REDUCING MEDICATION ERROR RISK IN THE EMERGENCY DEPARTMENT

GROWING CONCERNS

With higher volumes of patients, reduced time to deal with them, less physical space to care for them, hospital ED's are at increased risk for medication errors.

INCIDENCE OF MEDICATION ERROR (ME)

EMERGENCY DEPARTMENT (ED)

- At least 1 error occurred in 60% of patients, and 37% of patients overall had an error reach them[1]
- US Pediatric Emergency Care Applied Research Network (PECARN) reported medication event incident rate of 19%[2]
  - 13% resulted in patient harm
  - 94% were MEs (ie. wrong dose, incorrect drug)
- MEs were found in 7 of 8 pediatric mock resuscitations[3]
  - Of the prepared syringes that could be examined (58 of 72), 9 were above the expected dose by 20%, and 4 were above by 50% or more

PACU, ICU, CCU

- Of recovery room incidents, drug error was 11%[4]
- A PACU review of MEs found that 5.8% were harmful[5]
- In ICU, ME is the most common error, accounting for 78% of serious MEs[6]

OR

- A review found syringe or drug preparation errors to be 50% of the reported errors[7]

ROLE OF BOLUS DOSE VASOPRESSOR IN THE ED

- For decades, anesthesiologists have used bolus dose vasopressors for managing hypotension in the OR
  - Recent Emergency Medicine focused blogs support the use of bolus dose vasopressors and its use is transitioning to the ED[8]
- In the ED, the use of bolus dose vasopressors represents safety challenges not present in the OR[9]
  - Ordering, preparing, administering, and monitoring may be done by several individuals less familiar with the practice and who have other tasks to perform which increases the risk for error
- Bolus dose vasopressors can be an effective temporary intervention for treating hypotension when rapid treatment is needed
- It is recommended to use the lowest appropriate concentration to reduce risk
- Preparation of bolus doses of vasopressors like phenylephrine can be complex, and the risk of error is increased in the ED setting[8]
- A commercially manufactured phenylephrine pre-filled syringe offers a solution to:
  - Rapidly treat emergent hypotensive situations in hemodynamically unstable patients
  - Help reduce the risk of medication errors, simplifies administration, and reduces wastage

Isn't it time for your hospital to switch to pre-filled syringes?

1. Patanwala AE, et al. A Prospective Observational Study of Medication Errors in a Tertiary Care Emergency Department.Annals of Emergency Medicine, June 2010, Volume 55, Issue 6, Pages 522–526. **2.** Shaw K , et al. Reported medicine events in a paediatric emergency research network: sharing to improve patient safety.Emergency Medicine Journal 2012; 00:1-5. DOI:10.1136/emermed-2012201642. **3.** Kozer E, et al. Prospective observational study on the incidence of medication errors during simulated resuscitation in apaediatric emergency department. The BMJ, September 28, 2004. DOI:10.1136/bmj.38244.607083.55. 4. Kluger MT, et al. Recovery room incidents: a review of 419 reports from the Anaesthetic Incident Monitoring Study (AIMS). Anaesthesia 2002, 57, pages 1060-1066. **5.** Hicks RW, et al. Medication Errors in the PACU. Journal of PeriAnesthesia Nursing, Vol 22, No 6 (Dec), 2007: p 413-419. **6.** Camire E, et al. Medication errors in critical care: risk factors, prevention and disclosure. CMAJ, April 28,2009, 180(9), p 936-943. **7.** Abeysekera A, et al. Drug error in anesthetic practice a review of 896 reports, from the Australian Incident Monitoring Study Database. Anaesthesia 2005, 60 p 20-227. **8.** Tilton L, et al. Utility of Push-Dose Vasopressors for Temporary Treatment for Hypotension in the Emergency Department. J Emerg Nurs 2016;42, Issue 3, p 279-81. **9.** Holden D, et al. Safety Considerations and Guideline-Based Safe Use Recommendations for "Bolus-Dose" Vasopressors in the Emergency Department. Annals of Emergency Medicine, Jan. 2018, Vol. 71, Issue 1, pp. 83-92.

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