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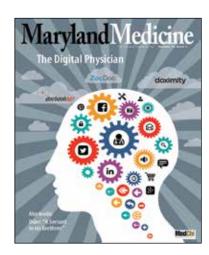
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I N S I D E



This issue of Maryland Medicine takes a look at the impact of digital media in medicine.

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MEDCHI'S LEGISLATIVE VICTORIES ncreasingly, physicians are not being invited to the table to make clinical choices affecting your patients and your livelihood. Being a part of the conversation means being a member of MedChi, The Maryland State Medical Society;

conversation means being a member of MedChi, The Maryland State Medical Society; the only association representing all physicians in Maryland. We could not have achieved the following victories without membership support:

"STERILE COMPOUNDING PERMIT" LEGISLATION

REPEALED MARYLAND'S 2013 "STERILE COMPOUNDING PERMIT" LEGISLATION PROTECTING PHYSICIANS' RIGHT TO CONTINUE TO DELIVER ROUTINE AND HIGHLY APPROPRIATE MEDICAL PROCEDURES TO PATIENTS.

THE ASSIGNMENT OF BENEFITS LAW

MADE PERMANENT THE 2010 ENACTMENT OF THE ASSIGNMENT OF BENEFITS LAW.

PAYMENT OF PHYSICIANS

PRESERVED THE PAYMENT OF PHYSICIANS
IN THE MEDICAID PROGRAM.

DISPENSING MEDICINES

DEFEATED ANY LEGISLATION TO LIMIT PHYSICIANS FROM DISPENSING MEDICINES FROM THEIR OFFICES.

MARYLAND CAP ON NONECONOMIC DAMAGES

THWARTED ATTEMPTS TO TRIPLE THE CURRENT MARYLAND CAP ON NONECONOMIC DAMAGES.

NONPHYSICIANS' SCOPE OF PRACTICE RESTRICTED NON-PHYSICIANS' SCOPE OF PRACTICE.

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Through MedChi, each day physicians are working to ensure that the Maryland General Assembly is enacting physician and patient-friendly legislation. We encourage you to get involved locally in your MedChi component medical society, because that is how change happens. Let your voice be heard.

To keep **YOUR PROFESSION** strong, join today!

THERE IS **STRENGTH** IN NUMBERS!



It Isn't Just Happening to Medicine: Thoughts on My Year as MedChi President



OUTGOING PRESIDENT'S MESSAGE

Tyler Cymet, DO @tcymet

Introduction

Every physician knows that healthcare today is drastically different from what it used to be. Changes happen constantly and in every part of daily life. Healthcare, law, and business have been sucked into the Internet of everything—where people want more information, want it faster, and expect a better quality of information.¹

Pre-smartphone behavior is no longer the norm. The antiquated practices of waiting until the end of the day to play recorded messages, using a rolodex or a phone book, joining social circles that exclude strangers with similar interests, to carrying a pager while on call have all changed. Computers and smartphones have given physicians more freedom while introducing additional layers of oversight within healthcare teams. Physicians may lament the changes that de-emphasize the physician's role in healthcare, but marvel over the advances that make patient care more personalized and effective. The constant connectivity, real-time sensors, and data management have changed how society lives and how medicine is practiced.

MedChi Presidency

For the past year I had the opportunity to travel around the state and the country discussing the future of medicine. We know that in 2016 more nurse practitioners (NP) and physician assistants (PA) than osteopathic (DO) or allopathic (MD) physicians will be graduating from schools in the United States. The culture of healthcare has changed and will continue to change.

Gone is the physician practice owner, and medical records "owned" by the physicians who generated the information and oversaw the quality of the information. Physicians are now employees of larger healthcare systems and are part of healthcare teams that include a wide range of

healthcare professionals. The patient or the insurance company now own medical records, and the data are as likely to be used by non-professionals as by a healthcare provider.

The message I have spread: Everything physicians do, can and will be done differently, the culture of healthcare is changing, and healthcare goals are moving from the requests and desires of the individual patient to "metrics" determined by payors or politicians.

Data-Driven, Money-Measured Healthcare

In a world that has more data, more information, more choices, more products, and more systems, having more options has tangled patient care. Insurance companies have decided that they will not pay physicians to perform routine pelvic exams since there are data that pelvic exams are not cost effective; therefore, physicians would no longer be compensated for the code that included pelvic exams. The decision put physicians in a complicated position. Do routine pelvic exams provide the most cost effective way to identify sexually transmitted diseases? If based wholly on that specific metric, then the answer is no.2 However, physicians who have performed a full physical including a pelvic exam can share experiences of learning about urinary incontinence, or complications of diabetes, prolapsed uteruses, and vulvar cancer. Diagnoses that have saved lives could not have been made without performing a pelvic exam. MedChi and other physician groups are questioning the decisions regarding care, and the physician role in leadership debated. I have begun to wonder if the punch line—the answer is money no matter what the question-IS really a joke, recharging my sense of right and wrong in the emergency department where clearly the most important thing anyone can have is an open airway. Given a

choice between the two options, money or an open airway, one has to be very disconnected from the situation to think that it can even be discussed.

Cost and the Safferman Cupcake

In the past, physicians have had greater responsibility in oversight of the health-care dollars. As those duties are taken over by politicians and payors, physicians have been left to argue over the limited percentage that covers the direct services they provide, only about 10 percent of all healthcare dollars.

A fellow Maryland physician, David Safferman, MD, has commented that physicians are arguing over a cupcake while the pie is left unattended. Dr. Safferman observes that physicians criticize business based healthcare decisions and administrative activity that are not directly related to care and rarely enhance care. Healthcare is meant to make people healthier and live longer, and functioning should be based on the care needed and not the other way around. As the discussions on value in the healthcare system continue, physicians need to voice their perspective of personalized care and individual needs versus wants in a way that is distinct from other professionals in the discussion.

And Then, There is SGR, ICD-10, and EHRs

From 1997 through July 2015 Medicare determined what was reimbursable³ (the Medicare term for "paid for") for medical care using a system that had no connection to the services provided. It created a crazy system in which anything new was expensive, and procedures and interventions had the highest value. The payment and incentives ran counter to logic and hurt healthcare tremendously. After seventeen years of SGR and incredible time and effort put

into lobbying politicians for a logical and reasonable system, a new payment system, ICD-10, is now in place. It is unclear what role physicians will play in the development of the system; however, it is a step forward.

The Hope and the Future

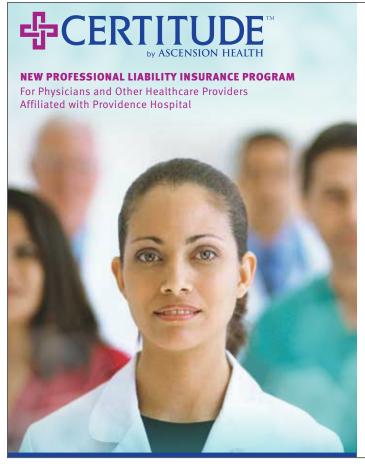
Physicians are the best trained healthcare professionals. Physicians have the highest standards and most thorough education. Assessment for physicians in training occurs at every stage of medical education, with feedback that is brutally honest. Physicians are the driving forces in educating patients, as well as other healthcare providers.

Redefining healthcare needs our experience and our vision. The people we care for need our involvement in the process. For a solid system to be developed and the best interests of people to be the number one concern physicians need to be present at political and business meetings that seem like they have no connection to medicine. It often seems that when conversations get boring, they get important, and potentially dangerous for those not paying attention.

Thank you for allowing me to represent MedChi, and to be present at those meetings at which the future for physicians is defined.

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- 1. T. C. Cymet. "Where Do We Go From Here: Envisioning Physician Version 3.0," *Maryland Medicine* Vol. 15, Issue 3 pages 5–6 (available at http://www.medchi.org/maryland-medicine-journal).
- 2. M. B. Keegan, J. T. Diedrich, J. F. Peipert. "Chlamydia trachomatis Infection: Screening and Management," Journal of Clinical Outcomes Management 21(1):30–38 (January 2014) (available at http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4279217/).
- 3. "Medicare Coverage Determination Process," Centers for Medicare & Medicaid Services (available at https://www.cms.gov/Medicare/Coverage/DeterminationProcess/).



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Beating to Windward

Making Progress in Difficult Times



'NCOMING PRESIDENT'S MESSAGE

Brooke Buckley, MD @medchipresident

As I embark on this truly remarkable experience of leading the Maryland State Medical Society, I follow in the footsteps of giants. I am also prepared to make a couple of footsteps of my own. I recently had the honor of being installed as the 168th president of MedChi. Although we were founded in 1799, I stand as only the third woman to hold this office. At thirtynine years old, I am also quite possibly the youngest president ever. I am a general surgeon, employed, and a mother of three, so I certainly represent evolution.

In this atypical demographic, I am often tutored on how new ideas are simply old ideas on their next "go-around." I readily accept this to be a truth. I also acknowledge that in every incremental change, an enormous revolution looms ever closer. I humbly accept my opportunity to guard, and guide, our great organization through the incremental changes of 2015–16.

"Isn't it funny how day by day, nothing changes. But when you look back, everything is different." – C.S. Lewis

I offer that this has been a remarkable decade of evolution for our great country and for our profession. I believe that this "goaround" of healthcare reform, if given special attention, could award great opportunity. As physicians, often too taxed by our core mission of saving lives, we have found short-term successes by burying our heads and awaiting the regression of each new tide. I see a different opportunity. I will use this year to offer reasons and examples of why and how to stand head on into the wind and, ever so slightly, begin to adjust our sails.

In my view, Maryland physicians have an opportunity to harness the future of medicine. Reform is a call to guide the science of delivery and protect the safety of patients in a way that has never been championed by physicians before. During his presidential year, Dr. Cymet worked tirelessly to understand the changes and incorporate the truths of varied healthcare providers in a vision of the future. Society is questioning the necessity of physicians, and of physician-style training. A tier of providers is gaining more access with less formal education, more algorithm driven care, and on-the-job training than ever before. Patients are driving this change, as "consumers," in ways that we have never experienced. Every patient has a mini medical degree from the academy of Google. Businessmen are training each other that the code of efficient healthcare delivery can be "cracked," just like building the most cost-effective Toyotas.

As informed by our experience, physicians would like to discount this tidal wave and convince people that we are more knowledgeable and therefore "right." I believe that ship, as is embodied in the millennial generation, has sailed. If physicians want to maintain our relevance and command the respect that we do rightfully deserve, we need to lean into the wind and tame these riotous seas.

I will spend my year looking for opportunities to harness the tide of non-physician

providers, to hold them to the highest standards, and to support the health of Marylanders in a modern way. I will look to elevate MedChi physicians above our intra-professional quibbles. I will ask us to stand shoulder to shoulder with a common purpose. I will look to harness the forces of the giants like hospitals, pharmacy, and runaway public opinion to understand the truth that without a captain, a ship cannot sail...a physician is an essential leader in healthcare. We must offer reasons to protect our role as such. We cannot expect to be given this right. We must earn it every day...as we always have.

