Medication Errors Among ALS Providers in the Prehospital Setting

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Background

- Emergency Medical Service (EMS) providers provide emergency care and transport in the prehospital setting.
- Levels of EMS providers:
  - EMR
  - EMT
  - AEMT
  - Paramedic
- Generally, all levels provide pharmacologic interventions, with increasing scope of practice from EMR to Paramedic.
- While there are many studies on medication errors occurring in the hospital environment, there are comparatively fewer studies focusing on the prehospital environment.

Methods

- A 28-question survey was constructed using SurveyMonkey software (Momentive, Inc).
- This survey permitted EMS providers to report the type and frequency of medication errors occurring in the past 12 months.
- Following IRB approval (protocol # 446, William Woods University), the survey was distributed electronically in the USA.
- Survey data was filtered prior to export to ensure only qualified (completed and submitted responses) were included in the data analysis.

Results

Demographics

192 qualified responses were returned. Of these qualified responses, 175 were paramedics and 144 were nationally registered paramedics (NRP) through the National Registry of Emergency Medical Technicians. The mean reported experience was 18.24 (SD = 11.24) years.

Error Type and Frequency

From the error categories provided in the survey, there were 99 reported instances of medication errors that occurred during the previous 12-month period (Figure 1). The type and frequency of drug errors in descending order were dosage errors (32.32%), indicated drug not delivered (21.21%), rate errors (14.14%), allergic reaction after failing to obtain allergy history (11.11%), route errors (5.05%), administered incorrect drug (5.05%), administered expired drug (4.04%), incorrect timing (3.03%), incorrect concentration (2.02%), non-indicated drug delivered (1.01%), incorrect patient (1.01%), and incompatible drugs delivered (0%).

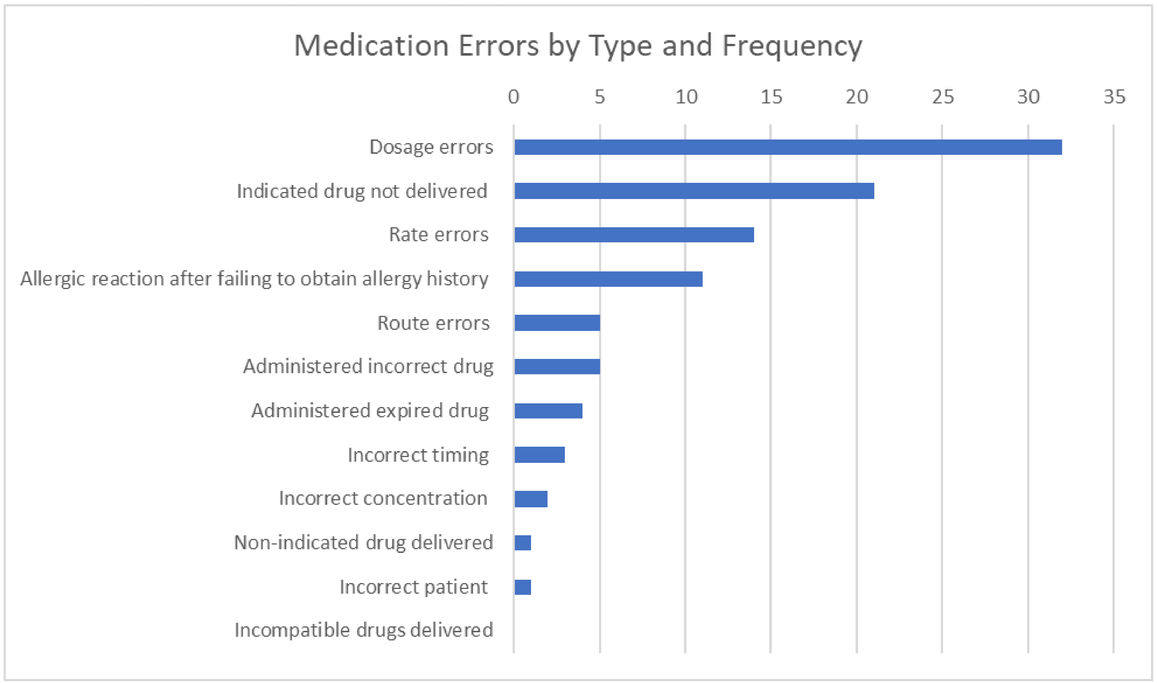

Figure 1. Medication Errors Occurring in the Past 12 Months as Reported by EMS providers.

Conclusion

- All medication errors have the potential to cause patient harm and even death.
- According to a retrospective analysis conducted by the CDC's Office of Post-Marketing Drug Risk Assessment, the error type most frequently associated with patient mortality is improper dosage.
- Dosage errors were the most frequently reported in this study which outlines the importance of additional research to determine and address the factors contributing to medication errors in the prehospital environment.

Future Directions

- Further analysis of data to determine what factors may have contributed to these medication errors.
- Conduct additional study with a larger sample size.
- Conduct simulation-based study on medication errors.

References

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