

Amy Zhang

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Independent Study and Mentorship

Research Assessment #4

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Subject: Medication-Related Emergency Department Visits in Pediatrics

Source(s):

"Medication-Related Emergency Department Visits in Pediatrics: A Prospective Observational Study." *Medication-Related Emergency Department Visits in Pediatrics: A Prospective Observational Study*. N.p., n.d. Web. 10 Oct. 2016. <<http://pediatrics.aappublications.org/content/135/3/435.short>>.

Analysis:

In this observational study, the contributors, Peter J. Zed, Karen J. L. Black, Eleanor A. Fitzpatrick, Stacy Ackroyd-Stolarz, Nancy G. Murphy, Janet A. Curran, Neil J. MacKinnon, and Doug Sinclair, worked together to investigate the relationship in regards to the pediatric field between medication-related visits (MRV) and the emergency department (ED). This study is the largest performed to date that evaluates the impact of medication-related visits to the emergency department in pediatrics specifically. This issue has been researched extensively in the entire nation's population, but there has

been a severe underrepresentation in the pediatric age range. The results of this study reveal the magnitude of this problem in the current healthcare system. After reading this study, I am much more aware of the MRV issue in children today and I am conscious of the adverse effects these visits can have on the healthcare system.

The ultimate goal of the observational study was to evaluate the frequency, severity (mild, moderate, severe, or fatal), preventability, and classification of medication-related visits to the ED of a hospital, and also to identify patient, prescriber, drug, or system factors contributing to the MRVs. The process that each patient underwent included the same steps. First, each randomly chosen subject used a personal digital assistant-based electronic data collection form and spoke with a residency-trained pharmacist research assistant specializing in pediatric acute care medicine. Each patient and family members disclosed the chief complaint and medication history, and went through the evaluations and assessments deemed necessary by the research assistant. If the chief complaint was due to 1 of 8 predefined categories: adverse drug reactions, drug interaction, improper drug selection, untreated indication, subtherapeutic dosage, supratherapeutic dosage, non-adherence, and drug use without indication, the ED visit was considered an MRV. The procedures of this observational study opened my eyes to the intricacies that a prospective study requires. There are many factors and constants in this study that needed to be maintained to create the most accurate results possible.

Between November 1, 2011 and October 31, 2012, 2028 patients were observed over the 12 month period. Out of these 2028 patients, 163 were found with a medication-related visit. These subjects' most common reasons for the MRV were adverse drug reactions (26.4%) , subtherapeutic dosage (19.0%), and nonadherence (17.2%). Out of the 263 MRV patients, 106 of the cases were deemed preventable, meaning that

the patients had inappropriate drug, dosage, route, or frequency for patient's clinical condition, age, weight, renal function; known drug allergy or previous reaction to drug; known drug interaction; nonadherence; laboratory monitoring not performed; and prescribing, dispensing, or administration errors. Understanding that the majority of the MRVs were preventable caused me to reflect on how much time, effort, and money could be saved if these circumstances were adjusted. In my opinion, the strategies that do exist to combat the frequency of MRVs should be taken seriously and implemented widely across the country.

The study's findings indicate that adverse medication-related occurrences account for 8% of pediatric ED visits and that 65% of these MRVs are potentially preventable. The reasons that MRVs are unfavorable are that hospitalization rates are higher and the length of stay is longer for MRV patients compared with patients admitted for other reasons. With less MRVs, I believe that the healthcare system in America will be more streamlined and more time and money can be devoted to severe cases that could not be prevented and require immediate attention.

Ultimately, the ways to reduce the numbers of preventable MRVs should be explored. A potentially effective strategy may involve interventions outside the hospital to improve the process and monitoring of prescriptions. Interventions that target patients, healthcare professionals, and the healthcare system as a whole to optimize communication between acute and ambulatory professionals and improve instructional adherence should also be looked into. This study has made me reflect on the importance of reducing the frequency of MRVs in the healthcare environment today.

I thought it was interesting to see the side of the pediatric field related to studies and observations rather than the actual treatment and care of the patient. It made me

realize that resources could be conserved wisely if efforts to reduce the amount of MRVs in pediatric healthcare environments were put into action. Analyzing this study expanded my perspective on the pediatric field and its different facets relating to research and analysis of reasoning behind patient visits. I am interested in learning more about prospective observational studies regarding other aspects of pediatrics.