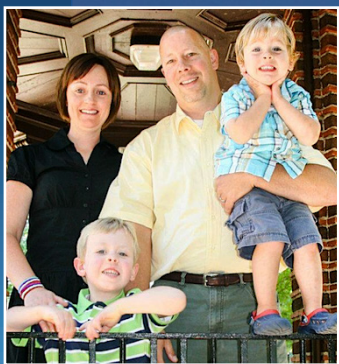


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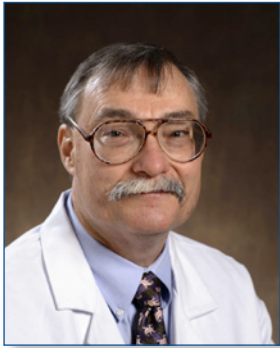


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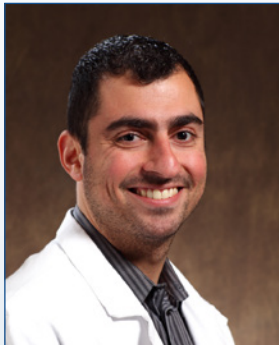
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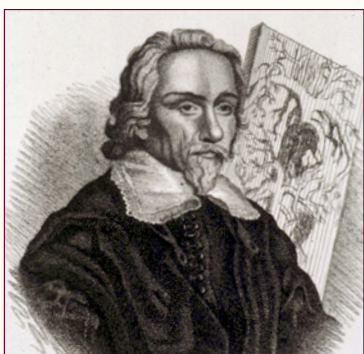
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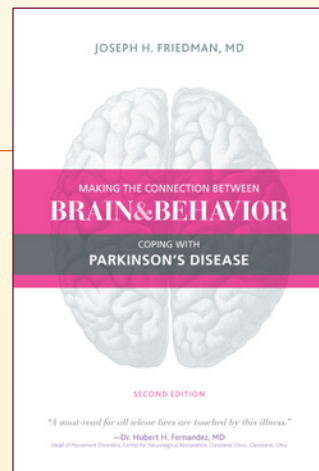
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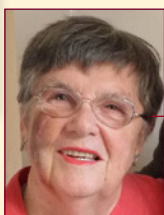
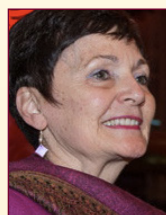
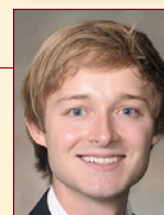
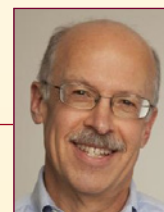
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RIMS thanks **Pfizer** for supporting the transformation of the 96-year-old *Rhode Island Medical Journal* into a 21st-century vehicle to serve the health care community in Rhode Island. A grant from Pfizer enabled the Rhode Island Medical Society to redesign the Journal for electronic distribution to a much wider audience, endowing it with an attractive new design and more diverse content, while making more efficient use of RIMS' resources and sparing the environment.

Thank you, Pfizer!

"Decent respect": An Update on United's October Surprise

ELAINE C. JONES, MD
PRESIDENT, RHODE ISLAND MEDICAL SOCIETY
president@rimed.org

PERHAPS I WAS FEELING oppressed and rebellious, and that is what drove my thoughts to those ringing words in the Declaration of Independence: "When, in the course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, ...a

decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation." The 1137-word Declaration could have been a whole lot shorter, had it not been for the "decent respect" for public and world opinion that compelled the framers to spell out the rationale for their drastic action.

"Decent respect" is something UnitedHealthcare apparently feels it owes to no one – not to doctors, patients, the media, state authorities, federal authorities or elected officials in Rhode Island or Washington. As we have seen from time to time in the past and are seeing now again, opacity is deeply ingrained in the corporate culture of United. In an age when corporate crisis managers and public relations professionals usually counsel transparency as the best policy, United's studied reticence seems oddly old-fashioned and self-defeating.

Granted, United was respectful enough to bring some of its top national and regional leadership to meet with



us at RIMS' offices on November 14 to address, in their word, some of our "confusion" regarding the recent wave of terminations from United's Medicare Advantage network. Once seated in our conference room, however, they politely refused to provide answers to most of the questions we

had about their rationale, their methodology, the numbers and the characteristics of physicians affected, the impact on patients, and United's further intentions for the future. They repeated that they were just trying to prepare for coming federal cuts that are designed, over the next ten years, to bring Medicare Advantage's per capita costs more closely into line with what are traditional Medicare costs per beneficiary.

When we asked when United would be providing notice of the terminations to their subscribers, we learned that a letter was "in the mail" and that subscribers would be receiving it shortly. When we asked if they could please provide a copy of the letter to us, they said no, they would not do so.

Well. With tens of thousands of those letters going out to Rhode Island subscribers, copies were inevitably going to find their way to the Medical Society in very short order. And indeed, an angry subscriber faxed us a copy of the letter the very next morning!

The letter is interesting. First of all, it addresses the subscriber by her first name. (There's that "respect" thing again.) And naturally it includes the obligatory boilerplate ("We value you as a member." "We are here to help." "Your health is important to us.").

But then there's a hint of candor in a paragraph that conceals more than it reveals:

"Health care is going through a transformation. As part of this transformation, UnitedHealthcare® is taking a new approach to managing the provider networks for our Medicare Advantage plans as we strive to help meet the specific needs of members. This means some doctors will not be part of our network going forward. However, we remain dedicated to offering you a strong choice of doctors now and in the future."

The letter names the patient's physician as one of those "who will no longer be a part of your plan's network." The patient who received this letter immediately telephoned the physician in question, who, as it turned out, had been unaware until that phone call that she, too, was on United's list for termination. Other physicians have reported the same experience of first learning of their termination through their patients rather than directly from United. **Please note:** Any doctor who receives notice of a February 1 termination later than October 31 has a right to appeal on that

basis alone, since United is contractually obligated to provide 90 days' notice. Appeals on other grounds (e.g., related to access or quality patient care) appear to be irrelevant and futile, as we are learning from members' reports of their appeal hearings.

In response to our questions on November 14, the United executives repeatedly advised us that everyone who approaches the Medical Society for information, advice or comment about United, whether they be physicians, patients, governmental authorities or representatives of the media, should be referred to United directly. "Just have them call us." They made it clear that they do not trust RIMS or anyone else

to comment fairly and accurately on United's practices and policies. They insist that their corporate spokespersons should be the sole conduits of any information – but, in fact, no information is forthcoming.

United's intense need to limit and control information has costs and ironies. The resulting vacuum quickly fills with speculations, suspicions and vituperations that fester as they as long as they go unanswered. The irony is that by trying to control its message so tightly, United actually loses control and fosters the impression that it may be acting in bad faith. But who am I to question the corporate strategy of an enterprise as successful as UnitedHealthcare Group?

I can imagine their internal discussion: if we respond to questions, that will only lead to more questions.

Our 1776 Declaration speaks of truths that are "self-evident." I am not sure I believe there are such things as self-evident truths. But I do believe it is quite evident that United, in remaining stubbornly uncommunicative, betrays an impressive lack of respect for the community – not only for the medical community, but for its own subscribers and for everyone who cares about meeting the challenges of delivering quality, cost-effective healthcare services to Rhode Islanders. ❖



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Altruism and my Nine Gallons of Blood

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THE NOTION OF WHAT altruism is, particularly whether it even exists, is one of those philosophical issues that I assume most of us have grappled with. Doctors are, I believe, often assumed to be more altruistic than the average citizen by virtue of our willingness to provide care, support and help to those in need, coupled with our often extremely long hours and our lengthy and intensive training. We proved our commitment by getting to where we are. We welcome all comers, whether we like them or not. We ease their burden by sharing their sometimes very bad news. But we do get our rewards. Most of us are paid quite well, perhaps not as well as we might had we become plumbers straight out of high school, or went into investment banking after college; nevertheless, most of us rarely want for the essentials. We are held in high regard in the community and, most importantly, we generally have high job satisfaction. It feels good to help people.

Are our actions altruistic? Is there such a thing? Don't we get some reward for the sacrifices we make, even if the reward is simply feeling good about ourselves for doing something even when, or particularly when, no one else knows about it? I got to wondering about this again for two reasons. The



more important is that I recently received the Charles Hill Award from the Rhode Island Medical Society for service and contributions to the community by being editor of this Journal for 15 years. The second is that I just got my mug from the Rhode Island Blood Bank for donating my ninth

gallon of blood. It would have been more if my trips to Africa didn't lop off a year of eligibility to donate after each visit.

So I sound like a good guy, maybe even altruistic. After all, this is volunteer stuff that I get no "reward" for, but that's really not true. However, I think that a mug isn't good enough for a tenth gallon. Maybe a ten-gallon cowboy is more appropriate, but then not many people, and certainly not me, will wear a cowboy hat in Rhode Island. I think I'll try to convince the blood bank to give a t-shirt for the tenth gallon so I can wear it, boast about it, and hopefully get others to go for a ten-gallon t-shirt of their own. Of course, if I keep going back to Africa I'll be dead from old age before I can get that t-shirt. I feel good giving blood. Most of the time no one knows I've donated. I keep it to myself, which, of course sounds altruistic, but it makes me feel good. I know that I'm helping someone and that no one knows it. I'm a secret helper, which makes it feel twice as good. So, no, that's not altruism. I'm

rewarding myself. One definition of altruism is: "A behavior is altruistic if it brings any kind of benefit to other individuals at some cost for the agent, and if there is no foreseeable way for the agent to reap compensatory benefits from her behavior." That doesn't sound like me. I get benefits from my behavior.

I'm not a philosopher or a logician, so I looked up an article on altruism, determined to see if someone's unlocked this enigma. The authors of the article I read categorized altruism into four types: psychological altruism where the "genuine" motivation is to help others; reproductive altruism, in which the actions are to improve another's survival and reproductive chances in return for some sacrifice; behavioral altruism, which involves "bearing some cost in the interest of others;" and preference altruism, in which one favors others' interests.

I'm not convinced there are such categories. I think that if one has time to make a decision then one is probably never completely altruistic. If you stop to think whether you should run at the maniac with the gun in a crowded theater rather than hiding, then in some conscious part of your brain you've made a decision that you'd rather die than live with the feeling of not having made the attempt. Several years ago, someone in New York City jumped onto the tracks in front of a subway train to save a person who fell after suffering a seizure. Surely he had no

time to think about feeling good due to his heroic action – if he came out alive. And then there was the incident of a French teacher who barricaded his students into a room as he remained outside, gunned down by a lunatic but saving those inside. Soldiers do this for their comrades. I can't imagine that all of these people, especially the ones who act on an instant, have any time to think. So, maybe that isn't a sacrifice, if the choice was not conscious. I view these, however, as "pure" acts, sacrifice without thought of reward.

I have done volunteer work. I've "donated" my services, but there has always been a reward. If my motivation for teaching in Africa was purely altruistic I'd better serve those people by working hard at home and sending the money I

made, then they can hire a "real" doctor and get the needed medical supplies. I like editing the Journal. It's like a hobby. Altruism is not a zero-sum game. One person or group wins, the altruist loses. That is, perhaps, the essence of the thing. Altruism is not an equation, whereas volunteerism is. Volunteerism is good, and often worth rewarding even if we reward ourselves by patting ourselves on the back. Getting rewards from others has been, at least for me, more humbling than anything. How does one keep from disappointing? Visible rewards come with expectations. They can be difficult to cope with.

I've decided that if I can't convince the blood bank to produce a ten-gallon t-shirt for my tenth gallon, I'll pay to have one made. I earned it. ❖

Author

Joseph H. Friedman, MD, is Editor-in-chief of the *Rhode Island Medical Journal*, Professor and the Chief of the Division of Movement Disorders, Department of Neurology at the Alpert Medical School of Brown University, and chief of Butler Hospital's Movement Disorders Program.

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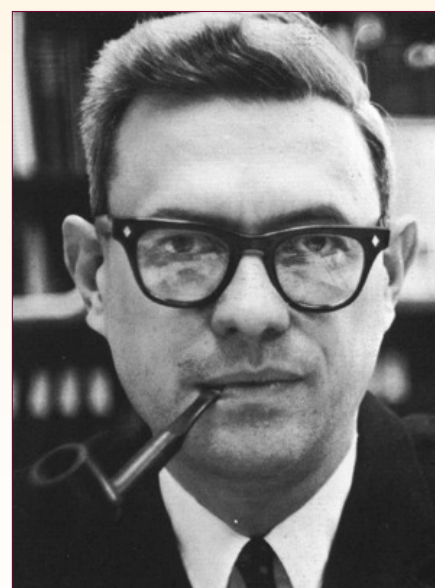
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Dr. Aronson in 2007 receiving Doctor of Medical Science (DMS) at Brown in 2007.



Stan Aronson, MD, in the early years in the 1950s at Downstate Medical Center in NYC.

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History Issues a Cautious Summons to Reason

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HISTORIANS ARE RELUCTANT to assign precise dates to what they have cautiously called the Age of Enlightenment; most have agreed, though, that the Europe of the 16th Century might be as close a date as they dare to choose. Yet they are uncomfortably aware that this same century had witnessed a king of Scotland publishing an encyclopedia of witchcraft called *Demonologie* while sanctioning death sentences for those convicted of witchcraft, evil incantations, sorcery, exorcisms or the casting of an evil eye. And so, between 1560 and 1600, Scotland executed some 6,000 women, burning them at the stake for the sundry forms of sorcery. And in neighboring England, under Elizabeth Tudor's laws of 1562, witchcraft was similarly a capital crime; but with typically Anglican forbearance, only 81 women were executed.

The combined forces of recurrent pestilence, periodic famine and widespread illiteracy kept Europe enthralled to a medieval mode of living and thinking for centuries. Witchcraft, in the Western nations – and its transatlantic colonies – would not disappear as a declared crime for another century; and sadly, seeking out witches, particularly those who express unpopular views, continues to be a popular bloodsport. Yet despite the residue of allying elderly women



with sorcery, enlightened reason was timidly advancing during that eventful 16th Century.

The relentless pandemics of the past, such as the bubonic plague, diminished appreciably in late 16th-Century Europe. This, and a general improvement in urban sanitation, led to improved health conditions and, inevitably greater survival particularly of the newborn. Inevitably, this led to a demographic revolution; and for the first time in recorded history the European population swelled dramatically prompting thoughts of colonial expansion and newer ways of producing needed commodities.

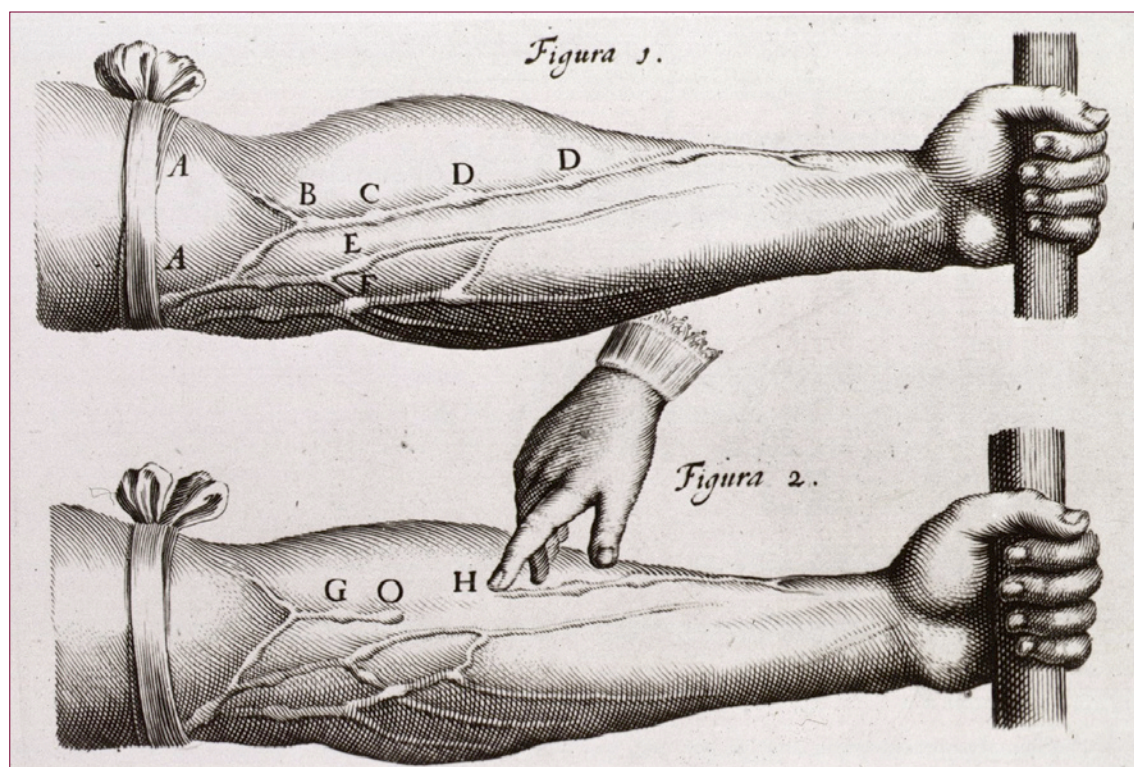
Isolated writers, including Francis Bacon (1561–1626), Benedict Spinoza (1632–1677), and Voltaire (1694–1778) now talked of reason, rather than revelation, as the basis for wider understanding of the world and its humans. Personal, independent thinking, and the alternative hazards of ignorance, were

emphasized when Voltaire declared: “Anyone who has the power to believe absurdities has the power to make you commit atrocities.” And many enlightened writers reminded their readers that the greatest danger was not acknowledged ignorance but the illusion of knowledge. All of these forces of reason accompanied a concerted expansion of transnational trade, national industries and international exploration.

Artisans, thinking of constructing more than one finished product – a set of wagons perhaps for a wider market – now needed more exacting tools and arithmetic methods to transform their



Portrait of Dr. William Harvey (1578–1657) with arterial chart in background.



Book illustration by Joannis Maire, 1639.

multiple products to a reality. A Scot named John Napier, in 1614, devised an ingenious mathematical procedure to hasten the tedium of calculation. He called his system, the logarithms; and in the next few decades other arithmetic discoveries and new navigational instruments made global commerce more feasible. The modern science of algebra (from the Arabic, *al-jabr*) came to be widely known in West Europe, largely the labors of Thomas Harriot (1560–1621). Harriot, a polymath, accompanied Raleigh to the Roanoke, Virginia, colony and assembled the first dictionary of the Algonquin language.

Harriot was also one of the first to use a newly devised instrument called the telescope. He was joined by others cautiously divorcing themselves from the ancient and mysterious flimflam called astrology which allowed some to predict the future of the gullible by noting the

position of the stars at the time of their birth. Astrology, firmly established in the dark spirit of the times, provided two principal services: Horary, or natural, astrology which judged the wisdom of a contemplated venture; and judicial astrology, which foretold events in the future, offering predictions coached in words of exquisite ambiguity. Others employed the telescope for such mundane purposes as the study of the nature and structure of the universe.

Great global explorations were undertaken, reasonably accurate maps were drawn, the oceans were defined and imaginary circumpolar lines were envisioned, called lines of longitude, to aid in transnational navigation.

The latter 16th Century was witness to William Harvey's early explorations of the nature of human blood circulation and his summary text published much later in 1628 and popularly known as *de*

motu cordis (on cardiac motion). Harvey, in his extensive knowledge of comparative embryology, dared to utter the Classical: "*Omni animal ex ovo.*" (Every animal comes from an egg.)

It was a time in human history when science matured into an international undertaking; when publishing, a 15th-Century invention, suddenly discovered the merit of mass production of texts, including the Bible as well as broadsheets, sometimes called newspapers, to answer the previously unspoken needs of an increasingly literate

populace. And an industrial revolution was waiting breathlessly in the wings. ❖

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Stanley M. Aronson, MD, is Editor emeritus of the *Rhode Island Medical Journal* and dean emeritus of the Warren Alpert Medical School of Brown University.

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ACC/AHA New Cholesterol Management Guidelines: What's a doc to do?

KENNETH S. KORR, MD

LET ME STATE AT THE outset that I am not a lipidologist, although I have had the opportunity to work with some renowned lipid experts (notably, Drs. Paul Thompson, Peter Herbert and Dick Carleton) over the years and they have taught me a lot. As a clinical cardiologist I have



been struggling with how to incorporate the new American College of Cardiology (ACC) and American Heart Association (AHA) guidelines on cholesterol management into my practice. And I have been besieged these past few weeks by my non-cardiology physician and other healthcare professional colleagues, asking whether or not they or their wives should be on a statin. So there is a lot of confusion even among this ultra-informed segment of the population.

There is a lot that I like about the new guidelines. They are oriented more towards healthy lifestyle choices rather than a simple LDL target to reduce cardiovascular risk. Lower may not be better (ie, LDL levels), at least not as a focus of therapy. And with that, they have moved us away from complex cholesterol subfractions (apoLa) and adjunctive lipid lowering medications (niacin, ezetimide, fenofibrates, etc.) which have not been shown to improve clinical outcomes even though they may lower the LDL further. I will, however, continue

to periodically measure lipid levels as this is a strong patient motivator.

The new guidelines outline four patient groups targeted for therapy and fortunately three of these are not too different from previous recommendations. Patients with known coronary or cardiovascular disease

(prior MI, angina, CABG, stents, stroke, TIA, PAD) should be on statin therapy. In addition, the guidelines include patients with diabetes who many of us have already been treating with statins. The third group are the very rare patients with an LDL >190mg% who are likely to have familial hyperlipidemia and significant family history and where the rationale for treating these patients with statins is more obvious. So far, no big change.

The target group that will present the most difficult choices, especially for primary care physicians, are those healthy patients, between the ages of 40 and 75 years with minimal risk factors and LDLs of 70 to 190mg%. For these patients, the new guidelines provide a "Risk Calculator" which includes 8 elements (age, gender, systolic BP, total cholesterol, HDL, DM, treatment for HTN, and smoking status). Noticeably absent from the Calculator elements are a family history of premature cardiovascular disease and an assessment

of obesity, such as waist circumference or body mass index (BMI), which are important elements in many risk assessments. That aside, the new guidelines recommend that anyone with a calculated 10-year risk of CV events >7.5% should receive statin therapy.

This is where the new guidelines are much more controversial, especially for woman and non-Caucasians, where there is not a lot of data and where the Calculator may significantly overestimate risk and lead to overtreatment. In fact, the Calculator is really only designed to assess risk in the 20- to 59-year-old age group. Age and male gender are strong predictors of cardiovascular events, so if you are a 60-year-old male your 10-year risk is already >7.5%! There has been so much controversy and criticism surrounding the Risk Calculator already, that the guideline authors have stepped back and recommended that it may be best used to start the discussion about an individual's risk and benefits of statin therapy. So you may not want to rush out and buy this App (although I am sure it will be made available for free).

Still, it is this fourth group of healthy patients where the current guidelines represent a major departure from prior treatment algorithms for primary prevention. And if these guidelines are applied rigorously, an enormous number of new and previously untreated patients would be started on statin therapy. Many have argued that the data to

support such a recommendation is just not there and that the NNT (number needed to treat) over five years to prevent a single MI is still too high to justify such a broad and aggressive treatment approach. Additional randomized primary prevention trials, enrolling a more diverse patient population, will be needed to answer this question. In the interim, we will have to continue to make our best individual judgment based on lipid profiles, traditional risk factors and adjunctive elements including ABIs, CAC and CRP levels.

Finally, the guidelines recommend either moderate or high intensity statin therapy based on relative risk (the first three groups for sure) and what the patient is able to tolerate (which has always been the biggest hurdle related to

statin therapy). High intensity therapy is directed towards a 50% reduction in LDL (so we are slipping back to treating the LDL again) and moderate intensity suggests a 30% reduction in LDL. This may be applicable to previously untreated patients where we have a baseline LDL as a starting point but it is less clear how we are to dose patients already on statins with demonstrable LDL reductions. Lower might still be better and here I suspect many of us will fall back on linking dose to an absolute LDL level. (It's going to be a hard habit to break.)

In sum, like all guidelines, these represent a stage in the evolution of the science and art of cholesterol management. We are sure to see more science, more controversy and further refinements along the way. As for the Risk

Calculator, it has its own risks and may not be ready for prime time yet – we may well be advised to wait until the updated version – if it survives the current and caustic scrutiny.

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Motorcycle Helmet Use in Rhode Island

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ABSTRACT

Motorcycle crashes are a major public health concern and place economic stresses on the health care system. Helmets have been shown to reduce both motorcycle-related fatalities and head injuries. Universal motorcycle helmet laws in other states have shown to be effective at increasing helmet use. The current Rhode Island motorcycle helmet law does not require every motorcycle rider to wear a helmet. Given the number of deaths and injuries that could be prevented, public health efforts to increase helmet use through education and legislation should be considered for review.

KEYWORDS: Motorcycle, helmet, state law, fatality, cost

Motorcycle crashes: A costly national concern

In the United States, 4,612 people died in motorcycle crashes in 2011, representing a 217% increase from 1997.¹ Motorcycles account for less than 3% of all registered vehicles in the U.S., yet they constitute 14% of all traffic-related fatalities.² For every mile traveled, motorcyclists are 30 times more likely to die in a traffic-related crash than individuals riding in a car.² Compared to other vehicle operators, motorcyclists in fatal crashes have higher incidences of being alcohol-impaired (28%), riding without valid licenses (22%), speeding (35%), having previous license suspensions or revocations (18%), and having past DWI convictions (4.7%).²

In 2009, there were 90,000 motorcyclists injured in the U.S.² Injured, non-helmeted motorcyclists require substantially more health care resources than helmeted motorcyclists, placing additional stress on each state's health care system. Hospital charges for non-helmeted motorcyclists average \$39,390 versus \$36,334 for helmeted motorcyclists,³ with the differential health care costs between non-helmeted and helmeted motorcyclist injuries accounting for an additional \$250 million per year.³

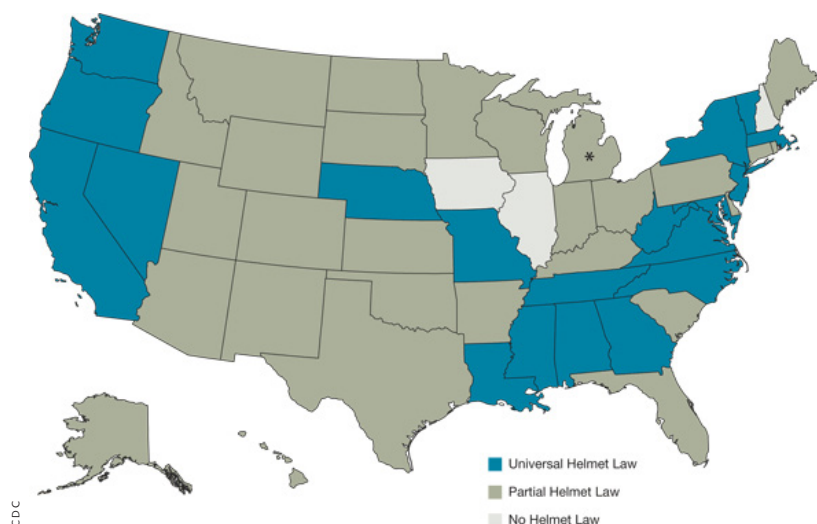
While the decision to wear or not wear a helmet is often viewed as a personal choice affecting only the motorcyclists, it is an inescapable fact that the cost of providing health care to a motorcyclist following a crash is largely borne by society, not the operator; thus the argument that it is an individual's right is irresponsible and flawed. The majority of motorcycle crash victims' medical care is paid for by public funds.⁴ Compared to helmeted motorcyclists, non-helmeted motorcyclists are more likely to be covered by government-funded health insurance or to have no health insurance at all.⁵

Motorcyclists without helmets are significantly more likely to experience traumatic brain injury (TBI).⁶ Severe TBI patients average 55 days of acute rehabilitation,⁷ and median hospital charges for motorcyclists with TBI are 13 times more than those without TBI.⁶

Factoring in the costs of lost work and long-term disability, the societal burden of motorcycle crashes reaches beyond acute medical care. Initial hospitalization and emergency department treatment account for only 68% of total medical costs.⁸ Other medical charges include hospital readmissions, professional fees, ambulatory care services, rehabilitation, and nursing home care, leading to higher insurance rates, increased taxes, and lost tax revenue.⁹ Medical and productivity costs saved from helmet use are estimated to be \$1,212,800 per fatality, \$171,753 per serious injury, and \$7,523 per minor injury.¹⁰ In a single year, the economic cost of motorcycle-related crashes total over \$12 billion.¹¹

Helmets prevent unnecessary deaths and head injuries

Helmets prevent fatalities and can reduce the number and severity of head injuries.^{12,13} Helmets are estimated to reduce the risk of head



injury in motorcycle riders by 69%.¹⁴ One study found that after implementation of a statewide universal motorcycle helmet law, fatalities decreased by 37.5%.¹³ In 2010, an estimated 1,550 motorcycle-related fatalities were prevented by helmet use and 706 more lives could have been saved nationwide, had everyone worn helmets.²

Universal helmet laws increase helmet use

Universal helmet laws require all motorcyclists and motorcycle passengers of all ages to wear helmets. Universal motorcycle helmet laws have shown to be effective at ensuring widespread helmet use.¹² Each state determines its own helmet law, and states that have enacted universal helmet laws have witnessed substantial increases in helmet use.¹⁵⁻¹⁹ Conversely, states that have repealed universal helmet laws have witnessed substantial decreases in helmet use.^{15,20-22}

Current Rhode Island helmet law

The current motorcycle helmet law in Rhode Island only requires three groups of motorcyclists to wear helmets: passengers,²³ new operators (who must wear helmets for a year after receiving their licenses), and operators under the age of 21.²⁴

Over 100 motorcycle-related injuries occur each year in Rhode Island.²⁵ In 2011, there were 16 motorcycle-related fatalities in Rhode Island.¹ All fatalities were 21 or older.¹ Seventy-three percent of RI motorcyclist fatalities were not wearing helmets in 2010.²

Conclusion

The decision to ride a motorcycle without a helmet has consequences that affect more than just the motorcyclist. In an effort to prevent unnecessary health care costs, injuries, and deaths, public health efforts to increase helmet use through education and legislation should be strongly considered. In light of the recent Rhode Island state legislative discussions on extending mandatory seatbelt laws and the "Reach Across, Avoid the Loss" seatbelt ad campaign, helmet use on motorcycles fits squarely within the purview of the state's public health and economic considerations.

