Medical Discovery and Progress From War

Spring 2016

April 6 – May 4
Medical Discovery and Progress from War – M04 590H
Syllabus

Description/Objectives:

As long as history has been recorded, human societies have physically attacked each other for various reasons. As destructive as wars have been, military history has played important roles in improving treatment of trauma, sanitation, drug development, and the understanding of many aspects of medical science. This selective will consider medical progress from United States military and national history.

At the end of this course, students will be able to:

• Identify the beginning of medical research and the development of the first national library in America;
• Understand how research showed that epidemic diseases such as yellow fever were transmitted by insect vectors and how public health dealt with this problem;
• Learn how cerebral trauma from high explosive shells advanced the fields of neurology and neurosurgery;
• Explore how the advent of World War II hastened the development of penicillin and blood transfusion; and
• Understand the development of psychiatric approach to Post Traumatic Stress Disorder arising from war.

Locations: Center for History Of Medicine, Bernard Becker Medical Library, 6th floor; Archives and Rare Books, Bernard Becker Medical Library, 7th floor

Time: Wednesday, 3:30 – 5:30 p.m. (unless otherwise noted)

Format: 3:30 – 5:00 p.m. Students discuss and summarize assigned articles – Center for History Of Medicine

5:00 – 5:30 p.m. Examination of Archival Materials – Archives and Rare Books

Subjects to be discussed:

Week 1 – The Early Frontier, 1800-1850: William Beaumont, the First American Medical Researcher
Week II – Scurvy, the Discovery of Vitamins and the Development of Controlled Clinical Trials

Week III – The Spanish-American War; Walter Reed and Yellow Fever; The First World War: Neurosurgery and Neurology of Cerebral Trauma

Week IV – The Second World War: Antibiotics and Blood Transfusion

Week V – From Shell Shock to PTSD: The History of Psychotraumatology

Participants:

WUSM I Students

Becker Library Archives and Rare Books Staff
   Ms. Elisabeth Brander, Rare Book Librarian
   Mr. Stephen Logsdon, Archivist
   Ms. Martha Riley, Rare Books Cataloger & Archivist
   Mr. Philip Skroska, Visual and Graphic Archivist

Faculty
   Robert M. Feibel, MD, Professor of Clinical Ophthalmology and Acting Director of the Center for History Of Medicine

Contact: Ms. Debra Knox Deiermann, 314/362-2725; CfHOM@wusm.wustl.edu
Medical Discovery and Progress from War – M04 590H
Readings

Week I – The Early Frontier, 1800-1850: William Beaumont, the First American Medical Researcher

Required reading
Assigned Readings via Announcements on CANVAS

Recommended reading
Brodman E: William Beaumont as a Physician [1967]

Week II – Scurvy, the Discovery of Vitamins, and the Development of Controlled Clinical Trials

Required reading
Assigned Readings via Announcements on CANVAS

Recommended reading
Magiorkinis E: Scurvy: Past, Present and Future
Dunn PM: James Lind (1716-94) of Edinburgh and the Treatment of Scurvy
http://fn.bmj.com/content/76/1/F64.full
Tröhler U: James Lind and Scurvy: 1747-1795
Bhatt A: Evolution of Clinical Research: A History Before and Beyond James Lind
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3149409/

BRIEF EVOLUTION OF CLINICAL TRIALS HISTORY:
Legumes, Lemons and Streptomycin: A Short History of the Clinical Trial
http://www.cmaj.ca/content/180/1/23.full.pdf+html
Hart PD: *A Change in Scientific Approach: From Alternation to Randomized Allocation in Clinical Trials in Clinical Trials in the 1940s*  
http://www.bmj.com/content/bmj/319/7209/572.1.full.pdf

Lilienfeld AM: The Fielding H. Garrison Lecture: Ceteris Paribus: *The Evolution of the Clinical Trial*  
http://search.proquest.com/docview/1296273943?accountid=15159

Carpenter KJ: The Nobel Prize and the Discovery of Vitamins  
http://www.nobelprize.org/nobel_prizes/medicine/carpenter/


**Week III – The Spanish-American War: Walter Reed and Yellow Fever; The First World War: Neurosurgery and Neurology of Cerebral Trauma**

