

Implementing and monitoring of ED Discharge Smart Set for Opioid Use

Category of submission (select as many as apply):

Resident/Fellow Project

IOM Domains that this project addresses (select as many as apply)

Patient Centered

Equitable

Please share how you defined your project. Consider addressing the questions below. (Max 500 Words)

What was the identified Quality Gap? - What was the improvement target? - What was the timeline of the project? - Who were the stakeholders? - What was the stakeholders' input? - What was the method for collecting stakeholder input? - What was the potential for significant impact to the institution? - What was the potential for significant impact to society?

The project aims to fill the quality gap between Barnes Jewish Hospital emergency department (ED) care of patients presenting with opioid use disorder (OUD) related chief complaints and their discharge care. In our previous cross-sectional study from 6/1/18 to 4/1/19 at the same institution we identified a practice gap in the prescription of naloxone to patients discharged from the ED after visits associated with OUD. The study reviewed 716 encounters for OUD related visits. Twenty-nine (4.1%) patients received a prescription for naloxone. Almost 95% (n=687 patients) were discharged without a naloxone prescription, 32% of whom had presented after receiving naloxone for an opioid overdose. These patients are at a very high risk of repeat overdose and potentially death. Correcting this practice gap would lead to significant improvements in patient care.

The ED has an estimated 50-70 visits per month for OUD related chief complaints. Naloxone is administered in the hospital approximately 200 times per month. These numbers are derived from tools within the EMR for studying hospital metrics. A simple search was used, and was not exhaustive thus could be underestimated. These numbers represent a population at high risk for mortality. If this subset of patients receive the resources provided in the smart set, we can increase engagement in treatment and decrease morbidity or mortality from OUD.

Using tools provided by the electronic health record (EHR), we created a discharge order set, or "smart set," to improve the rates of naloxone prescription at discharge for patients presenting with OUD related chief complaints. The order set includes adjunct prescriptions for treatment of opioid withdrawal such as buprenorphine, ondansetron and clonidine. It allows providers to select key, and appropriate diagnoses for the visit. The order set contains printable and region specific resources that include information regarding inpatient and outpatient treatment, medications for OUD and harm reduction. Initial efforts for the project began in March 2021. The order set was implemented on September 29th, 2021. In January 2022 the order-set was introduced to providers in the ED. Data collection began January 2022 with a monthly report generated from the EHR. The data was reviewed by the team leads. The plan is to collect six months of data and then reassess the need to make edits or additions to the initiative.

The stakeholders for the project are the involved EHR team members, emergency department physicians, administrators and residents, social workers, and pharmacists. We obtained stakeholder input via consulting with stakeholders for the appropriate aspects of the order set. The resident author held phone conversations and met with social workers who provided community resource information. Via email, medical toxicologists provided input regarding the treatment of OUD, and the department pharmacist approved the prescriptions included. The project was overseen by department administration which counseled the project via video meetings and email. We presented the order set to all ED provider groups to educate and receive feedback on the initiative. Monthly emails were sent to congratulate top users and communicate improvements in usage of the smart set.

Please describe how you measured the problem. Consider addressing the questions below. (Max 500 Words)

What data sources were used? - Was a numeric baseline OUTCOME measure obtained? - What defined the sample size? - What counterbalance measures were identified? - What numeric baseline COUNTERBALANCES were obtained? - Was the outcome measure clinically relevant? - Was the outcome measure a nationally recognized measure?

We collected data from all patient encounters from the Barnes Jewish Hospital ED between 1/1/2022-4/30/2022. We created and used a monthly report detailing the number of encounters for which the order set was suggested and how many times the order set was used. A specific sample size was not defined, but all ED encounters were included. Decreased overdoses, decreased death, and decreased complications from injection drug use are clinically relevant outcomes. If more patients are prescribed naloxone at discharge, or more patients are referred to treatment, the amount of return visits due to complications of opioid use will decrease. While giving patients naloxone is preferred over a prescription, many EDs cannot do this due to pharmacy regulation or cost. Thus, increasing the number of patients that receive a prescription and information about where to obtain free naloxone in the community is beneficial. Both of these discharge actions are contained within the smart set, readily available for providers to access while creating discharge plans and instructions.

Please describe how you analyzed the problem. Consider addressing the questions below. (Max 500 Words)

What was one factor contributing to the gap? - Were multiple factors contributing to the gap? - Was a structured root cause analysis undertaken? - What was the appropriate QI method or tool used for root cause analysis? - Was a root cause analysis performed prior to identifying potential solutions? - What was the rationale for selecting intervention(s)? - Did the project use a QI method or tool for selecting intervention(s)?

A root cause analysis was not completed. For this project, we used a plan-do-study-act cycle of improvement process. The initial needs assessment via cross-sectional study has been outlined in previous sections and serves for the “plan.” Our previous study completed by the same author at the same institution identified the gap in the practice of prescribing naloxone to patients discharged from the ED after visits related to OUD. The order set serves as the “do.” The “study” includes the reports pulled each month from the EHR detailing the usage of the order set. This will take place for six months after the addition of the order set. Additionally, the amount of naloxone prescribed from the Barnes Jewish Hospital ED each month will be tracked to determine if there is an increase in the rates of naloxone prescription at discharge for patients presenting with opioid use disorder associated complaints. Data extraction specialists are

currently determining a way to study how often naloxone is prescribed from the order set to show effectiveness of the order set to improve rates of naloxone administration.

