American Osler Society
John P. McGovern Award Lectureship

*Osler and the Enduring Narrative of Clinical Medicine**

C. David Naylor

*Dedicated to the memory of Dimitrios G. Oreopoulos (1936-2012), pioneering nephrologist, compassionate clinician, generous mentor and teacher, man of faith, and champion of the medical humanities.

John P. McGovern Award Lectureships

1. *Our Lords, The Sick* presented by Albert R. Jonsen, Ph.D., April 12, 1986, in San Francisco, California.

2. *To Humane Medicine: Back Door or Front Door?* presented by Edward J. Huth, M.D., April 29, 1987, in Philadelphia, Pennsylvania.

3. *Medicine and the Comic Spirit* presented by Joanne Trautmann Banks, May 3, 1988, in New Orleans, Louisiana.

4. *The 'Open Arms' Reviving: Can We Rekindle the Osler Flame?* presented by Lord Walton, April 26, 1989, in Birmingham, Alabama.

5. *Rx: Hope* presented by E. A. Vastyan, May 8, 1990, in Baltimore, Maryland.

6. *Osler's Gamble and Ours: The Meanings of Contemporary History* presented by Daniel M. Fox, April 10, 1991, in New Orleans, Louisiana.

7. *From Doctor to Nurse with Love In a Molecular Age* presented by William C. Beck, March 26, 1992, in San Diego, California.

8. *The Heroic Physician In Literature: Can The Tradition Continue?* presented by Anne Hudson Jones, May 12, 1993, in Louisville, Kentucky.

9. *The Leaven of Science': Osler and Medical Research* presented by David Hamilton, May 10, 1994, in London, England.

10. *A Body of Knowledge: Knowledge of the Body* presented by Sherwin B. Nuland, May 10, 1995, in Pittsburgh, Pennsylvania.

11. *Other People's Bodies: Human Experimentation on the 50th Anniversary of the Nuremberg Code* presented by David J. Rothman, April 25, 1996, in San Francisco, California.

12. *The Coming of Compassion* presented by Roger J. Bulger, April 3, 1997, in Williamsburg, Virginia.

13. *Why We Go Back to Hippocrates* presented by Paul Potter, May 6, 1998, in Toronto, Ontario.

Cover — The John P. McGovern Award Lectureship commemorative medal which is presented to each annual lecturer.

The 27th John P. McGovern Award Lecture

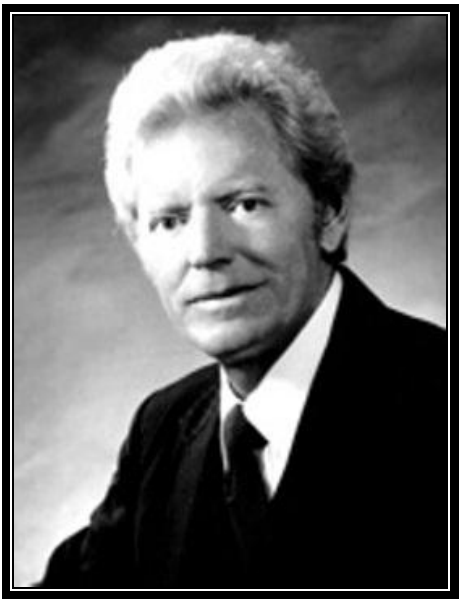
*Osler and the Enduring Narrative of Clinical Medicine**

by

C. David Naylor, M.D.

Delivered April 23, 2012
at the 42nd Meeting of the American Osler Society
Chapel Hill, North Carolina

*Dedicated to the memory of Dimitrios G. Oreopoulos (1936-2012), pioneering nephrologist, compassionate clinician, generous mentor and teacher, man of faith, and champion of the medical humanities.



John P. McGovern

John P. McGovern Award Lectureship

Through the generosity of the John P. McGovern Foundation to the American Osler Society, the John P. McGovern Award Lectureship was established in 1986. The lectureship makes possible an annual presentation of a paper dedicated to the general areas of Sir William Osler's interests in the interface between the humanities and the sciences-in particular, medicine, literature, philosophy, and history. The lectureship is awarded to a leader of wide reputation who is selected by a special committee of the Society and is especially significant in that it also stands as a commemoration of Doctor McGovern's own long-standing interest in and contributions to Osleriana.

