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Sarah Ames Executive Summary

Epidural injections are a commonly performed medical procedure often used in treatment of chronic pain, pre- and post-operative pain management, and regional anesthesia. These injections are either performed unguided, where the physician will insert the needle by hand, relying on previous experience, or guided via CT scans and fluoroscopy which are both expensive and in the case of CT scans, expose the patient to radiation. The goal of my capstone project is to aid in the development of Rivanna Medical's upcoming medical ultrasound device for epidural injections. This technology is intended to provide a middle-ground option where the physician will have visual guidance while inserting the epidural needle while also providing a less expensive and safer option for the patient. If properly implemented, this ultrasound technology has the potential to provide a cheaper, more accurate, and more comfortable experience for both the patient and physician.

While my capstone project centered around a specific technology to create a better experience for both patients and physicians, my research centered around improving the patient-physician relationship through the use of emotional intelligence (EI) training. Through interviews and curriculum comparison, this research aimed to identify the potential benefits of incorporating EI strategies into healthcare and to determine where in the medical education sequence EI training would best be added. Analysis was performed through the framework of empathy, which states that empathy is neither a moral good nor a moral bad but a moral neutral since it can be expressed with bias toward certain groups. This framework was used as a tool with which to ensure that any proposed changes to the medical education system would account for potential bias with which empathy (through EI) is expressed and to encourage physicians to be conscientious about their expression of empathy.

Curriculum comparison was performed to evaluate what types of classes medical students are required to take which teach about the social skills of working with patients and to determine how EI is discussed in any of these classes. Interviews were performed to determine how physicians and residents perceive their own emotional management abilities, whether they could benefit from EI training, and where they would like to see EI training made available. Based on existing literature it was expected that the analysis would indicate that EI specifically is not taught in the current medical education sequence but that the physicians interviewed would present signs of needing better emotional management techniques, as many healthcare workers experience overwork and burnout. By promoting both a technology which creates a better patient-physician experience and an emotional intelligence curriculum which intends to foster better patient-physician relationships we can hope to see a future in which receiving medical care is more inviting and comfortable as well as making the physician experience healthier and more desirable.