Getting motorcyclists to wear helmets requires a system change. Medical care providers have opportunities to directly educate and encourage patient helmet use. State legislators should consider reexamining the current helmet law. Given the demonstrated efficacy of universal helmet laws on helmet use, a substantial reduction on state health care spending might be realized. Because helmets can save lives and money, this solution should be attractive to a broad coalition of support from providers, insurers, and the public.

References

1. National Highway Traffic Safety Administration. Fatality Analysis Reporting System: 2011. Washington (DC): National Highway Traffic Safety Administration, U.S. Department of Transportation. <http://www-fars.nhtsa.dot.gov/Main/index.aspx> (Accessed July 23, 2013.)

2. U.S. Department of Transportation: National Highway Traffic Safety Administration. Traffic Safety Facts 2010 Data: Motorcycles. 2012. <http://www-nrd.nhtsa.dot.gov/Pubs/811639.pdf> (Accessed July 24, 2013.)
3. Eastridge BJ, Shafi S, Minei JP, Culica D, McConnel C, Gentilelo L. Economic Impact of Motorcycle Helmets: From Impact to Discharge. *J Trauma*. 2006;60(5):978-83; discussion 983-4.
4. Rivara FP, Dicker BG, Bergman AB, Dacey R, Herman C. The Public Cost of Motorcycle Trauma. *JAMA*. 1988;260(2):221-223.
5. Hundley JC, Kilgo PD, Miller PR, Chang MC, Hensberry RA, Meredith JW, Hoth JJ. Non-Helmeted Motorcyclists: A Burden to Society? A Study Using the National Trauma Data Bank. *J Trauma*. 2004;57(5):944-9.
6. Cook LJ, Kerns T, Burch C, Thomas A, Bell E. Motorcycle Helmet Use and Head and Facial Injuries: Crash Outcomes in CODES-Linked Data. Washington (DC): National Highway Traffic Safety Administration, U.S. Department of Transportation; 2009. <http://www-nrd.nhtsa.dot.gov/pubs/811208.pdf> (Accessed July 23, 2013.)
7. Whitlock JA, Hamilton BB. Functional Outcome after Rehabilitation for Severe Traumatic Brain Injury. *Archives of Physical Medicine and Rehabilitation*. 1995;76:1103-1112.
8. Max W, Stark B, Root S. Putting a lid on injury costs: the economic impact of the California motorcycle helmet law. *J Trauma*. 1998;45(3):550-6.
9. McSwain NE Jr, Belles A. Motorcycle Helmets - Medical Costs and the Law. *J Trauma*. 1990;30(10):1189-97; discussion:1197-99.
10. Centers for Disease Control and Prevention. Helmet Use Among Motorcyclists Who Died in Crashes and Economic Cost Savings Associated With State Motorcycle Helmet Laws — United States, 2008–2010. *MMWR*. 2012;61:425-430.
11. Naumann RB, Dellinger AM, Zaloshnja E, Lawrence BA, Miller TR. Incidence and Total Lifetime Costs of Motor Vehicle-Related Fatal and Nonfatal Injury by Road User Type, United States, 2005. *Traffic Inj Prev*. 2010;11(4):353-360.
12. National Highway Traffic Safety Administration. Countermeasures That Work: A Highway Safety Countermeasure Guide for State Highway Safety Offices. 7th ed. Washington (DC): National Highway Traffic Safety Administration, U.S. Department of Transportation; 2013.
13. Kraus JF, Peek C, McArthur DL, Williams A. The Effect of the 1992 California Motorcycle Helmet Use Law on Motorcycle Crash Fatalities and Injuries. *JAMA*. 1994;272(19):1506-1511.
14. Liu BC, Ivers R, Norton R, Boufous S, Blows S, Lo SK. Helmets for Preventing Injury in Motorcycle Riders. *Cochrane Database Syst Rev*. 2008 Jan 23;(1):CD004333.
15. Derrick AJ, Faucher LD. Motorcycle Helmets and Rider Safety: A Legislative Crisis. *J Public Health Pol*. 2009;30(2):226-242.
16. Muelleman RL, Milinek EJ, Collicott PE. Motorcycle Crash Injuries and Costs: Effect of a Reenacted Comprehensive Helmet Use Law. *Ann Emerg Med*. 1992;2(3):266-272.
17. Auman KM, Kufera JA, Ballesteros MF, Smialek JE, Dischinger PC. Autopsy Study of Motorcyclist Fatalities: The Effect of the 1992 Maryland Motorcycle Helmet Use Law. *Am J Public Health*. 2002;92(8):1352-1355.
18. Rowland J, Rivara F, Salzberg P, Soderberg R, Maier R, Koepsell T. Motorcycle Helmet Use and Injury Outcome and Hospitalization Costs From Crashes in Washington State. *Am J Public Health*. 1996;86(1):41-45.
19. National Highway Traffic Safety Administration. Evaluation of the Reinstatement of the Motorcycle Helmet Law in Louisiana. Washington (DC): National Highway Traffic Safety Administration, U.S. Department of Transportation; 2008.
20. Ulmer RG, Preusser DF. Evaluation of the Repeal of Motorcycle Helmet Laws in Kentucky and Louisiana. Washington (DC): National Highway Traffic Safety Administration, U.S. Department of Transportation; 2003.
21. Ulmer RG, Northrup VS. Evaluation of the Repeal of the

- All-Rider Motorcycle Helmet Law in Florida. Washington (DC): National Highway Traffic Safety Administration, U.S. Department of Transportation; 2005.
22. Mertz KJ, Weiss HB. Changes in Motorcycle-Related Head Injury Deaths, Hospitalizations, and Hospital Charges Following Repeal of Pennsylvania's Mandatory Motorcycle Helmet Law. *Am J Public Health*. 2008;98(8):1464–1467.
 23. State of Rhode Island General Assembly. Title 31: Motor and Other vehicles: Chapter 31-10.1 Special License for Motorcycles, Motor Scooters, and Other Motor Driven Cycles: Section 31-10.1-6 Passengers. State of Rhode Island General Laws. <http://webserver.rilin.state.ri.us/Statutes/> (Accessed September 26, 2013.)
 24. State of Rhode Island General Assembly. Title 31: Motor and Other vehicles: Chapter 31-10.1 Special License for Motorcycles, Motor Scooters, and Other Motor Driven Cycles: Section 31-10.1-4 Required equipment. State of Rhode Island General Laws. <http://webserver.rilin.state.ri.us/Statutes/> (Accessed July 23, 2013.)
 25. Donnelly EF. Motorcycle Injuries in Rhode Island. *Med Health R I*. 2009;92(5):185–6.

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Rhode Island Medical Journal Submissions

The Rhode Island Medical Journal is a peer-reviewed, electronic, monthly publication, owned and published by the Rhode Island Medical Society for more than a century and a half. It is indexed in PubMed within 48 hours of publication. The authors or articles must be Rhode Island-based. Editors welcome submissions in the following categories:

CONTRIBUTIONS

Contributions report on an issue of interest to clinicians in Rhode Island. Topics include original research, treatment options, literature reviews, collaborative studies and case reports.

Maximum length: 2000 words and 20 references.

PDFs or Jpegs (300 dpi) of photographs, charts and figures may accompany the case, and must be submitted in a separate document from the text. Color images preferred.

CREATIVE CLINICIAN

Clinicians are invited to describe cases that defy textbook analysis. Maximum length: 1200 words. Maximum number of references: 6.

PDFs or JPEGs (300 ppi) of photographs, charts and figures may accompany the case, and must be submitted in a separate document from the text.

POINT OF VIEW

The writer shares a perspective on any issue facing clinicians (eg, ethics, health care policy, patient issues, or personal perspectives). Maximum length: 600 words.

ADVANCES IN PHARMACOLOGY

Authors discuss new treatments. Maximum length: 1000 words.

ADVANCES IN LABORATORY MEDICINE

Authors discuss a new laboratory technique. Maximum length: 1000 words.

IMAGES IN MEDICINE

Authors submit an interesting image or series of images (up to 4), with an explanation of no more than 400 words.

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Doctor questions requiring flu shots for health care workers

In the previous issue, Dr. Lori Keough, PhD, argues that it is unethical for Health Care Workers to fail to get immunization against seasonal influenza or to wear a mask during flu season (whenever that is). She says that we HCWs have an obligation not to expose our patients to vaccine preventable diseases, citing the 19th-Century failure of physicians to recognize that they were the sources of infection (for puerperal fever – not a vaccine preventable disease).

I am up to date on all of my vaccines – with the exception of influenza virus. I wash my hands and, I hope, follow practices of “non-maleficence” and “beneficence” of doing no harm. However, I remain unconvinced that requiring HCWs to be vaccinated or to wear masks is anything other than overreaching on the part of the health department and other regulatory agencies.

I have no problem with *recommendations* that HCWs be vaccinated, provided that they are not allergic to the vaccine. I have no problem with HCWs receiving sick pay when they get a flu-like syndrome from the vaccination. I have no problem with HCWs being vaccinated with vaccines that are effective.

How effective is the current vaccine against influenza? Not very effective according to many studies. Is 56% effective¹

adequate? This is the estimated rate of effectiveness for persons over 65. I happen to be over 65; I expect a better “bang for my buck” if I am to submit to influenza vaccination.

What are the data that show that wearing masks significantly lowers the rate of transmission for influenza between HCWs and patients? Not too good, it turns out. There do not seem to be many published studies showing efficacy.² Hand washing is probably the better protector.

Though not a politically conservative person, I confess to having a problem with regulations that ask us to do things that don't work so well. I do not share Dr. Keough's enthusiasm that “...the obligation to protect patients from seasonal influenza has been enshrined in Rhode Island law...” Let us enshrine things that work, not things that don't work very well. Vaccines and masks are costly.

Steven G. McCloy, MD
Providence, RI

1. www.medscape.com/viewarticle/779816
2. www.medscape.com/viewarticle/766508

Impact of nursing-centered HIV testing using standing orders in RI

The CDC now recommends that all Americans between the ages of 13 and 64 years old be tested at least once for HIV and those at higher risk be tested more frequently, such as yearly. This is a daunting task. Why not put HIV testing in the hands of nurses?

Interventions that have been effective in the hospital setting, such as influenza and pneumococcal vaccination have been accomplished through empowering nursing. Nurses spend more time with patients than physicians. Opening up a conversation related to HIV can provide a nurse with the opportunity to inform the patient of risk factors and counseling on prevention of HIV.

In an effort to offer HIV testing to inpatients at The Miriam Hospital, a pilot project was initiated utilizing Standing Orders for Routine HIV (SORT) testing by nurses.¹ During the admission process, nurses provided patients with a tailored brochure describing the CDC recommendations that conformed to those of the RI Department of Health. The patients were informed that HIV testing would be included in their routine admission blood work, unless they declined. In patients who did not decline, the nurses activated a standing order. ELISA was used as the screening test. Negative results were provided to the patients by the nurses

and the positive results by the attending physician (with a commitment from Infectious Diseases to provide those results). This was done after appropriate training of the nursing staff and full review through the Lifespan Institutional Review Board, Patient Care Committee, and Medical Executive Committee.

SORT was well received by patients, nurses, and physicians; 342 eligible patients were screened over a period of 15 months. All HIV test results were negative. Recent studies demonstrate that voluntary HIV screening is cost effective even in health care settings in which HIV prevalence is low.³⁻⁵ The project did not require any additional staff to be hired. This type of approach has the potential to greatly influence HIV testing around the country. Other models of testing have required hiring of specified staff or adding this task to physician duties, which did not yield the desired increase in testing.

In RI in 2011, patients aged 18-64 comprised of 48% (63,211 of 130,652) of the total hospital discharges.² Assuming that 50% of inpatients are offered HIV testing through SORT, roughly 31,605 patients will be offered HIV testing in RI annually.

We propose that this nursing-centered model of HIV testing could easily be rolled out around the country.

1. Costello JF, Sliney A, Macleod C, et al. Implementation of Routine HIV Testing in an Acute Care Hospital in Rhode Island: A Nurse-Initiated Opt-Out Pilot Project. *J Assoc Nurses AIDS Care*. 2013 Sep-Oct;24(5):460-8.
2. HCUP net. Information on stays in hospitals for participating states from the HCUP State Inpatient Databases.
3. Walensky RP, Weinstein MC, Kimmel AD, et al. Routine human immunodeficiency virus testing: an economic evaluation of current guidelines. *Am J Med*. 2005;118:292-300.
4. Paltiel AD, Weinstein MC, Kimmel AD, et al. Expanded screening for HIV in the United States – an analysis of cost-effectiveness. *N Engl J Med*. 2005;352:586-95.
5. Sanders GD, Bayoumi AM, Sundaram V, et al. Cost-effectiveness of screening for HIV in the era of highly active antiretroviral therapy. *N Engl J Med*. 2005;352:570-85.

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Special Section: Emergency Medical Services (EMS)

More than a ride to the hospital – Examining the continuing evolution of a complex, coordinated response system

KENNETH A. WILLIAMS, MD; FRANCIS SULLIVAN, MD
GUEST EDITORS



Kenneth A. Williams, MD



Francis Sullivan, MD

An emergency call to 911 in most of the United States (other numbers are used internationally) summons aid. First responders from police, fire, and emergency medical services (EMS) agencies respond to the scene, trained to locate, evaluate, treat, and transport the sick and injured to the best definitive care setting. Who are these EMS professionals? How are they trained? How do physicians oversee the EMS system? Do they save lives? How do they transport critically ill and injured patients between hospitals? This issue of the *Rhode Island Medical Journal* addresses these questions.

Emergency medical service is an essential component of the expanding emergency care system in the United States, providing access to life-saving medical care 24/7/365. Emergency Medical Technicians (EMTs), trained at a variety of levels, staff ambulances and work in a variety of other settings. EMTs treat and transport the sick and injured, but they also provide safe scheduled transport for non-ambulatory patients to and from physicians' offices, dialysis facilities, and other medical care settings. In some systems, they have been asked to integrate with the public health system, providing injury prevention screening, follow-up

evaluations, and augmenting community primary care. EMS is often taken for granted, but is expected to perform rapidly and professionally in time of need, regardless of the volunteer or paid status of the responding agency and personnel. This evolving resource has already influenced patterns of health care delivery, become a vital public health and disaster response asset, assumed an expanded role in community health, and, yes, saved lives daily in Rhode Island and across the United States.

Maturing over half a century, EMS and EMTs pioneered the concept of physician extenders, made specialized systems of healthcare with "centers of excellence" possible through critical care inter-hospital transport, enabled many life-sustaining and saving treatments such as dialysis and radiation therapy through sched-

uled transport, and earned respect and recognition as a profession. In this issue of the *Rhode Island Medical Journal*, the authors seek to provide our physician community with a succinct description of the history of EMS, its physician interface, EMT professional education, the practice of inter-hospital critical care transport, and to propose a uniform definition of saving a life in the EMS and emergency medicine environment, the Rhode Island Life Saving Score (RILSS).

Guest Editors

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Scott Francis, Critical Care Paramedic at LifePACT, passed away unexpectedly as this issue was going to press. Scott is pictured in the enclosed article on Critical Care Transport. Scott exemplified the best of EMS, with his ready smile, calm and humble personality, excellence in patient care and safe emergency driving, and helpful attitude. He is survived by his wife Nancy and sons Aiden and Liam. The guest editors dedicate this special issue to his memory.



An Overview of Prehospital Emergency Medical Services

FRANCIS SULLIVAN, MD; KENNETH A. WILLIAMS, MD; JASON RHODES, MPA, EMT-C

ABSTRACT

Prehospital emergency medical services (EMS) provide lifesaving care daily in the United States. This article outlines the development of this vital public safety endeavor and highlights the characteristics of the Rhode Island system.

KEYWORDS: Prehospital, emergency medical services, ambulance, EMS, Rhode Island

“Is the sand other than the rocks? That is, is the sand perhaps nothing but a great number of very tiny stones? Is the moon a great rock? If we understood rocks, would we also understand the sand and the moon?”

— Richard Feynman, Physicist

“If you know one EMS system, you know one EMS system.”

— Anonymous EMS Physician

INTRODUCTION

Emergency Medical Services (EMS) systems represent a complex interplay of personnel, ambulances, equipment, communications mechanisms, training endeavors, business operations, and administrative oversight. How did these systems evolve nationally and in Rhode Island? How is the system managed in Rhode Island? This article addresses these questions.

Prehospital emergency service in Rhode Island shares a common heritage with this vital public safety endeavor elsewhere, and its diversity reflects the many service models present in the United States. EMS development is strongly linked to the lessons of battlefield medical challenges and to major paradigm shifts in the care of the most lethal health threats faced by citizens of the developed world.

The modern era in prehospital care dates to the Napoleonic Wars with the battlefield evacuation and treatment efforts championed by Baron Larrey; similar efforts occurred in the United States during the Civil War. Hospital-based ambulance services developed, as did private enterprises of lesser sophistication. The increasing lethality of warfare in the first two World Wars was coupled

with continued emphasis on rapid evacuation, provisional stabilization, and expedited definitive surgery with a resultant mortality reduction. These efforts were redoubled with the air evacuation and forward field hospitals pioneered in the Korean conflict and Vietnam War.¹ The lessons were slow in their civilian sector application as highlighted in the report published in 1966 by the National Academy of Sciences entitled “Accidental Death and Disability: The Neglected Disease of Modern Society.” This study demonstrated that many deaths occurring daily could be prevented through a combination of community education, stricter safety standards, and better prehospital treatments. Its publication was a significant event in the development of modern standards of care.^{2,3,4}

The federal response was legislation intended to create components of a rational trauma care system, mandating automotive safety standards, remedying non-uniform informal training of ambulance attendants, and supporting medical institutional organization into trauma systems.

Advances in care of cardiac disease, another major public health threat, were occurring concurrently, with the development of specialized coronary care units offering increasingly sophisticated monitoring and interventions. Pioneering efforts of Pantridge in Belfast, Northern Ireland, showed that extending these interventions to field care in ambulances could further reduce mortality. This process of



The so-called ‘flying’ ambulances were horse-drawn wagons for collecting and carrying the wounded from the battlefield to base hospitals developed by 18th-century French physician Dominique-Jean Larrey in 1797. The transport carried supplies and a doctor, quartermaster, noncommissioned officer, a drummer boy (who carried the bandages), and 24 infantrymen. According to Dr. Larrey’s field reports, the transports swooped into the battlefield and collected the wounded in less than 15 minutes.



NATIONAL LIBRARY OF MEDICINE

This photograph of horse-drawn ambulance carriages was featured in a 1911 photographic history of the Civil War.

moving lifesaving care initially developed in the hospital setting into the field is intuitively appealing and has been a general theme in the development of modern EMS, with predominantly positive results.^{5,6,7,8}

EMS Systems Act of 1973

The EMS Systems Act of 1973 was the first important piece of legislation affecting the development of regional emergency and trauma care systems. This act called for creation of a lead agency under the Department of Transportation (DOT), chosen because concern for traumatic highway deaths was a major impetus behind the initiative. The legislation identified 15 components (including trauma systems) to assist local planners in establishing regional EMS programs. This approach to service delivery was viewed as a way of distributing resources equitably while expanding access to health care systems. Substantial funding was devoted to the establishment of an EMS infrastructure in over 300 EMS regions nationwide.⁹ Although national standards for EMS personnel training and certification were developed by the US Department of Transportation National Highway Traffic Safety Office (DOT-NHTSA), and national certification programs offered by the National Registry of Emergency Medical Technicians (NREMT), they were subject to modification by local authority.

During this period, studies continued to link poor patient outcomes with delays in both initial and definitive care of injured patients, drawing continued public attention and accelerating progress towards trauma systems development in some areas. Pioneer efforts in cities around the country began projects to staff ambulances with attendants with training similar to military medics. The popular 1970s NBC series *Emergency!*, portraying two fictional Los Angeles “paramedics” responding to a variety of emergencies, also encouraged interest by other communities in establishing equivalent services.¹⁰ (Personal communication, Dr. Ronald

Stewart, July 2013. Dr. Stewart served as medical advisor to the show *Emergency!* and subsequently as medical director for paramedic training in Los Angeles, among many other accomplishments.)

Health Planning and Resources Development Act of 1974

Nevertheless, this initial legislation failed to adequately stimulate initiatives to sustain EMS funding at the local level. In the Health Planning and Resources Development Act of 1974, regionalization of emergency medical services was designated as a national health care objective. However, by 1981, funding sharply declined when the Omnibus Budget Reconciliation Act consolidated EMS and trauma system funding into the state preventive health block grant program. The intent of the block grant concept was to shift responsibility of funding EMS services to the states while still supporting the lead agencies directing these services. But, since states were given wide discretion regarding use of these funds, many regional EMS programs lost funding and ended, while others responded by increasing their involvement in system development. Uniformly, however, citizen expectations for some minimal level of service were created. Service delivery models that evolved varied from volunteer-staffed units to hospital-based systems to fire department-based or independent public service departments, and the immediate local responsible authority from county or other regional to municipal entities. State governments retained the ultimate oversight responsibility.

PROVIDER EDUCATION AND CERTIFICATION

In concert with this process, the aforementioned DOT-NHTSA training standards and certification levels were developed for personnel, now termed emergency medical technicians (EMTs). The most basic level (EMT-Ambulance) included training in basic first aid, non-invasive airway

and breathing support, treatment of anaphylaxis and hypoglycemia, spinal immobilization and positional prevention and treatment of shock, all in a roughly 100-hour curriculum. An intermediate level (EMT-Intermediate), requiring several hundred more hours of training, added skills in intravenous fluid support and more advanced airway management. The generic term paramedic (EMT-Paramedic) became the formal classification for an advanced level provider capable of providing intravenous support, advanced cardiac rhythm analysis and electrical / pharmacologic therapy, and advanced airway and trauma intervention management. Training requirements for this level were significant, often 1500-2000 hours. However, in keeping with the overall philosophy of latitude in system evolution, these certification levels were subject to local modification.

Since most communities aspired to offer the highest level of care, but many lacked the resources (particularly in volunteer services) to train many providers to the EMT-P level, many systems added treatment skills to the intermediate level but reserved their autonomous practice to the paramedic level. This expansion of intermediate scope of practice under direct medical control was eventually codified in a 1999 DOT-NHTSA intermediate curriculum modification, but much local system heterogeneity still exists for this skill level.¹¹ Additionally, during this period the development of new airway management adjuncts and of automatic external defibrillator technology brought safe use of these lifesaving skills to the basic EMT scope of practice. National efforts continue to bring uniformity to certification levels, an issue addressed in the companion article in this issue.^{12,13,14}

MEDICAL OVERSIGHT

From its inception, prehospital emergency care has clearly been an extension of the practice of medicine into the field. The initial use of battlefield medics, or, in the civilian sector, selective inclusion of nurses or physicians in addition to ambulance attendants provided models that evolved in the United States to formal recognition and training of EMTs with judgment reserved, in varying degrees, by the supervising physician. From pioneering efforts of trauma surgeons and cardiologists in the creation and development of EMS, the responsibility for continuing to guide its daily practice and evolution has largely shifted to physicians trained in emergency medicine, a specialty whose recognition and growth paralleled that of EMS. Medical oversight can be conceptually partitioned into “off-line” and “on-line” medical control, with implications for the practice parameters of the supervised EMTs. Off-line (or indirect) control is the physician involvement in system design, setting of certification and training standards, development of protocols and standing orders, formal quality assurance programs, and EMT education. On-line control is the provision of medical advice for the care of individual patients in the prehospital environment, now accomplished predominantly remotely by cellular telephone or radio, but selectively, in some systems on scene by EMS physicians.

RHODE ISLAND'S EMS SYSTEM

Rhode Island has statewide EMS system administration, with the Department of Health (DOH) empowered by law to establish regulations, create protocols and oversee the system. A highly sophisticated statewide 911 central call center distributes emergency calls to the appropriate public safety dispatch authority. There are approximately 500,000 annually, resulting in about 750,000 referrals to response agencies, as many incidents require multiple resources (eg, police, fire, EMS and power company for a car crash into a utility pole). There are 93 licensed ambulance services in Rhode Island, with 911 response entities predominantly fire service and municipally based. The fire-based system offers personnel depth and resource advantages, as fire apparatus can be dispatched to medical emergencies along with transport ambulances, providing both faster response and the additional

Current implementation of a new electronic Run Report and data system will facilitate reporting to a national EMS database, NEMSIS; all EMS services in Rhode Island will be mandated to only utilize electronic reporting to the state by January 1, 2014.

resource and manpower that may be required. Three communities provide EMS via a “third” service, independent in administration from the local police or fire department. The more rural areas of the state are predominantly served by largely volunteer rescue agencies augmented by career and per-diem staff. Ambulance services are classified and licensed by the DOH as basic life support (BLS), advanced life support (ALS), or mixed, based upon the training level of the EMTs staffing the ambulance and its equipment. In Rhode Island, the DOH licenses three levels of EMS practitioner – EMT (a national standard certification with 1,585 licensed personnel), EMT-Cardiac, (a level unique to the state but similar to the DOT I-99 Intermediate and the new Advanced EMT with 2,193 licensed personnel), and Paramedic (a national standard certification with 333 licensed personnel). ALS ambulances must be staffed by two providers, one at EMT-C or higher licensure.¹⁵ (Personal Communication, Jason Rhodes, MPA, EMT-C, Chief, Emergency Medical Services Division, RI Department of Health, Aug. 27, 2013)

EMT training is available through a wealth of programs, from individual volunteer organizations to private business endeavors to community college-based programs. Supervision of these programs must be by an instructor coordinator trained by the Division of Emergency Medical Services at the RI Department of Health (DOH-EMS); each individual training endeavor must be specifically approved.¹⁶ RI EMTs hold independent licensure; they are directly accountable to the DOH-EMS for adherence to the *Rhode Island Prehospital Protocols and Standing Orders*. Practice standard violations are subject to review and disciplinary action by the DOH-EMS.¹⁷

A standard state-approved EMS Run Report must be completed electronically or manually and filed with DOH-EMS for each completed ambulance call. The data are reviewed for resource allocation, protocol revision, quality assurance programs, and practice standard adherence purposes. Current implementation of a new electronic Run Report and data system will facilitate reporting to a national EMS database, NEMSIS; all EMS services in Rhode Island will be mandated to only utilize electronic reporting to the state by January 1, 2014.¹⁸ A copy is also left with the receiving hospital for inclusion in the medical record.