C. David Naylor, M.D.

David Naylor has been President of the University of Toronto since 2005. He earned his MD at Toronto in 1978, followed by a D Phil at Oxford where he studied as a Rhodes Scholar. Naylor completed clinical specialty training and joined the Department of Medicine of the University of Toronto in 1988. He was founding Chief Executive Officer of the Institute for Clinical Evaluative Sciences (1991-1998), before becoming Dean of Medicine and Vice Provost for Relations with Health Care Institutions of the University of Toronto (1999 – 2005). Naylor has co-authored approximately 300 scholarly publications, spanning social history, public policy, epidemiology and biostatistics, and health economics, as well as clinical and health services research in most fields of medicine. Among other honours, Naylor is a Fellow of the Royal Society of Canada, a Foreign Associate Member of the US Institute of Medicine, and an Officer of the Order of Canada.

I

I am deeply honored to have been asked to deliver this year's John P. McGovern lecture. I am also daunted to be here on two scores. First, I am that lowest of academic species: the long-serving administrator - a limbic creature whose pre-frontal cortex has been dormant for years. Second, the members of this Society, not least your distinguished President, my colleague Michael Bliss, arguably represent the most knowledgeable gathering of Osler scholars in the world. My own scholarly engagement with things Oslerian ended many years ago. Thus, I feel humbled and privileged to be among you.

A unifying theme for these eclectic remarks is the concept of narrative. You may ask: 'Well, we're all historians here. We all tell stories. Why is this academic bureaucrat carrying coals to Newcastle?' There's a simple answer. The longer that I serve in leadership roles in the academy and the more that I see of my profession and the world of healthcare and health research, the more convinced I have become of both Osler's continued relevance and the enduring importance of narrative to clinical medicine.

Let me begin, therefore, with some personal narrative.

After an internship, I took a few years at Oxford to study the social sciences and humanities with a view to making better sense of my profession and the healthcare system. That break from specialty training gave me a chance to read about Osler and to study his writings. Later, during a residency in medicine, I wrote a short note on Osler's first published case reports.[1] And along the way I acquired two pieces of memorabilia that have stayed with me. An 1892 first edition of Osler's textbook was out of financial reach, but I acquired and avidly studied the 1893 printing of the same text. A second keepsake was an enlargement of the iconic 1891 photo of Osler at Johns Hopkins, working away on his textbook at the chief resident's desk. That photo has been on the wall near my desk in every office I've occupied since 1985. You will understand then that there was little choice for me but to accept your President's invitation.

With that, let me turn to some reflections on contemporary medicine and healthcare. Those reflections suggest that medicine has been in the throes of a major intellectual transition not dissimilar to that which occurred around the turn of the nineteenth century as Osler launched his landmark textbook.

II

Medicine today brings to mind Dickens' memorable phrase: ours is the best of times and the worst of times. The research literature continues to grow exponentially. So does our capacity to do both good and harm – the latter not only through the deleterious effects of a wide range of diagnostic and preventive or therapeutic interventions, but also through the massive misdirection of resources.

At risk of a sweeping over-simplification, one can discern two major influences on contemporary practice. The first is 'evidence-based medicine' – short-hand for a broad set of concepts that emphasize epidemiological methods and the related quantitative evaluative sciences.

This line of thinking has trickled through medicine for centuries. Springs bubbled up from diverse quarters in the century before Osler's birth. One thinks here of James Lind's experiments with the treatment of scurvy in the mid-seventeenth century, or the pioneering work of Pierre Charles Alexandre Louis in the first half of the nineteenth century. Glancing recently through various editions of Osler's textbook spanning the period from 1892 to 1920, I was struck by the growing use of numerical data with each revision. The quantitative springs, it seems, were coalescing into a fast-running stream as the century turned.

As the late Sir Richard Doll observed in the 2003 McGovern lecture[2], clinical trials using the principle of alternation were already in play by the end of the nineteenth century. And formal randomized studies were undertaken sporadically in the first decades of the twentieth century. Nonetheless, the landmark study, known to all in this room, was Austin Bradford Hill's randomized trial of streptomycin for pulmonary tuberculosis in 1946. From there on, the randomized clinical trial,

together with a range of related measures to minimize bias, became the gold standard for assessing not just the efficacy of pharmaceuticals, but the value of a wide range of clinical interventions.

It was not, however, until the 1970s, sparked among others by Archie Cochrane[3] in the United Kingdom, Alvan Feinstein[4] in the United States, and David Sackett[5] in Canada, that the stream became a river. More and more quantitative measures were developed to make sense of diagnostic, preventive, and therapeutic interventions. The ground was softened for these ideas by social critics such as Ivan Illich[6] who highlighted the diverse forms of harm done by medical activity, and by social medicine specialists such as Thomas McKeown[7] who questioned the marginal yields of modern medicine at an aggregate or population-wide level.

With rising angst about the costs of high-technology medicine in the 1970s and 1980s, health economics was added to the methodological mix, bringing considerations of allocative efficiency into play alongside efficacy and effectiveness. A generation of medical students was steeped in the catechism of critical appraisal of clinical studies. And even the time-honored rituals of the bedside clinical examination came under intense scrutiny.

By the early 1990s, the already-strong currents of this important intellectual river were channeled into something of a waterfall with the moniker, evidence-based medicine. The mainstream backwash against evidence-based medicine and its proponents was rapid and some of it was predictable. After all, by inference, anyone who did not bow at the new altar of numerology was at best mired in nineteenth-century patho-physiological inference, and at worst a defender of ignorance. Some small-time heretics sought middle ground – among them, this writer[8] who championed the new methods but imagined Max Weber's ghost lamenting the presumption that "one can, in principle, master all things by calculation"[9]. Fortunately, the sponsors of this new movement rapidly and sensibly modified their doctrine – as I shall explain later. And, notwithstanding the churn, it was arguably as important in the 1990s to tear down the edifice of sloppy assumptions and poorly-tested interventions underpinning clinical practice as it had been for Osler to challenge the dogma of his time one hundred years earlier.

III

Building new foundations of clinical evidence was unequivocally a big step forward. However, the raw materials for those foundations were overwhelmingly created by the labors and insights of basic and translational scientists. That leads me logically to the second great influence on modern medicine – the ongoing revolution in diagnosis, prevention and treatment, derived from advances in genetics and molecular biology.

The resulting model of care has been termed 'personalized medicine' because of the precision with which predictions can be made about the effects of drugs or different subtypes of disease with associated variations in both effective treatments and prognosis. The factors driving this biotechnological revolution will be better known to many in the audience than to me, so, with apologies, I will be cursory.

Extraordinary advances in chemical and cellular biology, including the ability to solve complex molecular structures with myriad techniques, have enabled exquisite definition of disease mechanisms and designer drugs. New imaging technologies have allowed resolution of structures at the molecular, cellular, tissue, organ and whole organism level. And nowhere have the developments been more dramatic than in genetics. The release of a draft of the human genome in 2000, with the final version in 2003, remains one of the greatest milestones in scientific history.

Animal models with purposive genetic modifications have enabled a new level of sophistication in relating genes to functions. Nonetheless, we are still in the early phases of making use of the reams of genetic data that are becoming available to medical researchers. We do not know all the locations and functions of genes, or how exactly genes are expressed. Despite the emergence of proteomic and bioinformatics as new disciplines to help make sense of gene products, we do not know what many of those protein products do at the cellular level. The correlation of DNA sequence variation with disease susceptibility is also still in its infancy. While we have new insights into single gene disorders, these often turn out to be much more complicated than first surmised. And we

know even less about the more common multigene or polygenic diseases which account for the vast majority of morbidity and premature mortality affecting our species.

In short, old disease syndromes based on apparent congruence of clinical symptoms and laboratory test results are being disaggregated into new subtypes based on sophisticated biomarkers. Gene-related testing has helped us characterize the responsiveness of patients to drugs and the likelihood of side-effects, while opening up new possibilities for personalized disease prevention based on modifying environmental and behavioral risk factors. A massive public engagement in personalized or genetic medicine is also heralded by the success of private enterprises such as 23andMe – a sequencing and health information service that enables subscribers to estimate their genetic susceptibility to particular disorders, as well as to find long-lost relatives!

I would add, however, that the two main intellectual currents in modern medicine exist in both tension and equilibrium. The first is dependent on applying averages and probabilities to individuals, based on inferences from clinical populations. The second is driving towards ever greater precision in the biological profiles of individual patients, with a deterministic rather than primarily probabilistic lens on what should and should not be done by and for those individuals to live longer and better lives. Nonetheless, neither offers easy answers to all questions of health and illness, and we are still at sea when it comes to understanding and preventing or treating many diseases – a point made stringently by Lewis Thomas in the 1970s even as these twin currents were gaining force.

IV

For twentieth century medicine and medical research, Lewis Thomas was a multi-dimensional figure analogous in some ways to William Osler in the nineteenth. Thomas's four score years spanned a period in which, as he was fond of saying, medicine went from being the oldest art to the youngest science.[10] In an essay published in 1977, Thomas tracked the progress and impact of science and technology on clinical care and public health.[11] It was and remains a sobering assessment. Thomas

argued that, for the vast majority of major diseases, the available interventions were far from definitive. He characterized these measures as halfway technologies – often expensive, sometimes risky, and not particularly effective. He urged not only a critical assessment of those half-way technologies, but societal patience and ongoing investment in science.

Wise words, I think, but what would the verdict be today, updating that assessment almost four decades later?

First, we have made substantial progress. Age-adjusted death rates from most of the major scourges are falling in the industrialized and industrializing countries. Billions of people are living longer and better. To be sure, improvements in population health status are not new. And, in much of the nineteenth century and, arguably, the first half of the last century, such trends were overwhelmingly attributable to changes in society and sanitation that took place outside the healthcare system.

Recent progress, in contrast, is due in major measure to the more effective prevention and management of a vast range of diseases. And as I have already indicated, that progress has its foundations in fundamental and translational bioscience, clinical and epidemiological research, and, to be fair, advances in the organization and delivery of healthcare.

What are some examples of these changes?[12]

In 1977 Thomas wrote: "…in general, cardiovascular disease lacks any decisive, conclusive technology with the power to turn off, reverse, or prevent disease." He added that a "direct approach to coronary disease must await the future." Thomas would have been surprised at just how quickly the future arrived in prevention and care of patients with vascular diseases.

We now fiddle brilliantly with blocked or narrowed arteries, and the standard cocktail of medications prescribed during and after an acute myocardial infarction reduces medium-term mortality by up to 80%. Following a heart attack, moreover, medicine now has a range of drug

options that, combined with exercise programs, offer well-proven long-term benefits to patients. Among them are the potent cholesterol-lowering statin drugs that have transformed both primary and secondary prevention of atherosclerotic risk.

Then again, we do not really have a simple and definitive intervention to prevent let alone rapidly reverse atherosclerosis. And while we can prevent strokes in many patients, and use clot-dissolving drugs to treat those who get to hospital early, brain tissue death remains a debilitating and permanent event for millions of young and old persons alike.

In cancer control, we have made big strides. The linkage of human papillomavirus to cervical cancer and the development of the HPV vaccine is one recent and notable advance. But the toll of cancer remains massive, and it will be decades before we have definitive treatments for all the members of this baffling and protean family of proliferative disorders.

Then, with apologies to Dickens, there is 'a tale of two arthritides'. When Lewis Thomas wrote his chastening essay, no one could have imagined the importance of antibodies to tumor necrosis factor in relieving symptoms and arresting joint destruction in rheumatoid arthritis. It is wonderful to think that the next generation of health professionals may never see those characteristic deformities in the hands of a patient with longstanding rheumatoid arthritis. In contrast, osteoarthritis remains a disease that many associate with the phrase 'wear and tear', as if we were pieces of furniture rather than living, regenerating organisms. And despite advances in our understanding of articular cartilage and the widespread use of arthroscopy, I would submit that the treatment of osteoarthritis has advanced little in the last three decades.

Finally, lest there be any doubts about our ongoing challenges, emerging and re-emerging infectious diseases have taken a massive toll worldwide in the last thirty years. Indeed, while Lewis Thomas was writing, HIV was still in its quiet phase, but in a few short years had spread across five continents.

And so it is more generally with modern medicine – everywhere a mixture of great successes and continuing challenges. My conclusion will be obvious. Lewis Thomas is still right. We don't know enough.

V

That sentiment readily leads one back to the remarkable life story of our friend Osler and his transformative textbook.

Here let me acknowledge a blooper in a précis of this talk that I submitted some months ago. I asserted from distant memory that the phrase "No specific treatment" recurred often in Osler's 1892 *magnum opus*. I was wrong. My recent re-reading of Osler's textbook shows that the phrase itself seldom appears; but, at risk of shameless self-exculpation, I would note that its gist was ubiquitous. No wonder that Osler was accused of undue skepticism by critics, even charged with "paranoia antitherapeuticum baltimorensis."[13] As Hogan[13] has observed, it is not that there was an absence of treatment recommendations. Rather, most of them were indeed non-specific, including those two evergreen treatments implicitly championed by Osler, tincture of time and a dose of doctor.

As all here will know better than me, the first edition of *The Principles and Practice of Medicine* had a transformative impact on medical education and ultimately clinical practice. It is a massive overview, full of clinical narrative, fascinating autopsy series – many of Osler's own doing, and intriguing physical signs that are seldom seen today. Indeed, for those of us who learned medicine in a gentler but fuzzier time before the new tyranny of the numerocrats, reading Osler's textbook is like slipping into a warm bath on a cold day.

I believe it is also useful to compare the treatment of pneumonia in two editions of Osler's textbook – the first from 1892, and the fifth from 1905. In both Osler opines that "There is no specific treatment for pneumonia". In the second, he adds a further caveat. "The young practitioner may bear in mind that patients are more often damaged than helped by the promiscuous drugging, which is still only too prevalent." Oddly, both

recommend early use of bleeding, with a general suggestion that the pendulum has swung too far against venesection.

While that recurrent endorsement of bleeding suggests limited progress, the two chapters nonetheless show striking differences. The 1905 edition provides a much more detailed and, dare I say it, evidence-based analysis of different therapeutic options that might be used to alleviate symptoms. Susceptibility and mortality statistics are presented, with breakdowns by, variously, sex, race, and urban versus rural abode. An elegant description of streptococcus pneumonia speaks to the continued bacteriological revolution in medicine. With it Osler offers a description of trials of anti-serum, with references to differing perspectives on their immunological mode of action and efficacy. He concludes, however, with a familiar refrain: "Thus far it has not been shown that this serum influences in any marked degree the course of the disease in man."

In a nutshell, one sees in this single section of Osler's text a before-after snapshot of the remarkable times in which he lived. The substrate of science and practice was changing fast. A world-wide movement to bedside teaching had been brewing long before the Hopkins curriculum made it a mainstay, but was accelerating in the early years of the twentieth century. The sides of the magic triangle of modern medical research and education were being locked into place – the clinician-teacher with scholarly interests and a major academic time commitment, the teaching hospital, and, as Osler had championed in his 1892 remarks at the University of Minnesota,[14] strong linkages to a reputable university. That academic geometry was soon to be reinforced, when Abraham Flexner swept through North America, fomenting an institutional and cultural revolution in medical education that was arguably as fundamental as the bacteriological revolution in medical research and practice. And hot on Flexner's heels would come the report of William H. Welch and Wickliffe Rose that established the American model for schools of public health.

VI

Osler, of course, had a detailed understanding of the sweep of his profession's history, and one senses that he was able to locate himself

and others in that narrative in a unique way. In this regard, Daniel M. Fox,[15] delivering the 1991 McGovern Lecture, made some compelling observations. Fox highlighted "the vast importance that Osler accorded to history as basic to an understanding of medicine", Osler's conviction "that history was driven by ideas", and his belief that "ideas, especially scientific ideas, could liberate medicine, and by extension other areas of life, from two tyrannies that Osler loathed – the tyranny of routine and the tyranny of authority".

I agree with Fox, and would add three comments to his interpretation.

The first is that Osler's resilient optimism was rooted in his observation that, at least in the history of medicine, good ideas eventually win the day – often against resistance, and sometimes after a period of dormancy. Nowhere is that progressive world-view more evident than in his Harveian oration of 1906, entitled appropriately, "The Growth of Truth".[16]

Second, I want to echo and amplify Fox's observation that Osler believed in the power of individuals to shape their world and abet 'the growth of truth'. One might take as confirmation Osler's many biographical sketches. Or again, in his 1913 essay on "The Evolution of Modern Medicine",[17] one need only read Osler's heroic characterization of Morgagni: "…[H]e came just at the right time. The profession was literally ravaged by theories, schools and systems – iatromechanics, iatrochemistry, humoralism, the animism of Stahl, the vitalistic doctrines of Van Helmont and his followers – and into this metaphysical confusion Morgagni came like an old Greek with his clear observation, sensible thinking and ripe scholarship."

Osler might just as well have been describing himself. He was a man who had been influenced by mentors and heroes, both in person and through his immersion in history. A superb mentor and role model in his own right, Osler was clearly dedicated to sharing the narratives of individuals who had inspired him, in hopes that they might inspire others.

Third and finally, it is worth recalling that the practice of historiography was but one of Osler's preoccupations with the humanities. His broader commitment shines through most notably in his 1919 presidential address to the Classical Association, with its lament about the general estrangement of the old arts and the new sciences, not just in medicine but in general.[18]

VII

With Osler's 1919 address as a segue, I want to return, in this paper's penultimate section, to our modern context and the interface of clinical uncertainty with medical humanism and narrative.

When the late Sir Richard Doll spoke here in 2003, he highlighted the emergence of large clinical trials, able to determine with precision the presence of significant small inter-group differences in important outcomes, such as mortality. (One might think of them as 'tombstone trials' – randomize and count the dead![19]) This is an important and sensible methodological advance. But it is perhaps telling that modern medicine's marginal returns are sufficiently small that such designs are necessary.

Moreover, even where we have powerful and precise evidence of the effectiveness of a given treatment, there is a residual and non-trivial problem – the application of clinical trial evidence to the individual patient. Patients vary. The trial may not have included patients with the same characteristics as the one in front of us. Their preferences or values, and the context in which they are treated, also vary. The patient may take a very different view of risks and benefits than the experts. In short, it is not a trifling task to take probabilistic statements about diagnosis or treatments based on group data, and apply those findings to categorical decisions at the individual level.

The challenges of that task are highlighted when experts get together to write clinical guidelines or generate templates for utilization review. In many cases, the evidence is incomplete or conflicting, leaving many patients in an evidentiary limbo. These are the grey zones of clinical practice where the balance of harms and benefits is uncertain.[8]

UCLA's Robert Brook[20] and his associates have done much important work in this regard. Over the course of three decades, they have convened panels of clinical experts to draw inferences and fill in the gaps in the evidence base for a variety of diagnostic or therapeutic interventions. Many insights have emerged from the use of their so-called appropriateness criteria to review front-line clinical decision-making. But what has also emerged is this: Not only is there disagreement within a given panel, vitiating best efforts to shrink the grey zone. It is also clear that the assessment of clinical scenarios varies by specialty, by location within and across nations, and by the type of practice setting and related incentives for the clinical experts on these panels.[8,21]

Unfortunately, the wide persistence of clinical uncertainty has not stemmed the tide of measurement and micro-management of medical care. Partly because of the expense and risk of new medical technologies, more and more third parties now oversee the interactions between professionals and patients. The result is a clinical realm that has become increasingly 'entzaubert' or disenchanted, in the sense that Max Weber elaborated on that term.[9] And it seems that doctors and patients alike are often disenchanted in the more colloquial sense.

While the utilization managers remain unrepentant, it is noteworthy that, as mentioned earlier, the proponents of evidence-based medicine had useful second thoughts early in the evolution of their movement. By the mid-1990s, they were arguing that "the practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence… By individual clinical expertise we mean the proficiency and judgment that individual clinicians acquire through clinical experience and clinical practice."[22] As Greenhalgh observed,[23] these colleagues "were anxious to acknowledge that there is an art to medicine as well as an objective empirical science…"

Greenhalgh has also been a champion of 'narrative-based medicine'. She and others have emphasized the dissonance that "health professionals experience when trying to apply evidence based research findings to real life case scenarios".[23] And Greenhalgh has highlighted the need for us to consider the patient's narrative not just in taking a history, but in

understanding the ongoing path of that individual to health, death, or a variety of states in between.

My explanation to medical students for some years has been similar. I urge them to move beyond an understanding of disease as an abstract pathophysiological construct, and understand illness as the experience of a fellow-traveler on this planet. In that latter respect, what is required is the interleaving of their clinical knowledge with the empathy and communication skills to help the patient and family construct a narrative in which they can locate all that is happening to them in a vulnerable and stressful time.

Put another way, "the limits to medical evidence continue to limit the ambit of evidence-based medicine. The craft of caring for patients can flourish not merely in the grey zones where scientific evidence is incomplete or conflicting but also in the recognition that what is black and white in the abstract may rapidly become grey in practice, as clinicians seek to meet their individual patients' needs. To paraphrase Osler, let us agree that good clinical medicine will always blend the art of uncertainty with the science of probability."[8]

VIII

The morning is waning, and I want to close this paper by tying a few threads together.

First, it is perhaps useful to think of the current period of medicine as not dissimilar to the mid-nineteenth century. One can see, taking shape in the not-distant future, an extraordinary flowering of measures to prevent and treat disease that will fundamentally transform the human condition. But it is early days. For now, we are plagued with what might be called exponential uncertainty. The more we learn, and the more options available for diagnosis, prevention and treatment of disease, the greater the numbers of permutations and combinations that might be contemplated in the care of any individual – not least those of us past 40 who may have multiple chronic conditions. Clinical judgment -- the craft of caring for patients – seems likely to remain salient for a very long time.

Second, we have no shortage of individuals working to improve and codify the art of clinical practice – the guideline writers and utilization managers, the social scientists examining doctor-patient communication, and the psychologists and educators trying to refine clinical reasoning. Despite their best efforts, it is still unclear how one can parse and package judgment and empathy – a fact that might, in an odd way, be seen as reassuring rather than frustrating.

Third, every step forward in healthcare delivery seems only to accentuate the pertinence of the Oslerian message about humanism in medicine. Take digital records, for example, a boon in many ways. As Abraham Verghese, the McGovern lecturer in 2007,[24] wrote last year in the New York Times, electronic records can also depersonalize care. Dr. Verghese learned that lesson first-hand from a trip to an emergency room. In his experience, the iPatient – the virtual person represented by a computer record, was becoming the focus of professional attention, "while the real patient in the bed often feels neglected, a mere placeholder for the virtual record."[25]

Fourth, some closing reflections on narrative seem warranted. Osler was a historically-minded and extraordinarily literate professor of medicine. He was also a master story-teller – one whose narratives were shaped by an abiding interest in the history of medicine as not just the march of abstract ideas, but tangible progress shaped by distinctive personalities with unique attributes. Today, the more scientific and technological that medicine becomes and the more that processes of care are micro-managed, the more it seems that doctors yearn on some levels for stories – stories that remind us of the essence of medicine as a profession and celebrate the basic human impulse to make a positive difference in the lives of others. Of course, when medical history reaches back many centuries, it is harder for us to relate. But Osler is a modern touchstone. I believe Osler's enduring appeal is based in part on the fact that, through both his life and his writings, we feel a connection to an inspiring narrative of multi-faceted individual excellence and a timeless tradition of caring wisely and well for others.

Last, I believe that many today are drawn, perhaps without fully realizing it, to Osler's resilient optimism. There he was in 1919, having lost his only child to the Great War, surely more aware than ever of his age and mortality. But speaking to his Oxford colleagues, Osler said, "To have outgrown age-old theories of man and of nature, to have seen west separated from east in the tangled skein of human thought, to have lived in a world re-making – these are among the thrills and triumphs of the Victorian of my generation."[17]

We, too, live in a world re-making itself at breakneck pace: a time when East and West are commingling as never before -- a period of tremendous opportunity, but also one of conflict, stress and transition when humankind threatens to outgrow not just age-old theories but the very planet on which we live. To read Osler, to read *about* Osler, is to have at least passing reassurance that good shall triumph, that truth grows, and that individuals can still make a difference in this complicated world.

References

1. Naylor D. Osler's first medical publications. Can Med Assoc J. 1984; 131:800-5.

2. http://aosler.org/wp-content/uploads/2010/01/2003-McGovern-Lecture.pdf.

3. Archie Cochrane (1909-88) is best known for one brief and compelling monograph: *Effectiveness and Efficiency. Random Reflections on Health Services*. London: Nuffield Provincial Hospitals Trust, 1972. It has since been reprinted a number of times.

4. If Cochrane was the great excavator who laid bare the shaky foundations of modern clinical medicine, Alvan R. Feinstein (1925-2001) was arguably the master mason who taught others how those foundations could be rebuilt. In addition to editing the *Journal of Clinical Epidemiology* for more than 20 years, Feinstein wrote hundreds of articles and editorials, and several influential books including *Clinical Judgment* (1967), *Clinical epidemiology: The Architecture of Clinical Research* (1985), and *Clinimetrics* (1987).

5. David L. Sackett founded the influential Department of Clinical Epidemiology and Biostatistics at McMaster University in the mid-1970s. Among Sackett's many gifts is a remarkable ability to make quantitative ideas crystal clear and clinically relevant. This helped make his first book an instant classic: Sackett DL, Tugwell P, Haynes RB. *Clinical Epidemiology: A Basic Science for Clinical Medicine*, 1st edition. Boston: Little Brown, 1985.

6. Illich I. *Medical Nemesis: Limits to Medicine; The Expropriation of Health*. London: Marion Boyars Publishers, 1976.

7. McKeown T. *The Modern Rise of Population*. New York, NY: Academic Press; 1976. See also: McKeown T. *The Role of Medicine: Dream, Mirage, or Nemesis?* London: Nuffield Provincial Hospitals Trust; 1976.

8. Naylor CD. Grey zones of clinical practice: some limits to evidence-based medicine. Lancet. 1995; 345:840-2.

9. Weber M. Science as a vocation. (Delivered at Munich University, 1918). Available on-line, e.g. http://www.wisdom.weizmann.ac.il/~oded/X/WeberScienceVocation.pdf. The quote is on p8.

10. Lewis Thomas (1913-1993) became known to generations of physicians and scientists through his monthly columns in the New England Journal of Medicine, entitled 'Notes of a biology watcher'. Award-winning collections of these essays were published by Viking Press in 1974 and 1979. His musings on medicine are collected in The Youngest Science: Notes of a Medicine-Watcher. New York: Viking Press, 1983.

11. Thomas L. On the science and technology of medicine. In: Knowles, JH, ed. Doing Better and Feeling Worse. Health in the United States. New York: WW Norton, 1977, pp 35-46.

References

12. This text draws on unpublished remarks that I presented on October 11, 2009 in Toronto at the 50th Anniversary gala of the Gairdner Foundation. I thank Irfan Dhalla MD for helping an old professor with updates to the 'state of the art'. Notes for those remarks are on-line at: http://www.president.utoronto.ca/speeches/on-the-science-and-technology-of-medicine.

13. Hogan DB. Did Osler suffer from "paranoia antitherapeuticum baltimorensis"? A comparative content analysis of The Principles and Practice of Medicine and Harrison's Principles of Internal Medicine, 11th edition. Can Med Assoc J. 1999; 161:842-5.

14. Osler's address, "Teacher and Student", was delivered "on the Occasion of the Opening of the New Building of the College of Medicine and Surgery of the University of Minnesota" in Minneapolis on October 4th, 1892. Available on-line, e.g. http://archive.org/details/cihm_52039.

15. Available on-line by following the date/author's name at http://aosler.org/annual-meeting/mcgovern-presentations/.

16. Available on-line, e.g. http://archive.org/details/growthoftruthasi00osleuoft.

17. Available on-line, e.g. http://www.archive.org/details/cu31924007603982 (The quote is from p.189).

18. Published in the British Medical Journal on July 5 1919, pp1-7, and available on-line, e.g. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2343167/.

19. Naylor CD. Clinical decisions: from art to science and back again. Lancet. 2001; 358:523-4.

20. Robert H. Brook's distinguished record of original research into quality of care dates back four decades to his days as a medical student. See, among many examples, the following papers: a) Brook RH, Chassin MR, Fink A, Solomon DH, Kosecoff J, Park RE. A method for the detailed assessment of the appropriateness of medical technologies. Int J Technol Assess Health Care. 1986; 2:53-63; b) Leape LL, Park RE, Solomon DH, Chassin MR, Kosecoff J, Brook RH. Does inappropriate use explain small-area variations in the use of health care services? JAMA. 1990; 263:669-72; c) Brook RH, McGlynn EA, Cleary PD. Quality of health care. N Engl J Med. 1996; 335:966-70; and d) Brook RH, McGlynn EA, Shekelle PG. Defining and measuring quality of care: a perspective from US researchers. Int J Qual Health Care. 2000; 12:281-95.

21. Naylor CD. What is appropriate care? N Engl J Med. 1998; 338:1918-20.

References

22. Sackett DL, Rosenberg WMC, Gray JAM, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. BMJ. 1996; 312:71–2.

23. Greenhalgh T. Narrative based medicine in an evidence based world. BMJ. 1999; 318:323-5.

24. http://aosler.org/wp-content/uploads/2010/11/2007.pdf.

25. http://www.nytimes.com/2011/02/27/opinion/27verghese.html?pagewanted=all.

John P. McGovern Award Lectureships

14. *Health Care in the Next Millennium* presented by John D. Stobo, M.D., May 5, 1999, in Montreal, Canada.

15. *"Writ Large": Medical History, Medical Anthropology, and Medicine and Literature* presented by Gert H. Brieger, M.D., Ph.D., May 17, 2000, in Bethesda, Maryland.

16. *Reflections on American Medical Education* presented by Kenneth M. Ludmerer, M.D., April 18, 2001, in Charleston, South Carolina.

17. *John Shaw Billings as a Historian* presented by James H. Cassedy, Ph.D., April 24, 2002, in Kansas City, Kansas.

18. *The Evolution of the Controlled Trial* presented by Sir Richard Doll, May 23, 2003, in Edinburgh, Scotland.

19. *Practising on Principles: Medical Textbooks in 19th Century Britain* presented by W.F. Bynum, M.D., Ph.D., FRCP, April 20, 2004, in Houston, Texas.

20. *Just Call Us Children: The Impact of Tsunamis, AIDS and Conflict on Children* presented by Karen Hein, M.D., April 11, 2005, in Pasadena, California.

21. *A Leg to Stand On: Sir William Osler & Wilder Penfield's Neuroethics* presented by Joseph J. Fins M.D., F.A.C.P., May 2, 2006 in Halifax, Nova Scotia.

22. *Touching Where It Hurts: The Role of Bedside Examination* presented by Abraham Verghese M.D., M.A.C.P DSc (Hon), May 1, 2007, in Montreal Quebec.

23. *Managed Fear: Contemplating Sickness in an Era of Bureaucracy and Chronic Disease* presented by Charles Rosenberg, May 5, 2008, in Boston, Massachusetts.

24. *Is Scholarship Declining in Medical Education?* presented by Patrick A. McKee, M.D., April 21, 2009, in Cleveland, Ohio.

25. *Selling Our Souls: The Commercialization of Medicine and Commodification of Care as Challenges to Professionalism* presented by Nuala P. Kenny, M.D., April 27, 2010, in Rochester, Minnesota.

26. *"The Back Forty":* American Medicine and the Public Interest *Revisited* presented by Rosemary A. Stevens, Ph.D., May 2, 2011, in Philadelphia, Pennsylvania.