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Cover: "Night Herons & Gulls," Oil on board, 11 x 14 inches, by Jerry Powers, who chaired the Art Department at Westminster School in Simsbury, CT, and now lives and works on Block Island. He says of the painting: "I do a lot of fishing, and sometimes find myself sharing the beach with these other hopefuls." He exhibits at the Spring Street Gallery on Block Island.
www.JerryPowers.com

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Commentaries

Sharing Bad News

I am usually uneasy telling medical students how to behave with patients. I like to think that they take away what they think is best from each interaction they see. So, this will not be a column on how to tell patients that there is something wrong with them.

When I visited Zambia last year, I met a young doctor whose extra-curricular volunteer work was helping AIDS patients make out their wills. In Zambia, where 10% of the population and perhaps 20% of adults in reproductive years have HIV, there are many people to be counseled. In that terribly poor country I wondered what was in these wills. Of course they centered mainly on arranging placement and education for their children. I marveled at the selflessness of this doctor, especially in a country where 50% of the children have lost one or both parents to AIDS. I told this Zambian physician that his work was very inspiring but hard, and that I didn't know if I could do it. He told me that it was indeed very difficult at the beginning but that he had gotten used to it. "It became easier with time," he said.

I mused on my own counseling experiences. My patients come for diagnosis and treatment, not for counseling, at least not primarily, but, as with the AIDS patients, we have to share news and plan with our patients, in one case for death and in the other for an altered life with progressive disability. I said, "I share bad news with people too, but I think it's gotten more difficult over the years, not less." For over 25 years I've been telling people things they didn't want to hear. I've followed hundreds of people with **Parkinson's disease (PD)** and other disabling disorders for 10-20 years. I know the possible futures.

There are some saving graces about telling people they have PD. One is that the course varies enormously so that some of my patients, no thanks to me, have negligible disability 15 years into the illness. Therefore I can't tell patients what they'll be like 5 years from now. Studies have shown that the rate of progression early on usually (but not always) remains relatively constant so that there are no sudden declines, no unpredictable emergencies. This gives people time to adjust and plan.

I recently read a chapter written by a psychiatrist suggesting how doctors should deliver bad news. Schedule an hour in a comfortable office. Turn the cell phone and beeper off. Refuse to accept interruptions. Arrange to have supportive family members present, and then, gently, but without beating around the bush, give the bad news, followed by "the plan" for dealing with it. I thought about this and wondered how often a doctor in today's busy environment has the opportunity to do this. The author suggests that this appointment be made "after all the test results are back." This works when there are tests but quite often the specialist already has all the information, or, as in my case, there usually aren't any helpful tests to order.

In my practice a new patient is usually either diagnosed on the spot or is not diagnosed at all. The diagnosis of PD usually takes a brief moment, although very early cases and those with confounding features may require a few visits over several months. There are no tests to diagnose PD so I usually order none. The diagnosis is based purely on the history and the physical examination, a "throwback" to classical medicine. I cannot tell the patient, "Come back next week, and bring your spouse." I wish I could. Last week I saw a 45-year-old nurse who came alone. "I have this little tremor and I want to know what it is. My doctor thinks it's essential tremor." Parkinson's disease wasn't in her mind. Today I'm seeing a doctor my age who has a resting tremor, the usual beginning of PD. He called and is worried that he has PD. It will not be easy to tell him, if indeed he does have that diagnosis.

I don't know if it's my aging, the increasing number of neurodegenerative cases, or the heartbreak that I mete out. I sometimes think that it's an increasing sense of injustice I feel as more and more of my patients are younger than I, have kids younger than mine or bear greater responsibilities with fewer resources. Each diagnosis has its own sadness. "We'll beat this," they sometimes say. But my diseases aren't like cancer. They aren't curable. Yet some do "beat it." The resiliency and depth of spirit are often inspiring, even in the face of true disaster. "We'll beat this," perhaps a prayer.

Yet, having said all this "touchy feely" stuff, I can't spend an hour sharing the news. I spend what I feel is needed to give my "spiel" about PD, how we don't know the cause, how we don't have a diagnostic test, how much research is being done, how variable the progression is- look at Janet Reno, Muhammed Ali, Michael J. Fox, and the Pope; and then I try to comfort and support. Yes, we're in this together. I've been doing this 22 years. But I have to be efficient too. I have a waiting room full of old patients with new problems and new patients, patients who are a little stiff and shuffle once in a while, "when the arthritis acts up."

