, with 7 articles showing concerns were potential barriers to prescribing naloxone. These included provider lack of	Level 1; low quality	Strengths: authors performed a comprehensive search strategy. Duplicates were removed, data related to either acceptability or feasibility of naloxone prescribing was extracted, a quality assessment of articles was conducted. Limitations: although a quality assessment was conducted, authors did not share their methods due to high degree of heterogeneity in the study designs and various study metrics. A validated tool was not used. Additionally, there was some overlap of study authors within the review. No risk or harm if implemented. Implementing a survey to gauge provider acceptability prior to implementing an educational intervention would be feasible in my practice setting and would assist in

		was then performed.	Inclusion: articles related to acceptability or feasibility of prescribing naloxone in the primary care setting, US based, peer-reviewed and full length articles written in English were included. There were no publication date restrictions. Exclusions: articles were excluded if naloxone prescribing occurred outside of the primary care setting.	education patients regarding naloxone. Dependent variables: number of naloxone prescriptions, number of opioid related emergency department visits, and the number of opioid overdose reversals. Acceptability was measured via surveys to measure provider willingness to prescribe naloxone and concerns related to naloxone prescribing. No interventions were implemented in these articles.			knowledge, fear of risk compensation, fear of offending patients, and concerns about time restraints. 2 articles showed that providers sampled did not believe naloxone perpetuated risk behavior and did not believe patients would be offended. 6 articles assessed overall feasibility of naloxone prescribing, with all articles showing an increase in naloxone prescriptions and one also showing a decrease in opioid related emergency room visits following interventions and a decrease in opioid-related adverse events.		tailoring the specific educational interventions.
Article 2									
Behar et al. (2017)	N/A	Randomized Control Trial	143 primary care providers in San Francisco who prescribed opioids to Medi-Cal patients in 2014 were randomized into two groups. 48 were contacted for academic detailing	IV1= academic detailing addressing naloxone prescription for opioid safety. Patient brochure and provider educational booklet were created and used during the academic detailing.	N/A	A difference-in-differences approach was used with a negative binomial regression model to compare changes in naloxone prescribing between	Detailing encounters lasted a mean of 28 minutes (5 min to 60 min). Most frequently discussed topics: how to write naloxone prescription, pharmacy outreach, overdose language, indications for prescribing. Intervention group had greater increase in naloxone prescriptions filled compared to the	II; low quality	Strengths: results show a positive impact on naloxone availability through primary care. Limitations: small sample size, randomization process not described, providers selected based on Medi-Cal claims excluding other payers, and providers may have had varying knowledge of naloxone and prescribing practices at baseline. No risk or harm if implemented.

			intervention addressing naloxone prescriptions. Exclusion: providers were excluded if they were affiliated with San Francisco Department of Public Health safety-net clinics where naloxone co-prescribing was being done. Providers were excluded if no longer in practice or no longer in primary care. 24 providers were reached 9 months post intervention to check on naloxone prescribing. Data was gathered on all 40 providers via Medi-Cal claims.	Dependent variable: the number of naloxone prescriptions filled via the Medi-Cal insurance system.		providers in the two groups.	control group (IRR= 11.0, 95% CI= 1.8-67.8, *p*= 0.010). In providers who received intervention, the number of naloxone prescriptions filled increased from 0 to 10 compared to the control group which had no change.		The use of academic detailing aimed towards primary care providers is feasible in my practice.
Article 3									
Bounthavong et al. (2017)	N/A	Retrospective repeated measures cohort study conducted over two years	Providers in the Veterans Health Administration (VA) who were treating patients in primary care or substance-use disorder clinics during the study period. This	IV=Academic detailing (AD) session. Individualized, in-person education to providers in addition to opioid overdose education and	N/A	Data gathered from VA Corporate Data Warehouse. Student t test with unequal variances for continuous	750 providers received AD (22%) No statistically significant difference between the two groups of providers in terms of age, length of employment, or gender. Providers who had AD had an increased	IV; good quality	Strengths: study focus was on primary care (chronic pain) and substance abuse, making the population more diverse. Closed cohort study highlighted multi-faceted approach of AD and OEND. Limitations: unable to control for selection bias, could not determine if all providers knew of OEND at the VA prior to the study, population limited to pts of the VA.

