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Reflections on Texas Back Institute Internship

Shelby Jones

University of Arkansas

Description of Internship

For my honors project, I chose to do the experimental option to gain more knowledge on topics that we do not spend much time covering in nursing school. I had the privilege to complete an internship with the Texas Back Institute, their main office is located in Plano, Texas. I worked closely the Scoliosis and Spine Tumor Center that is a branch of their team, and completed my internship from May to the first week of August 2019. I worked 20 hours a week during my internship between the clinic and the hospital. I was able to observe physicians in the office setting and in the operating room. This position ended up being exactly what I was hoping for, I learned so many new things, and believe I can take these on into my future practice.

The Texas Back Institute provides care for patients suffering from neck and back pain. As a whole, the practice includes 23 physicians who all specialize in treating patients with neck and back pain. They have 11 offices located all across Texas that some of the providers travel to, but I worked in the offices located in Plano or Frisco, Texas only. One of the most fascinating parts of this practice is that the staff works to make surgery a last resort, meaning no patient will have unnecessary surgery. All options are exhausted before jumping into surgery, this sets Texas Back apart from other spine surgeons around Texas. The skills in the practice are unmatched, the providers specialize in neurosurgery, orthopedic surgery, spine surgery, Physical medicine and rehabilitation, or even Psychology. This team and their extensive skills allow patients to have many options that are non-surgical before jumping into a surgery. I worked mainly with the Scoliosis and Spine Tumor Center which specializes even further to better serve their patients. The team consists of 3 physicians, Dr. Isador Lieberman, Dr. Mark Kayanja, and Dr. Blake Staub. I spent most of my summer with Dr. Lieberman who is an Orthopaedic and Spinal Surgeon and one of the founders of the Texas Back Institute, and Dr. Kayanja who is also an

Orthopaedic Spine surgeon. Both of these doctors specialize in pediatric and adults which drew my interest as I am wanting to go into Pediatrics. In addition to the physicians, the Scoliosis and Spine Tumor Center also has 3 PA's, and 3 medical assistants, one for each physician. On slow clinic days for the Scoliosis and Spine Tumor Center, I was able to head to the other side of the office to work with and shadow different doctors with the Texas Back Institute. The flexibility available was key as I could float around to see specific cases that sparked my interest, or stay with one doctor and see a typical clinic day for them.

Responsibilities

Depending on the client load each day, my responsibilities differed. If the clinic schedule was especially busy, I would bring patients back, get their height and weight, then take them into the room where I got their vital signs. I would look at the charts beforehand to see why the patient was coming in, and then would ask them questions regarding their medical history as well as specific questions related to why they were in today. Prior to the physician coming in, I would pull up previous imaging we had on file on the computer in the room for the doctor to reference as needed. After the patient was set up in the room, I would go and open their new appointment in the computer. This allowed me to input their vital signs for the doctor to see, usually at this point the doctor would either already be standing at the desk waiting for me, or would be coming out of the room. Before going and getting the patient, I asked the physician if they would like x-rays because we can do them in office before the physician goes into the room to see the patient. I would give them a brief verbal report on the patient, and update any changes in their medical records including adding signed consent forms to their chart. Other days, if we were less busy, I would return patient phone calls, scan and upload paper forms and consents, and any other things

they may need. If one of the staff who works up front had to be off, I would work up in the front. My responsibilities working in the front included appointment reminder calls, confirming or moving their appointments, checking out the patients after their appointments, scheduling future appointments, checking in the patients, and assisting as needed with the electronic forms on a tablet. Many of the patients we saw were older adults who required a lot of assistance with the electronic forms, so I spend a lot of time walking them through the forms helping them mark their answers.

In July, Dr. Kayanja's medical assistant took some personal time, so I actually had the opportunity to take over the medical assistant role for a few weeks. My responsibilities during this time were a little more set in stone. Dr. Kayanja was in the clinic in Frisco, TX on Tuesday and Thursday. This clinic was much smaller and usually the only staff in this office while we were there were the receptionist, x-ray tech, and then Dr. Kayanja's team who traveled with him, his medical assistant and surgery scheduler. This role allowed me to see patients' full journey and how the Scoliosis and Spine Tumor Center worked in each phase of the process. I was able to observe one new patient all the way into the OR. Another great thing about the Frisco office is that Dr. Kayanja would observe imaging and teach me what he saw and why that issue would lead to the patient's symptoms. My responsibilities as a medical assistant were bringing the patient back, getting a background and vital signs, reporting to Dr. Kayanja, and then waiting to see what he wanted to do with each patient. I was able to schedule patients for future appointments, work with the surgery scheduler to get additional imaging or labs scheduled for the patient, sending prescriptions to the pharmacy, and anything else I could assist with. Working in the smaller office helped me learn many more skills, and much more about each patient we saw.

Skills Learned

The skills I learned during my internship were very valuable to my future career. Going into nursing, we do not spend much time talking about insurance companies and billing, or anything like that because most people go work in a hospital. I have always planning to return to school and be a nurse practitioner in primary care, and having a background in how billing works will be very beneficial to my future. Aside from that, I was able to learn how to get a good background on patients, and what questions were important to ask. This experience will help me in getting an admissions background on patients, and knowing how to ask questions specific to their visit. I also learned a lot about radiology and how to choose the correct imaging for the patient, and what each view meant. In addition to skills I learned in clinic, I was able to observe surgeries in the OR, and spent the day with the circulating nurse understanding her role in the OR. This was a unique experience from clinical OR days because I was with the same nurse each time I went, and she was very involved in making sure I was learning and knew exactly what was going on during the procedures.

Project Description

The main goal I had for my project was to learn more about spine injuries and surgery as this is a topic that is not touched on in depth in nursing school. I wanted to expand my knowledge and have experiences that set me apart from my peers when graduating. When expressing interest in this position, I talked with the director of the Scoliosis and Spine Tumor Center about my goals for an internship, and specific interests I had. She worked with the doctors to help get me involved with patient cases that would help me reach my goals, and that were focused on unique patient situations. Right from the start after expressing my interest in pediatric

patients, I was paired with the two doctors who saw pediatric patients. Dr. Lieberman especially has a strong base in the pediatric population and holds a clinic one Saturday a month for only pediatric patients. He was aware of the difficulty in getting patients to appointments during the normal work hours between their school, extracurricular activities, and the parent's work schedule, so he added this Saturday Clinic. I had the privilege of attending Saturday Clinic and getting to shadow with Dr. Lieberman, his PA Jennifer Shivers, and his medical assistant Anna. This was very beneficial to my project because I was able to see the different ways that the M.D. and PA interact with patients and how much time they spend with the patients.

Challenges

One of the big challenges for me in this role was my lack of knowledge regarding spine surgeries and treatments. I knew what scoliosis was, but I was very unaware of all the other things that can happen to a patient causing them spine issues. While 3 months seems like a long time for an internship, to fully get everything out of it I was wanting, it required a lot of research and many questions to better understand each patient. I was lucky to get to spend a lot of time in clinic with Dr. Kayanja who is newest to the practice and is still working to get a higher client base, so he had more time to spend with patients, and was far less busy allowing him to take time explaining things to me as well. Dr. Lieberman is a pioneer in spine surgeries, and is only in clinic one day a week to allow time for surgeries, so it was challenging to ask questions when he was in the clinic because I did not want to slow him down. There was quite a bit of terminology that was used between the staff that I did not understand, this required quite a bit of memorization and more research on my part. Lastly, it was challenging understanding how each surgery is performed, equipment used, and the robots use in the procedures. There were specific

types of imaging and additional work required when using the robots in surgery, but they really are able to improve the quality of care.

In order to improve my experience in this internship, I would've done much more research prior to starting. I also would have adjusted my work schedule at my other job to allow me to attend the monthly lectures the Texas Back Institute held. These lectures were taught by one or more of the physicians and the research team at Texas Back. Attending the lectures would have helped me see more of the research side of medicine, and how many of the physicians in the practice were constantly involved in research. I also would recommend if anyone chooses to do a similar internship, to try and only work at your internship. I was balancing the internship and my job as a patient care technician at the hospital, and often ended up working 50+ hour weeks between observing procedures, working at the clinic, and working my other job. Some days I felt too exhausted to really get to absorb all the information available. This internship was truly amazing, but I definitely feel there are many things I could've done myself to make it an even better experience.

Expectations and Goals

I was very lucky that this internship not only met, but exceeded my goals and expectations I had going in. My biggest goal was to expand my knowledge over a specialty that is not covered very much in school. I came into the internship with very little background in spine or even orthopedic procedures in general, and came out with so much knowledge. I also really wanted to get more OR experience to see if that was a route I wanted to take after graduation. I expected to learn about scoliosis and spine procedures, but I could not have expected how much the doctors taught me, and allowed me to experience. I was able to observe

physicians interact with patients in clinic, preop, and in the operating room. I was also able to shadow PA's in clinic and observe them in surgery as well. I learned so much about the field of spine surgery, trauma, and all other neck and spine related health issues. Most of my goals for my learning revolved around getting exposure to new things, but I left the internship more confident in patient interactions and with better handoff report skills to doctors which is a very scary idea for a new graduate nurse. These nursing skills were not expected as part of the process, but I am so thankful to have had these experiences before going out as a new nurse.

Analysis of Internship

The Texas Back Institute's mission and work was a large part of why I chose to do my internship with them. Their goal is to use surgery only as a last resort option to reduce the amount of unnecessary surgeries that occur. I found this unique and was very excited to learn alternative measures that are taken prior to deciding on surgery within the practice. Another part of their work that really grabbed my attention is the work that Dr. Lieberman has started in Uganda. Every summer, Dr. Lieberman takes a team and a ton of equipment down to Uganda for a few weeks to see patients and perform surgeries. This heart for serving patients who cannot afford or access treatment really made me want to learn from such a selfless person. Dr. Lieberman's approach to life is to "Take what you have and make it better" this mentality is very present within the work that Texas Back does. One of the objectives I had was to learn and gain new experiences, and not only did I learn medicine, but I learned the importance of being selfless within my practice as well. These life lessons I learned were important to my project without even being expected.

Knowledge Gained

My internship provided me with many new experiences and learning opportunities. I was able to learn how to navigate a their charting system called Centricity. Learning how to best navigate through and efficiently complete tasks really helped advance my technology skills and further develop my charting. I was also able to learn how to communicate with patients and answer questions over the phone, I returned phone calls when patients called with questions, and if assistance from the provider was needed, I would ask them, then return the call. This is similar to the functioning of a hospital in that the patient asks the nurse a question, that I then have to ask the provider, and relay that answer to the patient. This helped to improve my communication skills and better my confidence when interacting with physicians. Through the duration of the internship, I learned many new medications, usage, and dosing that are used commonly in the practice, as well as labs that are drawn for patients. In class we talked a lot about osteoporosis in older adults, but I never thought about a provider drawing labs to assess for signs prior to deciding on a route to take. I also learned about a drug that is being used for many patients in the practice called, Forteo. Forteo is used in patients with osteoporosis to build new bone, and strengthen the bone in these patients. It has been proven effective in postmenopausal women, and is used in any patient suffering from osteoporosis. I was able to help educate patients on how to use Forteo at home as it is a daily injection in a prefilled pen-type container. In the clinic we had practice equipment to aid in teaching the patients, and this really helped to grow my confidence in patient education, even in items I was new to myself.

Ethical Considerations

This practice was very strong in decisions being in the best interest for the patients, and

providers feeling comfortable to bounce ideas off each other. Spine surgery was described to me as being able to take a patient whose pain is at a 9/10 all the time to only a 3/10. This change still results in pain, but the improvement greatly improves the quality of life for the patient. I did not personally experience any ethical issues, but I will discuss potential ethical issues that can occur. First, patients' pain is subjective, it is all in how they rank it, a 10 for me could be a 5 for someone else, so basing surgical procedures off pain would create an ethical dilemma. At Texas Back, the providers will collaborate and get other opinions if they are torn about during surgery or trying something else, which helps to prevent that ethical issue. A very serious ethical issue that can occur for doctors in this specialty, is the decision to prescribe opioids for pain to these patients. Within the Scoliosis and Spine Tumor Center, where I spent most of my time, these doctors will not prescribe opioids unless the patient has had surgery, and even then they are very restrictive. They also use a program which will tell them if the patient is receiving opioids from another prescriber prior to prescribing any pain medication. These steps they have in place ensure that the providers are not contributing to the opioid crisis, and if a patient truly just needs to have their pain managed, they are referred to a pain management doctor who will assist them. At the clinic, pre-signed prescription pads are locked up in the manager's office to ensure no one can steal those sheets and prescribe themselves medications, there was one instance where a pad went missing that could have led to a big legal and ethical issue, but the pad was actually with the medical assistant who had forgotten to sign the pad out in the log. The practice has many tools in place to prevent ethical issues from occurring, and they are very prepared to handle anything that may come up. They have many staff members who speak fluent Spanish in all levels of the practice, which is very important being based in Texas. Overall, I was very impressed with the preparedness and prevention in place to prevent the providers from having to

get into ethical dilemmas on their own. The staff truly functions as a team, and has the patient's best interest at heart at all times.

Case Review

I was able to observe surgeries in the OR throughout my internship, and to better explain my project, I will be reviewing one of the patient cases I observed. The patient's initials are A.G. and he was a 15 year old male diagnosed with idiopathic scoliosis. He was a patient of Dr. Lieberman and had been visiting the clinic for years while Dr. Lieberman watched his growth and changes in his spine. At the Scoliosis and Spine Tumor Center, it is standard that all pediatric patients, and many others, receive an specialized X-Ray called an EOS X-Ray at least once per year. This system provides low doses of radiation while getting unique images that give the doctor a better understanding of the patient's spinal curve. The EOS is a very fast procedure, usually taking only a few minutes, and it "produces two simultaneous frontal and lateral, low dose images of the whole body or an anatomical segment" (EOS, 2020). The benefit of getting the whole body in one image for our uses, was that the doctors are able to see the whole picture of the spine without having to use separate images, or mesh 2 separate ones together. This program also allows for accurate measurements to be made of the whole spine because they will not have any magnification or stitching inhibiting a clear reading. AG had been receiving EOS X-Rays with each visit, and as his symptoms worsened, so did the curve of his spine. This led to Dr. Lieberman deciding to perform surgery rather than another option. AG's spinal curve progresses from 42 to 56 degrees. It was clarified as a double thoracic curve meaning his spine has 2 curves. The first a high thoracic curve from T2-T6, and then he also had a midthoracic curve from T6-L2. The patient has no known drug or food allergies, and weighs 133 pounds.

To set up for the procedure, the patient was admitted to preop around 0600. Here he started getting prepared for surgery, getting an IV started, fluids running, receiving preop medications, and ensuring all consents are signed and in his chart. The anesthesiologist on the case was Dr. Struthers, he saw AG prior to the procedure to discuss plans for anesthesia and answer any questions the patient or family had. Dr. Lieberman went to see the patient before he went back and explained the procedure again, reminding the family what to expect and make sure there were no further questions, then AG was brought back to the OR. Once he was back in the OR, Dr. Struthers placed him under a general anesthetic, and placed an arterial line for hemodynamic monitoring. Prior to starting surgery, the patient was placed on spinal cord monitoring with somatosensory evoked potentials, motor-evoked potentials, and EMG monitoring. These were monitored continuously through the procedure to ensure that the spinal cord was not damaged during the procedure. After the patient was asleep, he was intubated, then the team worked to flip him over to lay in the prone position on a specialized table called the Jackson table. Finally, he began getting prepped for the procedure by getting the site draped, and prepped with iodine solution. Dr. Lieberman began the procedure by obtaining a bone marrow aspiration which he combined with cancellous allograft chips which he used later in the procedure for the fusion. The full name of the procedure being performed was a segmental instrumentation correction and fusion from T3-L1 with multilevel Smith Peterson osteotomies to facilitate sagittal and coronal plane correction.

Dr. Lieberman used robotic-assisted surgery using the Mazor robot. This is a unique robot that Dr. Lieberman actually helped develop. This robot works to allow surgeons to plan their surgery before they go in. The plan provides “efficient movements, enabling a predictable procedure — complete with defined trajectories, preselected implants, and no anatomical

surprises. This plan takes into account construct design and global alignment, going beyond single trajectory guidance” (Medtronic, 2020). The patient gets a CT scan with a specialized protocol for this specific procedure, called Mazor protocol. During the procedure, the robot works by aligning with the spine to place screws or hardware exactly where the surgeon planned prior to being in the OR. This technology helps decrease human error, while still allowing freedom in choosing screw size and planning their own surgery. At multiple points during the procedure, the positioning and plan were checked by Dr. Lieberman and the robot using intraoperative imaging to ensure correct placements. After all the screws were confirmed to be in the correct position, the patient was given an epidural injection of Duramorph, Marcaine, and fentanyl to help with post-operative pain management.

The procedure lasted almost 6 hours, and the results were phenomenal. I was able to stand up by the patient’s head for the last stretch of the surgery when the rods were all placed, then all at once moved the spine into the correct placement. It was one of the most fascinating things I have ever experienced. This patient was then closed up, and sent over to the PACU for recovery, and then up to their floor in the hospital. The nurses who work on the Texas Back unit are specialized and know exactly what the providers want for the patient to be doing after a procedure. They are big on getting up and walking as soon as possible to encourage healing and continue movement. Dr. Lieberman rounds on his patients in the hospital each morning, so he went to see AG the next morning and he was recovering phenomenally. Getting to observe this procedure was one of the best parts of my internship, I was able to be with the patient and observe from preop all the way through the end of his procedure. Dr. Lieberman and the staff with him in the OR were all excited that I was there to learn, and everyone wanted me to come over and see what they were doing during the procedure. This learning experience was one of a

kind, and was able to mesh my internship with my passion for pediatric patients. I am forever grateful to the Texas Back Institute for allowing me to be part of the team and complete my internship with them.

In conclusion, this internship was more than I could have dreamt of. My goals and expectations were not only met, but they were exceeded. I grew in my skills of report, charting, and confidence in patient interactions. I learned about insurance and billing issues experienced in the clinic setting, often requiring a lot of extra work to get the patient what they need. The knowledge I gained during my internship is incredibly valuable and is something I never would've learned otherwise which was my top priority when selecting an internship. I analyzed the Texas Back Institute and how their mission lined up with my interest in less invasive treatment options as a priority. I also discussed my duties and responsibilities while in the clinic setting, and reviewed a patient's surgical case to give more of a full picture of what the internship included. This internship has forever changed how I will practice in the future, and taught me so much about how to be a provider that patients trust. The skills and confidence in my abilities that I gained will help me perform better as a new graduate nurse, and can set me apart from other job applicants. The experiences I gained from this internship will be carried with me throughout my nursing career, and I am so grateful that I had the opportunity to learn from the providers at the Texas Back Institute.

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