Are you ready to join me? Are you ready to redouble your efforts and open your mind to new roles and relationships? Are you ready to redefine yourself so that we can sail into the smoother seas defined by population health a bigger team and with our patients by our side? Are you ready to offer MedChi the skills that you do best? Nothing ever changes—the patient-physician relationship is paramount—but everything is different. Let us again take our place at the helm and sail.



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What every business needs to know:

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- The top businesses for data breaches may surprise you. Healthcare providers and Educational facilities are the top sectors for breaches. As more and more sensitive information is stored electronically, these businesses will continue to be targeted.
- The offender is usually an employee. From passwords stuck to computer screens to lost laptops and Blackberrys, a large portion of security breaches are due to employees' actions.
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 Cyber criminals know there will be less barriers to scale when hacking into smaller companies.
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Contact Us for More Information About Privacy/Data Breach Coverage:

Ronald Kendall, Business Development Manager Med Chi Insurance Agency, Inc. 1204 Maryland Avenue Baltimore, Maryland 21201 Office Direct: 443-449-2334

Coverage Highlights

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- Privacy notification expense
- Crisis management and reward expenses
- E-business interruption
- E-theft and e-communication loss
- E-threat
- E-vandalism expenses

Third Party Liability Coverage for:

- Disclosure injury
- Content injury
- Reputational injury
- Conduit injury
- Impaired-access injury

Underwriting Factors:

- Business revenue
- Employee count
- Nature of the business
- Technical safeguards the company



MedChi Sets Priorities for 2016



CEO'S MESSAGE

Gene Ransom, III, Esq. @GeneRansom

In September, the MedChi House of Delegates, its policy body, held its annual fall meeting to determine the 2016 legislative priorities. Public health will be front and center of our agenda next year. MedChi has been directed to work on issues ranging from fixing Medicaid to dealing with the health-related problems in Baltimore. While we are adding several new issues to our lengthy legislative agenda, the top two priorities are fixing Medicaid and protecting tort reform.

Medicaid

In 2012, MedChi successfully persuaded the Maryland General Assembly to increase Medicaid payments for Evaluation and Management (E&M) codes to Medicare rates for all physicians who accept Medicaid. The increase was to address two concerns: (1) the coming expansion of healthcare to tens of thousands of Marylanders and (2) a significant lack of participation in the Medicaid program by Maryland physicians because of inadequate reimbursement. MedChi applauded and fought to keep the payment rate increase and subsequent retention of funding for increase in the 2013 and 2014 General Assembly sessions. The increased reimbursement has been a success, and physician participation in Medicaid has significantly grown.

A problem developed last year when former Governor Martin O'Malley reduced reimbursement for E&M codes in the FY2015 midyear budget cuts that were adopted in December just before he left office. Beginning April 1, 2015, reimbursement for E&M codes was scheduled to be reduced from 100 percent of Medicare to 87 percent of Medicare. Fortunately, MedChi lobbied and payment was increased to 92 percent with the help of General Assembly leaders and Maryland Governor Larry Hogan.

In 2016, MedChi will advocate that we return to parity with Medicare, and we will strongly oppose any cuts in payments.

Medicaid payment cuts create significant barriers to patient access and ultimately increase the cost of healthcare. The tremendous increase in health insurance enrollment that has occurred with the implementation of federal healthcare reform makes retention of the enhanced reimbursement policy essential. Without such a policy, Maryland's ability to main-

New Legislative-Related Resolutions Adopted by MedChi's House of Delegates

Resolution 15-15: Resolved, that MedChi work legislatively to restore Medicaid physician payment for evaluation and management services to equal those of the Medicare fee schedule in the 2016 budget.

Resolution 16-15: Resolved, that MedChi will work legislatively to eliminate the diversion of physician license fees to fund the Health Personnel Shortage Incentive Grant (HPSIG) program, and to ensure that the amount of fees diverted to the Loan Assistance Repayment Program (LARP) are proportionate to the amount actually distributed by Maryland Higher Education Commission (MHEC) for that purpose.

Resolution 17-15: Resolved, that MedChi requests that the Secretary institute a statewide campaign to immunize all children against human papillomavirus (HPV) at the CDC recommended ages... and be it further resolved, that MedChi encourage the endorsement of universal childhood HPV immunization by component and specialty societies, stressing the benefits of prevention of the adulthood consequences of cervical, vulvar/vaginal, anal, penile, and oropharyngeal cancer.

Resolution 18-15: Resolved, that MedChi work within its means to explore novel strategies such as working with insurance companies and actuarial professionals to create new insurance products such as "prior auth insurance"...and be it further resolved, that MedChi explore ways to decrease the administrative burden of the prior authorization process in general.

Resolution 23-15: Resolved, that MedChi supports adoption of the Interstate Medical Licensure Compact; and be it further resolved, that MedChi work legislatively in consultation with the Maryland Board of Physicians for Maryland to enter into the Interstate Medical Licensure Compact.

Resolution 33-15: Resolved, that MedChi will adopt the AMA policy on eradicating homelessness (H-160.903) as MedChi policy and monitor the activities of the AMA on issues around housing and public health; and be it further resolved, that MedChi work with policymakers and relevant stakeholders to study the public health implications of affordable housing and other issues that impact the public health of those who are homeless to identify evidence-based, cost-effective solutions to those issues.

Note: A full list of reports and resolutions can be found at www.medchi.org/hod.

tain an adequate provider network and ensure patient access to necessary services would be at risk. Maryland can only solve the problem of physician shortages in the Medicaid program by preserving Medicaid funding increase for all specialties.

Plaintiffs' Lawyers Attempt to Weaken Tort **Protections**

For every session of the General Assembly, MedChi makes it a top pri-

trial lawyers to weaken tort reform. Trial lawyers regularly attempt to increase the cap on damages in medical malpractice cases and to make other changes to the legal environment favorable to their profession, including abolishing the defense of contributory negligence. The issue had heightened visibility in Maryland's courts when, in 2013, the Maryland Court of Appeals (our Supreme Court) considered a case that could have led to a repeal of

ority to monitor and fight attempts by the

the contributory negligence law. In a split decision, the Court declined to repeal the contributory negligence, but in doing so has positioned the issue for legislative action. In addition, several high-profile obstetric cases over that same time period

"For every session of the General Assembly, MedChi makes it a top priority to monitor and fight attempts by the trial lawyers to weaken tort reform."

> resulted in multi-million dollar verdicts against hospitals. These decisions continue to weigh heavy on hospitals, causing a number of them to consider closure of obstetrics units. The closure of labor and delivery units because of large malpractice verdicts in obstetric cases could result in significant loss of access to care for pregnant women and their babies.

> While Maryland has a cap on noneconomic damages in medical malpractice cases, it is one of the most liberal in the

nation and increases each year by \$15,000. The Trial Lawyers Association has previously proposed legislation to restrict a physician's use of expert witnesses in malpractice cases even where a witness's testimony would be crucial to a defense.

> MedChi will continue to strongly oppose legislation that would eliminate the contributory negligence defense, as well as legislation that would abolish the present rules relating to expert witnesses or increase the cap in malpractice

MedChi is the foremost advocate for physician's patients and the public health of Maryland. Every year we monitor and comment on hundreds of pieces of healthcare legislation. Our web sitewww.medchi.org-gives a detailed report on what we are working on and contains testimony on measures as well as a running list of legislation with positions.





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EDITOR'S CORNER

Bruce M. Smoller, MD

The advent of social media, digital existence, web optimization, and the rest of the animals of the digital zoo has given doctors new tools, new directions, and, most assuredly, new headaches. I bet that we could graph the amount of agita against the age of the physician and get a bimodal curve with two low points at "too young to be daunted" and "too old to be aware." The rest of us along that curve are going to be more or less distressed by the need to perform for the digital world in proportion to our age at graduation multiplied by the square root of the health of our practices.

Physicians traditionally think of themselves as experts in the healthcare of the nation. It goes without saying that our training, especially for those of us who are shall we say a bit gray at the temples, prepares us to do battle with the evil empires of degeneration, decline, and disease. We are armed with an arcane set of weapons, which, like most guilds, we understand, but mortals don't. We are prepared to be judged against these standards by our peers. What we are definitely not prepared for, by our training and expectations, is to be judged by our patients on the basis of how cheery our receptionist is, how easy it is to grab an appointment and whether we are number one or number sixty-four on the Google

hit chart. But there it is. We do, we are, it is, and we must adapt. Just like the rest of the world.

Physicians have now been thrown into the performance pits of the Colosseum just like florists and roofers, dry cleaners, and landscapers. The digital age has forced us to compete on turf we are not sure of, and, worse, doesn't have the magic of the arcane to protect us. Even more, we didn't start this...it has been thrust upon us by a bunch of upstart wonks who now own the space in which we must compete. Not only do we have to know the forty-three associated syndromes of pain in the left upper quadrant, but also we have to pay attention to optimizing our search engines so that we are not left in the dust of the unwashed and can shine in the bright sun of Google. Not only do we have to be adept at not nicking ureters during a procedure, we have to make sure that our Yahoo rating is up to snuff. Most of us don't even know where that comes from. Doctors don't like losing control of our environment. It's dangerous and slippery and can lead to our patients' demise and threatens our grip on our enemy...disease...or is our enemy now disease and Bing! We understand disease. Only a few of us understand Bing.

The world is changing...was there ever a more apt cliché? And there is something to be said for the direction of the change being a poor shadow of what we really do and really are and have trained for. Doing battle with disease and decay we understand. We are armed for it, trained long for it, and accept the quest eagerly. It's even fun, and mostly interesting. Doing battle with the unseen digital gods of Healthgrades and Google, we are, most of us anyway, definitely not trained for. But we had better be. It's knocking at our doors...and in some cases, has blown the doors right in.

We are, however, nothing if not resilient. We are able to adapt, and we are able to wrest control from the unseen forces of Zorc. What's more, what really does count is what we do best...doctoring. Want to know a secret? Patients really do know that. So could we be a little more communicative? Yes. Can we be a little more digital? Sure. Can we take back our own digital destiny? To a point, surely. We had, however, better know the terms of the playing field. That, dear reader, is what we present you with in this issue of Maryland Medicine. Have at it, and may the best gigabyte win. Now, I must get back to smacking the rat...I mean clicking the mouse.

EDITORIAL STATEMENT

Editorial Offices
Montgomery County Medical Society
15855 Crabbs Branch Way
Rockville. MD 20855-0689
Phone 301.921.4300, ext. 202
Fax 301.921.4368
sdantoni@montgomerymedicine.org

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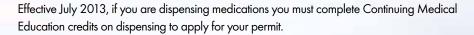
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Roxanne Ward Zaghab, DM, CKM

CIPS Knowledge Enterprise
Center for Innovative Pharmacy Solutions
University of Maryland School of Pharmacy
20 N. Pine Street, PHN427
Baltimore, MD21201
410-706-2963



Frank C. Berry, BS, CCMEP

Director

Division of Continuing Professional Development MedChi, The Maryland State Medical Society 1211 Cathedral Street Baltimore, Maryland 21201 410-539-0872, Extension 3307



Introduction

Mark Jameson, MD, and Stephen J. Rockower, MD

Patients need doctors. Doctors need patients. How is it that they find each other? In the olden days (say, the 20th century), word of mouth was usually the only way for someone to match with a physician. Family physicians, neighbors, and friends provided references and feedback. In this Brave New World, there are now numerous ways for patients to find doctors and doctors to attract patients.

Patients look for physicians in many places. They often go to ratings sites to find a physician, such as Yelp, RateMDs, Healthgrades, or others to do their search. Dr. Google is often used for evaluating symptoms. Mr. Owen Dahl explains to us how to use these sites appropriately, and how to maximize the time.

ZocDoc is another site to find physicians and make appointments. They have studied the root causes for patients not getting in to a physician (the "Dropouts") and suggest ways to correct the problem.

Social media is all the rage. HIPAA standards notwithstanding, many physicians are using Facebook, Twitter, and Instagram to communicate with patients and with each other. Dr. Peter Alperin of Doximity instructs us in the dos and don'ts of e-communications.

Dr. Cymet explains Texting and Twitter. This can be used in careful discussion with patients, other physicians, or to drive patients to your own site. An alternate to unsecure texting among physicians is DocbookMD, a free, HIPAA-secure service for MedChi physicians. Dr. Randall Wong explains in detail search engine optimization and the methods you can use to promote your web site. Attorney Kathleen Pennington discusses the legal and ethical concerns of using digital media.

Other special items in this issue include Dr. Richard Colgan's review of the newly published book on Sir William Osler. As we all know, Dr. Osler was a giant of *Maryland Medicine*, and our main meeting space at MedChi is named in his honor.

Dr. Gershen's Classic Word Rounds is presented along with some new musings in "Late Night Thoughts." We are always happy to publish his work.

It behooves all of us to become more savvy in the new world of social media. The new generation of patients doesn't find their doctors in the traditional ways. When we become adept at reaching out to patients in ways they are already using to interact with their peers, success will surely follow.



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- Access patient demographics, lab results, radiology reports, Maryland Prescription Drug Monitoring (PDMP), discharge summaries, history and physicals, operative notes, and consults.
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How to Manage Your Online Reputation

Owen Dahl, FACHE



It was not that long ago that rating physicians and medical practices, either negatively or positively, was done by word of mouth. Today, public ratings are the norm, and the real issue is online ratings and how they can impact a physician's reputation.

Originally a public relations term, reputation management has evolved and been shaped by the emergence and growth of the Internet. A Google search of the term presents a list of definitions, including the following: "the influencing and/or control of an individual's or business's reputation...the advancement of Internet and social media use, along with reputation management companies, have made it primarily an issue of search results" (Wikipedia).

In the context of today's Internet world, physicians must identify, and understand how to manage, the multitude of available sources of information about physicians and medical practices.

Identify sources of online comments and ratings and take the time to understand what and how these sites are measuring. Sites such as Yelp, Healthgrades, RateMDs, ZocDoc, and Angie's List are defined as social networks or rating sites. Patients or family members may post a comment about a recent visit to a physician, an experience with the billing office, or any other encounter with the practice.

Develop a plan of action to respond to what is being said about you and your practice. If you have provided excellent care and have met the expectation of the patient, online comments will be positive, and you will share with the office staff and post on your website, Twitter account, or blog. If comments are negative, respond with caution. Remember that HIPAA rules apply! Do not respond directly to the post (the patient). If you know the patient, reach out directly via personal contact, face-to-face, or a phone call, to discuss what can be done to remedy the situation.

If there is a threat of a lawsuit noted in a patient's post, immediately notify the malpractice carrier. Do not reply directly online to the comment.

There are many times when it is appropriate to respond online; again, remember the privacy rules and let the public know that you cannot respond directly to the comment. Note that you take all comments seriously and that you are looking into the situation or that you have taken steps to correct it. You may even wish to apologize. Open communication with the patient and public can go a long way to show that you are concerned about the patient and that their satisfaction is important.

Establish a system to review and resolve the issue identified. This does not mean a quick fix or response; rather, track trends, drill down to identify the root cause of the issue, and deal with that. Too often we jump to conclusion, which may not address the issue or could cause additional problems in the long run. Once a resolution has been reached, physicians are advised to post online and in the office reception area to inform patients.

A preventative strategy is to use patient satisfaction surveys. One option is to pose a single question—"Based upon today's visit

would you recommend our practice (physician name here) to a family member or friend?"—and request that it be answered before the patient leaves the office. The patient survey is not scientific, but it is a great way to obtain immediate feedback. Create a 10-point Likert scale with 9 and 10 being the goal. Anything lower than a 9 or 10 did not meet standards. Ask a simple follow-up question, such as "Please indicate your reason for this ranking." The patient portal can be an option as well to encourage patients to post comments about their most recent visit.

By establishing and maintaining a culture built around meeting a patient's expectations, the negative incidents will be few and far between. This means as often as possible reinforcement for good "customer" service is done. Patient satisfaction is taken seriously.

Owen Dahl, FACHE, CHBC, LSSMBB, is an independent consultant based in The Woodlands, Texas. He can be reached at odahl@owendahlconsulting.com.



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Please note this list as of 9/16/15 may not be comprehensive and is subject to change. We apologize to anyone who may have been inadvertently overlooked.



Who Are Healthcare Dropouts?

A ZocDoc Study

Healthcare providers strive to deliver great care to the patients they see. But what about the patients they don't see? Across the country today, there is a population of patients who could get care, but delay or forgo it completely. At ZocDoc, we're calling them Healthcare Dropouts. And no provider, large or small, can afford to ignore them or let them sit on the sidelines.

ZocDoc recently partnered with the award-winning research firm Kelton Global to ask more than 2,000 Americans about their biggest healthcare challenges. We set out to learn who is dropping out of the American healthcare system, why they've dropped out, and what can be done to bring them back into the fold. What we found has implications for every player in the healthcare industry—especially providers.

Who are healthcare dropouts?

We discovered that certain patients are especially likely to withdraw from healthcare:

Millennials are more likely to drop out than older patients.

With little disposable time and high expectations, these "young invincibles" are less likely than their older counterparts to get needed care—whether acute or preventive. Ninety-three percent of millennials have delayed or not scheduled a checkup, versus 74 percent of their older counterparts.

More than men, women are giving up on care.

Although men have a reputation for neglecting their health, we found that women consistently reported less engagement in their healthcare. Sixty-four percent of women say managing their health is a struggle (versus 58 percent of men).

Parents are putting their own care last.

Parents are caregivers for everyone but themselves. More than half (53 percent) of parents would recommend a same-day appointment for a loved one feeling unwell, but only 30 percent would make the same effort for themselves.

Why do patients drop out of preventive and acute care?

For many patients, routine visits are seen as unnecessary. Patients cite absence of symptoms (26 percent), time passed since last appointment (25 percent), forgetting (20 percent), having to book in advance (18 percent), or work commitments (17 percent) as reasons they avoid booking preventive visits.

When patients do schedule an appointment, life gets in the way: they end up cancelling or rescheduling their appointments



for a number of reasons, including work commitments, family conflicts, general busyness and forgetting. The same hesitancy exists for acute care. Even when patients are sick, 27 percent of patients wait more than a week to get care, if they seek out a doctor's advice at all.

In other words, busy lives and a complex and antiquated healthcare system stand between patients and good care.

How can we get dropouts to drop back in?

Healthcare needs to catch up with consumer-first, digital experiences.

As powerful brands like Amazon and Netflix continue to reset patient expectations, the high-friction healthcare experience becomes increasingly archaic in comparison. Patients already see healthcare as one of their most painful responsibilities. Sixty-one percent of people described healthcare as a struggle to manage—more so than personal finances, household responsibilities, career goals, or family obligations.

Patients want choice, transparency, and personalization.

Patients would be more likely to promptly schedule checkups if providers would allow patients to pick their preferred appointment time and to book appointments 24/7, send reminder emails or texts, and allow shorter windows for rescheduling. These patient preferences are confirmed by ZocDoc's proprietary data. While the average nationwide wait-time to see a doctor is 18.5 days, patients who book via ZocDoc choose to see a doctor much sooner (within twenty-four hours), and nearly half (45 percent) choose to book after hours.

Access is a particularly painful issue and must be fixed.

The old-fashioned experience of booking an appointment by phone is one that many patients find unpleasant and discouraging. One in four (24 percent) Americans say it's tough to reach a person when they call a doctor's office, and 26 percent wait at least a few weeks before trying to make an appointment again if

not successfully scheduled on the first call. Seventy-eight percent of Americans say they would book a doctor's appointment online. Asked why, the vast majority say that it is more convenient and they can do it at any time, even when the doctor's office is closed.

Conclusion

The rise of the Healthcare Dropout is troubling for providers, who rely on patients who are engaged and willing to make an office visit. As this study shows, many patients simply aren't willing to persevere through an unaccommodating or archaic experience. The points of friction in a patient's journey may seem individually insignificant. However, in combination, they form a real barrier to early detection and intervention, continuity of care, positive clinical outcomes, and more.

The good news is that patients do not seem to be dropping out because of a lack of desire or knowledge. They want to get the care they need, and many know what they should be doing. In other words, there is a tremendous opportunity to help patients—especially millennials, women, and parents—better prioritize their healthcare by removing friction and structural deterrents. Doing so will mean attending to the needs that patients are voicing, which are both reasonable and feasible.

What must providers do to reengage Healthcare Dropouts? Encouraging patients to "drop back in" will require improved access, digital convenience, and tailored follow-up. These changes are more than a short-term stratagem. Getting ahead of the curve will be possible only for the providers and care organizations that can see themselves through patients' eyes—and deliver the outstanding experience that patients expect and deserve.

ZocDoc is a medical care scheduling service. *Healthcare Dropouts: America's Quiet Healthcare Crisis* was originally published in August 2015. To access the full white paper and learn about listing your practice with ZocDoc, visit http://ZocDoc.me/MarylandMedicine.



Professional Social Networks Helping Solve Physician Communication Challenges

Peter Alperin, MD

Physicians are constantly stuck in a giant game of telephone. Remember the game? One person tells a quick story to another, who then relays the story to yet another person, and the cycle continues until the last person has to share it with the group. Everyone usually ends up laughing

at the resulting story, which is often far from the original version. In medicine, however, distorted communication is no laughing matter. The story is the patient's medical history, symptoms, current medications, test results, and prog-

ress. The group is comprised of primary care physicians, medical exam technicians, nurses, specialists, and the patients themselves. The resulting story is critical to the well-being of the patient. Communication channels must be quick, secure, and direct to ensure that the story is consistent and understood accurately by all the experts.

A typical primary care physician coordinates care with nearly 300 different physicians in a given year. While physicians may have their regular referral network for textbook cases, complex cases often require a specialist, or team of experts, outside of their usual list of contacts. Until recently, there has been no master Rolodex of physicians. Standard approaches to identifying experts—asking peers for recommendations or searching Google—are time-consuming and yield results of inconsistent quality.

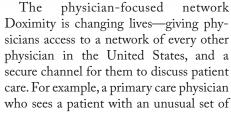
Preventable medical error, often caused by miscommunication, is the fifth leading cause of death in the United States. Rapid, quality communication is essential for continuity of care, and yet it's a challenge all physicians face because of the many restrictions and hoops they need to jump through. No other profession has such a strong need for real-time communication, and yet we still rely on fax machines—a technology first patented in 1843. EHR systems have helped physicians keep better patient records, but they often make it more difficult to share those records between physicians, especially

"Fortunately, the winds are changing. Silicon Valley is turning its focus from Candy Crush to healthcare."

across institutional boundaries.

Fortunately, the winds are changing. Silicon Valley is turning its focus from Candy Crush to healthcare. According to digital health incubator Rock Health, \$4.1 billion was invested in digital health last year alone. While many of these developments focus on early disease detection or tools for chronic care—such as a device that turns a smartphone into a otoscope to detect ear infections remotely or a tremor-reducing spoon that allows patients with Parkinson's Disease to eat without assistance—others are tackling behind-the-scenes issues like scheduling and communication.

Some healthcare entrepreneurs are taking cues from consumer technology. Modern social networks like Facebook and Twitter have changed the way our society communicates—families and friends around the world connect instantly and continuously, consumer brands have direct contact with their customers, and news travels the globe as fast as it can be typed or filmed. Industry-specific networks are providing similar workflow tools. With the right security and infrastructure in place, these same technologies have life-changing implications for patients and healthcare professionals.



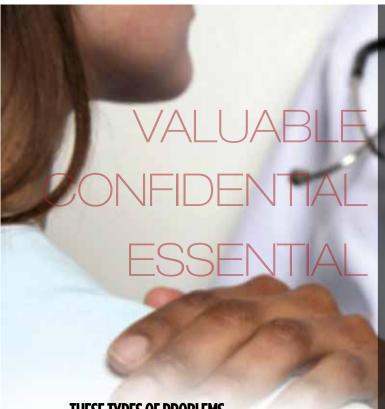
signs and symptoms suggestive of a rare condition can easily find and contact a specialist with specific expertise for a consult or referral. Having a network in place to find verified experts and communicate with them quickly is vital for an information-based

profession.

Figure 1, a medical photo-sharing app, is another example of a digital health company following a social network model. Launched in 2013, it has been dubbed the "Instagram for Physicians," allowing medical professionals to learn from each other through posting and sharing feedback on images of interesting or rare cases. These types of companies are incrementally breaking down the communication barriers physicians face.

At the end of the day, physicians are responsible for providing the best possible care for their patients, and should have a communication technology that doesn't stand in their way. With new tools like Doximity's secure professional network, the medical community is taking a page from current trends and looking to the network to prevent error, establish better physician-to-physician relations, and improve patient care.

Peter Alperin, MD, practices Internal Medicine at San Francisco VA Medical Center, and is Vice President of Connectivity at Doximity. He can be reached at pete@ doximity.com.



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- Been plagued with worry or concern because a colleague "just doesn't seem right?"

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Text Messaging and Physician Communication: Tweeting Others as We Would Want to Be Tweeted

Tyler Cymet, DO @tcymet

Can physicians maintain professionalism while contributing to social media forums? Should text and Twitter messages be a way of communicating and sharing information with our patients and the public? In an age in which there is an abundance of information on healthcare and health issues, people are often eager to seek out the physician voice. As a result, text messaging has become a quick and efficient method of communication that physicians cannot ignore. Although personal text messages can be a great way of disseminating information, they are typically only sent to a few people on a cell phone contact list. For large-scale dispersal of information, physicians can now use Twitter, a social media platform that shares and stores public text messages to anyone with a Twitter account.

Beginning with the first "Merry Christmas" text message in 1992 to the present day, it is clear that text-messaging habits have changed drastically.1 Early text messages were limited to providing cell phone users with voicemail notifications. Suddenly, people felt the need to share photos of their food, inform friends of where they were throughout the day, and their opinions on everything and anything. In a culture where being busy is worn like a badge of honor, the simplicity and convenience of emitting bits of information in seconds was exactly what people needed. By 1995, text messages became commercially available and continued to increase in usage.

My introduction to text messaging came in 2005 during Hurricane Katrina. Baltimore City Medical Society sent ten healthcare professionals to aid the hurricane devastated area, and for the first time I experienced the true value of text messaging. Phone lines had been hit hard, and communication was difficult. In this

situation, text messaging was the most reliable way to share information among the aid team. It proved itself effective and efficient for communication among medical providers.

As physicians, there is no need to fear texting and Tweeting, but instead embrace the times and use these tools to their full capacity. Physicians should use this technology to update patients and other Twitter followers with general health tips, new and changing medical information, reminders, and commentary on current health issues. Twitter is the perfect medium for physicians to take control of the dialogue on health concerns, such as Ebola or a celebrity's recent double

mastectomy, that arise in the media and generate fear. Additionally, Twitter can be used to develop better relationships between physicians and patients by breaking down communication barriers. Twitter and text messages give physicians the capability to be with patients during their morning commute, on their lunch break, and even on their nightstand while they sleep, but only a fraction of physicians are taking advantage of this.

When used responsibly, Twitter and text messaging can be very powerful. Studies have shown that text reminders enhance adherence to medication schedules.² Similarly, the impact of messages on Twitter and other social media forums is

Twitter Definitions



Tweet Message containing less than 140 characters.



Retweet=RT Reposting someone else's Tweet.



@ Symbol used before Twitter name. @DoctorSmith



Hashtag Used to index keywords. #healthadvice



Direct Message=DM Private message with 140 character limit.



Reply Response to someone's Tweet.



Follower A Twitter user who subscribes to your Tweets.

evident. There is a need for reliable information on the Internet, and physicians need to understand that people are seeking their trusted advice on these forums.

However, we must use Twitter with care because responsible "Interneting" takes time. While most physicians will not become Internet addicts, Twitter presence and familiarity will hopefully increase as people become more comfortable. With this, it is important to remember that physicians have an obligation to be evidence-based when making public statements. The AMA has recently released policy statements reiterating that physicians have important responsibility to maintain ethical guidelines in mass media forums.³

Since Tweeting occurs without any peer review, premature Tweets may not be fully thought out and ready to be shared. High risk is involved if thoughts are not filtered, organized, and accurate before releasing them for public consumption. Tweets can be written and sent out for millions of people to see in mere seconds, but they are not so easy to withdraw after clicking that Tweet button. The focus for physicians must remain on being the most trusted sources of healthcare information.

In 2011, JAMA published a study on physicians who have more than 500 followers on Twitter. They found that about half of the 5,156 Tweets they studied were related to health or medicine. Only 12 percent were self-promotional, and 1 percent recommended some sort of medical product or service. A mere 3 percent, or 154 Tweets, were flagged "unprofessional."

Overall, physicians are using Twitter responsibly. Mistakes may be made, but it is important that some physicians are learning by trying. With time and experience, physicians will make fewer mistakes and share more useful health information.

As of 2015, more than 81 percent of Americans send text messages regularly, and in 2011 text message users sent and received

an average of forty-two messages per day.⁵ It is clear that text messaging and Twitter are not just passing trends, and there is no reason for physicians to be excluded from using these tools for professional communication.

When used conscientiously, these newer modes of transmitting information greatly enhance communication between physicians and patients. If they improve a physician's practice and patients' health then it is important to learn how to use them and do so effectively. Although Twitter is unlikely to become the next big thing in healthcare, it will continue to be an effective tool for physicians to connect with patients, promote good health practices, and improve communication.

Tyler Cymet, DO, FACP is the past president of MedChi and a member of the Maryland Medicine Editorial Board. He works for the University of Maryland Emergency Medicine Physician group seeing patients at Prince George's Hospital Emergency Department, and is the Chief of Clinical Medical Education for the American Association of Colleges of Osteopathic Medicine. Dr. Cymet can be reached at tcymet@gmail.com and @tcymet.

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Diminishing the Risk of Physician-to-Physician **Mobile Communication**

Tim Gueramy, MD

Introduction

Smartphones are now medical devices. Smartphones and applications made for them make it easier for patients to perform and track physical activity, monitor calorie intake and heart rate, and be reminded of the time to take their medications. Physicians are using smartphones in their practices to crosswalk ICD-9 to ICD-10, research potential drug interactions, and connect with medical colleagues to share cases and plan medical school alumni events. Too often, though, physicians are also using smartphone texting capabilities to communicate protected health information (PHI) about patients in a non HIPAA compliant manner.

Enter DocbookMD and other mobile apps that allow physicians to communicate PHI in a way that is safe and HIPAA secure.

With Medicare's focus on reducing readmissions and the new Maryland Medicare waiver that pays hospitals using a global budget strategy, it has become increasingly important for hospital-based physicians, including hospitalists and ER physicians and their care teams, to communicate with community-based physicians and their care teams. DocbookMD provides the mobile platform for this HIPAA compliant connection to occur, resulting in better care management and improved outcomes.

MedChi, together with component societies, partnered with DocbookMD in 2013 to bring this technology to MedChi members across the state. Activating the application requires active membership in MedChi and payment of annual dues. There are no additional fees. While there has been growing use of DocbookMD

throughout Maryland, it will be more useful for care continuity when most physicians—hospital-based and community physicians—are using it.

The idea for DocbookMD came as its founders were celebrating their first wedding anniversary. Dr. Tracey Haas, a family physician, and Dr. Tim Gueramy, an orthopedic surgeon, were at dinner when Dr. Gueramy was paged to his hospital for an emergency.



Upon arrival, he discovered that the fracture he'd been called in to examine was not as serious as first thought. "When Tim got home, he said, 'If I had been able to get an X-ray on my iPhone I would have been able to finish dinner with you," Haas said. "That night, we decided to figure out how to make that happen."

Overview

DocbookMD is an exclusive HIPAAsecure messaging application for smartphone and tablet devices and is also available on the web. Designed by and for physicians, it creates a secure community to share critical patient information and collaborate with medical colleagues. In the past year, DocbookMD has experienced incredible

growth and now counts more than 25,000 physicians users across forty-two states. Drs. Tim Gueramy and Tracey Haas began developing DocbookMD six years ago out of a very personal need for more efficient and instantaneous physician-to-physician communication. By using DocbookMD, physicians may send HIPAA-secure text messages bundled with images, labs, X-rays, and EKGs. Direct integrations with answering services and ADT (admit, discharge, transfer report) software are also available, eliminating the need for additional pager services. All information is at a physician's fingertips, resulting in faster and richer discussions on patient treatment and care. In 2014, the application became available to physician's care teams as designated by the physician. Also, with local physician and pharmacy directories built in, the time physicians spend finding colleagues or tracking down a local pharmacy is cut from hours to minutes.