Prior to the implementation of this quality improvement initiative, there were no unified discharge resources. On an individual basis, clinicians decided which prescriptions or resources to provide to patients. Given the busy work environment and unpredictable nature of the patient population, it is easy for physicians to forget to give them resources or a prescription. With this order set, a unified prescription list and discharge resources were readily available. The lack of unified resources likely contributed to the gap seen in the prescription of naloxone at discharge for patients presenting for opioid related chief complaints to the emergency department.

One limitation to our data as well as prescribing is that a local program sends recovery coaches to the ED if they are consulted. The local program, named Engaging Patients in Care Coordination (EPICC), offers expedited access to naloxone and medication for addiction treatment (MAT) via peer coaches. The coaches give patients naloxone prior to them leaving the ED. It is not always documented if the patient met with the coaches or received naloxone. Based on patient state of residence, there are patients that are ineligible to receive naloxone from the coach or refuse to meet with them so do not receive naloxone in hand. Without an order set, the medical team would need to remember to prescribe naloxone and give the patient additional resources. Finally, some providers may believe that even if they were to prescribe naloxone, patients would not be able to fill the prescription due to the cost and thus be discouraged from prescribing it. The smart set is a gentle reminder of this important intervention. In the future, a best practice advisory alert could be employed if it seems providers are using the order set without prescribing naloxone. The order set may improve rates of naloxone prescription now and set practice patterns for a future where naloxone is more accessible and affordable.

Please describe how you improved the problem. Consider addressing the questions below. (Max 500 Words)

What was the implementation of intervention(s) (date/time of go live)? - Was the target measure re-measured afterwards with comparison graph? - Was a structured plan for managing change used? - Was the project counterbalance re-measured with a comparison graph? - Was the counterbalance adversely affected? - Is the improvement in target outcome measure shown? - Was a statistical significance demonstrated in the outcome measure?

We implemented the order set on 9/29/2022, but did not start generating reports until 1/1/2022. Each month, a report is generated demonstrating how often the order set was suggested by the EHR and how often it was used. After implementation, we introduced the initiative to clinicians at various educational meetings in order to reach each population of clinicians that would be utilizing the order set. Additionally, monthly email reminders are used to promote the order set as well as to congratulate those that were utilizing it. We demonstrated Improvement in the rates of usage of the order set over time. In the first month following implementation, the order set was suggested 47 times and used 2 times for a total of 1%. The second month was suggested for 67 encounters with only 1 use for a total of 1% utilization. In the third month of data collection, the order set was suggested 71 times and was used 8 times for 11%. In the fourth month of data collection, the order set was suggested 44 times and used 12 times for a total of 27%. Trends show that usage is increasing, likely due to increased awareness of the patient care resource. Especially after the second month of data collection given that education occurred at the end of February and early March which correlates with the end of the second and the third month of data collection. While there are many confounding variables, early data shows that naloxone prescriptions post-implementation of order set are increasing each month (see table attached).

Please describe the control phase of your project. Consider addressing the questions below.

What were the lessons learned from the project? - Was there communication to stakeholders of the summary of the project, and lessons learned? - Was a process owner identified? - Did the process owner acknowledge ownership of ongoing monitoring? - What control measures were identified? - What was the reaction plan for deficiencies identified in the control measure? - Was there at least one year of sustained monitoring demonstrated? - Was the project successfully diffused in scholarly form (i.e. poster, manuscript, etc)?

While there is no true control phase we have added in monitoring of the rates of naloxone prescription from the ED to our project. The monthly usage report is unable to track how many times naloxone was prescribed from the order set, only how many times the order set was used or engaged with. Separately, through another query, we gathered the monthly rates of naloxone prescription from the ED. We compared the rates of naloxone prescription to the percentage of usage of the order set across time. While there are confounders, this is a way to theorize whether or not the order set is being effective at encouraging providers to prescribe naloxone for OUD related chief complaints at discharge. This project focuses on removing barriers for providers to give information and prescribe a life saving medication. It does not address the problems with access to that medication once prescribed. Access to the medication is a barrier to project sustainability. Outside of the direct work with this project, one author is working to address the access barrier through grants to provide affordable or free naloxone at the point of care setting in the ED. By working to improve compliance with the order set now, prescribing patterns will already be improved when patients are able to readily access affordable or free naloxone. Positive reinforcement is also being used for provider behavior modification in response to each monthly report. The providers with the top compliance are congratulated via department emails. This provides sustainability to the project by encouraging continued use and highlighting the existence of the initiative.

There was a large gap in time from the initial needs assessment and presentation of data to the time the quality improvement tool was implemented. Reducing this time period may have caused more clinicians to be aware of the scope of the problem and increased usage. Additionally, educational efforts regarding the initiative were not started until after the go-live date. In retrospect, education to the utilizers should have been provided in the weeks just prior to the go-live date for improved utilization. Since then, there has been monthly communication to key stakeholders, residents, attendings, and APPs regarding the usage data from each month.

We identified a resident and administrative attending as the process owners. This will be transitioned to another resident upon graduation, so that the project and data collection can continue. The goal will be to have one full year of sustained monitoring. We have plans to submit this as an abstract followed by a manuscript once data collection is completed.

Attachments

[ED Opioid Smart Set Table and Graph](#)

[ED Opioid Use Disorder Smart Set Data](#)