			was a closed cohort study. N=3,313. Exclusion criteria: providers who wrote acute opioid prescriptions excluded to focus on providers who had more contact with their patients and provided routine care.	naloxone distribution (OEND) specific education: opioid safety, opioid overdose prevention, risk identification, and naloxone. Dependent variable: number of naloxone prescriptions prescribed.		data and X^2 test for discrete data used for comparison of baseline data between providers exposed to AD and those unexposed to AD. Difference-in-differeces estimators show the average differences in the rate of naloxone prescriptions between the two provider groups.	incidence rate of prescribing naloxone by a factor of 3.2 at the 1-yr mark compared to providers who did not receive AD (95% CI 2.0-5.3, *p*= <0.001) Providers who had AD had a 7 times higher incidence rate of naloxone prescriptions than those who did not receive AD (95% CI 3.0-17.9, *p*= <0.001) The AD group had a 7.1% higher average change in naloxone prescriptions when compared to the group that did not receive AD (95% CI 2.0%-12.5%)		No risk or harm if implemented The use of a multifaceted approach combining AD and specific overdose education may be beneficial in my practice setting to increase naloxone prescription rates.
Article 4									
Coffin et al. (2016)	N/A	Nonrandomized intervention study	6 primary care clinics in San Francisco. 1985 patients receiving long-term opioids for longer than 3 months for chronic pain Exclusions: Pts with cancer related pain were excluded	IV1= naloxone prescribing training for prescribers. Education included rationale & indications for prescribing, language to approach pts, training on how to educate pts. Training was initiated 30 days before the start of naloxone co-prescription, additional training was provided with email reminders.	N/A	Charts were reviewed by trained investigators. Chi-square, Fisher exact and Wilcoxon rank-sum tests used for feasibility assessment. Multivariable Poisson regression model to determine effect on ED use. Negative binomial model used to determine	38% of 1985 pts receiving opioids were given naloxone prescriptions. Pts who received naloxone prescriptions had 47% fewer opioid-related ED visits 6 mos after prescription (IRR 0.53 [95% CI 0.34-0.83] *P*= 0.005), 63% fewer after 1 yr (IRR 0.37, CI 0.22-0.64] *P*< 0.001) compared to those who didn't receive naloxone. Pts prescribed naloxone reported a decrease in opioid dose and discontinuation (RRR 1.47, CI 1.17 to 1.86, *p*= 0.001).	III; good quality	Strengths: large study over 6 clinics with n=1985, shows feasibility of co-prescribing naloxone in primary care. Limitations: No control group in study, so unable to establish causality No risk or harm if implemented The co-prescription of naloxone is feasible in my primary care practice setting.

				Dependent variables: patients prescribed naloxone, opioid related ED visits, and prescribed opioid dose		effect on opioid use.			
Article 5									
Devries et al. (2017)	N/A	Program evaluation	Inpatient and outpatient settings part of UC San Diego Health System: academic hospitals, primary care clinics, infusion centers and pharmacies. Inclusion: departments with high volume of pts with long-term or high-dose opioids, substance misuse or abuse, and pts with opioid overdose.	IV1= naloxone prescribing guidelines developed and implemented IV2= provider education and training IV3= electronic health record (EHR) changes: orders and pop-up alerts IV3= emergency department screening IV4= interprofessional collaboration and training with pharmacists Dependent variables: naloxone prescriptions	N/A	Reports generated by EHR to reflect naloxone prescriptions, and EHR naloxone alerts and the provider response Pharmacy reports of naloxone prescriptions and naloxone kits dispensed by pharmacists.	13 trainings sessions provided among 8 departments. 245 naloxone prescriptions written 298 EHR alerts- 13.8 naloxone prescriptions written due to the EHR alert. Naloxone prescriptions increased from 4.5 per month to average of 46 per month during the three months post-implementation of program	Level VI; low quality	Strengths: program was successful in increasing naloxone rx Limitations: multi-faceted program implemented making it difficult to see individual intervention effects. Data evaluation relies completely on EHR reports, no specified use of statistical tests to ensure reliability. Alert fatigue may result in missed opportunities to prescribe naloxone. No risk or harm if implemented. Implementing a multifaceted approach in my practice setting may help to increased naloxone prescriptions in my practice setting.
Article 6									
Funke et al. (2021)	N/A	Quality Improvement Project	Adults in the emergency department, at least 18 yrs old, discharged from the emergency room (ER), diagnosis of opioid overdose	IV1= Staff education to providers, nurses, and clinical support staff in the ED regarding evidence support naloxone prescribing given	Likert scale was used to assess ED provider and nurse perceptions towards patients with opioid use	Autoregressive ITS model was used to represent the proportion of patients with opioid overdose or opioid use	Naloxone prescribing rates increased from 1.5% pre-intervention, to 6.3% after the educational intervention and to 28.7% (95% CI= 5.9-36.4, *p*= 0.008) after the EHR work aids. The effects of the	IV; good quality	Strengths: tying the EHR alerts with naloxone order for easy prescribing. Incorporating the educational lectures during meetings, conferences, didactic seminars, and interactive meetings aided in delivery of information. Educational materials and EHR alerts and prescription order sets are easily available to others using the same system (Epic).