**Required reading**
Assigned Readings via Announcements on CANVAS

**Recommended reading**
Bean WB: *Walter Reed: A Biographical Sketch*

Downs WG: *The Story of Yellow Fever Since Walter Reed*

Change C: *The Zika Outbreak of the 21st Century*  

Shanks DG: *How World War I Changed Global Attitudes to War and Infectious Diseases*  
http://www.thelancet.com/pdfs/journals/lancet/PII%20S0140-6736%2814%2961786-4.pdf

McDonald I: *Gordon Holmes Lecture: Gordon Holmes and the Neurological Heritage*  
https://brain.oxfordjournals.org/content/130/1/288

Lepore FE: *Harvey Cushing, Gordon Holmes and the Neurological Lessons of World War I*

**Week IV – The Second World War: Antibiotics and Blood Transfusion**

**Required reading**
Assigned Readings via Announcements on CANVAS

**Recommended reading**
*Smells Like Science: The Making of a Miracle Drug (Part 3)*
http://smellslikescience.com/the-making-of-a-miracle-drug/

Lesch JE: *The First Miracle Drugs: How the Sulfanilamide Drugs Transformed Medicine* (Introduction, p. 3)

Lesch JE: *The First Miracle Drugs: How the Sulfanilamide Drugs Transformed Medicine* (Chapter 10, “Trial By Fire”)  

Ligon BL: *Penicillin: Its Discovery and Early Development*  

Keefer CS: *Penicillin: A Wartime Achievement* (Part Nine, Chapter LII)

Cowdrey AE: *Fighting for Life: American Military Medicine in World War II* (Chapter 8, pp 165-173)

Guest GM: *Advances in Military Medicine: Methods of Preservation of Whole Blood* (Chapter XXX)

**Week V – From Shell Shock to PTSD: The History of Psychotraumatology**

**Required reading**
Assigned Readings via Announcements on CANVAS

**Recommended reading**
Barnes-Jewish Hospital Health Library: *Post-Traumatic Stress Disorder (PTSD)*

Birmes P: *Early Historical Literature for Post-Traumatic Symptomatology*  

Crocq M-A: *From Shell Shock and War Neurosis to Post Traumatic Disorder: A History of Psychotraumatology*  
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3181586/

Andreasen NC: *Posttraumatic Stress Disorder: A History and a Critique*  
Hegadoren KM: *Posttraumatic Stress Disorder III: Health Effects on Interpersonal Violence Among Women*


Scheck A: *Lurking Inside Every Headline, PTSD for Emergency Physicians*

http://ovidsp.tx.ovid.com/sp-3.20.0b/ovidweb.cgi?QS2=434f4e1a73d37e8c8c813b19b627f4de023efa9b50e3f856004fe08fdafb85475821f0ed02ef3d9a289669074cd00f115158a61999c29380701b3bfb7f0a3b1e79964b9c0572cdaec0425b74cdc44bd52de8e32895d02340fc1f3126b125f6da3499476e4d419afcd7988d03fa830fcdb50b3c8ecd72a986d2f5141275934fc4def8b65df55a4cd92c6c90871dec5887e8bda908f55ae03fc32d989f1882446d4c3cbaca4b552ba5405e47295da790d3c436bc16cd8f52890855867f6130064ed80710111c4f68f82f9fb27b98612592631bd0e88dceb69a3d7b094e40334737ed4678f031e91c2f6d391bcfd837886cc46e1cd0b451c0e7c80aedfd8307f2fde025a7c3ee695de65584bd91620b0276f345c64546b6404339e0fbc6e85c1c8eebf9af98894082bfe8764c099a5fd2ff5c1557db55b400216c3a2db718721248cedb2b902ca8d5eb9e18635ee729c8

Weiniger CF: *Posttraumatic Stress Disorder Among Surgical Physicians Exposed to Victims of Terror: A Prospective, Controlled Questionnaire Survey*

Selective Reflection: Medical Discovery and Progress from War

Over the course of the 5 selective classes, we discussed a wide variety of topics. Overall, I found them very interesting! I definitely enjoyed the format of the class. I liked how the reading was broken down so you didn’t have to read everything (which would have been very overwhelming!); but since classmates gave a summary, I felt like I still got a good sense of the information. In this way, workload was well balanced with learning. The times when I was assigned an article to read and summarize were good too, because it allowed me an opportunity to interact with the texts and take a deeper look. I especially enjoyed going up to the archives to see primary sources. However, I do wish that more time was allotted to independent perusal of the books and photos. By the time the lecture by the archivist was finished, it was normally almost time to leave – and I hadn’t had a chance to really look at any of the objects, as I had been listening. While what they were saying was certainly interesting, a shift in that time distribution might allow a more engaging experience.

