Increasing Medication Safety Event Reporting

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Abstract

Problem & Purpose: In an ambulatory clinic located within Prince George's County, Maryland, there is a pediatric clinic that has a low number of reporting medication safety events including near misses and actual events. A medication error report from 2021, showed only one medication administration error and zero near misses reported. Since "preventable medication errors impact more than 7 million patients and cost almost $21 billion annually across all care settings," it is important to increase medication safety event reporting to prevent future errors. This quality improvement initiative aims to increase medication safety event reporting in this clinic. Increasing near misses and error reporting will result in discovering and correcting underlying clinic or system problems that may exist and can prevent future medication errors from occurring. **Methods:** The QI project was implemented over a 15-week period in the fall of 2022. Two interventions, an educational session and an audit feedback tool, were used to increase the number of medication near-miss reports entered. Initial and ongoing education included a review of the reporting system and just culture, and staff were given a pre- and post-survey to assess their learning. The second intervention was the implementation of a standardized and validated tool, SBAR, which the manager used to provide timely feedback after a report was submitted. **Results:** 100% of staff completed the education. Post-education survey results showed there was an 83% increase in staff knowledge from baseline. At the end of the 15-week project, one medication error and one near-miss event were reported. This was an increase of 100% from the near-miss reporting baseline data. The audit feedback tool was used after the medication error was reported. **Conclusions:** Findings suggest that the teaching and audit feedback tool can be effective in increasing the medication near-miss reporting.

Increasing Medication Safety Event Reporting

Medication errors are a huge problem in healthcare organizations. Approximately 1.5 million people are harmed by medication errors in the United States, and there are 450,000 preventable medication-related adverse events each year; costs associated with these events is roughly $3.5 billion (da Silva & Krishnamurthy, 2016; Williams, et al., 2014). While medication errors can occur during multiple stages of the medication process, nursing is involved in the preparation and administration phases, where one-third of the errors are likely to occur (Williams et. al., 2014; Alomari et. al., 2018; Smeulers et. al, 2015). There are estimates regarding the impact associated with medication errors; however, since staff do not always report medication errors, the extent of the problem is not truly known. As much as 50-60% of medication errors are not reported, which is a huge barrier to an organization's improvement efforts and patient safety (Mutair et al., 2021).

In an ambulatory clinic located in Prince George's County, Maryland, there is a pediatric clinic that cares for thousands of patients each year. The clinic is staffed with MDs, RNs, LPNs, and certified nurse assistants (CNA's). A report for all medication errors reported in 2021 showed only one medication error and zero near miss events reported. A near miss is defined by the World Health Organization as an "Error that has the potential to cause an adverse event (patient harm) but fails to do so because of chance or because it is intercepted" (Sheikhtaheri, 2014). Due to no near-miss events being reported in the previous year in this clinic, the manager was consulted, and she confirmed that near-miss events did occur in the past year but that they were not reported through the reporting system.

Through informal feedback, staff reported that near misses such as interruptions during medication preparation occurred frequently, but never got reported. This was mostly due to acceptance of the interruptions, lack of time to report, and unfamiliarity with the reporting process. Similarly in the literature, researchers have cited that underreporting of events occurs due to issues such as reporting bias, burdensome reporting systems, fear of retaliation, lack of feedback and lack of knowledge regarding the reporting process or system (Gleeson et. al., 202; Christina et. al, 2016). Other factors relating to the root cause of the problem are described in the fishbone diagram, see Figure 1. The purpose of the DNP project was to implement and evaluate the effectiveness of education and an audit feedback tool on staff reporting of near-miss medication events.

Available Knowledge

An integrative review of the literature was completed using Medline, Pubmed, and CINAHL databases; the search terms used were ”near-miss”, “medication errors”, “error reporting”, “incidence reporting”, and “reporting barriers”. A total of eleven articles were synthesized, three of those articles were level III- high quality, and two articles were level III-good quality grades following the Johns Hopkins Hospital (JHH) Evidence Level and Quality Guide (Dang et al., 2022). The literature showed common barriers experienced by nurses when it came to reporting medication errors and near misses. These were described as organizational barriers, which included the reporting system, culture, management behavior, and personal and professional barriers including own characteristics, fear, and accountability (Vrbnjak et al., 2016). A qualitative study by Hewitt & Chreim, 2016, found that in situations such as handling near-misses, dealing with re-occurring safety problems, which were thought of as inevitable, or when dealing with patient issues viewed as unique or one-time events, staff preferred to fix the issues and move on rather than report it. Reporting near-miss events was not considered a priority or necessary if the safety problems were fixed.

Effective strategies and interventions to improve reporting and reporting systems, and the benefit of multifaceted intervention versus a single intervention were discussed in the systematic reviews by Mutair et al. (2021) and Gleeson et al. (2020). Five out of 17 studies reviewed by Gleeson et al. used more than one intervention to improve the rate of reporting, and the most common interventions used were critical incident reporting, audit with feedback, followed by education (Gleeson et al., 2020). Although this was a systemic review of hospitals, common themes emerged which could be translated into the ambulatory clinic setting.

Lack of feedback or ineffective feedback after reports are entered makes it less likely for nurses to change their practice (Christina et al., 2016). Audit with feedback, a common theme in the literature, is a strategy that enhances professional performance by increasing awareness and motivation to change behavior and or improve outcomes (Hutchison et al., 2021). It is defined as, when staff receive feedback on practice issues and recommendations for improvement. While this strategy is evidence-based and effective, it also needs to be purposeful, timely, and delivered in such a way that staff view it as helpful and non-punitive (Christina et al., 2016). See Evidence Review Table 1.

Rationale

The quality improvement framework selected for this DNP project was the Knowledge to Action (KTA) Framework, see Figure 2. This framework, which facilitates the use of research knowledge and provides a step-by-step guide for translation, was developed in 2006 by Graham et al. and is based on over 30 change theories (Graham et al., 2006). The two ideal concepts of this framework, knowledge creation and action, are permeable and may influence one another throughout the various cycles. Once the practice problem of underreporting was identified, knowledge inquiry occurred to ensure there was enough evidence in the literature to support a practice change. Through review and synthesis of the literature, the best evidence-based tools were selected to implement at the DNP project site.

In the action phase of KTA framework, an education module was applied after assessing and accounting for the local context and barriers to ensure feasibility. Lack of understanding and familiarity with the reporting tool was a huge barrier to near-miss event reporting. Therefore, an evidence-based education module was tailored to capture important elements such as how to access the tool and the difference between near-miss and error reporting. Another intervention that was tailored and applied during this phase was the audit feedback tool. Staff feedback was solicited regarding the timing and method of feedback to ensure the tool would be effective. At times, implementation strategies were modified to ensure the most appropriate application of the knowledge. Once the project was complete, outcomes were evaluated, and knowledge was yet again applied in the development of the sustainability plan for continued knowledge use.

Methods

Context

The pediatric clinic consisted of a staffing mix of RNs. LPNs, and CNA's, all whom administer medications. The tenure of the staff working in this clinic ranged from one to 20 years, with most staff being employed less than 10 years. The length of employment was an important factor because fear is a barrier to reporting (Rutledge et al., 2018), and staff that were employed the least amount of time reported being fearful about reporting medication safety events due to being less senior and concerned over losing their job. To assess culture in the clinic, the Context Assessment Index (CAI) tool developed by McCormack et al. (2009) was used. The results of this assessment demonstrated that staff were open to change. The clinic site manager provided information related to the department, staff, and workflows, which was helpful in determining the interventions that would be most effective. The DNP project team consisted of a project lead (PL), faculty advisor, clinical site representative (CSR), project site sponsor, the clinic manager, and a representative from the risk department.

Staff training for error reporting typically consisted of training once per year. The training was reported to be long and monotonous, and not interactive. Staff were not routinely encouraged to report events, nor was a lack of reporting seen as problematic or addressed. Although a system for reporting existed, staff were not clear on what should be reported, did not have time to report, did not view reporting as valuable, and they faced other barriers to reporting. The common practice in the clinic was to 'fix and forget,' for example, if a provider ordered the wrong dose on a patient, they would ask the provider to change the order and would not report the error due to lack of education to know that this was a problem, which in the study by Hewitt & Chreim (2015), this was described as a common practice in healthcare. See Figures 3 and 4 for current state vs desired state process.