			or opioid use disorder. Patients admitted to the hospital were excluded. 61 providers were surveyed pre-intervention, only 43 completed the survey post-intervention.	over two lectures. IV2= Electronic health record (EHR) best practice alert to remind providers to prescribe naloxone. This was linked to the naloxone order set for easy prescribing. DV= naloxone prescribing rates	disorder and their willingness, confidence, and barriers to naloxone prescribing.	disorder who received a naloxone prescription each month. Durbin-Watson statistic was used for autocorrelation. Descriptive statistics were used to process the survey responses and staff demographics.	educational interventions were not clinically significant (95% CI= -8.3-18.1, *p*= 0.310) after the second educational lecture. This change was sustained after 1 year. Three months after educational interventions, ED providers reported being more confident in ability to prescribe naloxone (*p*= 0.001), and as having a reduction in prescribing barriers (inadequate training [*p*= 0.001], and knowledge gaps on prescribing evidence [*p*= 0.003]).		Limitations: educational lectures were spaced over 1 yr apart. A prescribing feedback RCT study ran during the same time as this project, though ITS analysis found no measurable impact on the naloxone prescribing. Increased awareness of the opioid epidemic may have affected naloxone rates, but this wasn't seen as significant. This was a single site study, limiting the external validity. No risk or harm if implemented. The use of EHR alerts & provider education is a feasible change to implement in my practice.
Article 7									
Taylor et al. (2018)	N/A	Nonrandomized control trial	160 Residents at Beth Israel Deaconess Medical Center (BIDMC) affiliated with Harvard Medical School. Inclusion criteria: internal medicine 1st, 2nd and 3rd year residents on inpatient and outpatient services. Internal medicine faculty on inpatient and outpatient services served as the control group.	IV= Curriculum was created to teach residents about harm reduction in patients with opioid use disorder (OUD). -1 hour lecture -1 hour interactive, group session. Residents were given a pre and post-survey to determine their knowledge and attitudes regarding naloxone Dependent Variables: -naloxone prescription rates	Likert scale was used in the pre and post-surveys of the resident's knowledge and attitudes towards prescribing naloxone.	Fisher's exact tests were used to determine the pre and post intervention naloxone prescribing rates. Interrupted time series analysis was used to show the trend of the prescriptions over the period of the study Generalized estimating equations (GEE) with Poisson distribution	Inpatient resident and faculty prescribing was not statistically significant post-interventions (*p*= 0.54) Proportion of inpatient residents writing 1 or more naloxone prescription increased from 5.3% to 18.2% (*p*= 0.002). Proportion of inpatient faculty writing 1 or more naloxone prescriptions remained the same, from 14.3% to 11.3% (*p*= 0.65). Outpatient resident prescribing increased significantly (95% CI 220-600, *p*= <0.001). The proportion of outpatient residents writing 1 or more naloxone prescription	III; low quality	Strengths: a brief curriculum intervention increased naloxone prescribing Limitations: Study conducted at a single center. Analysis of trends in interrupted time series analysis was limited due to the relative paucity of outcomes. Survey response was low. It is possible that educating residents resulted in an indirect increase in prescriptions in the faculty control group. No risk or harm if implemented. Implementing brief teaching sessions is feasible in the practice setting.

				-residents' knowledge and attitudes -self-reported prescribing		used to show the weekly prescriptions rates. The survey data was analyzed using Chi-square (categorical variables) and t-tests (continuous variables). GEE was used to determine survey data correlation.	increased post-intervention from 0% to 11.9% (p= <0.05), while the proportion of faculty increased from 3.1% to 16.9% (p= 0.009). Resident prescribing increased significantly following the intervention (p= <0.001) compared to faculty prescribing which increased but not significantly (p= 0.25) Survey results showed no change in residents' knowledge (baseline knowledge was found to be high). Survey results showed residents were more likely to feel adequately trained in naloxone prescribing and were more likely to plan to prescribe naloxone post intervention (95% CI, p= <0.001). Self-reported prescribing increased post-intervention from 2.5% to 36.4%.		

