Clinics in Surgery

Research Article
Published: 09 Nov, 2017

# Career Choices of Residents Leaving General Surgery: What Do the Residents Say?

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## Abstract

**Background:** General surgery has the highest rate of attrition of all residency programs. Residents who leave general surgery residencies may change to another specialty, be dismissed, quit medicine altogether, specialize early into an integrated program or complete general surgery followed by a subspecialty fellowship and practice a surgical subspecialty. To our knowledge, this is first study in which residents who left general surgery were interviewed and the explanations of why they chose other specialty published.

**Design, Setting and Participants:** A list of 6,271 graduates of the University of Alabama School of Medicine (UASOM) assigned to the Birmingham, Tuscaloosa and Huntsville campuses from 1974 to 2015 was obtained from the published records at the main campus in Birmingham. Information was obtained on 6238 (99.5%) graduates by Google® Search Engine. Graduates who matched into General Surgery but then changed into another specialty, were dismissed, quit medicine altogether, specialized early into an integrated program or completed general surgery followed by a subspecialty fellowship and practiced a surgical subspecialty were included in the study. In the first phase of the study, residents were identified who changed from general surgery. In phase two, graduates who left general surgery residencies from the last ten years (2001 to 2011) were surveyed.

**Results:** There were 282 graduates who left general surgery and changed to another specialty from 1974 to 2015. Ninety residents were identified from the study that changed from general surgery over the last ten years. Fifty-eight residents (65.2%) responded to the survey. Many provided explanations for why they chose another specialty.

**Discussion:** The 282 residents changed from general surgery to 27 different medical and surgical specialties grouped into Primary Care, Non-Primary Care, Non-Patient Care, Surgical Care and Non-Medical Care. One resident chose a Non-Medical Career as an artist. Uncontrollable lifestyle is the number reason residents leave general surgery residencies. Interviewed residents provided a variety of reasons they chose other specialties which is discussed in this paper.

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**Received Date**: *21 Aug 2017*
**Accepted Date:** *01 Nov 2017*
**Published Date:** *09 Nov 2017*

***Citation:***
*Geno CE, Avery DM Jr, Wallace JC, Burkhardt J, Bell G, Harrell AG, et al. Career Choices of Residents Leaving General Surgery: What Do the Residents Say?. Clin Surg. 2017; 2: 1724.*



## Introduction

"I matched into a general surgery residency. During surgery clinic, the chief of surgery approached me and asked why I was treating a sinus infection for a patient I was completing a preoperative work-up on. He informed me that she needed to see a real doctor for that. He was joking to a certain extent, but it hit me square in the soul. I decided at that moment that I wanted to become "a real doctor". When considering why the change, the overriding reason is the primary care relationship with the patient. It is a potentially long-term relationship that covers a wide array of problems. Why family medicine? It is a primary care relationship with the whole family. There are no borders as to who can be seen or treated. The advice of a primary care provider is that family medicine is "cradle to grave". The trust that develops is significant. There are few topics that cannot be discussed. I had a patient in private practice that was admitted for chest pain. He was told by the cardiothoracic surgeon that he needed a bypass. When scheduling the surgery for the next day, my patient informed the surgeon that he would not have the surgery until it was Okayed by me, his primary care physician. I saw my patient and reviewed the chart and films. I had operated with the surgeon many times. I told my patient it was the right thing to do and that he would do well. He did have the surgery and came off the ventilator and came out of the ICU in near record time. During surgery residency, my toddler son would tug on his mother's clothes when he saw anyone with scrubs on and ask his mom, "Daddy?" In family medicine, I could spend more time with my family and my son knew who I was. The hours were much less. I did obstetrics in private practice and