Intervention

Two interventions, education, and audit feedback were implemented supported by a strategy and tactics approach (Bingham & Main, 2009). For education, training was provided by the PL, which included information on the following topics: the importance of medication safety event reporting, an overview of the reporting system, how to access the reporting system, what medication events should be reported, the difference between a near-miss and actual event, barriers staff face when deciding to report, and the definition of just culture. Staff were given approximately two weeks to complete the training, which was delivered during huddles and downtime. The training was developed by the PL and its completion was optional, ongoing education was also provided throughout the project. Selecting unit champions was a tactic used to support buy-in and they served as resources that could provide education and answer questions when the PL was not in the clinic.

The second intervention was the implementation of a standardized and validated audit with feedback tool, SBAR, which the clinic manager used to provide feedback to the staff after a report was entered. Staff provided input into this tool regarding their preferred feedback intervals and method of communication, which was in-person. The purpose of using this tool was to have effective and purposeful feedback to reinforce reporting of near-miss events. Staff were held accountable to report events, and management was held accountable to provide timely feedback, within 2 business days, after an event had been reported. On a weekly basis, data on reports entered were collected and the PL attended huddles to share this information with the care team. See Figure 5 for Audit Feedback SBAR tool.

Measurement

Four types of data were collected for this project: a pre-implementation survey, a post-implementation survey, the completion rate of education module, and a weekly medication near miss and error event report. The structure goal was that 100% of staff would receive training regarding medication safety even reporting. The clinic manager provided the total number of staff working in the clinic so that there would be a baseline number for the PL to compare participation. Once staff received the education, they were instructed to complete a paper attestation, without identifying themselves, and place them in a designated box in the staff break room. Before and after completion of the education module, staff were surveyed on their knowledge regarding event reporting, these paper surveys were also anonymous and to be placed in a designated box in the break room. Measuring the difference in pre and post survey responses would provide a measure to assess learning. The PL collected the attestations and surveys and entered them into RedCAP.

The process goal was that the audit feedback tool to provide feedback for all reports entered. Once a report was entered, the PL communicated with the clinic manager to remind them to use the SBAR audit feedback tool and would receive a confirmation. The outcome goal was to increase near-miss reporting by 20%. The risk department provided a weekly email report which showed the number of medication errors and near-miss reports entered. The PL then tracked this information through excel.

Ethical Considerations

Ethical considerations included encouraging staff to report medication safety incidents, which was known to illicit fear in some individuals (Vrbnjak et al., 2016). Addressing this early on by educating staff on just culture and reinforcing a non-punitive environment, helped to alleviate some of that fear. Staff was informed that during the DNP project they should continue to follow their day-to-day routines, and that they would not be penalized if they did not take part in the interventions. There was no change to the organization's reporting tool and process, which allowed for anonymous reporting if preferred. The organization's IRB application process was followed, and the DNP project was deemed exempt. Patients were not subjected to the intervention within the project, so they remained unaffected, and their data and privacy/confidentiality remained the same. The PL gained HPRO approval for this project, and once the data was stored in REDCap, the paper copies were shredded. On a weekly basis the PL entered and tracked data within REDCap or Excel.

Results

As shown in Figure 6, the structure goal of having all staff receive the medication safety event reporting training was met. Additionally, staff knowledge was assessed by conducting a pre and post-education implementation survey. There were five questions asked in the pre-implementation survey, 100% of staff reported knowing what the organizational reporting tool is, what medication events should be reported and the difference between a near-miss and actual medication error. When asked if they knew how to enter a report only 67% of staff surveyed replied yes, and 33% replied no. When asked if they knew what “Just Culture” is only 17% replied yes. See Figures 7-11.

Upon completion of the training module, staff was surveyed with the same questions to assess learning. The results of the three questions, which 100% of staff reported knowing in the pre-implementation survey’s did not change. However, as compared to the pre-implementation survey question of knowing how to enter a report, 100% of staff reported yes, an increase of 33%. There was also an increase in knowledge of what just culture is. From the pre-implementation survey there was an 83% increase in staff knowledge. See Figures 12-16. The education intervention appears to have been effective since there was in increase in reported knowledge from pre- to post-survey.

The process goal of using the audit feedback SBAR tool after entering a report was met when the reporter could be identified. For the one medication error that was reported, the manager did use the tool, however, for the near-miss report that was submitted, the manager could not provide follow-up with an individual because it was entered anonymously. This unexpected problem, which was addressed by having the clinic manager share the near-miss event report and provide feedback to all staff during huddle. At the end of the 15-week project, one medication error and one near miss had been reported, during the third and sixth weeks, respectively. Since no near-miss events were reported in the first three weeks of the project, the PL increased reminders and education during weeks four to five. Finally, in week six a near-miss event was reported, but then for two consecutive weeks, no additional events were reported so again the PL increased reminders and education for the remainder of the weeks. The near-miss reporting that occurred in week six could have been related to the training and emphasis that was placed on reporting in the weeks leading up to it.

The outcome goal to increase the number of near-miss reports entered by staff by 20% was achieved. No trends or astronomical data points were noted in the run chart, and there were not enough observations to determine too few or too many runs. See Figures 17-18. One consequence that was discovered during the DNP project was that the internal reporting tool was reported by the staff to be tedious and time consuming. For example, when the nurse entered the near-miss event, she reported an interruption she experienced during medication preparation. While going through the series of questions asked in the reporting tool system, she was forced to enter several details about the medication she was attempting to prepare. This information was irrelevant and entering it took extra time. The way the questions were structured, the tool appeared to focus more on error reporting rather than near-miss event reporting. This finding was consistent with what was found in the literature, that staff feel the amount of time it takes to report events was a common barrier to reporting.

One unexpected finding was that an anonymous near-miss report was submitted. Because the audit feedback tool was intended to provide feedback to the reporter after each event, this was not possible when an anonymous event was reported. To solve this, the PL and clinic manager met and the solution that they agreed upon was that feedback and recommendations for the event would be shared during huddle with all staff. Because reports can be entered anonymously, this needs to be accounted for and the process of providing general feedback and recommendations to all staff should continue to be followed.

Discussion

A key finding of the project was the impact it had on people. Staff were receptive to ongoing education and reminders about entering near-miss reports. The feedback from one nurse was that she had never been encouraged to report near-miss events and that it felt like the culture was changing for the better. During huddles, staff appeared interested in getting updates on reporting, and when examples of near-miss events that occurred in other clinics were shared, they often expressed that similar events to what was being reported were occurring in their clinic. Post project implementation, while checking in with the clinic staff, they would sometimes ask about other near-miss events being reported, which suggests the DNP project sparked their curiosity and had an impact on them.

A comparison of results with findings from other publications shows that the DNP clinic site staff faced similar organizational, personal, and professional barriers to event reporting. In a study by Vrbnjak et al. (2016), organizational barriers included the reporting system, culture, management behavior, and personal and professional barriers included own characteristics, fear, and accountability. These were very similar to the reporting barriers expressed and encountered by the DNP project site staff. Mutair et al. (2021) suggested that as many as 50-60% of medication errors are not reported, based on the volume of reporting noted during the 15-week project, underreporting may still be a problem that needs further attention.

Reasons for the differences between observed and anticipated outcomes for this project was that the PL did not take into consideration that near-miss reports could be entered anonymously. The process goal was to have the clinic manager use the audit feedback tool to provide timely feedback to the reporter after each report was entered. The PL assumed that each medication safety report would have a person's name attached to it so that the manager could follow up and use the audit feedback SBAR tool with that individual, however, this was not the case. When an anonymous near-miss event was reported, the manager could not provide direct feedback to the reporter and therefore had to shift from the original plan and instead share the feedback with the entire clinic staff during huddle.

A factor that may have limited internal validity or introduced bias is that the PL is an employee within the same organization, but in a different department, where the project was implemented. Some of the staff may have altered their behavior or agreed to participate as a result of that collegial relationship. Limitations to the DNP project included the short duration of the project implementation, which was 15 weeks, and staffing resources. There were days that the staff did not have time for questions or education due to working with limited staffing, and there were other times when the clinic was staffed with float staff who had not received the reporting education module and were not aware of the interventions of the project.