Programs, training standards, regulations, and protocol revisions are the responsibility of the DOH-EMS, with input from a medical consultant, a specific committee structure, and from an advisory board of individuals representing interest groups within EMS and hospital and professional organizations – the Ambulance Service Advisory Board. The 23 members appointed by the governor offer invaluable perspective on potentially under-recognized implications of proposed administrative changes.¹⁹

The clinical ecology of Rhode Island features a fortunate geographic distribution of hospitals and EMS units offering ALS care with a centrally located Level 1 Trauma Center, interventional cardiology and stroke centers, pediatric and women's specialty hospitals, and three nearby air-medical systems offering potential transport from the more distant portions of the state. In addition, a centrally located critical care ground transport service is able to perform field mutual aid or concurrent rapid response to local hospitals for transfer to tertiary care.

SUMMARY

EMS in the United States has evolved into a diverse, complex system, with some momentum toward greater uniformity and coordination. Rhode Island EMS provides rapid response from 911 call to the patient's side, with thousands of dedicated providers and hundreds of ambulances providing life-saving care to its citizens.

References

1. Keseg, P, et al. *Medical Direction of Emergency Medical Services*. 3rd ed, p 11-20. ACEP; 2011.
2. National Academy of Sciences - National Research Council Committees on Trauma and Shock. *Accidental Death and Disability: The Neglected Disease of Modern Society*. Washington, DC: *National Academic Press*, 1966.
3. Haacker LP. Time and its effects on casualties in World War II and Vietnam. *Arch Surg*. 1969;98:39-40.
4. Neel S. Army aeromedical evacuation procedures in Vietnam: implications for rural America. *JAMA*. 1968;204:99-103.
5. Elam JO, Brown ES, Elder JD. Artificial respiration by mouth mask method: a study of respiratory gas exchange of paralyzed patients ventilated by operator's expired air. *N Engl J Med*. 1954;250:749-754.
6. Kouwenhoven WB, Jude JR, Knickerbocker GG. Closed-chest cardiac massage. *JAMA*. 1960;173(10):1064-7.

7. Zoll PM, Linenthal J, Gibson W, et al. Termination of ventricular fibrillation in man by externally applied electrical counter-shock. *N Engl J Med*. 1956;254:727-732.
8. Pantridge JF, Geddes JS. A mobile intensive care unit in the management of myocardial infarction. *Lancet*. 1967;2:271-3.
9. West JG, Trunkey DD, Lim RC. Systems of trauma care. A study of two counties. *Arch Surg*. 1979;114:455-460.
10. Emergency! Wikipedia. <http://en.wikipedia.org/wiki/Emergency!> Updated July 12, 2013. Accessed July 29, 2013.
11. National Highway Traffic Safety Administration. Contents of 1998 Emergency Medical Technician - Intermediate: National Standard Curriculum. <http://www.nhtsa.gov/people/injury/ems/EMT-I/>. 1998. Accessed July 29, 2013.
12. Brennan JA, Krohmer JR. *Principles of EMS Systems*. 3rd ed. Sudbury, MA: Jones and Bartlett Publishers; 2006.
13. "National EMS Scope of Practice Model" (PDF). NHTSA. <http://www.ems.gov/education/EMSScope.pdf>. September 2006. Accessed July 26, 2013.
14. Sullivan FM, Williams KA. Emergency Medical Technician Education and Training. *R I Med J*. Dec. 2013; 96(12).
15. Emergency Medical Services Regulations. Rhode Island Department of Health. www.health.ri.gov/programs/emergencymedicalservices. Accessed July 26, 2013.
16. EMT courses. Emergency Medical Services Division, Rhode Island Department of Health. http://www.health.state.ri.us/lists/EMTCourses_2011.pdf. Accessed July 26, 2013.
17. Prehospital Care and Standing Orders Protocol Book. Rhode Island Department of Health Division of Emergency Medical Services. www.health.ri.gov/programs/emergencymedicalservices. Accessed July 27, 2013.
18. National EMS Information System. <http://www.nemsis.org>. 2005. Accessed June 29, 2013.
19. Ambulance Service Advisory Board, Rhode Island Department of Health Division of Emergency Medical Services. www.health.ri.gov/programs/emergencymedicalservices. Accessed July 27, 2013.

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Physician Medical Direction of Emergency Medical Services

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ABSTRACT

Emergency medical services (EMS) bring the practice of emergency medicine directly to the homes of patients. Physician guidance of system development and provider practice can enhance the quality of care. This article provides an overview of issues in the development of EMS system oversight in the United States in general, and in Rhode Island.

KEYWORDS: Medical director, emergency medical services, ambulance

INTRODUCTION

The introductory article for this issue outlines the aspects of physician oversight of emergency medical services (EMS) in the United States and the variations in system evolution that influence the form this involvement takes for individual regions. A common aspect is the recognition that prehospital care is the delegated practice of medicine. EMS providers (EMTs) are the “eyes and hands” of the physician in the field, with physician judgement expressed through system design, guidelines and protocols, and medical control. Physician oversight is partitioned into real time, or direct on-line medical control and off-line, or indirect administrative medical control. Both aspects will be discussed and their Rhode Island expressions described.¹

On-Line Medical Control

On-line medical control consists of direct communication via cellular telephone or radio between an EMS provider (EMT) and a physician or designee, either in a designated role or the receiving emergency department, to consult about the care of a specific patient. The scope of practice of EMTs is defined by regional or state protocols, standing orders, or a combination. In the protocol system, providers attempt to fit a patient presentation into a predetermined symptom/sign complex and are authorized to progress to a certain point in the care plan that best seems to fit the clinical presentation. Depending upon provider sophistication, they are then required to seek on-line medical control to perform further intervention. In the standing-order system, progression through an entire evaluation and management sequence can occur without on-line medical consultation

unless desired by the EMTs. The latter option can be an advantage in low-volume systems with basic provider skills, or in very busy systems with trusted paramedics who need very little routine oversight. The former option allows atypical situations to be discussed and appropriate interventions performed with the potential enhanced safety of immediate and specific on-line physician judgement.^{2,3} This on-line control may be supplanted or augmented by organized, or sometimes serendipitous, physician presence at the scene of the call. Such organized physician scene responses have been employed in Pittsburgh, Seattle, and Houston, but are the exception in the United States. Serendipitous presence of an on-scene physician allows medical control to be transferred from the remote on-line physician only if authorized by the latter after direct discussion with the on-scene physician, who often must agree to accompany the patient to the receiving facility.^{2,3} Some systems also have “default” provisions for those instances when medical control is unavailable.⁴

Beginning in the 1960s, a national effort to improve trauma care spurred EMS system evolution, organized trauma care, and resulted in consensus field triage guidelines that are applied by EMTs to assist with trauma patient destination decisions. On-line medical control may be required for decision support, but experience has demonstrated that EMT destination judgment is excellent.⁵

Early improvements in cardiac care also helped drive development of EMS systems, and rhythm telemetry to the hospital for cardiac staff interpretation was routine practice until it was determined that EMTs had reached a level of sophistication such that there was no value added by this practice. The development of emphasis on emergent interventions in ST elevation myocardial infarction and availability of 12 lead EKG acquisition and transmission from the field has created a similar situation. System practice varies, from passive transmission, reliance on computer interpretation, provider interpretation, or both to alert the receiving facility emergency department staff, or in some systems, direct notification of interventional cardiology staff. The development of specialized hospital systems for cardiac, and increasingly, for stroke care, has created field destination decisions that are analogous to those for trauma care. On-line medical control continues to play a variable and evolving role in these care systems, but in many cases serves primarily to provide early notification about impending patient arrival.^{2,3}

To summarize, on-line control may offer little added value in some cases, but a great deal in others. Physicians familiar with the EMS system are able to assist with patient-care decisions, validate destination choices, and activate specialty teams for certain types of patients through on-line medical control. Patient transport refusals represent both medical and legal hazards for EMTs, and are another example of the benefits of on-line medical control.^{6,7}

In Rhode Island, on-line medical control is available to supplement the State of Rhode Island and Providence Plantations Department of Health Division of Emergency Medical Services Prehospital Care Protocols and Standing Orders (RI EMS Protocols), which define the practice parameters for RI EMTs at all practice levels. This hybrid of two approaches (protocols augmented by on-line medical control) melds the distinct advantage of both. The RI EMS Protocol document provides a shared-care model, and undergoes periodic revisions based upon new developments in medical care, resource availability, and overall system changes. In general providers are required to notify the receiving hospital when there is vital sign abnormality, altered mental status, poisoning or overdose, suspected ST elevation myocardial infarction, or suspected stroke, and encouraged to do so when the prehospital caregivers feel a need for additional informational or judgment support. Other cases require routine notification to the receiving hospital emergency department, now performed through a computer system (Patient Tracking System). Many RI EMS Protocols require medical control consultation before advanced treatment occurs, with this requirement occurring earlier at more basic EMT levels. This feature provides physician judgement support as the EMT approaches the upper limits of training sophistication in assessment and intervention. Thus, paramedics (the highest EMT level) are able to deliver care with considerable autonomy, while basic EMTs must seek advice at much lower intervention risk levels. Contact with the receiving hospital is strongly encouraged, but EMTs may request control from any Rhode Island hospital; this provision both provides potentially needed alternatives and allows access to the additional pediatric expertise available from Hasbro Children's Hospital emergency department staff and the OB/GYN staff at Women & Infants Hospital. Communication from field to hospital is predominantly by cellular telephone. The ability to transmit 12 lead EKGs is available in many ambulances. Backup communication systems exist in case of equipment failure, overload, or in a disaster.⁸ In addition to EMS hospital contact for mandated or elective medical control, hospital notification occurs via a custom computerized patient tracking and system status management system installed after the Station Fire disaster and the Rhode Island Disaster Initiative project.⁹

Off-Line Medical Control

Off-line medical control encompasses the breadth of physician engagement in the community/EMS/hospital interface.

In some areas, this participation has been as extensive as complete EMS system design; more commonly, it includes setting practice parameters, educational oversight, quality assurance activity, and disciplinary action involvement. The role may be more extensive and advisory for a larger scope of authority, for example, that of a state medical director, or limited, depending upon the overarching administrative structure of an EMS agency. The American College of Emergency Physicians, the National Association of EMS Physicians, and the National Association of EMTs have position papers defining the optimal scope of authority and support for medical direction. The minimum qualification criteria for the position include direct experience in prehospital care delivery, familiarity with EMS system design, operation, and administrative and legislative issues, active involvement in training, quality assurance improvement, and on-line medical control.^{10,11} This threshold sets a high bar in practice for both initial and ongoing demands for the designated physician. The current specialty organizations have promoted ambitious comprehensive oversight recommendations, further enhanced by the EMS Agenda for the Future.¹² The development of specialized additional post-graduate EMS fellowships has been recently formalized to include an AC-GME accreditation process and the first subspecialty examination in emergency medical services for physicians will be offered this year by the American Board of Emergency Medicine.¹³ As discussed in the introductory article, the original Emergency Medical Services Act created 303 regions with initial development of medical control left to these local jurisdictions, with further disparate evolution of physician oversight as the funding and local authoritative structure changed.^{2,3,14} It remains unclear whether the increasing financial challenges faced by responsible municipal or other governments can sustain, much less, expand, support of physician oversight sufficient to implement the vision.

The state of Rhode Island Department of Health engages an experienced EMS physician consultant to the Division of Emergency Medical Services. Rhode Island, in keeping with its tradition of the 'Independent Man,' independently licenses EMTs at their respective certification levels.¹⁵ This division encourages the involvement of physicians by strongly advising each of the licensed ambulance services to appoint a medical director and requiring identification of a supervising physician for each state-approved educational activity or training endeavor. While in the vast majority of cases this physician involvement is voluntary, and often nominal, in some cases extensive ongoing participation in quality assurance and other areas occurs. Several physicians, representing various specialty fields, serve voluntarily by appointment of the governor on the Rhode Island Ambulance Service Advisory Board. A relatively new state mandate that each service develops a quality-improvement process encourages further physician engagement. Federal and state laws regarding prescription drugs and controlled substances carried in ambulances also imply that the service is arranging acquisition of

these supplies under the license of the medical director. It is likely that this process will evolve toward both greater individual service autonomy and accountability in the future. Also, anticipated regulatory changes would extend the legal immunity protection enjoyed by ambulance services to their medical director. This evolution should support further physician oversight.¹⁶ Many physicians participate in EMT training, as is discussed in the companion article. (Personal Communication. Jason Rhodes, MPA, EMT-C, Chief, Division of EMS, Rhode Island Department of Health. August 27, 2013) Increasingly, national certification bodies in trauma care, cardiac care, and stroke care mandate close liaison with EMS agencies, including outcome feedback.^{17,18,19} The Brown University Department of Emergency Medicine fellowship in Emergency Medical Services is currently applying for ACGME accreditation, bringing a new level to EMS physician training in Rhode Island.²⁰

References

1. Sullivan FM, Williams KA. An Overview of Emergency Medical Services. *R I Med J*. Dec. 2013; 96(12).
2. Brennan JA, Krohmer JR. *Principles of EMS Systems*. 3rd ed. Sudbury, MA: Jones and Bartlett Publishers; 2006.
3. Keseg, DP, et.al. *Medical Direction of Emergency Medical Services*. 3rd ed. p11-20 ACEP; 2001.
4. Advanced Life Support Treatment in Communication Failure or Without Base Hospital Contact (PDF). Orange County Emergency Medical Services Agency. healthdisasteroc.gov. Accessed 7/26/2013.
5. Bass RR, Gainer PS, Carlini AR. Update on trauma system development in the United States. *J Trauma*. 1999;47(3 Suppl):S15-S21.
6. Hoffman JR, Luo J, Schriger DL, et al. Does paramedic-based hospital contact result in beneficial deviations from standard prehospital protocols? *West J Med*. 1990;153:283-287.
7. Cone DC, Kim DT, Davidson SJ. Patient-initiated refusals of prehospital care; ambulance call report documentation, patient outcome, and on-line medical command. *Prehospital Disaster Med*. 1995;10(1):3-9.
8. Prehospital Care and Standing Orders Protocol Book. Rhode Island Department of Health Division of Emergency Medical Services. www.health.ri.gov/programs/emergencymedicalservices. Accessed July 27, 2013.
9. Patient tracking system users guide. Rhode Island Department of Health, Division of Emergency Medical Services. www.health.ri.gov/programs/emergencymedicalservices. Accessed July 27, 2013.
10. Polsky S, Krohmer J, Maningas P, et al. Guidelines for medical direction of prehospital care. *Ann Emerg Med*. 1993;22:742-744.
11. Alonso-Serra H, Blanton D, O'Connor R. Physician medical direction in EMS. *Prehospital Emerg Care*. 1998;2(2):153-158.
12. Delbridge TR, Paul B. Anderson PB, Aufderheide TP, et al. EMS Agenda for the Future. National Highway Traffic Safety Administration <http://www.nhtsa.gov/people/injury/ems/agenda>. April 16, 1996. Accessed July 26, 2013.
13. Subspecialty certification: Emergency Medical Services. American Board of Emergency Medicine. <http://www.abem.org/>. Accessed July 26, 2013.
14. Boyd DR. The history of emergency medical services systems in the United States of America. In: Boyd DR, Edlich RF, Micik S, eds. *Systems Approach to Emergency Medical Care*. Norwalk, Conn. Appleton-Century-Crofts; 1983.
15. Emergency Medical Services Regulations. Rhode Island Department of Health Division of Emergency Medical Services. www.health.ri.gov/programs/emergencymedicalservices. Accessed July 26, 2013.
16. Sullivan FM, Williams KA. Physician Direction of Pre-hospital Emergency Services. *R I Med J*. Dec. 2013; 96(12)
17. Trauma Programs: American College of Surgeons, www.facs/trauma/. Accessed July 26, 2013.
18. AHA/ACC publishes new performance measures. www.theheart.org/article/921925. Accessed July 26, 2013.
19. Advanced Certification for Primary Stroke Centers. Joint Commission www.jointcommission.org. Accessed July 27, 2013.
20. Fellowship in Emergency Medical Services, Department of Emergency Medicine, Alpert Medical School of Brown University. www.brown.edu/.../medical/about/.../emergency-medicine/residency/fellowship. Accessed July 27, 2013.

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Emergency Medical Technician Education and Training

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ABSTRACT

Emergency Medical Services (EMS) training and education are vital and vibrant aspects of a young and evolving profession. This article provides a perspective on this effort in the United States and reviews current activity in Rhode Island.

KEYWORDS: Prehospital Emergency Care, Emergency Medical Technician

INTRODUCTION

Education of prehospital emergency care personnel is an essential element in the function and growth of the emergency care system. EMS in the United States has largely developed through local interpretation of federal guidelines with training to nationally recognized certification levels derived from curricula developed by the Department of Transportation National Highway Traffic Safety Administration (DOT-NHTSA).^{1,2}

EMTs are certified according to training level, with individual states setting standards for this training and certification (or licensure, in some cases). All states have several distinct EMT levels, usually at least three. Although states are not bound by DOT-NHTSA standards, as the EMS system matured, the importance of common training standards was increasingly recognized, and DOT-NHTSA standards are now used in most jurisdictions.^{1,2,3} The National Registry of Emergency Medical Technicians (NREMT) is a private organization that offers certification exams based on these education guidelines.⁴ Currently, NREMT exams are used by 46 states as the basis for certification at one or more EMT certification levels. The NREMT uses sophisticated computer adaptive software for its cognitive testing, providing excellent information about the student's comprehension of the material. Psychomotor testing occurs at a local level.⁵

Until recently, DOT-NHTSA recognized four EMT training levels: EMT-Basic, EMT-Intermediate 85, EMT-Intermediate 99 (The 85 and 99 referring to curricula released in 1985 and 1999, respectively) and EMT-Paramedic.²

The procedures and skills allowed at the four levels differ. The EMT-Basic level (EMT-B, or EMT-Ambulance in some jurisdictions) generally includes non-invasive and lower risk skills such as bleeding control, positive pressure ventilation

with a bag valve mask, use of oropharyngeal or nasopharyngeal airways, supplemental oxygen administration, and splinting including spinal immobilization. CPR and automatic external defibrillator use are also part of the EMT-Basic scope of practice. Additional skills possibly allowed, depending on jurisdiction and additional training, include administration of a patient's own medicine, of intramuscular epinephrine, non-intravenous (intramuscular, oral, intranasal) administration of other medications such as glucagon and naloxone, and advanced airway management in cardiac arrest patients. A typical EMT-B course includes approximately 100 hours of classroom and clinical training.^{6,7,8}

EMT-Intermediates are providers with training and scope of practice between basic (EMT-B) and paramedic (EMT-P) levels. The NREMT had two distinct intermediate level tests until recently, covering both the 1985 and the expanded scope 1999 DOT-NHTSA curricula. EMT-I/85 is a level including enhanced assessment skills and several more invasive interventions than those allowed at the basic level, including intravenous fluid therapy and advanced airway management, typically including endotracheal intubation in patients with cardiac arrest. EMT-I/99 further extends this scope of practice, necessitating additional instruction in cardiac monitoring and pharmaceutical interventions. However, the wide variety of local interpretations resulted in at least 65 different EMT-Intermediate levels across the nation, with up to several hundred hours of training time required beyond that of the EMT-B program.⁹⁻¹⁵

EMT-Paramedics, commonly referred to as "paramedics" (the only technically correct use of the term in the United States), represent the highest standard level of EMT in the United States.¹⁶ Paramedics receive significant education in anatomy, physiology, and pharmacology; they understand why certain treatments work. By comparison, the EMT-Intermediate curriculum typically focuses more on skill performance than on basic science knowledge. Paramedics bring sophisticated assessment skills to the patient's bedside, and perform a variety of medical procedures such as advanced airway management including intubation and cricothyrotomy, an extensive range of pharmaceutical administration, central IV access, manual defibrillation, and pleural decompression.²

In addition to this range of EMT-Basic, Intermediate, and Paramedic levels, a variety of specialty EMT levels developed in some jurisdictions. These include curricula tailored

to specific situations and patient conditions, predominantly directed toward expanded scope of practice for the paramedic level. These additional specialty levels are presented in **Table 1**.¹⁶

Accordingly, by the late 1990s there were several hundred types of certification for EMS personnel within the United States, many of these recognized by no more than a single jurisdiction, county, or state. This multiplicity of certification / licensure levels, the result of locally interpreted national curriculum guidelines, provided an EMT workforce optimized for local operations, but created issues with training, standardization, and reciprocity. It made large ambulance services (serving multiple jurisdictions) cumbersome to operate, and discouraged workforce mobility. EMTs would often have to take additional training programs and pass specific certification examinations when moving from one state to another, an obstacle for both professional and volunteer

providers. Cross-border operations became increasingly problematic, and response of hundreds of ambulances from many states to large scale events, such as Hurricane Katrina, even more challenging due to variations in training, scope of practice, medication availability, and communications failures.

NATIONAL EMS SCOPE OF PRACTICE PROJECT

In 2009, the NREMT posted information about transition to a new system of levels for emergency care providers developed by the NHTSA through the National EMS Scope of Practice Project. This extensive project gathered significant data about skill performance, training, value of various interventions, and other factors from a multitude of experts, providers, and educators, and then grouped interventions into EMT levels. The initial goal was that by 2014 these new levels would replace the fragmented system found around the United

States. The new classifications are emergency medical responder (EMR, replacing first responder, a provider with a smaller skill set than a basic EMT), emergency medical technician (EMT, replacing EMT-Basic), advanced emergency medical technician (AEMT, replacing EMT-Intermediate 1985 and, in part, 1999), and Paramedic (replacing, in part, EMT-Intermediate 1999 and EMT-Paramedic). Educational requirements for the new levels are similar to prior curricula, but are based on competency, not absolute classroom hours. Slowing this transition process are the momentum of the current system, cost of re-education, and the daunting logistics and human factors involved in simplifying a highly variable system. However, most states, and the NREMT, have now transitioned to the new model, introducing an era with more uniform training at the three new EMT levels.

Table 1. EMT Specialty Levels

Advanced Practice Paramedic or Critical Care Paramedic	These paramedics have additional training in the management of critical trauma and medical patients and typically staff inter-facility ground and aeromedical transports. Skills include ventilator management, treatment with a wide variety of medications and blood products, intra-aortic balloon pump monitoring, and specialized hemodynamic monitoring. There are specific training programs appearing for pediatric and neonatal critical care paramedics.
Community Paramedic	Described by some as a public health paramedic, or primary care paramedic, these providers have additional training in prevention, public health, primary care and health maintenance.
ToxMedic	Very specific training in the treatment and dealing with hazardous materials exposure and poisoning. Often working in support of HAZMAT and military response teams, these paramedics are adept at operations in a variety of high-level personal protective equipment.
Wilderness Paramedic (and other wilderness EMT levels), FireMedic	Trained in search and rescue, survival techniques, definitive and prolonged-care measures, preventive medicine, these providers support wilderness search-and-rescue teams, wildland fire operations, and similar austere and wilderness medical settings.
Tactical or NarcMedic	Supporting certain high-risk law enforcement operations, these paramedics are trained to understand and safely work around (and sometimes) with firearms and other police weapons and tactics. They may integrate with entry teams, respond upon need, or stand by at a safe distance.
Flight Paramedic	Adding aviation and altitude physiology to a Critical Care Paramedic curriculum, flight paramedics typically staff helicopter and fixed-wing transport programs. ¹⁶

PRACTICAL ASPECTS OF EMT TRAINING

Training programs vary, provided that each course meets applicable requirements. Recent textbooks and on-line training materials reflect the new EMT levels, streamlining the lesson plan process for instructors. The transition to competency-based curricula cannot

practically eliminate minimum hour commitments for didactic and clinical aspects of training. EMTs still receive at least 100 hours of training, AEMTs have about 400 additional hours, and paramedics are trained for an additional 1,000 hours or more.

EMT training programs still also vary greatly in format. For example, intensive two-week fast-track programs are available for basic EMTs. Other training programs are months long, up to two years, for paramedics in associate degree programs. In addition to this didactic education, clinical rotations are required. Students must spend time in an ambulance and one or several different hospital services and demonstrate clinical competence in order to be eligible for the certification exam. This clinical time commitment can vary, as indicated, depending on requirements, the level of training sought, and the amount of time it takes an individual student to show competence.^{7,9} Accreditation is available for EMT programs from the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP), and is becoming more common.¹⁷ NREMT now requires graduation from an accredited paramedic program as a prerequisite to testing at that level, and is working flexibly with states on bridge programs to facilitate transition to the new levels.

EMT-training programs are offered at a variety of locations: universities, community colleges, technical schools, hospitals or EMS academies.^{18,19} Every state has an EMS lead agency, often within the Department of Health, Public Safety, or an equivalent, which regulates and accredits both training programs and the entire EMS system. CoAEMSP requirements for paramedic program accreditation require affiliation with a sponsoring institution, such as a college or academic hospital, eliminating “garage-and-basement” paramedic training programs.

On-line resources are a burgeoning enterprise. A variety of well-established and highly regarded supplemental courses exist as well, such as Basic Trauma Life Support from the American College of Emergency Physicians, Prehospital Trauma Life Support from the American College of Surgeons, Advanced Cardiac Life Support and Pediatric Advanced Life Support from the American Heart Association.^{20,21,22} Concepts and approaches from these courses often become incorporated into the initial certification program curricula, both in didactic content and emphasis on skill stations and case or scenario-based teaching. A wealth of topic-specific educational resources is available for continuing education.

Prehospital provider education also includes a minimum number of continuing education (CE) hours required to maintain certification. While the format and specifics may be set at the state or other jurisdiction level, the NREMT now has uniform level-specific requirements.²² Emergency medicine and EMT-specific journals, educational conferences, and on-line resources may be used to fulfill these requirements.²⁴⁻²⁷

EMT TRAINING IN RHODE ISLAND

EMT training in Rhode Island reflects national diversity, and is transitioning to mirror new national uniformity. The supervision of these programs must be performed by an instructor coordinator trained and authorized by the Division of Emergency Medical Services at the RI Department of Health and each individual training endeavor must be specifically approved. Entry level EMT-B training entails completion of a 110-hour didactic and practical course, including ED and field observation, passing the NREMT cognitive exam and a local psychomotor exam. Transition to the new EMT curriculum is in process. This basic EMT training is currently available through a wealth of programs, from individual volunteer organizations to private business endeavors to community college-based programs. EMT-C, a skill level unique to Rhode Island but very similar in scope to the DOT-NHTSA I-99 curriculum, requires prior EMT-B certification and completion of an additional 160 hours of training as well as a supervised clinical practicum in intravenous access. Transition to the new Advanced EMT curriculum is underway. EMT-P training requires over 500 hours of classroom training, plus extensive hospital rotations in obstetrics, intensive care, and emergency settings, as well as a field internship. Like EMT-B, RI paramedics take the NREMT exam, and transition to the new Paramedic curriculum is also in progress. Several paramedic training programs exist within RI. College credit earned can be used toward a degree. An undergraduate major in emergency management is also offered.

The RI Department of Health currently mandates continuing education through refresher programs for maintenance of EMT-B and C licensure. The EMT-P license renewal process via the NREMT requires documentation of continuing education hours, which may be obtained at a refresher program or at many other educational opportunities, including on-line sources.²³ For example, Rhode Island Hospital and its Lifespan affiliates, along with the University Emergency Medicine Foundation have sponsored Rescue Rounds since 1999. This monthly EMT CME program, certified by the Office of Emergency Medical Services of Massachusetts for EMTs of all levels, offers credits toward license renewal for prehospital providers both from Rhode Island and neighboring states.

Several other local hospitals offer similar EMT educational opportunities. The RI Metro EMS Chief's Organization sponsors an annual educational conference. In addition, the Department of Surgery, Division of Trauma and Critical Care at Rhode Island Hospital sponsors several annual trauma seminars. Hospital interventional cardiology programs and stroke centers have provided prehospital directed education focused on acute cardiac and stroke care. The EMS for Children program, managed by the Division of EMS of the RI Department of Health, has created an ongoing pediatric educational program for EMTs. This program has recently added web-based

access to the series, expanding its accessibility to the EMT community and with continuing education credits obtained through Brown University. The Division of EMS also provides educational programs to introduce protocol changes or with any new program initiative. (Personal communication, Jason Rhodes, Chief, Division of EMS, Rhode Island Department of Health. August 27, 2013.) All of these efforts help unite and educate Rhode Island's EMTs.

SUMMARY

Emergency Medical Technician training and education in Rhode Island apply national and state programs appropriately to meet distinct local needs. Dedicated professionals provide both initial certification instruction and ongoing teaching in a wide variety of continuing education programs.

References

1. Occupational Outlook Handbook – EMTs and Paramedics. US Department of Labor, Bureau of Labor Statistics. <http://www.bls.gov/ooh/healthcare/emts-and-paramedics.htm>. March 29, 2012. Accessed July 26, 2013.
2. US Department of Transportation, National Highway Traffic Safety Administration. The History of EMS at NHTSA. <http://www.ems.gov/history.htm>. Accessed August 31, 2013.
3. Abram T. Legal Opinion: Certification v. Licensure. National Registry of Emergency Medical Technicians. www.nremt.org. Accessed July 26, 2013.
4. About NREMT Examinations. National Registry of Emergency Medical Technicians. www.nremt.org. Accessed July 26, 2013.
5. State Office Information. National Registry of Emergency Medical Technicians. www.nremt.org. Accessed July 26, 2013.
6. National EMS Scope of Practice Model (PDF). National Highway Traffic Safety Administration. www.nhtsa.gov. Accessed July 26, 2013.
7. Emergency Medical Technician-Basic National Standard Curriculum (PDF). National Highway Transportation Safety Administration. www.nhtsa.gov. Accessed July 26, 2013.
8. National EMS Scope of Practice Model (PDF). National Highway Transportation Safety Administration. September 2006. www.nhtsa.gov. Accessed July 26, 2013.
9. Emergency Medical Technician-Intermediate: National Standard Curriculum. National Highway Transportation Safety Administration. www.nhtsa.gov. Accessed July 26, 2013.
10. 1998 Emergency Medical Technician - Intermediate: National Standard Curriculum. National Highway Transportation Safety Administration. www.nhtsa.gov. Accessed July 26, 2013.
11. Advanced Practice Paramedic. Wake County EMS. www.wakegov.com/ems. June 13, 2013. Accessed July 26, 2013.
12. Tennessee Critical Care Paramedic. Tennessee Department of Health EMS. <http://health.state.tn.us/ems>. Accessed July 26, 2013.
13. EMT-I (1) Regulations (PDF). California EMS Authority. www.emsa.ca.gov. Accessed July 26, 2013.
14. EMT Information. California EMS Authority. www.emsa.ca.gov. Accessed July 26, 2013.
15. Emergency Medical Services (EMS) Certification and Education Information. New York State Department of Health. www.health.ny.gov. Accessed July 26, 2013.
16. Emergency Medical Services in the United States. Wikipedia. <https://en.wikipedia.org/wiki/Emergency-Medical-Services-in-the-United-States>. Accessed July 27, 2013.
17. Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions. <http://www.coaemsp.org/>. Accessed September 2, 2013.
18. Paramedic Education: Paramedic Associate Degree Program. University of Virginia Health System. www.medicine.virginia.edu. Accessed July 26, 2013.
19. Emergency Medical Services Program. Drexel University. emt-careertraining.com/drexel-emt-training. Accessed July 26, 2013.
20. Basic Trauma Life Support. www.itrauma.org. Accessed July 27, 2013.
21. Prehospital Trauma Life Support. www.naemt.org/education. Accessed July 27, 2013.
22. Advanced Cardiac Life Support, Pediatric Advanced Life Support, Pediatric Emergency Assessment, Recognition, and Stabilization. www.heart.org. Accessed July 27, 2013.
23. NREMT EMT-Basic Recertification. National Registry of Emergency Medical Technicians. www.nremt.org. Accessed July 26, 2013.
24. Emergency Medical Services Regulations. Rhode Island Department of Health Division of Emergency Medical Services. www.health.ri.gov/programs/emergencymedicalservices. Accessed July 27, 2013.
25. *Journal of Emergency Medical Services*. www.elsevier.com/journal-of-emergency-medical-services/jems. Accessed July 27, 2013.
26. *Fire Rescue*. www.elsevier.com/journals/fire-rescue-magazine. Accessed July 27, 2013.
27. Prehospital and Disaster Medicine. www.wadem.org. Accessed July 27, 2013.

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The Rhode Island Life Saving Score (RILSS) – A Proposed Life-Saving Definition for EMS and Emergency Medicine

KENNETH A. WILLIAMS, MD; FRANCIS M. SULLIVAN, MD

PREFACE

*“Unresponsive, pulse 120, respiratory rate 3, pulse oximetry 73%. BVM with 100% oxygen, naloxone given.” He opens his eyes.
We save another life.*

“What are you doing?” he asks. “I was taking a nap!”
— Anonymous Rhode Island EMT

ABSTRACT

Emergency Medical Services (EMS) and Emergency Medicine staff are often described as life-saving providers, but there is no generally accepted objective definition of a life saved by these providers. Therefore, a proposed definition is described. Development of this definition began with conceptual rules, followed by a survey of physician EMS medical directors, and then by the development of a tool to implement the definition, and measure its validity and reliability through a review of 100 critical care transport EMS patient charts.

KEYWORDS: emergency medical services, mortality

BACKGROUND

Lives are saved in ambulances and emergency departments every day. However, there is no standard definition of a life saved during emergency care. Emergency departments and ambulance services tend to describe their efforts in terms of volume statistics, percent of patients admitted to hospital, and demographics of patients. Other than for cardiac arrest, where the Utstein criteria¹ provide a standardized template, there is no template or definition that can be used objectively by emergency care providers to quantify lives saved during emergency care. This paper proposes such a definition.

METHODS

The Rhode Island Hospital IRB approved this study. Conceptual rules were derived using a modified Delphi method. Medical director surveys were performed using Illume web-based survey software (Illume, DatStat, Seattle, WA) and an email distribution list provided by the National Association of EMS Officials (www.NASEMSO.org Medical Director Council). Data were converted to Excel (Microsoft

Corp., Redmond, WA) for analysis. Simple arithmetic analysis (averages, sums) was performed in Excel. Interobserver reliability calculations were performed by a statistical consultant, Jason Machan, PhD, using SAS version 9.3 (The SAS Institute, Cary, NC).

Conceptual Rules

We began by drafting proposed conceptual rules. These are detailed in **Figure 1**. They included the need to be able to apply the definition during the period of patient care. While other specialties have continued contact with patients and can perform prolonged follow-up inquiries, such as determining 5-year survival rates after cancer treatment, EMS and emergency medicine are often precluded from obtaining such follow up. In addition, emergency patients often have discrete life-threatening events that are independent of future health problems. They may also have several life-threatening events (e.g., recurring hypoglycemia, arrhythmias, or opiate overdose) over a period of several years, and intervention at each constitutes a discrete life-saving event. Other criteria included simple application by the emergency personnel who wish to apply the definition (i.e., a form or list that can be completed during observation of care or chart review, not a complex algorithm requiring data

Figure 1.

Conceptual Life-Saving Score Rules
1. The definition must be based on objective actions, such as procedures performed or treatments given, and causally linked objective outcomes, such as survival or improved vital signs / accepted clinical measures. It must not be based on theoretical evaluations of thought, differential diagnosis, or subjective efforts.
2. The definition must measure the effects of emergency care independent of subsequent intervening events. In other words, the goal is measurement of lives saved during a discrete emergency care encounter, regardless of the effects of later illness or injury, or the efforts of subsequent providers.
3. The definition must be practical to apply and useful. It must not over or underestimate the number of lives saved, and therefore must, at face value, be consistent with saving a life. Practical application demands that the definition be easy to use by emergency providers and their managers.

from future care), the need for the definition to be objective and therefore reliable when measured by different observers, and the need for the definition to be valid in the sense that it must not over or underestimate the number of lives saved as judged by a panel of EMS experts.

Initial Proposed Definition

From these conceptual rules we proposed a definition, shown in **Figure 2**. This general definition was based on the division of emergency patients into several categories, paralleling common triage categories. We defined our categories based on a combination of acuity and severity, with critical patients most in need of life-saving care having both conditions that would result in death if untreated, and conditions where such treatment must be delivered in seconds to minutes in order to save a life. One example is defibrillation to treat cardiac arrest caused by ventricular fibrillation. The next category again included conditions that would be life threatening, but that emergent threat to life would take hours or days to develop and could be mitigated by an intervention during the contact period. An example is treatment of sepsis with antibiotics and fluids in compliance with goal-directed therapy, preventing septic shock and subsequent death. The third category of patients has urgent conditions or behaviors that are potentially life threatening, but that threat to life occurs more than days in the future (weeks or longer). An example would be counseling an athlete to wear a protective helmet during future sporting events.

Figure 2.

Initial Proposed Definition of an EMS Life Saved
<p>A life is saved if EMS or other emergency providers perform a procedure or apply a therapy that:</p> <p>(1) Results in patient improvement from a condition that is critical or emergent, as defined by likely death if untreated within seconds to minutes (critical) or hours to days (emergent), or prevents death at some future time through a change in behavior or health and</p> <p>(2) Maintenance of that improvement is maintained until discharge or transfer of patient care to subsequent providers.</p>

Expert Panel Survey

We surveyed physician EMS directors from every state in the country and several territories to determine the validity of our definition with an expert panel, using the Medical Director Council email list provided by the National Association of EMS Officials (www.NASEMSO.org). The survey consisted of a list of proposed actions within the three categories described above: critical, emergent, and urgent. For each action we listed a proposed condition, the therapeutic action, and a proposed improved state. The subjects were asked to score whether they felt each individual action set constituted a life saved if the process proceeded as

described. We achieved a good return from these surveys, and good group agreement about the critical and emergent action lists. However, the group felt that the urgent list, due to the vague and unspecified future threat to life, should not be included in the definition of life-saving actions by emergency care providers. This group of experts is well aware of the important progress being made by injury prevention, behavior modification, teachable moment, abuse recognition and prevention, and other similar efforts in emergency care, but was uncomfortable validating the interventions by these groups as immediately life-saving.

Resultant definition

Therefore, the resultant definition includes only critical (death within seconds to minutes, if untreated) or emergent (death within hours to days if untreated) conditions, and objective therapies that stabilize or improve these conditions during provider contact time. This revised definition is shown in **Figure 3** as the Rhode Island Life Saved Score (RILSS).

Figure 3.

Revised Definition: The Rhode Island Life Saved Score (RILSS)
<p>A life is saved if EMS or other emergency providers perform a procedure or apply a therapy that:</p> <p>(1) Results in patient improvement from a condition that is critical or emergent, as defined by likely death if untreated within seconds to minutes (critical) or hours to days (emergent), and</p> <p>((2) Maintenance of that improvement is maintained until discharge or transfer of patient care to subsequent providers.</p>

Tool Development and Reliability Testing

From the RILSS definition and the survey tool, we developed a preliminary form that could be used by an emergency provider to score whether or not a particular patient received life-saving care. This form, attached as **Figure 4**, lists interventions and instructs the scoring provider to count the patient as having had their life saved if one or more of these interventions were applied for an appropriate indication and resulted in stabilization or improvement in the patient's condition.

Reliability testing was sought by having four emergency medicine attendings independently score the same 100 consecutive adult transport charts provided by the LifePACT critical care transport service at Rhode Island Hospital. Almost all of these patients are transferred between hospitals, and are admitted to intensive care or procedural settings such as cardiac catheterization or interventional radiology laboratories, or the operating room. Therefore, they constitute a group of patients with a likely high concentration of life-saving activities. We sought to determine if our score had good interobserver reliability, and if it appeared valid given the acute and severe conditions present in this patient population.

Figure 4. Rhode Island Life Saved Score (RILSS) Tool

PRE-CONDITION	INTERVENTION	RESULT	PRESENT?
CRITICAL			
Cardiac arrest	Resuscitation (PALS*, ACLS, ATLS)	Return of spontaneous circulation (ROSC)	[]
Ventricular fibrillation	Defibrillation	ROSC	[]
Pulseless ventricular tachycardia	Defibrillation / cardioversion	ROSC	[]
Unstable tachycardia (Rapid Afib, SVT)	Electrical/Chemical cardioversion OR rate control	ROSC or improved HR/BP	[]
Unstable bradycardia	Transcutaneous pacing or med for rate control	Pacer capture or improved HR/BP	[]
Pericardial tamponade	Pericardiocentesis	Improved MAP, resolved tamponade	[]
Respiratory arrest or failure	Advanced airway management (intubation, LMA, etc.)	Sufficient oxygenation/ventilation	[]
Respiratory failure or sedation or paralysis causing respiratory insufficiency	Advanced airway or ventilation or CPAP/BiPAP (continuation)	Adequate ventilation and oxygenation	[]
Airway obstruction / Choking	Removal of foreign body/establish patient airway	Sufficient oxygenation/ventilation	[]
Anaphylaxis	Epinephrine and/or advanced airway control	Resolution of reaction	[]
Tension pneumothorax	Needle decompression/tube thoracotomy	Adequate ventilation, oxygenation, and BP	[]
Opiate overdose with respiratory compromise	Naloxone, Naltrexone	Adequate respiration and ventilation	[]
EMERGENT			
Infection or sepsis	IV fluids, Anti-infective agent +/- surgery	Improved perfusion, reduction in SIRS criteria / shock	[]
Shock (diverse causes including septic, traumatic, hemorrhagic, neurogenic, cardiogenic, anaphylactic)	IV fluids or pressors or removal of causative medication or agent or emergency thoracotomy	Improve MAP and tissue perfusion	[]
Ruptured AAA	Application of pneumatic anti-shock garment, shock treatment	Improved clinical condition	[]
Significant anemia +/- Hemorrhage	Blood transfusion	Adequate blood volume	[]
Anticoagulation With Hemorrhage	Reversal of anticoagulation (FFP, Vit K, etc.)	Hemostasis	[]
Toxic or hazardous material exposure (+/-shock or other associated critical condition)	Removal of exposure or application of antidote, decontamination	Improved clinical condition	[]
Life threatening circumstances (entrapment, hazardous material exposure)	Rescue and removal from environment	Improved safety	[]
Symptomatic hypoglycemia	D50 or other dextrose/glucose/ glucagon	Normal glucose level	[]

***Rhode Island Life Saved Score (RILSS) Tool Abbreviation Key**

AAA	Abdominal Aortic Aneurysm
ACLS	Advanced Cardiac Life Support course, American Heart Association
Afib	Atrial fibrillation
ATLS	Advanced Trauma Life Support course, American College of Surgeons
BiPAP	Bilevel Positive Airway Pressure
BP	Blood Pressure
CPAP	Continuous Positive Airway Pressure
D50	Dextrose 50% water
FFP	Fresh Frozen Plasma
HR	Heart Rate
IV	Intravenous
LMA	Laryngeal Mask Airway
MAP	Mean Arterial Pressure
PALS	Pediatric Advanced Life Support course, American Heart Association
ROSC	Return of Spontaneous Circulation
SIRS	Systemic Inflammatory Response Syndrome
SVT	Supraventricular tachycardia
Vit K	Vitamin K

RESULTS

The expert panel survey revealed agreement about the conceptual score construct and the specific critical and emergent life-saving actions. The chart audit revealed excellent agreement between observers regarding which patients received life-saving interventions. The overall Fleiss-Cohen weighted kappa was 0.83 (0.78-0.87), with no differences across pairings ($p=0.5980$) (SAS version 9.3, The SAS Institute, Cary, NC). Approximately one half (48.75%) of patients had at least one life-saving procedure performed (range 0-4 life-saving procedures per patient), confirming validity of the score as a reasonable measure of life-saving activity in this select population. Therefore, the RILSS Tool and definition are both valid and reliable when used to assess a critical care transport EMS patient population.

DISCUSSION

The RILSS definition (**Figure 3**) and final scoring tool, presented as **Figure 5**, allow EMS and other emergency care providers to quantify their life-saving activities in addition to measures counted by current methods (return of spontaneous circulation after cardiac arrest). This proposed Rhode Island Life Saved Score (RILSS) can be used in EMS and emergency care quality improvement efforts, objective descriptions of EMS service performance and activities, and for comparison between patient populations served. Weaknesses of our score include inability to predict long-term survival (arguably irrelevant to EMS providers) and lack of large-scale validation in 911 and emergency department settings. Future study should refine the score and tool, and seek validation in other settings.

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Reference

1. Abramson NS, Allen M, Baskett PJ, et al. Reporting of Data From Out-of-Hospital Cardiac Arrest: The Utstein Style. A Statement for Health Professionals From a Task Force of the American Heart Association, the European Resuscitation Council, the Heart and Stroke Foundation of Canada, and the Australian Resuscitation Council. *Circulation*. 1991;84:960-975.

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Critical Care Transport

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ABSTRACT

Critical care transport (CCT) is the segment of the Emergency Medical Services (EMS) system that transports patients who are critically ill or injured. Nearly 1,000 medical helicopters affiliated with over 300 transport programs, hundreds of fixed-wing aircraft, and many, many ground ambulances assisting adult, pediatric and neonatal CCT teams are operating in the United States.¹ This article reviews the history of and indications for CCT, team qualifications, vehicle options, safety, CCT system design, and physician involvement in CCT. It concludes with a brief review of CCT services in Rhode Island.

KEYWORDS: emergency medical services, helicopter, ambulance

Services (EMS) system that transports patients who are critically ill or injured. These patients are unstable, or are likely to become unstable, during transport. Specialized staff training, scope of practice, and equipment, often accompanied by purpose-built ambulances (air or ground), facilitate safe CCT operations and account for an equivalent description, specialty care transport (SCT). This article reviews the history of and indications for CCT, team qualifications, vehicle options, safety, CCT system design, and physician involvement in CCT. It concludes with a brief review of CCT services in Rhode Island.

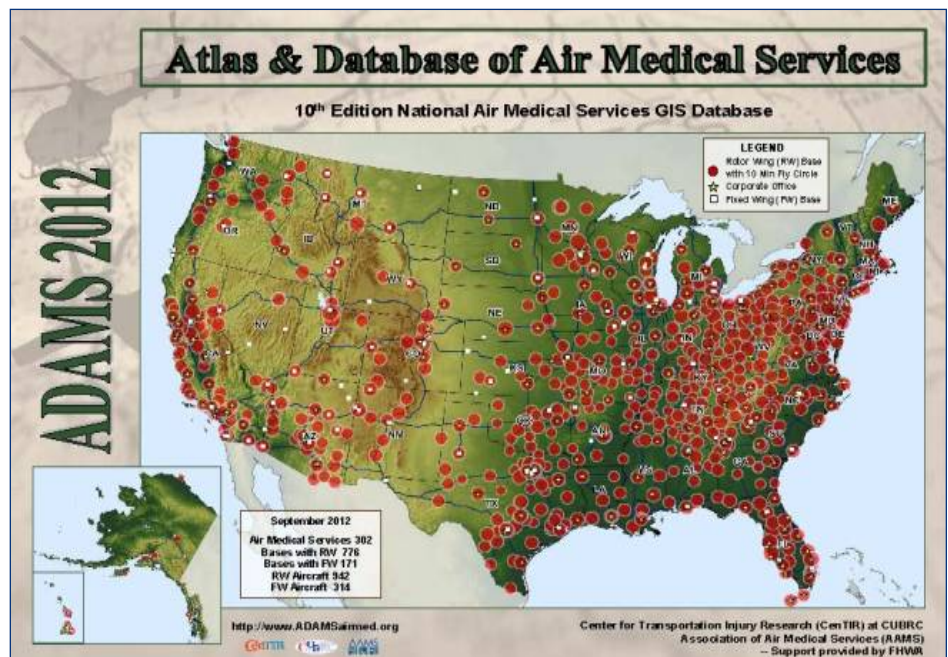
History

The first pediatric hospital in the United States, Children's Hospital of Philadelphia, began operations in 1855, and the first neonatal ICU opened in 1961 at Vanderbilt University.³

INTRODUCTION

The popular impression of a helicopter ambulance landing on the highway to transport a victim from the crash scene to the trauma center is an inadequate picture of critical care transport (CCT) services. Nearly 1,000 medical helicopters affiliated with over 300 transport programs, hundreds of fixed-wing aircraft, and many, many ground ambulances assisting adult, pediatric and neonatal CCT teams are operating in the United States.¹ (Figure 1) Together, these services transport over 550,000 patients annually by aircraft, and an unknown but likely larger number by ground ambulance, including about 68,000 neonates.² However, the vast majority of these CCT patients are transported between hospitals, not from the scene of injury or illness to the hospital. A full understanding of critical care transport includes both scene and interhospital transports. Critical care transport is the segment of the Emergency Medical

Figure 1. National View of 15-Minute Rotor Wing Response Areas as of September 2012.



Status as of September 2012. http://www.aams.org/AAMS/Media_Room/ADAMS_Database/aams/MediaRoom/ADAMSDatabase/ADAMS_Database.aspx?hkey=4cccf748-2bc7-4bb9-b41a-c710366c51dc. (Accessed August 20, 2013) The map above shows the locations of Air Medical rotor and fixed wing bases providing emergency response to medical & trauma scenes. The blue circles are 10-minute rotor wing fly circles around each base. These circles represent a nominal 15-minute response area (5 minute for RW launch + 10 minutes flight time). The white squares represent fixed wing bases.

Hospitals and systems dedicated to specialized care of trauma patients first developed in the United States in the 1960s and 1970s.⁴ More recently, specialized centers for cardiac, stroke, burn, organ transplantation, and other resource and time-intensive medical problems have developed. This concentration of tertiary care and specialty services at designated hospitals necessitates transport of patients from other hospitals, and argues for direct transport from the scene to specialty centers, bypassing other hospitals in some cases. For patients who meet criteria, direct transport for trauma,⁵ ST segment elevation myocardial infarction (STEMI),⁶ and stroke patients⁷ is advantageous.

Ambulance systems dedicated to delivering patients to these specialty centers from referral hospitals began to appear in the 1970s and 1980s, paralleling the development of many hospital specialty systems. The first civilian hospital-based helicopter program in the US began operations in 1972, modeled after military helicopter medical operations that started in 1944.⁸ Rapid growth in the helicopter ambulance segment occurred early, and then again in the 1990s when reimbursement adjustments made for-profit services viable. Many CCT teams use ground ambulances for all transports, and some use both ground and air ambulances.

Due to this combination of increased ambulance service capability and the concentration of specialty medical services at the center of “hub-and-spoke” system models, it became possible to safely transport critically ill and injured patients from outlying facilities and scenes to lifesaving care at these specialty centers. Thus, patients who had been “too sick to transfer” became “too sick to stay” as CCT teams became available.

CCT Team Composition

CCT team composition varies, requiring a blend of EMS, emergency department, and intensive care unit skills and therefore significant training beyond each provider’s baseline in most cases. There is general agreement that CCT patients should be attended by a minimum of two providers while a third team member drives or pilots the ambulance. The most common CCT team composition is nurse/paramedic, but nurse/respiratory therapist, paramedic/physician, and other crew compositions exist.

In many cases, particularly where call volume is low (i.e., less than 1 mission every 24 hours), CCT teams are “unit-based,” meaning that they are situationally assembled from staff already performing clinical tasks on a patient care unit (typically an ICU or ED), or are on call from home. This provides efficient use of resources, but response time is delayed while team members sign out patient care to their peers or drive to the hospital. In addition, if system volume increases, this model can lead to inefficient staff use and animosity, as CCT team members are often absent from expected unit duties. Other CCT teams are “dedicated,” meaning that CCT is their primary assignment. Team members, if located at a hospital or other clinical setting (instead of an airport,

fire station, or other non-clinical site), can assist with clinical tasks but avoid assignments that are difficult to leave promptly. Dedicated CCT teams respond rapidly to missions, have time to maintain their vehicles and their own clinical competence while being perceived as extra help in patient care units when the system is managed properly.

CCT Vehicles

Some CCT teams are self-contained; they provide all staff and equipment necessary for patient care, and contract with an ambulance provider or general CCT team to provide an adequate vehicle and support for each mission. Many neonatal and pediatric transport teams, and subspecialty (transplant, stroke, intra-aortic balloon pump, etc.) teams use this system. In other cases, CCT teams use custom-designed air or ground vehicles. Ground CCT vehicles tend to be large ambulances, providing room for multiple providers, centrally-mounted patient cot, significant electrical power for CCT equipment, often via an accessory generator, point-of-care testing equipment, medication refrigerator and fluid warmer, intravenous pumps, ventilator, and other typical equipment. By comparison, most air medical helicopters offer small patient care areas and more limited equipment space, necessitating more patient “packaging” prior to transport.⁹

Location

Many CCT patients have conditions that are both time and level of care critical. Therefore, CCT services should be located where they can provide both rapid and high-quality care. Unfortunately, these can be conflicting requirements. Transport time is reduced if the team is located close to the referral source (scene or hospital), but care quality is best maintained by frequent experience and training, both most often available at the receiving specialty care center. In addition, a single CCT team based at a receiving center would have to be replaced by multiple “satellite” teams to reduce transport time from all geographic directions, increasing system cost and training complexity. An efficient alternative is a combination of centrally located ground (covering the local area) and helicopter air (covering more distant referrals) CCT teams, augmented by 911 EMS systems that include specialty destination protocols and mechanisms to intercept CCT teams while en route to the specialty center when indicated.¹⁰ Unfortunately, there is insufficient regulatory control of CCT providers in the United States to organize such an efficient system. In particular, there is considerable inequity in the distribution of helicopter CCT programs (**Figure 1**).¹¹ However, there are efforts to accredit CCT programs, primarily by the Commission on Accreditation of Medical Transport Systems¹² and by the Commission on Accreditation of Ambulance Services.¹³

Safety

CCT operations must prioritize patient, provider, and public safety. Safety is enhanced by proper design, restraint of people

and objects inside the ambulance, and careful vehicle operation. Helicopters must meet stringent design and restraint requirements, vehicle maintenance and pilot qualifications, and yet there have been a concerning number of crashes and deaths involving helicopter ambulances.¹⁴ Ground ambulances in the United States are not so vigorously regulated regarding design and equipment / personnel restraint, or driver training, but crashes, although much more frequent, are less likely to cause serious injury or death. Nevertheless, there is significant need for improved ground ambulance design and operational safety.¹⁵ In addition, there is concern that some areas of the country have too many CCT systems, particularly those operating helicopter ambulances, and that these systems are often not utilized properly.¹⁶ In New England, by contrast, appropriate utilization is almost universal.¹⁷

Indications for CCT

Three decisions guide the use of a CCT team to transport a patient.

1] Does the CCT team vehicle provide unique advantages? For example, helicopter or fixed-wing aircraft, or a custom ground ambulance with bariatric capabilities, may be indicated depending on patient location, weather, or size, regardless of clinical needs.

2] Does the patient need, or potentially need, the specialized capabilities of the CCT team? Patients who are unstable, require significant respiratory support, are receiving multiple intravenous medications, and/or who have a condition that may deteriorate during transport (e.g., acute myocardial infarction, intracranial hemorrhage, gastrointestinal

hemorrhage, sepsis) may be best served by a CCT team.

3] Is there a better alternative to the CCT team? For example, in some cases the time necessary for the CCT team to arrive at the referring facility may be prolonged and the referring facility can better serve the patient by sending hospital staff (properly trained and equipped) in a rapidly available local ambulance. In other cases, telemedicine or teleradiology may facilitate consultation and reduce the need for transport. In many areas, there are several CCT systems available. "Shopping" for a CCT system when the weather precludes safe transport (air or ground) is not advised, and a better alternative is local patient stabilization until safe transport is possible.