**Table 1:** Career Choices of Residents Leaving General Surgery Residencies.

| | | |
|---|---|---|
| **Primary Care** | **29** | **10.30%** |
| Family Medicine | 21 | |
| General Medicine | 2 | |
| General Internal Medicine | 5 | |
| General Pediatrics | 1 | |
| **Non Primary Care** | **90** | **31.90%** |
| Anesthesia | 45 | |
| Addiction Medicine | 1 | |
| Cardiology | 1 | |
| Dermatology | 1 | |
| Gastroenterology | 3 | |
| OB/GYN | 1 | |
| Psychiatry | 11 | |
| Rheumatology | 1 | |
| Emergency Medicine | 23 | |
| Critical Care | 2 | |
| Physical Medicine & Rehabilitation | 1 | |
| **Non Patient Care** | **28** | **10.00%** |
| Radiology | 16 | |
| Pathology | 8 | |
| Preventive Medicine | 1 | |
| Pain Management | 1 | |
| Occupational Medicine | 2 | |
| **Surgical Care** | **132** | **46.80%** |
| Oral Maxillofacial Surgery | 13 | |
| Pediatric Surgery | 4 | |
| Plastic Surgery | 51 | |
| Cardiothoracic Surgery | 43 | |
| Colorectal Surgery | 15 | |
| Surgical Oncology | 5 | |
| Transplant Surgery | 1 | |
| **Non Medical Care** | **1** | **0.40%** |
| Artist | 1 | |
| **Total** | **282** | |

enjoyed that immensely. I saw the whole family as patients for years. I have been an advisor for several patients long after I moved to another city. I continue to have patients travel hundreds of miles to see me as their physician. It is my role as a family doctor that continues. This is the "real doctor" that I became" (CEG).

General surgery has the highest rate of attrition of all residency programs [1-3]. One in every 6 residents in general surgery quits residency [3]. Attrition in general surgery residencies is important because there is a critical shortage of general surgeons in the United States, especially in rural areas [3-7]. Elimination of the pyramid system and new work hour restrictions has not improved attrition in general surgery programs. General surgery is a medical specialty that is shrinking [8] and residents leaving training are a significant problem [9]. Applications to general surgery residencies have decreased by 30% [10]. The decreasing interest in general surgery by medical students may eventually have an impact on filling general surgery residency positions [11]. This paper discusses the career choices of residents who left general surgery. To our knowledge, this is first study in which residents who left general surgery were interviewed and the explanations of why they chose other specialties published. In our initial study examining why residents quit general surgery residencies [12], 19 (47.5%) residents changed to other specialties and 14 (35%) residents changed to surgical subspecialties by completing subspecialty fellowships after general surgery residencies. Three residents (7.5%) pursued early specialization into integrated residencies. Two residents (5%) quit medicine altogether. One resident (2.5%) was dismissed from his residency program [12]. Most residents who left general surgery remained in graduate medical education and changed to another specialty [13]. A small number of residents will leave medicine altogether because they do not want to practice medicine or they do not like patient care. In a study by Reynolds, many residents changed specialties during training. Some knew what they were interested in and others did not. Program directors should help residents cultivate their interests, although this is rarely done in residencies today, especially in regards to changing residencies [14]. Changing residencies is inherently more complex than the initial selection of residency [15]. Choice of another residency may require some thought, reflection and research. Many medical students today already have "second choice" residencies should they not have matched into their first choice of residency due to career counseling during medical school. There are many considerations such as what area of medicine one may be interested in and with what area of the current residency is one dissatisfied [15]. There are issues of acute versus chronic care, inpatient versus outpatient care, urgent care, primary care versus non-primary care versus non-patient care, salary, productivity, work hours, call, unattached emergency department call, schools for children, jobs for spouses, and urban versus suburban versus rural locales[15].

There are costs and time off associated with travelling to programs and interviewing, reduction in salary, finding a new place to live, and participating in the attending/resident/intern hierarchy. Being an intern again can be difficult. However, this is an issue of long term happiness and satisfaction. Many physicians have changed residencies during their training and most have been satisfied. Most physicians see it as investment for the future. Two of the authors (CEG and DMA) changed specialties with long term career satisfaction; one of these was from general surgery to family medicine (CEG). Graduates are attracted to specialties with controllable lifestyles and are distracted by residencies with clinical demands, a lot of call, and long hours [6,9,16]. Residents change to "lifestyle specialties" with shorter hours, less emergencies and less life-or-death decisions. Medical students choose more "lifestyle friendly" specialties today [17]. Residents who left for lifestyle reasons often select another type of residency which has a better quality of life and/or shift work with a fixed schedule like anesthesia, radiology or plastic surgery. Males more commonly change to plastic surgery while more women changed to anesthesia. In a study by Yeo et al. [1] 62% of residents who left general surgery changed to non-surgical residencies especially anesthesia, radiology and emergency medicine, while 13% transferred to a surgical specialty. Most, however, stay in the medical profession but change to other specialties. Some stay in general surgery but change training programs. Residents may pursue surgical, non-surgical, non-medical careers, research, academics, administration, pharmaceutical industry, military as a General Medical Officer (GMO), or left the country to pursue medical training abroad. Some leave medicine

altogether and rarely; some are dismissed from the training program. Controllable lifestyle residencies are specialties that offer regular, predictable work hours such as anesthesia, dermatology, radiology, neurology, ophthalmology, ENT, pathology, and psychiatry with fewer work hours, less on call responsibilities, less primary patient care, and less outpatient care leaving more personal time, predictable schedule, family time and social life [18]. Controllable lifestyle is a major impetus in selection of careers today. Female graduates are looking for residencies and specialties that allow time for pregnancy, child rearing, personal relationships, maternity leave and career advancement (Evans). Generation X or those born since 1965 are looking for specialties that allow autonomy, a flexible schedule, less rigorous call schedule and comfortable lifestyle with time for family and friends.

## Design, Setting and Participants

This research was approved by the Institutional Review Board of the University of Alabama. Financial support was provided by the Institute of Rural Health Research of The University of Alabama. A list of 6271 graduates of the University of Alabama School of Medicine assigned to the Birmingham, Tuscaloosa and Huntsville campuses from 1974 to 2015 was obtained from the published records of the main campus in Birmingham. Graduates assigned to the Montgomery Campus were not included since this campus opened only recently. This list contained the years of matriculation and graduation, full names, specialty choice, name and location of PGY1 institution and name and location of residency. This database was expanded to include additional information including current practicing specialty described in the initial study. Information was obtained primarily from Google Search Engine. Publicly available data from internet sources was selected as the primary source of information with verification from other sources when feasible, recognizing the positives as well as the limitations of internet-based data. Information was obtained on 6238 (99.5%) graduates assigned to the three campuses from 1974 to 2015. Physicians were identified by their practice website. The database was then configured into a SPSS database so that descriptive statistics could be applied. In the first phase of the study, graduates who matched into General Surgery but then changed into another specialty, were dismissed, quit medicine altogether, specialized early into an integrated program or completed general surgery followed by a subspecialty fellowship and practiced a surgical subspecialty were included. Graduates who matched Non-5 Year Categorical positions (i.e. 1 year of surgery before ENT) were not included. There were 282 residents who changed from general surgery identified by their website by Google® Search Engine.

The second phase of this study, UASOM graduates assigned to the Birmingham, Tuscaloosa, and Huntsville campuses who changed from general surgery residencies over the last 10 years of the study (2001-2011) was surveyed. The survey is shown in Figure 1. For residents completing a surgery residency in 2015, they would have matriculated into the surgery residency in 2011. Study investigators initiated contact with graduates by telephone to conduct the interviews. Graduates who could not be reached by telephone were sent surveys through the mail, along with pre-addressed, postage-paid envelopes to return the completed survey. If a graduate did not return the initial survey, he or she was sent a second survey. Respondents were not given incentives for participating in the study.

## Results

In phase one, 282 residents from the three campuses changed from general surgery to other specialties based on their website information. Residents changed to 27 different medical and surgical specialties grouped into Primary Care, Non-Primary Care, Non-Patient Care and Surgical Care (Table 1). One resident chose a Non-Medical Career as an artist. In the second phase of this study, UASOM graduates assigned to the Birmingham, Tuscaloosa, and Huntsville campuses who changed from general surgery residencies over the last 10 years of the study (2001-2011) were surveyed. Ninety residents were identified from the study that changed from general surgery. Fifty-eight residents (65.2%) responded to the survey. One graduate had died. The following paraphrased physician comments that were either communicated to the telephone interviewer or written on the mailed survey under "Other" that describe what specialties graduates changed to and why they changed to that specialty after quitting general surgery. Explanations for why residents changed careers are found categorized in Table 2. Eight categories of explanations were developed after reviewing the residents' responses of why they changed to another specialty.

**Table 2:** Categories of Resident Explanations for Choice of Career.

| |
|---|
| Did Not Like Surgery or the Operating Room |
| Became Interested in another Specialty or Area |
| Had Planned on another Specialty |
| Became Interested in Academic Medicine and/or Research |
| Became Interested in Oncology |
| Concerned with Lifestyle Issue |
| Concerned with Practice Manageability |
| Became Interested in Primary Care |

## Individual Paraphrased Resident Comments

### Did not like surgery or the operating room

- A resident was in the armed forces and wanted to be a flight surgeon. He applied for preliminary surgery but matched into Categorical Surgery. He enjoyed general surgery but hated the operating room. He enjoyed resuscitations and critical care. He changed to emergency medicine with a fellowship in critical care planned afterwards.

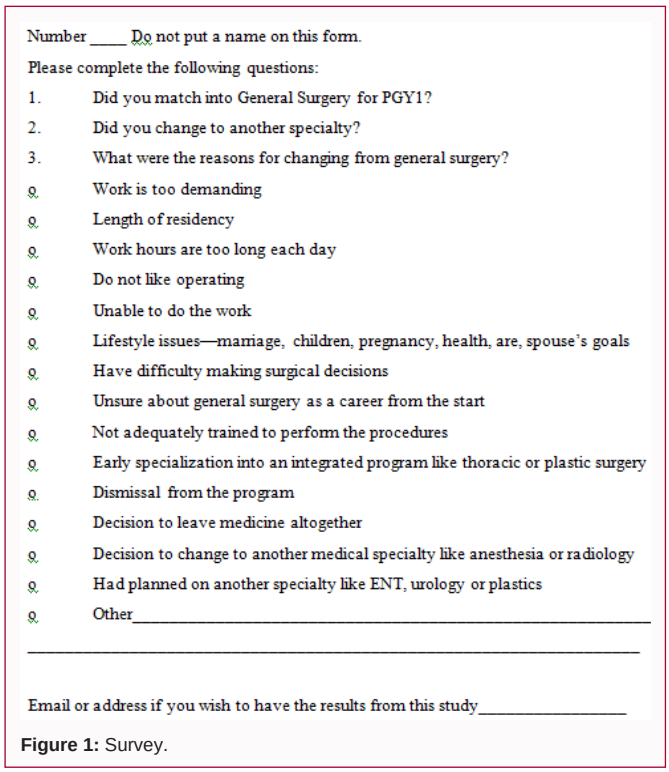
- A resident matched into general surgery but the work hours were too long each day, he did not like operating and the lifestyle was not good. He changed his residency to anesthesia.

- A resident matched into general surgery and found the work hours were too long each day. Work and call expectations after finishing training did not appear to get better. He changed residency specialties.

- A resident matched in general surgery but the work hours were too long each day and he did not enjoy clinical work or long term patient care. There were also lifestyle issues and he changed residencies to anesthesia.

- A resident matched into general surgery but did not like operating and surgery was not fulfilling enough so he changed residencies to radiology.

- A resident who had been interested in surgery during medical school, had a negative experience with a medical school attending who told her that she would never be a surgeon. She matched into urology.



Number ____ Do not put a name on this form.

Please complete the following questions:

1. Did you match into General Surgery for PGY1?
2. Did you change to another specialty?
3. What were the reasons for changing from general surgery?

- o Work is too demanding
- o Length of residency
- o Work hours are too long each day
- o Do not like operating
- o Unable to do the work
- o Lifestyle issues—marriage, children, pregnancy, health, are, spouse's goals
- o Have difficulty making surgical decisions
- o Unsure about general surgery as a career from the start
- o Not adequately trained to perform the procedures
- o Early specialization into an integrated program like thoracic or plastic surgery
- o Dismissal from the program
- o Decision to leave medicine altogether
- o Decision to change to another medical specialty like anesthesia or radiology
- o Had planned on another specialty like ENT, urology or plastics
- o Other_____

_____

Email or address if you wish to have the results from this study_____

**Figure 1:** Survey.

- A resident matched into general surgery and related little interest in the full spectrum of general surgery cases and changed residency specialty.

- A resident matched into general surgery but changed residencies to anesthesia. Interns were on call every night in his program. Upper level residents were for the most part helpful but some would not answer [the telephone] at night. He saw unnecessary procedures performed so chief [residents] could "flesh out their totals." General surgery was very disappointing. Anesthesia seemed genuinely interested in patient welfare and seemed to be their final advocate.

- A resident matched into general surgery but did not match into what [residency that] he had wanted to do. He changed residencies to radiology and practices that specialty now. All 8 interns in his surgery residency changed to different specialties. He cited too many [surgical] subspecialties resulting in fewer procedures [for general surgery].

- A resident matched into general surgery but was unsure about general surgery as a career from the start. He changed to an Integrated Plastic Surgery Program.

- A resident matched into general surgery. He did not like operating and was unsure about general surgery as a career from the start.

- A residency matched into a general surgery residency. [He] felt like he was at the low end of the totem pole fixing other specialties' mistakes in the middle of the night. "I miss surgery but probably would have specialized. Being a country doc has been good."

### Became interested in another specialty

- A resident matched into general surgery and became interested in plastic surgery. He completed the general surgery residency, became board certified and then matriculated into a plastic surgery fellowship.

- A resident matched into general surgery and liked general surgery and planned to do it but liked colorectal surgery even better; He completed a general surgery residency and then pursued a colorectal surgery fellowship.

- A resident matched into general surgery than pursued a plastic surgery fellowship because he [had] always loved plastics.

- A resident matched into general surgery and completed the general surgery residency. He liked plastic surgery and found the results satisfying, so he pursued a plastics fellowship after general surgery.

- A resident matched into general surgery but was dismissed from residency. Later, the resident matriculated into and completed a urology residency.

### Had planned on another specialty

- A resident completed a general surgery residency then pursued a plastic surgery fellowship which he had originally planned to do but later changed to a cardiothoracic surgery fellowship.

- A resident matched into general surgery but wanted to do surgical oncology from the beginning. He completed general surgery and then pursued a surgical oncology fellowship.

- A resident matched into general surgery and then pursued a surgical transplant fellowship since she had received a transplant herself as a child.

### Became interested in academic medicine and/or research

- A resident matched into general surgery but changed to research because the work was too demanding, work hours are too long each day, and she was unsure about general surgery as a career from the start. There were also lifestyle issues. She changed to research, completed a MSPH degree and has been active in research at a major medical center.

- A resident matched into general surgery and discovered research options in head and neck oncology during his training. He completed general surgery and then pursued head and neck oncology. He had planned academic medicine all along.

### Became Interested in Oncology

- A resident matched into general surgery. She discovered that working with cancer patients was important and pursued a colorectal surgery fellowship after her general surgery residency, which was not part of the original plan.

- A resident who matched into general surgery wanted more research experience so he spent 3 years in the laboratory after his second year of general surgery residency. After completion of general surgery, he pursued a surgical oncology fellowship.

### Concerned with lifestyle issues

- A resident matched into general surgery but quit her surgery residency when her grandparents became sick and required her care. She took care of them for a period of time. When she returned to medical education, she completed both pathology and radiology residencies. She did not return to surgery because the length of training is too long and lifestyle issues.

- A resident matched in general surgery but changed residency specialty to anesthesia. She said that residents do not know

what the real life is about practicing general surgery. General surgery changed her personality.

- A resident matched into general surgery. He had an essential tremor which was likely to worsen with time. He changed to a family medicine residency.

- A resident matched into general surgery. His father developed a malignancy and the resident took time off to spend with his father and did not return to the residency program. Late, he pursued an emergency medicine residency.

- A resident matched into general surgery but developed a health issue and could not complete a rigorous residency. He changed specialties to public health, mental health and addiction medicine.

- A resident matched into general surgery but changed to an anesthesia residency because of [the] lifestyle and was also unsure of general surgery as a career from the start.

- A resident matched into general surgery but changed to family medicine because of lifestyle issues.

- A resident matched into general surgery but changed to family medicine because of lifestyle issues. He had been exposed to family medicine at [the] Tuscaloosa [campus].

### Concerned with practice manageability

- A resident matched into general surgery but then pursued a plastic surgery fellowship after general surgery due to decreased autonomy and decreased reimbursement for general surgery.

- A resident matched into general surgery but became discouraged because the work was too demanding, lifestyle was uncontrollable, and there was a lack of practice control. Compensation was less and general surgery was lost in the healthcare debate. "You sacrifice your life for nothing." He completed general surgery then pursued a cosmetic surgery fellowship.

### Became interested in primary care

- A surgery resident changed to family medicine because he wanted more whole person care—emotional, social and spiritual.

- A resident matched into general surgery but changed to internal medicine because he enjoyed more relationships with patients and wanted more primary care rather than the technical work of surgery.

## Discussion

To our knowledge, this is first study in which residents who left general surgery were interviewed and the explanations of why they chose other specialties published. There were 282 graduates who were identified by their website who changed specialties from general surgery. Residents changed to 27 different medical and surgical specialties grouped into Primary Care, Non-Primary Care, Non-Patient Care and Surgical Care. One resident chose a Non-Medical Career as an artist. Non-Primary Care (31.9%) and Surgical Care (46.8%) made up almost 79% of what residents changed specialties into. Non-primary care consisted of many specialties with shift work, fixed hours and limited patient contact. All of the surgical specialties were surgical subspecialties with a less demanding lifestyle than general surgery.

Residents who did not like surgery or the operating room or both did not have an adequate understanding of what a general surgery residency or career was about nor what surgery residents do. Medical school residency counseling may have improved this. A rotation or elective at a large teaching hospital that has a surgery residency may have been an opportunity to experience exactly what surgery residents do and what their life is like. Our regional medical campus only has a family medicine residency. Students remotely interested in general surgery are strongly encouraged by the surgery clerkship director and department chair to spend a month at a large academic medical center that has a general surgery residency to experience what it is like to be a surgery resident. Only then, the surgery clerkship director further counsels students about pursuing a general surgery residency and career. Residents may have become interested in another specialty because they were unhappy with general surgery or were enamored with that area or specialty or both. Residents may have become interested in oncology, academic medicine, research or primary care in the same fashion. Uncontrollable lifestyle remains the number one reason residents quit general surgery residencies. Lifestyle issues are a difficult challenge and may require significant changes in general surgery education to improve. This study did not identify residents who completed surgical subspecialty fellowships after general surgery and practiced primarily general surgery. Residents changing to other general surgery programs are likewise not identified in this study.

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