N/A= Not Applicable

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Appendix B

Critical Appraisal and Synthesis

Table B2. *Level of Evidence Synthesis Table*

	1	**2**	**3**	**4**	**5**	**6**	**7**
Level I: Systematic review or meta-analysis	X						
Level II: Randomized controlled trial		X					
Level III: Controlled trial without randomization				X			X
Level IV: Case-control or cohort study			X				
Level V: Systematic review of qualitative or descriptive studies							
Level VI: Qualitative or descriptive study, CPG, Lit Review, QI or EBP project					X	X	
Level VII: Expert opinion							

Appendix B

Critical Appraisal and Synthesis

Table B3. *Outcomes Synthesis Table*

	1	2	3	4	5	6	7
Naloxone Prescriptions	↑	↑	↑	↑	↑	↑	↑
Opioid-Related Emergency Room Visits	↓	**NE**	**NE**	↓	**NE**	**NE**	**NE**
Prescribed Opioid Dose	**NE**	**NE**	**NE**	↓	**NE**	**NE**	**NE**
Prescriber Confidence	↑	**NE**	**NE**	**NE**	**NE**	↑	↑
Prescriber Knowledge	**NE**	**NE**	**NE**	**NE**	**NE**	↑	**NC**
Self-Reported Naloxone Prescribing Rates	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	↑

Symbol Key: ↑ = Increased, ↓ = Decreased, **NC** = No Change, **NE** = Not Examined

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emergency department through education and electronic medical record work-aids. *The Joint Commission Journal on Quality and Patient Safety*, *47*(6), 364-375.

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Appendix C

Estimated Project Timeline

Table C1. *Estimated Project Timeline*

April 12, 2022 • DNP project oral presentation	July 2022 • Final draft of policy, presentation, and patient materials • Provider education on naloxone and prescribing policy
May 2022 • Draft of naloxone prescribing policy • Discuss naloxone sets in EHR	August 2022 • Implementation of naloxone prescribing policy
June 2022 • Draft of provider presentation and patient educational materials	October 2022 • Completion of project and final data collection

Appendix D

DNP Quality Improvement Checklist

Differentiating Quality Improvement and Research Activities Tool

Question	Yes	No
1. Is the project designed to bring about immediate improvement in patient care?	X	
2. Is the purpose of the project to bring new knowledge to daily practice?	X	
3. Is the project designed to sustain the improvement?	X	
4. Is the purpose to measure the effect of a process change on delivery of care?	X	
5. Are findings specific to this hospital?	X	
6. Are all patients who participate in the project expected to benefit?	X	
7. Is the intervention at least as safe as routine care?	X	
8. Will all participants receive at least usual care?	X	
9. Do you intend to gather just enough data to learn and complete the cycle?	X	
10. Do you intend to limit the time for data collection in order to accelerate the rate of improvement?	X	
11. Is the project intended to test a novel hypothesis or replicate one?		X
12. Does the project involve withholding any usual care?		X
13. Does the project involve testing interventions/practices that are not usual or standard of care?		X
14. Will any of the 18 identifiers according to the HIPAA Privacy Rule be included?		X

Adapted from Foster, J. (2013). Differentiating quality improvement and research activities. Clinical Nurse Specialist, 27(1), 10–3. https://doi.org/10.1097/NUR.0b013e3182776db5

An answer of yes to all of the items in l-l0 and no to all of the items in 11-I4 indicates that this project meets criteria for a Quality Improvement Project. It also indicates that the project does not qualify as human subjects' research and does not have to go through the Institutional Review Board at Sacred Heart University.

Appendix E

Institutional Review Board Exemption Form

Sacred Heart University

Institutional Review Board Appendix B: Exemption Form

Submit (by email) completed form to:

Funda Alp, Executive Director

Office of Sponsored Programs

Sacred Heart University

alpf1@sacredheart.edu

Tel: 203-396-8241

Proposal Title: Naloxone Education to Improve Distribution in Primary Care: A Quality Improvement Project

Investigator(s): Joanna Boback

Department: Dr. Susan L. Davis, RN, & Richard J. Henley College of Nursing at Sacred Heart

Student Faculty

Address: 5151 Park Avenue, Fairfield, CT 06825

Email Address: bobackj@mail.sacredheart.edu

Telephone Number: 203 501 5579

Faculty advisor (if student): Dr. Susan DeNisco DNP, APRN, FNP-BC, FAANP

Advisor/ chair approval: Yes No

Exempt Category: Indicate the section(s) in 6.1 of the IRB Guide under which this proposal qualifies for exemption: 6.1.4, 6.1.5

How is this justified? This proposal qualifies for exemption because it meets the criteria for a quality improvement project based on the quality improvement checklist attached.

Description of Research Protocol. (Include in lay language the purpose and procedures to be applied to human subjects. Append additional pages if necessary.) The purpose of this quality improvement project is to increase naloxone distribution (prescriptions) to at risk patients who receive health care at a Federally Qualified Health Center (FQHC) in Southwestern Connecticut. The proposed

intervention to be implemented is educating the primary care providers (MDs, APRNs, and PAs) through a PowerPoint presentation. The goal is to increase distribution of naloxone following this educational presentation.

