

Mentor: Dr. Alexander Rae-Grant
Scholar: Amy Virojanapa
Department: Neurology

I. Experience:

I never expected to learn as much as I have through the Research Scholar Program. The Lehigh Valley Hospital is one of the most renowned teaching institutions in the nation, and I feel privileged to be a part of this unique opportunity. The amount of exposure to clinical experience that I received with Dr. Rae-Grant is unlike any other program available to undergraduates. Through my research project, I was able to join the neurological team, medical students, and residents during inpatient and outpatient rounds. The neurologists taught me medical terminology, procedures, etiology and pathology of various diseases, and other very interesting facts. I was shown numerous scans and taught common signs used to diagnose disease. I also was allowed to observe numerous procedures including electromyography and lumbar punctures.

One of the most interesting experiences of the program was when I shadowed Dr. Li in the OR performing what may have been the highest risk procedure that I will ever observe. I feel lucky to have been trusted to be in the operation room for this procedure considering my level of training. The patient, who was diagnosed to have a hemorrhage and aneurysm, was undergoing brain surgery to place clips around the aneurysm to stop further growth. To my surprise, Dr. Li allowed me to scrub in and observe the surgery from right behind his shoulder. The procedure was intense, exciting, and unforgettable.

The program also gave me the opportunity to experience other fields of medicine in which I am interested, such as emergency medicine and pediatrics. Shadowing in the different departments allowed me to discuss my career goals with the physicians about the different options and aspects of the medical profession. I have become more

interested in emergency medicine and pediatrics through my experiences and the program strengthened my desire to go into the medical field. I thank the LVH scholar program for this wonderful opportunity. I learned a lot and appreciate the effort of the doctors for including me in this experience.

II. Research:

A common goal for physicians is to be able to answer clinical questions that arise at the bedside and to provide the best care possible to their patients. However, the information overload and the dramatic rate of changing medical knowledge place a burden on physicians to keep themselves current with the literature. The high volume of medical literature is expanding every year and is increasingly becoming problematic. The literature is not well organized and can be overwhelming when physicians depend on the material for solving clinical problems. The idea is for physicians to conduct literature searches when clinical questions arise at the bedside to determine the appropriate plan of action all while the patient waits in the room. This is a challenge and often causes physicians to rely on clinical experience or possibly on “problem-oriented,” low evidence searches. Although most physicians believe in the importance of evidence-based medicine, it is not all that practical and most often does not occur in the physician’s demanding schedule. To make valid and informed decisions, there is a need for accurate, reliable, and readily available evidence-based medicine.

The hypothesis of the EPOC project is that physicians often do not practice evidence-based medicine, but instead practice using their own knowledge and experiences. My role as a research scholar was to round with the neurological team to collect the clinical questions that arise at the bedside and to observe the neurologist’s methods of practice. I would research the answer to the clinical questions using

evidence-based databases and I would forward the collected information to the neurologist the same day to assure that the neurologist was practicing medicine according to the current literature. I also created an Access database that was used to record all the clinical questions and answers collected on the rounds for future analysis. In addition, I documented the type of question asked, whether a literature search was performed by the neurologist, the level of evidence of my research, the resource used, the type of oriented evidence, and whether the information found influenced patient care. At the conclusion of the program, I found that during rounds, clinical questions were asked 75% of the time. Literature searches were performed by the neurologists at the bedside in less than 1% of these clinical questions. Although the evidence-based answer found later in the day always corresponded with the neurologist's methods of practice, it is evident that physicians often rely on the accepted guidelines or past education and experiences. The project aims to integrate evidence-based medicine into current methods of practice to influence patient care. The research suggests that there is a need for alternatives to navigate the high volume of information to find up-to-date, quality evidence at the point of care. The capacity to obtain better information may influence the way physicians practice medicine, and overall could improve patient care.