

WORCESTER **medicine**

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NEW DEVELOPMENTS IN WORCESTER AND BIOTECH



THIS ISSUE IS DEDICATED TO JOHN J. MASSARELLI, MD

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This issue of Worcester Medicine is dedicated to
Dr. John J. Massarelli
28 December 1927 – 22 August 2010

Editor of Worcester Medicine (1973-1989)
President of Worcester District Medical Society (1984-1985)

John was a renowned clinician, devoted scholar, persuasive patient advocate, gifted teacher and mentor and supportive colleague. He will be missed by the entire Worcester community whom he served with unceasing dedication.

Jane Lochrie, MD
President

editorial

New Developments in Worcester and Biotech

Paul Steen, MD



Paul M. Steen, MD

The focus of this issue is on Worcester medicine ~ what is going on inside our community ~ with articles on nursing, education and the biotech worlds. I'll start with a very interesting article by Paulette Seymour-Route on nursing's perspective on their future involvement in healthcare delivery including professional nurses, nurse practitioners and advance practice nursing (APN). The article includes some excellent web references worth looking up.

Moving to the educational front is Michael Malloy's article on the College of Pharmacy expansion since its opening in September 2000. I doubt that many of us realize how far they have come and how many different programs they offer, especially at the graduate level. For example, in recent years they have added programs on physician assistants and physical therapy. Although not theme articles, for two interesting articles on education look at Ruthann Rizzi's article on mental healthcare in medical students and Jeroan Allison and Suzanne Cashman's article on a new paradigm in medical education.

On the biotech frontier are Kevin O'Sullivan's views on why the biotech industry keeps us healthy. It's a good discussion on the risks and rewards facing the industry and the uncertainty they face under healthcare reform. He also demonstrates the size of the industry in Worcester and Central Massachusetts. Finally, we wanted to profile one Worcester biotech firm to give a more personal view of this very complex world. Herbert Dean does just that with his article on Verax, a platelet-testing biotech company.

Finally, I want to acknowledge that the Editorial Board is dedicating this issue to John Massarelli, a former editor of Worcester Medicine, book review editor, historian, and all-around role model within the medical society.

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A Nursing Perspective on the Future Delivery of Health Care

Paulette Seymour-Route PhD, RN



Paulette Seymore-Route PhD, RN

Introduction

National health expenditures in 2010 are estimated at \$2.6 trillion (or 17.5%) of the Gross Domestic Product (GDP). Over the next few years, about 32 million additional people will enroll in the ranks of the insured (Sisko, Truffer, Keehan, Poisal, Clemens & Madison, 2010).¹ Those staggering numbers create a tremendous sense of urgency to prepare an adequate

workforce of expert health care providers, including physicians, nurses, pharmacists and others who together deliver high quality care. Creating that workforce also implies changes in areas such as regulation and reimbursement to allow providers to practice within their full scope of practice in order to meet the health needs of the nation's population.

Nursing, like other health professions, exists because there is a social need for our professional services. So the opportunities for professional and advanced practice nursing brought forth by the Healthcare Reform Act (also known as the Patient Protection and Affordable Care Act 2010) start with the individuals needing the health care services nursing can provide. As the largest group of care providers, nurses in the professional (RN) or advanced practice (APN, or "Nurse Practitioner") role see people across the entire continuum of care. This creates a challenge as we try to get our arms around all the possible implications of healthcare reform for nurses. There's no question that professional nurses (RNs) will continue to play a critical role in the current acute and chronic care settings and use their expertise in care coordination, care transitions and home care.

Nursing's Collaborative Consensus

Nursing academic and practice leaders are creating the future for nursing within and across their traditional boundaries locally, na-

tionally, and in partnership with other health professionals. The nursing community, represented by multiple national nursing organizations, has developed the paper "Commitment to Quality Healthcare Reform: A Consensus Statement from the Nursing Community," which addresses the contributions that nursing can make towards opening access to cost effective, quality care for all who need it. The ability of nursing professionals to practice within their full scope under state law is discussed. Additionally, the paper addresses our ability to educate and retain the appropriate number of professional and advanced practice nurses and recognizes the nursing faculty shortage as an obstacle to maintaining an adequate pool of qualified nurses. www.nursingworld.org/MainMenuCategories/ANAPoliticalPower/Nursing-Community-Statement.aspx.

Reform~ Nurse Managed Clinics and Patient-Centered Medical Homes

The role of the APN has been discussed, debated, and evaluated by many groups over time. The APNs' ability to provide safe, quality patient care is well documented. The Healthcare Reform Act provides for expanding the number of [APN] Nurse Managed-Clinics and adds the new model of a Physician or Nurse Practitioner led patient-centered medical home. Many other opportunities exist across the continuum of care for APNs independently, or in healthcare teams, to provide primary care and prevention services. The UMass Medical School Center for Health Law and Economics website provides a resource for greater detail on these and other aspects of the healthcare reform legislation: <http://www.umassmed.edu/CHLE>

Inter-professional Education of Providers

As the dean of a graduate school of nursing, I believe inter-professional educational models that address curriculum reform, lifelong learning, and teamwork and communication in clinical practice are key to our ability to transform the way we promote health, prevent disease, and care for the

acute and chronically ill. The Josiah Macy Jr. Foundation convened an inter-professional conference titled "Who Will Provide Primary Care and How Will They Be Trained," co-chaired by Linda Cronenwett, PhD, RN, FAAN and Victor J. Dzau, MD. The proceedings provided a series of recommendations that will support our ability to provide access to contemporary primary care services. The findings discuss education, scope of practice, issues and opportunities within and across three groups of primary care providers: physicians, nurse practitioners, and physician assistants. The report provides a thoughtful review of how we got here and where we need to go. The report can be found at www.josiahmacyfoundation.org/index.php?section=publications.

Conclusion

Whether you are implementing delivery system changes in acute care, opening primary and preventive care access for medically underserved populations, improving care coordination and chronic care management, or improving safety, there is a role for nursing. Equally important to recognize is that success is dependent on cooperation and collaboration across all the health care professions. No single group alone can accomplish the changes needed.. The challenge is to open communication, support innovation and remain focused on the people we serve across all settings. As a coalition of the willing, we can collectively meet our professional responsibilities.

Reference

1. Sisko, A., Truffer, C., Keehan, S., Poisal, J., Clemens, M.K., & Madison, A. (2010). *National health spending projections: The estimated impact of reform through 2019*. *Health Affairs*, 29(10), 1-9.

Paulette Seymour-Route PhD, RN is Dean and Professor of the Graduate School of Nursing University of Massachusetts Medical School.

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John J. Massarelli, MD (1927-2010)

Reverend clergy, members of the Massarelli family, and patients, friends and colleagues of Dr. John J. Massarelli, it is an honor for me to deliver this eulogy for our greatly admired friend and colleague. After reading the most eloquent statement by John's children on page 4 of the Funeral Mass program entitled "The life so short, the craft so long to learn," (Hippocrates) and absorbing the wonderful comments delivered by Msgr. Thomas Sullivan, I have little to add except to concur. Permit me too state what has not already been said, and that is ~ contrary to the frequent criticism of illegibility of doctors' handwriting ~, John Massarelli had beautiful cursive penmanship. He and I were students of the Palmer method!



I have known John for 50 years as a dear friend, highly respected colleague, trusted physician for my parents, consultant for my patients with complex enigmatic medical problems, medical historian, medical editor, deliberator and accomplished scholar.

John met his wife Vera in Korea; he, a Captain in US Army Medical Corp. and she, a civilian administrative secretary. Both happened to be from Bayonne, New Jersey. They were married in 1952 in Japan. After John fulfilled his military commitment, the couple moved to Rochester, MN to the Mayo Clinic where John completed a Fellowship in gastroenterology. In 1957, they settled in Worcester. John was undoubtedly recruited by the late Drs. James Brosnan, head of medicine at St. Vincent Hospital, Dr. Jack Meyers and Dr John Manning a general surgeon, all members of the Fallon Clinic, which at that time had a close alliance with the Mayo Clinic. John became the 5th member of the Fallon Clinic, then located a 10 Institute Rd. Dr. Rudolph Utzschneider, the 6th physician to join the Fallon Clinic, informed me that John preformed the first endoscopy in Worcester. At that time, endoscopes were rigid, non-pliable instruments, and John would carry his in a case similar to a musician carrying a trombone! It was also a time when a normal cholesterol value was considered to be 180-300 mg%. Times have changed.

In preparation for this eulogy, in addition to speaking with Dr. Utzschneider, I made inquiries to Dr. Jane Lochrie, the current President of the WDMS, as well as Director of the internal medicine residency education at SVH, and John's personal physician, Dr. Joel Popkin, a past resident at SVH and long time colleague and admirer of Dr. Massarelli's, and Dr. Herbert Dean, John's colleague and co- author of their book Look to Your Health. All concurred that Dr. John was an unhurried, most thorough, respectful, conservative and methodical diagnostician. John was a superb clinician and teacher. He was a perennial student and a highly regarded educator at SVH. A legion of young doctors benefited from John's teaching. A popular quote in medicine is that "Young doctors know all the rules while old doctors

know the exception to the rules!" John knew all of the rules throughout life.

In the 1960s, SVH enjoyed an academic affiliation with Georgetown University School of Medicine and the members of the medical staff who were involved in teaching were honored to have faculty appointments. Coincidentally, John received his MD degree from Georgetown University.

John was very active in the Worcester District Medical Society, the third oldest medical society in the United States, established 1794. He was editor of its publication Worcester Medical News, now called Worcester Medicine, for three years. He continued as its book editor for 16 years and he served as President of the WDMS in 1984. He also served as a book editor for the Journal of the American Medical Association. As mentioned, together with his associate Dr. Herbert Dean, he published a book entitled Look to Your Health in 1980. The book was dedicated to their wives Vera and Joan and to Mr. Neil Heffernan and emphasized "what you should know about your body."

Dr. Dean informed me that John and he met every Sunday for two years while writing the book. Tongue in cheek, he said the book

sold several thousand copies, but “My parents could only buy so many!”

The late Dr. Paul Bergin was a noted medical historian and wrote a volume on the History of the WDMS 1794-1954. John wrote a complimentary volume on the history of the Society in a book entitled A Community of Physicians 1954-1994. This marvelous book describes momentous happenings in Worcester over a 40 year span. Typical of John, the book emphasizes the achievements of others, the impact of medical discoveries and regional happenings such as the establishment of the University of Massachusetts Medical School. You should know that the WDMS 186 year old library was gifted to the medical school, and in turn, the medical school has provided library privileges to all members of the WDMS. But the greatest accomplishment was John's efforts in compiling and writing the volume. He was motivated by his love for his profession, writing and history. John retired from medical practice in 1999.

I would like to conclude this eulogy by reading the nine Principles of Medical Ethics of the American Medical Association. The AMA was established 1846 for the purpose of upholding professionalism and promoting medical ethics. Every two years the AMA's Code of Medical Ethics is updated based on the deliberations and new Opinions from AMA's Council on Ethical and Judicial Affairs. The 2010-2011 volume contains 200 ethical Opinions structured upon these Principles.

The nine Principles of Medical Ethics are:

A physician shall be dedicated to providing competent medical care, with compassion and respect for human dignity and rights.

A physician shall uphold the standards of professionalism, be honest in all professional interactions, and strive to report physicians deficient in character or competence, or engaging in fraud or deception, to appropriate entities.

A physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient.

A physician shall respect the rights of patients, colleagues, and other health professionals, and shall safeguard patient confidences and privacy within the constraints of the law.

A physician shall continue to study, apply, and advance scientific knowledge, maintain a commitment to medical education, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated.

A physician shall, in the provision of appropriate patient care, except in emergencies, be free to choose whom to serve, with whom to associate, and the environment in which to provide medical care.

A physician shall recognize a responsibility to participate in activities contributing to the improvement of the community and the betterment of public health.

A physician shall, while caring for a patient, regard responsibility to the patient as paramount.

A physician shall support access to medical care for all people.

Dr. John J. Massarelli exemplified these principles of right conduct and rules based on a system of moral values that govern the members of the medical profession. His only enemy was disease!

John excelled in his responsibilities to his family ~ wife Vera, their daughter and five sons, his faith, his community, his profession, and his country. I am most proud and appreciative to have had the benefit of his friendship for one half a century. Doctor John, rest in peace!

Leonard J. Morse, MD
August 26, 2010

A Tribute to Our Father, Dr. John Massarelli

“The life so short, the craft so long to learn.”
-HIPPOCRATES

John Joseph Massarelli was our father. If living a meaningful life is a craft, he was the finest mentor we could have had. He taught us the importance of being true to ourselves and to others ~ a lesson that lasted his lifetime and one he hoped would endure throughout ours. His primary method of teaching was by his unfaltering example.

He taught us that our well-being is inextricably tied to the welfare of others. We learned to appreciate other people's company and contributions and never to categorically exclude anyone. Our parents taught us the importance of being rooted in our community and to contribute to it broadly, not just in a way that will impact us directly.

We learned the importance of schooling and that learning never ends. We are grateful to our parents for their generosity in providing our education. We will always remember Dad reading medical textbooks at the beach.

We learned that humor can diffuse a situation, make a tough circumstance more bearable, and simply make life more fun. Dad made us laugh when we needed it the most.

As adults, when faced with adversity we drew upon our father's example and advice to help us make the right decisions. Dad was strong yet caring, considerate yet honest. He was always a gentleman ~ both in manner and appearance.

Most importantly, our father and our mother established the bonds of our family as a source of strength and love, as their families had before them. We will continue to do so.

The Massachusetts College of Pharmacy and Health Sciences-Worcester: The First Ten Years

Michael J. Malloy, PharmD



**Michael J. Malloy,
PharmD**

On September 18, 2000, the Massachusetts College of Pharmacy and Health Sciences opened the doors to the inaugural class of the Accelerated Doctor of Pharmacy Program. The program was housed in a single building located at 19 Foster Street in Worcester. The newly renovated building contained state of the art classrooms, laboratories, and office space. If you fast forward to the present, the Massachusetts College of Pharmacy and Health Sciences –Worcester

consists of seven buildings, five degree programs, a distance education program in Manchester, New Hampshire, over one hundred employees and over 700 students. The following narrative will provide a detailed description of the development and growth of the Massachusetts College of Pharmacy and Health Sciences –Worcester.

In response to the national shortage of pharmacists, President Charles F. Monahan Jr. and the Board of Trustees of the Massachusetts College of Pharmacy and Health Sciences funded the opening of a School of Pharmacy which housed an Accelerated Doctor of Pharmacy Program in Worcester. The inaugural class, which consisted of 126 students, was seated September 2000. The program was designed to provide a typical four year Doctor of Pharmacy degree in two years and 10 months. Presently, the Doctor of Pharmacy Program enrolls 225 students per class with plans to increase to a class size of 250 students for fall 2011. This will bring the total number of pharmacy students matriculating on the Worcester campus to 750 by the year 2013.

Beginning in the fall of 2010, the School of Pharmacy enrolled its first group of graduate students (three) and offered graduate degrees in Pharmacology and Pharmaceutical Sciences through the Boston

School of Pharmacy Graduate Program. The graduate program will complement the School's burgeoning Postgraduate Training Program that was started in 2004. This program began with one Fellow placed with Genzyme Pharmaceuticals and now has grown to 16 Fellows from 6 different companies including Genzyme, Biogen Idec, Cubist, Novartis and Clinical Pharmacology Study Group. The postgraduate fellowship program is the second largest pharmaceutical industrial fellowship program in the United States and offers graduating pharmacy students from across the nation the opportunity to train with some of the best pharmaceutical companies in the country. The Post Graduate Training Program also includes two residents participating in a Community Practice residency sponsored by our partner Walgreens.

In January of 2005, the College enrolled its first class of 44 students into the Accelerated Bachelors of Science in Nursing Program in response to the national nursing shortage and to meet the ever-changing needs of our health care system. The first class graduated 28 students, all of whom found positions within the profession. Currently there are 62 students enrolled in the program, which continues to grow annually. The projected enrollment for January of 2011 is 65 students. Also, in September of 2010, the School of Nursing enrolled 8 students in a Masters of Nursing program which was designed to provide working nurses an opportunity to obtain their Masters and improve their employment options. The program is hoping to attract approximately 10 new students each year. These programs are housed in the state of the art Borysek Living and Learning Center at 25 Foster Street.

A couple of years later in January, 2008, the College enrolled the inaugural class in the Master of Physician Assistant Studies Program on the Worcester campus in the Borysek Living and Learning Center. The School of Physician Assistant Studies in Worcester offers an accredited program dedicated to the education of clinically competent medical professionals thoroughly prepared to deliver quality patient care in the context of a dynamic health care delivery system. The program was instituted to help meet the growing primary care

demands on the health care system both regionally and nationally. It complements the existing programs on the Worcester campus and fills an educational void in Central Massachusetts. The initial class consisted of 24 students from all around the country. All graduates in the program have found employment upon graduation. The size of the class has grown, with 50 students expected to matriculate in January, 2011.

The newest degree program scheduled to join the Worcester campus is the Doctor of Physical Therapy program, which will be located at 10 Lincoln Square. This program will welcome its initial class of approximately 25 students in January, 2011 with an anticipated graduation in May, 2015. The graduates from the program will help meet the regional and national shortage of physicians. It is expected that the Physical Therapy program will also bring an increased opportunity for additional inter-professional collaboration amongst the disciplines on our campus.

In addition to our degree programs, the Massachusetts College of Pharmacy and Health Sciences- Worcester also houses the Massachusetts College of Pharmacy and Health Sciences Outreach Program in the Borysek Living and Learning Center. The goal of the Massachusetts College of Pharmacy and Health Sciences Pharmacy Outreach Program is to ensure that patients can get the medications

they need and are compliant and adherent to their therapy. By calling a toll-free help line, patients can receive personal assistance with accessing affordable prescription drug programs. They can also receive general information about medications and their side effects. This program was established in July, 2001 as the MCPHS Mass-Medline program through federal and state grants and appropriations. It was designed to service patients in Central Massachusetts as well as patients throughout the entire state. From the start, the program was very well received; it has serviced over 42,000 patients and logged over 149,000 patient calls since its inception.

Massachusetts College of Pharmacy and Health Sciences- Worcester will continue to be the leader in developing new health-related degree programs in the future. The new programs that are selected will complement and enhance the existing programs at the Worcester campus while meeting the health care needs of the city, region, state and the nation. Also, we will continue to work in concert with the numerous hospitals, pharmacies, health care educational institutions and other health care related facilities in Worcester and the state, region and nation to enhance the delivery of health care to all patients. It is our desire to become one of the leaders in Health Care Education and to provide graduates who will be leaders in the delivery of health care for the 21st century and beyond.



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Healing on the Horizon: Why a Healthy Biomedical Industry Keeps Us All Healthier

Kevin O'Sullivan



Kevin O'Sullivan

School of Veterinary Medicine at Tufts University, the Fallon Clinic, Fallon Community Health Plan, Mass College of Pharmacy and Health Sciences, Worcester Polytechnic Institute (WPI), and all of our other great institutions of higher learning here ~ along with the Massachusetts Biomedical Initiatives (MBI).

Today, researchers in Worcester and throughout Massachusetts are pursuing the next blockbuster medical breakthrough ~ perhaps a drug to prevent heart disease, or cure Parkinson's, or eradicate cancer. Given our vast array of leading health care, academic and science resources, the Worcester area will continue to capture new technology and move it into the market place using this unified "teamwork" approach.

An example of this success is the Massachusetts Biotechnology Re-

search Park, home to approximately 20 companies and health care related institutions with over 2,000 combined jobs, filling 1 million square feet, with an investment of over \$300 million, generating close to \$3 million dollars in tax revenue to the City of Worcester alone.

The entire biomedical industry in Central Mass has grown to over 100 companies with 7,500 employees generating yearly revenue of approximately \$1billion

And because biotechnology is such a high risk but vital endeavor, we need to ensure that any political plan to reform health care does not undercut the ability of these researchers to discover cutting-edge cures. With everyone increasingly concerned about the cost

Worcester and Central MA rely on education, healthcare and the life sciences. Let's make sure we continue to support these vital regional strengths as our future well-being depends on quality health care along with biomedical company and job formation opportunities, all fueled by education, innovation, and research and development

searching, developing, and bringing to market a typical biologic ~ a complex drug created not from chemicals, but from living organisms. More than 600 such medicines are currently in the development pipeline, despite the dismal odds against success. We need to do better, however, because currently drug discovery takes too long and costs too much.

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of comprehensive health-care reform ~ estimates are that it will cost over \$1 trillion over the next decade~ we need to continue to collectively work together in order to provide not only coverage to the uninsured, but to bring about the needed reforms within the existing system as well.

Already, biotech companies spend nearly \$1.2 billion, and, on average, close to ten years re-

searching, developing, and bringing to market a typical biologic ~ a complex drug created not from chemicals, but from living organisms. More than 600 such medicines are currently in the development pipeline, despite the dismal odds against success. We need to do better, however, because currently drug discovery takes too long and costs too much.

Nine out of ten drugs fail before reaching clinical trials, and of those making it to clinical trials, more than two thirds fail to win FDA approval. Two-thirds of FDA-approved biologics still won't generate sufficient revenue to cover the cost of their development.

Despite these facts, more than 127,000 biotech employees keep at it here in Worcester and throughout Massachusetts, which has also long been a hub of biopharmaceutical success. They remain determined to discover the next medical advance, exactly like what is happening with the Biotech Park's Abbott Bioresearch Center's development of the drug Humira for rheumatoid arthritis ~ as that is just one specific example.

Expensive to discover and develop, drugs are relatively pricey and they cost insurers and Medicare a lot of money. Pharmaceutical companies and venture capitalists continue sinking money into the often-elusive search for a biologic wonder drug. In fact, most of the major pharmaceutical companies have located here within Massachusetts over the last decade in order to partner up with our innovation and education economy and find collaborations and contract research organizations in order to speed up their drugs to market and reduce the high cost of research and development and delivery to the patient.

Patients rely on drug discovery ingenuity. At any given moment, a Bay State biotech firm could be months or weeks away from a lifesaving finding that could save thousands of lives and billions of dollars. A Lewin Group study, for example, concluded that within five years of a biologic breakthrough for say, Alzheimer's, annual Medicare spending could decline by as much as \$50 billion. We are hopeful that breakthroughs will come from the robust biotech and health care industry right here.

Worcester and Central Massachusetts rely on education, healthcare and the life sciences. Let's make sure we continue to support these vital regional strengths as our future well-being depends on quality health care along with biomedical company and job formation opportunities, all fueled by education, innovation, and research and development collaboration.

All of these combined strengths certainly benefit us all.

Kevin O'Sullivan is President & CEO of Massachusetts Biomedical Initiatives, Inc. (MBI), an economic development organization which promotes the growth of the biotechnology, medical device, and informatics industry, and as such, operates 3 life science business incubator facilities in Worcester.

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Herbert Dean, MD



Herbert Dean, MD

Verax was founded in 1999. It is a diagnostic company involved in blood safety testing, and specifically with the development of a rapid, reliable (high degree of sensitivity and specificity) and inexpensive method for the identification of bacterially contaminated platelet units. The company is located at 4 Biotech Park, Worcester, and currently employs 17 people.

I have been associated with Verax since its beginning, first as an angel investor (an individual investor as opposed to other funding sources such as venture capital, or other debt issuances such as bank loans), later as a member of the Board of Directors, and I still carry the title of Medical Director.

The company has secured the key patents for its technology and in late 2009 received its second 510(k) approval from the FDA for the use of its immunoassay test, Platelet PGD, for the detection of aerobic and anaerobic gram-positive and gram-negative bacteria in whole-blood derived platelets. Verax had previously received a 510(k) for use on apheresis single donor platelets.

Some information regarding the collection and storage of platelets is appropriate for readers to understand the role the Verax test plays in improving and enhancing the safety of platelets in transfusion medicine and clinical practice.

Platelets retain their functional capacity for up to 7 days and require storage at room temperature, as opposed to red blood cells, which must be stored under refrigeration. After day 5, approximately 1 in 2,000 platelet units exhibit serious levels of bacterial contamination, mostly gram positive organisms but in about 10 - 15% of the cases, gram negative bacteria are found. The American Association of Blood Banks recommends platelets not be transfused after 5 days of storage and this requirement is mandated by the FDA.

Platelets are collected in two ways: whole blood derived platelets are collected from a single donor with the unit of blood separated into a unit of red blood cells, a unit of platelets, and plasma. In order to achieve a sufficient increase in the platelet count for transfusion, usually 5 to 6 units of platelets from a corresponding number of donors are pooled together into a platelet unit for administration to a patient; with apheresis-collected platelets the entire dose comes from a single donor. During apheresis collection, blood is passed through a cell separator that permits the re-infusion back to of the donor of red blood cells and plasma while at the same time collecting the equivalent of multiple units of platelets.

The majority of platelets used in the U.S. are derived from apheresis collected platelets. Blood centers that collect apheresis platelets hold the units for 24 hours and then take a bacteria culture. The units are usually held for another 24 hours before being released to hospitals and transfusion centers. Unfortunately, repeated studies have shown that more than 70 % of cultures performed 24 hours after the time of collection fail to detect the presence of bacteria prior to their administration due to several factors. These factors include too few organisms at the time of collection and culture to be reliably sampled, unique growth characteristics of some bacteria that limit growth during the first 24 to 48 hours, and the presence of plasma derived anti-bacterial factors that may be present in some of the retained plasma.

The Verax test is performed when a hospital blood bank or transfusion laboratory is called upon to provide platelets, usually day 3, 4 or 5, and at these times, bacteria have had an opportunity for exponential growth, and the Verax test is able to now detect the presence of bacteria that culture was previously unable to detect.

Some in the medical community hope that once the Verax test is adopted across the entire platelet inventory, the ability to test for bacterial contamination may enable the extension of the shelf life of platelets up to 7 days since any contaminated platelet units can be discarded if the test identifies presence of bacteria.

The Verax Platelet PDG test is an immunoassay and consist of a disposable plastic cartridge that contains a strip coated on either end with a pan-generic antibody for Gram-positive and Gram-negative organisms that is able to detect antigens on the cell surface of bacteria, a central sample well, and appropriate controls. (See diagram.)


The company is currently conducting post-market surveillance studies with apheresis platelets to demonstrate the ability of the Platelet PDG test to detect bacteria previously missed by culture methods and expects to submit data supporting the effectiveness of the test to the FDA in the near future.

Currently, since approval by the FDA, over 40 transfusion centers and hospital blood banks are now utilizing the Verax test to enhance blood safety. Other institutions are conducting validation studies and training personnel and are expected to employ the technology in the coming months. The company has developed a close relationship with Fenwal Inc., and Fenwal is marketing the product both in the U.S. and overseas.

The company plans to explore the application of this technology for detection of bacterial contamination of red blood cells (estimated to occur in 1/50,000 units) and for ensuring the safety of stem cells and tissues and organs used in transplantation.

In conclusion, my experience and involvement with Verax has provided me with an education (Business 101) in employing technology for clinical applications, the multiple steps needed for product development, difficulties associated with financing, various legal issues and time extended with due diligence processes, dealing with regulatory agencies, developing relationships for marketing and distribution, and the frustration of changing the mind set of decision makers within the medical community even when quality and safety improvement is demonstrated.

Herbert M. Dean, MD, FACP is a retired Fallon Clinic physician, an oncology consultant for Unum and MassPro, and the Medical Director of Verax.



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Pandemic Influenza

Richard Glew, MD



Richard Glew, MD

The 20th century experienced three influenza epidemics that moved beyond initial outbreak zones to gain massive, worldwide footholds, thus termed pandemics ~ in 1918, 1957, and 1968. The so-called Spanish Flu of 1918-19 infected one-fifth of the world's population and one-fourth of the people in the U. S., resulting in 50 million deaths globally and one million deaths in the United

States. The mortality rate was 2.5%, 25-fold higher than the usual 0.1% mortality experienced in previous influenza pandemics. Adding to the horror of the outbreak was its surprising demographic profile ~ most deaths occurred in healthy young adults, whereas influenza typically proves fatal in infants, the elderly, and the infirm.

During the Spanish Influenza pandemic, Dr. Isaac Starr, a medical student at the University of Pennsylvania, was pressed into service as a hospital nurse. Sixty years later, he described the scene at UPenn Hospital: "On admission the patients had fever but little else ... Soon they became short of breath and cyanotic ... After gasping for breath for hours they became delirious, and many died struggling to clear their airways of blood-tinged froth that gushed from nose and mouth ... It was dreadful business ... The deaths in the hospital exceeded 25% nightly during the peak of the epidemic ... To make room for new patients, bodies of the dead were tossed from the cellar into trucks which, when filled, carted them away ... The life of the city had almost stopped ... public assembly was forbidden - there were no plays, movies, concerts, or church services, and schools were closed."

Seasonal epidemics of influenza occur annually worldwide, lasting only weeks. Every several decades a mutated virus arises that is unique antigenically. Since few in the population have protective immunity against such a novel flu strain, it is able to escape herd immunity and produce extremely high rates of infection globally, generating a pandemic. In the 20th century, the Spanish Flu of 1918-1919 caused 50 million deaths worldwide, the Asian Flu of

1957-1958 two million deaths, and the Hong Kong Flu of 1968-1969 one million deaths.

Severe complications of influenza take three forms: 1) rapid decompensation in patients with chronic heart and lung diseases, 2) less often, superinfecting bacterial pneumonia, due to respiratory tract bacteria, such as *Streptococcus pneumoniae* and *Staphylococcus aureus*, and, 3) least often, primary viral pneumonia. Ordinarily the mortality rate associated with seasonal influenza outbreaks is low ~ about 0.1%. Most deaths occur in high-risk populations ~ the very young, the elderly, and individuals with severe chronic medical conditions such as heart and lung disease.

The secret to the success of this virus lies in its evolutionary ability to change its surface appearance and escape immune defenses. The virus has two key chemical signatures on its surface ~ neuraminidase (N) and hemagglutinin (H), two antigenic proteins against which the infected individual develops long-lasting protective immunity. Intramolecular rearrangements of the H antigen (16 varieties; only H1, 2 & 3 occur commonly in humans) and N antigen (9 varieties; only N1 & 2 in humans) create new variants of the virus which, to some degree, appear to humans as new viruses. Influenza viruses are able to infect and circulate among swine and fowl, both wild and domestic, as well as among humans. In doing so, the virus exchanges and recombines genes from all three species, periodically creating a radically new virus, unrecognized immunologically by most of the human population, and possibly with novel virulence properties, thereby creating the opportunity for a worldwide pandemic. The 1918 Spanish Flu was termed H1N1, the 1957 Asian Flu was H2N2, and the 1968 Hong Kong Flu was H3N2, designations based on the particular versions of the two surface antigens carried on the viruses.

In the spring of last year, we experienced the appearance of a new H1N1 Swine Flu, initially in Mexico, with rapid spread around the globe. Because this novel H1N1 variant resembled the H1N1 virus that caused the horrific Spanish Flu pandemic, and because an H1N1 virus had not circulated among humans in ninety years, public health authorities in the U. S. justifiably were alarmed that it could lead to a global pandemic, possibly of high virulence. After

the first cases were reported in the spring of 2009, mobilization of resources occurred in the United States. Public health measures were instituted, including: 1) broad surveillance to detect cases, 2) closing of schools experiencing outbreaks, 3) public education to encourage individuals with influenza-like illness to remain home, 4) use of anti-viral drugs, which can attenuate the course of the infection and shorten the period of viral shedding, and 5) accelerated production of an H1N1 flu vaccine, with an aggressive public health program to promote immunization.

Fortunately, the 2009 Swine Flu pandemic proved less virulent than predicted. Western countries experienced attack rates of about 10%, far lower than anticipated. Mortality rates were only 0.03% in the United States, somewhat lower than during seasonal flu outbreaks, and 80-fold lower than during The Spanish Flu. The benignity of the 2009 Swine Flu was due not to public health interventions, such as the immunization campaign, which did not achieve full mobilization until after the epidemic had peaked in late October 2009 and ended in late November, with only 61 million people (20% of the population) immunized. Many European countries did not launch large-scale immunization programs, yet also were spared major outbreaks. Rather than public health interventions, the primary factors that averted a severe global pandemic were viral ~ the 2009 H1N1 pandemic strain turned out to lack genetic mutations required for enhanced pathogenicity and virulence, a fortuity that could not have been assumed at the start of the outbreak.

Three decades earlier, in 1976, after a few severe cases of fatal swine influenza (HswN1) were detected at Fort Dix, New Jersey, an ill-conceived crusade against a predicted flu pandemic was launched in the U.S. Fearing a virulent pandemic like the Spanish Flu, the Ford administration began a nationwide immunization program; 43 million people, 20% of the population, received the vaccine. Unrelated to this program, the outbreak fizzled quickly and failed to spread beyond the Fort Dix military installation. However, in subsequent months, there was a dramatic increase in the incidence of Guillain-Barré

Syndrome, likely caused by hypersensitivity reaction to the HswN1 flu vaccine. For years this debacle chilled enthusiasm for annual flu immunization programs.

Seasonal epidemics of influenza occur annually worldwide, lasting only weeks. Every several decades a mutated virus arises that is unique antigenically. Since few in the population have protective immunity against such a novel flu strain, it is able to escape herd immunity and produce extremely high rates of infection globally, generating a pandemic.

In 2009 the world dodged a bullet, due primarily to the unexpected tameness of the new Swine Influenza virus, not because of the power of public health measures or the power of modern medicine. However, if this novel 2009 H1N1 Swine Influenza virus, during its likely ongoing traffic among swine, fowl, and humans, acquires mutations that enhance its virulence, we could experience another deadly outbreak. On the other hand, mortality rates in future pandemics are unlikely to approach those of the Spanish Flu, due to modern advances in medicine such

as high-tech ICU care and antibiotics for treatment of secondary bacterial pneumonia. Although the seasonal genetic scrambling of influenza viruses cannot be predicted or averted, we can learn from past pandemics and take some comfort in the extraordinary advances in critical care and infectious disease practices as domains of medical science ever more equipped to manage the influenza patient.

Richard H. Glew, MD, is Professor of Medicine and Molecular Genetics & Microbiology and Vice Chair of Medicine for Undergraduate Medical Education & Faculty Affairs at University of Massachusetts Medical School

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Never A Better Time To Get Involved with Oral Health!

Hugh Silk, MD, FAAFP



Hugh Silk, MD, FAAFP

There is a lot going on in dental/oral health in Massachusetts right now, and we need medical professionals to play a more active role in addressing oral health as part of addressing overall health. 1 in 20 children in our state has oral pain in elementary schools; stronger links are being found between periodontal disease and heart disease, diabetes and rheumatoid arthritis. Get involved and do your part for your patients' overall health!

How You Can Get Involved

First, you can apply fluoride varnish in your office if you are in pediatrics or family medicine. MassHealth reimburses medical providers \$26 to apply fluoride varnish to pediatric patients from age 6 months to 21 years. The varnish costs \$1. If you apply varnish to 5 children a day, 5 days a week, for 50 weeks a year – that is \$31,250 of revenue! And you are doing the right thing by reducing caries in children by 38%. As of October 1st, your Medical Assistant (MA) (in addition to nursing staff) can apply the varnish too. For more information, please contact me at 508-334-8846 or visit www.mass.gov and search for “fluoride varnish.”

Secondly, The Society of Teachers of Family Medicine and the American Academy of Family Physicians recently released the third edition of the award-winning “Smiles for Life: A National Oral Health Curriculum.” You can use this to educate yourself, your staff, or other learners with whom you work. The edition includes interactive online courses and clinical cases, downloadable PowerPoint modules, instructional videos, and patient education materials.

“Smiles for Life” is the nation’s most comprehensive and widely used oral health curriculum designed for primary care clinicians. The 7 modules cover the relationship of oral to systemic health, childhood oral health, adult oral health, dental emergencies, oral health in pregnancy, fluoride varnish, and the oral examination. Curricular components of the first two editions of “Smiles for Life” have been downloaded over 100,000 times. Visit www.smilesforlifeoralhealth.org to explore and take CME courses today.

Lastly, on July 1st, 2010, MassHealth dental benefits for adults ~ including restorative services (fillings, root canals, crowns,), dentures, and periodontic treatment ~ were cut. Emergency and preventive treatment for adults (such as X-rays, cleanings, and extractions) is still covered. Fortunately, there was no change to services for those under the age of 21.

If your MassHealth patients are having difficulty finding dental coverage, they can look for resources through the Health Safety Net by calling the MassHealth Dental Customer Service Center (1-800-207-5019). You can also visit <http://tinyurl.com/hsndental> for a list of community health centers with MassHealth dental services.

If you or your patients are upset about the MassHealth adult dental cut, please contact your State Senator and Representative (617-722-2000) and the Governor (617-725-4005) to let them know how this cut has impacted your patients' ability to receive treatment and its affect on their overall health.

Hugh Silk, MD, FAAFP, is Associate Professor, University of Massachusetts Medical School, Department of Family Medicine and Community Health.

Determinants of Health: A New Paradigm for Medical Education

Jeroan J. Allison, MD, MS

Suzanne Cashman, Sc.D.



Jeroan J. Allison, MD, MS Suzanne Cashman, Sc.D.

With the Flexner report of 1910, medical education made a paradigm shift to focus on scientific evidence and rigorous curricular standards. Over the past several decades, an emerging body of scientific literature describing the relationship between social and economic conditions with health has been leading medical education to what may be another paradigm shift. This new paradigm teaches medical students to incorporate patients' life circumstances in their management plans rather than focusing exclusively on biomedical facts. We know that this "new" perspective is already shared by many physicians who have learned from their real-world practice of medicine. However, the schism between real-world practice and medical education in the United States has persisted far longer than our understanding of the contributors to ill health has warranted.

The evidence linking social and economic circumstances to health is overwhelming. The association of better economic status with longer life expectancy is almost linear for both developed and developing countries. Medical care, which often enters the equation only when the patient has presented with advanced disease, is only one determinant of health. For example, economic difficulties limit the opportunity to buy healthful food. Stressful life circumstances increase vulnerability to poor health habits such as smoking and overeating. High crime neighborhoods make it difficult for residents to get adequate exercise by walking. In addition, stress itself

contributes to allostatic load, which slowly erodes the immune system and the ability of human physiology to maintain proper function. Poverty, pollution, crime, and poor health are highly clustered by neighborhood. These issues have been thoroughly explored in California Newsreel's highly acclaimed series, "Unnatural Causes: Is inequality making us sick?" This series aired on public television stations in the spring of 2008.

Recently, our nation has focused on health care reform, particularly on ensuring that citizens have insurance. However, having medical insurance does not guarantee access, nor does it ensure a healthy life. Even as health care reform moves forward, troubling health-care disparities still persist. The Agency for Healthcare Research and Quality publishes an annual report on health disparities; it documents that the quality of care received by patients is often influenced by their race, ethnicity, or economic status. The report also identifies other health disparities such as the excessive number of HIV cases among African Americans and Latinos. Rates of heart disease and stroke are much higher among the African American population, and much of the excessive mortality and morbidity are directly attributable to uncontrolled risk factors such as hypertension and diabetes.

Concurrent with this changing practice environment, the University of Massachusetts Medical School (UMMS) has benefitted from the educational leadership and dedication of our faculty, who have long supported community-based education as a required experience for our medical students. Under the leadership of Senior Associate Dean Michele Pugnaire, MD, a comprehensive five-year process of curriculum redesign was launched with a focus on cutting-edge models and national benchmarks for medical education. Spearheading the curriculum redesign process, Melissa Fischer, MD, MEd, Associate Dean for Undergraduate Medical Education, has brought together the talent and innovative recommendations from a wide and diverse range of faculty, students and graduates to develop new courses and curricular methodologies featured in our Learner-centered Integrated Curriculum ("LInC").

One of the courses included in this new curriculum entitled “Determinants of Health (DOH)” prepares students to act beyond the isolated perspective of the biomedical model. In this course, we review the pervasive nature of health disparities, explore the powerful health consequences of overall life circumstances, and begin demystifying the health care system. In the course’s initial lecture, Dr. Joseph DiFranza explained how he had moved from clinical observation to focus more on research and then on policy change. Early in his years of practice, Dr. DiFranza observed that many of his adolescent patients became addicted by smoking only a few cigarettes. This inspired his discovery of how adolescents could easily purchase cigarettes in Massachusetts, ultimately leading to changes in federal law. With an aim of further understanding the addiction process, Dr. DiFranza is now conducting functional magnetic resonance imaging studies that demonstrate remarkable changes in brain structure after only a few doses of nicotine.

DOH will continue the Community Health Clerkship, a highly rated, two-week experience dedicated to community health. The clerkship has been a cornerstone of the UMMS educational experience over the past two decades under the leadership of Dr. Mick Godkin. As part of the DOH course, the clerkship will bring together students from the School of Medicine and Graduate School of Nursing for an “immersion” experience at one of approximately 25 community sites devoted to improving the care of vulnerable populations. In addition, students will acquire new epidemiologic knowledge to characterize their chosen populations. The clerkship also features service learning through which students will carry out action-oriented projects and focus on the role of advocacy in population health improvement.


Judy Savageau, MPH, is leading the Epidemiology/Biostatistics DOH module, through which students learn to understand the medical literature and apply it to their own clinical decisions. Students will work with data from their chosen community clerkship population as well as data from a survey about health behavior administered to their own class. DOH content is also integrated into the more basic biomedical and clinic experiences of the first two years.

As co-leaders of DOH, we are most pleased to be at the forefront of an important paradigm shift in medical education. With the evolving understanding of the multiple determinants of health, we are better able to prepare medical students to face the complex and difficult challenges of the real-world practice of medicine and to act beyond the isolated biomedical perspective to improve health outcomes for patients, families, and communities.

Jeroan J. Allison, MD, MS is Professor and Vice-Chair, Department of Quantitative Health Sciences, and Associate Vice-Provost for Health Disparities, University of Massachusetts Medical School.

Suzanne Cashman, Sc.D., is Professor and Director of Community Health, Department of Family Medicine and Community Health, University of Massachusetts Medical School.

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Hidden Disparities in Mental Health Care for Medical Students: A Local Perspective

Ruthann Rizzi, MD



Ruthann Rizzi, MD

Given their immersion in medical culture, it is difficult to imagine that medical students would have problems with gaining access to mental health care. After all, college/university mental health is a field marked by growing usage rates and the availability of increasingly sophisticated services. A recently published review of this clinical phenomenon, *Mental Health Care in the College Community*, reflects a growing global awareness of these issues. This awareness is especially important when it comes to mental health care, as many chronic mental health issues begin in young adulthood (or even sooner, as with the anxiety disorders).

Yet medical students differ in a crucial way. Unlike many other students, they are involved, intimately, in the care of patients. The dawning realization that how one appears to colleagues, patients, and society at large carries a heightened level of importance is a burden that must be considered as the medical student settles into the larger medical culture. However, this is a culture with “low priority given to physician mental health...despite evidence of mood disorders and an increased incidence of suicide.”¹ Paradoxically, untreated mental illness is more likely to lead to impairment in one’s ability to practice medicine than a properly treated illness. National rates of “probable” depression in medical students hovered at approximately 25% in a six-site survey of over 2000 medical students and residents published in 2009²; it is likely that the total percentage of medical students with any mental health issue is even higher. Yet the same paper concluded “...students are concerned that treatment for depression could jeopardize their career. Few...utilize services because of issues of stigma, cost, and accessibility, despite previous studies showing the desirability of such programs.” More recent

studies have issued a “clear invitation to intervene with depressed and at-risk students, particularly...when suicidal thoughts and the wish to leave medical training may be greatest.”³

Local experience at the University of Massachusetts Medical School (UMMS) Student Counseling Service (SCS) belies this overall picture. While a range of mental health issues bring students to SCS, the number of students presenting with non-mental health needs is kept very low by the availability of other support services on campus. Yet 44% of the graduating class of medical students (class of 2010) was seen at SCS at some point in their medical school career. This is not an aberration: the percentage of students treated at the UMASS SCS has increased over the past few years, without gross evidence of a greater burden of illness for our particular campus’s medical student population.

Why is the UMMS SCS able to reach such a high proportion of students in need? UMMS and the Department of Psychiatry have made a unique commitment to the mental health and wellness of the students. First, access to care is emphasized: SCS provides care for medical, nursing, and graduate biomedical sciences students in a private suite located centrally on the Worcester campus. Initial visits are offered within 24-48 hours of first contact with rare exception, and students are seen for psychotherapy and/or medication management for as long as clinically needed.

Second, students’ confidentiality is prioritized: SCS clinicians are relieved of any teaching burden, exceeding Liaison Committee on Medical Education (LCME) recommendations for student counseling staff of medical schools. Charts are segregated within SCS, and do not become part of any other medical records. No information about a student is released without the student’s request, save for immediate danger towards self or others.

Finally and importantly, while SCS services are covered by a health fee assessed on all students at the start of each semester, there are no further costs for our services to any students once they walk

through the door, relieving them of insurance visit limitations and out-of-pocket visit fees. This is a model paralleled by the Physician Health Services, Inc. (PHS) of the Massachusetts Medical Society, through its own confidential monitoring and referral services. Although not involved in treatment, PHS offers its services free of charge to any physician or medical student (from any Massachusetts medical school) who is seeking help. Their numbers reflect a similar picture of growth at the state level: from 1978-2007, 40 medical students were assisted. In the three years since 2007, PHS has assisted 31 more medical students.⁴

It is encouraging to see the resulting rates of utilization, as we suspect they are a reflection, at least in part, of services designed to reduce the barriers unique to medical students. This allows us to reach more students with more adequate care, for clinically appropriate lengths of time. As a school-based service, we directly impact and educate the medical school (and the larger medical environment) regarding the most pressing issues concerning the mental health of medical students. We can aggregate data more quickly than loosely-affiliated community providers, empowering our liaison role with the faculty and school administration. We have a

greater impact on students while they have the time in their medical career to make good use of treatment.

We hope our model of student care emphasizing access, privacy, and reduced payment burden will continue to evolve and grow and set the stage for a lifetime of attention to the mental health care of our future physicians, and, by extension, the patients they serve.

- 1, 2. (Acad Med 84, 2: p 240)
3. (JAMA 304(11), p 1232)
4. PHS 2010 Annual Report, p 18.

Ruthann Rizzi, MD is Assistant Professor, Department of Psychiatry and Director, Student Counseling Service, UMass Medical School. She is also a member of the Medical Student Advisory Committee, Clinical Advisory Committee and an Associate Director, Physician Health Services, Inc. (a Massachusetts Medical Society corporation).



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Patient Privacy Verses Physician Punishment

Peter Martin, Esq.



Peter Martin, Esq.

When may the law weigh the privacy interests of patients against the public interest in regulating physician conduct? A recent Massachusetts Supreme Judicial Court decision held that the psychotherapist-patient privilege is not subject to such a weighing process by ruling that investigators from the Board of Registration in Medicine may not have access to the records of a psychotherapist suspected of improperly prescribing painkillers.

The case arose when the psychotherapist, a specialist in pain management, refused to comply with the Board's subpoena for his medical records. The Board had issued the subpoena after reviewing pharmacy records of 205 patients and finding a high level of oxycodone and diazepam prescriptions. The Board filed suit to enforce the subpoena and the trial court ruled that because the defendant was not a psychotherapist the privilege did not apply, and ordered production of the subpoenaed records. Since the Board conceded at oral argument before the Supreme Judicial Court that pain management is a subspecialty of psychiatry, the Court ruled that the defendant was a psychotherapist whose patient communications fell within the statute's protections.

The Massachusetts statute protects diagnosis and treatment-related communications between patients and psychotherapists "in any court proceeding and in any proceeding preliminary thereto and in legislative and administrative proceedings." The Court ruled that "administrative proceedings" includes the Board's investigation prior to the filing of a statement of allegations which actually commences a license revocation case. (The Board failed to argue in its brief to the Court that its investigation of the defendant did not constitute an administrative proceeding, so that argument was waived.)

Thus, this case stands for the proposition that the statutory protection extends to the investigation prior to the lodging of formal allegations against a practitioner. The court's logic could be applied to other health care professionals whose communications are privi-

leged by statute. This is particularly the case where the privilege statute specifically protects patient confidentiality in "administrative proceedings" as is the case with the social worker and domestic violence counselor privilege statutes.

The Court distinguished the Board's action in seeking the patient records in a civil administrative proceeding from a criminal case implicating the defendant's constitutional right to present relevant evidence. In the latter case, courts recognize the need to balance the defendant's due process right to such evidence and the protection of the statutory privilege. In the context of an administrative proceeding commenced by the Board, no constitutional interests are involved, so no such balancing is required.

In the civil context, the Court deferred to the legislature's evident balancing of the privilege against competing interests, reflected in several statutory exceptions to application of the privilege. These exceptions concern such situations as a proceeding in which a patient introduced his mental or emotional condition as an element of his claim or defense, and the judge determines "it is more important to the interests of justice that the communication be disclosed than that the relationship between patient and psychotherapist be protected," or where the psychotherapist discloses otherwise privileged information if there is a threat of imminently dangerous activity by the patient against himself or others. Even though there may be a strong public interest in disclosure in support of the Board's investigation of physician misconduct, the Court declined to extend the exceptions to the statutory privilege beyond what the Legislature already provided.

In another case in which the issue is fully briefed and argued, the Court might decide differently. However, in light of this decision, the protections of the statutory privilege for a variety of health care providers may have been given a significant expansion. Those providers may be able to use the logic of this case to resist licensing body inquiries by protecting privileged information from disclosure to investigators.

Peter J. Martin, Esquire, is a partner in the Worcester office of Bowditch & Dewey, LLP, whose practice concentrates on health care and non-profit law.

Do You Index?

Amos Robinson

Behavioral framing...

Political pollsters have long known that how a question is “framed” can greatly influence the response. Restaurants understand “framing” too; they offer early-bird or late-night specials; not peak-period surcharges.

Investment products are “framed,” too. With no idea what the future performance might be, the marketing message is designed to appeal to investor behavioral patterns.

Marketing index funds...

The marketing of major market index funds offers good examples of ‘framing.’ Most are sold as core allocations or as opportunities to participate in the markets without the risks associated with individual stock-picking; all send positive messages designed to appeal to investors’ herd instincts.

And why not ~ would investors flock to an S&P 500 Index fund if its marketers told investors, “This index fund will absolutely underperform the S&P 500 and have more risk?”

Of course, the statement is accurate; the fund’s small management fees ensure less-than-index total returns and worse-than-index volatility. If investors are charged additional management fees by financial advisors, the aggregate fees are no longer so small and the underperformance no longer minor.

The herd instinct, to be fair, is not the only reason investors buy index funds: some investors are influenced by the academic notion that passive investing will necessarily outperform active investing ~ in other words, they think they cannot do better.

University of Chicago Professor Eugene Fama fathered this idea; his Efficient Markets Hypothesis suggests that in an efficient market, all

pricing anomalies are arbitrated away leaving only stocks that are neither under or over-priced.

Stock market anomalies...

Curiously, Eugene Fama has also unearthed a number of enduring anomalies that, due to overriding behavior influences, do not get arbitrated away and have outperformed the indexes.

The most famous of these is the “value effect;” an observation that stocks with low pricing ratios have done substantially better than those with high ratios ~ and better than the major market indexes, too. Apparently, the “positivity bias” of investors causes them to collectively pay too much for glamorous companies and too little for plodders.

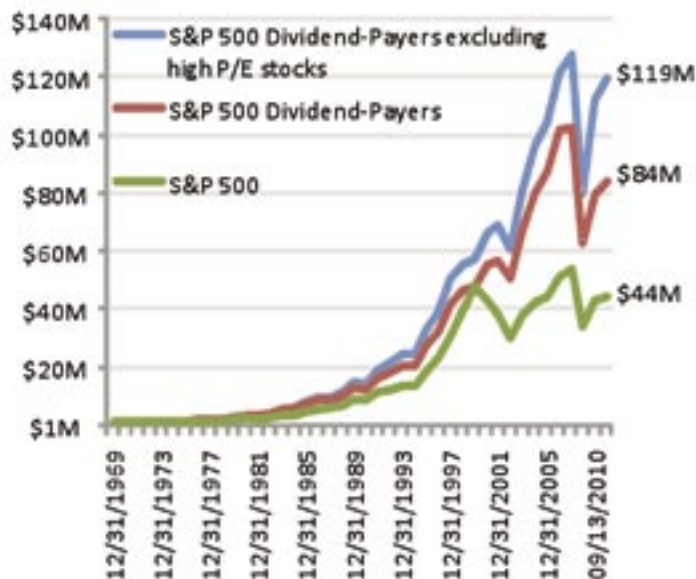
Prominent research firm Ned Davis Research has demonstrated another enduring anomaly: over time, dividend-paying stocks have delivered significantly better total returns than non-dividend-payers, and better than the major market indexes as well. Investors’ intense focus on short-term investment performance apparently causes too-little appreciation of the value of future dividend payments.

Put to the test...

So, which has done better ~ the whole S&P 500 Index or a subsector of the index that owns only the value-priced dividend-paying stocks embedded in the index?

The following chart compares the actual performance of the S&P 500 Index to a variation of the index in which all the non-dividend-paying stocks were thrown out each year. A second variation also excludes any dividend-paying stocks with Price/Earnings ratios more than 150% of the average.

Testing Anomalies



12/31/69 – 09/13/10

Source: ThomasPartners Research

Clearly, the value-priced-dividend-paying stocks in the S&P 500 did much better than the Index as a whole. The implication, therefore, is that the high-priced-non-dividend-payers in the Index did quite poorly...which they did. This result does beg the question why investors would want to own stocks with high Price/Earnings ratios that do not pay dividends, or why they would want to own funds that own them, either.

“Framing” ThomasPartners...

Our firm is often asked to explain the “secret” of our clients’ investment performance and our resulting rapid business growth. “It is quite simple,” we say. “We believe the data.” When we find enduring anomalies in the markets, we try to exploit them; we do not find cause to ignore or excuse them.

Consequently, we do not buy index funds for our clients’ portfolios. Instead, we have steadfastly invested equity allocations in value-priced stocks that not only pay dividends, but have also demonstrated the capacity and propensity to increase their dividends each year, year after year.

If you would like to see a presentation of ThomasPartners composite performance statistics, please visit our website, www.thomaspartnersinc.com, or contact Amos Robinson at amos@thomaspartnersinc.com or 781-431-1430.

PIAM, a subsidiary of the Massachusetts Medical Society, has selected ThomasPartners to be their designated provider of financial planning and investment management services to MMS members at discounted fee arrangements. If you would like additional information, please contact Amos Robinson at amos@thomaspartnersinc.com or at 888-431-1430.

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WDMS Remembers Its Colleagues

Charles I. Brink, II, MD (1923 - 2010)

The death of Charles I. Brink II, MD on June 27, 2010 is recognized with sadness, admiration and honor for a physician who, most ably, served the Worcester District Medical Society, Worcester City and Memorial Hospitals, and two generations of greater Worcester patients.

Charles' college years at Norwich University were interrupted by military service during World War II. Upon his return, he completed his undergraduate and medical studies at the University of Illinois. In 1959, following residency training in Internal Medicine, he entered practice in Worcester.

Throughout his career, he served as Captain in the U.S. Naval Reserves and was instrumental in the formation of the Naval Reserve Chapter in Worcester, becoming its first president. Charles also took a leadership role in Worcester medicine, serving for many years as Secretary of the WDMS as well as editor of this publication, then called Worcester Medical News. With his guidance, the publication matured to feature timely Articles and provocative editorials and became a repository of continuing heritage for the third oldest medical society in America.

Interested in the treatment and rehabilitation of the chronically infirmed, Charles was a consultant to the Massachusetts Rehabilitation Commis-

sion. He was also treasurer of the Central Massachusetts Health Care Foundation, precursor to the current Health Foundation of Central Massachusetts. He was on the faculty of Assumption College and the University of Massachusetts Medical School.

In addition, Charles was committed to the Boy Scouts of America, serving as a director and member of the executive committee of the Mohegan Council. He was also a member of Rotary International.

Charles is survived by his wife Barbara and four sons, three of whom served in the Military ~ undoubtedly the result of their father's influence. His first wife, Ellie, an active member of the WDMS Auxiliary and editor of The Feedline, official publication of the Massachusetts Medical Society Auxiliary, predeceased him.

Charles learned and enjoyed a disciplined lifestyle in school, the military, college, medical school and post graduate study. Upon completion of his formal education, he, like all physicians, entered a new and most important chapter dedicated to a lifetime of continued learning to benefit those entrusted to his care.

As exemplified by his life and accomplishments, Charles I. Brink, II, MD was indeed an outstanding Captain of many ships.

**Lorenzo D. Campos, MD
and Leonard J. Morse, MD**

Fallon Clinic Says Goodbye to Dr. Nancy Frohloff (1956-2010)

In many ways, Fallon Clinic is a family for those of us who work here. There is a great deal of mutual respect among us; we rely and depend on each other and care deeply when bad things happen to one of our own. As happens in all families, ours suffered a terrible and sudden loss in August. Dr. Nancy Frohloff died suddenly, too young, at the age of 54, and with much left to give to her family, her patients and her colleagues. She was a devoted mother to her children Amelia and Justin and a loving wife to her husband of 25 years, Bill Strohsnitter. And she was an important part of our Fallon Clinic family for 17 years.

A passionate and caring physician, Nancy was always an advocate for her patients and her colleagues. In fact, Dr. Frohloff's devoted patients commonly followed her over the years to various Fallon Clinic sites, most recently to her Westborough practice. On frequent occasions, her patients expressed respect and gratitude for her unique brand of care, calling her "kind," "caring," and "thoughtful" ~ high praise for any physician.

As a professional, she was thought of in the highest regard. A long time resident of Westborough, she received her training at the University of Massachusetts Medical School and was active in the medical community. Beyond the remarkable care she provided to her patients, she was a proven leader who was once the Chief of our Westborough office and most recently was named as our Primary Care Quality Chief for Family Practice.

Dr. Frohloff's absence will be felt deeply by all who knew her, worked with her, or sought her out as their personal physician. Her memory will live on here at Fallon Clinic and in the Central Massachusetts medical community.

Jack Dutzar, MD

in memoriam

Irving N. Wolfson, MD
(1919 - 2010)

Dr. Irving Wolfson, 90, died peacefully in his sleep on July 8th at his home in Worcester. He graduated from Columbia University and Yale Medical School and served as an Army medical officer during World War II. Following an internship at Mt. Sinai Hospital and several residencies, he relocated to Worcester where he practiced first internal medicine and later cardiology. He was Chief of Medicine at Fairlawn Hospital, Chief of Cardiology at Worcester City Hospital, Professor of Medicine at the University of Massachusetts Medical School and past President of the Worcester Heart Association. Irving was preceded in death in 1983 by his beloved wife of 37 years and is survived by 3 children, 6 grandchildren and one great grandchild.

I became friends with Irving some 20 years ago after being introduced to him through a mutual friend and colleague of mine at Clark University. The 3 of us would gather for lunch and discuss issues of medical science and evolutionary psychology for insights into human nature, which was the common background that brought us together. During these discussions, Irving and I elaborated upon our common interest in issues of religious experience and its neurological origins.

In our discussions of the nature of Human origins, we found common ground about the evolution of our ancient ancestry and descendants and evaluated the all too common human tendency for war and violence and how it is moderated by love and compassion. Irving was a staunch advocate of reason and rationality in human affairs and as a life-long Humanist, he lent his wit, wisdom and scholarship to energizing the human spirit of others in the community.

Irving was one of the brightest people I have had the pleasure of knowing; he showed his intellectual precociousness early in life when he was admitted to Columbia at age 15 and graduated 3 years later to study medicine at Yale. His intellectual skills were expressed not only in medicine but also as an expert in chess and painting and as a connoisseur of classical music.

The sadness of his passing is that the great mind that was embodied in the person of Irving will no longer be with us to stimulate the provocative ideas and discussions that made life such an interesting experience.

John J. Brink Ph.D.

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The Worcester District Medical Society 2010 Scholarship Award Recipients

Matthew J. Frigault, 2012

University of Pennsylvania School of Medicine
The Dr. Burte Guterman Award

Mitchell J. Li, 2013

University of Massachusetts Medical School
The Philip Wilder Book Award

Rachel S. Sagor, 2011

University of Massachusetts Medical School
The Priscilla Lamantea Book Award

Bram J. Geller, 2011

University of Massachusetts Medical School
The Physicians of Indian Origin Award

Stuart P. Murray, 2013

University of Massachusetts Medical School
The Worcester District Medical Society
Book Award

Jennifer L. Scholwin, 2011

University of Massachusetts Medical School
The Harrington Memorial Hospital Award

Timothy P. Gleeson, 2013

University of Massachusetts Medical School
The Dr. Edward L. Amaral Family Book Award

Nicole L. Nadeau, 2011

University of Massachusetts Medical School
The Fallon Clinic
Dr. M. Elizabeth Fletcher Award

Laura M. Spring, 2011

University of Massachusetts Medical School
The Saint Vincent Hospital
Dr. Gilbert E. Levinson Award

Kevin D. Han, 2011

The George Washington School of Medicine
The Dr. Sanfrey Lilyestrom Award

Michael T. Quinn, 2013

*The Edward Via Virginia College of
Osteopathic Medicine*
The Dr. Julius Tegelberg Award

Daniel G. Terk, 2013

University of Massachusetts Medical School
The UMMHC Dr. Samuel Pickens Award

Jonathan T. Klaucke, 2012

University of Massachusetts Medical School
The Milford Regional Medical Center
Jack A. Rauth Book Award

Tara K. Richardson, 2012

University of Massachusetts Medical School
The Worcester District Medical Society
Book Award



The Worcester District Medical Society Alliance 2010 Nursing Scholarship Award Recipients

WDMSA MSN/NP Scholarship Award

Lorraine P. Fitzgerald, 2011
Massachusetts College of Pharmacy and Health Sciences

WDMSA BSN Scholarship Award

Carolyn Lazar Noyes, 2012
Simmons College

WDMS Congratulates its 2010 Award Recipients

20th Annual Dr. A. Jane Fitzpatrick Community Service Award



Herbert M. Dean, MD

Volunteer Physician, St. Anne's Free Clinic

Hematology/Oncology Consultant for Unum Provident, MassPro Consultant

Medical Director, Verax Biomedical.

Prior to his retirement, Dr. Dean practiced Hematology/Oncology and Internal Medicine at the Fallon Clinic, 1968 through 2001

This annual award commemorates the life-long community contributions and exemplary efforts of Dr. Fitzpatrick in the Worcester community. The award emphasizes the main purpose of WDMS: to promote the health, benefit, and welfare of our citizens, to highlight contributions that have been made to the global community, to encourage others to seek similar opportunities and to publicly recognize the role of a health professional for outstanding contributions made beyond their professional duties, to improve the health and well-being of others.

2010 WDMS Career Achievement Award



Dennis M. Dimitri, MD

Assistant Professor, Department of Family Medicine and Community Health, University of Massachusetts Medical School

Vice Chair, Department of Family Medicine and Community Health, University of Massachusetts/UMass Memorial Medical Center

This annual award was established to honor a member of the Worcester District Medical Society who has demonstrated compassion and dedication to the medical needs of patients and/or the public and has made significant contributions to the practice of medicine.

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