Conclusion

This project suggests when nurses are regularly encouraged to report near-miss events and are provided with timely and effective feedback, the number of near miss events reported can increase. An increase in near-miss medication event reporting can result in decreased medication errors and cost associated with those errors, increased patient safety and better patient outcomes. Strengths of the project included improvement in the clinic culture, such as decreased fear of reporting, increased accountability to report, and a speak-up culture where the team felt they could discuss near-misses in a non-punitive environment. A sustainability plan was put into place between the PL and clinic manager so that staff would continue to be encouraged to report near-miss events at weekly huddles, and so that the audit feedback tool would continue to be used after an event was reported.

Implications for practice included nurses having a heightened sense of accountability to report. When nurses realize that as a result of increased reporting there are less medication errors and more improvements at the clinic and system level, they may feel encouraged to continue reporting. Healthcare systems should focus on removing barriers to reporting and making the process more streamlined. Future quality improvement initiatives could show how near-miss reporting directly impacts costs or quality metrics.

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Table 1.

Evidence Review Table

Citation: Christina, V., Baldwin, K., Biron, A., Emed, J., & Lepage, K. (2016). Factors influencing the effectiveness of audit and feedback: nurses' perceptions. Journal of nursing management, 24(8), 1080–1087. https://doi.org/10.1111/jonm.12409					**Level and Quality** **III -B**
Purpose/ Hypothesis	**Type of Evidence Research Design**	**Sample – Population, Size, Setting**	**Intervention/Procedures**	**Primary Outcome/Measures**	**Results/Conclusions**
To determine nurses perceptions on factors influencing the effectiveness of audit and feedback (A&F) in an acute care setting	Research Qualitative descriptive study	Sampling Technique: Convenience. # eligible: 40 nurses # accepted: 14 # in control: n/a # in intervention: 14 Power analysis: n/a Group Homogeneity: All participants were female, all had BSN, ages were mid-20's to mid-40's.	Control: n/a **Interventions:** Individual interviews were conducted by researchers using open ended questions about the A&F process. These interviews lasted between 25-60 minutes. **Intervention fidelity** Pilot interviews were done with nurses on another unit to ensure clarity of the questions and consistency.	DV: Perceptions of nurses regarding A&F. Data was analyzed independently by the researchers and coded. The coding was then compared using a constant comparative method and themes were identified.	Statistical Results: n/a Nurses in both units reported that three factors influenced their perception of A&F, (1) relevance, (2) process, and (3) own individual factors. Clinical Significance: While audit and feedback can be useful, the timing and relevance of when this is done are important factors. How the feedback is delivered is also an important consideration because staff need to see this as a learning opportunity vs a punitive approach. Conclusions: It is important for nurse leaders to understand nurses' perception related to A&F so that they can best A&F effectively.
Citation: Gleeson, L., Dalton, K., O'Mahony, D., & Byrne, S. (2020). Interventions to improve reporting of medication errors in hospitals: A systematic review and narrative synthesis. Research in Social and Administrative Pharmacy, 16(8), 1017–1025. https://doi-org.proxy-hs.researchport.umd.edu/10.1016/j.sapharm.2019.12.005					**Level and Quality** **III - A**
Purpose/ Hypothesis	**Type of Evidence Research Design**	**Sample – Population, Size, Setting**	**Intervention/Procedures**	**Primary Outcome/Measures**	**Results/Conclusions**

To identify and summarize, and studies in which interventions were carried out in hospitals to improve medication error reporting, and to make recommendations for future investigations.	Research Systemic review	Sampling Technique: Five databases were used to find articles. Inclusion and exclusion criteria was set # eligible: 66 studies # accepted: 17 # in control: n/a # in intervention: n/a Power analysis: n/a Group Homogeneity: All studies described interventions used to increase medication error reporting.	Control: na/a **Interventions:** Studies were screened by reviewers using set criteria. The intervention type used was then mapped to the Effective Practice and Organization of Care (EPOC) taxonomy and split into 4 main domains. The data from each study was tabulated to search for patterns and relationships across the studies. **Intervention fidelity** The Economic and Social Research Council (ESRC) Guidance on the Conduct of Narrative Synthesis in Systematic Reviews was followed in conducting the narrative synthesis. Each study was reviewed by 2 reviewers and disagreements were resolved by consensus.	DV: Review interventions used in hospitals to improve medication error reporting.	Statistical Results: n/a Out of the 17 studies, 5 studies carried out a single intervention and twelve studies conducted bundled interventions. The most common intervention types were (1) critical incident reporting- reported in 15 studies and (2) audit and feedback- reported in 7 studies. Other interventions included educational materials, educational meetings, and role expansion and task shifting. **Clinical Significance:** For those organizations that do not have critical incident reporting in place, this intervention should be considered. For those that already have it in place other interventions described in these studies can help increase reporting **Conclusions**: There needs to be more research done regarding the effectiveness of interventions aimed at improving medication safety events.
Citation: Hewitt, T. A., & Chreim, S. (2015). Fix and forget or fix and report: a qualitative study of tensions at the front line of incident reporting. BMJ Quality & Safety, 24(5), 303–310. https://doi.org/10.1136/bmjqs-2014-003279					**Level and Quality:** **III -B**
Purpose/ Hypothesis	**Type of Evidence Research Design**	**Sample – Population, Size, Setting**	**Intervention/Procedures**	**Primary Outcome/Measures**	**Results/Conclusions**
To determine whether	Research Qualitative study	Sampling Technique: Convenience	Control: n/a	DV: Primary, the use of the “fix and forget” vs. the “fix	Statistical Results: n/a

practitioners tend to "fix and forget" a safety problem or "fix and report" it.		# eligible: n/a # accepted: 40 # in control: n/a # in intervention: n/a Power analysis: n/a Group Homogeneity: 40 staff members from the General Internal Medicine dept. Various roles	**Interventions:** Two researcher conducted 45-minute interviews of 40 staff personnel and did a thematic analysis. The interview questions consisted of reporting, non-reporting and safety practices. **Intervention fidelity** The training of the researchers was not discussed. The data obtained by the researchers was coded via the Atlas Ti software and common themes were identified.	and report" method to address problems in the clinic, which they could themselves resolve.	The results of this study showed that when practitioners were faced with problems they could resolve on their own, they would "fix and forget" rather than "fix and report". **Clinical Significance:** Some of the barriers to reporting near misses and do-not -harm events include the time it takes to report, and the lack of education regarding the importance of reporting for organizational learning. Often these events are not prioritized over actual harm events. **Conclusions**: Underreporting of near misses and do-not-harm events does not serve organizational learning and patient safety. Staff should be made aware of the importance of reporting events.
Citation: Mutair, A. A., Alhumaid, S., Shamsan, A., Zaidi, A., Mohaini, M. A., Al Mutairi, A., Rabaan, A. A., Awad, M., & Al-Omari, A. (2021). The Effective Strategies to Avoid Medication Errors and Improving Reporting Systems. Medicines (Basel, Switzerland), 8(9), 46. https://doi.org/10.3390/medicines8090046					**Level and Quality** **III -A**
Purpose/ Hypothesis	**Type of Evidence Research Design**	**Sample – Population, Size, Setting**	**Intervention/Procedures**	**Primary Outcome/Measures**	**Results/Conclusions**
To provide a summary of medication errors reporting culture, incidence reporting systems, creating effective reporting methods, analysis of	Research Systemic review	Sampling Technique: Five databases were used to find articles. Inclusion and exclusion criteria were set. # eligible: 300 articles # accepted: 60 articles # in control: n/a # in intervention: n/a	Control: n/a **Interventions:** Two reviewers vetted abstracts and then did a full article review and narrative synthesis. **Intervention fidelity** Data was mined by two reviewers and then verified by two other	DV: Recommendations to improve medication error reporting.	Statistical Results: n/a As a result of this review recommendations were made regarding the use of reporting systems to enhance patient safety. **Clinical Significance:** Some of the common barriers to

