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OF ALPHA OMEGA ALPHA HONOR MEDICAL SOCIETY

Spring 2012

“Be Worthy to Serve the Suffering”

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Editorial

The data deluge: The information explosion in medicine and science

Richard L. Byyny, MD, FACP

The explosive increase in the amount and flow of information and data represents an important professional challenge for those of us in medicine and science.

Today, data sets are measured in petabytes ($10^{15}$ bytes), and data is so efficiently gathered and stored that it presents a major challenge when evaluating its reliability, extracting its useful information, and using it effectively to improve our understanding of science and medicine.

Five years ago there was already 276 billion gigabytes (Gb) of digital information, and about 19 billion Gb of analog information. The data continues to accumulate and physicians continue to struggle with how to organize it and use it to understand science, to prevent disease, and to better serve the suffering. As Nobel Prize winner Tom Cech notes, we are still in the contemporary Dark Ages when trying to access and utilize the available data and information being produced and stored.

Physicians and other scientists are good and getting better at producing data. But we must become proficient—with or without the help of technology—at mining and managing the data in ways that will allow us to use it to maximum effect.

Throughout history, changes in technology have often increased the production of information and its dissemination. When we advanced from verbal communication to written records we could slowly produce manuscripts and books that some could read and learn from. In concert with the development of writing were archives, repositories of tablets and other permanent records, which evolved to become libraries. But the ability to easily disseminate collected information had to await the fifteenth century.

Around 1439, Johannes Gutenberg invented the printing press, resulting in a dramatic increase in the spread of information at a more reasonable cost. Even then, many lamented the problem of too much information.

The integration of the rational sciences with medicine in the 1700s and 1800s built the foundation for scientific medicine. During this period the pursuit of observational science evolved and the study and understanding of anatomy progressed to pathologic anatomy and the identification of the relationship between clinical symptoms and signs to post-mortem findings and disease. Physicians developed new instruments and methods to study diseases and patients. Jenner discovered the efficacy of cowpox vaccination to prevent smallpox. The discovery that quinine was a specific treatment for malaria occurred during the same period.

The concepts of cell theory, cellular pathology, physiology, and pathophysiology were established. Anesthesia and antimicrobial agents dramatically improved surgery and its outcomes. The germ theory of disease was put forth and microbial agents causing disease were isolated, identified, and characterized. This was followed by the development of antimicrobial drugs, the use of antitoxins, and the development of more vaccines to prevent disease.

The twentieth century brought a dramatic rise in the publication of scientific journals and monographs, most of which were not critically reviewed. However, most physicians had no access to the available medical literature.

Sir William Osler, the author of The Principles and Practice of Medicine, the leading textbook of the early twentieth century, was very concerned about the increase in the medical literature. He worried about the lack of quality, limited access, and how it would be used. Osler and his colleague, John Shaw Billings, one of the innovators and leaders in medical librarianship,* worked together to further the development of medical libraries.

For most of the last fifty years, physicians and scientists have retrieved needed information on paper: they subscribed to journals, filled filing cabinets or their office floors with commonly referenced papers, or visited libraries. Biomedical scientists developed hypotheses about a gene, RNA, protein, receptor, or pathway, and performed experiments that resulted in huge advances in our understanding of health and disease, along with ever increasing data.

Throughout the twentieth and now twenty-first centuries, the flow of information has been increasing at nearly exponential rates, until it now threatens to drown us in data. By 2008, more than 5000 biology, chemistry, and medical journals were being published. PubMed listed one million articles. Publication of randomized controlled trials, the gold

* Billings was the creator of the Index Medicus, modernized the library of the Surgeon General’s Office of the Army, and was the first director of the New York Public Library.
standard of clinical research, has increased rapidly since the first study was published in the 1940s, such that it is estimated that just to keep up on reading RCTs for the ten most common diagnoses in a field would mean reading twelve publications per week.

The development of computers and the Internet—instant access to virtually any and all information—has fundamentally changed the way knowledge is gathered, stored, and disseminated. With more than a billion people online and ten billion pages of information available on the Internet, we have evolved through Web 1.0 and 2.0 and are heading into the “semantic web,” Web 3.0, in which human-computer interaction is projected to provide access to usable “metadata”—data that is aggregated, organized, and ready for analysis.

In the past, a scientist’s first goal was to develop a hypothesis. That hypothesis was then proved or disproved through simple experiments. Proven hypotheses became working theories, providing valid answers to experimental questions. Today, the science of living organisms has become so complex that any investigation requires looking at many interactive processes, such that, more than ever, an interdisciplinary systems approach is needed to understand biology and the science of medicine. Data from multiple sources is coming at us in bigger pieces, faster, and cheaper. In genomics, for example, the amount of data has increased from about 100 Gb per year in 2006 at a cost of $20,000 per megabyte (Mb), to about 100,000 Gb in the year 2010, at a cost of $200 per Mb. Other areas of medicine show similar explosions in data, including that of diagnostic imaging, in which data sets of up to 1000 petabytes are not unheard of.

As noted above, traditional science is based on developing hypotheses and then designing experiments to confirm or disprove them, a process in many ways the antithesis of data mining. Data mining more resembles longitudinal population-based studies in which cohorts of people are followed over a period of time to identify associated predictors of disease.
The data deluge: The information explosion in medicine and science

Asking the appropriate question and assessing the appropriate databases is critical in designing longitudinal studies, as it is in data mining.

So how will we deal with the data deluge? As in Osler’s era, medical scientists partner with librarians—which these days include computational scientists and technology experts—to develop new ways to store and retrieve information in forms that are useful. How do we present data in ways that allow us to grasp the essential and useful information and ignore the rest?

Key to the challenge of being able to use the flood of information that is threatening to overwhelm us will be the development and use of “intelligent agent software,” programs that can automate commonly performed tasks and learn from their interactions with people. Such software could conceivably identify unrecognized opportunities to analyze data, solve problems, bring in interdisciplinary expertise, and integrate and prioritize diverse data sources in large, complex, and distributed information systems. To be truly useful, we would need the agents to know:

- What parts of particular sets of information are relevant to a specific individual and the current situation
- Which medical references pertain to a specific patient’s condition
- To which web sites a physician should refer a patient for relevant information
- How to recognize potential unexpected relationships between the diverse information sources.

But it doesn’t stop there. We would also need new tools and biomedical curators to categorize the data with common and integrated languages. Data collected should be curated and organized in a commonly agreed-upon format, then submitted to repositories that will allow interconnections among data sets. Data needs to become knowledge.

Until that happens, we need an effective way to take things in. I believe just-in-time learning is currently the most effective approach. Almost fifty years ago, one of my teachers and mentors, Dr. Telfer Reynolds, explained to me his strategy for continuous learning in medicine. He kept a black book in his lab coat pocket. When he discovered something he didn’t know about medicine or a patient—which seemed rare—he would write it down in his book. Once a week, he would go to the Los Angeles Medical Society Library. He would start at the top of his list of questions and look up the information needed to answer his question, as well as other pertinent literature. At closing time, he would tear out his list, crumple it, and throw it in the trash so he could start a new list for the next week. Dr. Reynolds’ use of just-in-time learning for specific reasons—to diagnose a problem or to teach students—meant that he was much more likely to remember what he had just learned.

Today, just-in-time learning plays an increasingly important role. Information is most useful applied at the right time. Dr. Reynolds knew that learning is more likely to be useful, remembered, and teachable if it is tied to a problem or event. As a clinical scientist, practitioner, educator, and learner I, too, have long believed in just-in-time learning. Fortunately, the development of the internet and World Wide Web has greatly facilitated just-in-time access to information and data.

Although I have many issues with the use and utility of proprietary electronic health records and systems, it does provide one major advantage for just-in-time learning. While sitting with a patient and wondering about a diagnosis, test, or treatment I can immediately go to the online library and find the answer.

Before overloading your brain, recognize that not everything in medicine changes rapidly, if at all. New diseases appear infrequently. The clinical manifestations of most diseases change slowly, if at all. The symptoms in the history and physical findings, although varying from patient to patient, are usually consistent over time. And the physician’s use of deductive reasoning to reach a conclusion from the clinical information doesn’t change. If I work hard to learn what doesn’t change rapidly in medicine and continue to practice the skills and use that knowledge, I will have a good, reliable, and persistent foundation of knowledge to draw from in caring for patients. I can then look up information “just-in-time” to answer questions that arise that I don’t know or that may have changed recently.

What does change rapidly in medicine includes diagnostic strategies, technologies, and therapies. These areas require constant attention and continuous learning. Make it a habit to stay current in advances within these areas. Although not everything changes all the time, many things are changing. For issues too complex for this strategy, you can and should rely on subspecialty consultants—those whose depth and breadth of knowledge are more profound. It is also important to recognize that patients now have access to much of the same information as their physicians, and can bring useful or confusing information to bear on their ailments.

It is estimated that 12,000 new articles and 300 randomized controlled trials are added to Medline each week, and that new medical articles appear at a rate of one every twenty-six seconds. We clearly need a plan to keep up as well as we can.

Here is my proposed strategy:

1. Read the literature to attain, maintain, or improve knowledge and/or medical competence.
2. Maintain your curiosity and inquisitiveness—with an appropriate degree of skepticism.
3. Information is most helpful when used to answer questions about a patient’s condition, pathobiology, diagnosis,
therapy, or prognosis.

4. Pick a place to start. This will depend on your own knowledge of a topic. If your knowledge is limited, start with general textbooks written by experts and then move to more specialized textbooks, including online textbooks. Once you have satisfactorily increased your understanding of the problem or issue, move on to critical reviews and original studies and research articles for more in-depth knowledge or to answer specific questions.

5. Develop a strategy for evaluating research articles and studies to determine if the article is of high quality and if the information will be useful. It is often useful to quickly scan or read the title, abstract, introduction, and conclusion to determine if the information is relevant to your practice, patients, knowledge, or teaching. If the scan of the article is positive then spend more time on the stated hypothesis, study design, results, analysis, assessment, and discussion.

6. Critically appraise the research and article content. I recommend the JAMA series on “Step-by-Step Critical Appraisal” that describes how to critically appraise medical literature. These have been published in JAMA for many years, with emphasis in each article about different types of research and how the articles should be critically reviewed.

    Critical Appraisal of the Medical Literature: List of Useful Questions

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<th>Is the study’s research question relevant?</th>
<th>Was the study design appropriate for the research question?</th>
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<td>Is the topic relevant to a question or to one’s own field of work?</td>
<td>Did the study design and methods address the question?</td>
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<td>Does the study, if valid, add anything new?</td>
<td>Are there important sources of bias or interpretation in the study?</td>
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<td>Are there stated incremental advances of value?</td>
<td>How were participants selected and allocated?</td>
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<td>What type of research question does the study pose?</td>
<td>How was data collected?</td>
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<td>What is the stated hypothesis?</td>
<td>Did the study follow the protocol?</td>
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<td>Who is the population of patients or subjects studied?</td>
<td>Was the analysis and assessment rational, appropriate and valid?</td>
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<td>What are the measurable parameters or outcomes of interest?</td>
<td>Is the sample size sufficient for validation?</td>
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<td>Is it a study related to diagnosis, therapy, frequency of events, prognosis, or something else?</td>
<td>Does the data justify the conclusions?</td>
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<td>What is the study design?</td>
<td>Are there sources of potential conflicts of interest?</td>
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<td>- Meta-analysis of randomized controlled trials</td>
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<td>- A randomized controlled trial</td>
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A key part of our professional responsibility is continuous learning to improve our knowledge, skills, and our practice of the art of medicine. Information overload makes this much more difficult. It is ironic that we have exchanged what was a lack of access to medical information in Osler’s time for the contemporary problem of drowning in data.

I don’t doubt that Osler would have embraced the abundance of information and the new technologies for finding and spreading it. But he, like many of us today, would have recognized and worried about the dilemma we face in distinguishing the useless from the useful, and in deciding how to put the useful to best use. So even though challenging, it’s up to us to make sense of and organize the vast knowledge available to become more worthy to serve the suffering.

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The Pharos/Spring 2012
Success, professionalism, and the medical student

Richard B. Gunderman, MD, PhD

The author (ΔΩ, University of Chicago, 1992) is Professor of Radiology, Pediatrics, Medical Education, Philosophy, Liberal Arts, Philanthropy and In the Honors College at Indiana University. He is a councilor director on the Board of Directors of Alpha Omega Alpha and councilor of the chapter at Indiana University School of Medicine.

The second-year students were gathering in one of the medical school’s amphitheater-style classrooms. Soon after the hour turned and the final student had taken a seat, a middle-aged father and his adolescent son entered through the front door. The boy sat in a wheelchair, and it was immediately apparent to everyone present that he was neurologically devastated. His posture was contorted, his head was tilted back and to one side, and his eyes stared blankly up toward the heavens, evidently registering nothing.

The father began to tell of a conversation with his wife the evening before. The boy’s mother argued that they should not bring their son to the medical school again. He had been poked and prodded by each new crop of residents, interns, and medical students for more than a decade. The family had contributed far more than their share to the education of future physicians, and it was time to give their son a rest. He had been used as a pincushion long enough, she said, and it was time to let some other family shoulder the load.

The father disagreed. He argued that it was important for each year’s group of young doctors to meet their son for themselves. The encounter would help them learn the signs of his disease. More importantly, they would hear firsthand what it had been like for his parents to know that something was wrong with him, yet to be told by the doctors that they could not make a specific diagnosis. These future physicians needed to hear what it is like to learn that your son has a relentlessly progressive, irreversible, and lethal neurologic disorder.

As the father related this story, it was clear that the conversation had proved a very emotional one. From time to time, he looked out at the students, hands outstretched, as though pleading with them to understand how trying it had been. He added more than once that he wanted the students to understand how seriously he and his wife took their education. As he spoke, particularly about their son’s deterioration over recent years, he choked with emotion. The students seated in the front rows could see tears welling up in his eyes.

Throughout the father’s story, one student in the second row sat rapt in attention, never averting his eyes. When the father winced, a hint of a grimace swept across his face. When the father sighed, you could see the student’s shoulders fall ever so slightly. And when the father’s voice faltered, the student’s eyes welled up with tears. He was deeply immersed in the story, as though he were reliving their decade-long struggle right along with them.

In the first row sat another student. No more than five minutes into the class session, he opened up his lecture notes, pulled out his audio device, and donned his ear phones. Throughout the following minutes, he never once looked up at the father or paid any attention to what was being said.

What are we to make of the conduct of these two students? Which one will be a better physician? Which of the two would their fellow students regard with a greater admiration? And perhaps most importantly of all, which of these two future physicians would we most likely turn to if our own parent, spouse, or child needed medical care?
Excellence in medicine is not strictly a matter of what we know. You can be the most knowledgeable, technically skilled, widely published, extensively funded, and most successful physician in the room, but still leave a great deal to be desired as a doctor. Medicine is not simply a matter of what we know and what we can do. Medicine is also a matter of who we are. And who we are shines forth through every interaction with a patient. Patients need more from us than mere expertise.

What else do patients need? They need us to be genuinely curious about them and to take a sincere interest in their lives, not just with a view to arriving at a diagnosis or prescribing a therapy, but simply to share their experience. Everyone will get sick. Everyone will die, even the doctor. Medicine may turn the tide for a time, offering a respite of months, years, or even decades of life. But the end is always the same, and every human being, even a doctor, needs someone with whom to share it. There are times when our patients need us to be human beings first and experts second.

They need someone who sees them as more than a malfunctioning machine that needs repair. Sickness manifests itself in many ways, from pain to nausea to vertigo to loss of function. But this is no less true of our household pets than of human beings. What distinguishes human beings is the fact that suffering is a problem for us. We not only feel it, we also try to make sense of it, to understand it in the larger context of our lives, to find in it some meaning and purpose, insights into where we have been, where we are, and where we have yet to go.

To excel as physicians, we must do more than diagnose and treat our patients. We must also care about our patients. They need us to bring the best of our compassion, courage, and hope. Above all, they need us to be worthy of their trust. Trust is about more than avoiding breaches in confidentiality. It means carrying gently, like a newborn baby, the lives and the life stories entrusted to us. Patients and families share with us something fragile and deeply precious. Are we fit to receive it? Are we faithful stewards?

Of equal importance is how effectively we cultivate this sense of mission in the minds and hearts of our successors. Will future physicians set their hearts on conventional signs of success, such as prestige, authority, and income? Or will they think first of their patients, the human beings they have cared for, and the lives they have been privileged to
touch and become part of? What do we tell medical students about what matters most to us, and what do we show them through each patient encounter?

The student in the second row who never took his eyes off the father and son did well in school and garnered a fine position in a good primary care residency program. When I think about the kind of physician I would want to care for my parents, my wife, our children, or me, his is one of the faces that come to mind. He is not only a fine doctor but a real human being, someone who truly cares for his patients.

And the student in the front row? He is now completing his postgraduate training in one of the country’s most competitive fields at one of the most prestigious programs. He earned the highest score on the exam, and then the highest grade in the course. In fact, he earned the highest grade on many of his exams, and graduated at the top of his class. A year and a half before graduation day, while still a junior, he was elected to membership in Alpha Omega Alpha Honor Medical Society.

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Dr. Gunderman related this anecdote at the September 2011 AΩA Councilor Meeting in Chicago following my presentation on “AΩA and Professionalism.” A rather shocked silence was followed by vigorous discussion about scholarship, professionalism, and the values AΩA should look for, and hopefully instill, in its members.

Looking back at the two students, I only hope that the second one, who became an AΩA member in his junior year, will read this and learn to care about his patients.

Richard L. Byyny, MD
Executive Director and Editor
In autumn, through forested paths
Showered by falling leaves,
Each is a life fallen before mine.
I catch some at full stride—
And release to the ground
The lives of those I loved.

Someday I will bud
Atop a magnificent tree,
Enduring spring’s winds,
Basking in summer’s warmth,
To a grand exit
In yellow, red or brown,
Gracefully drifting into the hand
Of someone who loves me.

Steven F. Isenberg, MD
J. Joseph Marr, MD

The author (AΩA, Johns Hopkins University, 1964) is a retired academic physician and business executive and a member of the editorial board of The Pharos.

For now we see through a glass, darkly;
    —1 Corinthians 13: 12

We live in four dimensions. In the moment, we live in three. Could we live in fewer? Suppose we had only length and width but no depth, where the depth is perspective based upon empathy for our fellow creatures? Could we live without that? Knowledge and reason give us a position, but the emotional connection with others and with the past give us a life. Without this, we risk becoming that myth of philosophy upon which so much argumentation is based—the rational man—or, far more likely, the mechanized cog of society portrayed by Charlie Chaplin. Interactive, meaningful, human contact with life requires emotions that link us to others and without which even memories are simply a slide show. We are not speaking here of the emotional displays devoid of reason, perspective, or knowledge that are so in evidence among us today, but the interpersonal bonds that come with the understanding of another and the circumstances of that other. Are we living without these in our society? Are we doing it in medicine?

**Case history**

That evening I admitted a man of about fifty years in serious condition. He had a long history of smoking and a right pneumonectomy for cancer several years before. His chart, when it came from the record room, was replete with sporadic infections and evidence of chronic bronchitis. He was garrulous, in complete denial of the situation, febrile, and short of breath. The x-ray confirmed the physical examination: all segments of the left lung were involved with pneumonia. At that time, we did our own Gram stains and laboratory work. The sputum was laden with leucocytes and Gram-positive diplococci; the white count was elevated. He was placed on oxygen, antibiotics, and intravenous fluids, given as much intensive care as we could and left to the mercies of Atropos.

After the examination and the orders for treatment, I sat with his wife. She was a quiet, fragile woman in late middle age who looked at me expectantly yet
without anticipation. We spoke of his situation, its causes, and the intensity of the treatment he was receiving. Her reply indicated that she was aware of all of this and it was why she had brought him to the hospital. She had asked him to stop smoking but could do no more. He did not listen. She looked at me as I explained the severity of his disease and the efforts we would make to reverse it. I implied that we might fail and she nodded and then picked up her purse to leave. I halted her with a word or two and rephrased my message since I thought she had not understood. She nodded again, thanked me, and left.

During the next two days I spent much time with him. He remained talkative, insofar as he could be, given his respiratory situation, and apparently cheerful about his outcome. His role in the tableau, as he appeared to understand it, was as the entertainment: serious disease for the physicians and a raconteur for everyone else.

His fever did not break and his blood pressure was kept up with fluids. As anticipated, his clinical course went slowly downhill and on the third day he became increasingly confused and died that evening.

I called his wife and she came in to the hospital. I told her again of his death and spoke with her regarding his clinical course and the mechanics of therapy as she sat quietly. There was increasing confusion on my part and some frustration as she failed to react either to my explanation or the fact of her husband’s death. After some time, she interrupted me quietly, probably to stop my iterations, and said that she understood completely and thanked me for the explanation and the work to try and save her husband’s life.

“But you see, I had a lobotomy and I cannot react to what you are telling me. I understand the situation, and I expected it, but I feel nothing. I have felt nothing now for many years, so you should not be concerned. Thank you very much for your work and your explanation. Now I should go and make arrangements.” Then she stood up and left the room. I sat and thought about this for some time.

*Primum non nocere*

The answer is “Yes!” we can live without human emotional relationships. She did and others have, but at what price? What did medicine do to her those many years ago when the leucotomy went in above the eyes and cut those connections that made her human? Presumably she was difficult to manage in one way or another, so a terrible procedure, which enjoyed a vogue among some physicians for some decades and was vigorously fought by others, was employed to change her life and make the lives of her caretakers simpler. (See the excellent history of lobotomies and their influence in medicine by Mary Ellen Ford, MD,¹ and Laurence M. Weinberger, MD.²)

This woman, when I met her, was well dressed, well spoken, apparently intelligent, devoid of real facial expression, and without emotional connection to her world. Did she enjoy seeing the sunrise; did she have children and love them; could she relate to a symphony; did she go out to see the leaves in the fall? She was a frighteningly and completely rational person. I cannot imagine how much of the flavor of life was taken from her by that procedure but I do know that she missed the essence of living. Her life must have been as grey as the clothing she wore the various times I saw her.

I did not think of her for many years but during the past few years our encounter and my reaction to it have come back with increasing frequency. Her husband and his laughing denial of his terrible situation have recurred as well. They were a team then and they remain so—Janus, caught in a situation.

The situation that caused me to think about her again, and later him, crystallized at a “Town Meeting” some time ago that our congressional representative had arranged. I admired him because he spoke directly and seemingly honestly while many representatives were unwilling to visit their constituents between elections due to their understandable fears of a verbal pummeling. In response to my question regarding Medicare administration and funding and what appetite Congress might have to reconsider the fundamentals of the program, he paused and then responded that there was no appetite and the issue probably would not be addressed until the crisis was even more acute. My reaction—and that of the audience—was, in essence, a silent shrug of the shoulders and the thoughts: “probably an honest answer” and “suspicions confirmed.” Why did I and why did we acquiesce like that? No one said a word. Why were we and why was I not upset or concerned or incensed by the flagrant lack of fiscal and social responsibility by a legislative body elected to take responsibility for exactly those things? Shortly thereafter, the woman and her husband came back into my mind.

When I think about medicine and where we seem to be now, one
or the other and sometimes both of them
look at me. Are we as physicians, in
fact, living in a way that both that pa-
tient and his silent partner would un-
derstand? Some of us work within a
greatly changed system to deliver good
medical care as best we can and to game
the system as best we can—turn it into
a job and manage the economics—in
denial of what has occurred. Others con-
tinue to give good medical care but have
disconnected emotionally in order to
preserve their own mental balances. Do
both groups, each in its own way, avoid
thinking about a noble profession that
has been subverted and, perhaps, per-
verted by fiscal considerations?

Most of us probably act as the “ser-
vant leaders” described by Dr. Byyny in
his recent editorial.3 These are people
who, by example and teaching, try to
make better their immediate surround-
ings. All physicians, particularly mem-
bers of ΩΩΑ, in my opinion, should
be servant leaders at the very least but
also should try to be more than that.
There are many leaders in medicine,
working quite hard to, if not change the
system, at least slow its headlong plunge
into simply a business. I am referring to
something else here.

Quarterly earnings and market share
have become important topics not only
in the administration boardrooms but
also at medical staff meetings. People
are not being seen because of fiscal
considerations and the country’s mor-
bidity and mortality statistics place us
lower among nations of the world than
one would expect the wealthiest coun-
try in the world to be. We continue to
maintain an enviable place in research.
Younger physician-scientists are every
bit as bright and dedicated as those of
us who went before and the knowledge
base from which they draw is far more
advanced. That is not the issue. The
issue is that patient care and access to
that care have declined. With respect
to planning for and delivery of medical
care, the adage primum non nocere no
longer applies.

A minuet of accountants

None of this is new, of course; we have known about it for years.
Physicians as a group are pragmatic
and some who understood where medi-
cal practice was going joined the ranks
of business in order to help manage
the process—myself included. However,
one interested, we were co-opted into
the system and, of necessity, became part
of it. All discussions have become fiscal
and patient benefit and the historic and
altruistic goals of medical practice have
been eroded rapidly. Many of us try to
help patients whenever and however
we can—but when have we made a con-
certed, visible, and united effort to de-
mend that patient care be given priority
and that profits take a second place? It
is not necessary to make fortunes in the
delivery of medical care; but it is neces-
sary to deliver that care.

The entry of big business in the
1990s, under the guise of employing
good business practices to improve ef-
ciciency and cut costs was, in my view,
the death of patient-centered medical
care. It is one thing to change a cottage
industry model into a more modern
and efficient delivery system but quite
another to forget, damage, and alienate
the consumers in the process. Why did
dicine not protest loudly on behalf of
the patient? We certainly spoke about
it amongst ourselves. Perhaps we were
too busy trying to understand what was
transpiring and to survive it. But we are
in it now, and this wreckage of a delivery
system will not change until the profit
motive is removed.

Why not consider the delivery of
medical care a fundamental social re-
sponsibility, fund it as necessary but
change the business model? As one ex-
ample: remove the quarterly earnings
focus from large provider systems and
insurers. Investors in these organiza-
tions could expect a reasonable return
on investment, but as a healthy dividend
—similar to a bond or utility company
—rather than an incremental share price.
The funds that would be otherwise paid
out as earnings and administrative sala-
dies and bonuses for fiscal performance
would be returned to the system to
maintain it—as is the case now—and to
fund indigent care. This is but one ex-
ample and there are others, but none will
work until the profit motive is removed
or contained. It does not matter whether
these providers are private or govern-
mental as far as the business model is
concerned.

We seem now to be a part of and sus-
taining members of a greatly distorted
system that only Torquemada could have
designed. Our excuse is that we came
into it by a long series of compromises.
But where is our outrage at the result
and at what is taking place in patient
care? Why are we as silent and rational
in our acceptance as that woman? Have
we, through a long process of acquies-
cence, subconsciously applied the leuco-
tome to ourselves?

We can look back through the locked
glass door that allows us to see the vari-
ous stages of our pasts but will not per-
mit us to re-enter. As time and change
occur, I believe we see the humanism
and idealism of that era less clearly. The
events of those times may be somewhat
clear, but the sense and ethics of those
times are dim. Is this dark glass a defense
or a survival mechanism? Have we given
up or do we truly not care anymore? I
cannot bring myself to believe it is either
of the latter. We simply need more hope
and may have to supply that for our-
selves by taking some action.

The editorial “ΩΩΑ and Leadership”
rased questions about leadership among
the ΩΩΑ membership and what the orga-
nization might do to assert a leader-
ship role in medicine. Perhaps declining
patient care and the subjugation of
the human to the fiscal are issues on which
ΩΩΑ could take a position and articu-
late it strongly. That is, if we truly wish
to “Be Worthy to Serve the Suffering.”

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Paulinia was a beautiful and intelligent child. She was seven years old and very ill with a massive abdominal tumor. I had performed a laparotomy in the hope that the tumor would prove to be resectable, but it surrounded the aorta, all of its visceral branches, and the vena cava. All I had been able to do was biopsy the tumor, which proved to be a liposarcoma. Paulinia was unable to eat, although she could retain oral fluids.

A few days after the biopsy, Paulinia asked me, “Dr. Straehley, am I dying?”

Many years ago, during medical school and my surgical residency, I was told that one informs the family, but protects the child from the knowledge of impending death. But I knew that if I lied to her she would lose faith in me. I answered, “Yes, Paulinia, God has decided to take you to heaven with him.”

Then she made an interesting request. “Dr. Straehley, please take me to the Waikiki Pancake House one more time.”

On the following Sunday, the chief nurse and I took Paulinia on a gurney in an ambulance to the Waikiki Pancake House. We had called the manager beforehand, and he had set up a table and alerted all of his employees. They came out to greet her as she was wheeled in. Paulinia smiled and laughed as several of the employees kissed her and wished her aloha. One of them brought her a lei.

After we returned to the hospital, Paulinia asked me, “Dr. Straehley, will you sit beside me and hold my hand when I die?”

I left orders that when her vital signs began to fail, I should be called regardless of the time of day. Several nights later I received the expected call. As I sat at her bedside and held her hand, Paulinia said, “You came.”

Shortly thereafter she died. On her face there rested a beautiful smile. Paulinia had died in peace.

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The Anatomy of Melancholy

Burton and Osler

Henry N. Claman, MD

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The Anatomy of Melancholy, written by Robert Burton in 1621, is probably the most fantastical book that you haven't read. It's right up there with Finnegans Wake, perhaps also with The Life and Opinions of Tristram Shandy, Gentleman. The very size of the book is itself somewhat of an obstacle; it weighs in at almost 2.5 pounds, and stretches on for 1,132 pages of text followed by 206 more pages of notes—most of which are in Latin.1

Furthermore, because of its unusually dense style, one cannot really read this book as you would read other books. Instead, you are more likely to dip into the text, to stroll by the introductory poems, to peruse the complex outlines of the book's structure, or to mine the almost endless quotations from the Greek and Roman classics, the Bible, the Church Fathers, and so on.

And even so, no matter how charming Robert Burton's company may be—perhaps he is another Montaigne—why spend 1338 pages on the subject of depression (a word he didn't use), even if the book did turn out to be an instant bestseller?

Let us step back a little and look at Burton and his family. He was born in 1576 to Dorothy and Ralph Burton, the squire of Lindley, a small landholding about fifty miles north of Oxford. Robert was the fourth of eleven children and the second son. He later calculated the exact moment of his conception, and learned the minute of his birth (8:44 AM). Thus he could determine that he was born under the sign of Saturn (the "star" of melancholy) and we can get a hint of his interest in astrology, and his analysis of his own character.

In 1593, he entered Brasenose College, Oxford, and then in 1599 he became a Student (like a Fellow) of Christ Church,
THE
ANATOMY OF
MELANCHOLY
What it is, with all the knots causes, symptoms, prognosticks, 
and several cures of it.
In three partitions, with their several sections, members, 
and subdivisions.
Philosophically, medically, historically, and as it stands.
By
Democritus Junior.
With a satirical preface, concurring to the following discourse.
The fourth edition, corrected and augmented by the author.
Omnis rubra punctum, quae maneat stilus uler.
Oxford
Printed for
Henry Cripps.
1672.
Oxford, where he lived for the rest of his life. He earned the degrees of Bachelor and then Master of Arts, and then in 1614 became a Bachelor of Divinity (as befitted a second son). He held several church offices and referred to himself as “a divine,” but he always lived in Christ Church College. He never married and did little traveling, preferring to live among books, which were indeed his life. As he put it, he did his traveling “by card and map.” And of books he had plenty—his own collection, then those volumes and manuscripts belonging to Christ Church (where he himself became Librarian in 1626) and most notably the Bodleian Library, which had opened in 1602.

Indeed he was “a man of the books.”

The organization of *The Anatomy* is crucial to its objective, the study of melancholy. It is in four parts; a long preface and three “partitions.”

The 123-page preface is titled “Democritus Junior to the Reader.” (The author is supposed to be Democritus Junior.)

There were, in Greek antiquity, two philosophers, Democritus and Heraclitus. Democritus was “the Laughing Philosopher” (although Burton calls him melancholic, like himself). Heraclitus was “the Weeping Philosopher.” Democritus laughed at the activities and condition of humankind while Heraclitus cried over them. Burton calls himself Democritus Junior to indicate his own tendency to ridicule his fellows and also to connect himself with the classical tradition. This device is also a signal to the reader that *The Anatomy* is not in its essence a medical book but a philosophical treatise.

The preface, on one hand, does ramble somewhat, but on the other, it drops information about what is to come in the Partitions. Indeed, on page 39, Burton already tips his hand by declaring (with the poet, Horace,) that all mankind is “mad” “For indeed who is not a fool, melancholy, mad? . . . who is not brain-sick? Folly, melancholy, madness, are but one disease, delirium is a common name to all.” 1Preface, p39 Later (page 114

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*The Anatomy of Melancholy*
and on), he indulges his passion for enumeration by mentioning that the following (and others) are all mad: great men, philosophers, scholars, teachers, poets, lovers, most women, youths, the aged, the rich, the covetous, as well as the prodigal, indeed, the lot. By now it has become clear that Burton has chosen for the subjects of his analysis not only the sad and fearful but, indeed, all of humanity.

After the preface, Burton gets right to work, but he proceeds slowly, starting Partition I with the causes of melancholy. It would be hard to improve upon the characterization of Burton’s modus operandi made by another very noted bibliophile, Holbrook Jackson:

Like most interesting men, he is not quite consistent. He preaches the happy mean and does not practise it. His book is always excessive. He overloads every statement. It is the most sententious book ever written, yet it reads trippingly as a novel. It is packed with common sense and uncommon nonsense. He is never tired of apologizing for his long-windedness, and immediately starts exasperating again. He fears that he will go too far in his exposition of love-melancholy, and does. He was never married, but marriage has no mysteries for him.2pxi

First, he lauds man’s excellence and nobility above all creatures of the world. Immediately, however, he bewails the miserable state this magnificent creature finds himself in.

The impulsive cause of these miseries in man, the privation or destruction of God’s image, the cause of death and diseases, of all temporal and eternal punishments, was the sin of our first parent Adam, in eating of the forbidden fruit, by the devil’s instigation and allurement.1p131

Shades of St. Augustine (called St. Austin in our version)—we have not arrived at the Age of Reason quite yet! The instrumental causes (by means of which God’s purposes are carried out) include the stars, heavens, elements, often with diabolical help from magicians, witches, poisons, etc.

Then, having digressed into anatomy (both of body and soul) Burton gives us a neat and precise summary of the bases of health and disease, i.e., the concept of the Four Humors, that theory of Hippocrates, Galen, Celsius, and Avicenna that predominated right through the Middle Ages and Renaissance.

We note:
- Choler—hot, dry, bitter (gall)
- Phlegm—cold and moist (liver)
- Sanguineous—hot and moist (blood)
- Melancholy—cold and dry, thick, black, sour (bile)

Illness is made manifest by imbalances between the humors, and it is the physician’s task to rebalance them correctly; this will then lead back to health. These four humors have some analogy with the four elements and also the four ages of man.

Of course, as an academic, Burton is concerned to define his subject. What, indeed, is melancholy? Here he is:

Of the matter of melancholy, there is much question betwixt Avicenna and Galen, as you may read in Cardan’s Contradictions, Valesius’ Controversies, Montanus, Prosper Calenus, Capivaccius, Bright, Ficinus, that have written either whole tracts, or copiously in it in their several treatises of this subject. “What this humour is, or whence it proceeds, how it is engendered in the body, neither Galen nor any old writer hath sufficiently discussed,” as Jacchius thinks.1p131

Now this is classical Burton; author after author is mentioned, and quoted, every cause is enumerated, every possibility is aired—yet nothing is concluded, nothing is definitive. But the ride gallops on.

We see Burton’s dilemma. Intellectually, he stands “on the cusp” (as they say) of the Age of Reason. His book was published just after The Advancement of Learning (1603–1605) and The Novum Organum (1620) of Francis Bacon and just before A Discourse on Method (1637) of Descartes. Bacon and Descartes urged observation, experience, experiment, and doubt—the essentials of the rational method. In their scientific approach, however, while there is much discussion of newer methods, not enough time had elapsed for extensive fact-finding and experiment. That is yet to come. But, as an English man of the cloth, Burton is also firmly committed to the Christian beliefs in revealed truth. He juggles these two positions—the scientific and the religious—through his Farrago of quotations, and in general, medicine and physic are seen as the servants of divinity. But here, too, the causes of melancholy are complex—they include not only divinity but its opposite, malignity (in the form of witches and magicians) and of course the stars and planets—and old age.

Burton, perhaps surprisingly, even tackles genetics, saying that there is no doubt “but that it [melancholy] is an inherited disease,”1p212 promoted by consanguinity; thus “the Church and commonwealth, human and divine laws, have conspired to avoid hereditary diseases, forbidding such marriages as are
any whit allied.” 1PrL,p212

Having mentioned the above “natural” causes of melancholia (i.e., those “according to nature”) that are hard to avoid, Burton then turns to causes and influences he calls “non-natural” (i.e., not ordained nor innate), which today we might describe as those of “lifestyle.” He mentions six: diet, retention and evacuation, air (climate), exercise, sleeping and waking, and perturbations of the mind (including habits). As lack of proper balance in these areas may lead to or exacerbate melancholy, so diligent attention to their rectification later becomes an integral part of melancholy’s cure.

Burton loves bimodal distinctions, and while he emphasizes the mind/body (or soul/body) dichotomies, he is convinced of their interdependence. He is certain that disturbances of the mind can perturb the body and cause disease, and that disorders of the body can in turn derange the mind. (Do we have here an early recognition of “psychosomatic medicine”?) Quoting his authorities on this matter, however, he cannot come to any conclusion as to which—soul or body—has the dominant influence over the other.

Partition II concerns the means of curing melancholy. Again, both religion and science are called upon, and they interact with each other. Right off, Burton insists that “unlawful cures” (those not divinely sanctioned), are forbidden. Thus, “diabolical” means may not be used to cure diseases—even those diseases produced by diabolical causes (about which Burton had no doubt). He deplores the “common practice of some men to go first to a witch, and then to a physician, if one cannot [help] the other shall.” 1PrL,p7 “Lawful cures” come primarily from God, without (or most often with) the help of the physician—“God’s intermediate ministers . . . We must use our prayer and physic both together.” 1PrL,p9

Immediately there arises the question of whether lawful aid may come via saints and relics—a tricky issue in a Protestant England still hostile to and suspicious of “papists.” Here, our English clergyman is firm and decisive—the answer is “no.” 1PrL, pp11–14

As to the physician’s armamentarium for curing melancholy, Burton is also quite clear. He also can sound rather modern. For him, physic (i.e., medicinals and blood-letting) does not come first. Instead, he recommends detailed attention to those “non-natural” activities previously mentioned, particularly diet, “air,” (he has a long digression on the importance of climate), exercise (thirty pages), and proper sleep. He wants to moderate the passions and discontents of the mind, to curb “immoderate Venus,” and to use the healing powers of music as well as of mirth and merry company.

After all these measures, then comes physic. But Burton is wary of and indeed is ambivalent about pharmaceuticals. In one place he says they come from God, in another, from the devil. In either case he believes that most physicians “prescribe too much physic, and tire out their [patients’] bodies with continual potions, to no purpose.” 1PrL,p17

Partition III is entitled “Love-Melancholy.” It is almost as long as the first section. As it is written by a single (and presumably celibate) curate, (yet one who advocates marriage), one starts reading it and wonders what he will say about love. Most readers will be disappointed, as his earlier instructive and entertaining style becomes more labored and, if possible, more rambling. His analyses deal with desire, seen as a form of melancholy-equals-madness, amorous love (in the most general terms), and jealousy (love turned awry).

The final section is on “Religious Melancholy,” and deals in terms of love of God himself. Such love, practiced in the “right” (i.e., Burton’s) way, is the love of God’s beauty and all his excellences and mercies. This is natural. But there are also devil-inspired beliefs and practices appearing as religion. He calls these superstitions and idolatry. Finally, there is religion “in defect” (i.e., too little religion of any kind)—atheism. He is sorry that only one-sixth of mankind is Christian, and even that fraction includes those of the “wrong” Christianity, mostly Catholics. As to the superstitions, he is harsh in his condemnations, particularly of the Jews, whose beliefs he calls “mad, . . . absurd, . . . ridiculous, impossible, incredible.” 1Prill, p351 Without any arguments to the contrary. As to the Jews themselves, he presumes that “no nation under heaven (sic) can be more sottish, ignorant, blind, superstitious, wilful, obstinate, and peevish.” 1Prill, p361 One is led to wonder about Burton’s acquaintance with Jews and Judaism. After all, they had been expelled from England in 1306 and had not yet been allowed to return in any numbers. Those who were in England may well have hidden their religious identification and practices. Burton treats the Muslim faith and Asian religions in the same way.

At the very end, Burton gives what he thinks is the essence of the “cure” for melancholy. After all the myriad pages and quotations, it is indeed brief:

Be not solitary, be not idle. 1Prill, p432

Perhaps he was tired. Perhaps he is also being subtle, and there is more than just a kernel of truth here. Maybe he means that the “cure” is in the search, which, like the book itself, never seems to end. So . . . keep on . . . reading!

What, then was the fate of this quixotic magnum opus? Was the public interested? Indeed it was; it sold quickly in the quarto format. In fact, it sold so well that a second edition was printed in 1624, this time in the larger folio format. There were first a total of five editions, each larger than the one before it. He had even revised it for a sixth edition, but this was not printed until after he died. Thus, the book seemed never to be finished.

What kind of a book (or books) was this best-seller? In spite of claims to the contrary (see later), it was not a textbook of medicine. It was written by an English layman (who was not a physician, in spite of his “inclination”), and for English
lay readers. It put forth opinions, but did not choose among them. Indeed, it was more of an encyclopedia of theories and practices.

For whom was it written (and presumably, by whom was it bought)? We must of course recognize that Burton was himself a melancholic. For instance, early on he says “I write of melancholy by being busy to avoid melancholy.” Thus, he is writing for himself! Furthermore, in writing of melancholy, he was writing about himself. But, in spite of the size of this book about him, we never feel that we know him as well as we come to know Montaigne from his Essays. Burton is reserved, at times almost hidden behind his enormous erudition. We know that he was unhappy with the university system where he lived and worked, unhappy with the lot of scholars and dissatisfied by the unrealized promises of patrons. He was eccentric in his melancholy, but could be rescued to merriment by companions and by his books and quotations (he must have had a prodigious memory, especially in Latin.)

And, as he considers that everyone is melancholic, he is thus writing for everyone. So he hopes that his book, although not a textbook of medicine nor a book of sermons, will help the whole world. He states at the beginning, “I doubt not but that these following lines [over a thousand pages of them], when they shall be recited, or hereafter read, will drive away melancholy...”

Reader, heal thyself.

Burton died in 1640. He is buried in a chapel in Christ Church, under a bust effigy, and with an epitaph that he wrote in Latin. It does not include his own name but harks back to the frontispiece of The Anatomy, reading (in translation)

Here lies DEMOCRITUS junior
To whom Melancholy gave life and death

Burton was indeed an original. As a master of books, he endeared himself to two other unique bookmen—Samuel Johnson and William Osler. Johnson himself was prone to melancholy, sometimes rather profoundly so, so his interest in Burton is understandable. He told Boswell that The Anatomy of Melancholy was the only book that ever took him out of bed two hours sooner than he wished to rise.

William Osler and Robert Burton

Osler, (1849–1919), was even more of a Burton devotee than Johnson. He was an avid, almost fanatical, collector of books and letters on the history of medicine and of science. He pursued this avocation wherever he was—at McGill University (his alma mater), the University of Pennsylvania, Johns Hopkins, and finally at Oxford. Rare inscribed copies and first editions were always on his mind (and on his wallet as well). He patronized used bookstores and auction rooms. He was so keen on this subject that he amassed what may have been the largest and greatest private collection of its time, now the centerpiece of the Osler Library at McGill. The catalogue of this library, called Bibliotheca Osleriana, is a massive volume first published in 1929, ten years after Osler’s death. It is annotated in detail and lists 7783 items, including books (many of them multivolumed), papers, letters, manuscripts, incunabula and so forth.

Osler’s connections to Burton and The Anatomy were many, and these can be seen best in the landscape of books, libraries, and the Bibliotheca. When Osler arrived at Oxford in 1905 as the newly elected Regius Professor of Medicine, he found that he automatically became a curator of the Bodleian Library, where he knew that Burton had spent many hours of his life. The Bodleian also housed the large collection of
Burton’s personal library. The tie to Burton was even closer. Although the Oslers lived “in town” in Oxford, Osler himself also had study rooms in Christ Church—Burton’s own lodging for forty years. Although nobody knew for certain exactly which rooms Burton had lived in, Osler mentioned several times the delightful possibility that he was occupying real estate that had been inhabited by Burton himself.

We are not surprised that the Bibliotheca tells us that Osler had a copy of all the editions of The Anatomy published in Burton’s lifetime, and the posthumous sixth edition as well. We would expect nothing less. But one can easily imagine what Osler must have felt when he got his copy of the first edition. In that edition, Burton’s name indeed appears, although only at the end. There it is printed: “Robert Burton. From my Studio in Christ-Church, Oxon. Decemb. 5, 1620.” (Burton appears on the frontispiece as the real author only in later editions.) Osler must have been thrilled to know that The Anatomy may have been ended (if not completed) perhaps in the very room that Osler himself was working and writing in almost 300 years later.

The Bibliotheca is organized in sections, the first two presenting original scientific works—Galileo, Harvey, Galen, etc. Now Osler, in a famous passage, had called Burton’s Anatomy a medical treatise, the greatest indeed written by a layman. He may have had misgivings about this statement because The Anatomy does not appear with the other medical texts in these sections but in the third section, “Litteraria,” which is described as “the literary works written by medical men, and books dealing in a general way with doctors and the profession.” And so it is.

Outside of the Bibliotheca, Osler’s formal tribute to Burton was a set of three essays, written and read in various venues, between 1909 and 1914, and printed together and called Robert Burton, the Man, His Book and His Library. In it, Osler writes glowingly of a man and a work he greatly admired, and he did so with his usual mix of enthusiasm, skill in writing, and scholarship.

No book of any language presents such a stage of moving pictures—kings and queens in their greatness and in their glory, in their madness and in their despair; generals and conquerors with their ambitions and their activities; the princes of the Church in their pride and in their shame; philosophers of all ages, now rejoicing in the power of intellect, and again groveling before the idols of the tribe, the heroes of the race who have fought the battle of the oppressed in all lands . . . all are there. (Do we detect some infection in Osler caused by the literary virus of Burton himself?)

As one would expect when one bibliophile is considering another, Osler delves into curiosities such as marginal annotations and details of the various editions of The Anatomy.

Osler died in Oxford on December 29, 1919, age 70. On
New Year’s Day, a service was held for him in Christ Church. Let me close with the ending words by Harvey Cushing in his Life of Sir William Osler. (Cushing was not only Osler’s principal biographer but his disciple and friend.) The service was over.

So they—the living—left him overnight; alone in the Lady Chapel . . . with the quaint effigy of his beloved Robert Burton near by—lying in the scarlet gown of Oxford, his bier covered with a plain velvet pall on which lay a single sheaf of lilies.96686

References

Additional readings

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The case for integrating public health and medical education and how to do it

Jonathan Ryan Barry, MSPH
The case for integrating public health and medical education and how to do it

The author is a member of the Class of 2013 at the University of Tennessee College of Medicine. This essay won honorable mention in the 2011 ΑΩΑ Helen H. Glaser Student Essay Competition.

Here’s a typical question among medical students: “What specialty are you interested in?” The most common replies—internal medicine, emergency medicine, or pediatrics—may draw nods of approval, but my response, preventive medicine, many times provokes a questioning look from my peers.

To be honest I, too, would probably know little about preventive medicine—and would most likely not be pursuing it as my career—had I not first deferred admission to medical school and earned a Master of Science in Public Health (MSPH). Years ago, an eighth-grade hospital tour unexpectedly piqued my interest in public health. At the end of the tour, our guide, a public relations employee, anxiously took questions and I asked why the hospital’s new cardiac care center was needed. Slightly perplexed, he responded that the growing rate of cardiovascular disease in the area created the need. I nodded and he smiled back, presumably confident that he had satisfied my curiosity. The truth is, however, he only fueled it further. Sure, perhaps the current clinical demand justified the new cardiac center, but what underlying factors caused this need? Asking why has ultimately helped me to shape my future and prompted me to lobby for a new, more public health-centric direction in American medical education.

Let’s step back for a moment from the modern dogma that medical advances will always lead us forward. It’s true that today we live longer than ever before thanks to technological, surgical, and pharmacological advances. I fear, though, that we are reaching a point of diminishing returns. Even with our many advances, we still face many ubiquitous threats: rising levels of obesity, adolescent type II diabetes, and bacterial drug resistance, among others. These threats are best managed by effective public health surveillance methods and treatment approaches. Prevention would be better!

Modern medical education deemphasizes the traditional public health and preventive medicine curriculum, downplaying the role of public health and its ability to improve health care. More than ninety-five percent of current medical education curriculum is devoted to diagnosis and treatment of diseases in individual patients (versus populations), and less than half a percent of faculty are trained in public health or preventive medicine. Perhaps because of this, data show that our public health infrastructure is growing weaker. I argue that to strengthen this weakening infrastructure we must fully integrate these separate educational disciplines into joint medicine-public health programs for all medical students.

The American public health workforce is aging. In 2003, the Association of State and Territorial Health Officials (ASTHO) conducted the State Public Health Workforce Survey and concluded that twenty-four percent of public health workers were then eligible for retirement. A follow-up survey, completed in 2007, reported that the percentage of the public health workforce eligible to retire by 2012 had increased to twenty-nine percent. In addition, a similar survey conducted by the National Association of County and City Health Officials reported that vulnerable health departments (i.e., those serving populations fewer than 25,000) reported the largest percentages of retirement-eligible staff. Moreover, ASTHO notes that by 2012 over fifty percent of some state health agency workforces will be eligible to retire.

Concurrently, the total number of public health physicians and preventive medicine residency positions is decreasing. From 1970 to the early 2000s, the number of public health physicians has dropped from 2.3 to 0.8 percent. In addition, the number of preventive medicine residency programs has decreased from ninety in 1999 to seventy-five in 2009, and the total preventive medicine residency positions declined by twenty percent (434 versus 348) between 1996 and 2008. As veteran public health workers exit and fewer new graduates enter our nation’s public health system, leadership deteriorates. Eleven states have no appointed physician leaders in their entire local public health systems, and twenty-nine states lack physician state health directors or commissioners. Not only is physician leadership in public health departments declining, but this decline also correlates with less effective public health responses. In 1997, twenty-three percent of local health agencies were directed by physicians, with only eight percent led by physicians who held MPH degrees or were American College of Preventive Medicine fellows. A 2003 study by Dr. Laura Kahn, research scholar with the Program on Science and Global Security at the Woodrow Wilson School of Public and International Affairs of Princeton University, on the leadership practices in American public health departments concluded that departments lacking physician leaders handled public health outbreaks and other medical emergencies less well than those directed by physicians.

Public health medical education deficiencies

I analyzed forty areas of medical education instruction from thirteen of the latest Association of American Medical Colleges (AAMC) Graduation Questionnaires (1998 through 2010). In these annual questionnaires, students rated their medical education in specific areas as inadequate, appropriate, or excessive. Using the interquartile range to develop a four-letter grading scale, I then compared these educational areas and found several deficiencies.

Graduating medical students rated instruction in many areas vital to improving the nation’s public health infrastructure as inadequate. Of twenty-one educational areas related to
<table>
<thead>
<tr>
<th>Area of Instruction</th>
<th>Type of Skill</th>
<th>Mean Percent</th>
<th>Grade</th>
<th>Area of Instruction</th>
<th>Type of Skill</th>
<th>Mean Percent</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient interviewing skills</td>
<td>M</td>
<td>2.32</td>
<td>A</td>
<td>Epidemiology</td>
<td>P</td>
<td>22.20</td>
<td>C</td>
</tr>
<tr>
<td>Care of hospitalized patients</td>
<td>M</td>
<td>2.59</td>
<td>A</td>
<td>Culturally appropriate care for diverse populations</td>
<td>P</td>
<td>22.20</td>
<td>C</td>
</tr>
<tr>
<td>Physician-patient relationships/communication skills</td>
<td>M</td>
<td>4.59</td>
<td>A</td>
<td>Health determinants</td>
<td>P</td>
<td>22.55</td>
<td>C</td>
</tr>
<tr>
<td>Professionalism</td>
<td>M</td>
<td>4.65</td>
<td>A</td>
<td>Community medicine</td>
<td>P</td>
<td>23.31</td>
<td>C</td>
</tr>
<tr>
<td>Diagnosis of disease</td>
<td>M</td>
<td>5.22</td>
<td>A</td>
<td>Health issues for underserved populations/health care disparities</td>
<td>P</td>
<td>24.13</td>
<td>C</td>
</tr>
<tr>
<td>Problem solving</td>
<td>M</td>
<td>6.60</td>
<td>A</td>
<td>Biostatistics</td>
<td>P</td>
<td>27.51</td>
<td>C</td>
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<tr>
<td>Patient confidentiality and privacy/HIPAA</td>
<td>M</td>
<td>7.43</td>
<td>A</td>
<td>Public health</td>
<td>P</td>
<td>28.73</td>
<td>C</td>
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<tr>
<td>Clinical reasoning</td>
<td>M</td>
<td>7.80</td>
<td>A</td>
<td>Health surveillance strategies</td>
<td>P</td>
<td>34.02</td>
<td>C</td>
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<tr>
<td>Management of disease</td>
<td>M</td>
<td>8.46</td>
<td>A</td>
<td>Role of community health and social service agencies</td>
<td>P</td>
<td>35.22</td>
<td>C</td>
</tr>
<tr>
<td>Drug and alcohol abuse</td>
<td>M</td>
<td>9.55</td>
<td>A</td>
<td>Environmental health</td>
<td>P</td>
<td>40.88</td>
<td>C</td>
</tr>
<tr>
<td>Ethical decision making</td>
<td>M</td>
<td>9.96</td>
<td>B</td>
<td>Health care quality improvement/assurance</td>
<td>P</td>
<td>41.18</td>
<td>F</td>
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<tr>
<td>Health maintenance</td>
<td>M</td>
<td>10.08</td>
<td>B</td>
<td>Health care systems</td>
<td>P</td>
<td>42.10</td>
<td>F</td>
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<tr>
<td>Physical examination skills</td>
<td>M</td>
<td>11.45</td>
<td>B</td>
<td>Global health issues</td>
<td>P</td>
<td>42.90</td>
<td>F</td>
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<tr>
<td>Care of ambulatory patients</td>
<td>M</td>
<td>11.48</td>
<td>B</td>
<td>Complementary and alternative medicine</td>
<td>P</td>
<td>44.66</td>
<td>F</td>
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<tr>
<td>Interpretation of laboratory results</td>
<td>M</td>
<td>12.48</td>
<td>B</td>
<td>Health policy</td>
<td>P</td>
<td>45.22</td>
<td>F</td>
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<tr>
<td>Biomedical ethics</td>
<td>M</td>
<td>12.96</td>
<td>B</td>
<td>Biological, chemical, and natural disaster management</td>
<td>P</td>
<td>46.96</td>
<td>F</td>
</tr>
<tr>
<td>Evidence-based medicine in general</td>
<td>M</td>
<td>13.09</td>
<td>B</td>
<td>Occupational medicine</td>
<td>P</td>
<td>47.37</td>
<td>F</td>
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<tr>
<td>Disease prevention</td>
<td>P</td>
<td>15.58</td>
<td>B</td>
<td>Health services financing</td>
<td>P</td>
<td>52.93</td>
<td>F</td>
</tr>
<tr>
<td>Physician-physician communication skills</td>
<td>M</td>
<td>16.79</td>
<td>B</td>
<td>Managed care</td>
<td>P</td>
<td>55.97</td>
<td>F</td>
</tr>
<tr>
<td>Continuity of care</td>
<td>M</td>
<td>19.85</td>
<td>B</td>
<td>Medical economics</td>
<td>P</td>
<td>64.23</td>
<td>F</td>
</tr>
</tbody>
</table>

The forty areas of instruction are taken from the practice of medicine areas in the AAMC Graduation Questionnaire for years 1998 through 2010. The mean percentage is the average percentage of medical students reporting that instruction in a particular area is “inadequate.” The grade is based on a four-letter grading scale as follows: between 0 and 9.76 = A; between 9.76 and 21.03 = B; between 21.03 and 41.03 = C; greater than 41.03 = F. M = Medical practice skill, P = public health practice skill.

Public health, ten achieved a grade of C (“satisfactory instruction”) and ten earned a grade of F (“incompetent instruction”). Only one public health practice area earned a B (“good instruction”) and none merited an A. Conversely, of nineteen medical practice skills analyzed, none earned a grade lower than B, and there is an almost equal number of A’s (10) and B’s (9).

The average mean percentage of students who rated medical core practice instruction as inadequate was 93.35 percent versus 37.14 percent who rated public health core practice area instruction as inadequate.

Data from both the Council on Graduate Medical Education (COGME) and the Institute of Medicine (IOM) further highlight this lack of instruction. In its 2010 “Physician Education for a Changing Health Care Environment,” COGME details a need to review curriculum content and learning processes in modern medical schools, and recommends that medical schools emphasize public health-related disciplines, including epidemiology and population-based approaches, health care policy and systems, and disease prevention and wellness.14 The IOM’s Committee on Training Physicians for Public Health Careers recently estimated that the United States faces a 10,000-person shortage in the number of public health physicians.15

What to do?

Dr. Laura Kahn wrote in a 2003 paper in Health Affairs that “The nation’s schools of medicine should collaborate with schools of public health to provide high-quality courses relevant to macro medicine practice, so that all medical school graduates can be effective members of public-private efforts.”13 I suggest taking Dr. Kahn’s recommendation even farther: we must fully integrate public health education with medical school curriculum for all graduating medical students. Today, only 55.8 percent of all medical schools offer joint MD/MPH or DO/MPH degrees. A national public health curriculum would give all medical students a solid education in public health.16,17

Key stakeholders, including the AAMC, Association of Schools of Public Health, and American Association of Colleges of Osteopathic Medicine, could develop and mount
The case for integrating public health and medical education and how to do it

About Jonathan Ryan Barry
I graduated from Wake Forest University in 2007, where I studied biology and health policy and administration. Deferring medical school, I then matriculated at the London School of Hygiene & Tropical Medicine where I earned my MSPH, specializing in health promotion and management. While in London, I was financially supported by a Rotary International Ambassadorial Scholarship, and it was my pleasure to speak at eighty Rotary Clubs in the United States and England. In July 2008, I was commissioned an ensign in the U.S. Navy Reserve and accepted into the Health Professions Scholarship Program. I am a third-year medical student at the University of Tennessee College of Medicine. I would like to serve as a Navy preventive medicine physician. I strongly believe that preventive medicine is awaiting a fresh renaissance, and I want to contribute my talents to increasing our collective health through innovation and personal responsibility.

An educational innovation competition to create an online national MPH curriculum for all American medical students. Schools would compete in submitting their own existing in-house MPH-related coursework, which could serve as the basis for a national MPH curriculum for all medical students.

The educational innovation competition would be used to design and implement the proposed national MPH curriculum:
1. Stakeholders/organizers would be identified and brought on board, and a steering committee will delineate the focus areas for the curriculum.
2. The committee would announce the list of public health focus areas and recruit schools of public health and schools of medicine to submit lesson plans, course blueprints, and examination questions for specific courses within a particular focus area.
3. The committee would evaluate the submitted lesson plans and other documents, and select the ones that will compose the topical courses within each public health focus area.
4. The steering committee would work with a panel of educators and a technology partner to develop and implement secure, online portals to provide access to course materials.
5. Medical students pilot the courses.
6. All medical students begin taking classes.

The MPH academic year
Medical students would begin their MPH year as the first year of a new nationwide five-year joint medicine-public health program. I propose six academic focus areas: public policy and governance, environmental health, health services management, health services research, health promotion, and general public health. Each area will consist of modular coursework; several courses can be used to fulfill requirements for different focus areas. The modular design would not only accelerate the curriculum’s development but would also decrease overall operating costs and curriculum administration.

First-semester modules would serve as essential (or core) courses for the MPH while term two and three modules would be elective courses chosen by medical students depending on which focus area they choose to pursue. These online courses would integrate videos, computer presentations, and interesting case studies. Review quizzes would be available for students to test their knowledge, and formal assessments for each course would be completed via secure, online portals. Coincidentally, this online teaching strategy will not only serve as an economic approach in which to develop and administer the MPH curriculum, but it will also support a COGME recommendation in which medical schools should utilize the internet and distance learning technology in the educational process.14

An overall curriculum change integrating public health and medical education will reinforce the American public health infrastructure and provide trained physicians for public health leadership positions. It may also increase the number of medical students who choose to enter primary care, which may also improve access to primary care. This will not only reduce reliance on specialty care but may also improve the efficiency and quality of health care delivery.21

Regardless of specialty, medicine-public health students should be able to select a concentration from one of the focus areas to complement their personal interests and career objectives. New focus areas could be added to keep up with national health trends and medical student interests. Using existing schools of medicine and public health to jointly develop the MPH curriculum should result in high-quality courses and class materials at low costs and administrative overhead.

The Committee on Educating Public Health Professionals for the 21st Century (CEPHP) recommends that “serious efforts be undertaken by academic health centers to provide joint classes and clinical training in public health and medicine” and that “a significant proportion of medical school graduates should be fully trained in the ecological approach to public health at the MPH level.”22 The CEPHP further notes that “medical schools should partner with accredited programs in public health to provide for public health education.”22 An educational innovation competition to assemble medicine-public health curriculum would uniquely accomplish that task.

The recent passage of the Patient Protection and Affordable Care Act will likely advance substantial changes to the American medical care landscape. One of the most significant yet under-emphasized aspects of the Act is the creation of the National Prevention, Health Promotion and Public Health
Council. President Obama has charged the Council, chaired by the U.S. Surgeon General, to develop a National Prevention and Health Promotion Strategy. This presents a tremendous opportunity to highlight prevention and wellness, and perhaps this renewed focus on preventive services will help to begin a national dialogue on public health education.

When I think about my eighth-grade hospital tour, I feel that my asking “Why?” has not only shaped me into the medical-public health student that I am today but also into the medical-public health physician that I will be tomorrow. Asking “Why?” has broadened my scope of thinking about health, and I look forward to the patients and populations that I will serve in the future. I hope my argument has piqued your interest and that now you’ll find yourself asking “Why not?” Why not integrate public health and medical education? The need is clear, the consensus is there, and the national focus on prevention is growing. Together let’s ponder “Why not?” and make it happen.

References

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From the Book of Treatment

And the Chemotherapy came to him
and said, Give Me your fields, your flowing fields
of hair, from atop your head to your toes
every single follicle—all of them
give them to Me, your Chemotherapy
so that you will feel naked although clothed.

And give Me your flock, your bountiful flock
of mucosal epithelial cells
the cells by which you consume and digest
give them to Me, your Chemotherapy
so that you will be a leper to food.

And give Me your soldiers, your brave soldiers
of your immune system, your white blood cells
from the tribe Neutrophil and Lymphocyte
give them to Me, your Chemotherapy
so that you will know how fragile you are.

Give these, your most prized possessions, to Me
amid incense of rubbing alcohol
upon an altar of reclining chair.

In return, I shall smite your enemy
the cancer, cause of suffering and death.
I, and no scalpel; I, and no x-ray.
I will poison the primary tumor
and his children and his children’s children
throughout your flesh, in every hiding place.
Their cytoplasm will run in your veins!
I will destroy them all, without mercy
so that you will know bad happens to good
in order for worse to happen to bad.

So did the Chemotherapy declare.
And the follow-up CT scan was good.

Adam Possner, MD

Dr. Possner (AΩA, University of Michigan, 2006) is assistant profes-
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Illustration by Jim McGuinness.
Individuals who have contributed substantially to medicine and fields related to medicine, but who are not eligible for membership in AΩA as graduates of a medical school with an AΩA chapter or as a faculty member of a medical school maintaining an active AΩA chapter, may be nominated for honorary membership by any active member of the society. In 2011 Alpha Omega Alpha’s board of directors extended invitations to the following distinguished physicians and scientists.

Thomas Cech, PhD
Dr. Cech received a BA in Chemistry from Grinnell College and a PhD in Chemistry from the University of California, Berkeley in 1975. He is currently the Director of the Colorado Initiative in Molecular Biotechnology and Distinguished Professor at the University of Colorado Boulder. He won the Nobel Prize in Chemistry in 1989 for discovering that ribonucleic acid molecules serve as enzymes or ribozymes in addition to their role in producing proteins. He has published extensively in chemistry and biology. He is a member of the American Academy of Arts and Sciences, the Institute of Medicine, and the National Academy of Sciences. He was awarded the National Medal of Science in 1995, the Lasker Basic Medical Research Award in 1988, and many other honors and awards. He has been a Howard Hughes Medical Institute investigator since 1988 and served with distinction as the HHMI President from 2000 to 2009. He is on the Board of Trustees for Grinnell College. He has excelled as a scientist and his discoveries and work have had a major impact on medicine and science. He has been an academic and scientific leader throughout his distinguished career.

Martin George Tauber, MD
Dr. Tauber is a Professor of Medicine at the University of Bern. He received his MD from the University of Zurich, Switzerland, and specialized in Internal Medicine and Infectious Diseases. He has served as the co-director of the Institute for Infectious Diseases, University of Bern, as Dean of the Medical Faculty, University of Bern, and as Vice-Rector for Research and Rector-elect of the University of Bern. He has published extensively regarding infections of the meninges and brain and treatment of CNS infections. He is on the editorial board for the European Journal of Clinical Microbiology and Infectious Diseases. He has also published regarding medical education. He has an international reputation as an investigator in infectious diseases and as a distinguished educator.
The physician at the movies

Peter E. Dans, MD

Tinker Tailor Soldier Spy
Starring Gary Oldman, Mark Strong, Colin Firth, and Tom Hardy.
Directed by Tomas Alfredson. Rated R. Running time 130 minutes.

Most readers are probably familiar with John Le Carre who wrote the book on which this movie is based. Le Carre (aka David Cornwell) was a member of the British foreign service from 1959 to 1964. He has written twenty-one novels, the best-known of which is The Spy Who Came in from the Cold. The latter was made into a movie, as were seven others including The Constant Gardener, The Russia House, and The Little Drummer Girl. His best books concern the intrigues inside the British intelligence service MI-6 during the Cold War, when MI-6 was sparring with the intelligence services of the Soviet Union, East Germany, and even the United States.

The movie principally deals with the existence within MI-6 of a highly placed mole or double agent turned by the Russian spymaster Karla, and the attempt to discover his identity. Not having read the book nor watched the acclaimed BBC miniseries, I had some difficulty getting into the movie. There are many threads to the story, which the director introduces in fragments before hopping to another one in flashbacks. In addition, the central character, George Smiley (Gary Oldman), says very little for the first twenty minutes of the film, and, when he does, he is very laconic. I finally did figure out what was going on and came away accepting that it was a thinking person’s movie and worth seeing, especially given the dearth of films that tell stories and engage the viewer. In addition, it led me, as I will note later, to sample the various other forms in which the story has been told.

The film opens in 1973 with the Cold War in full force. Britain’s Secret Service MI-6, codenamed “The Circus” for its fictional location in a nondescript building on Cambridge Circus, has been suffering reverses, with agents in foreign countries being exposed, and secrets being leaked to Moscow and other enemies. The spymaster nicknamed Control (John Hurt) suspects a mole at MI-6’s highest level, in the person of one of his top five underlings. Told that there is a Hungarian general who wishes to defect and who knows the identity of the mole, he sends for agent Jim Prideaux (Mark Strong), who is familiar with Hungary and who has been away from the Circus during the period when the mole is suspected of having operated. Prideaux is instructed to send back a cable after meeting with the general, identifying the mole using one of five code names assigned to them. The assignment is drawn from a popular English children's fortune-telling rhyme used when presumably counting cherry stones, waistcoat buttons, daisy petals or the seeds of timothy grass: Tinker, Percy Alleline (Toby Jones); Tailor, Bill Haydon (Colin Firth); Soldier, Roy Bland (Ciaran Hinds); Sailor; Rich Man; Poor Man, Toby Esterhase (David Dencil); Beggarman, George Smiley; Thief. He skips Sailor because it is too close to Tailor and Rich Man because agent Esterhase is always complaining of being underappreciated, thus Poor Man.

The mission goes badly and Prideaux is shot twice in the back. Although originally thought to be dead, he is later tortured by Russian superspy Karla in an attempt to reveal the Hungarian spy network and to determine who else in the Circus knows of his operation. Prideaux will reappear in England teaching in a Boy’s Prep School (one of the many enigmas in the story). London is notified about the capture of a British spy and the mission is hastily covered up. Control is replaced as being over the hill and because his suspicions are considered outlandish, and his trusted lieutenant George Smiley is sacked. The rest of the film deals with Smiley being rehired by the undersecretary who supervises MI-6 when it becomes clear through rogue agent Ricki Tarr (Tom Hardy) that the mole does exist. Smiley is assigned the job of ferreting out the mole with the help of Peter Guillam (Benedict

From left, Gary Oldman and John Hurt in Tinker Tailor Soldier Spy (2011). Focus Features/Photofest.
Cumberbatch), a loyal lieutenant whom Smiley had recruited into the service.

Mix in another thread with the Istanbul-based Tarr falling in love with a Russian spy who knows the mole's name but will only reveal it to Percy Alleline, the new head of the Circus. Tarr cables the information to London, setting into motion another betrayal (the real theme of the film). Smiley methodically and surreptitiously works to discover the traitor. Another thread involves the existence of an operation kept secret outside the Circus called "Witchcraft" and controlled by the mole who passes on to England a mixture of low level accurate information and bogus disinformation while funneling secrets to Merlin, the code name of a Russian Embassy operative who all but the mole consider to have been turned, but is loyal to Moscow.

The film is full of lots of walking to and fro, which I would have preferred to have been replaced by making the story more transparent. There is one scene with a plane in the background that I found difficult to understand, as Smiley and Guillam grill Esterhase who is not believed to be the mole. The miniseries handled that scene much better.

In all the presentations of the story, a mostly unseen character is often mentioned, namely George Smiley’s estranged wife, with whom he is still in love despite the fact that she notoriously sleeps around. It apparently fuels feelings of inadequacy as a husband in Smiley and explains his withdrawn nature. A lighter she gave him also figures in the story when Karla, whom Smiley had been assigned to turn early in his career, is allowed to keep it before returning to Moscow. The most incongruous scene involved a drunken Christmas party that the director inserted using as background music “La Mer,” sung by Julio Iglesias. A particular favorite of mine written during World War II by Charles Trenet, his classic version of the song was used to great effect and much more appropriately in the film Mr. Bean's Holiday. The director liked it too, and decided that the party conveyed all that MI-6 was not, fun and camaraderie.

Since I am addicted these days to audiobooks, I decided to learn more about the story by trying to find one, but could only locate a BBC radio adaptation that ran about three hours with repetitive credits, somewhat longer than the movie but actually quite similar to it in presentation. Then I watched the 1979 miniseries that ran on three discs of 108 minutes each. This much more robust presentation of the story is the most satisfying audiovisual rendition of the book, not just because it stars Alec Guinness as George Smiley, but because the extra time allows the story to be better-paced and more comprehensible. If you have the time, I recommend watching it. Still, Gary Oldman, who has been nominated for an Academy Award for Best Actor, does a great job of channeling Alec Guinness and the film is certainly worth a rental. If you want to view a more lighthearted and entertaining movie about spies, I strongly recommend Hopscotch, starring Walter Matthau and Glenda Jackson. It’s a hoot.

Addendum: In an excellent twenty-eight-minute 2002
The physician at the movies

interview that is part of the miniseries on DVD, Le Carre has some fascinating insights into Alec Guinness's approach to acting (look for him doing the simple action of putting on a glove or walking in a meadow). He also discusses how his personal life led to a career both in intelligence work and writing, as well as how the story has historic resonance. The existence of highly placed double agents was known even before the Soviet Union imploded and KGB files were made public. Agents didn't always report that they suspected that someone was a mole because they could monitor them and for fear that the press would get wind of it; they were less worried of it being discovered by Moscow than by the press.

Le Carre also comments on the changing nature of the class structure in England that had contributed to a greater loyalty to one's class. The intelligence service was mostly comprised of people who had studied at Eton, Oxford, and Cambridge and were in the upper tier of society. They started out very idealistic but often became cynical, especially as the British Empire disintegrated after World War II, taking with it the whole idea of Britannia ruling the waves, the sun never setting on the British Empire, and doing things for King and Country. Indeed, in the film, the mole mentions this disillusionment after his discovery as being a factor in why he turned traitor.

References
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Moneyball

Starring Brad Pitt, Jonah Hill, Philip Seymour Hoffman, Kerris Dorsey and Robin Wright.


Moneyball is the most entertaining film I’ve seen in a long time. Based on the book by Michael Lewis, the story centers on the innovations introduced by Oakland A's general manager Billy Beane in constructing his baseball team. He took a team that had the second lowest payroll and whose clubhouse Lewis described as “the cheapest and least charming real estate in professional baseball” and melded it into one that won twenty consecutive games on its way to 103 wins. You don’t have to be a sports fan to enjoy the film, largely due to the crackling dialogue and the Academy Award nominated performance of Brad Pitt. He is in almost every scene and his interactions with the players, scouts, executives, manager, and, most especially, Paul Brand (Jonah Hill), the Yale-trained economist he hires as a special assistant, are pitch-perfect. The real assistant whose ideas Beane took a chance on implementing was Paul De Podesta, actually a Harvard graduate whose persona was wonderfully fictionalized. Thinking he was being portrayed too much as a nerd, he asked that his name not be used, but he helped with the film. Hill, who also received an Academy Award nomination, plays him with great timing, facial expressions, and comebacks that make the scenes with him and Pitt a joy to watch. Their remarkably collaborative interaction generates humor while moving the story along.

The story is set in 2002, a time when baseball fans and sports media, especially ESPN, were obsessed with home runs and the distance they traveled, as well as the signing of free-agent players with big salaries. In charge of a small-market team, Beane began applying what has come to be called sabermetrics, developed by William James, a more mundane statistical analysis of players’ contributions to winning baseball. It put a lot of emphasis on on-base percentage, assuming that the more you got on base the more likely you were to be batted in. It also encouraged players to take more pitches, not only to see the starters’ entire repertoire and possibly get a better pitch to hit, but also to increase the pitch count and thus get into the bullpen sooner. Beane made enemies of veteran scouts and executives by downgrading the role in player evaluation of a scout’s intuition and a player’s physique. As he said, “We’re not selling jeans.” In addition to relying on objective criteria, not just eyeballs, he emphasized dedication to the team concept rather than on individual prima donna attitudes.

One might think that a film lauding an efficiency expert and statistics would be boring, but this one isn’t. Like the original 1950 version of Cheaper by the Dozen with Clifton Webb, also about an efficiency expert, humor and humanity are woven into the film. This is seen not just in the interactions with the manager Art Howe (Philip Seymour Hoffman), players, scouts, and Brand, but also in the interweaving of Beane’s personal story. Growing up in a middle-class suburban San Diego neighborhood, he was a heavily recruited high school football and baseball player and was offered a scholarship at Stanford and a tryout with the New York Mets. Deciding to join the Mets in 1980 and to forgo college, his dreams of stardom were never fulfilled, as is shown in flashbacks. Thus, this job offered him an opportunity for redemption and recognition in the baseball world. The most touching parts of the film are those scenes that focus on the relationship between the divorced Beane and his daughter Casey (Kerris Dorsey), and in part with his ex-wife Sharon (Robin Wright). The film ends somewhat on a high note with the A's coming back to win a playoff game, while he connects in a very poignant way with his daughter. Still, the director makes it clear that his was not a storybook ending.

Like many Hollywood biopics, which are primarily entertainment and not documentaries meant to convey historic truths, this one has had its detractors. First of all, they point out that it doesn’t give credit to the pitching, which in the end really wins world championships. Having three bona
fide number one pitchers on the staff played as large a role or maybe more than the statistical methods in reversing the fortunes of the team. Second, Art Howe, who is thin and laid-back as opposed to the paunchy Hoffman who plays him as uniformly stubborn and negative, is livid about his portrayal. Howe is widely recognized as a brilliant manager and the A’s wouldn’t have won 103 games had he not been creative.

Third, though his methods were innovative, Beane was not the first to use the new statistics and he has never won a world championship. Indeed he did have an opportunity to move to the Red Sox to use his sabermetrics but refused the offer; the Red Sox made Theo Epstein the general manager. Epstein hired William James, and using the same methods with more money at his disposal, he was able to win a World Series in 2004 for the first time since 1918, ending the curse of the Bambino. The Red Sox had never won a World Series since trading Babe Ruth to the Yankees for $100,000 at the end of the 1919 season, a move that has gone down as the worst trade in baseball history. Finally, it’s worth noting that a large part of the success of sabermetrics was due to the revolution in computers that made statistical analysis commonplace to the point where it’s gotten ridiculous, as one can see in the Wall Street Journal’s section on sports.5

References

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Hail to thee, my gizmo smart
That sends live current through my heart.
My sinus node has lost its vigor
And needs adjustment of its trigger.
Your electric mind has figured out
Proper rhythms to give the clout
For contracting pumps both left and right
Rushing blood to proper sites.
Needed oxygen to the brain
For thoughts and conscience to maintain.
Pacer, you mean all to me—
Whether to be or not to be.

Herbert S. Harned, Jr., MD

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Illustration by Jim McGuinness
The intense, focused eyes of a surgeon, in a scrub cap with mask dangling from his neck, stared straight through me as I saw the cover of the current issue of *Time* Magazine in the spring of 1957—“Inside the Heart: Newest Advances in Surgery.” Having just started a premedical curriculum, this image and its accompanying article convinced me that my primary interest in medical school would be heart disease. Charles Bailey of the Hahnemann Hospital in Philadelphia was the surgeon, and this particular cover is reproduced in David K. C. Cooper’s *Open Heart: The Radical Surgeons Who Revolutionized Medicine*.

Dr. Cooper, a cardiac surgeon himself, bases his account on personal interviews with many of the pioneer surgeons still living when he began writing the book in 1987. Otherwise he interviewed associates, coming away with a history that is strongly personal—a significant advantage in that medicine in general, and surgery in particular, remains a personal endeavor despite current trends that tend to emphasize the team, the group, and the institution.

Large portions of the story are told by the participants themselves; the author refers to it as an oral history. This is the stuff of legend, passed on in reminiscences at meetings and courses and kept alive by those who trained under these innovators who had the “right stuff.”

Some thirty cardiac surgeons are featured, from Robert Gross, who performed the first closure of a patent ductus arteriosus in 1938, to William DeVries, who was featured on the cover of *Time* in 1984 for carrying out the first clinical trial on the artificial heart. The chapters are organized according to surgical milestones, such as the concept of the heart-lung machine and heart transplantation. This format created the problem of where to place surgeons who figured in several chapters of the story. The author includes Michael DeBakey and Denton Cooley in the chapter on mechanical hearts, even though DeBakey was also known for aortic aneurysm surgery, and they were both known for innovations in coronary bypass surgery.

Some of the stories go beyond legends I had previously heard. One of the trainees under DeBakey told of being in the ICU for ninety days at a stretch—you slept in the ICU, meals were brought in. A former resident of John Kirklin in Birmingham reports that routine morning rounds began at 4:00 a.m., and a call had to be made to Dr. Kirklin to report on his patients at exactly 6:00 AM. Call a few minutes early, and he would hang up. Call a few minutes late, and you were in trouble.

Their methods were sometimes extreme, but the stakes were high. Patients often died. These were brilliant and daring young men, many of whom had finished at or near the top of their medical
school classes, but with steep learning curves for performing new operations. How did they get away with it? The more lenient medico-legal climate of the time permitted Dr. James Hardy of Mississippi to perform the first heart transplant with only a one-paragraph consent form, signed by the patient’s next of kin and not mentioning that the heart donor would be a chimpanzee. The relatively small threat of being sued for malpractice also helped fuel their determination to persist with a new procedure in the face of a “bad run” of operative or postoperative deaths. But persistence came with a price. Dr. Lillehei admitted that sometimes he was “almost ready to quit.” His remedy was “a good night’s sleep, and maybe a few belts at the local bar.” Dr. Kirklin said that often he went home and cried. “Surgeons are people who cry in movies,” he once said.

As a cardiac surgeon himself, Cooper addresses the issue of the importance of manual dexterity to a surgeon. Atul Gawande, a surgeon and well-known writer on current medical issues, has emphasized that rigorous training and sound habits are more important than technical prowess in achieving surgical success. Those who spend a lot of time in the operating room know who the technically good surgeons are. (As a cardiologist, I knew the best surgeons by results and reputation, though I was unable to fully appreciate their elegant work on my rare visits to the O. R.) Cooper, however, quotes a description by Dwight Harken, a legendary pioneer in his own right, of the virtuosity of Denton Cooley, a surgeon who “operates with Woolworth volume and Tiffany quality.” And when DeBakey and Cooley were operating together, their synchronicity was “wonderful to see,” according to Viking Bjork, another of the greats. Observing DeBakey and Cooley was described by another as “like watching an octopus operate. There were hands everywhere.”

And yet, some of the most skillful surgeons, such as Denton Cooley, spent so much time in the operating room that postoperative care was often left to others. Another hero, Dr. Brian Barratt-Boyce of New Zealand, was critical of Cooley’s early work: “His results were not good, and never comparable to those of the Mayo Clinic.”

Cooley enjoyed operating, made it look easy, and did so calmly and without intemperate language. Some other surgeons were notorious for cursing and throwing instruments. Not all were blessed with great manual dexterity. Alfred Blalock and Russell Brock, two of the early innovators, are said to have had “technical limitations in the operating room” that accounted for their “difficult behavior,” but did not prevent them from making significant contributions.

Perhaps, as Lewis Thomas wrote some forty years ago, coronary artery bypass surgery is a “halfway technology,” the best we can do until we learn to prevent or reverse coronary disease by nonsurgical means. But the development of the heart-lung machine, which allowed open heart surgery to become almost commonplace, must stand as one of medicine’s great advances, surely worthy of the Nobel Prize that never came.

Charlie Bailey and William DeVries were not the only ones to arrive on the cover of Time. As illustrated in Open Heart, Michael DeBakey did so in 1965 for his work “toward an artificial heart,” and Christian Barnard was featured in 1967 after he performed the first human-to-human cardiac transplant. In this enjoyable book, David Cooper has given us their stories, along with those of their colleagues who dominated a surgical era that captured the imagination of the world—not just that of a young premedical student in Arkansas in 1957.

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DNR: Do Not Resuscitate—Real Stories of Life, Death and Somewhere in Between
Lauren Jodi Van Scy, MD (AΩA, Drexel University, 2010)
Reviewed by Walter Forman, MD, FACP, FAAHPM
skill depends on thoughtful mentoring and repeated practice.

*DNR* contains five stories, each about a person with an illness that in the usual course of events ends in death.

Bruce's story concerns a man in his early fifties with severe progressive cardiac failure. Details about his clinical course are elucidated, but Dr. Van Scoy questions the continued treatment of this “terminally ill” person. Yet the story ends happily after Van Scoy meets the patient after he has received a cardiac transplant and is about to ride off on his motorcycle. The reader is left to “think about” the difficulty of accurate prognosis.

Mrs. Chandler is an elderly woman with a strong family, whose members insist that everything that is medically possible be done for her. The author quotes one relative: “It’s the need to help. It’s the need to be there for your family member. Maybe it’s guilt. But it is almost certainly love.” Mrs. Chandler dies after intensive intervention and with multiple medical devices in place. While love certainly played a very prominent part in her care, Van Scoy regrets that he could this have been avoided with more explicit discussions about exactly what interventions would entail?

Patrick is a young man of nineteen with cystic fibrosis, entering hospice care. Oddly, Van Scoy recounts that caring for him “was a nice change of pace from the chest pain patients and the confused elderly patients with pneumonia.” This is the story of a mother who gave birth to a child with a fatal congenital illness. Her story is told to the author some two years after Patrick’s death. One feels that Van Scoy missed the opportunity to tell the important story about the bereavement period and how it affected the family.

Walter is a twenty-nine-year-old man who sustained a major intracranial bleed and is “brain dead,” although his heart and lungs function “normally.” Here Van Scoy renders a fine description of how brain death is determined. She follows that up with the procedure in her institution for making that determination, valuable information for any physician.

The final case presentation is Victoria’s story. Here we find an elderly woman taken to the hospital with what she thinks is an allergy attack. A chest roentgenogram makes it clear that she has a malignancy with metastasis to both lungs. Van Scoy then describes a wonderful presentation to the family, some forty members of whom are gathered in a small conference room, about the options for whether or not to begin resuscitation efforts if the patient’s status worsens, or whether to keep her pain free and allow the disease to progress along its expected clinical course to death. The family decides not to request resuscitative efforts. Victoria is intubated, administered intravenous morphine, which allowed her to expire quietly. Here the question might be raised as to why the intubation, when intravenous morphine alone would have resulted in the same end with far less discomfort.

The last sentence summarizes the entire book: “I backed out the door, re-entering into the unit and back into the world of science and medicine.”

*DNR* serves the purpose of allowing a physician to express her thoughts and feelings about critically ill people for whom she had cared. In my view it would have been helpful if an interdisciplinary team had been brought in to consult on each case. Thankfully, currently over fifty percent of medical institutions in the United States now have an interdisciplinary palliative care team that is available to consult on these most difficult situations. I recommend that every physician and health care worker learn how to establish contact with his or her team.

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### Anatomy of a Kidnapping: A Doctor's Story


Reviewed by Charles S. Bryan, MD (ΛΩΑ, University of South Carolina, 1992)

A South Carolina clergyman was dictating his next sermon into a tape recorder when a robber burst into his study, put a gun to his head, and said, among other things, “Give me three reasons I shouldn’t kill you.” The clergyman’s third reason: “Because you’ll have to answer to the Lord.” He survived and later described a surrealistic calm that embraced him during his moment of peril.

Steven L. Berk found a similar calm in William Osler’s motto, *aequanimitas*. About 7:00 AM on the morning of Sunday, March 6, 2005, Berk, then regional dean of a campus of the Texas Tech University Health Science Center School of Medicine, made himself a cup of coffee and went upstairs to his study. At about the same time, a fugitive criminal entered the residential subdivision of Amarillo, Texas, turned into a back alley, found an open garage door, and entered Berk’s home. He found Berk in his study, pointed a shotgun at his head, and said, “I will kill you if you don’t do what I say.” Berk spent the next four hours riding around Amarillo and the
surrounding countryside at the mercy of a desperate, emotionally unstable armed robber.

Berk was unarmed—indeed, he could not distinguish between a shotgun and a rifle—but proved a poor choice of victim. He had little cash in his possession. He did not know how to use an ATM machine. He did not know his PIN. He was, however, quite capable of memorizing the ten numbers and four letters of the vehicle identification number on the left lower windshield. This information led to arrest, conviction, and sentencing.

In this can’t-put-it-down memoir, Berk elaborates on æquanimitas, defined by Osler as the mental counterpart to the physical attribute of imperturbability. “Being calm is what we do,” Berk later told a newspaper reporter. He quotes from Osler’s 1889 address to graduating medical students:

Imperturbability means coolness and presence of mind under all circumstances, calmness amid storm, and clearness of judgment in moments of great peril, immobility, and impassiveness.

Berk also reminds us that, properly understood, æquanimitas implies emotional response appropriate to the circumstances. We must seek balance between detached objectivity with humanistic empathy. Osler exhorted students to cultivate

such a judicious measure of obtuseness as will enable you to meet the exigencies of practice with firmness and courage, without, at the same time, hardening “the human heart by which we live.”

Chasing such balance is a lifelong endeavor, never complete.

In the end, such balance probably saved Berk’s life. He was able to establish rapport with his kidnapper, to explore his feelings, to empathize with his descent into alcohol, drugs, domestic violence, and crime. Such empathy no doubt resulted in his roadside release somewhere in the Texas prairie, minus his billfold but unharmed.

Berk artfully weaves into this wrenching story the tapestry of his autobiography, the making of a doctor, a teacher, a husband, and a father. He avoids the major pitfall of autobiography—narcissistic self-justification—in part by relating how he, too, has made mistakes, including a warfarin interaction that cost a man his life. He reminds us that we are all of the same clay. As one of my teachers used to say after each encounter with a down-and-outer, “There but by the grace of God go I.”

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After We Die: The Life and Times of the Human Cadaver
Norman L. Cantor
Washington, DC, Georgetown University Press, 2011
Reviewed by Jack Coulehan, MD
(ΩΩA, University of Pittsburgh, 1969)

The title of Norman Cantor’s new book is intriguing. Most books that tackle “after we die” topics deal with theology, spirituality, or the world of the paranormal. Cantor, however, approaches “after we die” from a more (literally) down-to-earth perspective. He surveys what he terms “the life and times” of human corpses, including their legal status and rights, methods of disposal, natural history of decomposition, social roles, and the various types of desecration and abuse cadavers are subject to. A distinguished law professor and author of such books as Legal Frontiers of Death and Dying and Advance Directives and the Pursuit of Death With Dignity, Cantor tackles this vast array of material with insight, elegance, and wit. For those of us not turned-off by the topic, this is an engaging book to read.

The author begins at the beginning, the diagnosis of death and physical characteristics of the corpse. He then investigates the legal status of the “postliving.” The common assumption that cadavers are, at least in some sense, property that can be disposed of according to the preferences of relatives has little basis in American law. To the contrary, cadavers have legal rights, justified under a concept Cantor calls “prospective autonomy,” which allows decisions made by the person when alive to be enforced after death. The author also reviews the right to a decent burial, to “quiet repose,” and to privacy of personal information, although clear legal exceptions exist to each of these.

The chapter on decomposition is very graphic. I was surprised to learn that the practice of embalming covers a wide range of methodology and potential results. One early example of high-grade embalming was that of Mrs. Van Butchell, who died in 1775. She and her husband had a prenuptial agreement that said he could control
her estate “as long as she remained above ground.” Thus, after she was embalmed, he kept her above ground in a glass case in his drawing room. I learned that extreme chemical embalming can prevent decomposition almost indefinitely, but the trade-off is a much less lifelike appearance of the corpse, generally unacceptable and unnecessary given the usual goal of a prompt burial after viewing. Other methods of preventing decomposition include cryopreservation, mummification, and plastination, a very expensive new process made notorious by traveling commercial exhibitions like Body Worlds. Perhaps with tongue-in-cheek, Cantor also mentions sainthood as a “possible antidote to bodily decomposition,” citing numerous stories of saints miraculously preserved for hundreds of years.

Cryopreservation, or cryonics, based on the idea that freezing the corpse could preserve it sufficiently that future scientific advances might someday allow its resurrection, made a big splash when introduced in the early 1960s. Although the process has increased in chemical sophistication over the years, there is widespread skepticism that “cryonauts” could ever be resuscitated, due to widespread cellular damage during the freezing process. At present there are fewer than two thousand cryopreserved bodies in the United States. The other end of the spectrum, in terms of bodily preservation, is cremation, a process that has rapidly increased in popularity in recent decades. In 1963 only four percent of dead bodies were cremated, but by the year 2003, twenty-eight percent were disposed of in this way, and a 2005 survey indicated that forty-six percent of Americans would elect to have their bodies cremated.

Perhaps organ donation is the most desirable social role for today’s cadavers. Cantor traces the development of laws and practices governing organ donation, including the relatively recent practice of organ removal after pronouncement of death by cardiac criteria. His discussion of proposed methods for increasing the chronically insufficient pool of cadaveric organs is particularly interesting. He argues that permitting a market in organs—allowing dying patients or their families to sell them—would be unlikely to substantially enlarge the pool. His favored approach, based on a communitarian rationale, is to presume consent and routinely remove usable organs, giving individuals the option (obviously prior to death) of informed refusal. Several countries in Western Europe have successfully adopted this system. Cantor reviews several possible constitutional arguments against the enactment of laws allowing routine use of cadaver organs for transplantation, but (surprisingly, in my opinion) he discounts them all, while at the same time admitting that “donation” in the face of family objection would probably be unacceptable in practice.

Two of the other roles that cadavers might perform are those of teacher and parent. Cantor considers the common use of recently dead persons by students to practice intubation and other medical procedures. He supports these practices, but only with explicit premortem consent, or postmortem consent by family members, since such procedures violate the right to “quiet repose.” He suggests that premortem consent might be included in routine hospital admission forms, which to me is ethically questionable, since the pro forma admissions process would necessarily include insufficient information disclosure to allow any such consent to qualify as “informed.” Cadavers might serve as parents in a variety of ways, ranging from extraction of sperm, to be frozen and used later, from a recently dead man to gestating a live fetus in a brain-dead woman being maintained on a ventilator. According to Cantor, the key issue in each case is the likelihood that producing a postmortem child reflects the actual wishes of the deceased person.

In summary, the author covers almost every conceivable aspect of “the life and times of the human cadaver.” After We Die is a masterful work that should be of interest to a broad range of practicing physicians, as well as to specialists in medical ethics, health law, and organ transplantation.

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history of immunology could be found within the last five years’ issues of the most widely read journals.” He recounts that his historical interests became serious when he was asked to review a paper that essentially replicated a study published by Paul Ehrlich some eighty years before, using modern techniques but giving the same results. Silverstein wrote that he hoped to provide modern practitioners of immunology with some perspective on the development of their field. In the original edition he predominantly explored acquired immunity to infectious diseases, though he also included chapters on allergy, autoimmunity, and transplantation with references almost exclusively to original scientific literature in English, French, and German, and some archival sources. His introduction, entitled “History and Historians,” is perhaps the best short introduction to historical method I’ve ever seen, as he cautions contemporary scientists that the past is just as full of wrong turns, wasted effort, and blinkered funders as is the present, and therefore historical progression is hardly as neat and orderly as it appears in later textbooks.

When Silverstein published the first substantive monograph on the history of immunology in 1989, he was at the lead of a now wide-ranging historical literature. In just the first decade after his book appeared, the field grew dramatically, with the publication of books on the work of Élie (Ilya) Metchnikoff, father of cellular immunity; Macfarlane Burnet’s clonal theory; the development of bacteriology; antibodies; recognition of self and non-self; humoral and cellular immunity; monoclonal antibodies; transplantation; and serum therapy for diphtheria. The next decade saw Silverstein’s own new book on Paul Ehrlich’s receptor theory, biographies of Emil von Behring and Niels Jerne, and books on the history of allergy, multiple sclerosis, interleukin-2 treatment, and stories about the development and use of vaccines in many countries across more than two centuries, not to mention a steady stream of books on AIDS. Given all of that activity, revising A History of Immunology promised to be a massive undertaking. Some would have given up. Instead, Silverstein has taken on the project of including much of this substantial new work, adding two chapters to the intellectual history section and eight chapters on developments in the realms of public response (notably vaccination and anti-vaccination movements), research funding and funders’ priorities, scientific societies, and technological change.

Two of these new chapters deal with the generation of antibody diversity and the clonal selection theory, drawing on the work of Alfred Tauber, Scott Podolsky, and Pauline Mazumdar, among others. The social history section starts with a revised chapter on vaccination, the “Royal Experiment” to test smallpox inoculation, and the promise and problems with “magic bullets.” Other social history chapters are new to this edition, including one on the impact of scientific meetings and societies, drawing on insights about the importance of networks for innovation and dissemination of ideas and practices. A chapter on Metchnikoff, Burnet, and Darwin explores the resurgence of evolutionary thinking in this most molecular of sciences, a field where studies of mechanism once largely eclipsed broader thinking about biological systems.

Silverstein’s sections on autoimmunity highlight the contrast between basic immunologic theory and the history of clinical immunology. Silverstein meticulously traces Ehrlich’s idea of *horror autotoxicus*, and the difficulties that many immunologists had in accepting that the immune system could cause, as well as protect from, disease. He illustrates the value of considering autoimmunity to explain the curious case of *sympathetic ophthalmia*, in which penetrating injury to one eye can later cause blinding inflammation in both eyes, illustrating the importance of antigenic sequestration—the immune system had never “seen” proteins from the lens of the eye and therefore didn’t recognize it as “self.” This disease nicely illustrates the importance of clinical examples to the development of ideas in immunology. However, Silverstein spends relatively less time exploring the immunologic basis of lupus and other traditional autoimmune diseases, leaving the complexity of clinical observations, pathological findings, laboratory testing, and therapeutic options in the individual autoimmune diseases to other historians. He has set circa 1970 as the end of his narrative and, as the mechanisms of diseases like lupus, multiple sclerosis, and inflammatory bowel disease are still being worked out, this is a sensible historical choice. A number of scholars are actively working in this area, and much like Silverstein’s first edition, the second can expect to inspire and guide a new generation of scholarly interest in the history of immunology.

Given Silverstein’s focus on the history of scientific ideas in immunology, the text will be of greatest interest to readers with scientific or medical training in immunology, as well as medical historians, but physicians with a strong personal interest in immunology or medical history should also find this an engaging and intellectually satisfying book.

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2011 AΩA councilors meeting

The September 2011 AΩA Councilors meeting took place in Chicago on September 22 and 23, and was attended by a record number of forty-two councilors. The meeting identified and discussed a number of issues of importance to chapter councilors. An electronic survey was distributed to all councilors before the meeting, and the results were used to set the meeting program. It was co-chaired by Richard Gunderman, representing Alpha Chapter of Indiana, and Gabe Virella, representing Alpha Chapter of South Carolina.

All AΩA chapters have a chapter councilor appointed by the dean of the school of medicine. Chapter councilors serve as important role models and provide valuable leadership for their chapters, schools, and members. They work in partnership with the AΩA executive director and national office staff. Councilors supervise the election of chapter officers and organize and manage the nomination of new members each year according to the criteria set forth in the AΩA Constitution. They also coordinate and select proposals from medical students and faculty applying for national programs and awards. Most enjoy some administrative support from their school. Many chapters assess dues to support chapter activities and functions. In sum, AΩA chapter councilors are critical to the ongoing success of the society.

The most intensely discussed issue at the meeting concerned the criteria and procedures for selection of new members. All chapters must follow the membership guidelines presented in the AΩA constitution, Article IV. Scholastic achievement should be the primary, but not the sole basis for nomination of a student. “Leadership capabilities, ethical standards, fairness in dealing with colleagues, demonstrated professionalism, potential for achievement in medicine, and a record of service to the school and community at large shall be criteria in addition to the academic record.”

However, chapters use different processes for nominating students. Some of the challenges in selecting candidates for membership include identifying the top twenty-five of the class; criteria for recognizing leadership, service, and professionalism; and identifying candidates for membership as house staff, alumni, and faculty.

Concerns were also raised about the numbers of house staff, alumni, and faculty that can be nominated by each chapter. The number of eligible students is proportional to the size of the student body, but chapters are limited to two faculty members, two alumni, and three house staff, regardless of the size of the school. In effect, this makes AΩA membership much more difficult to achieve for candidates at larger institutions. This is an important issue, in part because faculty and alumni members often prove to be among the most engaged and supportive. There was broad support among attendees for making these numbers proportionate to the number of students. A motion concerning proportionate representation will be prepared by the co-chairs of the councilors meeting and submitted to the AΩA board.

While a few chapters receive funding from their dean’s office, more chapters assess chapter membership dues, which generally provide a stable base of funding. However, some attendees commented that the distinction between local and national dues can be confusing to members. Other chapters also generate revenue from the membership induction banquet, at which members are invited to contribute to the organization. When chapters solicit members for chapter dues, it is important to clarify that these are for chapter support and that members should also pay their annual or lifetime AΩA national dues.

Chapter activities include educational programs, mentoring, student health clinics, and fundraising. Some councilors, particularly those at schools where students are elected only in their fourth year, noted that it can be difficult to generate sustained student involvement. The fourth-year students tend to be busy with residency applications and interviewing in the fall and winter, and by spring many students are not so focused on school activities. The challenges in generating involvement among residents and fellows can be even greater.

When asked to name the AΩA national office program of most benefit to the chapters, members overwhelmingly endorsed the visiting professor and lecturer program. Many chapters solicit suggestions for speakers from students, faculty, and department chairs. In an effort to enhance two-way communication between chapters and the national office, councilors were urged to invite AΩA board members to serve as visiting professors and lecturers. This would enable the board to learn more about local chapter
life, while also enabling board members to share information about national activities, such as new initiatives in the areas of leadership and professionalism. It is important to clearly identify AΩA supported lecturers as AΩA Visiting Professors and to publicize their activities within the institution and community. It was recommended that everyone attending a celebratory banquet or AΩA function receive an AΩA brochure, which summarizes the national programs and awards.

The councilors emphasized the importance of a celebratory banquet to honor the student AΩA nominees and their families and friends. By inviting AΩA members from the faculty and community, some get more than 200 attendees. The dean should be invited and have this on his or her annual calendar. Many invite their AΩA visiting professors, who also speak at the award dinner. Some charge to attend the banquet and the fee can include payment for student attendees. The invitation letter often includes a request to support someone else from the chapter. Some recommended informing student members’ parents that a gift of AΩA lifetime dues could be a part of their graduation present. Some partner with the local academy of medicine and or local or regional societies for invitations and financial support. It is appropriate to request financial support from the dean or dean of students. Brief remarks on the importance of nomination to AΩA for students are well received and inspirational.

Chapters are strongly encouraged to include professionalism in member selection criteria. Some attendees noted that professionalism can be difficult to evaluate, though all agreed that it is vital. Moreover, chapters can help to promote a culture of professionalism in their schools, for example by sponsoring lectures and discussions on the topic and highlighting the fact that professionalism is an important criterion for selection to AΩA.

The curricula of many medical schools are so focused on scientific, technological, and clinical material that topics such as leadership tend to be overlooked. Yet the future of individual institutions and the profession of medicine as a whole hinges on a substantial degree on the quality of leadership they enjoy. AΩA can play an important role in helping to promote the development of medical students, residents, and faculty members as leaders. Again, AΩA chapters can sponsor lectures and discussions on the topic, and also ensure that chapter activities are carried out in a way that optimizes their leadership development potential.

The role of residents and fellows in AΩA chapters was discussed. A new program, the AΩA Postgraduate Fellowship was approved at the board meeting that followed the councilor meeting.

A final topic of discussion was communication within AΩA. Improving the quality of communication would benefit the entire organization. For the time being, the Pharos and dues notices are mailed to members, although these could begin to move toward an electronic delivery model. One possibility to improve communication among chapters and between chapters and the national office would be to utilize an outside vendor to create an electronic communication network. Various opinions were expressed on this point, and the decision was made to investigate options in more depth before reaching a decision. The AΩA national office has since implemented a member and councilor e-mail distribution system to facilitate communication with AΩA members and chapters.

The meeting generated considerable enthusiasm among attendees. The discussions were lively and spirits were generally high, as participants got to know one another and shared insights and experiences. Those present agreed that such meetings play a vital role in the health and vitality of the organization, by helping councilors to realize that the challenges they face are not unique and creating relationships for sharing ideas. There was broad agreement that such meetings should be available to new councilors on an annual basis, so that they can “learn the ropes” quickly and become part of this invigorating camaraderie. New councilors should invite experienced chapter councilors as visiting professors who can fulfill the responsibilities of the visiting professor and can work to educate and support the new chapter councilors.

Councilors should work to network with each other or with regional cohorts to learn from and support each other.

Richard B. Gunderman, MD, PhD
Gabriel Virella, MD, PhD
Richard L. Byyny, MD, FACP
Years of plodding strife have taught me
our heroes, our mentors, are not always known
nor are their caring laps and filtered voices
soon recalled,
though from some burning core,
they carry on.

My mentor’s genius lay
in finding meaning in a child’s play
amazed by all the dramas that unfold,
admitting to the undeceiving face of pain,
and meeting it with kindness,
his special way of helping others
to heal their many “raveled sleeves of care.”

When we have learned the art of “being there,”
“open-to” and “holding,”
while another dares to come alive,
we learn to feel respect,
aware our mentors live in us.

As well, we must allow each the grace to age
retaining their essential glistening eye,
allowing them the many stations of our lives
and honour them,
by learning how to tread the self same stony way,
knowing that our touching hands and minds
spread over time
will make one unbroken soul,
one unending day.

Carl Rothschild, MD, FRCP(C)

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Presenting the AΩA scarf

AΩA's new scarf highlights the society's insignia, based on the shape of the manubrium sterni. The center medallion features the Pharos lighthouse of Alexandria, one of the seven wonders of the ancient world, for which AΩA's journal is named. The borders are stylized DNA strands.

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