DocbookMD Technology

DocbookMD uses 256-Bit AES (Advanced Encryption Standard) encryption to securely transmit and store data, exceeding current HIPAA compliance requirements. All users are required to sign a HIPAA business agreement prior to activation (customized for our enterprise clients). Sensitive content such as patient details and photos reside on DocbookMD's cloud-based servers, not the user's device. DocbookMD offers remote disabling of the app if a device were lost or stolen.

All messages are saved for ten years, per the HITECH (Health Information Technology for Economic and Clinical

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DocbookMD Case Studies

Zach's Story

When five-year-old Zach broke his foot while out of town over the Thanksgiving holiday weekend, his parents took him to an urgent care clinic to be seen, resulting in consultation from an orthopedic surgeon who referred him to a pediatric specialist.

The Status Quo

The wait to see the specialist is two weeks—so the child and family would have had to painfully wait for definitive diagnosis and treatment until then. In the meantime, without prompt identification of the fracture, the child might not have been casted and kept non-weight-bearing, resulting in worsening or displacement of the fracture and a prolonged recovery, or even corrective surgery in the following weeks.

The DocbookMD Difference

With DocbookMD, the on-call orthopedic surgeon was able to receive a brief description of the injury along with secure X-ray images from the urgent care clinic.

Because he was able to quickly identify a fracture, unseen by the urgent care physician, he knew he needed to intervene quickly. He forwarded the message to a pediatric specialist, who agreed to see the child right away, despite it being the Thanksgiving holiday. With the ability to quickly see the problem from his mobile phone, the specialist got Zach in and placed a cast that day without interrupting the flow of his busy office schedule—thus avoiding a long wait, a possible worse outcome, added expense, duplicated X-rays, and stress on the entire family.

The DocbookMD Advantage

- Saved Time
- Saved Money
- Cost of Care
- Avoid Redundancy
- Reduced Admissions
- Critical Communications
- Improved Outcomes
- Higher Patient Satisfaction
- Improved Workflows
- Care Coordination
- Multi-specialty Collaboration

Pamela's Story

Late one evening Pamela entered the emergency room feeling like she might faint. Staffing the ER that night, Dr. Singh suspected a problem with Pamela's heart and ordered an EKG. At first, the bedside nurse reported that Pamela was simply suffering from tachycardia, but a closer examination of the EKG by Dr. Singh raised suspicion of something more serious.



The Status Quo

Typically, Dr. Singh would stabilize a patient like Pamela, and keep her heart rate slow while a cardiologist was called in to examine her. This could take more than an hour, while she waits, connected to a telemetry device, anxious and uncomfortable.

The DocbookMD Difference

Using DocbookMD, Dr. Singh quickly sought confirmation of her diagnosis from the on-call cardiologist (while he was at home) by sending him a high-resolution image of the EKG. Within seconds, the cardiologist confirmed that Pamela's heart was actually in supraventricular tachycardia (SVT) and required immediate intervention. With the consulting cardiologist in the palm

of his hand, Dr. Singh initiated an IV medication that quickly corrected the abnormal rhythm. He was able to discharge Pamela home directly from the ER. This saved time, money, and further discomfort for the patient, the hospital, and everyone involved in her care. All through the secure and simple communication tool, DocbookMD. Communication saves lives. Just ask Dr. Singh.

The DocbookMD Advantage

- Saved Time
- Saved Money
- Cost of Care
- Avoid Redundancy
- Reduced Admissions
- Critical Communications
- Improved Outcomes
- Higher Patient Satisfaction
- Improved Workflows
- Care Coordination
- Multi-specialty Collaboration

Docbook MD ...

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Health) Act/state recommendations. The technology offers custom HL7 (Health Level 7) integrations with lab, radiology, answering service, billing, and ADT software.

Looking forward, DocbookMD will have full compatibility and integration with HIEs (health information exchange organizations) using the Direct protocol.

Hospital and Groups

DocbookMD founders recognized that this technology was needed within larger groups of physicians and hospital systems. With the development of Docbook Enterprise, hospitals and large groups can now leverage the same communication solution that physicians in more than 200 medical societies trust to help them save time and money and keep them connected to the local medical community.

DocbookMD's messaging platform gives physicians and their care teams the critical communication tools they require to efficiently and effectively care for patients—both in and out of the hos-

pital. Physicians and staff can send messages, X-rays, EKGs, and other images in seconds from a mobile device.

DocbookMD is a HIPAA-secure messaging application with a customizable internal directory for your needs. Transcending practice settings and other medical technology solutions, including individual EMR systems, DocbookMD enables the kind of immediate secure communication and critical alerts that improve daily workflow and can change the face of healthcare.

Community-Minded

DocbookMD has worked with county and state medical associations since its beginning, providing a free, mobile directory for all physician members. DocbookMD aims to be inclusive of all physicians in each community, and involves local resources in each location. As they reach more groups and hospitals with Docbook Enterprise, community physicians are just a touch away, thanks to the medical society partnerships across forty-two states.

Physician-Centric

Built from the ground up by and for physicians, all major features and functions of the application are designed to streamline daily workflow and improve communication between colleagues across all care settings. Each feature keeps in mind the physician's hectic schedule and alert fatigue, so alerts are customizable for each user. Additionally, the app helps protect the entire medical team from text-related HIPAA violations, by offering many levels of protection, exceeding HIPAA standards of today. DocbookMD helps community physicians build their referral network, and improve care coordination, regardless of their practice setting or location.

Patient Care Targeted

While the app is designed for the entire care team to be able to communicate securely and efficiently, providing good patient care is at the center of all DocbookMD does. Critical communication saves lives—it's that simple. Good communication can also reduce healthcare costs and redundancy while improving patient outcomes—and that is DocbookMD's ultimate goal.

Tim Gueramy, MD, a board-certified orthopedic surgeon, is the CEO and co-founder of DocbookMD. Dr. Gueramy can be reached at tim@docbookmd.com.

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Helping Future Patients Find Your Practice on the **Internet:** It's All About SEO

Randall V. Wong, MD

Randall Wong, MD, a retina specialist, practicing in Fairfax, Virginia, discovered his passion for online branding, or Internet marketing, after attending a seminar. Dr. Wong believes that the techniques of Internet marketing can be used to improve the quality of health information available. "As healthcare authorities, if more doctors were willing to create pages such as mine [retianeyedoctor.com]," Dr. Wong states, "the quality of health information available on the Internet would be greatly improved!" Today, as more people rely on the Internet to search for physicians and health information, many more physicians are interested in building a Web presence and online brand. Dr. Wong founded Medical Marketing Enterprises to assist medical practices and physicians produce effective results-oriented websites.

In this article, Dr. Wong provides Maryland Medicine readers with advice regarding search engine optimization and website content marketing.

Eighty-seven percent of American adults use the Internet, and in the past year, 72 percent of Internet users have searched online for health information. Seventy-seven percent of all health inquiries are initiated at a search engine (including Google, Bing, Yahoo, and others), and one in five Internet users consulted online reviews and rankings of healthcare service providers.¹

SEO (search engine optimization) is the use of strategies, techniques, and tactics to increase the number of visitors to your website by obtaining a high ranking on a search engine results page (SERP). A high ranking refers to the position of a website in the list of results; the lower your number on the list, the higher the ranking (i.e., if your website is #1 on the list, you have a very high ranking). Understanding SEO will allow you to understand how search engines rank a website. Optimizing your website and its content is the ONLY way you can achieve and maintain high Internet rankings...there are no shortcuts or workarounds.

SEO for Physicians

Almost 50 percent of physicians own a website for their medical practice. Most of these sites do not have a high ranking, meaning they would not appear on the first, or even second, page of a search engine query.

Most sites do not rank because they lack fresh content AND the site is poorly optimized. The content is the most important criteria by which any website can be ranked. Having an understanding of how content impacts rankings is your first step in understanding SEO.

You should consider boosting the ranking of your website for the following reasons:

1. Patients expect you to be on the web. Patients want more than just your name, address, and phone. They are eager to get information about how you practice, how you operate your business, and some per-



Source: Medical Marketing Enterprises.

sonal transparency. They want a doctor who is willing to engage digitally. If they can't find you on the web, they certainly aren't going to call for an appointment.

- 2. Your next colleague wants to find you. Your next colleague will certainly "Google" you before considering working with your practice. Just like your next patient, your next colleague will want to find out some basic information about your business and you.
- 3. Marketing strategy. Your marketing strategy will say a lot about you. You need a marketing strategy as part of a healthy, viable business plan. Your next colleague will be happy to know that you have a sound marketing strategy to build your practice.

Optimize Yourself

Optimize yourself and your practice by optimizing the following:

- 1. Your Website
- 2. The content (of your website)
- Off-Page Sources

Website: There are basic components that every legitimate website should contain. These are elements that are expected, and if absent, will negatively impact your rankings. You should consult with your webmaster to ensure you (1) install an analytics package (Google is probably best and is free), (2) submit your site to the webmasters tools, and (3) have a robot.txt file (a file used to direct the activity of search engine crawlers) and a sitemap loaded on your site. These are "one and done" fixes, but do require some technical understanding of your website.

The main title tag of a website reflects the goods or services you provide and should not be confused with the name of a practice or business or professional name. (In most browsers, your title tag is displayed in the tab or at the top of the open window displaying your page.) For instance, the main title tag of my website is "Retina Specialist in Fairfax, Virginia" instead of "Randall Wong, MD" or, even worse, "Home."

Website content: Although search engines (Google, Bing, Yahoo, etc.) have their own SEO algorithm to compare and rank websites, the most important and critical component to website rankings is your website content.

Content is technically any text file you have uploaded on to your website—articles, power point presentations, posts, pages, and more—or essentially any file that contains words readable by the search engines.

Great ranking websites all have content that is *relevant* to the query (i.e., the question plugged in to the search engine), and *refreshed* often (new content frequently added) and *routinely*.

For physicians, the easiest source of content may be the textbook answers to the many health-related questions you get every single day. Educating your readers about the diseases you treat, how you make a diagnosis, treatment options are great sources.

Search engines exist to bring patients answers as fast and as accurately as possible. Presenting a list of webpages that are most likely to answer a patient's question, query, or problem with the first attempt is the goal. Presenting patients with old, stale, and irrelevant information is maddening and frustrating; ergo, websites with poor, stale content don't rank well.

Off-page sources (Links): Off-Page optimization includes links from other websites and social media platforms. Links from health-related sites to your website are optimal. Links from other health-related sites serve as endorsement of your site and will help your rankings.

For instance, links from my medical website to your medical website will boost your rankings more than links from my marketing website. Links from sites like "Healthgrades" can help your rankings. There is a plethora of health-related aggregator sites, "Healthgrades" being the most popular. These sites collect all kinds of information about practices and list them on their sites. These are excellent opportunities to establish links to your site.

Take the time to claim pre-existing accounts or create accounts on these sites. Complete the contact information as accurately as possible and make sure you link to your website by simply including the URL of your website. The reward for doing this is that you'll have a dozen or so links back to your site that will not only improve the SEO of your website....but also improve your rankings in "local search."

Ignore Social Media...for Now

Launching and developing a web presence is vital to a modern medical practice, as more patients now expect to find their next specialist or primary care provider on the web and to be engaged digitally.

It all starts with your website and your content. Unlike an advertising campaign, your marketing strategy should be dynamic and ongoing. Be disciplined and start slowly. Build your website and add content. After you develop a website of which you are proud, as a next step, you may consider social media. Engaging social media is not necessary for a medical practice, and if done prematurely, only draws attention to a website not ready for prime time.

Randall Wong, MD, is a retina specialist in Fairfax, Virginia. He is founder of Medical Marketing Enterprises, LLC (http://medicalpracticeadministrator.com/), a company dedicated to introducing Internet marketing to healthcare. Dr. Wong can be reached at randall.v.wong@gmail.com.

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Legal and Ethical Concerns of Digital Media and Technology in Healthcare

Kathleen Pennington, Esq.

Physicians and their patients are increasingly using digital media for both personal and professional purposes. Social media has become a part of physicians' and their patients' everyday lives, whether it's Facebook, Twitter, Instagram, or anonymous social networking apps. Likewise, apps marketed specifically to physicians have made it easier than ever for physicians to communicate with other providers and their patients, to develop treatment plans, and to review patient records—all on their mobile devices. This ease in communication goes hand in hand with the need for physicians to (1) maintain professional, ethical relationships with their patients; (2) exercise caution when engaging in telemedicine; and (3) safeguard their patients' electronic Protected Health Information (ePHI).

In general, physicians should separate their personal and professional identities online and be vigilant about what is posted about them online, both for accuracy and for appropriateness, particularly as seen through the eyes of current and prospective patients. It's best to exercise caution in accepting "friend" requests from patients or patients' family members at the risk of crossing into an inappropriate provider-patient relationship. Physicians also should be wary of inadvertently creating physician-patient relationships via social media or posting medical advice online, which may be relied upon by an individual. Online communications may be construed as a medical record of interaction between the physician and the individual, so it's best to use disclaimers when discussing health issues online, to decline to address any patient-specific medical issues, and to refer patients to a more appropriate clinical setting. State medical boards are increasingly addressing issues of online professionalism, particularly inappropriate provider-patient contact, which has resulted in physicians' licenses being limited, suspended, and revoked.



New healthcare apps have made it easier than ever for physicians to engage in telemedicine. The Health Insurance Portability and Accountability Act of 1996 ("HIPAA") Security Rule requires physicians to conduct annual risk assessments to ensure administrative, physical, and technical safeguards for ePHI are in place and well documented, including Business Associate Agreements when necessary and a physician's use of telemedicine technology. A risk assessment should determine whether a patient's PHI will be stored on the app, if any third parties might have access to patients' PHI on the app, and what level of encryption is used with the app. Physicians should exercise particular caution when using apps that were not specifically developed for healthcare, as they may not be HIPAA compliant. Although vendors may make claims regarding the HIPAA compliance of the app, it may be prudent to check online reviews that address HIPAA issues before using the app for patient communications.

Telemedicine also provokes the issue of unauthorized practice in other states. Before engaging in telemedicine with patients located in any other state, physicians should review the state's telemedicine regulations and medical board licensure requirements, as each state is unique. (Maryland has its own telemedicine regu-

lations that physicians must adhere to for patient care and billing.) In general, physicians are viewed as practicing medicine where the patient is located (unless a specific legal or regulatory exception applies), so physicians should exercise caution before providing telemedicine services to patients. Lastly, physicians should check with their individual liability carriers to see if they have their own guidelines and best practices and to confirm that telemedicine activities outside the primary practice state are covered.

Physicians must maintain the security of patients' ePHI (e.g., patient names, Social Security numbers, driver's license numbers, bank account or credit card numbers, health insurance plan information) that they create, receive, store and maintain, process, or transmit in electronic media (e.g., smart phones, laptops, USB flash drives, external hard drives, and cloud based storage), including when physicians or their employees use their own devices. A physician's duty to protect patients' ePHI includes having Business Associate Agreements in place with third parties that may have access to PHI (even without an intent to view it); however, HIPAA has an exception for "conduits" third parties that only transmit PHI without the capability to view it, such as Internet service providers.



HIPAA breaches via digital media occur both intentionally and unintentionally, and often in some of the simplest ways, such as the following:

- A computer or mobile device without password protection or encryption is stolen;
- A family member improperly accesses PHI on a computer or mobile device;
- A physician uses an unsecure wireless network to transmit ePHI;
- A patent's PHI is attached to emails sent to or from a personal, unsecured email account;
- A patient is treated via social media;
- A physician initiates intimate or other inappropriate relationships with a patient via social media;
- A physician complains about patients on blogs or social media;
- A physician posts particularly sensitive PHI (sexual or reproductive health, mental health, substance abuse, financial information, or "interesting" patient scenarios) on social media; and
- A physician shares photos or medical images of patients on social media.

In today's heightened HIPAA enforcement environment (which includes random government compliance audits of both providers and their business associates) physicians must be prepared to respond immediately to a potential HIPAA breach. Physicians must presume that any unauthorized disclosure of PHI is a HIPAA breach, and then work backwards to affirmatively demonstrate that it was not a breach using the required HIPAA risk analysis. Government enforcement actions for HIPAA breaches are often costly to resolve (with fines and settlements ranging from thousands of dollars to more than a million dollars), and most can be avoided by taking proactive, protective measures. Proactive compliance efforts can also help reduce the financial and regulatory impact of any breach that does occur. Additionally, if there is a breach of personal information that could lead to identity theft or other financial harm (even if no health information is released), Maryland's Personal Information Protection Act may apply, which has its own obligation to notify the patients and the Maryland Attorney General.

It's essential that physicians address the use of technology in their patient materials, including specific authorizations for providers to communicate with patients via email, website portal, or telemedicine app. As safeguards for the future, physicians should consider the following:

- encrypt any files that contain patients' PHI,
- enable remote wiping or disabling of mobile devices,
- refrain from sharing files between devices,
- install and routinely update security software,
- exercise discretion in downloading and using apps,
- only use secure Wi-Fi networks to transmit patient information, and
- make sure to securely wipe or destroy the memory of any device before discarding, selling, or re-using the device for another purpose.

Kathleen Pennington, Esq., is an associate attorney with Pecore & Doherty, where her practice focuses on corporate and regulatory healthcare law. Before joining Pecore & Doherty, Ms. Pennington worked as a judicial extern to the Hon. Ronald B. Leighton in the United States District Court for the Western District of Washington. She also interned at Disability Rights Washington and MultiCare Health System's legal services. Ms. Pennington can be reached at kpennington@pecoredoherty.com.

"A Servant to His Brethren"

Osler's Impact on the University of Maryland School of Medicine and on MedChi

Richard Colgan, MD

Although William Osler's impact on the Johns Hopkins Hospital and School of Medicine are legendary, less well known are his relationships elsewhere in Baltimore—specifically at the University of Maryland School of Medicine and at the Medical and Chirurgical Faculty of the State of Maryland.

How was Osler perceived outside of Hopkins?

Osler as Remembered by the University of Maryland School of Medicine

From the archives of the University of Maryland School of Medicine can be found a publication entitled *Old Maryland*, within which I found many references to Osler. *Old Maryland* was edited by Dr. Eugene Cordell, published at the University of Maryland in 1905, and continued until his death in 1914.

In *Old Maryland*, we find reviews of several of Osler's works, including his essays "After Twenty-Five Years" and "Science and Immortality."

The archives of *Old Maryland* record that on December 20, 1904, Dr. Eugene Cordell held the inaugural meeting of the University of Maryland's Library and Historical Society—in Maryland's historic Davidge Hall. Several hundred students and members of the faculties of the various departments and guests were present. *Old Maryland* noted: "There was great enthusiasm in the crowd! Dr. Osler then rose amid the cheers of the audience...the meeting was in every way a great success and will doubtless be long remembered by those present, especially the students."

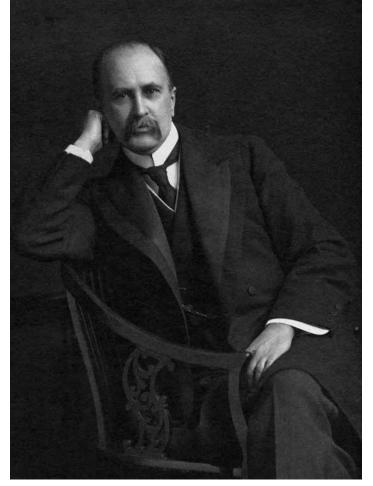
After his departure from Baltimore, Osler continued to receive the publication. A letter penned by Osler, which he wrote from Oxford was printed in *Old Maryland* under the headline: Dr. William Osler writes from 13 Norhan Gardens, Oxford. It reads:

"So glad to hear the centennial movement is prospering. How satisfactory to have a history on hand. We have just moved in to this house, and I am getting my books unpacked. Many thanks for the *Old Maryland*, which I read with great interest."

Osler as Remembered by MedChi

MedChi cherished Osler's memory and honored him in 1920 with a special commemorative bulletin conveying the extent to which they had fully embraced the Canadian as one of their own.

So how did they remember him?



JHMI, Alan Mason Chesney Medical Archives. Reprinted with permission.

Dr. Hiram Woods wrote that Osler championed the State Medical Society. "How many of us have met him browsing around in the library, and soon found ourselves just talking! It was from one such talk that I took away definite impressions about the evils of narrow specialism." Dr. Woods went on to recall his memories of Osler in the library. "We would sometimes find him in deep conversation with a beginner in medicine, or a man we hardly knew and we shied off. It was perfectly clear what he was doing. The comradeship was the real thing; there was nothing professorial about it."

Dr. John Ruhräh remembered Osler for promoting medical libraries. When Osler came to Baltimore, MedChi's library was housed in the basement of the Old Maryland Historical Society Building on St. Paul Street. The library was described as not dead at that time, not moribund, but asleep. Osler succeeded in waking it and having the library moved to a remodeled dwelling on North Eutaw Street. Dr. John Ruhräh quotes Osler: "A physician who does not use books and journals, who does not need a library, who does not read one or two of the best weeklies and monthlies, soon sinks to the level of the cross-counter prescriber, and not alone in practice, but in those mercenary feelings and habits which characterize a trade."

Dr. John Ruhräh also credits Osler with initiating MedChi's Book and Journal club, writing:

"With the small dues of five dollars a year a group of over one hundred men were induced to join this club, the meetings of which under Dr. Osler were a delight to all book lovers. This ability to get men out to meetings and to get them interested in

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- 1 Do I need an *attorney*? How do I find the right one?
- 2 How will my *compensation* be determined? Salary plus bonus model? Output? Quality?
- **3** Will I e*arn more or less* than in private practice?
- **4** Who is responsible for selling, buying, or leasing my *office and equipment*? What are the tax implications?
- **5** If I'm leaving a private practice, what are the *departure issues*? Can I take my current office staff with me? How much control will I have?
- **6** Who will pay for my **insurance**? Malpractice? Insurance Tail? Life? Disability?
- 7 How will my *quality of life* be affected? Coverage? Call schedule? Vacations?
- **8** What are my *hospital obligations*? Will I be expected to serve on hospital committees?
- 9 How will any *disputes* be handled?
- **10** How will a *non-compete clause* factor if I wish to later choose private practice? Whose patients are they?

MedChi is here to inform and guide you in making the best possible decision for you and your patients. Consider all aspects of the decision to enter into an employment agreement or to remain in an employed situation.

Visit MedChi for details at www.medchi.org or contact the Membership Department at 410-539-0872.





A Servant to his Brethren ...

continued from page 31

things was one of his very marked traits and he succeeded because he knew so well how to deal with the human being."

Osler acquired books from around the world and donated many to MedChi. His generosity knew no limit. When Osler found the library, it had a few thousand books, mostly old, and some journals. When he left, it had some 14,500 books—becoming one of the most important collections in the country.

Dr. Francis Packard remembered Osler for urging an appreciation of the history of medicine, writing, "The great increase in the publication of books and articles on medical history which has taken place in this country during the last twenty or thirty years, is undoubtedly largely due to his influence." Dr. Packard cites specifically index medicus and the Catalogue of the Library of the Surgeon General as "two great indices of medical literature in which he took such a profound and vital interest." Packard adds: "Osler was no dry as dust medical historian...No man ever possessed a more profound love of literature nor a more eclectic taste."

After Osler's departure from Baltimore, a movement took place to buy his house and use it for a memorial and library building. A considerable amount of money was raised and turned over to the Building Committee of the Faculty to be used in building the present day headquarters of MedChi at 1211 Cathedral Street.

Dr. Osler was President of the MedChi Faculty in 1896–97. His presidential address dealt with the physician's need to get together as a remedy to the stress of everyday practice.

Dr. John Ruhräh wrote: "Osler believed in professional harmony and did more than anyone who ever lived in Baltimore to secure it. What is more remarkable, he succeeded. Professional relations were less bitter during his residence there than ever before, or since."

He would not listen to gossip nor speak ill of anyone. His jokes were always kindly, according to Joseph Pratt. "He never willingly hurt a brother's feeling, and all men were his brothers. He would never allow anyone to censure in his presence a fellow practitioner of medicine."

I think Dr. Harry Friedenwald summarized well that Osler was deeply loved by his colleagues throughout Baltimore and the State of Maryland, in stating:

"Never has the medical profession of this city felt the loss of one of its members more keenly, never has the whole community shown greater respect and honor and love for the dead. How is it that his being here for only a very short time, his almost comet like presence among us, should have impressed and influenced us so profoundly? We felt near to him, each one of us, we loved him as we have loved none other."

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Special thanks to Dr. Charles S. Bryan; Ms. Meg Fairfax Fielding, Director of Development, Center for a Healthy Maryland; The Foundation of MedChi; and Richard J. Behles, Historical Librarian/Preservation Officer, Health Sciences & Human Services Library University of Maryland, Baltimore.

Richard Colgan, MD, is a professor of Family and Community Medicine at the University of Maryland School of Medicine, Baltimore, Maryland and the author of Advice to the Healer by Springer. Dr. Colgan was the sixth annual Thomas E. Hunt, MD, History of Maryland Medicine Lecturer and delivered "A Servant to His Brethren" on June 25, 2015 at MedChi's Osler Hall. Dr. Colgan can be reached at rcolgan@som.umaryland.edu.



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Late Night Thoughts

REFLECTIONS

Barton J. Gershen, MD Editor Emeritus

My father died in 1947 of a sudden heart attack. He was forty-two years old. It is a Jewish tradition to honor loved ones each year on the anniversary of their death. In the Yiddish language this custom is known as a *Yartzeit*—"a year's time." Tonight, I lit the Yartzeit candle in our kitchen, and sat there sipping my vodka in the darkness, illuminated only by that single candle. The enormous shadow of my rotund frame, magnified by the proximity to the candle, was cast on the wall behind me. It wavered in the flickering light, and as the evening grew darker, my thoughts turned to the universe and to my own inevitable death.

Astronomers have estimated that there are more than 220 billion galaxies in our universe, and each galaxy harbors 100 to 300 billion stars. That totals approximately 10²⁴ stars. Many of these stars contain planets revolving in orbits around them. According to Carl Sagan the odds make it probable that some of these planets, orbiting in the "Goldilocks Zone" (not too hot, not too cold, and with the right amount of precursor chemicals), may harbor life. Since 1960, astronomers have been searching the cosmos for signs of intelligent life—SETI, the Search for Extraterrestrial Intelligence. So far, there has been no contact or other evidence to confirm Sagan's hypothesis.

In 1947, Enrico Fermi asked: "Where is everybody?" Our universe originated about 13.5 billion years ago, plenty of time for life to have emerged elsewhere—and certainly sufficient time to develop a high order of intelligence. So where are they? Why have they not contacted us? Fermi's famous question has been called the Fermi Paradox.

I stared into the candle's flame and wondered—what if there *is* no other intelligent life in the cosmos? What if we are all alone? What if our species is the sole life form capable of bearing witness to our universe? What if we are the only recording secretaries of the cosmic empire?

Astronomers have informed us that our sun is a Class G main sequence star, with a life expectancy of approximately 10 billion years. The sun is now about 5 billion years old, and therefore has another 5 billion years to go before it dies. When that happens, when its hydrogen fuel is exhausted, our sun will expand enormously into a Red Giant. Its outer rim will engulf our earth, burning everything to a crisp. If there are any creatures living on earth at that time, they will be incinerated. If humans have not already left—or annihilated themselves— they will all be cremated. The earth will become a charred wasteland.

If we have not found a method to evacuate earth, it would mean the end of all human existence *in the entire universe*. And if humans were the only intelligent life in the cosmos, there would remain no evidence that any intelligent form of life had ever developed. The cosmos would continue its mechanical existence in a lifeless abyss, void of any sentient awareness. It would be the ultimate example of a tree falling in the woods with no one around to hear. Would there be a sound? Or, in this case, would the universe actually continue to exist?

I felt a deep sense of emptiness and desolation, finished my drink, and poured another. If these facts were true, why on earth would anyone bother to achieve anything? Why struggle for excellence? If all human triumph ends in cinder and ashes, why struggle? Shakespeare, in perhaps his most prophetic lines, wrote:

To-morrow, and to-morrow, and to-morrow,
Creeps in this petty pace from day to day,
To the last syllable of recorded time;
And all our yesterdays have lighted fools
The way to dusty death. Out, out, brief candle!
Life's but a walking shadow, a poor player,
That struts and frets his hour upon the stage,
And then is heard no more. It is a tale
Told by an idiot, full of sound and fury,
Signifying nothing.

Macbeth, Act 5, scene 5, 19-28

Suddenly, it occurred to me that I might have been created as a chicken, an ant, or an amoeba, instead of a human—or perhaps not been created at all. I would not have had the occasion to perceive the universe, to admire its complexity, and to marvel at its mysteries. What a wonderful opportunity I have experienced! Perception, curiosity, knowledge, awareness—even if only for a picosecond of cosmic time—has been an incredible adventure. To have laughed and loved and learned—what more could I have asked for?

And then I thought: to have been a physician was perhaps my greatest reward of all. I have enjoyed eighty-two voyages around the sun—fifty-eight of those tours as a physician. Historians have called my era the "Golden Age of Medicine." In comparison with modern tests, therapeutics, and procedures, the medical inventory my generation relied upon was scanty. However, our passion for medicine was intoxicating, our rapport with patients exhilarating, the respect of the community ubiquitous, and our independence unchallenged.

Sadly, over the past twenty-five years or so, much of this has been lost. With the advent of government insurance programs and their private insurance mimes, the relevance of physicians to the medical profession has waned. Under the guise of quality improvement, programs for cost containment have gradually usurped the physician's authority, tangled her life in a web of excruciating and superfluous details, and virtually obliterated the joy of medical practice. Anonymous authorities have placed physicians within a nebulous group known as "healthcare providers"—a category

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Late Night Thoughts ...

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which, I believe, includes nurses, pharmacists, EMTs, nutritionists, ambulance drivers, hospital janitors, and aroma therapists. In this amorphous group, the cardinal position of the physician is clearly diminished, his prestige reduced, and his importance within the medical team denigrated.

As these thoughts emerged, I began to feel anger rising, flooding my sclerotic arteries with epinephrine—a dangerous thing for old codgers. It was growing late. The candle flickered and a puff of smoke rose upward toward the kitchen ceiling. I gulped down the vodka, took a deep breath, pursed my lips and began to blow out the candle—but I paused and gently exhaled. I suddenly remembered something my dad had said when I first talked to him about my wish to go to medical school. He said: "In 1914, Justice Louis Brandeis defined a profession as an occupation which is pursued largely for others and not merely for one's self. And it is an occupation in which the amount of financial return is not the accepted measure of success. Always remember that." I had almost forgotten those words, but in retrieving them from my declining memory bank, I knew that the scholarly delights and the emotional rewards of our profession would never be eradicated by a government statute or a third party contract. I suddenly understood that the House of Medicine would ultimately heal itself.

My anger diminished and the adrenalin level dropped. I placed the flickering candle safely on the kitchen sink, smiled at it—and at its avatar—and went to bed.

I'll solve the cosmic questions later.

Barton J. Gershen, MD, Editor Emeritus of Maryland Medicine, retired from medical practice in December 2003. He specialized in cardiology and internal medicine in Rockville, Maryland.



Elemental Etymology

CLASSIC WORD ROUNDS

Barton J. Gershen, MD Editor Emeritus

In 1869, Dmitri Ivanovich Mendeleev (1834-1907) systematized and published a table of chemical elements, organized upon the basis of ascending atomic weights. Since Mendeleev's pioneering work, the Periodic Table has been revised and is now based on the atomic number of each element, rather than its atomic weight. The atomic number of an element represents the total number of protons in its nucleus. (In a neutral atom, that figure also equals the total number of its electrons as well.) The atomic weight, on the other hand, is equal to the sum of nuclear protons plus neutrons. For example, the prototypical carbon atom contains six protons and six neutrons, thus its standard atomic weight equals twelve. In chemical shorthand, this is written $\underline{\mathbf{C}^{12}}$. (It is actually no longer correct to speak of the atomic weight of an element. Rather, one speaks of the atomic mass units [amu] of an element.)

Although each element always maintains its characteristic number of protons, it may have various numbers of neutrons within its nucleus. For example, carbon with six protons may have anywhere from two to fourteen neutrons. Thus carbon may have atomic mass units that vary from eight to twenty. Each member of such a set is identified by the symbol for carbon followed by a superscript number, representing its atomic weight (atomic mass unit)—such as C¹⁴. The various carbon homologues are known as **isotopes**, some of which—especially the heavier atoms—are radioactive isotopes.

Currently, there are 119 elements known to science. Ninety-two of these elements occur in our natural world. The other twenty-seven have been created artificially in laboratories by bombarding the nuclei of certain atoms with subatomic particles. Thus physicists have truly transmutated one element into another. The goal of the ancient alchemists—changing base metals into gold—has almost been achieved (alchemist from Arabic al, "the," + kimiya, "chemistry").

Each of us has had some experience with the Periodic Table, from high school chemistry to biochemistry, so it may be interesting to review how some of those elements have acquired their names.

Carbon (atomic number 6, symbol **C**) is the quintessence of all earth-based life. It is indispensable to the production of carbohydrates, lipids, proteins, and nucleic acids. Its name stems from Latin *carbo*, which means "charcoal." It forms such diverse natural materials as coal, diamonds, and graphite. Combined with oxygen, carbon forms CO₂ as well as carbonates such as limestone and marble. The "lead" in pencils is graphite, composed of carbon sheets that slide smoothly past each other, proving valuable as a lubricant. In writing, some of the soft graphite rubs onto the sheet of paper (**graphite** from Latin *graphein*, "to write")

Calcium (atomic number 20, symbol Ca) is the most abundant metal in the human body because of its essential role in bone formation. Its name derives from Latin calx, "limestone." Much of sedimentary rock is composed of limestone (calcium oxide or CaO) due to the decomposition of ancient marine shells trapped within the sediment. In Latin, a small limestone pebble was known as a calculus, a term we still use in referring to renal or salivary stones. In ancient times, tiny pebbles (calculi) were strung onto rods and utilized to enumerate objects. Several of these rods were arranged in rows to form an early mathematical device known as an abacus—one row representing tens, the second hundreds, the third thousands, etc. Using pebbles in this manner allowed one to calculate answers to arithmetical problems. Indeed, today we still refer to such devices as calculators, and we have created the mathematical discipline of calculus, although the pebbles are no longer obvious.

In 1823, a Scottish engineer named Thomas Drummond attended some public lectures delivered by Michael Faraday. Drummond was particularly intrigued by the demonstration of an intense white light, whenever **limestone** (CaO) was heated to incandescence. Utilizing a hydrogen blow-torch, Drummond heated a block of limestone, focused its rays onto a parabolic mirror, and then through a series of convex lenses, producing a beam of light that could be seen more than sixty miles away. This device was immediately deployed in lighthouses as well as in theaters to illuminate the actors. The actors were thus said to be **in the limelight**.

Hydrogen (atomic number 1) was the chief element created by the "Big Bang." It fuels all young stars, by virtue of the fusion of two hydrogen atoms into a helium atom, releasing incredible amounts of energy in the process. (This is also the core mechanism of a hydrogen bomb.) The word hydrogen derives from Greek hydro, "water," + gene, "producing"—that is, "producing water," since the result of its union with oxygen is H2O. Helium (atomic number 2) was initially discovered in the sun, through spectroscopic analysis of sunlight. It was therefore named helios, Greek for "sun." Helium was discovered in trace amounts on earth much later.

Two other elements whose names end in *-gen* are nitrogen and oxygen. **Nitrogen** (atomic number 7) was named for Greek *nitron*, "nitre," which is potassium nitrate (also known as **saltpeter**) plus *gene*, "producing"—that is "producing nitre." As you may remember, nitre (KNO₃) was an essential ingredient in early gunpowder, which also included sulfur and charcoal. (The famous **Salpetriere Hospital** in Paris was built around the ruins of a gunpowder factory, thus acquiring its name.)

In the 1760s, Joseph Priestley conducted experiments in which he lit a candle within a closed jar. The candle gradually died out and a mouse confined within the jar expired. Priestley noted that the volume of air inside the jar had shrunk about 20 percent, although he was unable to discern

the cause. Antoine Lavoisier labeled the residual gas inside the jar "azote" since it obviously had failed to support life. (Azote Greek a, "without," + zoe, "life," as in zoology.) It was not until 1772 that the element, eliminated by burning the candle was identified as oxygen, and the residual gas as nitrogen. Nevertheless, the old term remains in our lexicon. We refer to many nitrogen-containing mixtures as azo compounds, and patients with elevated blood urea nitrogen (BUN) levels are said to have azotemia.

Oxygen (atomic number 8) was initially believed (wrongly) to be present in all acids. Therefore, the name—from Greek oxy, "sharp" (as in the tart, stinging sensation when one's tongue is exposed to an acid) + gene, "producing"—that is "causing acid." It was learned much later that all acids actually possess a hydrogen ion (a proton donor), but the name "oxygen" was fixed in our lexicon and could not be changed. The prefix "oxy" (sharp) is present in such terms as oxymoron (plus the Greek moros: "dull, stupid, foolish")—a word or expression that is both sharp and dull and has opposite meanings (e.g., an expression such as "jumbo shrimp").

Copper (atomic number 29) was one of the elements known to early man. Copper beads have been unearthed in northern Iraq that are 10,000 years old, and weapons composed of an alloy of copper with tin—the resulting material known as **bronze**—have been dated to circa 5000 B.C. During this early period, much copper was mined on the island of Cyprus, known to ancient Greeks as *Kupros* and to the Romans as *Cupros*. This has resulted in the curious symbol **Cu** for copper.

In addition to copper, there are several elements whose symbols do not appear to reflect their names. **Tungsten** (Swedish *tung*, "heavy," + *sten*, "stone"), which is atomic number 74, is symbolized by the letter **W**. During tin smelting operations, German miners discovered that a large amount of slag was produced when the tin deposits were contaminated with foreign matter. They termed the contaminant *wolfram*, German for "wolf dirt." It was later determined that the "contaminant" material (later designated **wolframite**) was essentially composed of the mineral tungsten, resulting in the rather obscure chemical label "W" for this element.

Other unclear elemental symbols include **Sn** for tin (from *stannus*, the Latin term for tin), **Sb** for antimony (from *stibium*, the Latin word for antimony sulfide), and **Hg** for mercury (based on the Latin term for mercury, *hydrargentum*, meaning "liquid silver" – from *hydro*: "water" + *argentum*: "silver").

The element silver is designated **Ag**, reflecting its Latin name (argentum). **Argentaffin** cells, located within glands of the gastrointestinal tract and bronchi, stain darkly when exposed to silver salts. (Latin argentum, "silver," + affinis, "having affinity for"). **Argentaffinomas** (also known as **carcinoid tumors**) are chiefly composed of these cells.

In South America, the Rio de La Plata was thought to contain a large amount of silver ore, just waiting to be harvested by early Spanish explorers (Rio de La Plata is Spanish for "river of silver"). Unfortunately for them, they were wrong. However, the country itself was named **Argentina** for those presumptive silver stores.

Gold is symbolized by Au for the Latin term *aurum*, which means, "glow of sunrise," and **sodium** is labeled Na for the Latin *natrium*, the ancient Roman term for sodium carbonate (Na₂CO₃). The Latin word for lead is *plumbum*, designated by the chemical symbol Pb. One common term for lead poisoning is **plumbism**, and the classic method for determining a perfect ver-

tical line is to dangle a <u>lead</u> weight from a string, which is known as a **plumb line**. The planet Saturn was thought to be composed of lead since it traveled so slowly through the sky. (Lead was one of the heaviest metals known at that time, and so was thought to be the cause of such an apathetic movement.) Therefore, lead poisoning is also called **saturnism**, and the hyperuricemia associated with its toxicity is known as **saturnine gout**. Someone with a bitter, gloomy, sardonic temperament is also said to possess a **saturnine personality**.

Finally, we come to **potassium** (atomic number 19), which bears the chemical symbol **K**. Early man found that oil and grease were difficult to clean from his utensils—as well as from himself. He discovered, however, that if burnt plant materials were boiled with water until the solvent had entirely evaporated, and if this process were repeated several times, a large amount of ash-like matter would remain in the pot. This residue proved highly effective in dissolving and cleaning oil and grease, and became the first "soap" utilized by ancient civilizations. We call the ash that remains in the container **pot ash**. The Arabs termed it *al quali*, "the ashes."

Today, we know that potash is principally composed of potassium carbonate (K₂CO₃) and has a pH between 10 and 11. It is, therefore, **alkaline** (from *al quali*). In 1807, Sir Humphry Davy (1778–1829) performed electrolysis by passing an electric current through moistened potash. At the platinum anode he recovered soft, shiny beads of a new metal. He called it **potassium** since it was derived from the potash. However, in keeping with the urbane scientific Latin so popular with nineteenth century science, he coined a scientific neologism. From *al quali* (or alkali), he announced that the new element would also be known as: "Kalium"—a term with a sense of scientific precision and a dollop of fake Latin panache.

Thus, **K** for potassium. It's quite elementary.

Reference:

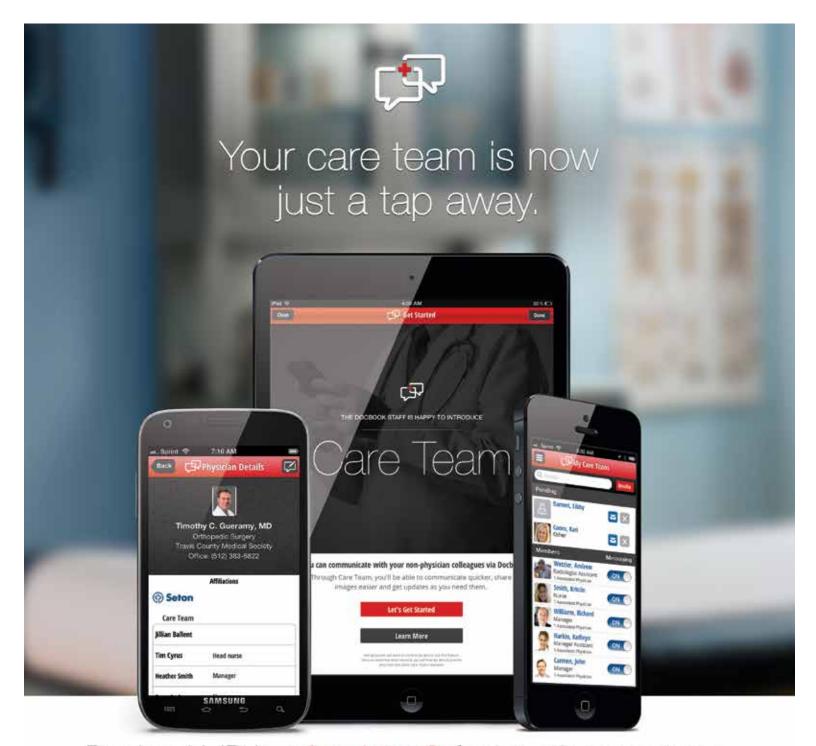
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Barton J. Gershen, MD, Editor Emeritus of Maryland Medicine, retired from medical practice in December 2003. He specialized in cardiology and internal medicine in Rockville, Maryland.





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