The investigator must provide summary statements addressing the following points of information. Where indicated, include the protocol page number(s) that contains detailed information. Use supplemental pages if necessary.

Purpose of the Study: The purpose of this project is to increase naloxone distribution to patients who are at risk for opioid overdose following an educational in-service to providers at the FQHC.

Characteristic of subject population: Include selection criteria and any age, sex, physical, mental, and health restrictions. The subjects who will receive this education are the MDs, APRNs, and PAs who work at the FQHC. All providers will be given the opportunity to attend and receive the education. Additionally, the patients who are served by the FQHC will benefit, as they will receive the naloxone prescribed by the providers. The more at-risk patients who are provided with naloxone, the more lives can be potentially saved following an opioid overdose.

Methods and procedures applied to human subjects: Yes

Risks to the Subject: Yes No

If subjects will be at risk, assess the probability, severity, potential duration, and reversibility of each risk. Indicate protective measures to be utilized. n/a

Benefits: Yes No

Describe any potential benefits to be gained by the subject as well as benefits that may accrue to society in general. The providers at the FQHC will have gained evidence-based knowledge to improve their practice and will be able to identify patients who are at risk for opioid overdoses.

The patients who receive naloxone prescriptions as a result of the provider education will benefit by being able to reverse opioid overdoses. This can potentially result in less lives lost to opioid overdoses in the community.

Information Purposely Withheld: Yes No

State any information purposely withheld from the subject and justify this non-disclosure.

n/a

Confidentiality: Describe how confidentiality of data will be maintained.

Confidentiality of data will be maintained by gathering raw numerical data regarding the number of naloxone prescriptions written before and after the educational intervention. All patient specific information and identifiers will be excluded.

Signature of Investigator: Joanna Boback

Date:5/5/2022

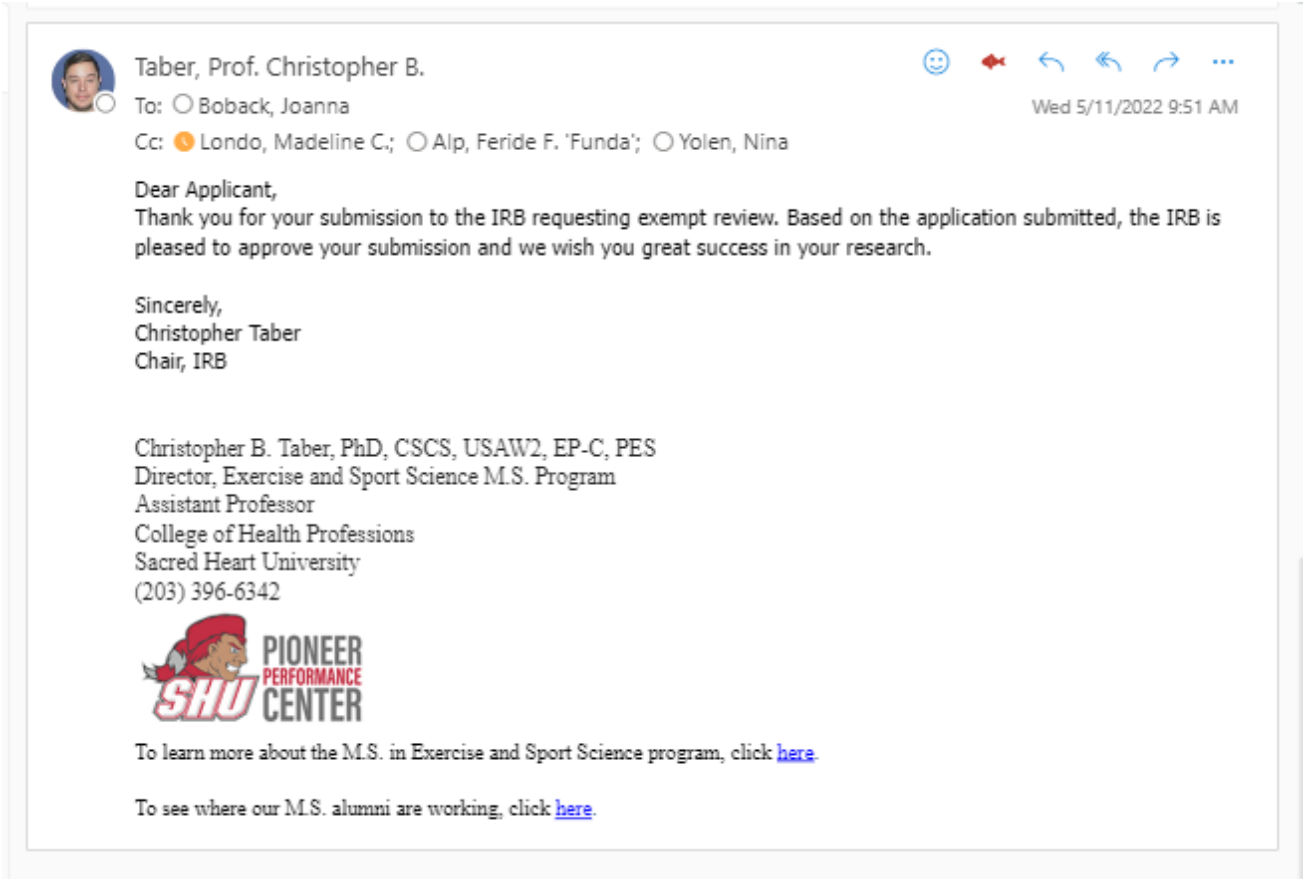
The IRB reserves the right to request the investigator to provide additional information concerning the proposal.

