

THE IMPACT OF A PHARMACY EMPLOYEE ENGAGEMENT PROGRAM ON
MEDICATION ERRORS

By

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ABSTRACT

PURPOSE: Studies have shown a positive correlation between employee engagement and performance. However, these studies are primarily focused on medical staff and nursing performance. There is limited data on the effects of employee engagement among pharmacy staff. The objective of this study is to engage inpatient dispensing pharmacists and pharmacy technicians in the prevention of medication errors by implementing a multifaceted employee engagement program and assess its impact on the quantity of externally reported medication-related errors.

METHODS: This study is a pre/post comparison of externally reported medication-related error rates after implementation of an employee engagement program. The employee engagement program was piloted for a period of three months, from December 2019 through February 2020. The employee engagement program was comprised of several different initiatives. Medication error reports were collected from August 2019 until February 2020, a period of three months before and after implementation. The reports were categorized into three categories: delivery errors and/or delays, medication mis-fills, and medication labeling errors. Data collected from the reports included medication involved, event date, event category/type, event description, and pharmacy manager responsible for event follow-up. The event reporter category, whether internal or external from the pharmacy department, was also collected. Internal reports were excluded to prevent potential bias. Reports related to parenteral nutrition orders and chemotherapy orders were excluded. Employee engagement was assessed using the Gallup Q¹² Employee Engagement survey administered to staff before and after the implementation of the program.

RESULTS: In the pre-implementation period, there was a total of 89 medication-related error events reported. The most common reported error was in delivery errors/delays (48.3%). During the post-implementation period, a total of 84 medication-related errors were reported. The most common reported error post-implementation was in medication mis-fills (44%). There was a total of 51 responses from the online survey pre-implementation and 76 responses from post-implementation, resulting an increase of 49%. The individual responses from the survey were not statistically significant.

CONCLUSION: Although a significant decrease in medication errors was not observed, the recommendation is to continue this employee engagement program. There was no statistically significant increase from the survey results, however it is recommended that an annual survey is deployed to continue to assess engagement. Employing methods of engagement is one way to ensure the team remains motivated and committed to the department's mission and vision, giving meaning to their role and responsibilities and ultimately improving their performance, leading to a decrease in medication errors.

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INTRODUCTION

The notion of promoting safety for employees in the workplace did not begin in the United States until the 20th century [1]. In the 1700's and 1800's, the workplace was a difficult place with the Industrial Revolution introducing new developments in machinery and manufacturing processes. Although this contributed to higher productivity and more efficiency in the workplace, it also became a dangerous place with hazardous conditions and long hours, frequently leading to serious long-term medical conditions or even death [2]. It was not until the 20th century, with the united push from Labor Unions and grassroots movements that efforts for regulations in improvement of workplace safety began to rise [1]. In the 1970's, efforts for self-protection led to a shift in laws and regulations that required employers put safety first. Accident rates began to fall, and workplace safety conditions continued to improve to create the safer workplace that we know today.

Employee satisfaction increased with the improvement in workplace safety however, other workplace issues began to emerge. Employee engagement was a concept that was increasingly explored in the 1990's and 2000's [3]. The term employee engagement is broad, but fundamentally looks at the relationship between employers and employees. Although the definition of employee engagement varies by organization [4], it usually covers constructs such as morale, motivation, ethics, and/or satisfaction. Despite the lack of a universal definition, it is clear there is the positive relationship between employee engagement and workplace success [3, 4]. It has been shown that engagement is highly related to positive business outcomes [5]. With the increase of awareness in the importance of employee engagement, employers have incorporated varying strategies and methods of engagement into the workforce to further optimize productivity and ensure organization success. The most commonly seen method to measure engagement is through surveys. Gallup, Inc. created the Gallup Q¹² Employee Engagement Survey after years of research and examining different questions that would best measure it, determining that their final set of twelve questions have the most powerful link between highly engaged teams and business outcomes [6]. These questions identify factors most common to high performing workgroups [7]. Surveys of these kind are beneficial because they

enable management to ask real, tough questions and provide employees the opportunity to answer honestly and anonymously in a safe setting. Lowe also demonstrated that employee engagement surveys can bring about further initiatives for quality improvement [8].

In healthcare, safety of the patients is important to high-quality patient care. However, a study conducted at Johns Hopkins found that medical errors is the third-leading cause of death in the U.S. [9]. As workers of the past have had to fight for safety, pharmacy must advocate for the safe use of the medications they provide. Great patient safety equals to patient satisfaction. There are several factors that may impact the patient's overall experience, such as direct physician-patient interaction, nurse-patient interaction, and patient clinical outcome. When hospitals create an engaging workplace, they lead to improvement in patient satisfaction and quality of care outcomes [5]. Similarly, Press Ganey has shown that hospitals with better patient experiences are correlated to those with better business performance and outcomes, such as readmission rates [10]. While there is existing literature that confirm the importance of hospital staff engagement in providing safe patient care [5, 9, 11], there is limited literature on how employee engagement of pharmacy affects medication errors and thus, patient experiences [12]. It is difficult to measure with the methodology of existing studies as patient interactions with pharmacy is unlike those of other services, like nurses or physicians.

Texas Children's Hospital (TCH) is one of the largest free-standing pediatric institutions in the United States with over 750 hospital beds. TCH Pharmacy previously had two large separate pharmacies that produced the majority of dispenses for both of the pediatric and adult populations. In February 2019, TCH Pharmacy experienced a large-scale change where these two pharmacies of physically different locations merged into one large, combined location. This led to changes in the workflow, workload, and team dynamics. There was an initial surge of safety events reported from this change. This raised the question of what measures can be taken to minimize errors coming from the now-largest pharmacy in TCH. This institution has a health system-wide voluntary safety event reporting system called "Safety Scoops". In order to gain a better understanding of the classification of these medication errors being reported, a preliminary study was conducted that included data collection of the Safety Scoop reports. Data was collected 6.5 months prior to and after the merge. As two separate pharmacies, there was a total of 209 reports, averaging to 32 reports per month. After the merge of these two pharmacies, there was a total of 220 reports, averaging to 35 reports per month. Most important, this revealed there

were three main categories that the medication errors fell into: delivery error and/or delay, medication mis-fill, and inappropriate labeling (mis-label). The methods of increasing employee engagement is one way to ensure a team remains motivated and committed to the organization's mission and vision, giving meaning to their roles and responsibilities, such as promoting safety culture. The results from this preliminary study and the current lack in current literature regarding pharmacy employee engagement prompted this study of examining the relationship between medication errors and the implementation of an employee engagement program.

