



2021 LEAD Capstone Poster Session

Preventing Acetaminophen Errors: An Increasing Problem in the Pediatric Perioperative Arena

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Abstract

- It is well known that medication errors in the hospital are common.
- Multiple contributors to perioperative acetaminophen errors have been identified:
 - Availability in multiple forms (oral, intravenous, and in combination with opioids)
 - Lack of documentation in the EMR
 - Lack of where to find documentation (MAR)
 - Poor handoff and communication
 - Human error
- Our mission is Safety First, No Exceptions! Through various methods including teaching, training, and using simple handoff and communication tools, we can conquer a practice improvement challenge to eliminate acetaminophen medication errors in the perioperative setting.



Objectives

- To decrease acetaminophen errors in our hospital.
- To strengthen the culture of Safety First, No Exceptions.



Background Information

- Despite acetaminophen being a seemingly benign medication, overdoses or multiple doses over a short period of time, can have serious medical implications, including hepatic toxicity and failure.
- Acetaminophen is commonly used in the perioperative setting due to its opioid-sparing, analgesic properties. Patients are often prescribed acetaminophen and/or NSAIDs after surgery because of these benefits and to reduce opioid use.
- When a patient receives too much acetaminophen, even if not a toxic dose, their dosing regimen will be impacted, such that they may have to skip additional doses of acetaminophen throughout the day. If postoperative pain is poorly controlled, they may require admission to the hospital or a prescription for stronger medication.
- Wake Up Safe, The National Pediatric Anesthesia Quality Improvement Initiative, has issued several statements calling attention to medication errors, specifically with acetaminophen in the perioperative setting. This is a national problem without an easy solution.



Background Information

- While many contributors to this error have been identified, one in particular stands out: documentation and communication among the anesthesia care team. The anesthesia care team is unique in that they are responsible for the entire medication delivery chain to a patient while they are in the operating room. Anesthesiologists can order, prepare medications, and administer them to a patient without any other healthcare provider present to check for any errors. Learners such as students, residents, and fellows are often part of the care team- they come and go throughout the year and are often unfamiliar with the EMR and where to find patient medication history and information.
- You can imagine that in an operating room with short cases and quick turnovers, and with new learners, the potential for medical errors are present.
- Additional factors that contribute to medication errors include acetaminophen availability in multiple forms, documentation errors, human error, and poor handoff and communication during patient care.



Specific Aims

- Identify stakeholders across several disciplines (gastroenterology, toxicology, pharmacy, nursing, quality and safety) and form an “acetaminophen error work group.” This group will meet regularly to review and revise guidelines and any tools developed for this initiative.
- A consensus, evidence-based guideline for the care of patients affected by acetaminophen errors will be developed by a multidisciplinary team and supported by the quality and safety division by January of 2022.
- A simple perioperative tool to document acetaminophen use and improve communication and handoff among providers will be implemented by January of 2022.



Project Plan

- Provide an evidence-based guideline for anesthesiologists to use for patients affected by acetaminophen errors in the perioperative setting, to ensure all patients have proper follow up and standardized care.
- Educate residents, fellows, and learners who rotate in the operating room on how to access the EMR and MAR, during their initial orientation.
- Develop a simple handoff and communication tool that providers can use intraoperatively to decrease the risk of acetaminophen errors.
- Utilize the tools and guidelines developed for this project and translate to additional high-risk medications.



Application of What You Learned at LEAD

- Transformational Leadership
- Collaboration
- Teamwork
- Negotiation
- Be adaptable, flexible, and open to change



Proposed Budget

- ***Time and effort*** from key stakeholders for monthly meetings, possibly more often to discuss progress of the project and any limitations that arise.
- ***Support and "buy-in"*** from all team members. Safety is everyone's responsibility!
- There is potential for monetary need to improve or replace equipment such as our Omnicell, Pyxis, or medication scanners (Rovers) to improve medication safety.



Innovation and Significance

- We have an opportunity to solve a national problem and to increase our culture of safety!
- Decreasing medication errors will result in cost savings for the patient and the hospital.
- This project aligns with the UTSW strategic mission of excellence in education, teaching, and training.



References

1. http://wakeupsafe.org/wpcontent/uploads/2018/10/acetaminophen_warning.pdf
2. http://wakeupsafe.org/safety_alerts/157/
3. http://wakeupsafe.org/safety_alerts/157/
4. Lobaugh, Lauren M., et al. "Medication Errors in Pediatric Anesthesia." *Anesthesia & Analgesia*, vol. 125, no. 3, 2017, pp. 936–942., <https://doi.org/10.1213/ane.0000000000002279>.
5. Samost-Williams A, Nanji KC. A Systems Theoretic Process Analysis of the Medication Use Process in the Operating Room. *Anesthesiology*. 2020;133(2):332-341. doi:10.1097/ALN.0000000000003376, 10.1097/ALN.0000000000003376