medication error reports, and recommendations to improve medication errors reporting systems.		Power analysis: n/a Group Homogeneity: Articles selected met the inclusion criteria of being (1) readily accessible, (2) peer reviewed, (3) full-text in the English language, and (4) primary research publications of any design.	reviewers. Disagreements between the first two reviewers were resolved by a third and fourth reviewer.		reporting include (1) fear of being terminated, (2) lack of management feedback, (3) unsupportive colleagues, (4) lack of time, and (5) lack of knowledge. Conclusions: Addressing some of the common barriers in a reporting culture will help to increase the number of reports submitted.
Citation: Vrbnjak, D., Denieffe, S., O, G. C., & Pajnkihar, M. (2016). Barriers to reporting medication errors and near misses among nurses: A systematic review. International Journal of Nursing Studies, 63, 162–178. https://doi-org.proxy-hs.researchport.umd.edu/10.1016/j.ijnurstu.2016.08.019					**Level and Quality** **III- A**
Purpose/ Hypothesis	**Type of Evidence Research Design**	**Sample – Population, Size, Setting**	**Intervention/Procedures**	**Primary Outcome/Measures**	**Results/Conclusions**
To explore barriers that nurses face when reporting medication errors and near misses in hospital settings.	Research Systemic review	Sampling Technique: Four databases were used to find articles, plus Google and Google scholar. Inclusion and exclusion criteria were set. # eligible: 97 studies # accepted: 38 studies # in control: n/a # in intervention: n/a Power analysis: n/a Group Homogeneity: Thirty identified papers used a quantitative design, five utilized a qualitative design and three used a mixed methods design.	Control: n/a **Interventions:** Studies were independently assessed for methodological quality by three authors. Study quality was explored using the Mixed Methods Appraisal Tool (MMAT). This tool contains 19 methodological quality criteria. **Intervention fidelity**; Disagreements between reviewers were discussed until consensus was reached.	DV: The different types of barriers faced by nurses when reprting	Statistical Results: n/a Barriers to reporting include, organizational (1) culture, (2) reporting system, and (3) management behavior. Personal and Professional barriers include (1) fear, (2) accountability, and (3) characteristics of nurses. **Clinical Significance;** Burdensome reporting systems, punitive culture, and lack of management support and feedback are common barriers to med error and near miss reporting. If these are addressed, it will help improve reporting and overall patient safety. Conclusions: There is a lack of research into barriers for med error and near miss reporting.

					Education and management support can help to address some of the barriers that exist.

Figure 1

Fishbone Diagram

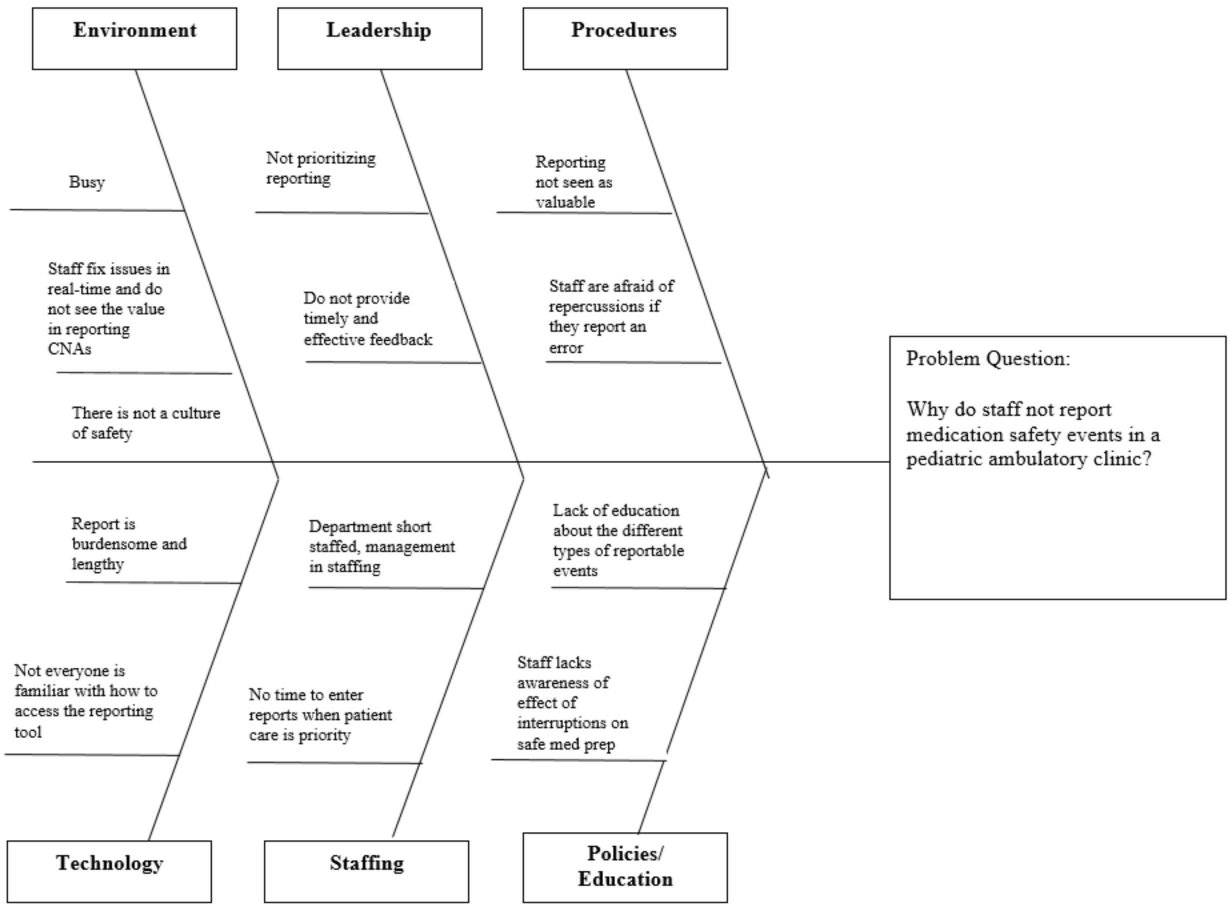


Figure 2

Knowledge to Action Process

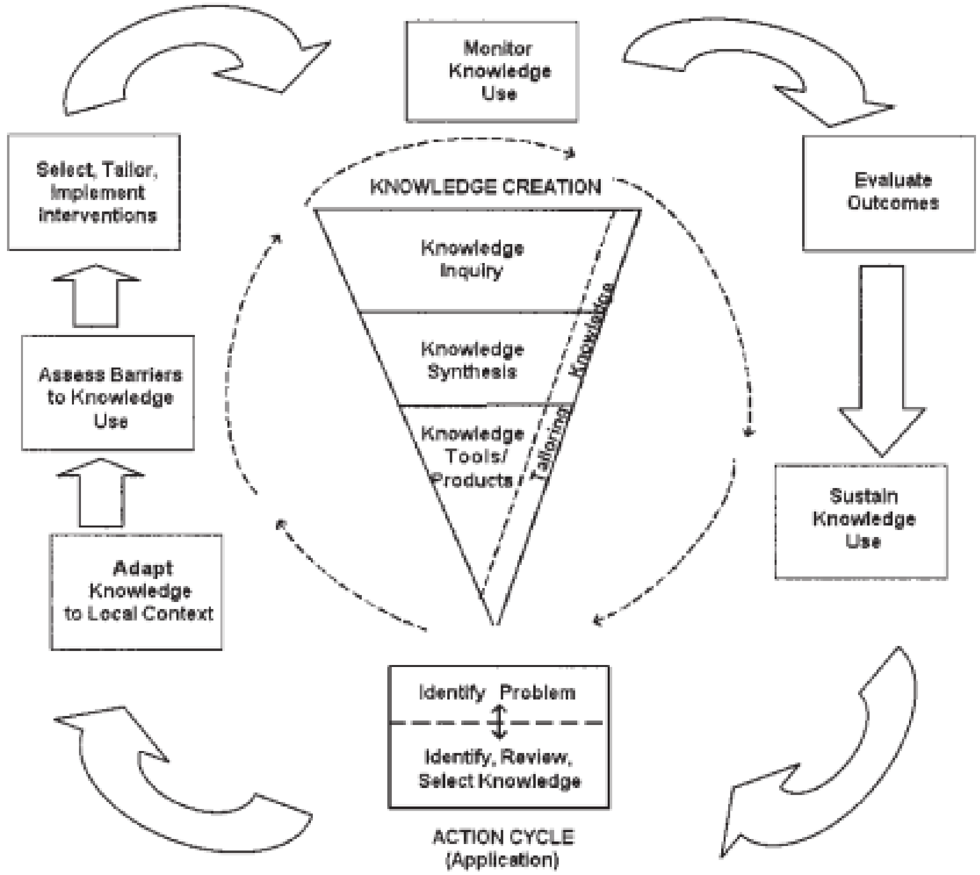


Figure 3.

Current State Process Map

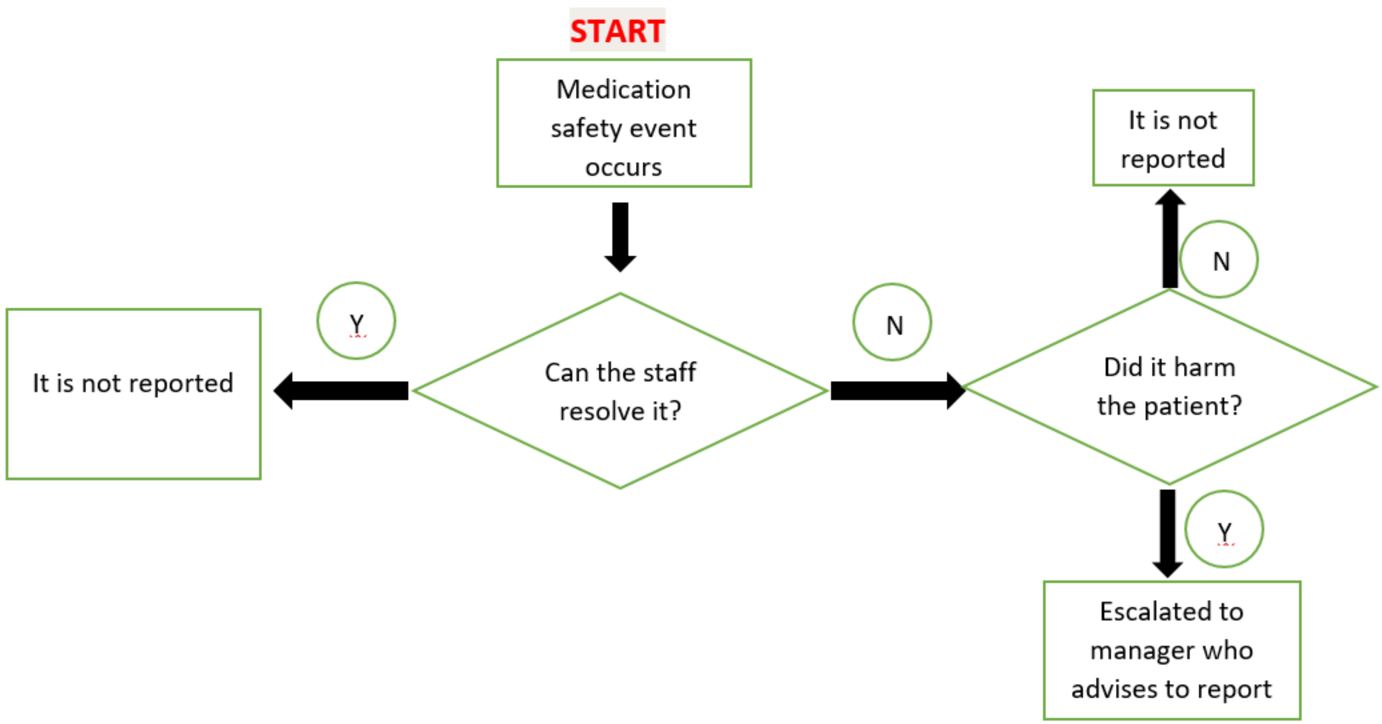


Figure 4.

Desired State Process Map

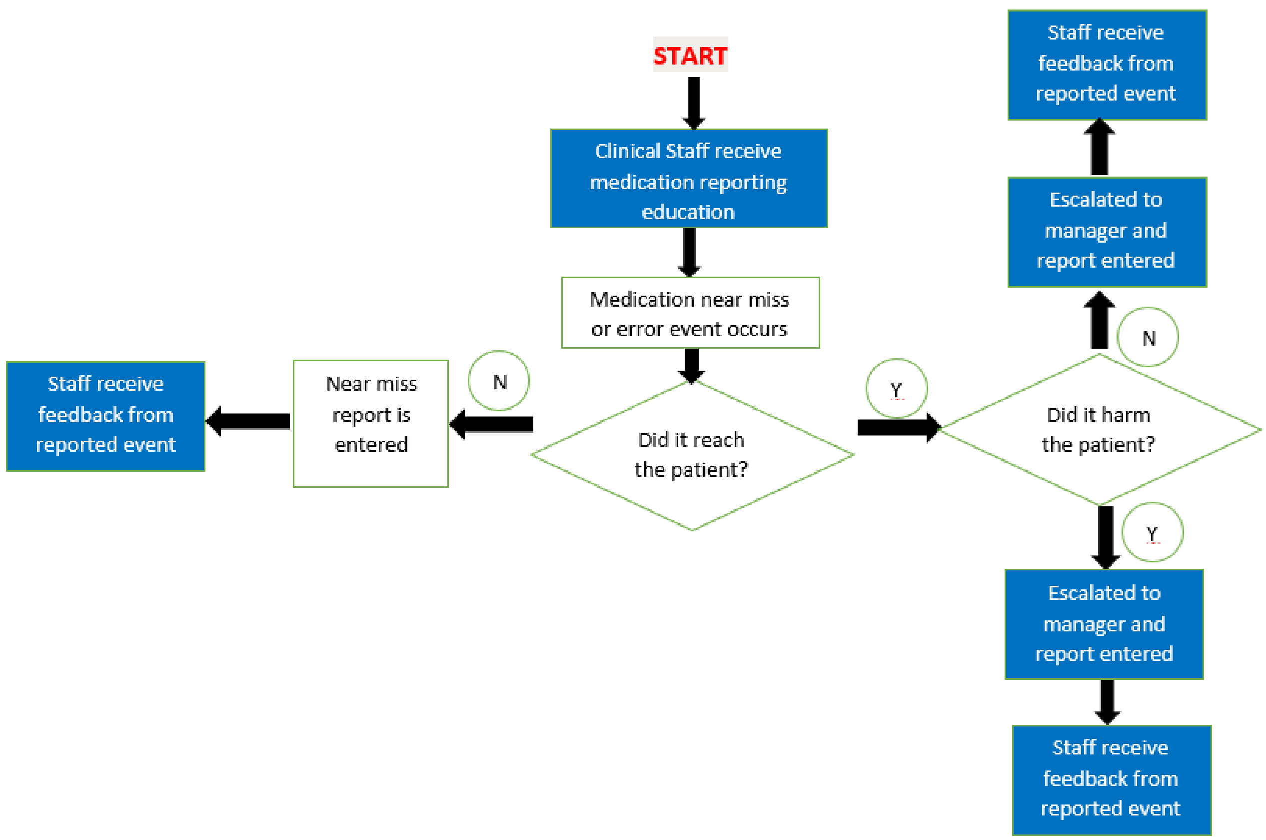
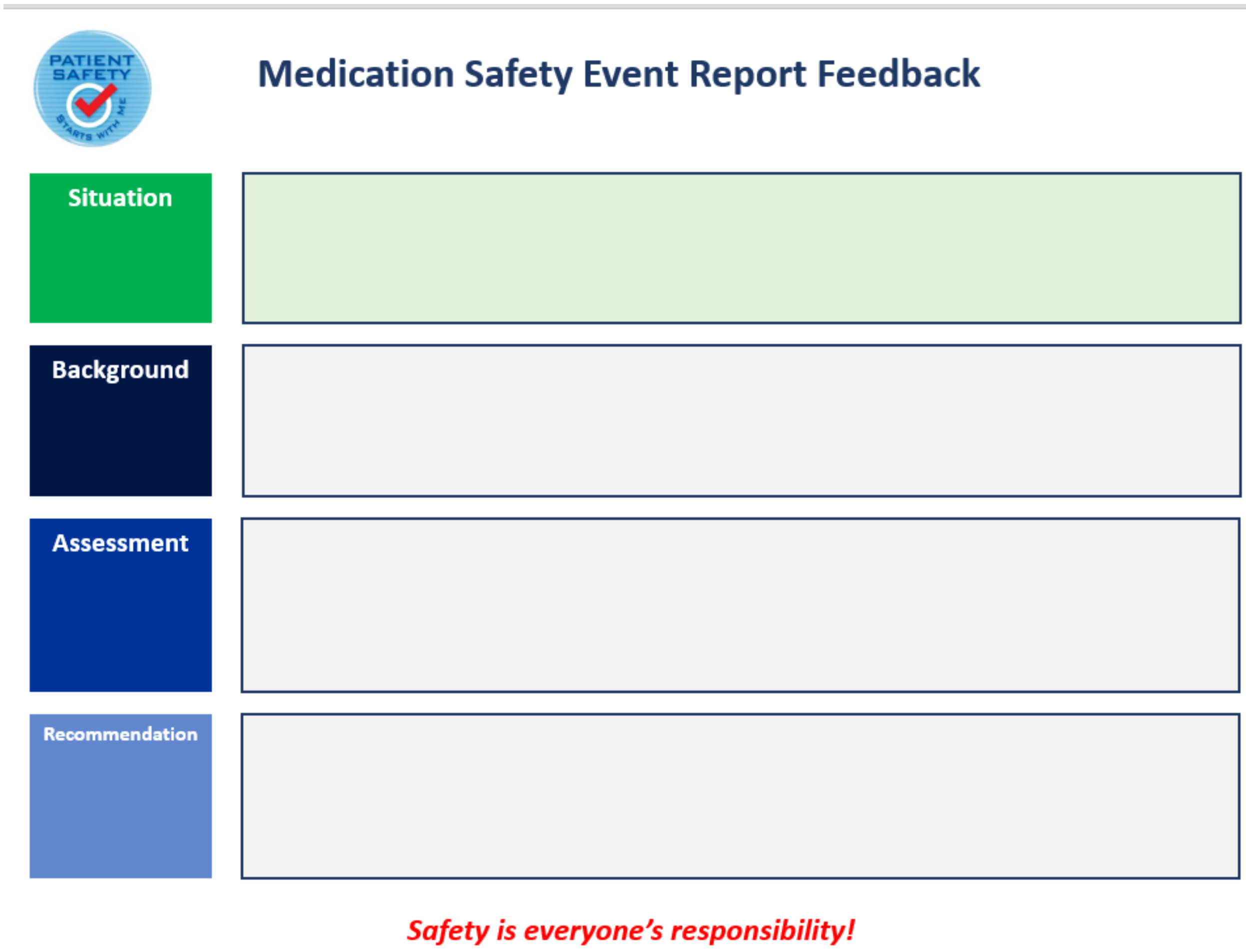


Figure 5.

SBAR tool



Medication Safety Event Report Feedback

Situation	
Background	
Assessment	
Recommendation	

Safety is everyone's responsibility!

Figure 6.

Categorical Data: Completion of education module

Did you complete the Medication Safety Event Reporting Education Module?

(did_you_complete_the_medic) Refresh Plot | View as Bar Chart

Total Count (N)	Missing*	Unique
6	12 (66.7%)	1

Counts/frequency: Yes (6, 100.0%), No (0, 0.0%)

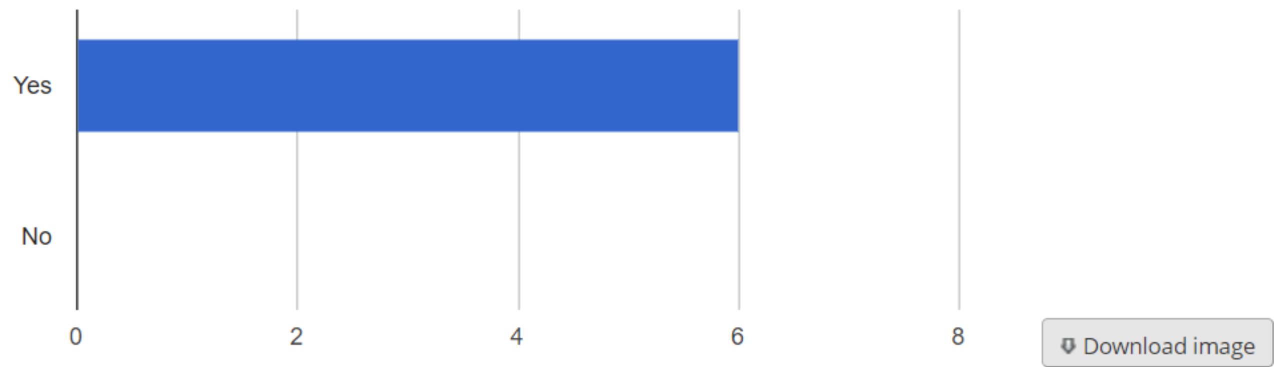


Figure 7.

Categorical Data: Pre-Implementation survey question 1

Do you know what the See It Report It (SIRI) tool is? *(do_you_know_what_the_see_i)* Refresh Plot |

View as Bar Chart

Total Count (N)	Missing*	Unique
6	12 (66.7%)	1

Counts/frequency: Yes (6, 100.0%), No (0, 0.0%)

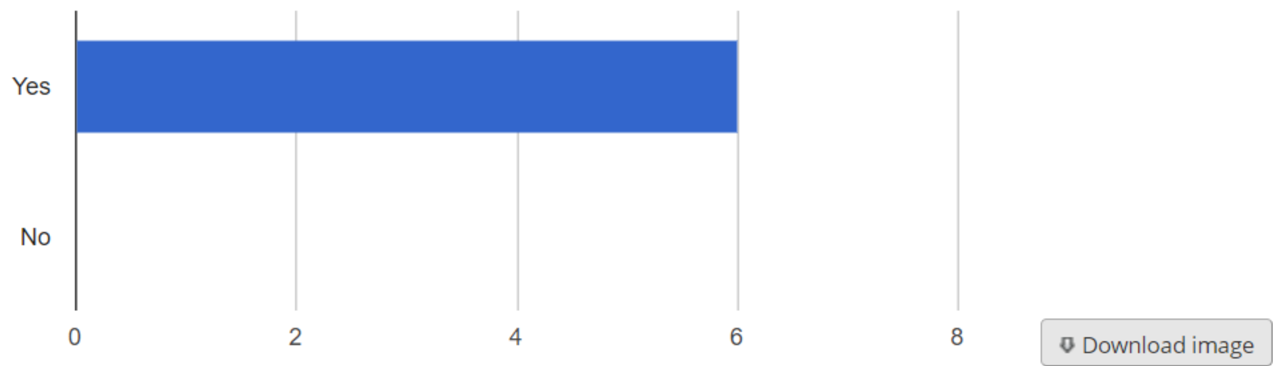


Figure 8.

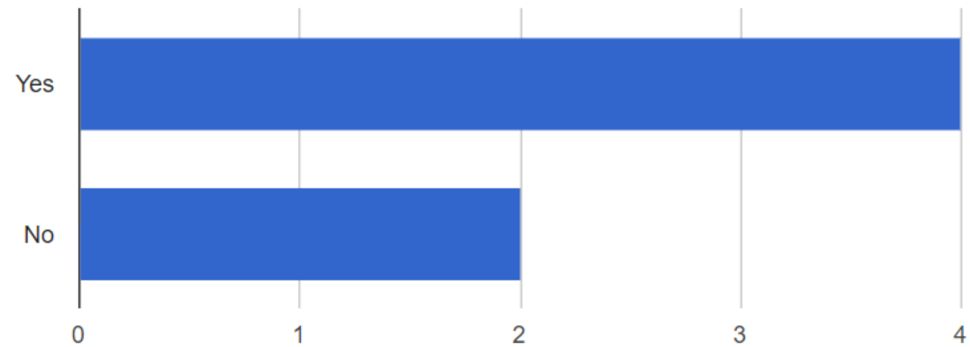
Categorical Data: Pre-Implementation survey question 2

Do you know how to enter a Medication safety event? *(do_you_know_how_to_enter_a)* Refresh Plot |

View as Bar Chart

Total Count (N)	Missing*	Unique
6	12 (66.7%)	2

Counts/frequency: Yes (4, 66.7%), No (2, 33.3%)



Download image

Figure 9.

Categorical Data: Pre-Implementation survey question 3

Do you know what medication safety events should be reported? *(do_you_know_what_medicatio)* Refresh
Plot | View as Bar Chart

Total Count (N)	Missing*	Unique
6	12 (66.7%)	1

Counts/frequency: Yes (6, 100.0%), No (0, 0.0%)

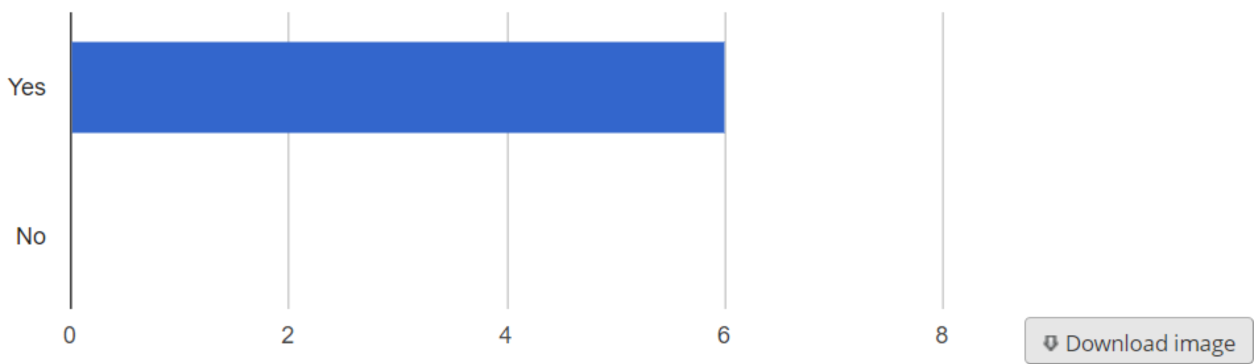


Figure 10.

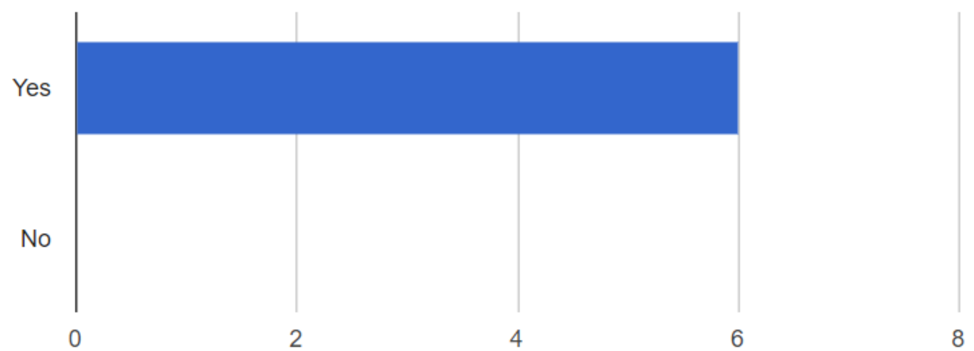
Categorical Data: Pre-Implementation survey question 4

Do you know the difference between a near miss and an actual medication error?

(do_you_know_the_difference) Refresh Plot | View as Bar Chart

Total Count (N)	Missing*	Unique
6	12 (66.7%)	1

Counts/frequency: Yes (6, 100.0%), No (0, 0.0%)



Download image

Figure 11.

Categorical Data: Pre-Implementation survey question 5

Do you know what Just Culture is? *(do_you_know_what_just_cult)* Refresh Plot | View as Bar Chart

Total Count (N)	Missing*	Unique
6	12 (66.7%)	2

Counts/frequency: Yes (1, 16.7%), No (5, 83.3%)

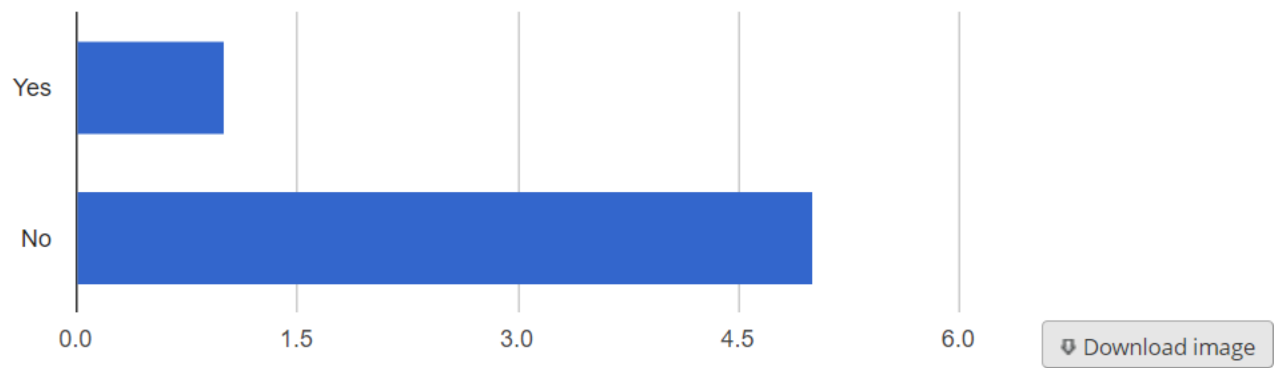


Figure 12.

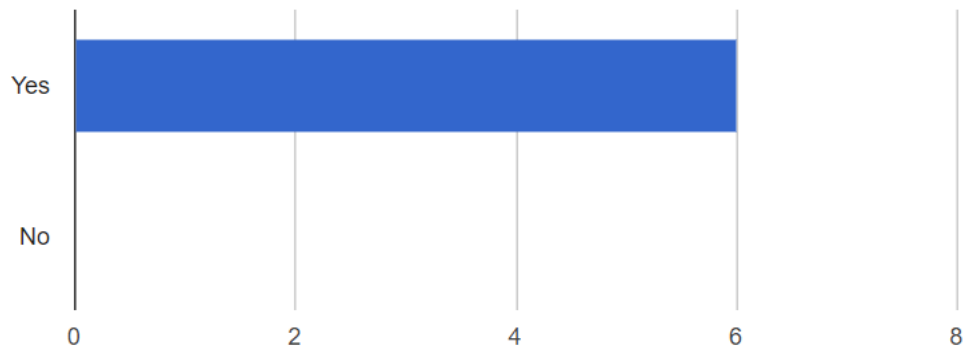
Categorical Data: Post-Implementation survey question 1

Do you know what the See It Report It (SIRI) tool is? *(do_you_know_what_the_see_i_v2)* Refresh Plot |

View as Bar Chart

Total Count (N)	Missing*	Unique
6	12 (66.7%)	1

Counts/frequency: Yes (6, 100.0%), No (0, 0.0%)



Download image

Figure 13.

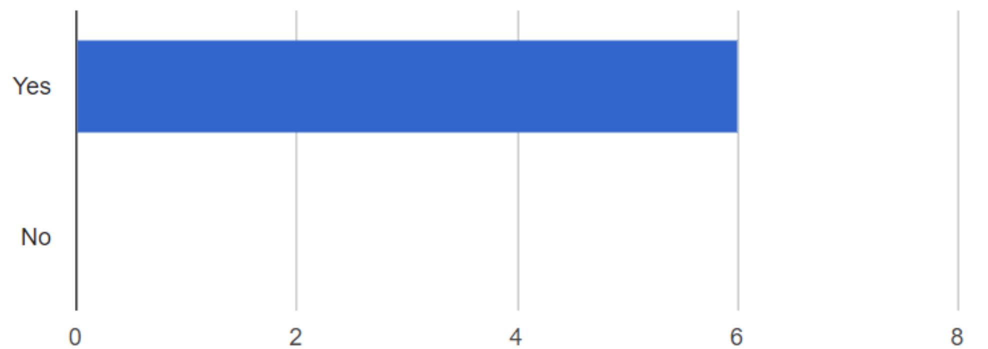
Categorical Data: Post-Implementation survey question 2

Do you know how to enter a Medication safety event? *(do_you_know_how_to_enter_a_v2)* Refresh Plot |

View as Bar Chart

Total Count (N)	Missing*	Unique
6	12 (66.7%)	1

Counts/frequency: Yes (6, 100.0%), No (0, 0.0%)



Download image

Figure 14.

Categorical Data: Post-Implementation survey question 3

Do you know what medication safety events should be reported? *(do_you_know_what_medicatio_v2)*

Refresh Plot | View as Bar Chart

Total Count (N)	Missing*	Unique
6	12 (66.7%)	1

Counts/frequency: Yes (6, 100.0%), No (0, 0.0%)

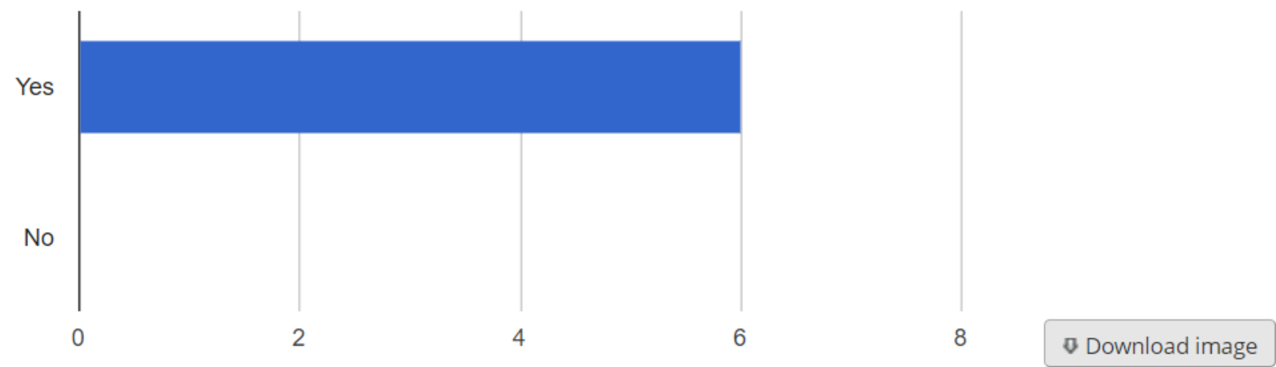


Figure 15.

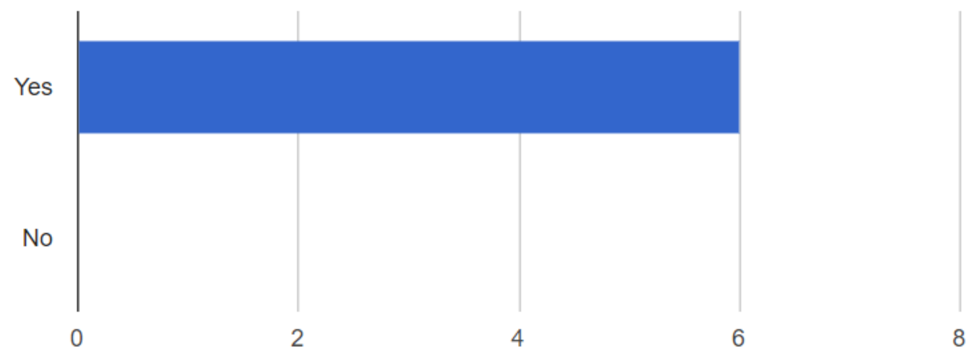
Categorical Data: Post-Implementation survey question 4

Do you know the difference between a near miss and an actual medication error?

(do_you_know_the_difference_v2) Refresh Plot | View as Bar Chart

Total Count (N)	Missing*	Unique
6	12 (66.7%)	1

Counts/frequency: Yes (6, 100.0%), No (0, 0.0%)



Download image

Figure 16.

Categorical Data: Post-Implementation survey question 5

Do you know what Just Culture is? *(do_you_know_what_just_cult_v2)* Refresh Plot | View as Bar Chart

Total Count (N)	Missing*	Unique
6	12 (66.7%)	1

Counts/frequency: Yes (6, 100.0%), No (0, 0.0%)

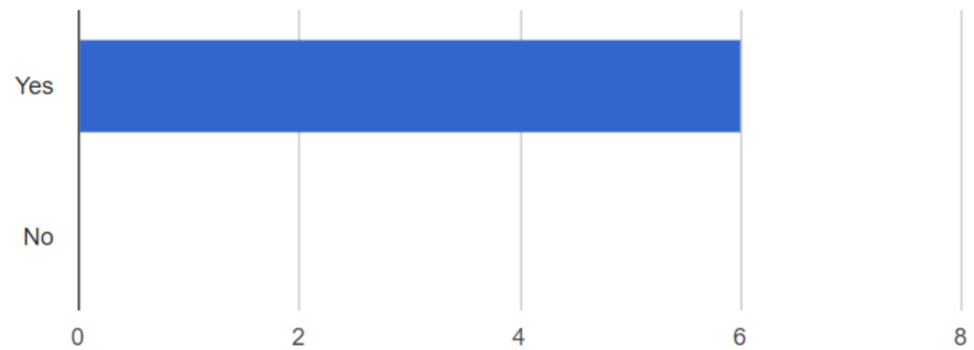


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Figure 17.

Continuous data: Run chart of weekly near-miss reports entered

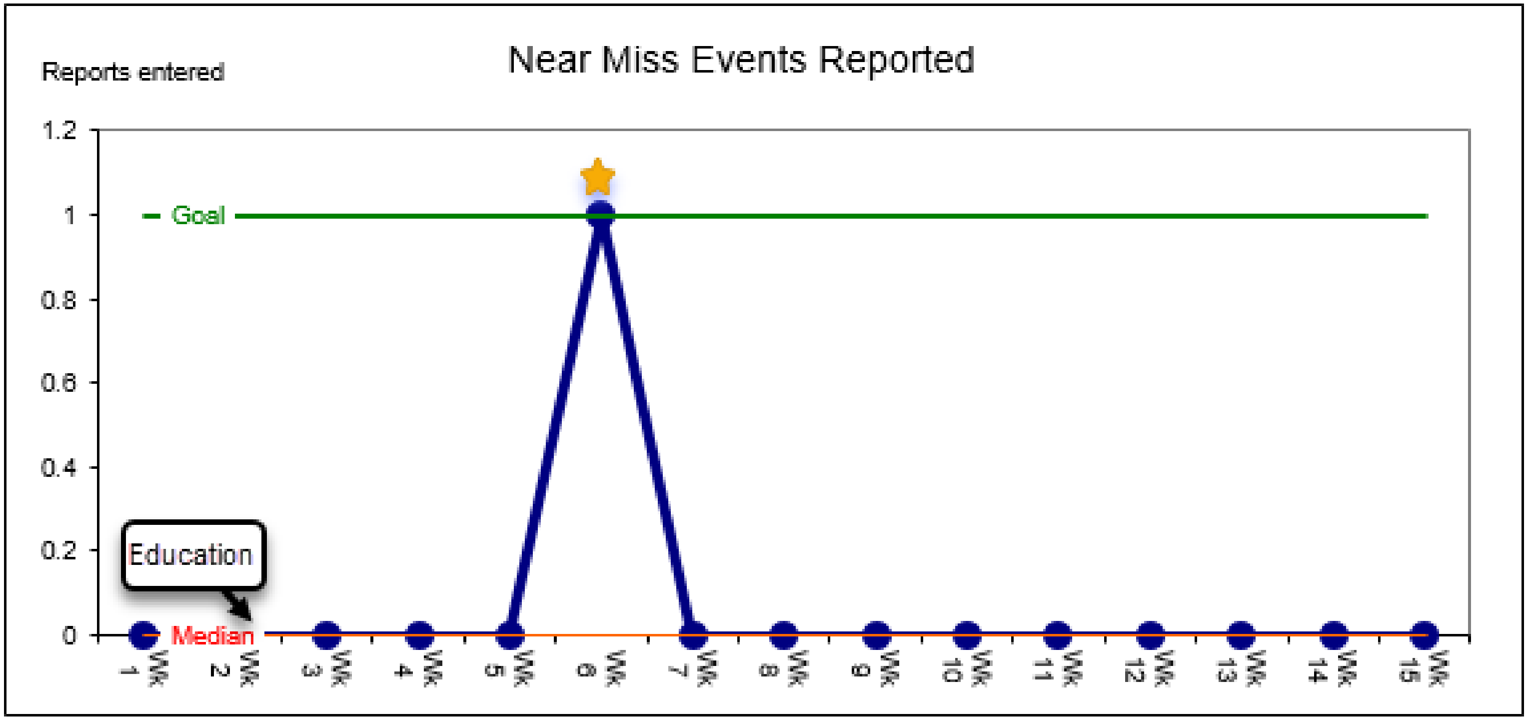

Figure 18.

Continuous data: Run chart of weekly medication error reports entered