METHODS

Study Design

This study was a three-month descriptive pilot that retrospectively looked at the volume of medication-related errors reported. The pilot program was conducted from December 2019 to February 2020. Data was collected three months prior to the implementation of the pilot program (August, September, and October) and three months after the implementation (December, January, and February). November was used as the roll-out period and thus, reports from this month was not included. Data collected from the reports included department/location, drug involved, event category/type, event date, event description, and the pharmacy manager assigned for follow-up. Inclusion criteria included all safety events reported from medical and nursing staff pertaining to medication preparation or dispense errors from the centralized pharmacy. Exclusion criteria included reports from pharmacy staff, parenteral nutrition and lipids orders, and intravenous chemotherapy orders. Internal reports from pharmacy staff were excluded to prevent potential bias. Parenteral nutrition orders, lipids orders, and intravenous chemotherapy orders were also excluded as these type of orders are dispensed from a different pharmacy satellite.

An employee engagement survey was conducted digitally via REDCap (Research Electronic Data Capture). The questions of the survey originated from the Gallup Q¹² Employee Engagement Survey [6]. The employee engagement survey was made up of the 12 Gallup survey questions, plus 3 demographic questions, for a total of 15 questions (Appendix B). The pre-implementation and post-implementation survey were available for two weeks prior and two weeks after the implementation and conclusion of the program, respectively. Pharmacist and pharmacy technicians employed by the centralized pharmacy leadership were eligible to partake

in the survey. This tool asks an employee to indicate their agreement with twelve statements, using a 5-point Likert scale from “strongly agree” to “strongly disagree”. Descriptive statistics were used for statistical analysis of all data, including the Likert scale for the survey responses. The error report data was analyzed using an unpaired t-test.

This study was completed at Texas Children’s Hospital, located within the Texas Medical Center in Houston, Texas. Texas Children’s Hospital’s now-merged centralized pharmacy services all inpatient scheduled doses and certain first doses. There is a dedicated team of pharmacists and pharmacy technicians for the centralized pharmacy. During this pilot period, there were a total of 42 pharmacists and 62 pharmacy technicians in this team. The leadership team of the centralized pharmacy consists of an assistant director, two pharmacy managers, and three pharmacy technician managers.

Description of Study Intervention

A multifaceted approach was taken to developing this program and focused on three main concepts, or components: awareness, recognition, and sustainability. Each of the three components consisted of two or three initiatives (Figure 1).

The first component was *awareness*. One initiative within the awareness component was the creation of a safety huddle board, which was dubbed the “*No Harm from the Pharm!*” Board (Figure 2). This was created using an office cork bulletin board with laminated, ringed numbers that showed the total number of days since the last day error-free for each specific medication error category. This board was affixed to the wall in the pharmacy visible to everyone. The second initiative was to provide a weekly communication email that would be released every Friday to the department. An email template was created that included a summary of the week’s reported errors for each category, as well as a summary of the other components of the program, which will be discussed in the following sections (Figure 3).

The second component was *recognition*. The two initiatives to the recognition component was a formal “Employee of the Month” implementation, similar to that of other typical employee of the month programs, and a less formal shout-out board implementation. For the “Employee of the Month”, pharmacist and technician peers could nominate one another via a paper submission form. The leadership team then would select an individual from the nominations. That selected individual was announced by the leadership team at the end of every month during a shift-change huddle. The employee received a framed certificate, a gift card, TCH stationary set, and a

handwritten card that was signed by the centralized pharmacy leadership team. The employee's picture was taken and featured on a "Shining Stars" Employee of the Month board (Figure 4) that was created from a bulletin board in the team's break room. This was also announced through the weekly communication email at the end of every month. The less formal recognition implementation focused on a more daily basis peer-to-peer recognition through "shout-outs". This was accomplished with a dry-erase bulletin white board that was named the "Cheers for Peers" Board (Figure 5), which team members could easily access and write on with dry-erase white board markers. The team was encouraged to write comments of appreciation for their team members. The names and/or shout-outs on this board were also featured in the weekly communication emails. A third initiative, huddle icebreakers, was included into this component. Short icebreaker activities related to team building were performed in team huddles at least once a month.

The third component of the employee engagement program was *sustainability*. The first initiative to this sustainability component was the implementation of a simple physical suggestion box (Figure 6) placed in the team's break room. The second initiative was a regular call for volunteers to be leads of these various initiatives. This call for volunteers was included in every weekly communication email. Lastly, the most important part of the sustainability component was the involvement of the leadership team. This comprised of bi-weekly leadership team meetings to discuss this pilot program. A standard operating procedure (SOP) was created which included a leader rotation schedule and to-do checklists for each initiative (Appendix A). This SOP included guidelines for the Employee of the Month initiative and other helpful advices to execute the program. This document was routinely updated throughout the pilot program as needed to optimize processes.

Endpoints

The primary endpoint was to identify the number of external reported medication-related errors before and after implementation of the employee engagement program intervention, specifically in the three categories of delivery error and/or delay, medication mis-fill, and inappropriate labeling (mis-label). The secondary endpoint was to assess the pharmacy staff engagement before and after implementation. Delivery errors and/or delays were defined as errors or unspecific delays in delivery from the pharmacy, such as a wrong delivery location or missing scheduled dose. Medication mis-fills were defined as medication orders with missing

drug, wrong dose/volume, wrong medication, or wrong dosage form. Inappropriate labeling or mis-label were defined as medication orders with wrong, missing, or duplicate patient label(s).

RESULTS

In the pre-implementation period, there was a total number of 595,625 doses dispensed with a total of 89 medication-related error events reported, resulting in 1.5 error per 10,000 doses (Table 1). The most common reported error was in delivery errors/delays (48.3%), then medication mis-fills (29.2%), and then inappropriate label (22.5%). During the post-implementation period, there was total of 601,214 doses dispensed with a total of 84 medication-related errors reported, resulting in 1.40 errors per 10,000 doses. The reported errors post-implementation were made up of medication mis-fills (44%), delivery errors/delays (42.9%), and inappropriate label (13.1%). From pre to post intervention, there was a 17.1% decrease in delivery errors/ delays, a 40.9% increase in medication mis-fills, and a 45.5% decrease in inappropriate labels reports, resulting in a 6.5% overall decrease in medication error reporting. Comparing with the hospital's total number of the medication-related errors reported in each month (Table 2), the errors pertaining to delivery error and/or delay, medication mis-fill, and inappropriate labeling from the centralized pharmacy.

There was a total of 51 responses from the online Gallup Q¹² survey for pre-implementation and 76 responses for post-implementation. Demographics of the respondents, which were further divided into pharmacists and technicians, can be found in Table 3. In pre-implementation, the survey has a response rate of 66.7% (n=28) for pharmacists and 37.1% (n=23) for the pharmacy technicians. Post implementation, the survey has a response rate of 95% (n=40) for pharmacists and 58.1% (n=36) of the pharmacy technicians. There were no statistically significant differences seen when comparing pre and post intervention responses from pharmacists and technicians. Responses to questions from pre-implementation and post-implementation surveys can be found in Table 4 and 5 for pharmacists and pharmacy technicians, respectively. The most favorable result pre and post intervention for both pharmacy and technician groups was "I know what is expected of me at work". The least favorable result for both groups was "In the last seven days, I have received recognition or praise for doing good work".

DISCUSSION

Medication error reporting

The results of the medication error reports from this study suggest that there is some sort of impact of an employee engagement program on the volume of medication related error reports, as there was an overall decrease by 6.5%. This study is the first to provide quantitative data that links employee engagement to medication errors from the pharmacy. Given the large volume that is dispensed from this centralized pharmacy, a low rate of errors is worthy of evaluating. We saw the largest error reduction in the category of inappropriate labels (45.5%), decreasing by almost half. This is significant to our practice and we can hypothetically presume that the team was being more mindful or attentive, due to increase in engagement, when placing labels for orders. We also saw a 17.1% decrease in the delivery errors/delays. In this institution, the same technicians who fill the orders also deliver to the floors and automated dispensing cabinets. The most types of errors/delays from delivery were due to incorrect placement of controlled substances, incorrect temperature (room as opposed to refrigerator), or the wrong patient's bedside drawer. In the post-implementation, there were the similar mistake patterns from pre-implementation, but less of them. One thing to address was the increase of 40.9% errors in the medication mis-fill category. Although reported errors involve appropriate and timely follow-up, those were not included in this study as it was beyond the scope of the study. So in order to better understand the errors, a deeper investigation of these errors would be required. Errors can be complex due to various factors, such as the property of the medications itself or a misstep from the workflow. From an initial review, one possible reason for this increase in mis-fills may be that there was a cluster of errors that occurred that can be traced to one specific dispense activity from the pharmacy. Being a dispensing pharmacy that produces orders in large batches, one oversight can lead to a high number of errors. This reason and other factors may have contributed to this increase in mis-fills. Despite the increased error rate for misfills, overall there was a 6.5% decrease in medication-related errors as a whole.

The hospital's total number of the medication-related errors reported in each month were compared to the errors reported in the three categories (Table 2). There was a sharp decrease in the total number of hospital reports in December 2019, which was due to an upgrade in the electronic reporting system that caused technical issues and thus barriers in reporting, resulting in a percentage that is slightly higher the other months. It can be deduced that there was a decrease

of reports in February due to the COVID-19 pandemic worsening near the end of the month, leading to a decrease in census, and thus impacting the rate of errors being reported. It is difficult to properly assess the consistency of overall error reporting patterns, including the impact of medication related events, due to these reasons.

There are several limitations to using reports as an indication for volume of errors. The most considerable limitation is the subjective nature of a voluntary reporting system and the inability to control for its subjective element. Reports are voluntarily entered and may not provide a completely objective and/or accurate account of the error. There is no standard definition of what constitutes the reporting of an error so there tends to be a wide spectrum of the types and severity of errors reported, from near misses to patient harm. The severity of errors were not taken into account in this study. Another limitation from this study was the short length of the program's intervention. The short duration made it difficult to see statistical significance in the survey results. Another limitation that could not be controlled and should be considered is staffing issues, such as understaffing, new employees, or covering of shifts from other teams, that may have occurred during these months and potentially impacted error volume and results. Lastly, global issues such as the complexity of human behavior with job satisfaction or engagement (economy, politics, changes with the profession, personal issues, health, relationship, position setting, specific roles, working conditions, etc.) could produce more uncontrollable variables.

Employee Engagement Survey

The Gallup Q¹² Employee Engagement is a powerful tool utilized by many leading Fortune 500 companies [14]. It is used by organizations to quantify and understand levels of employee engagement. This survey was selected for this study due to its popularity and its validation of success with many organizations. The use and purpose of the survey within this study was not to improve employee engagement, but simply to measure the engagement level. Overall there was no statistically significant increase in the responses, however there was a large increase in the total responses by 49%. The number of pharmacist participants reached nearly 100% post-implementation and the number of pharmacy technicians increased from only about one-third of pharmacy technicians to nearly two-thirds post-implementation. Those who do not participate in surveys can be predictive of who is more likely to leave the organization in the next six months [15].

There are certain aspects to consider when using Gallup's survey within the setting of this study. Gallup's research show that conducting the Q¹² survey every six months is the best strategy for building engagement [16]. However, this program pilot was only three months long, not long enough to see significant change. With the short duration, certain elements addressed in the survey, such as "Growth", were unable to be addressed. "Growth" is difficult to see an improvement in as the questions are phrased in "last 6 months" and the "last year". Question 4 asks "In the last seven days, I have received recognition or praise for doing good work". This would be difficult for a manager to maintain especially in really large teams. Another layer that adds to its difficulty is getting to know every single individual and their own preference to recognition methods. One of the questions stated "I have someone I can trust at work." This question is originally written by Gallup as "I have a best friend at work." This statement was edited because the term "best friend" can be tricky or strange, in that within healthcare, personal boundaries may be considered as necessary to remain professional. To reiterate, the goal of this study was not to improve the results of the employee engagement survey but to simply see the change in responses and assess if there is correlation to medication errors. Ideally, a questionnaire that is better applicable to pharmacy operations and more personalized to the setting would be most useful and effective. However, utilizing an available, validated tool saved on resources and limited potential bias in forming questions for this study.

Intervention

The purpose of the awareness component was to promote and increase transparency of errors between the leadership and the team. An up-to-date visible form of communication of errors, such as the No *Harm from the Pharm!* Board provides a patient safety overview in real time and empowers the team to develop a sense of ownership in patient safety. The weekly communication email summarized and reiterated error reports from the week, with tips and advice from the leadership on how to avoid the seemingly more common mistakes moving forward. Next step with the awareness component is to provide a visible "Best Score" section on the Board so that there is a visible reminder that drives for improvement.

There are benefits to recognition from both leadership and from peers. The goal of this component was to motivate high performance behaviors with positive reinforcement and by promoting a culture of recognition. Recognition demonstrates that their efforts are valued and that their hard work is worth rewarding. In a high-stress and busy environment like a hospital

pharmacy, it can be difficult to take a moment to verbally praise your peers. The “Cheers for Peers” board provided an avenue to anonymously provide positive feedback to an individual or group at any time. Incorporating peer-to-peer recognition is great for team spirit, as it encourages the team to see the positive attributes in those that they work with every day [16]. The huddle icebreakers were also added into this recognition component because by having a large group activity, everyone is recognized in some fashion. Although it is not “reward” based, this type of activity recognizes employees as people on a personal level, beyond just as co-workers.

As with any new program, sustainability can be challenging if there is no accountability or room for continuous improvement. A suggestion box served as a valuable asset as it creates a safe space for employees to share their ideas and help people feel that their input is valued. This created more open lines of communication and continuous feedback between the leadership and the team. There are so many suggestions that a bigger box was purchased midway through the pilot. The other initiative within sustainability was obtaining volunteers lead these various initiatives, with the goal that the leader will delegate some of the responsibilities to informal leaders, empowering them. The leader would maintain rapport with initiative leads to regularly evaluate what is working and what is not in the program. This initiative was difficult to execute in the pilot program as the leadership was taking the time to understand the program prior to taking any volunteers to delegate tasks to. The overall goal of this component was to keep the leadership involved and invested in keeping this program moving forward and to keep the momentum of this program.

There were some hurdles and gaps in the implementation and execution of this pilot. Some examples include instances where a leader may have forgotten to update the “*No Harm from the Pharm*” Board on a daily basis. The Board may have gone a few days without being updated as it was a very manual process. Some of the initiatives were more demanding than others, such as the “*No Harm from the Pharm*” Board requiring daily maintenance versus the “Employee of the Month” only requiring just a few hours at the end of the month. Although steps were taken to try to help facilitate some of the more demanding initiatives, it was not possible with the limited time and resources. There may be potential for greater success in the maintenance and upkeep of these boards and initiatives if there was a way to automate some of the activities.

Next Steps

This pilot program will continue to operate with adjustments as needed. The most successful initiatives, considering their impact and sustainability, will be reviewed, selected, and further optimized or remodeled. Furthermore, a Safety Attitudes Questionnaire may be considered to better understand the team [17]. Error reports can continue to be retrospectively collected. One of the first steps will be to send out the Gallup Q¹² Employee Engagement survey again after a longer period (an additional three months to total at least six months from the initial survey). From there, the results of the surveys should be reviewed and interpreted appropriately, addressing any areas that should be prioritized. There are guides available on how to address each areas that the team could utilize. With a longer pilot period, some of the anticipated long-term impacts include decreased medication-related errors and increased employee satisfaction. Lastly, we believe this in turn will yield soft cost-savings from improved attendance and retention, and improved productivity and efficiency. With time and as the program continues to develop, more data will need to be collected to assess its full impact.

CONCLUSION

In this three-month study, medication related reports in the categories of delivery errors and/or delays, medication mis-fills, and medication labeling errors were collected before and after the implementation of an employee engagement program that showed an overall decrease in the number of errors and an increase in the number of participants in the employee engagement survey. The findings of this study are limited to the short duration however, despite the limitations, the implementation of an employee engagement program was seen as effective in the reduction of medication errors. This study provides evidence that a longer study and more research is needed to better understand causation associations around the complexity of employee engagement in a pharmacy and medication error setting. The leadership team believes the far-reaching and long-lasting impact of an employee engagement program and is committed to continuing the growth of this program as a method to reduce errors and promote patient safety. There is room for improvement to increase engagement of the team and overall, a potential for team growth and performance improvement. It is with optimism that we believe this pilot program has set in motion and paved the way for a culture of recognition where employees feel appreciated, while emphasizing a culture of safety.

Figure 1. Components of the Employee Engagement Program

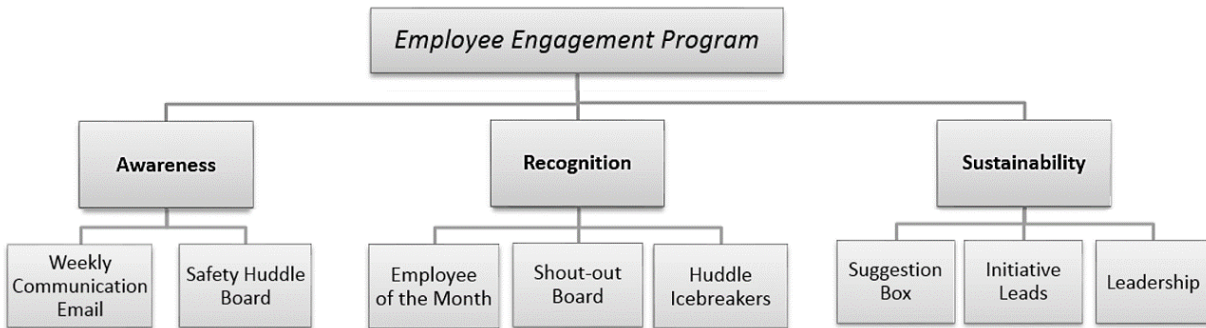


Figure 2. “No Harm from the Pharm” Board

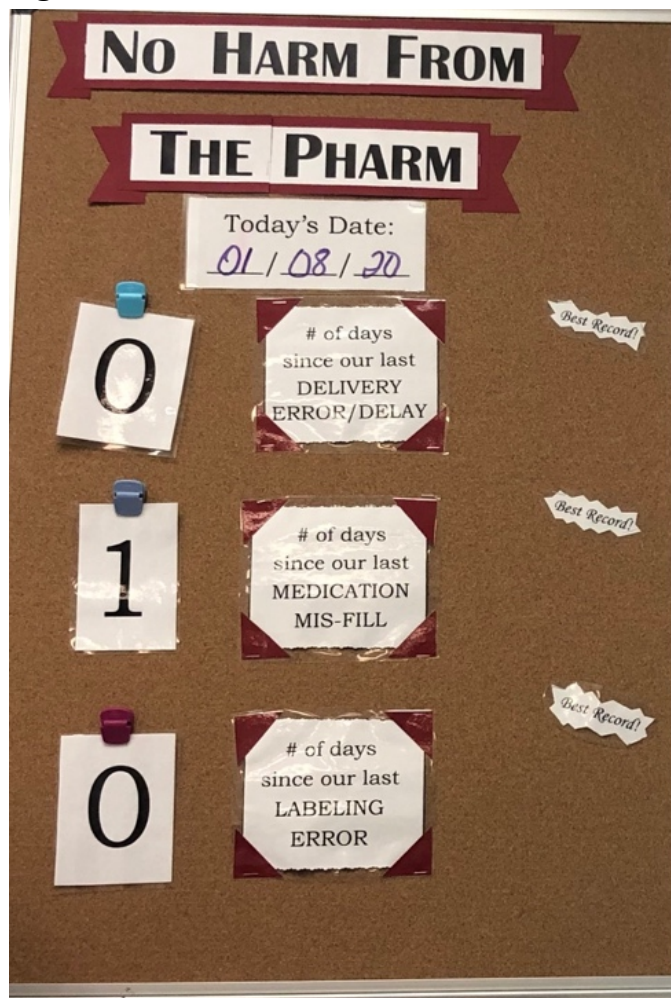


Figure 3. Weekly Communication Email Template

ATTENTION: 7PW PHARMACY SAFETY HUDDLE – No Harm from the Pharm!

7PW Team,

During the week of 12/9/19, we have had:

- **5** scoops related to medication delivery
- **0** scoops related to medication mis-fill (GOOD JOB)
- **0** scoops related to medication mis-label (GOOD JOB)

Tips and advice from leadership:

- **Good Job** ZERO misfills and mislabeling errors this week.
- Let us aim for no delivery delays

Suggestions from the team:

- Addition of a filtered water machine for breakroom
 - Response from leadership: A request was placed by leadership on 12/5 to have an ice machine/water dispenser placed in the 7 PW breakroom. Will provide status updates to the team as available.
- Stop micromanaging
 - If there is a particular situation/process that staff is concerned about, please do not hesitate to escalate this to your leader. Our goal is transparency, and to support the staff to the best of our ability.

Cheers from Peers: What a great catch!

- Cheers to the PW7 Team for always stepping up and getting doses to patients on time even when working short handed!!
- A special thanks to all who have been helping cover shifts
- **From John Derosa/Crystal Weaver-Hernandez:** *"Crystal caught a significant error for Augmentin 125 mg/5mL with the reconstituted volume being incorrect (DoseEdge says to reconstitute with 134 mL instead of 67mL) which saved pharmacy a preventable error. The patient would have only received half the intended dose. The mistake was reported to Willow Team, corrected in DoseEdge and the dose delivered correctly". Thanks Crystal!!!*

An Employee of the Month for every month will be announced at the end of the month!!

"No Harm from the Pharm!"

Thank you for all of your hard work every day to keep our patients safe!

If you would like to volunteer as a **lead** for an initiative for the next quarter, please submit a letter of interest into the Suggestion Box.