In summary, CCT is indicated when a patient needs the team's vehicle, crew, or both, and there is no better safe transport alternative.

Physicians and CCT

Physicians interact with CCT services in three ways:

1] Physicians may use CCT services to send or receive a patient. Although specialty dependent, most physicians should be aware of CCT services in their area, the qualifications and capabilities of their crews, and the vehicle types available to them. This familiarity will improve interaction with the CCT system, speed patient transport, and assure compliance with EMTALA and other regulations.

2] Some CCT teams include physicians as crew members. These transport physicians must be aware of the unique circumstances involved in critical care transport, including medical management, vehicle operations and altitude

Figure 2. LifePACT 1 at RIH Anderson Emergency Center.



Figure 3. LifePACT 2 at Hasbro Children's Hospital.



Figure 4. LifePACT 1 & 2 at RIH Anderson Emergency Center.



Figure 6. Rhode Island Congressional delegation dedicates LifePACT 1.



Figure 5. LifePACT 1 interior, with high fidelity simulation manikin and Paramedic Scott Francis.



Figure 7. UMASS LifeFlight and Boston Med Flight helicopters land at Rhode Island Hospital.



physiology (if aircraft are involved), the EMS systems in the operational area, and relevant protocols, regulations, and laws. At Rhode Island Hospital / Hasbro Children's Hospital, senior emergency medicine residents, EMS fellows, and pediatric residents serve as transport physicians aboard LifePACT, the hospital's critical care transport program and the only physician-staffed pediatric and adult CCT program in New England. These transport physicians are supervised by emergency physician or pediatric intensivist medical directors depending on patient age and condition.

3] CCT systems, given their complex and high level of care, require physician oversight. All CCT teams should have a physician medical director who is thoroughly familiar with all aspects of CCT operations, including the topics listed above. In addition, the CCT medical director must be a good leader, be able to facilitate research and quality assurance activities, represent the CCT system as indicated, and have authority to manage system medical operations. The Air Medical Physician Association (www.AMPA.org) and the National Association of EMS Physicians (www.naemsp.org)

provide significant support and resources for physicians interested in CCT systems, including courses for medical directors and suggested curricula.

CCT in RI

Rhode Island has two critical care transport teams. Women & Infant's Hospital operates a unit-based NICU team, staffed by a neonatologist and a respiratory therapist. They bring a neonatal isolette, patient support equipment, and all necessary medications on ambulances provided by a contracted provider. The W&I NICU team serves an established catchment area around Providence. Rhode Island Hospital / Hasbro Children's Hospital operates LifePACT (mentioned briefly above), a dedicated pediatric and adult critical care transport team. LifePACT has two custom ambulances staffed by specially trained paramedics, nurses, physicians, and respiratory therapists as indicated. (Figures 2-6) The LifePACT team members are dedicated to transport duty 24/7/365, and between missions they inventory equipment, maintain competency, perform quality assurance and training functions,

and support Express Care (transfer and access center) and the RIH MedCom Center (paramedic-staffed EMS communications center). LifePACT serves all hospitals in Rhode Island, and surrounding areas in Connecticut and Massachusetts as requested, transporting an average of 4 patients every day. Three helicopter CCT services (Hartford LifeStar, UMASS Memorial LifeFlight, and Boston MedFlight) border Rhode Island, and provide support when requested by Rhode Island EMS agencies and hospitals. (Figure 7)

SUMMARY

Critical Care Transport (CCT) is an important part of the health care system, safely providing the ability to move critically ill or injured unstable patients between hospitals (and occasionally from the incident scene to an appropriate hospital). While there are hundreds of CCT programs in the United States, operating nearly 1,000 medical helicopters and many other specialized ground and air ambulances, there are only 2 CCT services based in Rhode Island, one providing neonatal transport, and the other pediatric and adult transport. There is no helicopter CCT program based in Rhode Island.

References

1. National View of 15-Minute Rotor Wing Response Areas as of September 2012. Status as of September 2012. http://www.aams.org/AAMS/Media_Room/ADAMS_Database/aams/MediaRoom/ADAMSDatabase/ADAMS_Database.aspx?hkey=4ccc748-2bc7-4bb9-b41a-c710366c51dc. Accessed August 20, 2013.
2. Karlson K, Trautman M, Price-Douglas W, Smith S. National Survey of Neonatal Transport Teams in the United States. *Pediatrics*. 2011;128:685.
3. Neonatal Intensive Care. Wikipedia. http://en.wikipedia.org/wiki/Neonatal_intensive_care_unit. Updated August 20, 2013. Accessed September 4, 2013.
4. Trauma Systems History. Trauma. <http://www.trauma.org/archive/history/systems.html>. Accessed July 4, 2013.
5. Sampalis JS, Denis R, Frechette P, Brown R, Fleiszer D, Mulder D. Direct Transport to Tertiary Trauma Centers versus Transfer from Lower Level Facilities: Impact on Mortality and Morbidity among Patients with Major Trauma. *Journal of Trauma-Injury Infection & Critical Care*. 1997;43(2):288-296.
6. Dieker HJ, Liem SB, El Aidi H, et al. Pre-Hospital Triage for Primary Angioplasty. Direct Referral to the Intervention Center Versus Interhospital Transport. *J Am Coll Cardiol Interv*. 2010;3(7):705-711.
7. Alberts MJ, Baranski J. Building the Case for a Primary Stroke Center. *Stroke*. http://www.stroke.org/site/DocServer/Resource_Guide.pdf. 2007. Accessed July 4, 2013.
8. Flight for Life. <http://www.flightforlifecolorado.org/>. 2013. Accessed July 4, 2013.
9. Association of Air Medical Services. Fact Sheets. http://www.aams.org/AAMS/Media_Room/Fact_Sheets___FAQs/aams/MediaRoom/FactSheetsandFAQs/Fact_Sheets_and_FAQs.aspx?hkey=4ca2897d-5805-4ae4-bd31-e9e50e7e2981. Accessed July 4, 2013.
10. Bruhn J, Williams K, Aghababian R. True costs of air medical vs. ground ambulance systems. *Air Medical Journal*. 1993;12(8):262-268.
11. National Association of EMS Officials. National Association of State EMS Officials – Air Medical Services Committee Brief Outline of the Federal Pre-emption Issues in Regulating Air Medical Services. <http://www.nasemso.org/projects/airmedical/documents/HelicopterEMS.pdf>. October 2011. Accessed July 4, 2013.
12. Commission on Accreditation of Medical Transport Services. All Accredited Programs. <http://www.camts.org/All-Programs.html>. Accessed July 4, 2013.
13. Commission on Accreditation of Ambulance Services. Welcome to CAAS. <http://www.caas.org/.2103>. Accessed July 4, 2013.
14. National Transportation Safety Board. Special Investigation Report on Emergency Medical Services Operations Aviation Special Investigation Report NTSB/SIR-06/01. <http://www.nts.gov/doclib/safetystudies/SIR0601.pdf>. January 25, 2006. Updated March 2006. Accessed July 4, 2013.
15. Levick N. Objective Safety. <http://www.objectivesafety.net/>. 2004. Updated September 4, 2013. Accessed September 4, 2013.
16. Bledsoe BE. EMS Myth #6: Air medical helicopters save lives and are cost-effective. *EMS World*. <http://www.emsworld.com/article/10325077/ems-myth-6-air-medical-helicopters-save-lives-and-are-cost-effective>. December 1, 2003. Accessed August 20, 2013.
17. Williams K, Aghababian R, Shaughnessy, M. Statewide EMS Helicopter Utilization Review: The Massachusetts Experience. *Journal of Airmedical Transport*. Sept. 1990;9(9):14.

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Spontaneous Coronary Dissection in Polycystic Kidney Disease

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ABSTRACT

We report a case of a 46-year-old woman with hypertension and autosomal dominant polycystic kidney disease who presented with chest pain and was found to have spontaneous coronary artery dissection (SCAD) on diagnostic catheterization. We review the pathogenesis, management and prognosis of SCAD. We conclude that in patients with polycystic kidney disease who present with angina pectoris and positive cardiac biomarkers, coronary artery dissection should be considered.

KEYWORDS: Polycystic kidney disease, extra renal, spontaneous coronary dissection

INTRODUCTION

It has been suggested that spontaneous coronary artery dissection (SCAD) could be an extra renal manifestation of autosomal dominant polycystic kidney disease (ADPKD).¹⁻⁴ Some of the known cardiac manifestations of ADPKD include mitral valve prolapse, left ventricular hypertrophy, as well as aneurysms of the aorta, coronary and intracranial arteries.

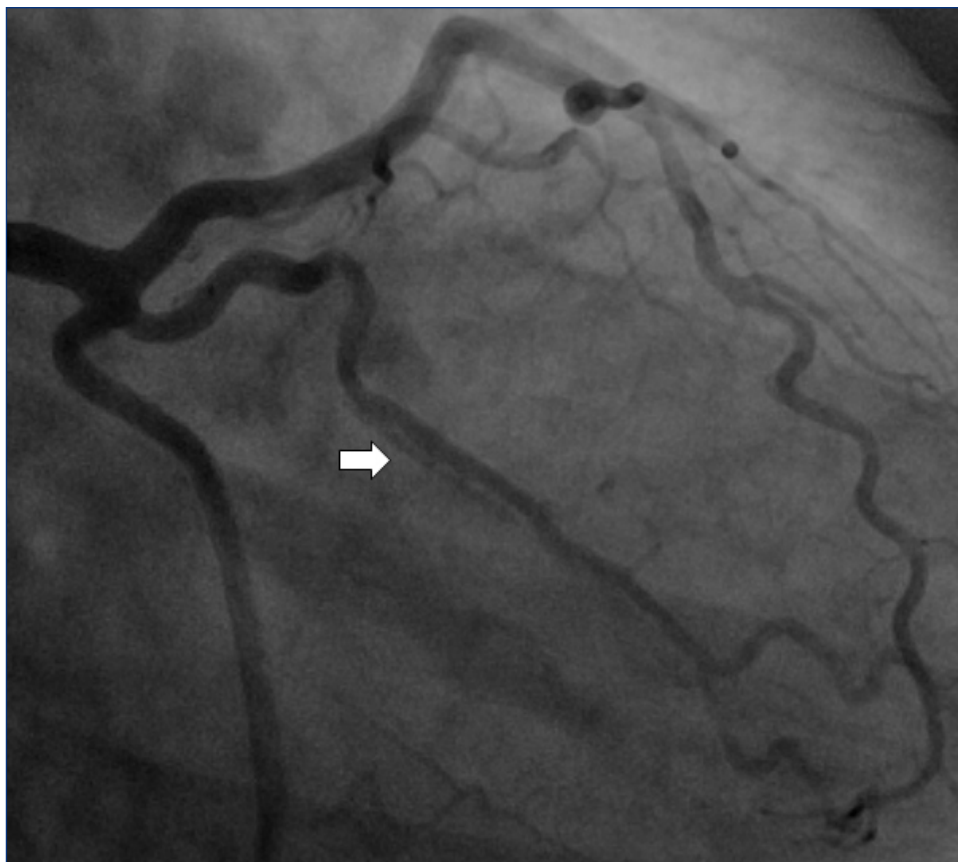
Case report

A 46-year-old woman with ADPKD and poorly controlled hypertension presented to the emergency department with sharp, substernal chest pain with associated dyspnea and diaphoresis. The pain started abruptly at rest and was described as moderate intensity, radiating to her shoulders and neck. She reported headache, dizziness and anxiety in the setting of recent psychosocial stressors. The patient was noncompliant with her anti-hypertensive medications, which included Losartan 100mg daily and Metoprolol 100mg twice a day. She denied tobacco, alcohol or recreational drugs use. Her family history was significant

for polycystic kidney disease in a first-degree relative but otherwise negative for significant cardiovascular disease.

Her initial blood pressure was 162/87 in the left arm and 171/87 in the right arm with normal heart and respiratory rates. The entirety of the physical exam was unremarkable. The initial Troponin I was measured at 0.09ng/mL (reference <0.04 ng/ mL) and peaked at 0.82ng/mL. Serial electrocardiograms (EKGs) revealed normal sinus rhythm with no ischemic changes. A chest X-ray was unremarkable. A transthoracic echocardiogram demonstrated mild hypokinesis of the mid to distal inferolateral wall with preserved left ventricular systolic function. A diagnostic cardiac catheterization revealed dissection of the mid ramus intermedius artery branch (**Figure 1**) with a thrombolysis in myocardial infarction (TIMI) grade 3 flow. There was 70% stenosis seen immediately proximal to the origin of the dissection flap.

Figure 1. Arrow points towards the site of dissection in the ramus intermedius artery.



No other angiographic evidence of coronary artery disease was identified. At the time of coronary angiography, the patient had been angina free for 24 hours and there was no evidence of left ventricular compromise on echocardiography. After initial anticoagulation, the patient was ultimately managed conservatively with aspirin, a high-dose statin, an angiotensin receptor blocker and a beta blocker to optimize her cardiac risk factor profile. Percutaneous intervention was not performed given the stability of her symptoms and hemodynamics.

DISCUSSION

There are only four other reported cases of SCAD in autosomal polycystic kidney disease. In ADPKD, the genes PKD 1 and 2 are mutated, compromising the expression of Polycystin 1, a glycoprotein which is responsible for maintaining the structural integrity of the arterial wall.⁵ The altered glycoprotein likely is the culprit of arterial dissections in patients with polycystic kidney disease.^{6,7} Familiar clustering of aortic artery dissections in polycystic kidney disease suggests a causal association with the altered polycystin.⁸ Hypertension, which is a common finding in ADPKD is a known risk factor for SCAD.⁹ However, in our patient it was unlikely to be the trigger since our patient did not present with a hypertensive emergency. Previously, segmental arterial mediolysis was demonstrated at pathology in a nonhypertensive ADPKD patient.¹⁰ This supports the hypothesis that there is an inherent deficiency that promotes vascular abnormality in ADPKD patients.

The preferred course of treatment of SCAD is highly variable and can range from optimal medical treatment to invasive therapies. The “conservative approach” which is comprised of medical management, with revascularization reserved for patients with ongoing symptoms or evidence of recurrent ischemia, has been associated with an excellent prognosis.¹¹ Tweet et al retrospectively evaluated 87 SCAD patients and found a high rate of peri-procedural complications in the 39 patients who underwent PCI.¹² Even a quarter of the interventions that were deemed ultimately successful was complicated by propagation of the dissection flap or the development of an intramural hematoma and thus required additional stent placement. Given these findings, caution should be taken in choosing an invasive approach when patients present with a spontaneous coronary dissection. Nine months after her initial presentation, our patient continues to be asymptomatic.

In summary, we are proposing that spontaneous coronary dissection should be in the differential diagnosis in ADPKD patients who present with chest pain or syncope.

References

1. Bobrie G, Brunet-Bourgin F, Alamowitch S, Coville P, Kassiotis P, Kermarrec A, Chauveau D. Spontaneous artery dissection: is it part of the spectrum of autosomal dominant polycystic kidney disease? *Nephrol Dial Transplant*. 1998; 13:2138-2141.

2. Basile C, Lucarelli K, Langialonga T. Spontaneous coronary artery dissection: One more extrarenal manifestation of autosomal dominant polycystic kidney disease? *J Nephrol*. 2009;22:414-416.
3. Itty CT, Farshid A, Talaulikar G. Spontaneous coronary artery dissection in a woman with polycystic kidney disease. *Am J Kidney Dis*. 2009;53:518-521.
4. Lee CC, Fang C Y, Huang CC, Ng SH, Yip HK, Ko SF. Computed tomography angiographic demonstration of an unexpected left main coronary artery dissection in a patient with polycystic kidney disease. *J Thorac Imaging*. 2011;26:W4-6.
5. Griffin MD, Torres VE, Grande JP, Kumar R. Vascular expression of polycystin. *J Am Soc Nephrol*. 1997;8:616-626.
6. Nacasch N, Werner M, Golan E, Korzets Z. Arterial dissections in autosomal dominant polycystic kidney disease - chance association or part of the disease spectrum? *Clin Nephrol*. 2010;73:478-481.
7. Kim K, Drummond I, Ibraghimov-Beskrovnya O, Klinger K, Arnaout MA. Polycystin 1 is required for the structural integrity of blood vessels. *Proc Natl Acad Sci USA*. 2000;97:1731-1736.
8. Biagini A, Maffei S, Baroni M, Piacenti M, Terrazzi M, Paoli F, Trianni G, Picano E, Salvatore L. Familiar clustering of aortic dissection in polycystic kidney disease. *Am J Cardiol*. 1993;72:741-742.
9. Tatli E, Altun A. May emergency hypertension be reason of spontaneous coronary artery dissection? *Int J Cardiol*. 2010;140:e53-54.
10. Keuleers S, Verbeken E, Sinnaeve P. Aortic dissection associated with segmental arterial mediolysis in polycystic kidney disease. *Eur J Intern Med*. 2009;20:e9-11.
11. Alfonso F, Paulo M, Lennie V, Dutary J, Bernardo E, Jimenez-Quevedo P, Gonzalo N, Escaned J, Banuelos C, Perez-Vizcayno MJ, Hernandez R, Macaya C. Spontaneous coronary artery dissection: long-term follow-up of a large series of patients prospectively managed with a “conservative” therapeutic strategy. *JACC Cardiovasc Interv*. 2012;5:1062-1070.
12. Tweet MS, Hayes SN, Pitta SR, Simari RD, Lerman A, Lennon RJ, Gersh BJ, Khambatta S, Best PJ, Rihal CS, and Gulati R. Clinical features, management, and prognosis of spontaneous coronary artery dissection. *Circulation*. 2012;126:579-588.

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Kikuchi Fujimoto Disease (KFD) in a 31-year-old woman

DANIEL PERLI, MD; NEHA ALANG, MD; ALWYN RAPOSE, MD

Kikuchi Fujimoto disease (KFD), or Kikuchi histiocytic necrotizing lymphadenopathy is an extremely rare disease known to have a worldwide distribution with a higher prevalence among Japanese and Asians.¹ There is much speculation about the cause of KFD; a viral or autoimmune cause has been suggested.¹ KFD is a benign, self-limited disease that resolves in 1 to 4 months.⁴ An early biopsy can be instrumental in preventing unnecessary investigations and potentially harmful treatments.⁵ We report a case of a woman who presented with this rare condition.

A 31-year-old Caucasian woman presented to the hospital with progressively worsening, painful right cervical and right axillary lymphadenopathy of 10 days duration. She denied fever, chills or malaise. She had similar episodes of recurrent painful lymphadenopathy in the past. During these episodes she was treated with empiric antibiotics, followed by partial resolution of the symptoms. Her other medical history was significant for asthma and chronic bronchitis. She denied any sick contacts or recent travel. She did not have any pets

at home and denied any recent contact with cats or insects. She did not have high-risk behaviors for HIV. Physical examination revealed enlarged, tender lymph nodes in the right posterior cervical, axillary and supraclavicular regions.

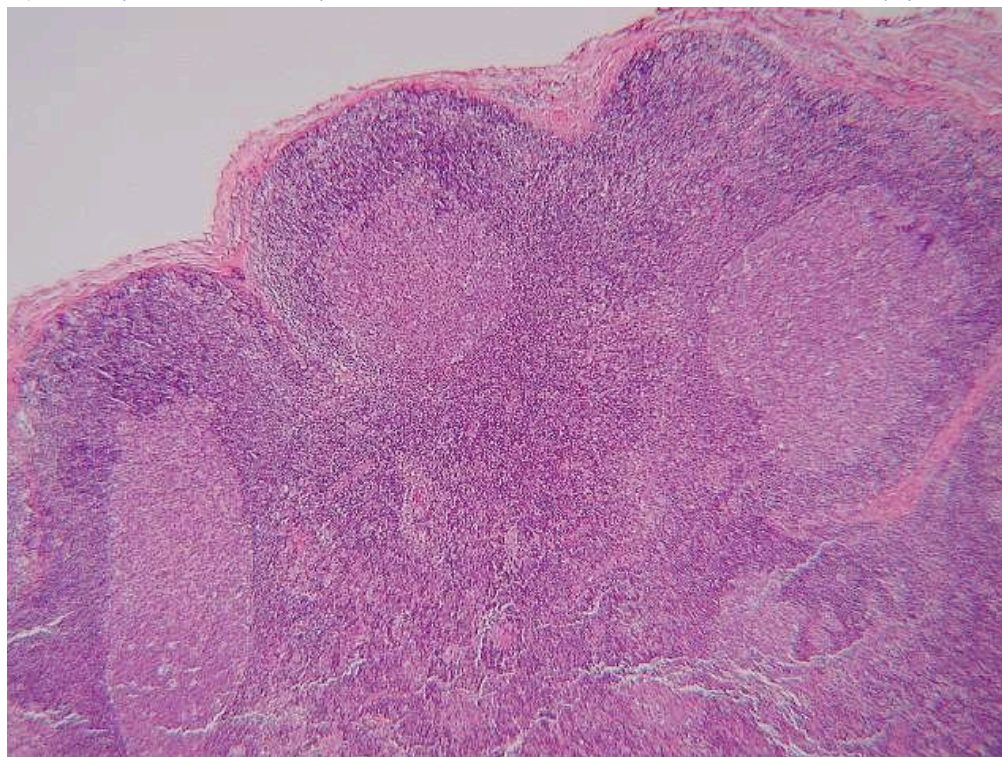
A complete blood count showed an absence of leukocytosis and a mild predominance of lymphocytes. A CT scan of the neck confirmed multiple enlarged lymph nodes in the right posterior neck, carotid sheath, submandibular and supraclavicular regions. A CT scan of the chest revealed lymphadenopathy in the anterior mediastinum, left para-tracheal, pre-tracheal and bilateral axillary regions, while the abdomen and pelvis were unremarkable. HIV RNA, Bartonella antibodies, EBV, immunoglobulin panel, CMV, RPR, and ANA were negative.

Biopsy of the right cervical lymph node revealed crescentic histiocytes admixed with nuclear debris and apoptotic cells (Figures A, B, C), consistent with Kikuchi lymphadenopathy. Immunostaining of lymphoid cells was positive for CD3, CD4 and CD8 T cells. She was treated symptomatically

with pain relief and hydration and was discharged after her symptoms had improved.

The diagnosis can only be made by histological examination of the node, which may show the following changes typical for KFD: paracortical necrotic foci, surrounded by histiocytic aggregates, irregular rounded eosinophilic areas of different sizes in the paracortex and cortex with the presence of numerous histiocytes, lymphocytes, immunoblasts, plasmacytoid monocytes and eosinophilic granulated cellular debris.² It is typical not to find epithelioid cells and neutrophil granulocytes in the necrotic centers. In particular, the disease needs to be distinguished from high-grade lymphoma and SLE lymphadenitis.²

Figure A. Biopsy of the cervical lymph node showing histiocytes admixed with nuclear debris and apoptotic cells.



In KFD painful, palpable lymphadenitis is localized to one or two sites in the head and neck territories in young adults (third decade) and is associated with fever.³ Other clinical manifestations are infrequent: arthromyalgias, cutaneous rash, sweating, splenomegaly. Leukopenia is present in 50% of the cases with sometimes “atypical” lymphocytes.³

References

1. Bosch X, Guilabert A, Miquel R, Campo E. Enigmatic Kikuchi-Fujimoto disease: a comprehensive review. *Am J Clin Pathol*. 2004;122:141-52.
2. Glaser M, Borin P, Kavalier R, Skalicky M. Necrotising cervical lymphadenopathy: Kikuchi-Fujimoto Disease in a young male. *Wien Klin Wochenschr*. 2008;120(11-12):360-5.
3. Meyer O. Kikuchi Disease. *Ann Med Interne (Paris)*. 1999 Apr; 150(3):199-204. Review. French.
4. Mahajan T, Merriman RC, Stone MJ. Kikuchi Fujimoto disease (histiocytic necrotising lymphadenitis): report of a case with other auto-immune manifestations. *Proc (Bayl Univ Med Cent)*. 2007 Apr;20(2):149-51.
5. Payne JH, Evans M, Gerrard MP. Kikuchi Fujimoto disease: A rare but important cause of lymphadenopathy. *Acta Paediatr*. 2003;92(2):261-4.

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Figure B. Histopathology showing histiocytes in medium resolution.

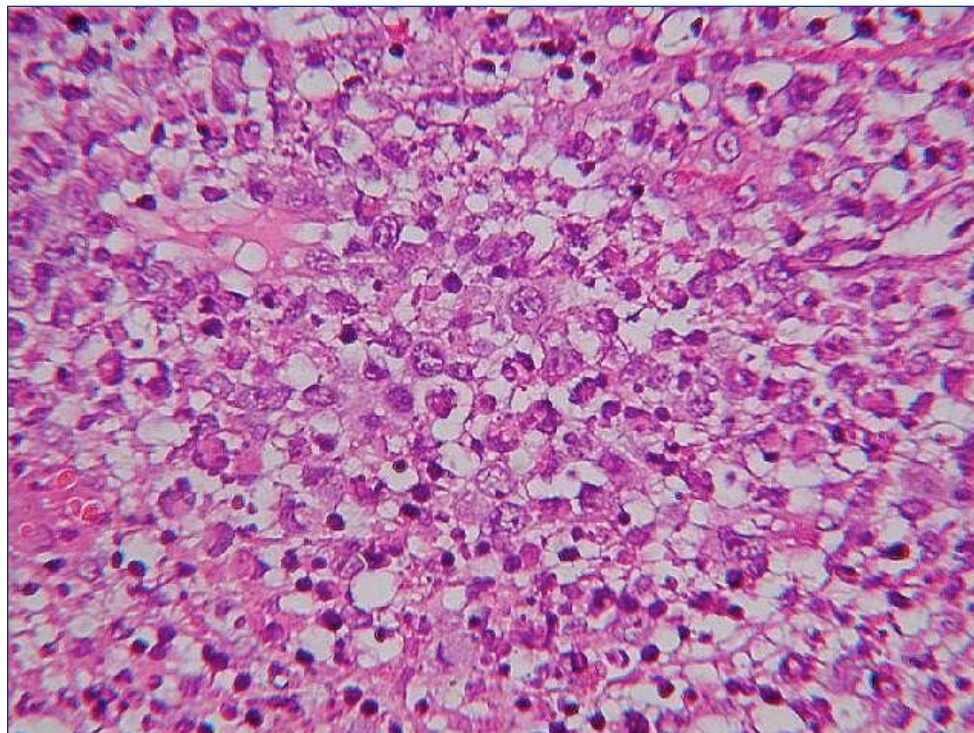
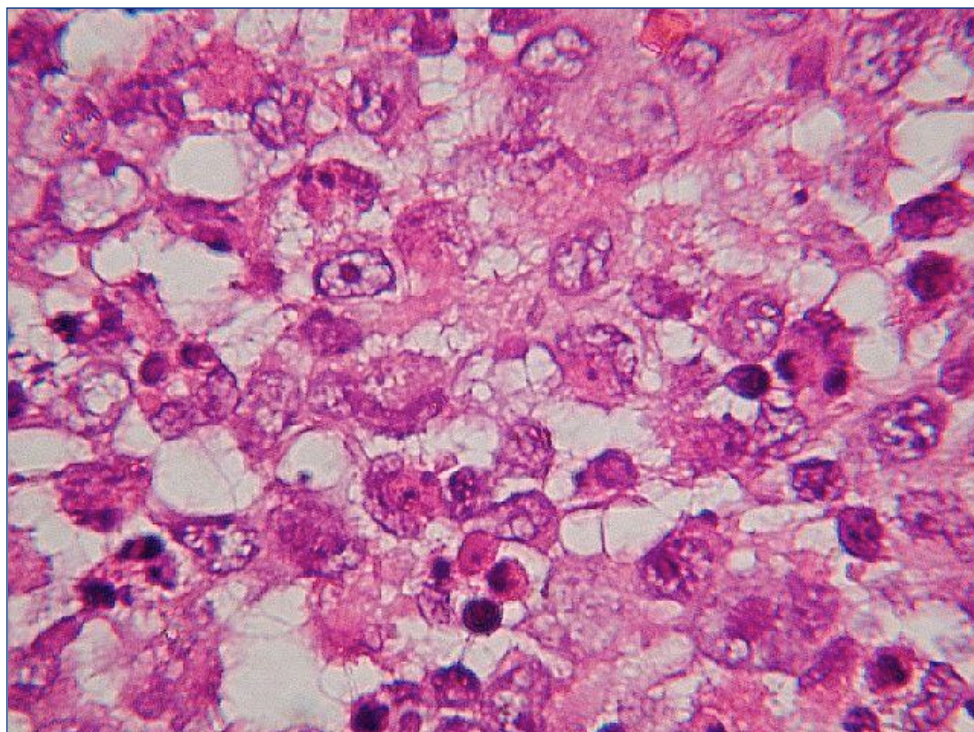


Figure C. High resolution image showing crescentic histiocytes.



Health Information Technology (HIT) Adoption and Use by Rhode Island Advance Practice Registered Nurses and Physician Assistants, 2013

KIMBERLY PELLAND; ROSA BAIER, MPH; BLAKE MORPHIS; SAMARA VINER-BROWN, MS; REBEKAH GARDNER, MD

INTRODUCTION

The adoption of electronic medical record (EMR) systems, also known as electronic health records (EHRs), has the potential to reduce the incidence of medical errors and to improve the care patients receive through better compliance with recommended standards, improved coordination of care and ready access to up-to-date health information.^{1,2}

Recognizing the potential impact on patient safety and healthcare quality, the Rhode Island Department of Health determined that it was important to track health information technology (HIT) adoption and use as part of a legislatively-mandated public reporting program. In 2008, the Department's Healthcare Quality Reporting Program began surveying physicians annually about their EMR and e-prescribing adoption.³ One year later, in 2009, the program began publishing individual-level measures of physician HIT adoption. To our knowledge, Rhode Island is the first state to publicly report structural and process measures of HIT adoption for every licensed physician providing direct patient care, regardless of practice site.⁴

In 2013, at the suggestion of stakeholders, the Department piloted the Rhode Island HIT Survey with Advance Practice Registered Nurses (APRNs) and Physician Assistants (PAs). The objectives were to broaden the focus from physicians to all licensed independent practitioners (LIPs), and to establish a baseline for HIT adoption among all LIPs in the state.

Methods

The Healthcare Quality Reporting Program is a legislatively-mandated⁵ public reporting program that publishes clinical quality measures and patient satisfaction data for licensed healthcare facilities, including home health agencies, hospitals and nursing homes. In 2006, legislation expanded the program to include physicians.⁵ The program is run by the Department and administered by its contractor, Health-centric Advisors. Public reports are available at www.health.ri.gov/programs/healthcarequalityreporting.

We developed the initial physician Rhode Island HIT Survey instrument in collaboration with local healthcare state agencies and other stakeholders, including commercial health plans.⁴ In February 2013, we adapted the survey for APRNs and PAs. APRNs included certified registered nurse anesthetists, certified nurse-midwives, clinical nurse specialists, and certified nurse practitioners. We tested the revised survey instrument with a small group of APRNs and

PAs to obtain feedback about whether the questions were easily understood by this audience and were relevant to their clinical practice. After incorporating revisions, we administered the survey electronically in March 2013 to 1,456 APRNs and PAs licensed in Rhode Island, in active practice, and located in Rhode Island, Connecticut, or Massachusetts. We mailed notifications with a link to the electronic survey to all APRNs and PAs and also sent email notifications and up to two email reminders to those who provided an email address with their licensure application. Because this was a pilot, data were collected and analyzed in aggregate, but were not published at the individual practitioner level.

Based on survey responses, we calculated five measures of HIT implementation and use: (1) **APRNs and PAs with EMRs** (who indicate that they have "EMR components" in their main practice OR another practice); (2) **APRNs and PAs with "Qualified" EMRs** (who indicate that they have an EMR that is certified⁶ by the Office of the National Coordinator for Health Information Technology and includes specific functionality); (3) **Use of Basic EMR Functionality** (extent of use of six clinical documentation and results management functionalities); (4) **Use of Advanced EMR Functionality** (extent of use of 10 decision support, external communication, order management, and reporting functionalities); and (5) **APRNs and PAs Who are e-Prescribing**. The basic and advanced functionality scales (0-100) were each calculated by giving equal weight to self-reported use of various EMR functions, with points proportional to the frequency of use. The five measures are tailored to reflect inpatient or outpatient practice, where necessary.

Beginning in 2014, the HIT Survey will be administered to physicians, APRNs and PAs together. APRN and PA data will be included in same practitioner-level report that has been published annually for physicians since 2009.

RESULTS

Overall, there was a 46.2% response rate for APRNs and PAs, with 673 of the 1,456 APRNs and PAs responding. Nearly three-quarters of the respondents were APRNs (74.2%) and approximately one-quarter were PAs (25.9%). In the 2013 HIT Survey for physicians the response rate was 62.3% (n=2,367).

More than three-quarters of the 673 APRN and PA respondents report having EMRs. The prevalence of EMRs is slightly

lower among APRNs at 71.9%, as compared to PAs at 88.5% (**Figure 1**). Among those with EMRs, fewer than half (44.2%) report having EMRs that met the standards for 'qualified' EMR systems. The prevalence of 'qualified' EMRs is higher among PAs at 43.1% vs. APRNs at 30.5%. EMR prevalence among physicians at 88.2% is similar to that among PAs; physicians have the highest prevalence of 'qualified' EMRs at 45.8% (**Figure 1**).

The 359 APRNs with EMRs report comparatively higher use, on average, of basic vs. advanced functionalities (basic functionalities: 75.4 points; advanced functionalities: 50.0 points), as did the 154 PAs with EMRs (basic functionalities: 81.0 points; advanced functionalities: 63.6 points). APRNs' reported use of both basic and advanced functionalities is lower than PAs' reported use. Physicians reported an average of 78.5 points for basic functionality and 57.8 points for advanced functionality.

Among 599 APRNs and PAs, 64.4% report e-prescribing. The prevalence of e-prescribing is higher among PAs (72.5%) as compared to APRNs (61.3%). The prevalence among all providers is highest in physicians (79.9%).

DISCUSSION

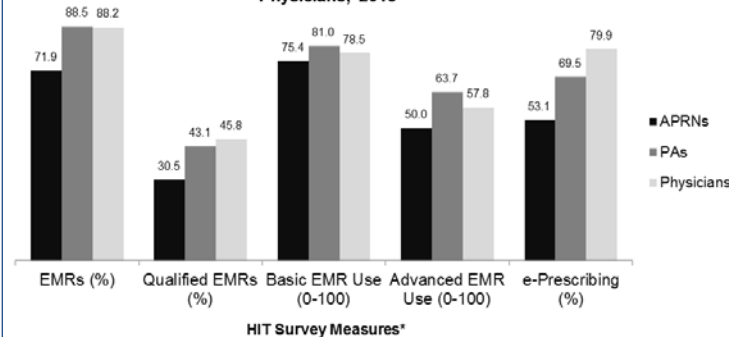
This pilot survey of HIT adoption by APRNs and PAs establishes a new baseline for Rhode Island. We found that 76.2% of APRN and PA respondents are using EMRs in their practices. Prevalence of HIT adoption, as captured in the reported measures, is similar between PAs and physicians, except for e-prescribing, where physicians have higher use of this technology. APRNs have the lowest reported use of HIT across all measures. As this is a pilot survey, we will need to reevaluate over time to determine trends among APRNs and PAs.

Our findings that PAs and physicians have similar rates of HIT adoption may be due to more similar work environments for those clinicians, compared to the diverse group of healthcare workers included in the APRN designation. PAs and physicians may also have more similar roles within a healthcare organization. In addition, unique local policies and incentives likely have influenced differing levels of implementation among the LIPs studied.

Our results have some limitations. We may have overestimated the rate of HIT adoption if APRNs and PAs with EMRs were more likely to respond than those without EMRs. Providers with EMRs may be more likely to respond due to logistical reasons related to completing an electronic survey, including increased access to computers and the Internet. To address this, we calculated a lower bound estimate of the EMR adoption rate at 35.2% for APRNs and PAs combined, by assuming that all survey non-respondents lack EMRs.

With national incentives aimed at stimulating HIT adoption, it is critical to have reliable baseline data and metrics to measure change and evaluate outcomes. The expansion of this survey to include APRNs and PAs further enables Rhode Island providers and stakeholders to track HIT adoption over time, while also setting precedents for other states to follow.

Figure 1. Use of Health Information Technology among APRNs, PAs, and Physicians, 2013



APRN: Advance Practice Registered Nurse

PA: Physician Assistant

EMR: Electronic Medical Record

HIT: Health Information Technology

*See Methods section for description of measures

References

1. Chaudhry B, Wang J, et al. Systematic review: Impact of Health Information Technology on Quality, Efficiency, and Costs of Medical Care. *Ann Intern Med.* 2006;144:742-52.
2. Wang SJ, Middleton B, et al. A cost-benefit analysis of electronic medical records in primary care. *Am J Med.* 2003;114:397-403.
3. Baier RR, Voss R, Morphis B, Viner-Brown S, Gardner R. Rhode Island Physicians' Health Information Technology (HIT) Use, 2009-2011. *Health/Medicine RI.* July 2011;94(7):215-217.
4. Baier RR, Gardner R, Buechner J, Harris Y, Gifford DS. Creating a survey to assess physicians' adoption of health information technology. *Med Care Res Rev.* 2012 Apr;69(2):231-45. Epub 2011 Dec 6.
5. Rhode Island General Laws Chapter 23-17.17 Health Care Quality Program, Section 23-17.17-3 Establishment of Health Care Quality Performance Measurement and Reporting Program. See <http://www.health.ri.gov/chic/performance/index.php>. Accessed 10/16/13.
6. Office of the National Coordinator for Health Information Technology. Certified Health IT Product List. See <http://onccchpl.force.com/ehrcert>. Accessed 10/22/13.

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Rhode Island Monthly Vital Statistics Report

Provisional Occurrence Data from the Division of Vital Records

VITAL EVENTS	REPORTING PERIOD		
	JUNE 2013	12 MONTHS ENDING WITH JUNE 2013	
	Number	Number	Rates
Live Births	952	11,580	11.0*
Deaths	751	9,847	9.4*
Infant Deaths	8	81	7.0#
Neonatal Deaths	8	61	5.3#
Marriages	848	6,217	5.9*
Divorces	240	3,365	3.2*
Induced Terminations	No data available		
Spontaneous Fetal Deaths	No data available		
Under 20 weeks gestation	No data available		
20+ weeks gestation	No data available		

* Rates per 1,000 estimated population

Rates per 1,000 live births

Underlying Cause of Death Category	REPORTING PERIOD			
	DECEMBER 2012	12 MONTHS ENDING WITH DECEMBER 2012		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	230	2,355	223.6	3,379.5
Malignant Neoplasms	175	2,202	209.1	5,809.5
Cerebrovascular Disease	40	448	42.5	772.0
Injuries (Accident/Suicide/Homicide)	63	660	62.7	9,064.0
COPD	60	505	47.9	435.0

(a) Cause of death statistics were derived from the underlying cause of death reported by physicians on death certificates.

(b) Rates per 100,000 estimated population of 1,052,567 (www.census.gov)

(c) Years of Potential Life Lost (YPLL).

NOTE: Totals represent vital events, which occurred in Rhode Island for the reporting periods listed above.

Monthly provisional totals should be analyzed with caution because the numbers may be small and subject to seasonal variation.

Recent RIMS seminars, free for members



ICD-10 AND YOUR PRACTICE November 13, 2013

Sponsored by RIMS, coding specialist Nancy M. Enos, FACMPE, CPMA, CPC-I, CEMC of Enos Medical Coding reviewed the differences between ICD-9 and ICD-10, and consequent effects on workflow and documentation requirements.



Newell E. Warde, PhD; Nancy Enos, and RIMS President Elaine C. Jones, MD



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RIMS offices

Presented by RIMS, an expert panel will address the ACA's potential impact on your practice, legislation and regulations affecting self-pay receivables, and effective approaches. [Please click here for further details about this program.](#)

Free for RIMS members and staff. RSVP is required as space is limited. Please contact [Megan Turcotte](#), 401-331-3207

www.rimed.org/photos-seminars.asp

EMPLOYMENT 101 October 30, 2013

Sponsored by RIMS, panelists included Jeffrey F. Chase-Lubitz, Esq. and Kelly I. McGee, Esq. of Donoghue Barrett & Singal, PC; Matthew S. Blank, CFA, Director of Investments, Washington Trust Investors and Peter J. Miniati, CFP®, Esq., Vice President & Planning Officer, Washington Trust Investors; Peter A. Hollmann, MD, President, RIMS-IBC and Robert A. Anderson, Jr., Director, RIMS-IBC.



[Above] Kelly I. McGee, Esq. and Jeffrey F. Chase-Lubitz, Esq.; [lower right] Robert A. Anderson, Jr and Peter A. Hollmann, MD



Matthew S. Blank and Peter J. Miniati





Why You Should Join the Rhode Island Medical Society

The Rhode Island Medical Society delivers valuable member benefits that help physicians, residents, medical students, physician-assistants, and retired practitioners every single day. As a member, you can take an active role in shaping a better health care future.

RIMS offers discounts for group membership, spouses, military, and those beginning their practices. Medical students can join for free.



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Powerful advocacy at every level

Advantages include representation, advocacy, leadership opportunities, and referrals

Complimentary subscriptions

Publications include *Rhode Island Medical Journal*, *Rhode Island Medical News*, annual *Directory of Members*; RIMS members have library privileges at Brown University

Member Portal on www.rimed.org

Password access to pay dues, access contact information for colleagues and RIMS leadership, RSVP to RIMS events, and share your thoughts with colleagues and RIMS



Above: State House press conference on health care, Brown MSS at the AMA, CPT update seminar, bike helmet distribution, medical student volunteers; Upper right: Meeting of RIMS membership committee

SPECIAL NOTICE: 2014 AMA DUES PAYMENTS

The American Medical Association (AMA) will direct bill its Rhode Island members for their 2014 dues. Beginning August 2013, AMA members will receive a separate dues statement from the AMA instead of paying AMA membership dues through the Rhode Island Medical Society (RIMS) membership invoice. This is simply an operational change so that both RIMS and AMA can concentrate on their respective member satisfaction. There remains no requirement for RIMS members to join the AMA.

Please let us know if you have questions concerning this change by emailing [Megan Turcotte](mailto:Megan.Turcotte@rimed.org) or phoning 401-331-3207.

\$15M donation will establish institute for neuroscience at URI



URI PHOTO BY NORA LEWIS

URI President David Dooley (right) and Nasser Zawia (left), director of the URI Interdisciplinary Neuroscience Program, celebrate the establishment of the George & Anne Ryan Institute for Neuroscience with Tom and Cathy Ryan, whose gift of \$15 million launched the Institute.

KINGSTON – With the largest private donation in its history, the University of Rhode Island will establish a neuroscience research institute named for the parents of Thomas M. Ryan, a 1975 pharmacy graduate of the University and former chairman, president and CEO of CVS Caremark. Tom and his wife Cathy have donated \$15 million to establish the George & Anne Ryan Institute for Neuroscience at the University of Rhode Island.

“The Ryan Institute will elevate the visibility of the groundbreaking research taking place here in Rhode Island and position URI as a leader in neuroscience research and the treatment of neurodegenerative and neurological diseases,” said URI President David M. Dooley. “We are tremendously grateful to Tom and Cathy Ryan and the Ryan family for their foresight and continued generosity. They have created an enduring legacy and made a truly transformational gift.”

“When I retired from CVS two years ago,” said Ryan, “we had conversations about what the family foundation would focus on and we decided to focus on education and health care. I had some discussions with President Dooley because, although I had given back to the University, I wanted to give to something that was more transformational, more lasting, really a future gift.”

“When you look at what’s happening around the world with ALS, autism, epilepsy, Parkinson’s and Alzheimer’s, it’s truly an epidemic,” said Ryan. “As the population ages, not only in the U.S., but globally, it’s going to get worse.”

“On a personal level, my dad retired at a young age, was extremely healthy, rock-solid, kind of bigger than life guy – and he had a stroke and then subsequent Alzheimer’s. I saw what it did to him, what it did to my mother, and our family. The economic costs are one thing, but the personal, emotional costs are another. It steals memories. It saddles caregivers. I saw my mom’s health go down. I had colleagues at CVS pass away from ALS. So it hit close to home for us and —once we did the due diligence and saw what was going on at URI – it was a natural fit.”

Focus and collaboration statewide

The Ryan Institute will focus its research, teaching, and outreach on neurodegenerative diseases and disorders, like Alzheimer’s, Parkinson’s and ALS. It will draw on the expertise of more than 30 scientists from across the University who have been studying brain disorders and diseases from multiple perspectives and disciplines. The faculty – from pharmacy, engineering, psychology, chemistry, communicative disorders and more – participate in the University’s Interdisciplinary Neuroscience Program, established in 2011 to conduct innovative neuroscience research and offer master’s and doctoral degrees.

The Ryan Institute will be a magnet to attract people and engage them in solving some of the most pressing health care challenges we face in society – neurodegenerative diseases. This gift enables the University to attract leading researchers and train new generations of scientists to work on these problems. The Institute will collaborate with other state, regional and national entities to develop and deliver treatments for central nervous system disorders.

The University has unique research strengths in pharmacology/drug discovery, neuroengineering, and neuropsychology. To maximize statewide efforts in neuroscience, the Ryan Institute will stimulate cooperation among other institutions in Rhode Island, including the well-established neuroscience program at Brown University, the basic research programs of the Brown Institute for Brain Science, the newly formed Norman Prince Neurosciences Institute at Rhode Island Hospital that focuses on clinical neuroscience, and the U.S. Department of Veterans Affairs. ❖

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RIH, Hasbro orthopedic surgeons introduce 'GPS for the spine' to RI *FluoroNav system pinpoints surgical locations with real-time 3D images*

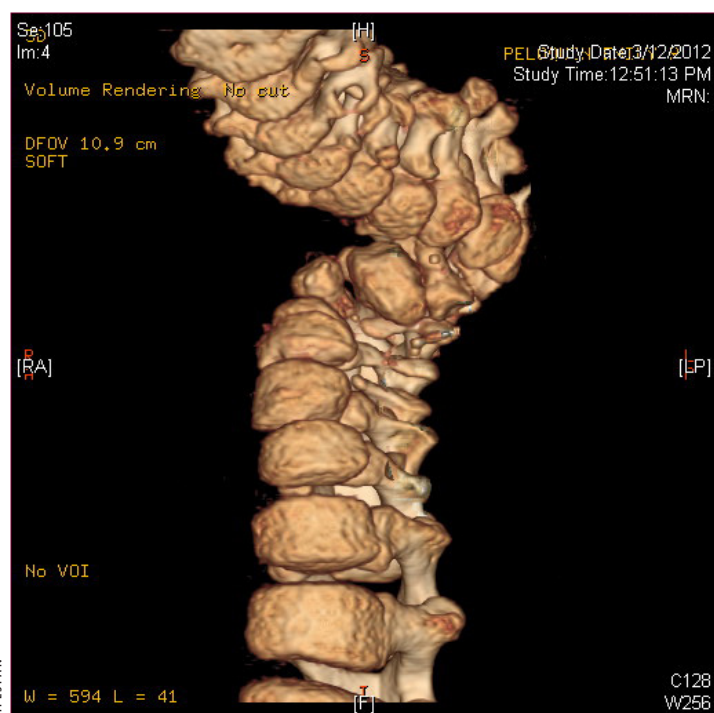
PROVIDENCE – Orthopedic surgeons at Rhode Island Hospital and Hasbro Children's Hospital are the first in the state to use the FluoroNav surgical guidance system that enables more accurate, efficient placement of spinal instrumentation in complex spine reconstructive procedures. Also called "GPS for the spine," the system allows surgeons to place orthopedic screws more efficiently, and also reduces the amount of X-ray radiation exposure to patients.

"This technology allows real time monitoring of hardware insertion using three dimensional models of the spine, so that screws can be safely placed even in the smallest of areas," said **MARK PALUMBO, MD**, an orthopedic surgeon at Rhode Island Hospital. "We use FluoroNav in orthopedics for spinal surgeries, but it can also be used for real time imaging in several types of surgeries including tumor resection, pelvic reconstructions, trauma cases and many others."

The FluoroNav system allows the surgeon to place a marker on to the patient to show the preferred location of each screw. The system then produces a real-time scan using much less radiation, and provides the surgical team with a 3-D model of the spine to see all the surgical screws at once.

It can be particularly helpful in pediatric surgeries. "Orthopedic spine surgery in children can be challenging, as the areas that screws must be placed are often underdeveloped or much smaller than the same areas in an adult," said **CRAIG EBERSON, MD**, a pediatric orthopedic surgeon at Hasbro Children's Hospital. "This technology can assist in better visualizing the placement of screws in a much smaller operating field, and ensures that everything is placed perfectly before we leave the operating room."

FluoroNav can also help with difficult cases where other views would be obstructed or difficult to reach, such as scoliosis or kyphosis. The system is portable and can be moved among the hospital's pediatric and adult operating rooms as needed. ❖



Women's Medicine Collaborative joins primary care initiative

PROVIDENCE – The Women's Medicine Collaborative has been selected to join a statewide initiative focused on promoting the patient-centered medical home model throughout Rhode Island.

Established in 2006, the Rhode Island Chronic Care Sustainability Initiative (CSI-RI) is a community-wide collaborative effort. One of the first multi-payer patient-centered medical home demonstration projects in the United States, CSI-RI promotes the patient-centered medical home (PCMH), putting an emphasis on prevention, wellness and appropriate treatment.

Currently, CSI-RI – which is also supported by the R.I. Medicaid program, along with the state's major health insurers – serves more than 260,000 Rhode Islanders across 48 sites and practices.

The CSI-RI selection committee followed an extensive and objective selection process, based on the applicants' service to Medicare and Medicaid patients, ability to use Electronic Health Records, commitment to establishing a patient-centered care team and demonstration of high quality care. The Women's Medicine Collaborative is the only Lifespan practice selected to participate.

"We have always supported and embraced patient-centered care and strongly believe in focusing on a patient's entire health needs, not just a single condition or diagnosis," said **IRIS TONG, MD**, director of primary care at the Collaborative. "Having an opportunity to be part of CSI-RI gives us a more systematic approach that will allow us to support patients in a more meaningful way and will help us continuously improve quality and service." ❖



Iris Tong, MD

AMA analysis lists states with lowest levels of health insurance competition

RI ranks tenth on list

CHICAGO – The American Medical Association (AMA) announced on Nov. 7 its annual list of 10 states with the lowest levels of competition among commercial health insurers. Those are among 15 states in which a single company had a majority share of the market.

The list was developed from the newly released 2013 edition of AMA's Competition in Health Insurance: A Comprehensive Study of U.S. Markets. The AMA study offers the largest, most complete picture of competition in the commercial health insurance markets across the United States. Based on 2011 data, the study examined state and metropolitan markets for the health insurance industry's chief products, including point-of-service plans (POS), health maintenance organizations (HMO) and preferred provider organizations (PPO).

Findings from the AMA study

The 10 states with the least competitive commercial health insurance markets were:

- 1. Alabama
- 2. Hawaii
- 3. Michigan
- 4. Delaware
- 5. Alaska
- 6. South Carolina
- 7. North Dakota
- 8. Nebraska
- 9. Louisiana
- 10. Rhode Island
- Fifteen states had a single health insurer with a commercial market share of 50 percent or more.
- Forty-five states had two health insurers with a combined commercial market share of 50 percent or more.

"In far too many states, one or two insurance companies dominate the market, which can hurt patients, physicians and employers," said AMA President Ardis Dee Hoven, MD. "Without rivals to compete against, a large health insurance company can take advantage of patients by raising premiums and dictating important aspects of patient care."

Dominant market power increases the risk of anti-competitive behavior by big health insurers and can place physicians at a significant disadvantage since most work in small or solo practices. A report released in September by the AMA found that almost 60 percent of patient care physicians in the U.S. work in small or solo medical practices.

"An absence of competition in health insurance markets places a particular strain on physicians in small practices who don't have the leverage to be

equal negotiating partners with large health insurers," said Dr. Hoven. "The new AMA report is intended to help researchers, lawmakers, policymakers and regulators identify markets where

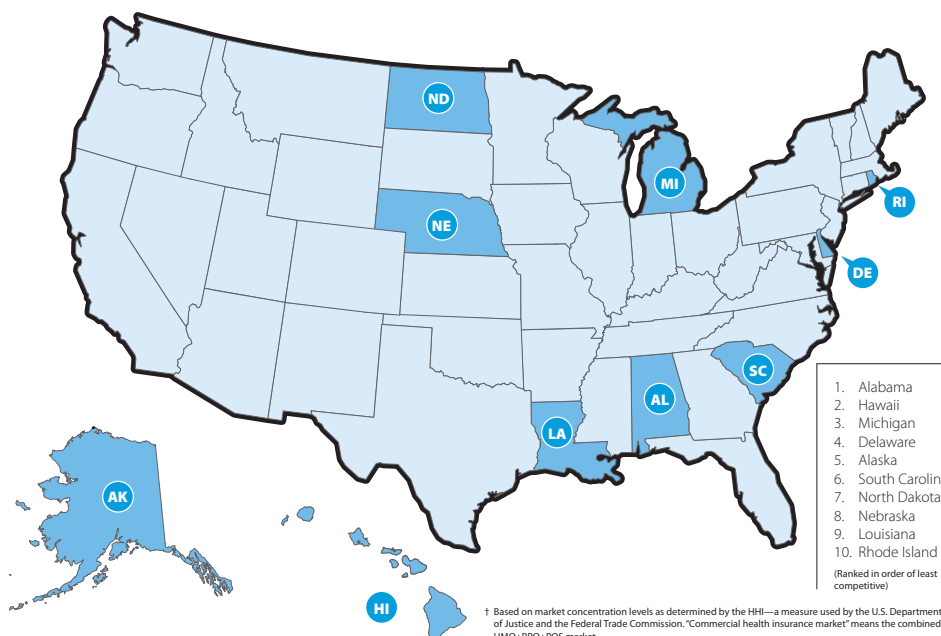
"In far too many states, one or two insurance companies dominate the market, which can hurt patients, physicians and employers."

– AMA President Ardis Dee Hoven, MD

mergers and acquisitions among health insurers may cause competitive harm to patients, physicians and employers."

The AMA's 12th annual report on the level of competition in the health insurance industry examined both fully-insured and self-insured plans in 386 metropolitan areas representing all 50 states and the District of Columbia. ❖

Top 10 states with the least competitive commercial health insurance markets[†]



Study finds stenting does not improve outcomes in renal artery stenosis

PROVIDENCE – According to the findings from a national research trial, people who suffer from a narrowing of the arteries that lead to the kidneys, or renal artery stenosis, do not experience better outcomes when renal stenting is used. Instead, a comprehensive regimen of drug and medical therapies works just as well. The national study, which was led by Rhode Island Hospital researchers **LANCE DWORKIN, MD**, and **TIMOTHY MURPHY, MD**, in collaboration with multiple investiga-



Lance Dworkin, MD



Timothy Murphy, MD

tors worldwide, is published in the *New England Journal of Medicine* (NEJM). They presented the results at the annual meeting of the American Heart Association on November 18

“The use of stenting to treat patients with renal artery stenosis is a treatment that clinicians have disagreed on for some time,” said Dr. Dworkin, director of the Division of Hypertension & Kidney Disease at Rhode Island Hospital and a physician with University Medicine Foundation. He is the senior leader and study chair for the trial. “Our findings clearly show that renal artery stenting does not confer any benefit for the prevention of clinical events when added to a comprehensive, multi-factorial medical therapy.”