Action Taken:

Signature:

IRB Chairperson:

Date:



Taber, Prof. Christopher B.

To: Boback, Joanna

Wed 5/11/2022 9:51 AM

Cc: Londo, Madeline C.; Alp, Feride F. 'Funda'; Yolen, Nina

Dear Applicant,
Thank you for your submission to the IRB requesting exempt review. Based on the application submitted, the IRB is pleased to approve your submission and we wish you great success in your research.

Sincerely,
Christopher Taber
Chair, IRB

Christopher B. Taber, PhD, CSCS, USAW2, EP-C, PES
Director, Exercise and Sport Science M.S. Program
Assistant Professor
College of Health Professions
Sacred Heart University
(203) 396-6342

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To see where our M.S. alumni are working, click here.

Appendix F

Naloxone (Narcan) Prescribing Policy

Title: Naloxone (Narcan) Prescribing

Policy: Patients who are prescribed opioids will receive a co-prescription of naloxone (Narcan). Patients who are otherwise deemed at risk for opioid overdose by the provider will be prescribed naloxone (Narcan).

Purpose:

The purpose of this policy is to describe the guidelines for naloxone (Narcan) prescribing at the Federally Qualified Health Center (FQHC) to reflect best practices.

Procedure:

1. Identify patients at risk for opioid overdose.
    a. History of or current substance use disorder or alcohol use disorder
    b. History of opioid overdose
    c. History of or current opioid use, especially those individuals following a period of abstinence such as
        i. Extended hospitalization
        ii. Inpatient substance use treatment program
        iii. Recent release from jail or prison
    d. Individuals who ingest opioids who
        i. Concurrently use benzodiazepines
        ii. Consume an opioid dose ≥ 50 MME/day
        iii. Are or live with persons aged 65 years or older
        iv. Live with children
        v. Have medical conditions such as COPD, sleep apnea, morbid obesity, asthma, chronic cardiac conditions which can depress one's respiratory drive
        vi. Have renal or hepatic insufficiency
        vii. Have mental health disorders, particularly depression or history of suicide (Centers for Disease Control and Prevention [CDC], 2022; Dowell et al., 2016).
2. Prescribing naloxone (Narcan)
    a. Providers will send an electronic prescription to the patient's pharmacy based on approved formulary with one refill
    b. Prescriptions will be renewed yearly, or sooner as needed by the patient
3. Patient Education

a. Patients will receive patient education handouts from the FQHC staff
    i. Know the Signs, Save a Life from the CDC
        1. Information on opioid overdose identification and steps to take
    ii. Narcan Nasal Spray Quick Start Guide
        1. Illustration guided steps on how to use Narcan Nasal spray

References

1. Centers for Disease Control and Prevention. (2022). *About CDC's Opioid Prescribing Guideline.* U.S. Department of Health and Human Services. https://www.cdc.gov/opioids/providers/prescribing/guideline.html.

2. Dowell, D., Haegerich, T.M., & Chou, R. (2016). Centers for Disease Control and Prevention (CDC) guideline for prescribing opioids for chronic pain — United States, 2016. *Morbidity and Mortality Weekly Report: Recommendations and Reports*, *65*(1), 1-49. http://dx.doi.org/10.15585/mmwr.rr6501e1external icon

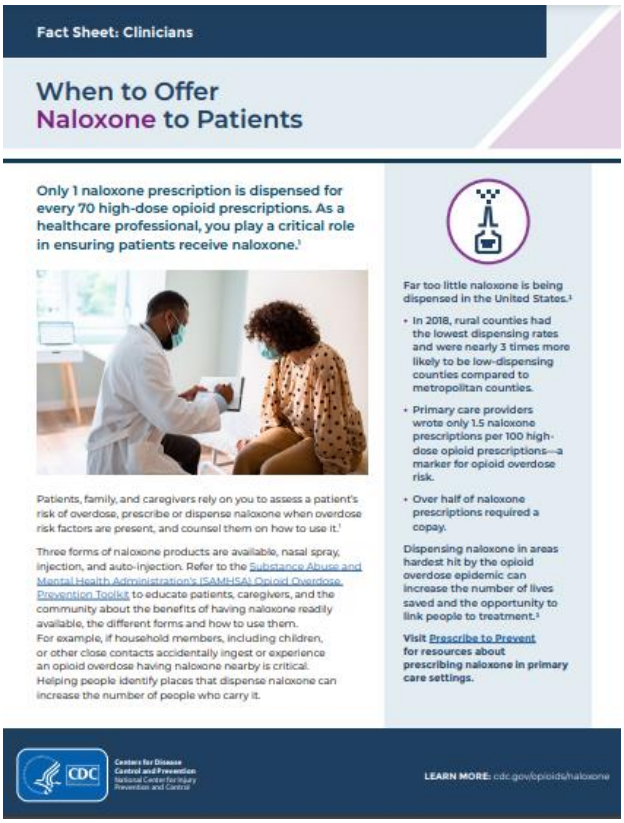
3. Prescription Drug Abuse Policy System. (2022). *Naloxone overdose prevention laws.* https://pdaps.org/datasets/laws-regulating-administration-of-naloxone-1501695139.

Joanna Boback, BSN, RN
Sacred Heart University, FNP-DNP Student

Updated October 2, 2022

Appendix G

Provider and Patient Educational Handouts



Fact Sheet: Clinicians

When to Offer Naloxone to Patients

Only 1 naloxone prescription is dispensed for every 70 high-dose opioid prescriptions. As a healthcare professional, you play a critical role in ensuring patients receive naloxone.[1]

Patients, family, and caregivers rely on you to assess a patient's risk of overdose, prescribe or dispense naloxone when overdose risk factors are present, and counsel them on how to use it.[1]

Three forms of naloxone products are available, nasal spray, injection, and auto-injection. Refer to the Substance Abuse and Mental Health Administration's (SAMHSA) Opioid Overdose Prevention Toolkit to educate patients, caregivers, and the community about the benefits of having naloxone readily available, the different forms and how to use them. For example, if household members, including children, or other close contacts accidentally ingest or experience an opioid overdose having naloxone nearby is critical. Helping people identify places that dispense naloxone can increase the number of people who carry it.

Far too little naloxone is being dispensed in the United States.[1]

- **In 2018, rural counties had the lowest dispensing rates and were nearly 3 times more likely to be low-dispensing counties compared to metropolitan counties.**
- **Primary care providers wrote only 1.5 naloxone prescriptions per 100 high-dose opioid prescriptions—a marker for opioid overdose risk.**
- **Over half of naloxone prescriptions required a copay.**

Dispensing naloxone in areas hardest hit by the opioid overdose epidemic can increase the number of lives saved and the opportunity to link people to treatment.[1]

Visit Prescribe to Prevent for resources about prescribing naloxone in primary care settings.

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

LEARN MORE: cdc.gov/opioids/naloxone

Fact Sheet: Clinicians

You can offer naloxone to patients prescribed opioids or who are using illicit opioids.

When overdose risk factors, such as those outlined below, are present.[2,3]

- Are taking higher dosages of opioids (≥50 morphine milligram equivalents (MME)/day)
- Have certain medical conditions such as chronic obstructive pulmonary disease (COPD) or obstructive sleep apnea which may increase their risk of overdose (regardless of opioid dose), or reduced kidney or liver function
- Have been prescribed benzodiazepines in addition to opioids (regardless of opioid dose)
- Are receiving medication for opioid use disorder (OUD), such as methadone, buprenorphine, or naltrexone
- Have a history of overdose
- Are using illegal drugs such as heroin and/or stimulants, including methamphetamine and cocaine or pills purchased "on the street," which could potentially be contaminated with illicit synthetic opioids like fentanyl
- Are aged 65 years and older Have a non-opioid substance use disorder, report excessive alcohol use, or have a mental health disorder (regardless of opioid dose)
- Have a history of opioid use and were recently released from incarceration or other controlled settings where tolerance to opioids

For more information and resources on naloxone, visit cdc.gov/opioids/naloxone, and for drug overdose prevention, visit cdc.gov/drugoverdose.

[1] https://www.cdc.gov/vitalsigns/naloxone/index.html
[2] https://www.cdc.gov/mmwr/volumes/67/rr/rr6701e1.htm?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fmmwr%2Fvolumes%2F67%2Frr%2Frr6701e1.htm
[3] https://www.hhs.gov/opioids/sites/default/files/2018-12/naloxone-coprescribing-guidance.pdf

LEARN MORE: cdc.gov/opioids/naloxone

NARCAN® (naloxone HCl) NASAL SPRAY

QUICK START GUIDE

Opioid Overdose Response Instructions

Use NARCAN Nasal Spray (naloxone hydrochloride) for known or suspected opioid overdose in adults and children.

Important: For use in the nose only.

Do not remove or test the NARCAN Nasal Spray until ready to use.

1 Identify Opioid Overdose and Check for Response

Ask person if he or she is okay and shout name.

Shake shoulders and firmly rub the middle of their chest.

Check for signs of opioid overdose:

- Will not wake up or respond to your voice or touch
- Breathing is very slow, irregular, or has stopped
- Center part of their eye is very small, sometimes called "pinpoint pupils"

Lay the person on their back to receive a dose of NARCAN Nasal Spray.

2 Give NARCAN Nasal Spray

Remove NARCAN Nasal Spray from the box.
Peel back the tab with the circle to open the NARCAN Nasal Spray.

Hold the NARCAN nasal spray with your thumb on the bottom of the plunger and your first and middle fingers on either side of the nozzle.

Gently insert the tip of the nozzle into either nostril.

- Tilt the person's head back and provide support under the neck with your hand. Gently insert the tip of the nozzle into **one nostril**, until your fingers on either side of the nozzle are against the bottom of the person's nose.

Press the plunger firmly to give the dose of NARCAN Nasal Spray.

- Remove the NARCAN Nasal Spray from the nostril after giving the dose.

3 Call for emergency medical help, Evaluate, and Support

Get emergency medical help right away.

Move the person on their side (recovery position) after giving NARCAN Nasal Spray.

Watch the person closely.

If the person does not respond by waking up, to voice or touch, or breathing normally another dose may be given. NARCAN Nasal Spray may be dosed every 2 to 3 minutes, if available.

Repeat Step 2 using a new NARCAN Nasal Spray to give another dose in the other nostril. If additional NARCAN Nasal Sprays are available, repeat step 2 every 2 to 3 minutes until the person responds or emergency medical help is received.

For more information about NARCAN Nasal Spray, go to www.narcannasalspray.com, or call 1-844-4NARCAN (1-844-462-7226).

PREVENTING AN OPIOID OVERDOSE

Know the Signs. *Save a Life.*

Opioid Overdose Basics

Prescription opioids (like hydrocodone, oxycodone, and morphine) and illicit opioids (like heroin and illegally made fentanyl) are powerful drugs that have a risk of a potentially fatal overdose. Anyone who uses opioids can experience an overdose, but certain factors may increase risk including but not limited to:

- Combining opioids with alcohol or certain other drugs
- Taking high daily dosages of prescription opioids
- Taking more opioids than prescribed
- Taking illicit or illegal opioids, like heroin or illicitly-manufactured fentanyl, that could could possibly contain unknown or harmful substances
- Certain medical conditions, such as sleep apnea, or reduced kidney or liver function
- Age greater than 65 years old

Death from an opioid overdose happens when too much of the drug overwhelms the brain and interrupts the body's natural drive to breathe.

Learn more about opioids to protect yourself and your loved ones from opioid abuse, addiction, and overdose: www.cdc.gov/drugoverdose

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

PREVENTING AN OPIOID OVERDOSE

Signs and Symptoms of an Opioid Overdose

During an overdose, breathing can be dangerously slowed or stopped, causing brain damage or death. It's important to recognize the signs and act fast. Signs include:

- Small, constricted "pinpoint pupils"
- Falling asleep or loss of consciousness
- Slow, shallow breathing
- Choking or gurgling sounds
- Limp body
- Pale, blue, or cold skin

What To Do If You Think Someone Is Overdosing

It may be hard to tell if a person is high or experiencing an overdose. If you aren't sure, it's best to treat it like an overdose– you could save a life.

1. Call 911 immediately.
2. Administer naloxone, if available.
3. Try to keep the person awake and breathing.
4. Lay the person on their side to prevent choking.
5. Stay with him or her until emergency workers arrive.

Ask your doctor about naloxone – a safe medication that can quickly stop an opioid overdose. It can be injected into the muscle or sprayed into the nose to rapidly block the effects of the opioid on the body.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention