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Mr. Speice

Independent Study & Mentorship

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**Neurocritical Care**

**Assessment 3 - Interview**

**Name of Professional:** Dr. Venkatesh Aiyagari

**Title:** Neurologist: Neurocritical Care Specialist

**Company:** UT Southwestern

**Date of Interview:** September 12, 2018

**Works Cited:** Gupta, Antara A, and Venkatesh Aiyagari. "Neurocritical Care." 12 Sept. 2018.

**Assessment:**

Commencing my exploration of Neurology through the help of professionals in the Dallas/Fort Worth area, I had the pleasure to interview Dr. Venkatesh Aiyagari, a neurologist at UT Southwestern. Given his vast experience working both in the clinical and academic sectors of neurology, Dr. Aiyagari provided ample information about research projects that he has worked on in the past and how he has been able to apply that knowledge to aid him in the clinical setting. Thus, although the original intention of the interview was to learn more about neurology in general, the discussion turned quite technical in nature.

To begin, I asked Dr. Aiyagari to describe a typical work day for him. He explained that due to the nature of his career, he often works in the clinical setting and sees patients for one

week, and then the following week, he gets time off to dedicate to either his lectures or research projects. During the weeks that Dr. Aiyagari spends with his patients, he often has an entourage of residents or medical students following him around to learn more about neurocritical care. Given the nature of his job, Dr. Aiyagari does not practice at an outpatient clinic, so he only sees patients at the hospital. Often times, many medical professionals are often too busy to dedicate time to research, which essentially drives the future, so it was quite inspiring that Dr. Aiyagari was able to make time for both.

In addition, since Dr. Aiyagari specializes in neurocritical care, the roles and responsibilities that he has as a medical professional are quite different than other neurologists who have outpatient clinics. Most of the patients that Dr. Aiyagari sees are critically ill, and he described that many of them are on breathing machines, pressure monitors, brainwave monitors, and 24-hour nurse sitters due to the severity of their condition. In the past while working in the clinical setting, I have observed how many hospitals utilize surveillance cameras instead of nurse sitters. Thus, it was quite surprising that such a premier research facility as UT Southwestern does not utilize the cameras and relies on the more traditional methods.

As the discussion started to lean more towards the different technology that is used in neurology and neurocritical care, I asked about how brainwave monitors work. Brainwave monitors have been mentioned in many previous research articles, so I knew that it is quite necessary to understand the underlying technology. Dr. Aiyagari explained that the human brain outputs brain waves at all times during life, but the intensity and frequency change depending on the state of mind. During sleep, the brain waves are less active. However, during the REM cycle, the brain waves become quite active. Connecting prior knowledge, this made sense because

approximately 90% of the dreams that humans see occur during the REM sleep cycle. In general, brainwave monitors are used to predict the onset of seizures, and prior research assessments have revealed that seizures lead to erratic electrical impulses and brainwaves.

Dr. Aiyagari also described the research projects that he has worked on. In the past, Dr. Aiyagari has researched how sodium levels affects neurological conditions. He explained that greater than 160 mg of sodium levels in the blood increase the risk of developing neurological conditions, and it can also adversely affect the renal system. However, sodium ions are also used in sodium-potassium pumps to send electrical impulses to different parts of the brain, so in the future, it would be interesting to research how increased levels of sodium harm this mechanism instead of helping it.

As the interview came to an end, Dr. Aiyagari explained how he started his medical education in India, and because of the large population, he was able to observe a diverse range of cases. However, he decided to come to the United States even though he struggled financially in the beginning because the medical technology that is available here is unrivaled. I found Dr. Aiyagari's anecdote quite inspiring because choosing knowledge over security is such a courageous decision, and it truly showcases the love he has for learning. Thus, as an aspiring neurologist, I hope to have the same passion for learning and use that to help others live better lives.