The CORAL (Cardiovascular Outcomes in Renal Atherosclerotic Lesions) study, which was the first randomized, controlled study to look at this issue, involved 947 participants at more than 100 sites in the U.S., Canada, South American, Europe, Australia and New Zealand. The participants all had atherosclerotic renal-artery stenosis and either systolic hypertension on two or more drugs or chronic kidney disease. They were randomly assigned to medical therapy plus renal-artery stenting or medical therapy alone.

Participants were then followed for up to seven years to

monitor for significant clinical events, such as cardiovascular or renal death, myocardial infarction, stroke, hospitalization for congestive heart failure, progressive renal insufficiency or renal replacement therapy.

“Renal-artery stenosis is a significant public health issue, so it was important that we go beyond following blood pressure and kidney function,” explained Dr. Murphy, an interventional radiologist and the medical director of the Vascular Disease Research Center at Rhode Island Hospital. He was a co-principal investigator for the study. “To really understand what benefits, if any, stenting provided, we needed to look at significant clinical events.”

What researchers found was that renal stenting did not make a difference in outcomes for patients.

According to Dr. Dworkin, these results are significant as they will lead to a reduction in the number of renal stents that are inserted in patients who experience renal-artery stenosis. “Stents do a good job in opening the arteries, but less invasive medical therapies, which have only gotten better over time, means that patients can often avoid more invasive stenting procedures,” he said.

This study was funded by the National Heart, Lung and Blood Institute. ♦

Judge gives final approval for Landmark deal

PROVIDENCE – On November 26, Rhode Island Superior Court Judge Michael A. Silverstein approved the sale of Landmark Medical Center in Woonsocket to Prime Healthcare Services of California, with the expected closure date to be executed by Dec. 31.

The agreement includes a financial settlement to Blue Cross & Blue Shield of RI, relating to prior claims, and also included an interval of two years for BC subscribers to be covered for care at the hospital.

Landmark has been in receivership since 2008. The sale also includes the Rehabilitation Hospital of Rhode Island in North Smithfield. ♦

Classified Advertising

Searching for a physician assistant to join your practice?



The Rhode Island Academy of Physician Assistants can help you find a qualified PA. Visit the RIAPA Career Center to advertise and view the CVs of the best and brightest PAs. Go to www.RhodeIsland-PA.org and click on Career Center to start your search. RIMS members are eligible for a 15% discount on ads. For questions and details of how to obtain the discount contact: Megan Turcotte, mturcotte@rimed.org, or 401-331-3207.

Part Time-Behavioral Health Medical Director Opportunity

(.5 of an FTE) – Blue Cross & Blue Shield of Rhode Island – To Provide medical leadership to the organization regarding behavioral health management programs, practices, and partnerships. Enhance and maintain relationships with physicians and other behavioral health providers. Provide expertise to reshape the delivery system to achieve efficiency, quality and affordability of services. Please visit our careers page on our website: www.bcbstri.com. Equal Opportunity/Affirmative Action Employer.

Alpert Medical School physicians among partners in Rwanda

PROVIDENCE – An article in Nov. 21 edition of the *New England Journal of Medicine* reports on a medical education partnership in Rwanda, known as the Human Resources for Health Program, includes Alpert Medical School professors **DR. MICHAEL KOSTER**, **DR. ADAM LEVINE** and **DR. BRIAN MONTAGUE**.

The Clinton Health Access Initiative and the Rwandan Ministry of Health launched the program in 2012. It is a \$150-million effort with 25 academic institutions, including the Alpert Medical School, which “deploys nearly 100 U.S. faculty members to Rwanda each year. Each school in the consortium sends full-time faculty members for 1-year periods to partner with Rwandan faculty-member counterparts in direct academic and clinical teaching. Several subspecialist physicians from the United States rotate throughout the year as well.”

The Brown faculty members are helping to advance medical teaching, research, and curriculum development at the National University of Rwanda. Referring to the physicians’ practice groups and hospital affiliations as well as their Brown affiliation, HRH program director Tej Nuthulagati said, “UMF, UEMF, Rhode Island Hospital, and Brown Medical School are playing an essential role in the program by providing immense support in increasing the quality of medical education in Rwanda.”

In an article on Brown’s website, Dr. Levine said medical training provides benefits that donating materials, equipment, and medicine alone cannot: “One of the wonderful things about knowledge and training is that they are inherently renewable resources. Unlike drugs and equipment, knowledge never has a stock-out, never breaks down, and never stops working when the power goes out. In my experience, improving medical provider training also has the effect of improving other components of the healthcare system, since trained doctors and nurses feel empowered to demand the medications, equipment, and efficient systems that they know they need in order to save patients’ lives.” ♦

Hittner, Ferguson reject President’s call to continue cancelled coverage in RI

PROVIDENCE – Rhode Island Health Insurance Commissioner **KATHLEEN HITTNER, MD**, and HealthSource RI Director **CHRISTINE FERGUSON** issued the following joint statement November 15 on the federal decision to continue coverage through certain individual and small business plans that had been subject to cancellation under the Affordable Care Act.

The statement read: “All plans available in 2014, whether through HealthSource RI or in the private

market, have been through a rigorous review process designed to ensure that they meet the standards set forth in the Affordable Care Act. After reviewing the President’s announcement, we have decided to continue in the direction we are going, and therefore will not be adopting the option made available to us by the President. We will continue to closely monitor any and all changes at the federal level that have the potential to impact Rhode Islanders.” ♦



Canadian expert Dr Timothy Whelan, center, spoke at Women & Infants Hospital on the latest advances in radiation therapy for treatment of early breast cancer. Among those at the grand rounds talk were Drs. Robert Legare, Jennifer Gass, Darlene Gabeau, Ashley Stuckey and Timothy Shafman.

Breast cancer expert speaks at Women and Infants Hospital

PROVIDENCE – **DR. TIMOTHY WHELAN** came to Women & Infants Hospital Oct. 31 to speak to physicians at grand rounds about the latest advances in radiation therapy for treatment of early breast cancer.

Dr. Whelan is responsible for overseeing cancer research and development as the Canada Research Chair in Health Services Research in Cancer with McMaster University in Ontario. He is also professor in the Department of Oncology and associate member of the Department of Clinical Epidemiology & Biostatistics.

“We are honored to have brought this international expert to Rhode Island,” said **DARLENE GABEAU, MD, PHD**, a radiation oncologist with 21st Century Oncology who is affiliated with Women and Infants’ Hospital and is an assistant professor at the Alpert Medical School.

The program, “The Systematic Effect of Locoregional Radiotherapy in Early Breast Cancer,” examined breast cancer progression, clinical trials and meta-analyses, and treatment advances over half a century. Dr. Whelan is currently the principal investigator on two clinical trials evaluating the role of radiation therapy for the treatment of early breast cancer.

This activity was funded in part by an educational grant from 21st Century Oncology. ♦

Recognition

Schwartz Center honors Dr. Chopra with 2013 compassionate caregiver award

BOSTON – **PRADEEP CHOPRA, MD**, director of the Interventional Pain Management Center of Rhode Island in Pawtucket, received the 2013 Schwartz Center Compassionate Caregiver Award at the 18th annual Kenneth B. Schwartz Compassionate Healthcare Dinner held Nov. 21 at the Boston Convention and Exhibition Center before an audience of 2,000 people.

The Schwartz Center, which selected Dr. Chopra for the award, is a national non-profit organization dedicated to strengthening the patient-caregiver relationship and preserving the human connection in healthcare.

As a young man, Dr. Chopra worked with Mother Teresa in his native India (*See sidebar*). He cares for patients from across the U.S. who suffer from rare pain disorders. In his remarks at the dinner, Dr. Chopra said the key elements of compassionate care are hope, care and love. "Hope cannot be prescribed on a small piece of paper for the pharmacy to fill," he said. "It is looking into your patient's eyes and making a promise that you will do your best to help them. We may not always have an answer, but we can always offer hope."

According to Schwartz Center Executive Director Julie Rosen, "Patients come to Dr. Chopra when they are at the end of their rope. He turns those ropes into lifelines. He is truly a role model for what compassionate care is and what it can accomplish. We are so pleased to be able to honor him and our other outstanding finalists."

As one patient wrote of him, "Patients with these disorders get dismissed so easily by the medical profession. We then get nervous and afraid every time we have to see someone new. He gave me faith in the medical community again."

The event booklet described Dr. Chopra's patients this way: "They suffer from rare diseases – painful and complex, with names as frightening as the illnesses themselves: dysautonomia, complex regional pain syndrome/reflex sympathetic dystrophy syndrome and Ehlers-Danlos syndrome. Other doctors have dismissed many as drug-seeking, told that their symptoms are psychosomatic, shuffled from physician to physician. When they arrive at Pradeep's office, the nightmare ends and their dream of better health begins."

Schwartz Rounds in RI

The Schwartz Center's signature program is Schwartz Center Rounds®, which brings together caregivers from multiple disciplines to discuss the challenging emotional and social issues that arise in caring for patients. In Rhode Island, participating hospitals include **Rhode Island Home and Hospice Care**, and **The Miriam, Rhode Island** and **Women and Infants** hospitals.

The Schwartz Center was founded in 1995 by Ken Schwartz, a Boston healthcare attorney who died of lung cancer at 40 and found that what mattered to him most as a patient were the simple acts of kindness from his caregivers, which he said made "the unbearable bearable." It is housed at the Massachusetts General Hospital where he received his care.

Academic background

Dr. Chopra is an Assistant Professor of Medicine (Clinical) at the Alpert Medical School and Assistant Professor of Anesthesiology (Adjunct), Boston University School of Medicine. He completed his anesthesia residency and fellowship in pain management at Harvard Medical School.

He is the author of several publications on chronic pain including several book chapters and is a member of the editorial board for *Journal of Cancer Pain & Symptom Palliation* and *Pain Physician*. ❖



RANDY H. GOODMAN FOR SCHWARTZ CENTER

Dr. Pradeep Chopra, MD, director of the Interventional Pain Management Center of Rhode Island in Pawtucket, accepting the 2013 Schwartz Center Compassionate Caregiver Award from Lois Dehls Cornell, Senior Vice President of Human Resources and General Counsel at Tufts Health Plan, a chairperson at the event.

A chance and life-changing encounter with Mother Teresa in Calcutta

PRADEEP CHOPRA, MD

(The following are excerpts from Dr. Chopra's remarks at the Schwartz Center recognition dinner.)

Many years ago, while living in Calcutta, I wanted to do some volunteer work. One day, I walked into what was then called a leprosy home. As I stepped into the place I saw an older lady quietly spoon-feeding a very sick man. He could barely sit up. Very patiently she fed him one spoon at a time.

After she had fed him, he lay down and she tucked him in, put her hand on his forehead affectionately and turned around to greet me...I was in the presence of Mother Teresa.

Over the next few months, as I worked with her I learned to get on my hands and knees and wipe the floors, clean the wounds of patients, and give the patients a bath.

It was a very humbling experience. That is when I realized that my calling was to become a physician, to alleviate suffering.

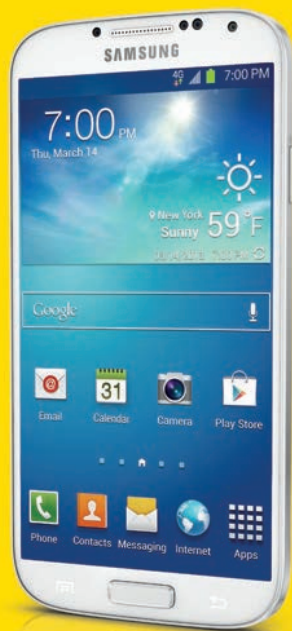
I learned humility, I learned compassion and – I also learned how to scrub floors.

Later, in my medical studies, I would



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TURELIO

often see the same frail Mother Teresa come into my hospital with a sick child. It was amazing to see her dedication and humility. Looking back, I felt that every time I came in contact with her, it added a little bit into my being. It influenced how I look at patients and try to offer them the same compassion she offered to others.

...Today, I stand before you as a patient, not as a doctor.

We are all patients. If you are not one, then one day you will be. It's an inevitable truth of life.

We are blessed that God has given us this opportunity to help others. It is with humility that I accept this calling and treasure it. So should we all.

Compassionate care is much more than the science of medicine. It is giving others hope...care...and love.

...Compassionate care is the heart of medicine.

...Hope.

Hope is what we live for.

It's what makes us get out of bed every day. In the waiting room, it is every mother's hope that her child will be safe and healthy. Hope is the one thing she brings when she takes her child to a medical facility – hope that we will have the knowledge, understanding, and care to do our best to help her child.

Hope is when we reassure the mother and child that we will go the extra step to help them – reassure them that we are on this journey together.

Hope cannot be prescribed on a small piece of paper for the pharmacy to fill. It is looking into your patient's eyes and making a promise that you will do your best to help them. We may not always have an answer, but we can always offer hope – hope of some kind. So, please, please think out of the box,

seek help on their behalf, and do not let them leave your office without hope.

Sometimes words are not enough. A lot can be said with the human touch. The human touch is one of the most reassuring gestures. Just a small touch, even holding someone's hand, reassures them that you are there for them.

...Care.

Care is the second word that defines compassion. Care is taking the time to listen to all the concerns and answer all the questions. Concerns that are relevant... and maybe not so relevant...but still part of what worries a patient.

Care is listening patiently. Listening is part of the healing process.

Look into their eyes and connect with them – please do not stare at computers and charts. Look into their eyes, smile, and reassure them that you are determined to help them.

A quick phone call, a short email to check in on your patient, always shows how much you care.

The most reassuring feeling a patient can have is in knowing that the doctor is thinking of him or her outside of an appointment.

Care is a team approach, with every staff member in an office greeting patients with a smile, making them feel truly welcome and comfortable...and making the office a sanctuary where all patients feel safe.

...Love is the driving force of compassion. Love is when we enjoy and cherish the uniqueness that is in every one of God's creatures.

...I must mention God. I went to a Catholic school; my family is Hindu; I lived in a community of Buddhists, and trained in a Jewish hospital. How could I not have faith?

Regardless of religion, love is at the core of all human beings.

The mother of a sick child knows all too well the power of love in healing. Shouldn't we, as healers, show the same love to others? Love is to share the patient's worries, and reassure them that we, as a team, care.

...So, please do not be dictated by establishment rules of how much time to spend with patients. An extra few minutes, a home visit, email or phone call, can make all the difference between mere treating and actual healing. ❖



Pradeep Chopra, MD

SCHWARTZ CENTER

Recognition

Hasbro Children's Hospital doctor is awarded 2013 Covering Kids Award

Pamela High, MD, honored by Rhode Island KIDS COUNT

PROVIDENCE – **PAMELA HIGH, MD**, a pediatrician and the director of developmental and behavioral pediatrics at Hasbro Children's Hospital, has been awarded the Covering Kids Award by Rhode Island KIDS COUNT, a statewide children's policy organization that works to improve the health, economic well-being, safety, education and development of Rhode Island children.



Pamela High, MD

Dr. High and other community leaders were presented with the award at the Rhode Island KIDS COUNT 13th annual Celebration of Children's Health luncheon. Each year, Rhode Island KIDS COUNT recognizes elected officials and community partners with Covering Kids Awards for their contributions to increasing access to health insurance coverage for children.

Dr. High treats patients and families as a member of interdisciplinary teams and supervises fellows in developmental assessment, care and research in the Hasbro Children's Hospital Neurodevelopment Center. Each year she and her colleagues evaluate more than 1,200 children from Southeastern New England with autism, developmental delays, attention deficit disorder, Down syndrome, fragile X and other developmental and behavioral concerns. She also works with families at the Brown Center for the Study of Children at Risk where she treats infants and toddlers who have challenges with sleeping, crying and feeding.

"Dr. High has been a major part of our pediatrics team here at Hasbro Children's Hospital for the past 20 years, even before we opened the doors to our official

children's hospital," said Robert Klein, MD, pediatrician-in-chief at Hasbro Children's Hospital. "In that time, she has had an immeasurable impact on thousands of patients and families, and has mentored countless residents and fellows. She has undoubtedly made health care better for children in Rhode Island, and beyond."

Dr. High's clinical and research interests include infant behavioral issues such as colic, sleep and feeding problems, anticipatory guidance, including literacy promotion in primary care, and the relationship between medical and psychological problems in childhood.

As part of the American Academy of Pediatrics, Dr. High has served on multiple national committees for early childhood, education, child care. She has also served as past president of the Society for Developmental and Behavioral Pediatrics. Her local advocacy efforts include serving on Rhode Island's Early Learning Council and on the boards of RI Kids Count and RI Reach Out and Read.

Dr. High is a graduate of the University of Florida, where she also received her medical degree. She was a resident in pediatrics at Stanford University and at the University of California San Francisco where she also completed her fellowship training in Developmental-Behavioral Pediatrics. In addition to her role at Hasbro Children's Hospital, she is also a professor (clinical) of pediatrics at the Warren Alpert Medical School at Brown University. She directs both fellowship and residency training in developmental-behavioral pediatrics at Hasbro Children's Hospital. ♦



The American Pharmacists Association has named Norman A. Campbell, professor emeritus of pharmacy at the University of Rhode Island, this year's honorary president. He is shown with Jenelle Sobotka, president of the association.

American Pharmacists Association honors Campbell

KINGSTON – For his commitment to pharmacy students, his contributions to the profession, and lengthy record of service, the American Pharmacists Association has named **NORMAN A. CAMPBELL**, professor emeritus of pharmacy at the University of Rhode Island, honorary president for 2013–2014.

"Dr. Campbell has been a professional role model for two generations of pharmacists and pharmacy students. His personal integrity, commitment to his colleagues, and dedication to his profession set a high standard for those that follow," said Paul Larat, dean of the College of Pharmacy at URI.

Dr. Campbell has served as president of the R.I. Pharmacists Association and the American Society for Pharmacy Law, which awarded him the Joseph L. Fink III Founders Award in 2011. ♦

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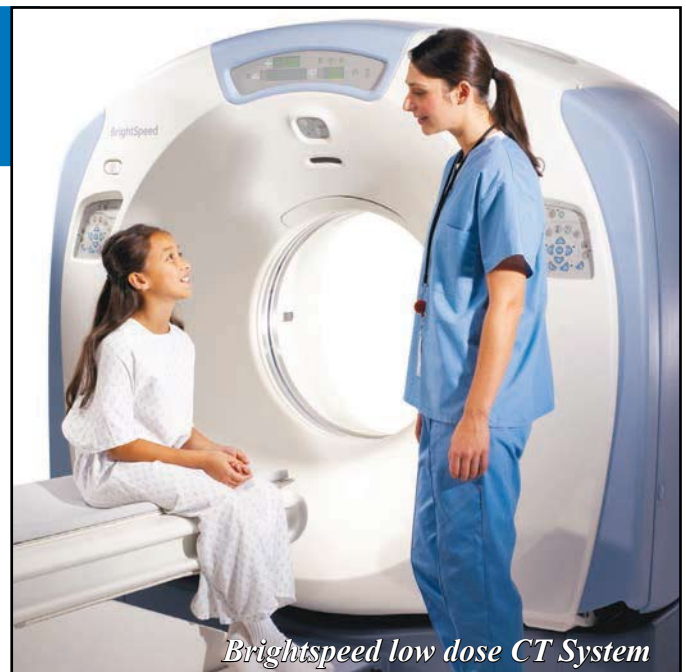
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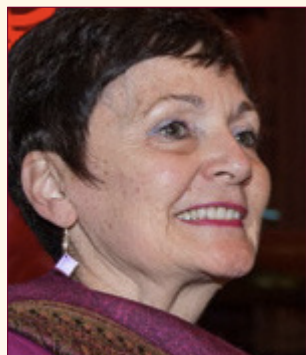
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Recognition



Terrie Fox Wetle, PhD

National public health group honors Wetle, Gans

PROVIDENCE – At the annual meeting of the American Public Health Association (APHA) in Boston November 2-6, **TERRIE FOX WETLE, PhD**, the inaugural dean of Brown's newly established School of Public Health, received a Lifetime Achievement Award for what the APHA's Aging and Public Health Section calls a "stellar record of service and contributions." She has served as deputy director of the National Institute on Aging, president of the Gerontological Society of America, and has published more than 200 peer-reviewed papers in the field.



Kim Gans, PhD

KIM GANS, PhD, di-

rector of the Brown University Institute for Community Health Promotion, received the Food and Nutrition Section's Mary Egan award at the conference for her innovative work to promote fruit and vegetable consumption in schools, workplaces, and neighborhoods where cost and access can be barriers to healthier eating. ❖

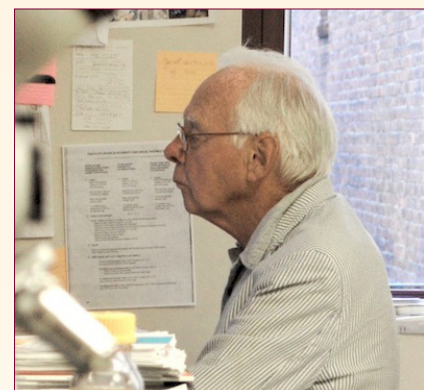
Endocrine Society honors Dr. Leslie De Groot with Laureate Award

PROVIDENCE – University of Rhode Island Research Professor **LESLIE DE GROOT, MD**, has been recognized by the Endocrine Society with its Robert H. Williams Distinguished Leadership Award. The annual award recognizes outstanding leadership in fundamental or clinical endocrinology. The award will be presented at the society's annual meeting in 2014.

Throughout his 60-year career as a scientist, teacher, clinician and administrator, Dr. De Groot has had an enormous impact on the field of endocrinology. He has authored influential textbooks, and his research in thyroidology has touched almost every aspect of the discipline, including thyroid hormone synthesis and action, mechanisms of autoimmune thyroid disease, and thyroid cancer.

Dr. De Groot trained at Columbia University College of Physicians and Surgeons and completed his medical residency at New York Presbyterian Hospital and Massachusetts General Hospital. He served in the Public Health Service at the National Institutes of Health and in Afghanistan, and spent 12 years at Mass. General and the Massachusetts Institute of Technology before joining the Department of Medicine at the University of Chicago. He joined the Endocrine Division at Brown University in January 2005 and moved to URI in 2009.

Based at URI's Institute for Immunology and Informatics at the Providence Campus, Dr. De Groot's research centers on viral mediated gene therapy for thyroid cancer and genetic mechanisms promoting autoimmune thyroid disease. He has more than 400 publications to his name and received the Endocrine Society award as Distinguished Educator in 2004. Perhaps his best-known publication is the three-volume textbook *Endocrinology*, which he edited through six editions over the past 30 years. He also is the editor of two Web books, www.endotext.org and www.thyroidmanager.org, which receive over 80,000 hits each day from 6,000 visitors around the world. ❖



Leslie De Groot, MD

American Kidney Fund recognizes two Rhode Islanders

WASHINGTON — The American Kidney Fund recognized **JOSEPH A. CHAZAN, MD**, and **LUCILLE M. PONO, RN**, with its Caregivers of the Year Award at its annual national gala, The Hope Affair, held October 29.

"We are delighted to recognize Dr. Chazan and Ms. Pono for their extraordinary contributions to the health and well-being of people living with kidney disease in the greater Providence area," said LaVarne A. Burton, president and CEO of the American Kidney Fund, the nation's leading charity providing

financial assistance to dialysis patients. "They were true pioneers when they

opened their first dialysis clinic, and their continued innovation over the past four decades has improved the lives of thousands of patients under their care."

Dr. Chazan, of Nephrology Associates in East Providence and clinical professor emeritus of medicine at Brown, is considered a pioneer in the dialysis community. He opened his first dialysis clinic in Providence 40 years ago. Since 2000, his practice has been affiliated with American Renal Associates, a national provider of dialysis services. ❖



VIDEO Joseph A. Chazan, MD, and Lucille M. Pono, RN, CNN – 2013 AKF Caregivers of the Year

Recognition

Undersea and Hyperbaric Medicine Society renews Kent's center with distinction

WARWICK – The Wound Recovery and Hyperbaric Medicine Center at Kent Hospital has achieved accreditation with distinction from The Undersea and Hyperbaric Medicine Society (UHMS), for the second time since 2009. The UHMS clinical hyperbaric medicine facility accreditation program recognizes hyperbaric facilities that demonstrate their commitment to patient care and facility safety.

The survey, which took place in September, involved a survey team consisting of a hyperbaric-credentialed physician, nurse and technician, who examined the facility's staffing and training, equipment installation, operation, maintenance, patient safety and standards of care.

"Our center has a strong commitment to our patients 24 hours a day, seven days a week and to achieve UHMS accreditation with distinction speaks volumes about the great service we provide to patients regionally," said **GEORGE PERDRIZET, MD**, medical director. "The clinical leaders of our facility work to provide the highest quality care to those patients in need of wound healing or hyperbaric oxygen therapy."

The regional referral center offers advanced wound care, treatment for diabetic ulcers, surgical wounds, ostomy problems and other chronic concerns. It is the only 24-7 hyperbaric medicine facility outside of Boston. ❖

Louise S. Kiessling, MD, recognized as a rural health champion

SCITUATE – **LOUISE S. KIESSLING, MD**, professor emeritus of family medicine at Brown, received a Rhode Island Dept. of Health 2013 Rural Health Champion Award on Nov. 21 at the Scituate Community Center.

Dr. Kiessling is the founder of the Neurodevelopmental Center at Memorial Hospital of Rhode Island. Prior to her retirement a decade ago, she served as the center's director and the hospital's pediatrician-in-chief.

The Washington County Coalition for Children, where she chairs its Mental Health Advisory Board, nominated her for the award. Susan A. Orban, LICSW, the Coalition's coordinator, described her as "a tireless advocate for the children and families of Washington County and what they need to thrive. At a time in her life when she could take on different and less challenging pursuits, Dr. Kiessling continues to care for the children of our community and her innovative work training providers will impact the care children receive for generations to come."

Orban cited several of Dr. Kiessling's initiatives:

- Forged critical new partnerships between the Coalition and the Alpert Medical School, engaging students in carrying out innovative behavioral health projects.
- Implemented Collaborative Office Rounds in Washington County to provide consultation and training for primary care providers on developmental/behavioral health issues using a developmental pediatrician (herself!) and child/adolescent psychiatrist as facilitators. As part of this project, she has launched physician study groups at South County Hospital and The Westerly Hospital.
- To expand the reach of these sessions to local schools and health care providers on Block Island and other rural areas, Dr. Kiessling partnered with RI Net and OSHEAN to begin videoconferencing and webstreaming and archiving sessions so anyone anywhere with a broadband internet connection can now participate.

Concerned about high rates of delayed prenatal care, infant mortality, teen pregnancy and reports of rising food insecurity in the town of Westerly, Dr. Kiessling worked with the Coalition to secure a CATCH Planning Grant (awarded in Dec. 2007) to identify root causes for these problems and develop community action plans to address them.

Orban said, "To us, she is a local hero; and, we believe her leadership and passion for children are deserving of this recognition." ❖



Louise S. Kiessling, MD, received a 2013 Rural Health Award in November. Attending the ceremony was Newell E. Warde, executive director of the Rhode Island Medical Society, of which Dr. Kiessling is an active member.



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Appointments

Dr. Deborah Myers Named Vice Chair of Department of Ob/Gyn

DEBORAH L. MYERS, MD, of North Kingstown, RI, director of the Division of Urogynecology and Reconstructive Pelvic Surgery at Women & Infants Hospital and professor of obstetrics and gynecology at The Warren Alpert Medical School of Brown University, has been named vice chair of the Department of Obstetrics and Gynecology.



Deborah L. Myers, MD

A graduate of Allegheny College in Pennsylvania, Dr. Myers earned her medical degree from the State University of New York at Stony Brook. She completed a combined medical-surgical internship at Rhode Island Hospital, a residency in obstetrics and gynecology at Women & Infants Hospital, and a fellowship in urogynecology at Mount Sinai Hospital, University of Connecticut.

Dr. Myers is an acknowledged national and international leader in female pelvic medicine and reconstructive surgery and a past president of AUGS. Last year, she was named the American Urogynecologic Society (AUGS) recipient of the National Association of Continence 2012 Rodney Appell Continence Care Champion Award. She serves on the Data and Safety Monitoring Board for the Urinary Incontinence Treatment Network of the National Institute of Health's Division of Kidney, Urologic and Hematologic Diseases, and is the co-principal investigator of the National Institute of Child Health and Human Development (NICHD) Pelvic Floor Disorders Network at Women & Infants and Brown University.

Research spearheaded by Dr. Myers has been recognized a number of times by the American College of Obstetrics and Gynecology. She currently serves as an editorial reviewer for eight professional journals, including The New England Journal of Medicine and The American Journal of Obstetrics and Gynecology, and has co-authored 47 original publications in peer-reviewed journals, 11 other peer-reviewed publications. ❖

Newport Hospital names Dr. McGue chief medical officer, VP Former career Navy physician



Tom McGue, MD

NEWPORT – Newport Hospital has appointed **TOM MCGUE, MD**, as the hospital's chief medical officer and vice president for medical affairs.

Dr. McGue joins the hospital following a long career as a naval officer and physician. He previously served as director of clinical services, Naval Health Care New England; deputy commander of Naval Medical Education and Training Command in Bethesda, MD; commanding officer, Naval Health Clinic Great Lakes; and deputy director/instructor Command Leadership School in Newport.

Among Dr. McGue's many accomplishments was his key role in the creation of the Captain James A. Lovell Federal Health Care Center, which was a first-of-its-kind partnership between the U.S. Department of Veterans Affairs and the Department of Defense. The project integrated all medical care into a single federal health care facility that combined the missions of the two agencies.

Dr. McGue received his medical degree from the Indiana University School of Medicine and completed his residency in family practice at the Naval Regional Medical Center in Jacksonville, Fla. He is a resident of Portsmouth. ❖

RWMC names Dr. Malik associate director of BMT Unit

PROVIDENCE – **MOHSIN MALIK, MD**, has been named associate director of the Blood and Marrow Transplant Unit at Roger Williams Medical Center. Dr. Malik completed a Hematopoietic Stem Cell Transplant fellowship at the Mayo Clinic. He received his fellowship training in hematology/oncology at the University of Tennessee Health Science Center. He is board certified in Hematology and Oncology.



Mohsin Malik, MD

Dr. Malik is a member of the American Society of Clinical Oncology, American Society of Hematology, and American Society for Blood and Marrow Transplantation. Since 1994, Roger Williams has been home to Rhode Island's only Blood and Marrow Transplant Program. In this role, Dr. Malik will be joining Dr. Todd F. Roberts, MD, MSc., FRCP (C), director of the Blood and Marrow Transplant Unit and Section of Hematologic Malignancies. ❖

Dr. de Leon joins Coastal Medical

PROVIDENCE – **LAUREN DE LEON, MD**, has joined Coastal Medical group. She attended Columbia University in New York and graduated with a bachelor of arts in neuroscience and behavior in 2006. A graduate of the Alpert Medical School in 2010, Dr. de Leon completed her residency training in internal medicine at Rhode Island Hospital and the Miriam Hospital in 2013. She is board certified in internal medicine with clinical interests in women's health, GI disorders, and pre-pregnancy counseling. ❖



Lauren de Leon, MD

Appointments

Brown's Savitz and URI's Sonnenfeld to co-chair science advisory council

PROVIDENCE – Gov. Lincoln D. Chafee recently appointed **DAVID SAVITZ, PhD**, vice president of research for Brown University, and **GERALD SONNENFELD, PhD**, vice president of research and economic development for the University of Rhode Island, as co-chairs of The Rhode Island Science & Technology Advisory Council (STAC).



David Savitz, PhD



Gerald Sonnenfeld, PhD

STAC serves as governing committee for the \$20 million Rhode Island National Science Foundation's Experimental Program to Stimulate Competitive Research grant.

Dr. Savitz is a senior member of Brown University's academic administration and the primary advocate for research. He came to the Office of Vice President for Research in September 2013 from Brown's School of Public Health, where he is professor of epidemiology, with a joint appointment in obstetrics and gynecology in the Alpert Medical School. His epidemiological research has addressed a wide range of many important public health issues including hazards in the workplace, the environmental effects of energy development, childhood obesity, pesticides and breast cancer, pregnancy health risks from environmental exposures, drinking water safety, and ethnicity and birth outcomes.

Before coming to the University of Rhode Island, Dr. Sonnenfeld was the vice president for research and professor of biological sciences at Clemson University. At Clemson, he established a healthcare research powerhouse for both the university and the Greenville Health System. His research has focused on the effects of stress on the immune system and resistance to cancer and infection. He was also one of the early researchers on the role of interferon-gamma in regulating immune response and has directed multiple pre-clinical studies and has been involved in clinical study development for several immunoregulatory agents. Dr. Sonnenfeld has also conducted experiments on the U.S. space shuttle and on Russian space program satellites. He is associate editor of the *Journal of Interferon and Cytokine Research* and a member of the editorial board of the *Immunological Journal* and the *Journal of Gravitational Physiology*. ❖



Grayson Wilkes Armstrong

Alpert student named chair-elect of AMA student section

GRAYSON W. ARMSTRONG, a Warren Alpert Medical School student class of 2015, and a member of the Rhode Island Medical Society Council, was elected chair-elect of the American Medical Association's Medical Student Section (AMA-MSS) on November 15 in National Harbor, Maryland.

The MSS is the largest voting block in the AMA's policy-making House of Delegates and represents more than 48,000 member students. Armstrong, of Weddington, NC, is currently on a leave of absence from Brown as he works toward a master's degree in public health at Harvard University, where he is focusing on health care policy and management with a concentration in public health leadership.

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Obituaries

STEPHEN T. CONWAY, MD, 66, passed away on November 18, 2013, surrounded by his loving family. Born on May 20, 1947, in Boston, he was the son of Dr. James and Mary Conway. He received his bachelor's degree in biology from Boston College, cum laude, in 1969 and earned his medical degree from Tufts University in 1973. Prior to his retirement, in 2003, he spent his working career of 25 years as an ophthalmologist in private practice.



Dr. Conway was a member of the Tufts Medical School Alumni Association, as well as a board member of the Rhode Island Society of Eye Physicians & Surgeons and Pawtucket Medical Society. He was proud of the teaching award that he received from Brown University School of Medicine, for his role as clinical assistant professor of ophthalmology. He loved music, played the piano and enjoyed golfing and vacationing with his family.

Members of his family include his loving wife of 40 years, Lorraine (Festa) Conway, of Bedford; two sons, Stephen Conway and wife Nazli of Windham and Christopher Conway of Providence; two daughters, Anne Conway of Brooklyn, NY and Emily Carleton and husband Edward of Brooklyn, NY. He is also survived by two granddaughters and five siblings.

Memorial donations may be made to: Alzheimer's Assoc. of NH, 5 Bedford Farms Dr., Suite 201, Bedford, NH, 03110; Doctors without Borders, USA, PO Box 5030, Hagerstown, MD, 21741-5030 or Marist Missionary Sisters, 349 Grove St., Waltham, MA, 02453, Attn: Donations

MARSHA L. DUPREE, MD, 56, passed away November 7 after a 3- year battle with a rare brain tumor. The wife of Brian Stainken, MD, she went with her family at her side, in comfort and at peace. She was honest, intelligent and kind, loved and admired by those she touched, from her many patients to her grieving family.

Dr. DuPree was born on November 11, 1957 in Haddonfield, NJ, to Madeline and Dr. Richard DuPree, the fifth of eight children. She studied chemistry at Georgetown University ('79) in Washington, DC, and then followed in her father's footsteps at Georgetown University School of Medicine (MD ('83) where she met her husband of 30 years at orientation.



She completed her residency in dermatology at the Naval Hospital in San Diego and a fellowship in dermatopathology at the Scripps Clinic in San Diego in 1994. Dr. DuPree was a fellow at the American Academy of Dermatology and a member of the American Board of Dermatology. She operated a solo eponymous dermatology practice in East Greenwich and loved her practice and her patients; they were an inspiration and a source of personal pride. She practiced her art with joy and devotion.

In addition to her husband, she is survived by three children: Cameron, a medical student at the University of Pennsylvania School of Medicine; Brett, a senior at the University of Rhode Island Engineering School, and Hannah, a junior at Georgetown University. She also leaves her seven siblings, and 26 nieces and nephews.

Beyond family and her patients, Dr. DuPree had two passions. One was the silent health effects of environmental toxins present in daily life. She worked tirelessly to eliminate food-borne toxins from her life as she spread awareness to others. In that spirit, her family is sponsoring a vegetable garden in her memory. Donations may be made through the Southside Community Trust at <https://secure.donationpay.org/southsideclt/marsha.php>.

Her other focus was recycling and composting; she believed and practiced both with characteristic diligence. With her in mind, the family invites readers to look at the good work of rescuemedicals.org. The medical supplies Dr. Dupree no longer needs are already on their way to be reused to help others.

Dr. Friedman's updated book examines impact of behavioral changes in Parkinson's disease

PD primer for patients/caregivers also informative for physicians

BY MARY KORR
RIMJ MANAGING EDITOR

Doctors, whether in private practice or working in Emergency Departments, will recognize their patients in the clinical vignettes presented in the recently updated book, *Making the Connection Between Brain & Behavior, Coping with Parkinson's Disease*, written by neurologist Dr. Joseph H. Friedman, Chief of the Movement Disorders Program at Butler Hospital and Chief of the Division of Movement Disorders in the

Department of Neurology at the Alpert Medical School.

The essential message in the book is that behavior trumps tremor in patients with PD. "What most doctors, even neurologists, don't realize is that while we use motor dysfunction to diagnose PD, it is actually the behavioral problems that cause the most devastating consequences of this illness. It took me many years to recognize this," Dr. Friedman writes.

In the Foreword to the book, Lee Coleman Krapin, MD, a neurologist in Albany, NY, echoes this from a dual perspective. "As a neurologist, I was trained to think of Parkinson's disease as the prototypical movement disorder. As a patient, I learned it was much more. It is an often-debilitating cognitive behavioral disorder that also has sensory and physical manifestations. Quality of life for people living with Parkinson's disease depends largely on better management of these behavioral issues."

Apathy, depression, anxiety and fatigue

The chapters address many of the behavioral problems associated with PD. The most common are depression, anxiety, apathy and fatigue. Dr. Friedman observes that while depression is usually treatable, "there are virtually no data to guide the treatment of the others." Psychosis and dementia reside at the grim end of the spectrum, and yet hallucinations and delusions can be medication-related and treatable.

The following clinical vignette is

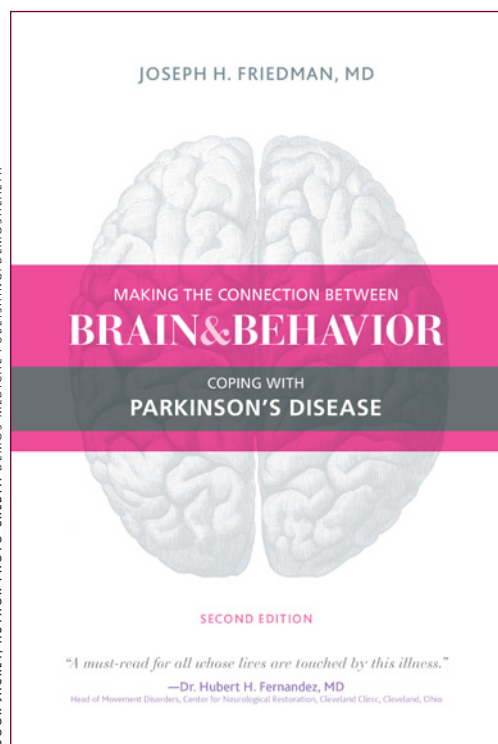


Joseph H. Friedman, MD, Chief of the Movement Disorders Program at Butler Hospital and Chief of the Division of Movement Disorders in the Department of Neurology at the Alpert Medical School.

from the chapter on apathy, which will resonate with primary care physicians and specialists/subspecialists whose patients also have or develop PD.

A 73-year-old man falls asleep frequently and does not seem to care. His family finds that he is not interested in anything. He attends family get-togethers and falls asleep before too long. He goes to his grandchildren's little league and soccer games and falls asleep. He is not embarrassed. He merely reports that, "I'm tired a lot." He has severe PD and is generally transported in a wheelchair. He is mildly demented, confusing some of his grandchildren from time to time, but never seems sad or anxious. He sleeps 12 hours each night and naps after breakfast. He snores mightily.

Dr. Friedman writes: "This patient probably suffers from sleep apnea and clearly has a sleep disorder. Some of his dementia may, in fact, be sleep related



Making the Connection Between Brain & Behavior, Coping with Parkinson's Disease (Second Edition)

Joseph H. Friedman, MD

Published: 07/2013

demosHEALTH, NY

www.demoshealth.com

264 pp. Paperback, available in e-formats

and his lack of interest in anything may be largely sleep driven or at least exacerbated by his constant sleepiness."

He explains that many PD patients lose some of their motivation and begin to lose interest in activities and the world around them, and while some of the changes may be the result of loss of motor function and frustration, "we believe that much of it is due to changes in regions of the brain that control motivation and reward. This 'apathy' rarely bothers the patient."

But it does distress family and friends. Unfortunately, he writes, it is unknown if this apathy can be treated.

Confounding treatment is that there is so much overlap among symptoms. But "when apathy is related to depression or sleep disorders, these problems can be treated and the apathy will then improve. And, if there is a medical reason, such as low hormone levels, abnormal kidney or liver function, it needs to be addressed first."

Getting the patient to agree to a sleep study, or wear a mask while sleeping, poses challenges of its own.

Rapid Eye Movement (REM) sleep behavior disorder (RBD)

For the medical community, one disorder relatively specific to PD is worth noting – Rapid Eye Movement (REM)

sleep behavior disorder (RBD), which is seen almost exclusively in patients with PD, dementia with Lewy bodies, or multisystem atrophy. "In RBD, patients, typically male, act out their dreams by punching or choking their bed partners. This is due to PD and is not a drug-related behavior. It is due to the specific pathological changes in the brain."

'As a neurologist, I was trained to think of Parkinson's disease as the prototypical movement disorder. As a patient, I learned it was much more.'

— Foreword by Lee Coleman Krapin, MD

L-Dopa controversy

The book also addresses concerns around the use of L-Dopa, in an appendix titled, "Urban Myth: L-Dopa Stops Working in Five Years." Dr. Friedman feels L-Dopa is helpful as long as there are enough dopamine-producing cells in the brain. It is "a rare patient who has so few cells left that a dose of L-Dopa produces no improvement in movement... It is an error to postpone taking L-Dopa due to the fear that it will stop working in five years."

The book was first published in 2008 and each chapter has been revised, with three additional chapters, appendices and updated treatment options, including the indications, benefits, and the

sometimes counterintuitive side effects to interventions, including deep brain stimulation (DBS) and electroconvulsive therapy (ECT) to treat intransigent depression and motor problems.


Although a layperson's primer on PD, addressing the medical science and the daily conundrums PD families face, such as when to stop driving, and when it is and is not OK to nag, or when it is appropriate to go to the ED, doctors, medical students and physicians in residency programs can glean pearls from Dr. Friedman's 30-plus years in the field.

And given the aging population in the United States, particularly here in Rhode Island, it is a timely review of what has been done and what needs to be done in terms of research and allocation of resources to address the needs of this population.

Dr. Friedman likens his role to an "anchor in a stormy sea." By sharing his wealth of experience within the book, its pages, too, become an anchor for those navigating the shifting, at times, chaotic seas of PD, as readers' reviews on Amazon.com attest to.

I am leaving my copy in my PCP's office on my next visit. ❖

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The Many Qu- Words of Medicine

STANLEY M. ARONSON, MD

THE LETTERS Q AND U, JOINED IN ETYMOLOGICAL WEDLOCK FOR centuries, form a small complement of clinically-related words of Latin, Greek and sometimes Germanic origin. In a standard medical dictionary of 1,660 pages, words beginning with QU make up but four pages.

The Latin prefix, *quadri-*, meaning something consisting of four, begins such words as quadruple (as in quadruple bypass), quadragenarian (a 40-year-old), quadripara (a woman who has borne four children), quadrivium (the first year of the medical curriculum in the Middle Ages, literally, "where four roads meet"), quadriceps (extensor muscle of four parts), and quadriplegia (paralysis of four limbs). The *-plegia* root is Greek, meaning blow or stroke. An alternate synonym, *tessaplegia*, renders the word entirely of Greek origin.

Quail, meaning to lose heart, derives from the Latin, *coagulare* (literally, to curdle.) And qualm, the feeling of faintness, is from a Greek word meaning smoke, or stupor. Quart derives from the Latin, *quarta pars*, the fourth part of a liquid measure.

Quality derives from the Latin, *qualitatum* (meaning how constituted); quantity, on the other hand, stems from *quantitatum* (how great, how many?).

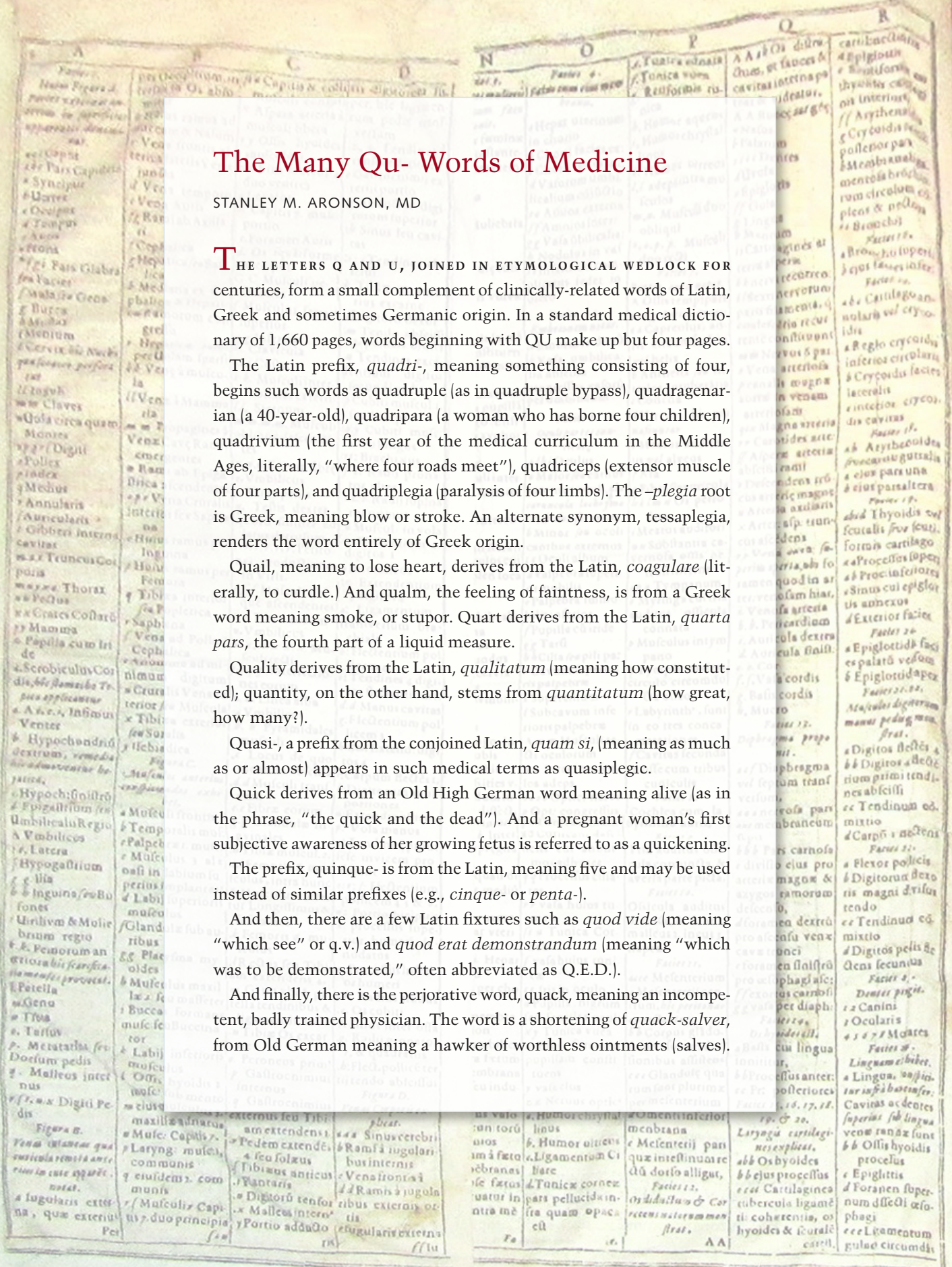
Quasi-, a prefix from the conjoined Latin, *quam si*, (meaning as much as or almost) appears in such medical terms as quasisplegic.

Quick derives from an Old High German word meaning alive (as in the phrase, "the quick and the dead"). And a pregnant woman's first subjective awareness of her growing fetus is referred to as a quickening.

The prefix, *quinque-* is from the Latin, meaning five and may be used instead of similar prefixes (e.g., *cinque-* or *penta-*).

And then, there are a few Latin fixturses such as *quod vide* (meaning "which see" or q.v.) and *quod erat demonstrandum* (meaning "which was to be demonstrated," often abbreviated as Q.E.D.).

And finally, there is the perjorative word, quack, meaning an incompetent, badly trained physician. The word is a shortening of *quack-salver*, from Old German meaning a hawk of worthless ointments (salves).





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Dr. Franklin C. Clark: Early mentor to HP Lovecraft – the master of ‘weird tales’

BY MARY KORR
RIMJ MANAGING EDITOR

Biographers of Howard Phillips (HP) Lovecraft cite **FRANKLIN CHASE CLARK, MD**, (1847–1915) as one of the horror master’s earliest literary influences. A distant relation to the Lovecrafts, the connection took root in 1902, when Dr. Clark married Lillian Phillips, Lovecraft’s beloved Aunt Lillie, when the boy was 12.

Dr. Clark was well suited to aid in the home-schooled Lovecraft’s tutelage. He had studied literature and the classics at Brown University (class of 1869). During that time, he also attended literary seminars given by Boston’s renowned poet and essayist, Dr. Oliver Wendell Holmes, Sr.

As a student, Clark shared Dr. Holmes’ medical and literary interests. He attended Harvard Medical School for a year, but completed his degree at the College of Physicians and Surgeons in New York City in 1872. Dr. Clark then returned home to Providence and worked as a surgeon in Rhode Island

Hospital’s outpatient department, eventually opening a private practice in 1882.

Dr. Clark was an active member of the Providence Medical Association, the Rhode Island Medical Society, and the Rhode Island Historical Society. He was a frequent contributor to the *Rhode Island Medical Journal*, and many others, but also wrote on historical, genealogical and general topics, such as the circus and hypnotism.

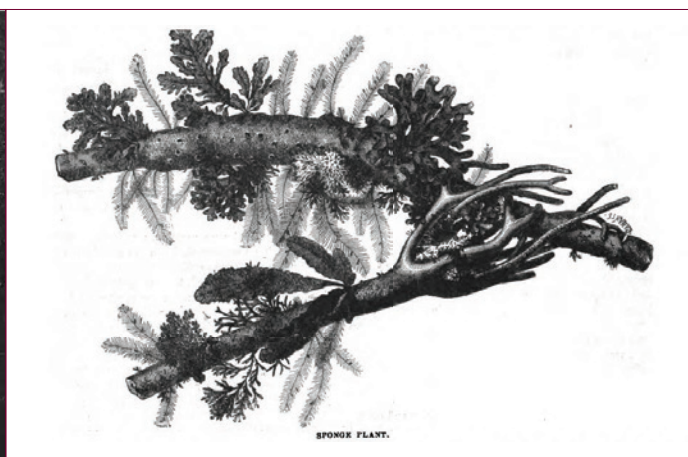
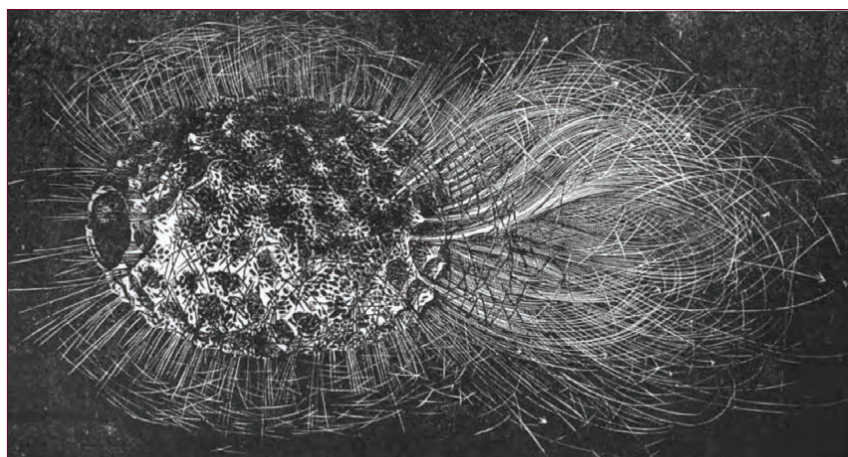
One of his articles, “A Curious City,” appeared in 1878 in the popular *Frank Leslie’s Sunday Magazine*. It is a fantastical yet scientific homage to the seemingly simple sponge and its underwater habitat, as seen in these excerpts:

...Suppose, now, we take a piece of living sponge and place it under a microscope. The sight we then get is said to be truly wonderful. The water rushes with considerable force in and out of the larger openings called oscula...Indeed, they very much resemble little volcanoes in action, vomiting



Lovecraft in front of his home at 598 Angell Street, Providence, in 1919.

from their crater-like mouths the water tinged with various materials. The animals absorb through the pores or smaller orifices (byways) the oxygen and other food carried in by the water...thus it will be seen that the sponge has a circulation which answers to the circulation of the blood in the higher animals...



These illustrations appeared in the article, showing a rare glass sponge dredged up in the Mediterranean Sea near Gibraltar and a sponge plant.

When the animals are destroyed, the soft gelatinous material decays and leaves behind the sponge...

...And now, after describing my little [sponge] city – a strange one at that – and after showing how many different kinds of cities there are, from the rude habitation to the elegant and beautiful structure, we leave the animal a fossil, a worn-out city, buried beneath the ruins of other cities, which, like this, help build up the foundations of the earth...

In his later letters, Lovecraft wrote of his uncle: "He began to influence my intellectual development. He was a man of vast learning...His historical attainments were likewise immense." He also wrote he hung on his uncle's "every word."

After HP's father died at Butler Hospital of neurosyphilis, and then upon the demise of his beloved grandfather, Dr. Clark became a stable figure in the boy's life. It appears the physician's classical interests (he translated and published the works of Homer, Virgil, and Lucretius)

resonated with the young Lovecraft, who had a keen interest in Greek and Roman mythology since he was very young. According to one HP biographer, Dr. Clark helped his nephew compile a "Manual of Roman Antiquities."

He also encouraged HP to continue his interest in chemistry and astronomy, and publish what were then called "weird" tales or fiction – the precursors to the horror, fantasy and science fiction genres.

One Lovecraft scholar suggests a number of HP's kindly but erudite physician characters may have been based on Dr.

Clark, who died on April 26, 1915, of a cerebral hemorrhage, at the age of 67. Lovecraft wrote an elegy for his uncle, which appeared in Providence's *Evening News*.

Much of Dr. Clark's writings, including many historical tales of Providence are in collections at Brown's John Hay Library and the Rhode Island Historical Society. ♦

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A CURIOUS CITY.

BY FRANKLIN CHASE CLARK.

I PROPOSE to say something about a very strange city—a little democratic State, so to speak, like the colony founded by the ancient Greek. There are thousands of these cities to be seen in different parts of the world; and they were all at first little colonies sent out by the mother-country which was once herself a colony like them. When these become prosperous and full of people they can no longer contain the

every respect; as there is no such thing known there as caste or rank. Every inhabitant labors for the good of all. Indeed, when we observe the manners and customs of the people more carefully, we find that such a course of action is absolutely necessary. For the inhabitants never for a moment trust themselves beyond the walls of the city, except the young; and they only depart at certain seasons



FISHING FOR SPONGE AT TRIPOLI, MEDITERRANEAN.

Dr. Franklin C. Clark was a prolific writer. "A Curious City" appeared in one of the most prestigious illustrated publications of the 19th century, *Frank Leslie's Sunday Magazine*.