Figure 4. “Employee of the Month” Board



Figure 5. "Cheers for Peers" Board

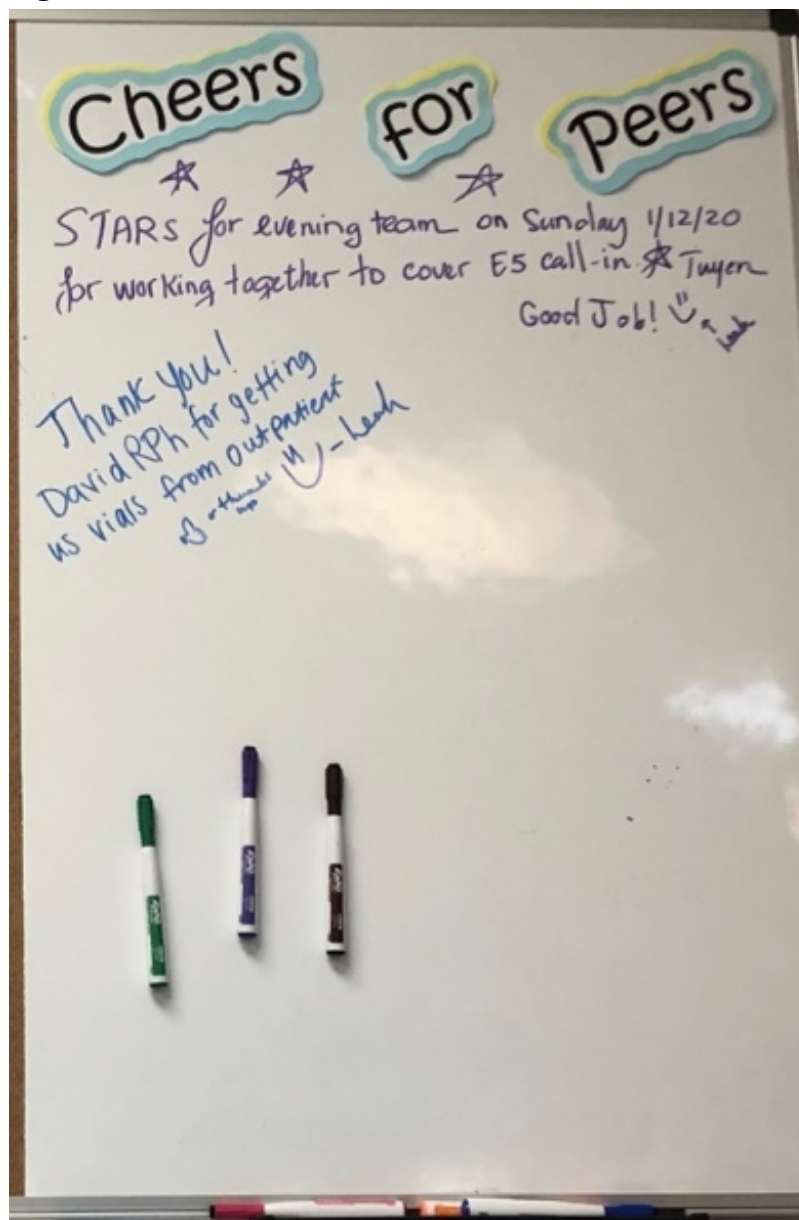


Figure 6. Suggestion Box (version one, version two)

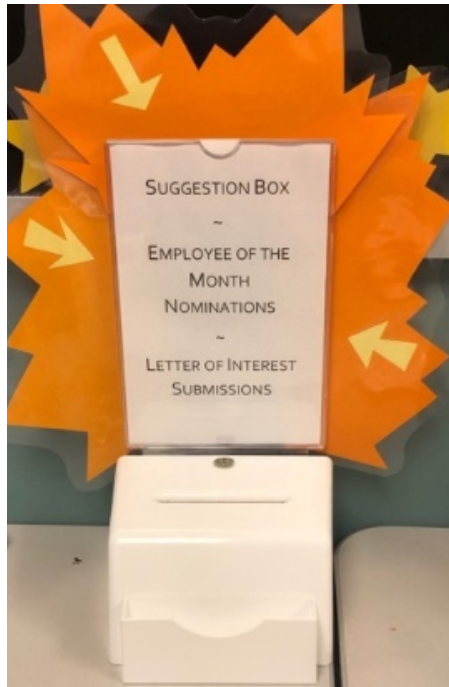


Table 1. Errors per Doses

Category	Pre-intervention		Post-intervention		Percent Change
	Errors per total doses (Total doses = 595,625)	Errors per 10,000 Doses	Errors per total doses (Total doses = 601,214)*	Errors per 10,000 Doses	
Delivery error/delay	43	0.72	36	0.59	– 17.1%
Medication mis-fill	26	0.44	37	0.62	+ 40.9%
Inappropriate label	20	0.34	11	0.18	– 45.5%
Total	89	1.50	84	1.40	– 6.5%

*includes February 1, 2020

Table 2. Errors by Month

	Delivery error/delay	Medication mis-fill	Inappropriate label	Total Number of Medication Error Reported	Total Error Percent
PRE-INTERVENTION (N=89)					
August 2019	13	6	8	326	8.3%
September 2019	18	12	8	308	12.3%
October 2019	12	8	4	314	7.6%
POST INTERVENTION (N =84)					
December 2019	11	13	4	230	12.2%
January 2020	17	9	4	322	9.3%
February 2020	8	15	3	273	9.5%

Table 3. Survey Respondent Demographics

	Pre-intervention N=51 (%)	Post-intervention N=76 (%)
PHARMACIST	28 (54.9)	40 (52.6)
Years as employee of TCH Pharmacy Department		
< 1 year	1 (3.57)	1 (2.50)
1 - 5 years	6 (21.43%)	9 (22.50)
6 - 10 years	12 (42.86%)	17 (42.50)
> 10 years	9 (32.14%)	13 (32.50)
Years in role as a Pharmacist or Technician		
<1 year	2 (7.14)	3 (7.50)
1 - 5 years	3 (10.71)	5 (12.50)
6 - 10 years	10 (35.71)	13 (32.50)
> 10 Years	13 (46.43%)	19 (47.50%)
TECHNICIAN	23 (45.1)	36 (47.4)
Years as employee of TCH Pharmacy Department		
< 1 year	3 (13.04)	5 (13.89)
1 - 5 years	16 (69.57)	23 (63.89)
6 - 10 years	2 (8.70)	4 (11.11)
> 10 years	2 (8.70)	4 (11.11)
Years in role as a Pharmacist or Technician		
<1 year	2 (8.70)	2 (5.56)
1 - 5 years	10 (43.48)	16 (44.44)
6 - 10 years	5 (21.74)	7 (19.44)
> 10 Years	6 (26.09)	11 (30.56)

Table 4. Survey Responses, Pharmacists

SURVEY QUESTION	Strongly Disagree (Likert Scale 1), n (%)		Disagree (Likert Scale 2), n (%)		Neutral (Likert Scale 3), n (%)		Agree (Likert Scale 4), n (%)		Strongly Agree (Likert Scale 5), n (%)		Mean (Std Dev)		P- value
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Basic Needs ("What do I get?")	6 (10.71%)	7 (8.75%)	5 (8.93%)	6 (7.50%)	2 (3.57%)	3 (3.75%)	30 (53.57%)	46 (57.50%)	13 (23.21%)	18 (22.50%)	3.70 (1.04)	3.78 (0.95)	0.65
I know what is expected of me at work.													
I have the resources and equipment I need to do my work right.													
Individual ("What do I give?")	24 (21.43%)	31 (19.38%)	22 (19.64%)	29 (18.13%)	21 (18.75%)	27 (16.88%)	31 (27.68%)	50 (31.25%)	14 (12.50%)	23 (14.38%)	2.90 (1.01)	3.03 (1.02)	0.30
At work I have the opportunity to do what I do best every day.													
In the last seven days, I have received recognition or praise for doing good work.													
My supervisor seems to care about me as a person.													
There is someone at work who encourages my development.													
Teamwork ("Do I belong here?")	21 (18.75%)	25 (15.63%)	17 (15.18%)	22 (13.75%)	12 (10.71%)	20 (12.50%)	47 (41.96%)	68 (42.50%)	15 (13.39%)	25 (15.63%)	3.16 (1.05)	3.29 (1.04)	0.32
At work, my opinion seems to count.													
The mission or purpose of my hospital makes me feel my job is important.													
My fellow employees are committed to doing quality work.													
I have someone I can trust at work.													
Growth ("How can I grow?")	9 (16.07%)	13 (16.25%)	14 (25.00%)	21 (26.25%)	7 (12.50%)	9 (11.25%)	23 (41.07%)	30 (37.50%)	3 (5.36%)	7 (8.75%)	2.95 (1.14)	2.96 (1.19)	0.93
In the last six months, someone at work has talked to me about progress.													
In the last year, I have had opportunities at work to learn and grow.													

Table 5. Survey Responses, Pharmacy Technicians

SURVEY QUESTION	Strongly Disagree (Likert Scale 1), n (%)		Disagree (Likert Scale 2), n (%)		Neutral (Likert Scale 3), n (%)		Agree (Likert Scale 4), n (%)		Strongly Agree (Likert Scale 5), n (%)		Mean (Std Dev)		P-value
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Basic Needs ("What do I get?")	4 (8.70%)	21 (29.17%)	5 (10.87%)	19 (26.39%)	6 (13.04%)	6 (8.33%)	17 (36.96%)	19 (26.39%)	14 (30.43%)	7 (9.72%)	3.70 (1.06)	3.74 (1.16)	0.85
I know what is expected of me at work.													
I have the resources and equipment I need to do my work right.													
Individual ("What do I give?")	19 (20.65%)	32 (22.22%)	22 (23.91%)	32 (22.22%)	10 (10.87%)	17 (11.81%)	24 (26.09%)	36 (25.00%)	17 (18.48%)	27 (18.75%)	2.98 (1.18)	2.96 (1.21)	0.90
At work I have the opportunity to do what I do best every day.													
In the last seven days, I have received recognition or praise for doing good work.													
My supervisor seems to care about me as a person.													
There is someone at work who encourages my development.													
Teamwork ("Do I belong here?")	19 (20.65%)	30 (20.83%)	12 (13.04%)	19 (13.19%)	12 (13.04%)	25 (17.36%)	32 (34.78%)	40 (27.78%)	17 (18.48%)	30 (20.83%)	3.17 (1.07)	3.15 (1.10)	0.85
At work, my opinion seems to count.													
The mission or purpose of my hospital makes me feel my job is important.													
My fellow employees are committed to doing quality work.													
I have someone I can trust at work.													
Growth ("How can I grow?")	7 (15.22%)	21 (29.17%)	8 (17.39%)	19 (26.39%)	9 (19.57%)	6 (8.33%)	21 (45.65%)	19 (26.39%)	27 (58.70%)	7 (9.72%)	2.57 (1.14)	2.61 (1.24)	0.84
In the last six months, someone at work has talked to me about progress.													
In the last year, I have had opportunities at work to learn and grow.													

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Appendix A

Standard Operating Procedure for Employee Engagement Program

Employee of the Month Guideline in Selection

Purpose: The purpose of the Employee of the Month Program is to recognize employees who have served the TCH Pharmacy Department in an exceptional manner by exemplifying outstanding service and upholding the values and goals in medication safety.

Eligibility Criteria

- X Pharmacists and technicians team members (managers are not eligible)
- X Employment status: full time, part time, or per diem
- X Employee must have completed all training
- X Employee should not have beyond an initial written
- X Nomination form must be completed by staff
- X Nominations will remain open from the 1st day of the month until the 20th day of the month
- X A team member can be nominated more than once in the month
- X A team member can be selected as Employee of the Month only once in a 12 month calendar year
- X The team member being nominated cannot not be involved in the Selection Committee

Selection Criteria

- X Conducted at team meeting with leadership on the last week of the month
- X Determined by alignment with goals relating to medication safety, specifically:
 - o Delivery error/delays
 - o Mis-labels
 - o Mis-fills
- X Selection Committee will consider the number of shifts staffed in Batch Pharmacy
- X Nominations should describe a specific event(s) and not just general behavior/performance – examples of great interventions or above and beyond performance
- X Selection Committee will discuss submissions and vote on final decision for the Employee of the Month. Each committee member will have one vote and selected winner must have majority (>50%) of the votes. Selection committee will consist of at least 3 managers
- X If there are no nomination submissions for the month or none who meet criteria, the Selection Committee may select an individual of their choice who they deem fit to be Employee of the Month.

