Department of Pediatrics
COLLEGE OF MEDICINE

SUMMER RESEARCH OPPORTUNITIES
FOR UNDERGRADUATE WOMEN

APPLICATION DEADLINE: March 1, 2010

The Department of Pediatrics is pleased to offer the following research project for the summer of 2010. Interested students are urged to contact the faculty member(s) directing the project that most interests them. By contacting the faculty member, you can discover more about the project, learn what your responsibilities will be and, if possible, develop a timetable for the twelve-week research period.

PROJECT TITLE: The Effect of Methylprednisolone Infusions on Vital Signs in Pediatric Patients Being Treated for Headaches

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Project Description

Methylprednisolone infusions have been associated with cardiovascular adverse effects. These include hypotension, hypertension, bradycardia, tachycardia, and some reports of unexplained death. Because of the possibility of cardiovascular adverse effects during high dose methylprednisolone infusions, monitoring of vital signs is needed for these patients.

Inconsistent ordering of vital sign monitoring by physicians caring for pediatric patients receiving these infusions was identified at Cincinnati Children's Hospital Medical Center (CCHMC). The National Guideline Clearinghouse was searched for guidelines on monitoring and administering steroid infusions; none were found. Questions about the frequency of cardiovascular adverse effects that can be attributed to these infusions, and the variability in vital sign ordering and monitoring practices led to this study.

This retrospective descriptive preliminary study will evaluate the frequency of cardiovascular adverse effects, specifically heart rate (HR) and blood pressure (BP) changes related to methylprednisolone infusions during a 3 year time period. CCHMC patients who were treated with intravenous methylprednisolone (IVMP) for treatment of headaches will be eligible.

Data collected will include patient demographics (date of birth, sex, weight, diagnosis, drug allergies), active medication orders at the time of the infusion, the dose and indication for methylprednisolone, the number of infusions each patient received, the timing and length of infusion, vital sign monitoring orders, and vital signs recorded (heart rate, blood pressure, temperature and pain score). Any interventions for abnormal vital signs will be recorded. If the frequency and timing of changes in HR and BP associated with IVMP infusions can be identified, guidelines and recommendations for vital sign monitoring for these patients could be developed.