My favorite topic was probably World War I, which came up a few times among discussions. It is obvious that it had a huge impact on medical development from many aspects – from medical organization to cerebral trauma to infectious diseases to controlled trials to blood transfusions. Discussion about pharmaceutical development was also interesting – I did not know much about the beginnings of drug development. I think it could be interesting to expand that discussion beyond too, and look at the impact of drug development on modern times. In undergrad, I read a book, Prescribing by Numbers: Drugs and the Definition of Disease by Jeremy A. Greene, which delved into the history of drug development in the more recent part of the 20th century and its influence on the medical community and definitions of disease. It was a fascinating read!

Reflection

The course Medical Discovery and Progress from War has been one of the most interesting and informative course I have taken here at WUSM. After this course, I have a better idea of where current medical practices stem from and how medicine has advanced
throughout history, sometimes largely by chance discovery. This course is well run, with interesting and thought-provoking topics. Although we only touched on it briefly at the end of our last session, the concept of physician burnout sparked my interest. I decided to look further into the recent advances in improving physician burnout (largely within the last year), and was dismayed by what I found.

There are many studies that show physician burnout is on the rise. In a study conducted by Shanafelt et al, they looked at burnout rates over the course of 2011-2014. They found that 45.5% of physicians in 2011 confessed to having one symptom of burnout, but in 2014, this rate of burnout rose to 54.4%. This rise in burnout also correlated with decreased job satisfaction- 48.5% satisfaction in 2011 and 40.9% satisfaction in 2014. In the world outside of healthcare, there was no change in burnout and dissatisfaction from 2011-2014.

One study tried to address the rising burnout in first year internal medicine residents. In previous studies, facilitated group discussion seemed to help decrease the rate of burnout in physicians. Ripp et al performed a randomized control trial to implement these earlier results. Contrary to previous findings, there was no difference between the control and experimental group in rates of burnout. I found many other studies like this one. All try to address the problem of burnout but all fail to produce significant results. Our current strategies to combat this issue lack efficacy. What is happening within the medical field that is leading to this rise in burnout? Will this trend keep rising over the years, will it plateau, will it decrease? How can we address this problem effectively without sacrificing quality care to patients?

Reference:


Advances of Medicine through War

I thought that overall the class was interesting, with good elements and elements that could be improved upon. I enjoyed having my classmates summarize the articles and present them to the group. Hearing someone tell the story is enjoyable and a change from the books and lectures we are inundated with on a day to day basis. It also helped make the reading load more manageable. One thing I would have liked more of was the stories that you tell to expound upon the information. I always found your input and insight very interesting and would have liked more of it! I thought the PTSD discussion was especially good, considering it is a big issue we are dealing with currently. Also, it could have an effect on some of our medical careers as well. I would say that was probably my favorite discussion.

I was not a huge fan of the vitamin articles, I understand how vitamin C was related to the navy ships, but didn’t quite get the relevancy of the others to the topic. One thing I might have enjoyed is to have each week be a different war and discuss the topics specific for that war. We did this a little bit, but it would have been nice to have it made clear which war we are focusing on that day to give us a frame of reference. Additionally, I enjoyed looking at the books and photographs from the rare books archive was really interesting, but though the lecture about the books could have been a little briefer at times.

Thank you for the time and effort you put into our class, I learned a lot of interesting things during our weekly classes. Also, thank you for being flexible about postponing our one class, because that helped immensely during the stressful time studying for our midterm.

