

## Writing Skill and Development in Medicine: An Ethnography of American Medical Students

### **Introduction:**

Many scholars have defined and described the concept of a discourse community, primary among them being John Swales who laid out 6 defining criteria, including a common goal, a set of genres, and methods of intercommunication between members.<sup>1</sup> A variety of other discourse community researchers have used that definition to their own ends, like Ann Johns who expanded on the idea and simplified it for an audience of college professors and students by exploring levels of community as well as authority, identity, and conflict within communities.<sup>2</sup> Others opt to follow one or a few specific members in order to gain specific and detailed insight into the inner workings of a discourse community. Such ethnographies and case studies center around the concept that a great deal of valuable information can be gained by closely studying a few members instead of looking at broad trends. Sean Branick, for example, interviewed three football coaches and watched videos of their speeches in order to investigate the idea that interpersonal communication and literacies in football coaches are important to their discourse community.<sup>3</sup> Wardle and McCarthy both follow a single person and study their writing and communication in order to develop on the ideas of writing as a social and contextual act within discourse communities.<sup>4,5</sup> However, many authors and scholars who discuss discourse communities focus on communities with intangible goals. Branick's discourse community of coaches strives towards the goal of improving coaching techniques, a goal that can be advanced, but in which perfection cannot be achieved. Additionally, McCarthy examines a student named Dave's writing across multiple college classes and contexts, and in each case the goal is to improve writing ability and learn about a subject. In both examples, the goal of the discourse community is intangible in a sense; improving at writing or coaching has no explicit, finite endpoint to which all members strive.

I will be examining a discourse community in which membership lasts until one specific goal is achieved or abandoned by conducting an ethnography. That discourse community is the community of medical students. The nature of this discourse community sets it apart from many others in that it is a discourse community where participation involves the same explicit goal of graduation with all other participation being important, but auxiliary. I will focus in particular on the styles of writing that medical students do, to whom that writing is addressed, and the ways in which writing ability affects medical students' experiences as they progress towards the goal of graduation and obtaining medical doctorate degrees. As becoming a doctor is the purpose of medical school, I will refer to doctors frequently as the primary utilizers of the genres I am analyzing. However, my research was conducted primarily on medical student samples. I found that writing plays a crucial role for medical students, however the style and values of that writing are notably different from many other forms of writing, and as such medical students themselves may not realize the importance of writing to their own experiences.

**Discourse Community Description:**

The discourse community of medical students in the United States consists of around 80,000 people enrolled across 147 accredited medical schools.<sup>6</sup> There is one main goal of participation in medical school, and there are a number of secondary goals. The primary goal is, of course, to attain a medical doctorate and become a doctor. At that point students graduate from medical school and, by extension, the medical school discourse community. The secondary goals of medical school are extensive, and different members may have different secondary goals. For example, students who are interested in becoming surgeons may share the goal of graduating with an ample amount of external experience, be that research, job experience, or anything else that would make that student a better candidate for a well regarded residency. Other students may have the goal of determining whether being a doctor is even something they want to do, as it is generally regarded as a stressful lifestyle. Around 6% of medical students drop out of medical school, thus leaving the discourse community without attaining the primary goal.<sup>7</sup> These students are very rarely academically unfit for medical school; rather, the majority simply decide that they do not wish to become doctors. Thus, there are only two ways to leave the community of medical students: to graduate, or to withdraw before graduation.

As with all other discourse communities, writing has an important role for medical students. However, the writing done in medical school is typically different in format from other levels of education. Medical school is typically divided into two sections. Years one and two, referred to as “pre-clinical,” focus on academic and laboratory classes. During these years writing occurs typically within the genres of lab reports and presentations. Some students may participate in research positions where they assist in writing research papers. The latter two years of medical school focus more on hospital rounds and clinical rotations. This time period is when most medical students begin to frequently utilize the main genre in a doctor’s line of work: medical charts. Medical charts comprise the majority of non-interpersonal writing that doctors do in their daily lives. Though doctors spend relatively little time writing in comparison to examining patients, performing rounds, et cetera, writing does influence their daily lives, and as such medical students aiming to become doctors must learn to write like doctors.

**Methods:**

The primary objective of this study was to conduct research by interviewing medical students and examining their writing and drawing conclusions from those data points; due to that approach, I had no hypothesis or specific objective to prove or disprove with the study. I began by conducting two interviews via email with two medical students at the Oregon Health and Science University (OHSU) from significantly different backgrounds. For privacy reasons their names have been altered. Sam is a 26 year old male, and a third year medical student at OHSU. He applied and entered medical school immediately after graduating from the University of Oregon with a Bachelor of Science degree in biology. Sam speaks English as a second language. Sarah is 31 years old, female, and a first year medical student at OHSU who graduated from

Oregon State University with a Bachelor of Science degree in biology and chemistry in 2007. Between 2007 and 2016 when she was first accepted into medical school at OHSU, she has worked a variety of laboratory research related jobs, and attained a graduate certificate in Nanoscience and Nanoengineering from Portland State University in 2016. In addition to interviews, I examined a small number of medical charts written by medical students, as well as medical chart “Subjective, Objective, Assessment, Plan” notes (abbreviated as SOAP notes) written by, and a lab research paper co-authored by Sarah. I chose these sources to compare how Sam and Sarah describe themselves as writers to actual writing within their field, and in Sarah’s case extensive examples of her own writing. Although at the moment I am an outside observer to this community, I am a prospective medical student myself and I have personally known Sam and Sarah since approximately six months before the interviews were conducted.

#### **Data sources:**

##### *Interview with Sam:*

Sam followed the path the majority of medical students do: he applied and enrolled medical school immediately after earning his undergraduate degree. He had prior work experience as a mechanic, and two years of full time research in a lab assistant position. He had published one abstract prior to entering medical school, and had taken two mandatory college writing courses.

Sam responded promptly to my email, and completed the set of interview questions within one day of me sending them. His responses were brief and technical, often getting to the point and answering the question immediately. Sam tended to use full sentences only where needed to make sense of more intricate responses, and numbers or simple statements such as “BS at University of Oregon. Major: Biology” for questions where he deemed content important and grammar secondary. Overall, his responses indicated that he does not believe that writing skill is important to success as a medical student. He responded to the question of whether he considers himself a proficient writer, “Absolutely not!” Additionally, Sam noted that in regards to the correlation between success as a writer and success as a medical student, “I do not believe these two are correlated very much at all.” However, despite Sam’s statement that he doesn’t believe that correlation exists, his answers to other questions complicated this response. For example, he noted that he mainly communicates with physicians, residents, and other medical students through email and text messages. He stated that his notes (medical charts, SOAP notes, etc.) were for his own benefit as they were rarely read by others. In regards to those notes he added that “As long as you are thorough and have written something in coherent English,” writing skill doesn’t influence his opinion of other medical students. Finally, he added that he “think[s] writing as a form of expression has a place in every profession including medicine.” In this statement he refers to self-reflection and writing that is not assigned for classes. He notes that although he does not do this himself, writing as a form of reflection can help medical students process what they are doing and why in order to learn.

### *Interview with Sarah:*

Sarah took a very different route to entering medical school. She took 11 writing courses during both undergraduate and graduate study, including English writing and literature, technical writing, business writing, grant writing, and intensive writing in the sciences courses. She also worked in varying capacities in Portland-based clinical and surgical research laboratories for 10 years before enrolling at OHSU, with “65 publications, 70+ abstracts & presentations” prior to entering medical school. Sarah stated that her experience was atypical for medical students, as most would probably have zero to three publications prior to medical school, and the vast majority apply earlier than 10 years after completing their undergraduate education.

Sarah also responded within one day, however she spent an additional six days compiling her answers to the questions as well as writing samples that she could send to me. Sarah, unlike Sam, considers herself to be a proficient writer, and believes that writing does in fact play a significant role in medical school - not only in success in medical school but in the application process as well. She explained the amount of writing involved in applying to medical school: one 5300 character common essay, as well as up to 15 activity sections and five to seven supplementary essay questions per medical school (Sarah applied to three) ranging from roughly 100 to 500 words each. To that end, Sarah noted that “there is a bit of a selection bias, in that one must be an excellent writer to be able to get into medical school.” In addition, she consistently responded in a manner that indicates that she believes writing is of high importance for medical students. In response to a question regarding documentation, she responded that ability to document patient information has absolutely been helpful. She also noted that while OHSU does not afford many opportunities to compare writing between students, “talent and writing skills have the ability to afford medical students more opportunities.” She stated this in reference to extracurricular opportunities primarily, specifically receiving grants, scholarships, and research positions. Interestingly, she stated that she “[hasn’t] noticed a difference in [social authority or] status among students within my class.” However, she correlated those opportunities that writing ability can afford with experience, and further correlated experience with status. She did so by noting that attendings, residents, and older medical students have often had these types of research or extracurricular experience and by extension have a higher standard of writing, and that “People who are in these types of high-status positions are generally very well respected.” Overall, Sarah’s opinion was that “those who are well respected in the medical community have strong skills in communication and writing.” She further specified that “those who are excellent writers are generally also excellent students.”

### *Analysis of medical charts:*

Medical charts are one of the genres most frequently used by doctors that medical students learn about. The term medical chart is very general, and refers to the collection of History and Physical Exam notes (H&Ps), progress notes, SOAP notes, and other medical documentation specific to a single patient. They can be handwritten or digital depending on the institution, and are a critical tool for keeping track of the vast amounts of information that a

doctor needs to constantly be aware of for each patient. These charts contain all of the patient information, vitals, and medical history that doctors, nurses, and anyone else interacting with a patient could use to assist in the patient's well being. Although medical charts are relatively free-form, consisting of a variety of different organizational and documentation strategies including SOAP notes and H&Ps, the style of writing across the medical charting that I examined was remarkably similar.

At the time of a patient examination, the examiner (be it a medical student or a practicing physician) records the patient's name, address, date of birth, age, sex, height, weight, body mass index, heart vitals, and a number of other statistics. They then fill out the majority of the chart, which consists of the chief complaint (CC), history of present illness (HPI), previous medical history (PMH), diagnosis (Dx), family history (FHx), social history, physical exam information (PEx), test results, and any other information at the examiner's discretion that could possibly affect the health of the patient. Medical charts often have an extremely high information density within their writing. The writer needs to include enough detail that absolutely nothing could be misinterpreted or not understood, but be brief enough that they can include all necessary information and that a reader can get through it in a matter of minutes. For example, one chart relating to a patient complaining of a cough reads "PMH. w Dx TB @ age 17 and was on TB meds for 1 year." Typically, every word or sometimes even every letter that does not impact the direct meaning of the sentence is dropped. Another section of the same chart reads: "37 Y/O F. CC: cough, tightness in chest. HPI: on/off Hx of cough, wheeze, & chest tightness x 1 year." The highly complicated and specific abbreviations, as Swales noted, "[are], of course, driven by the requirements for efficient communication exchange between experts."<sup>1</sup> Use of grammatically correct and complete sentence structure would significantly slow the speed with which a doctor could read and write within this genre. Sarah's written samples used similar abbreviations, however they were typically more complete in writing style and punctuation. A sample from one of her notes reads: "She has a history of GERD and depression. Her medications include: Ranitidine 150 mg po qhs, Sertraline 100 mg daily, Calcium 600 mg BID." In comparison to the handwritten samples, the typed ones were only slightly less dense, opting for complete sentences during the more subjective sections such as the patient's description of their illness, and using the same minimalistic style for more objective sections such as exam results, vitals, and medication information.

While nearly foreign to readers who have little or no experience in medical fields, these charts are incredibly important and medical students learn the format and lexis used over a significant period of time. Sarah noted in her interview that the standard for grading medical chart samples grows between each successive year of medical school. Although legibility is vitally important for handwritten medical charts, neat and easy to read handwriting is not typically something doctors are known for. In fact, the majority of the medical charts I have examined have a hastily written, semi-sloppy style that makes them more difficult to comprehend quickly. Digital medical charts tend to use a similar minimalistic style of dropping

unnecessary grammatical formalities as handwritten ones, although they typically opt for more complete grammar and punctuation. This is likely due to the amount of time it takes to handwrite as compared to typing: as typing is typically faster than handwriting, more complete sentences can be formed in the same amount of time.

#### *Analysis of research papers:*

The main source I used to analyze medical research papers was an article published by the International Hepato-Pancreato-Biliary Association, co-authored by six members of The Oregon Clinic including Sarah. I additionally used information I had found through a previous research essay on the *Journal of Surgical Research*, a journal that serves primarily senior residents but also publishes some articles that are co-authored by medical students. While Sarah and Sam stated that research is not necessary in medical school, it is extremely common for medical students, and to a lesser degree undergraduates applying to medical school, to have research experience and publications through research labs. Thus, this genre is not absolutely universal to medical students, but the majority of medical students do write within the genre at some point for either class assignments or laboratory research.

Research papers are written in a style that has distinct similarities and differences with medical charting. Like medical charts, information density and ease of reading are critical. Abbreviations are frequent, and tables and charts make up a sizable portion of the papers in order more efficiently communicate vast quantities of data. However, unlike medical charts, research papers have a higher standard of professionalism to meet. Thus, the language articles are written in is formal although not overbearing, and concise yet grammatically complete. An example from Sarah's paper reads "Patient demographics, procedural data, complication data and recurrence data were obtained from an IRB-approved hospital database. All data were analysed using SPSS 17.0 (SPSS Inc., Chicago, IL, USA)." The acronym and abbreviation-heavy style is typical as compared to other samples, and the sample, while short, provides an informed reader with a significant amount of information. The structure of research papers is frequently similar, with abstracts at the top and introduction - methods - data - discussion - conclusion layouts. Sarah's paper contained about four pages of text total, with two pages of graphs and charts and a page of references. These papers frequently cite and reference other studies and research to improve the credibility of their findings; this example cited 49 references. Research papers can be based on months of previous research, though even with extremely thorough methodology for studies, the presentation of that research can determine the effectiveness the paper overall.

#### **Discussion:**

Sam and Sarah had directly conflicting beliefs regarding the importance of writing in medical school. While Sam believed that writing was unimportant and analytical thinking and reasoning skills were the real driving force behind medical student writing, Sarah believed that writing skill was critical for success in medical school. Compared to Sam, Sarah had far more experience in technical and medical writing. This distinction came through in their responses: Sarah answered the interview questions in about 6 pages of writing, where Sam answered in just

over two. However, for many of their answers Sam and Sarah wrote in similar styles and the length of Sarah's responses came from her delving into details. This difference may be due to Sam finding writing "incredibly frustrating [because his] thoughts do not come out on paper like [he] imagined they would," where Sarah considered herself a strong writer. Sam's belief could be in part because he is not a native English speaker. Sam also noted that the majority of his writing is in medical charts, and that most of what is read by others is in the format of emails or text messages. Sarah noted that she turns in more research papers and narrative or reflective assignments for her classes. This discrepancy can be explained by the facts Sam is in the clinical stages of his medical school and Sarah is in the pre-clinical, academic focused stage.

Analysis of the genres used by medical students lead to the conclusion that medical students write in a very specific style with an incredibly complicated and intricate lexis. This style can be tailored depending on the genre, although overall it is fairly consistent. Johns mentioned that "These genres are not, in all cases, sophisticated or intellectual, literary or high-browed. They are, instead, representative of the values, needs, and practices of the community that produces them."<sup>2</sup> This is especially true of medical writing. The elements of this style include heavy utilization of medical lexis and data organization structures, as well as a concision that does change by genre, maintaining high standards of professionalism in most writing but sacrificing grammar for speed within the genre of medical charts.

Perhaps the most striking quote from the interviews was Sarah's noting that "one must be an excellent writer to be able to get into medical school." Considering this quote, as well as the style of writing used in medical charts and papers, brings a new perspective to some of Sam's responses. Although he does not consider himself a proficient writer, the style he used to answer my interview questions actually fit the style of medical writing I have been examining. He was concise where possible, and elaborated only where necessary. I believe that while he himself may not have recognized this, his responses reflect the type of writing he has been doing frequently, which has mostly been in that medical style. As Johns noted, "No matter what kind of class is being taught, faculty need to discuss critical thinking and reading and writing goals."<sup>2</sup> Sam may not have had adequate instruction regarding what constitutes good writing in medicine, thus leading to his belief that he writes poorly. Furthermore, a number of Sam's responses noted that he prized the ability to "gather that information and assimilate it into a thought process," but also that "the actual note writing as a medical student is minimal.... [the final products are] skeletons of large sums of information that do not take too much skill to complete." The fact that Sam wrote his responses in a style that was effective but does not consider himself good at writing indicates that perhaps he does not associate writing well within the medical style with "good writing." He did not see consider being able to turn a vast amount of data into a concise, easy to read summary good writing, which explains why his responses regarded writing as unimportant for a medical student, as he has been successful without a flowery vocabulary and refined prose. Most of his answers allude to the fact that good writing within medicine consists of efficiency, readability, and brevity. Sarah, on the other hand, had a strong grasp of what good

writing within medicine was. Her responses, while longer, often reflected her familiarity with medical writing from the decade of prior writing and research experience that she had.

Ultimately, these data points support the conclusion that writing is important for medical students, however within a style specific to medicine. This style revolves around effectively analyzing and parsing large amounts of data, and communicating them efficiently and concisely to a degree of professionalism dictated by the genre. Considering that this discourse community of medical students has the primary goal of graduation and a number of secondary goals, most notably experience in extracurriculars such as research, writing may play a larger role than either Sam or Sarah realize. While both admit that writing skills can affect your opportunities for research positions and scholarships, the goal of graduation itself could hinge on the ability to write effective medical documentation for patients. As Sarah noted and studies have found, though, medical students are typically well qualified to complete what is expected of them. As such, and in Sam's case, they may not even recognize the writing ability and talent they have that is helping them towards their goal of graduation.

### **Conclusion:**

The analysis of multiple medical student genres and the interviews of Sam and Sarah resulted in some conflicting information, however the overarching theme was one of the importance of writing within a specific medical style. Sarah's responses indicated that she was aware of this style and its values, where Sam's hinted at the importance of writing, and indicated that he did not recognize the style of his own talent within it. This study does have a number of limitations. While I examined the discourse community of medical students, the majority of information sources were directly linked to OHSU. Additional research including students from a breadth of medical schools could improve understanding of writing within medical school. Secondly, the study was conducted over a short span of time. Future research could follow students through medical school and examine a broader range of their writings. Finally, this study focused primarily on for-class writing. Interpersonal communication skills are also vital for medical students, and research could examine the emails and texts that both Sarah and Sam stated they use frequently.



## Appendix

### Interview questions:

1. What is your:
  1. Age?
  2. Year in medical school?
2. Please describe your:
  1. Prior education: major in college, prior degrees
  2. Work experience, and anything else that might be relevant
3. What was your background with writing like prior to entering medical school?
4. Did you have publications prior to medical school?
5. Do you have publications from your time in medical school?
6. Do you consider yourself a proficient writer?
7. What types of writing or essays was required on your entrance application?
8. Has the ability to document medical histories and patient information been an important factor for success as a medical student?
9. In considering your fellow medical students, and those who you respect most, does their ability to communicate through writing contribute to their status?
10. What methods or genres do you use for most of your school related communication and writing? Genres in this sense is a very general term. Analytical essays, research papers, email, text messages, any writing for a purpose related to medical school counts.
11. What test format is used primarily in medical school? Essay? Multiple choice?
12. What format of writing communication is used most commonly between med students?
13. Between students and teachers?
14. Between students and residents?
15. Do you receive critiques of the writing you do in med school for assignments? For medical documentation?
16. What opportunities do you think talent at writing affords medical students? How do those opportunities affect status, reputation, or your medical school experience overall?
17. In what ways do you think your style or experience with writing has helped you (or not) as a medical student?
18. How would you describe the correlation between success as a writer and success as a medical student?
19. How would you describe the correlation between reputation or respect and writing ability?

## References

1. Swales, John. "The Concept of Discourse Community." *Genre Analysis: English in Academic and Research Settings*. Boston: Cambridge UP, 1990. 21-32. Print.
2. Johns, Ann M. "Discourse Communities and Communities of Practice: Membership, Conflict, and Diversity." *Text, Role, and Context: Developing Academic Literacies*. Cambridge, New York: Cambridge UP, 1997. 51-70. Print.
3. Branick, Sean. "Coaches Can Read, Too: An Ethnographic Study of a Football Coaching Discourse Community." *Writing About Writing*. Boston, Massachusetts: Bedford/St. Martin's. 262-271. Print.
4. Wardle, Elizabeth. "Identity, Authority, and Learning to Write in New Workplaces." *Enculturation* 5.2 (2004): n. pag. Web. 18 Feb. 2010.
5. McCarthy, Lucille P. "A Stranger in Strange Lands: A College Student Writing across the Curriculum." *Research in the Teaching of English* 21.3 (1987): 233-65. Print.
6. "More Students Going to Medical School Than Ever Before." Association of American Medical Colleges, 29 Oct. 2014, <https://www.aamc.org/newsroom/newsreleases/411636/10282014.html>. Accessed 15 Nov. 2016.
7. Franco, Kathleen. "Understand Common Reasons Students Leave Medical School." US News, 22 Oct. 2013, <http://www.usnews.com/education/blogs/medical-school-admissions-doctor/2013/10/22/understand-common-reasons-students-leave-medical-school>. Accessed 15 Nov. 2016.