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Resident Spotlight: Alicia Barclay, MD, CA-3 (PGY-4), Anesthesiology
St. Joseph Mercy Oakland Hospital

In collaboration with faculty at Children's Hospital of Michigan, Dr. Barclay recently carried out a QI project designed to reduce medication administration errors (MAEs). This research had positive outcomes and will be presented at the Midwest Anesthesia Resident Conference (MARC) and other regional conferences this spring.

Q: Where did you grow up? When did you first become interested in medicine as a career?
AB: Growing up in New York City provided me with one of the most enriching upbringings imaginable. With all of the cultural exposure that informed me of the world-at-large, paired with my own immigrant family's goals for success, I decided at an early age to maximize my education and leverage it as my means out of the inner city. My initial interest in being a physician began before the age of 10. But by high school, my goals shifted toward other STEAM [Science/Technology/Engineering/Arts/Mathematics] professions, to which I had more exposure and encouragement to pursue. After turning 25 and working in corporate America, I realized I wasn't going to be happy professionally unless I sought a career in medicine. So, I went back to school and obtained another bachelor's degree in Anthropology-Biology-Chemistry prior to applying to medical school.

Why did you decide on Anesthesiology as your specialty?
Anesthesiology was the best specialty for me because I enjoy performing procedures, applying medical interventions to yield "real-time" physiologic results, and interacting and caring for patients in the surgical setting. In medical school, I was initially unaware of the benefits of practicing anesthesiology. After various friends and healthcare professionals encouraged me to consider it, I decided to take a 4-week elective in anesthesiology and enjoyed each week more than the last and that rotation more than the rest.

Did you have prior experience in conducting research, as an undergraduate or medical student?
Yes, my research background is in both bench and clinical research. As a premed student, I worked in an animal care facility at Lehman College in the City University of New York studying the effects of high-fat, poor-nutrition diets on the sympathetic nervous system in rats. That work was published in the AHA's journal *Hypertension* and helped launch my early career in research. I was subsequently awarded a research assistantship in the Netherlands, where I worked in a bench lab with a team of cardiac physiologists examining the effects of endosomal pH on glucose and long-chain fatty acid regulation in cardiac myocytes. During medical school, I worked on a retrospective study assessing trends in individuals under 55 who have had strokes, as well as served as a project coordinator for a randomized, controlled and double-blinded study on DHEA supplements and female libido. Before graduating, I spent several months as a clinical research fellow in the Anesthesia Outcomes Research Institute at the Cleveland Clinic, supporting projects like the DECADE trial and a meta-analysis on effects of intraoperative hyperoxia on surgical site infections, published in *Lancet* and the *British Journal of Anaesthesia*, respectively. Most recently, my program director, several other residents and I published a retrospective, multi-center study on outcomes of intubated COVID-19 patients.

Could you describe your QI project on MAEs?

There is an ongoing effort to improve anesthesia workflow in order to reduce MAEs. At Children's Hospital of Michigan, Wayne State faculty members Dr. Maria Zestos and Dr. Edward Kaminski wanted to study the relationship between IV fluid administration errors and the organization of the inventory stock area (known as the sterile core). Together, we postulated that by optimizing inventory in the sterile core, we could eliminate errors and near-miss events of intraoperative IV fluid administration. Additionally, we hypothesized that in this process, user satisfaction would be appreciably improved. The process involved reorganizing the sterile core shelves in order for users to more carefully confirm that they were obtaining and subsequently administering the appropriate intravenous fluid. Questionnaires were completed by 2 groups of subjects (pre- and post-reorganization), each of which comprised anesthesiology residents and Student Registered Nurse Anesthetists. We found that the incidence of both IV fluid administration errors and near misses were reduced and user satisfaction was improved. This research will be presented shortly at MARC, the 10th DMC Annual Graduate Medical Education QuESST Research Day, and the 6th Annual Michigan Summit on Quality Improvement and Patient Safety.

What are your plans after completing your residency?

I am excited about the next phase of my career: an attending position at Staten Island University Hospital, which is a 650-bed, Level 1 trauma center in New York City. As an anesthesiologist, I will join the patient safety and IRB committees and also launch a new anesthesiology program, all within my first 3 years.

I should add that I am so proud of the training I received during my anesthesiology residency at Wayne State! The variety of cases and mix within our patient population has afforded me a wide range of educational encounters that are transferrable to any attending position.