Response to Zika Virus Outbreak

As a reproductive age female, I was personally alarmed when I first learned about the Zika outbreak in Brazil, as I browsed through articles from the BBC news source. To me, it was only a matter of time before the virus came to the US and became a worrisome problem here. After all, the Olympics were to be held in Brazil, and people would spread the virus across the world via jet travel. Even if the Olympics were canceled, travelers could still bring the virus to the US and the mosquitoes would disseminate it eventually. While we have discussed that this topic may have been overly highlighted in the media, and that there may have been unnecessary public scare over the issue, it seemed to me that we really should be scared about this. What would be the impact of the virus on my ability to produce healthy children in the future? Would it be better to get infected now, and thus get...
immune to the virus so I wouldn’t have any viremia in my system when I eventually desired to get pregnant? Or would it be better to try to avoid mosquitoes altogether somehow because the Zika virus might never leave an infected person’s system? “There goes my enjoyable summer vacation,” I thought to myself. “Maybe I’ll have to spend the whole warm season indoors to avoid mosquitoes.” Then a friend of mine pointed out that it only matters if you have a viral load in your system during the last trimester of pregnancy, and that you could get immune to the virus after being infected once. To be honest, I’m not sure my friend is correct since we still don’t know the long-term effects of the virus, but this reassured me a lot, and I have since ceased to feel as anxious about Zika as before. I just hope that this virus does not become a significant public health problem in the US like it has in Brazil, and I hope that it will not impact my ability to have healthy kids in the future.

Preliminary Comparative Analysis of Physician Burnout

Challenge of Medicine or Difficulty of Career?

During class discussion of physician PTSD and burnout, we noted that emergency medicine (EM) physicians had the highest rates of burnout compared to other specialties such as trauma. It was suggested that primary (physician safety) and secondary (patient experiences) sources of trauma led to high rates of burnout in EM physicians. One student asked about the relative rate of burnout between EM and other specialties. While reported rate of burnout varies according to the study, EM physicians consistently had the highest level of burnout and certain specialties such as ophthalmology and psychiatry had consistently the lowest levels of burnout among physicians. According to a study published in Mayo Clinic Proceedings, 72% of EM physicians experienced burnout compared to 47% of psychiatrists and 49% of ophthalmologists. In comparison, a Medscape survey reported burnout rates of 55% for EM, 40% for psychiatry, and 41% for ophthalmology. Despite the lower rates of burnout for some specialties, 40-50% burnout is still a large number. Could this rate of burnout be due to the practice of healthcare?

In a 2011 study which compiled two studies for a total of 95,499 US registered nurses, nurses employed in positions with direct patient care had 22-37% rate of burnout, compared to 22-34% rate of burnout for nurses employed in positions without patient care. The lower burnout of nurses compared to physicians suggests 20% of burnout may not be due to the practice of healthcare. The minimal difference in burnout when comparing nurses with or without patient care further strengthens this point. How do nurses fare compared to other occupations? A 1990 study of 244 employees in different fields reports burnout rates of 24% in banking (tellers, loan officers, and financial
planners), 23% in industry (managers, personnel directors, and supervisory personnel), 26% in education (teachers, counsellors, principals, librarians), 30% in social services, and 16% in postal service. Despite the variation between industry and work environments, the average rate of burnout overall is approximately 25%.

What causes the increased rate of burnout for physicians? Could the increased rate of burnout be due to the difficulty of career in terms of required level of education and higher levels of occupational stress? Rates of burnout for Israeli engineers was 52% (male) and 84% (female) and Taiwanese lawyers was 52%⁵. The data demonstrates that higher rates of burnout is not unique to physicians, and may instead be associated with the high expectations placed on physicians, lawyers, and engineers.


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**2016 Medical Discovery and Progress from War Final Assignment**

Especially with the last three classes, the course made clear the connection between medical progress and war, as well as how wartime diseases and injuries could influence the medical inquiries being made. However, it seemed that for some readings (such as those on Beaumont), war and military service seemed more of a factor that molded the
investigators rather than the topic and purpose of the investigations themselves. I would appreciate making clearer the direct connections between wartime efforts and disorders/discoveries in the earlier classes.

One topic that I would have liked to have learned about, but was not emphasized in the course, was the availability and use of human subjects for non-retrospective medical research. The discussions on neurosurgery and blood transfusions touched on how the sheer number and severity of certain types of injuries necessitated medical discoveries and development, but none really seemed to touch upon involuntary or forced participation in medical research.

Although it would be nice to think that, for the purposes of this class, medical discovery and progress are happy byproducts of or separate fields influenced by the casualties and necessities of war, it nevertheless remains that many wartime discoveries were not made to improve warfront mortality and morbidity. Considering the ready supply of potential human subjects that prisoners of war and occupied territories provided, it would add another dimension to the class to consider the human casualties and ethical concerns that surrounded these events. The topic of ethical investigations came up in the Beaumont and PTSD discussions, but those seemed to focus more on individual actions and outcomes rather than those on a larger society or groups of people. We as a class have encountered the issue of crediting scientific discovery with the naming of club (rather than Clara) cells, and I think it would be nice to gain a better awareness of the questions and dilemmas that can arise as part of wartime progress.

Medical Progress and Discovery from War Reflection

I enjoyed this selective and appreciated that we not only learned about the medical discoveries from war, but also the role that St. Louis and WashU played in these discoveries. I had no idea that individual hospitals sent units to WWI and WWII, and am glad to have had the opportunity to visit the archives and see pictures, articles and records of WashU’s involvement. It was also interesting to learn about William Beaumont’s research on the stomach and how the strides were made in understanding digestion. I went to a volunteer celebration at the City Juvenile Detention Center the following week, and one of the volunteers attended Beaumont high school. We had a discussion about Beaumont and the archives at WashU, and I was glad to have a foundational knowledge about some St. Louis history.

It was both surprising and interesting to learn that many strides in medical
knowledge were gained by astute observations and chance accidents. While some breakthroughs today are made by recognizing that something we were trying to design has important, previously unrecognized off-target effects, it seems as though early strides were far more often made by paying attention to the details, making observations and capitalizing on accidents. James Lind’s realization that lemon and orange juices could successfully prevent scurvy based on observing sailors, followed by conducting a trial seems revolutionary. Similarly, it impressed me that antibiotics were identified by chance. Additionally, we are taking neuroscience right now, and learning about cerebellar injuries; I appreciate having the knowledge that so much of our understanding of the function of the cerebellum is due to poorly designed helmets during WWI and the observations of the neurosurgeon Harvey Cushing and neurology Gordon Holmes.

Thank you for a great course!

Medical Discoveries & Progress from War

The content of this selective was something I was never exposed to prior and an interesting change from the other classes of WUSM’s M1 curriculum. All the readings were easy enough to read, yet contained enough detail, specifics, and trivia to engage my interest. A few suggestions I have are as follows. Although the division of the readings is a good idea to reduce our work load, the presentation format where each student lectures the rest of us on the reading is not ideal. I would suggest that all students read all of the materials (maybe shorten the reading assignments if needed), and students can come up with discussion questions to ask the rest of us/lead the discussion. In addition, the upstairs archive visits are also fascinating, but also feel too lecture-based. The students I think would appreciate more freedom to explore and ask the librarian questions rather than have the librarian lecture us for one hour. These are only the perspectives of one student, however. Thank you for offering and leading this class!

Medical Discovery and Progress from War

I chose to take this selective based off of its title – I thought that it would be interesting to see how progress, medical or nonmedical, could come out of the horrible realities of war. Indeed, the title of the course poses a striking irony or mutual exclusivity, an oxymoron of sorts, by including the words “progress” and “war” in the same sentence.
However, I soon came to recognize that there’s more than what meets the eye.

As we started the selective and began going through some of the readings, I came to the realization that some of the historical motivations or drives for medical research arose through the necessity to solve wartime problems, and that medical discoveries that otherwise would not have been made as quickly, were possible (and accelerated) when put in the context of wartime efforts. I found that this course effectively demonstrates that medical progress has been made from war, while at the same time, does not detract from its atrocities.

While all the sessions in the selective were very engaging, my personal favorite discussion was on the discovery and development of antibiotics. The assigned readings are thorough and enjoyable, and our classroom discussions were interesting. I think the development of antibiotics is the prototypical example of how the need for treatment of infections in military men drove the private and public sectors into intense research and development, with outstanding results – which comes to show what feats humans are capable of, given the correct circumstances. Other discussions I thought were particularly enjoyable were Scurvy, PTSD (a neurologic and psychiatric condition brought to attention after veterans returned from war), and the development of anti-malarials (made necessary because Western troops were in the Eastern battlefronts).

I’d like to comment on the format of the selective. I think it’s a great idea to have every person read a different article as opposed to all of us reading the same one. Given the large body of work and the variety of good articles on a specific topic, it’s impossible for a busy medical student to read everything. And so by having each person read one article, we each brought something new to add to the discussion. This spurred some interesting discussions before, during, and even after class.

Finally, if I were to add something to the course, I would make one of the sessions be led by a guest speaker – for example, it would be interesting to hear the perspective of a psychiatrist on PTSD and his/her experiences with PTSD in war veterans. Another thing I would add is to be able to reserve 15-20 minutes at the end of each session for discussion – maybe have a couple of predefined discussion questions to gather people’s opinions on various topics.

This course did lead to some serious reflection and introspection on the role of physicians and medical researchers in driving progress in different historical contexts, and we had some great conversations throughout! The coursemaster is very knowledgeable on the topics discussed. Would highly recommend this course for future students!
History of Medicine and War Write Up

I have very much enjoyed the History of Medicine and War selective and the way it was designed. I thought it was interesting to start with Beaumont, because he had such a connection to Washington University and has such an interesting story with St Martin. It reveals an interesting aspect of how research was conducted in the early 1800’s, as well as brings up a discussion on research ethics and consent. It was amazing to get to go upstairs and actually see one of his consent documents, which I believe is one of the first instances of making a contract with a patient to conduct research.

My favorite two lectures were the last two, as we were able to go upstairs and see the impact of WashU physicians on WWI and WWII. I enjoyed learning about the neurosurgeons from WashU that worked in the war effort and seeing all of the pictures, which I believe impressed everyone. The story of sulfa drugs and Domagk was very interesting and showed the necessity of antibiotics and how Domagk was willing to try everything to find a drug that could cure disease, which was killing slightly more soldiers than the actual fighting. I thought it was a good idea to end on the WWII lecture on PTSD. While shell shock was considered a result of fighting, it tied in well with a final discussion on how ER physicians experience PTSD from being in very dangerous environments with very severely injured patients. It was a good reminder of the burden we have all taken on as physicians, and hopefully by discussing physician burn-out, we will be able to recognize when this happens in each other and help each other through it.

Thank you so much for taking the time to organize the course. I very much enjoyed it and would recommend it to others.

Medical Discovery and Progress from War Selective Review

I want to begin by saying that I think the topic for the selective is an intriguing topic, and I found it interesting. I thought the format and overall design of the selective were both good. I liked that the whole class did not have to read every article that was discussed. Assigning specific articles to individual students to present to the class was a good way to maximize both the amount of material to which we were exposed and participation, while still maintaining a very reasonable workload that was comparable to the other selectives that were offered this year. I thought the choices for the topics covered were good. It seemed that we were discussing the more prominent discoveries and medical progress that came from war and around wartimes. I thought the selective’s biggest weakness was the time spent in the rare books room. I am not sure the lecture on the material while we were
all standing for an extended period of time was the most effective way to present the material. I personally found it somewhat difficult to pay attention for the entirety of the lecture in the rare books room while standing the whole time. The material that was laid out for us to observe was definitely interesting, and well connected to the topics we discussed each week in the conference room. For this reason I think a more effective way to present the material in the rare books room might be a shortened lecture, followed by allowing the students an allotted amount of time to move around the various exhibits and observe the material for themselves, asking questions as they arise. Overall I was pleased with this selective, and was glad I was able to take it during my first year of medical school.

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**Medical Progress and Discover from War**

This selective brought me a lot of perspective towards the role of the military and armed conflicts in the development of medical science. Initially, I didn’t quite understand the huge importance of this link even though I was aware of the very important role of war in the development of other technologies that are integral to modern engineering, communications, and life in general. In the medical perspective, I was impressed with just how diverse the discoveries in medical science were. Not only was there a focus on acute injury due to battle, there were also impressive improvements made in mental health and epidemiology through military physicians. Additionally, I was fascinated by the ability of medical research to overcome limitations in their understanding of disease processes to still form effective treatments. I was particularly impressed with the development of the yellow fever vaccine and the process that the researchers underwent to determine the source of infection even before it was known that the disease itself was known to be caused by a virus.

In addition, it was interesting to see just how the advancements in medicine that arose in times of peace such as Pasteur's germ theory or the advent of antibiotics were able to be implemented into maintaining the health and wellness of soldiers. Yet, it was also important to see only how recently medical care was able to cope with the basic demands of war. The fact presented in the very first reading for the entire class which stated that World War 1 was the first conflict where the majority of casualties were due to actual military equipment and not disease was a point which stuck particularly well in my memory. It is sobering to realize that the maintenance of health of soldiers is only a relatively new phenomenon that still has a number of significant limitations, especially in the care for PTSD when servicemen attempt to reintegrate into society after their tours of duty.
# Washington University School of Medicine

## Medical Discoveries & Progress from War - Dr. Feibel - Selective Evaluation

### Level: Washington University School of Medicine

#### 1 - How would you rate this Selective course overall?

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#### 2 - How well were the course learning objectives met?

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<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12 (91.67%)</td>
<td>4.09</td>
<td>0.54</td>
<td>4.00</td>
</tr>
</tbody>
</table>

#### 3 - How effective was the course master in organizing and administering the course?

<table>
<thead>
<tr>
<th>Response Option</th>
<th>Weight</th>
<th>Frequency</th>
<th>Percent</th>
<th>Percent Responses</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>(1)</td>
<td>0</td>
<td>0%</td>
<td></td>
<td>4.82</td>
</tr>
<tr>
<td>Very little</td>
<td>(2)</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat</td>
<td>(3)</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A moderate amount</td>
<td>(4)</td>
<td>2</td>
<td>18.18%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very much</td>
<td>(5)</td>
<td>9</td>
<td>81.82%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Return Rate</th>
<th>Mean</th>
<th>STD</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12 (91.67%)</td>
<td>4.82</td>
<td>0.40</td>
<td>5.00</td>
</tr>
</tbody>
</table>

#### 4 - How effective do you consider the assessment method to be?

<table>
<thead>
<tr>
<th>Response Option</th>
<th>Weight</th>
<th>Frequency</th>
<th>Percent</th>
<th>Percent Responses</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>(1)</td>
<td>0</td>
<td>0%</td>
<td></td>
<td>4.18</td>
</tr>
<tr>
<td>Fair</td>
<td>(2)</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>(3)</td>
<td>2</td>
<td>18.18%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Good</td>
<td>(4)</td>
<td>5</td>
<td>45.45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent</td>
<td>(5)</td>
<td>4</td>
<td>36.36%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Return Rate</th>
<th>Mean</th>
<th>STD</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12 (91.67%)</td>
<td>4.18</td>
<td>0.75</td>
<td>4.00</td>
</tr>
</tbody>
</table>
5 - Would you recommend this course for future students?

<table>
<thead>
<tr>
<th>Response Option</th>
<th>Weight</th>
<th>Frequency</th>
<th>Percent</th>
<th>Percent Responses</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>(1)</td>
<td>1</td>
<td>9.09%</td>
<td></td>
<td>1.91</td>
</tr>
<tr>
<td>Yes</td>
<td>(2)</td>
<td>10</td>
<td>90.91%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Return Rate | Mean | STD | Median |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12 (91.67%)</td>
<td>1.91</td>
<td>0.30</td>
<td>2.00</td>
</tr>
</tbody>
</table>

* As long as they have an interest in history.

6 - Did this course make you reflect on your projected role as a physician?

<table>
<thead>
<tr>
<th>Response Option</th>
<th>Weight</th>
<th>Frequency</th>
<th>Percent</th>
<th>Percent Responses</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>(1)</td>
<td>0</td>
<td>0%</td>
<td></td>
<td>3.56</td>
</tr>
<tr>
<td>A little bit</td>
<td>(2)</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat</td>
<td>(3)</td>
<td>5</td>
<td>45.45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quite a bit</td>
<td>(4)</td>
<td>6</td>
<td>54.55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very much</td>
<td>(5)</td>
<td>0</td>
<td>0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Return Rate | Mean | STD | Median |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12 (91.67%)</td>
<td>3.56</td>
<td>0.52</td>
<td>4.00</td>
</tr>
</tbody>
</table>

7 - Please share suggestions for improvement of the course:

Return Rate | 11/12 (91.67%)

* The sessions in the rare books room ran long, and it was hard to maintain focus while standing the entire time.