Procedure:

1. Nominations for the month will close on the 20th day of the month at 17:00.
2. The Selection Committee will meet at the last week of the month to review all of the nomination submissions.
 - a. The designated manager in rotation for EoM is responsible for setting the selection meeting date
3. Each nomination will be discussed and voted on per the selection criteria stated above
4. Employees who were nominated will receive notifications through the weekly communication email and huddles that they were nominated

5. Designated manager will present the certificate and gift and announce at the last huddle of the month. (ie. Last Thursday of the month).
6. A picture of the employee will be taken and posted on the Wall of Fame board within the next week.

Manager Rotation Calendar & Responsibilities

- X Weekly Communication email
 - o Scoops with advice/tips, shout outs from Cheers4Peers, suggestions w/ responses
 - o Sent every Friday
 - o Manage the Communication Committee
- X Cheers 4Peers (C4P)
 - o Daily maintenance
 - o Weekly review
 - o Select a few outstanding shout-outs to be sent through weekly email
- X EoM
 - o Submission consolidation upon nomination close at the last Monday of every month
 - o Call for Selection Meeting
 - o Upon selection, coordinate to take employee photo
 - o Print and post on EoM board with name/credentials & why
 - o Manage the EoM Committee
- X “No Harm in the Pharm” Board
 - o Review scoops from batch pharmacy & categorize
 - o Update w scoops and/or goals on daily basis
 - o Clean and maintain the board
- X Suggestion
 - o Box will be checked on a weekly basis
 - o Update tracking grid with suggestion submissions
 - o Responses will be provided in the end of the week weekly communication email
 - o Manage the Suggestions/Ideas Committee
- X Sustainability (Metrics)
 - o Create metrics dashboard for bi-weekly meetings
- X Huddle
 - o Come up with monthly icebreaker/team building idea
- X Initiatives
 - o Call for leads and consolidate applications for leads at the end of every quarter

Managers

Laura
Urvi Brandy
Sunday
Jessica
Domonique

Manager Rotation Calendar

Month	Weekly Communication Email	EoM	No Harm in the Pharm Board	Suggestions /ideas	C4P & Huddle	Metrics & Initiatives
Jan	Domonique	Sunday	Urvi	Jessica	Brandy	Laura
Feb	Laura	Domonique	Sunday	Urvi	Jessica	Brandy
Mar	Brandy	Laura	Domonique	Sunday	Urvi	Jessica
Apr	Jessica	Brandy	Laura	Domonique	Sunday	Urvi
May	Urvi	Jessica	Brandy	Laura	Domonique	Sunday
Jun	Sunday	Urvi	Jessica	Brandy	Laura	Domonique
Jul	Domonique	Sunday	Urvi	Jessica	Brandy	Laura
Aug	Laura	Domonique	Sunday	Urvi	Jessica	Brandy
Sept	Brandy	Laura	Domonique	Sunday	Urvi	Jessica
Nov	Jessica	Brandy	Laura	Domonique	Sunday	Urvi
Dec	Urvi	Jessica	Brandy	Laura	Domonique	Sunday

Weekly Communication Email Template:

During the week of MM/DD/YR - MM/DD/YR, we had:

- _____ scoops related to medication delivery
- _____ scoops related to medication mis-fill
- _____ scoops related to medication mis-label

Tips and advice from leadership:

-
-

Suggestions from the team:

- - Response from leadership:

Cheers from Peers: Keep it up!

-
-

Congrats! The Employee of the Month for December is: _____ (at the end of every month only)

“No Harm from the Pharm!”

Thank you for all of your hard work every day to keep our patients safe!

If you would like to volunteer as a **lead** for an initiative for the next quarter, please print and submit a letter of interest* into the Suggestion Box.

linked into the shared drive

Employee Recognition Award Nomination Form

Today's Date: _____

Nominee's Information Name: _____

Nominator's (you) Information Name: _____

Shift of nominee (select one): ☐ Day ☐ Evening ☐ Night

REASON FOR NOMINATION:

Check the appropriate category: This employee demonstrated excellence in the area of (select one):

☐ Medication delivery ☐ Medication fill ☐ Medication label

Please provide specific example(s) of how the nominee demonstrated excellence in the selected area(s) (what was the setting, what was the intervention, was there recognition from others, etc.)*can continue on back:

Letter of Interest

Name: _____

Quarter: ☐ Jan-Mar ☐ Apr-Jun ☐ Jul-Sept ☐ Oct-Dec

Initiative (select one):

- ☐ Cheers for Peers
- ☐ Employee of the Month
- ☐ Communication
- ☐ Suggestions & Ideas

Why do you want to serve as a lead (limit to 250 words):

Employee of the Month Blurb Template:

_____(name)_____, ____ (RPh/CPHT)____, was nominated and selected as ____ (month)____'s *Employee of the Month* because _____ (based on nomination(s))_____.

Suggestion Form:

SUGGESTION FORM

Your ideas matter!

Submitted by (your name, if desired): _____

Date: ____/____/____

Suggestion (continue on back if needed):

Reason for suggestion:

- ☐ Improve quality
- ☐ Improve safety
- ☐ Increase productivity
- ☐ Improve morale
- ☐ Other: _____

Thank you for your suggestion(s)!

Appendix B

1. Are you a pharmacist or technician?				
Pharmacist		Technician		
2. How long have you been an employee of TCH Pharmacy Department?				
<1 year	1-5 years	6-10 years	>10 years	
3. How long have you been in your current role as a pharmacist or technician? (not just within TCH)				
<1 year	1-5 years	6-10 years	>10 years	
1. I know what is expected of me at work.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
2. I have the resources and equipment I need to do my work right.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
3. At work I have the opportunity to do what I do best every day.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
4. In the last seven days, I have received recognition or praise for doing good work.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
5. My supervisor seems to care about me as a person.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
6. There is someone at work who encourages my development.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
7. At work, my opinion seems to count.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
8. The mission or purpose of my hospital makes me feel my job is important.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
9. My fellow employees are committed to doing quality work.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
10. I have someone I can trust at work.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
11. In the last six months, someone at work has talked to me about progress.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
12. In the last year, I have had opportunities at work to learn and grow.				
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree