

Isabella Rosa Nanini

Mr. Speice

Independent Study and Mentorship- 3A

21 October 2016

Research Assessment 5

Subject: Being a Pediatric Cardiac Surgeon

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Works Cited

Fraser, Charles D., Jr. "...On Being a Pediatric Cardiac Surgeon." *CTSN*. 12 Oct. 2006.

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Assessment:

For this research assessment I chose to research the lives of pediatric cardiac surgeons, to learn what it is really like to be a pediatric cardiac surgeon. I found one article, an essay written by a pediatric cardiac surgeon at the children's hospital of Texas in Houston to encourage interest in his career.

This article interested me greatly. It showed me a side to pediatric cardiac surgery that was quite different than I had researched before. He began talking about the decreasing interest in his career field, which is something I had read in a previous article. Dr. Fraser spoke of what his career is, and what he goes through on a daily basis. He spoke of the huge number of professionals in a pediatric cardiac surgery, which I find very interesting. I believe working in well invested, dynamic, and smart group of people creates the best chance for patient survival, and this is the kind of work environment I seek for my future career. He also spoke of the

Rosa Nanini 2

extensive and long education to become a pediatric cardiac surgeon, I have always known about the extremely long schooling of this career, but this essay taught me that the course of study to become a pediatric cardiac surgeon somewhat varies. The fact that Dr. Fraser has studied here in Texas makes the possibility of becoming a pediatric cardiac surgeon seem more realistic and achievable. He also spoke about mentorship, which I had read about in a previous article. The importance of mentorship is shown in this essay as an essential part of a pediatric surgeon's education, and makes me feel that ISM will be the beginning of my education for this career. Dr. Fraser spoke of many challenges that come with his career, the lack of making personal life decisions as he puts it. This can be a highly discouraging factor to the want to become a pediatric cardiac surgeon; however, through ISM I am able to see that this is my dream career. Reading this article has made me extremely excited for my future, as long as it may take to get there or the life experiences I may miss, these challenges can be beared through the amazing rewards that come with this dream career. The complexity of each surgery will, as I have learned, constantly challenge me and never bore me. The immediate gratification, something I learned from this essay, is something I strive for in my future career. Being able to constantly save lives will my way to leave an impact in the world.

## **...On Being a Pediatric Cardiac Surgeon**

**By Charles D. Fraser Jr., MD**

Introduction

This essay is the product of a request, and represents no small creative struggle on my part—the struggle being what will I write that may be useful, meaningful and provide insight to others about my professional life. The stated purpose of the request is to provide the reader, presumably students (college, or perhaps medical school or maybe even high school) a glimpse into the world of pediatric cardiac surgery with the goal of convincing more individuals to pursue a career path in surgery. The obvious reason for this is that surgery in general, and subspecialty surgery (cardiothoracic surgery) in particular, has become less and less attractive to our “best and brightest”. FACT: Applications for residency positions in cardiothoracic surgery have declined significantly over the last decade. The decline in the number of applicants is of concern to all of us in medicine, irrespective of specialty. It portends a future of insufficient numbers of qualified practitioners in an environment of increasing medical/societal needs and expectations. I am grateful to have some opportunity to potentially influence this trend in a positive manner.

**Comment [1]:** I wanted to learn more about actually being a pediatric cardiac surgery

**Comment [2]:** Wonder why?? Possibly difficulty or long schooling?

**Comment [3]:** I have read on a previous article that the number of pediatric cardiac surgeons is decreasing

I am also grateful for the chance at what is, I hope, the mid-stage of my professional life, to conduct some self-analysis—probably a healthy thing for any professional to do periodically. Have I made a good career choice, and is my field one I feel good about recommending to others?

**Comment [4]:** This is important for someone, like me, looking to possibly go into this career

First, a brief description of what I do may be helpful. I am Director of Pediatric/Congenital Heart Surgery at Texas Children’s Hospital, a large, well-supported, fully integrated children’s hospital. I perform cardiac and thoracic surgery predominantly in children, although I have an increasingly large number of adult patients with congenital cardiac disease. This later observation is the result of the ever-growing population of adults with congenital heart disease. The majority of my patients have congenital cardiac malformations, meaning they were born with something structurally

**Comment [5]:** !!!

**Comment [6]:** What I want to do

**Comment [7]:** Interesting

abnormal, “seriously wrong” with their hearts. As such, the largest percentage of my patients are babies, often premature, requiring early cardiac surgery, because of the lethal potential of their congenital problems. I also perform heart and lung transplants and place mechanical circulatory assist devices in children with failing hearts. I work with three surgical colleagues in congenital heart surgery, all highly talented, well educated, and entirely committed. We work closely with a team of **pediatric anesthesiologists**; highly specialized anesthesiologists, whom I consider among the best in the world. Our medical counterparts in **Pediatric Cardiology** make diagnoses, manage patients before and after surgery, and perform interventional catheterization procedures when appropriate as an alternative to operative procedures. We all work with a wonderful team of perfusionists, nurses, respiratory and physical therapists, social workers and administrative personnel in an integrated children’s heart center. **It is an exciting, energized, friendly place to work, and I look forward to each day with the expectation of challenge ahead, gratification, and the mutual support of our team.**

**Comment [8]:** I find the number of specialist required for one surgery so interesting.

**Comment [9]:** Hope to interview a pediatric cardiologist

**Comment [10]:** This is the kind of work environment I want

The course of study to become a pediatric cardiac surgeon **varies somewhat**; mine was probably longer than most. After **medical school at the University of Texas Medical Branch**, I completed residency training (better termed: postgraduate education) in general and cardiothoracic surgery at the Johns Hopkins Hospital in Baltimore, Maryland. This nine-year program included two years of laboratory research in cardiopulmonary transplantation. **It was a long residency, not always pleasant, but without a doubt it formed the foundation of my professional life.** My wife and I also managed to have our four children during this residency period. The highlight of my education in pediatric cardiac surgery was a fellowship at the Royal Children’s Hospital in Melbourne, Australia. **My first “real job”, as my mother likes to remind me, came at the tender age of 35 at the Cleveland Clinic Foundation in Cleveland, Ohio.** In truth, I still had much to learn and was, in very many ways, still the student of an outstanding

**Comment [11]:** I didn't know this

**Comment [12]:** UT Southwestern?

**Comment [13]:** This long schooling can sometimes discourage people into wanting to become pediatric cardiac surgeons, however I find that it is an essential part of being able to do my dream job

**Comment [14]:** Another example of the length of the schooling of this career

mentor, Dr. Roger B.B. Mee for the next two years. I was fortunate to be invited to move to Texas Children's Hospital in 1995.

**Comment [15]:** I had read before of the importance of mentorship in a surgeon's education, here it is shown in this surgeons education

Admittedly, this whole process has included significant downside challenges. I do not ever recall making personal "quality of life" decisions in my professional career pathway—it should be clear that there are sacrifices in any career choice, and pediatric cardiac surgery requires significant sacrifice. Each individual must decide those compromises he or she can tolerate. Obviously, my education was extremely long—this was financially, emotionally, and intellectually challenging—at times highly stressful. My family life was, and continues to be, compromised by the demands of my professional life. That translates into missed birthday parties, school plays, little league games and anniversaries. I am blessed by a wonderfully supportive wife who has endured the whole process from the beginning. I have marvelous children. I believe we have made up for "quantity" with "quality" time, but no doubt there have been disappointments for all of us. The day-to-day strain of my practice has been different than I expected, and it is still evolving. It has been physically more difficult than I anticipated—the operations are long and require consistent concentration. The work is often exhausting.

**Comment [16]:** Another challenge with this career

**Comment [17]:** More challenges

**Comment [18]:** Even more challenges

So why pursue this specialty?

1. I have the opportunity to perform a large number of very different operations—"mundane" is not a part of our world of congenital heart surgery. The operations are challenging and are associated with the necessity of improvising and innovation. When a complex operation is complete, the result is akin to what I envision an artist or builder

**Comment [19]:** The dynamic atmosphere and challenges of this career interest me

must feel after creating something useful out of something that was a real problem—a sense of accomplishment.

**Comment [20]:** This must be an amazing feeling...

2. The gratification is tangible and virtually immediate—I can see the results quickly in a child after surgery. If they were cyanotic (blue from low oxygen levels), their lips turn pink. If they were in heart failure, they now have energy. Poor growth (“failure to thrive”) turns around rapidly and children put “meat on their bones”. Children heal quickly. They respond positively to well-performed operations. They are not burdened by preconceived notions about recovery as adults often are—they just want to feel better, to be like other children.

**Comment [21]:** This is what I thrive to experience one day, the gratification of saving a life.

3. The impact of operations that I perform on newborns has the potential to affect/influence an entire normal lifespan. Thus, the results of my work have implications and the potential to be realized over decades, not just months or even years. One example is the case of obstructed, total anomalous pulmonary venous return. This is a fatal condition in which the pulmonary venous drainage (oxygenated blood) returns abnormally, and the pathway to the heart is narrowed or blocked. These babies often present moribund very soon after birth, with death imminent within hours without treatment. A successful operation with precise repair will likely be translated into rapid recovery and the potential for lifelong normal cardiac function. This procedure is extremely rewarding.

**Comment [22]:** I believe these kinds of rewards will always trump the difficult challenges of this career



Figure 1: The MicroMed DeBakey VAD® Child system.

4. The patients are very interesting, and the physiology is fascinating. We treat patients with too little pulmonary blood flow or intracardiac mixing, and they have low systemic oxygenation—“blueness” or cyanosis. We treat patients with excessive pulmonary blood flow (overcirculation of the lungs). They have enlarged hearts, congested lungs and respiratory distress—congestive heart failure. We treat obstructed valves, incompetent valves, narrowed arteries, absent connections, and twisted pathways. We have patients with situs abnormalities—“backward hearts”. We have patients with absence or hypoplasia (underdevelopment) of cardiac chambers—single ventricles. This translates into a wide variety of anatomic and physiologic issues to be unraveled and corrected.

**Comment [23]:** A great way to constantly challenge myself.

5. I use very specialized equipment, which just keeps getting better; advancements in technology are important to what I do. My “tools” are highly refined, very delicate instruments—critical to optimum performance. I use a cardiopulmonary bypass “heart/lung” machine routinely to support the circulation during open-heart repairs. We monitor the brain with near infrared spectroscopy (NIRS) to determine adequate oxygen

**Comment [24]:** So cool

delivery. We study echocardiograms, cardiac catheterizations, MRIs, and CT scans to understand anatomy and function. We make neonatal diagnoses and surgical plans—even in some cases considering fetal intervention. We have an ever-growing number of mechanical devices available to support the child's circulation long-term when the heart fails [Figures 1 & 2]. We are able to replace the failing heart and lungs with transplants when appropriate. It makes for a very exciting life; seldom predictable, often frightening, never boring.

**Comment [25]:** Again, this is something I want in my dream career

6. I go to work every day with some of the most dedicated and accomplished people in the world. My associates are smart, ethical, focused, and committed. There is a spirit of community and mutual appreciation of the highest standards of patient care. We earn comfortable livings, but we are not driven to measure our performance by income levels. I am constantly challenged and uplifted by the professional standards of my associates. The spirit of service is tangible and infectious; my professional life is buoyed by my colleagues. In an increasingly cynical world of corporate scandal, disappointing behavior by our elected officials, and conflicting societal messages, our sense of mission and purpose remains clear. We take each day as an opportunity to do what is best for the children entrusted to our care.

**Comment [26]:** This kind of work atmosphere is something I want to experience

In conclusion, I find pediatric cardiac surgery to be challenging, exciting, varied, and extremely rewarding. I have no regrets about the path my professional life has taken, and I would encourage others to pursue a similar career choice. It continues to be a very enjoyable professional life.



*Figure 1 reprinted with permission from the International Society for Heart and Lung Transplantation (Morales DL, DiBardino DJ, McKenzie ED, Heinle JS, Chang ACC, Loebe M, Noon GP, DeBakey ME, Fraser CD. Lessons learned from the first application of the DeBakey VAD Child: An intracorporeal ventricular assist device for children. The Journal of Heart and Lung Transplantation 2005;24:331-337)*

Figure 2 used with permission of Texas Children's Hospital. Please do not use without prior permission and attribution.

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