I wish I could spend an hour with each of them. I wish I could schedule family visits to give the bad news. Life's not that tidy.

– Joseph H. Friedman, MD

Temper My Spirits, Oh Lord

The 18th Amendment of the United States Constitution was ratified in 1919. The American public tolerated it, in a manner of speaking, for about 14 years and then repealed it – the first and, thus far, the only Constitutional Amendment to be rescinded.

This 14-year interval, during which time consumable alcoholic products were prohibited, is viewed by many as a singularly bizarre, crime-ridden interlude in American history, a kinky eccentricity in that flawed ambiguity called the American ethos. It was an interval during which bootlegged liquor and speakeasies replaced the corner saloons; when the American transatlantic cruise industry was destroyed because it could not compete with European-owned vessels which served liquor; when many communities, such as Miami, flouted the law and when bootlegging grew to be a major industry.

Many presumed that this was, first, a short-lived period, following World War I, of legislative madness; and second, that it had no immediate or enduring effect upon alcohol-related diseases in the United States. Both presumptions are wrong.

Fermentation of barley, mead, grapes, and other fruits has been known since antiquity. But not until the technical process of distillation yielded far higher concentrations of alcohol, now called spirits, did alcohol consumption assume a major threat to societal integrity. Early New England clerics such as the Mathers, father and son, decried the use of ardent spirits. But it was the preachings of John Wesley [1703-1791], both in England and colonial Georgia, to "the multitudes living in heathen darkness" that initiated a movement advocating abstinence from all forms of alcoholic beverage. Wesley's evangelical "Methodism" declared that drinking was a morally destructive activity.

The 19th Century witnessed the birth of a coordinated, religion-based temperance movement, extending beyond the earlier Wesleyan efforts. Much of the national temperance movement was now directed by women who had seen how liquor-consumption by husbands and fathers had sapped the meager emotional and physical resources of their working class families. This led to the formation of the Women's Christian Temperance Union in 1873. Some in the organization had condemned all forms of alcoholic beverages while others exempted non-distilled forms like sacramental wines and even beer. After all, they claimed, the word *temperance* was derived from a Latin word meaning moderation, not exclusion. And so temperance took on many meanings in 19th Century America. Even a prayer from an ancient hymnal records these words as one of many rallying cries of the temperance movement:

Temper my spirit, O Lord, Keep it long in the fire;
Make it one with the flame, let is share That
upreaching desire.

Persuasion, both written and oral, as well as appeals to religious faith, were the primary weapons employed against alcoholism for much of the 19th Century. A more aggressive approach was gradually adopted by those who believed that alcohol's addictive influence was mightier than words. And so the **Anti-Saloon League** [ASL] gradually assumed the leadership in the battle against alcoholism. The League is often portrayed as a small group of grim, hatchet-wielding women intent on destroying the neighborhood saloons. But in truth their effect upon American history, and American legislative bodies, was far greater than the destruction of a scattering of bars. And it was the recruitment of immense numbers of middle-class women in the fight against alcoholism that represented the greatest achievement of the ASL.

Temperance infiltrated the sermons of thousands of ministers; and many newspapers and magazines refused to carry advertisements for alcoholic spirits. Even the American Medical Association officially opposed the use of ardent spirits either for recreational or therapeutic purposes. Alcoholism was gradually transformed from a moral dilemma to a public health problem.

The first tangible effects of the temperance movement were seen in laws passed by certain state legislatures [the "dry" states] that restricted the manufacture, transportation or sale of alcoholic beverages. By 1909 six states forbade consumable alcohol. And in 1913 Congress passed the Webb-Kenyon Act, which made importation of liquor to the "dry" states a federal crime.

The decade between 1910 and 1920, however, saw a notable increase in consumption of intoxicating beverages in the United States despite the efforts of the temperance movement. Beer production rose from1.2 billion gallons to over 2.0 billion gallons per year; whisky and other high-alcohol beverages rose from 97 million gallons per year to 147 million gallons.

The determined efforts of those opposed to alcohol consumption finally culminated in the passage of the 18th Amendment to the US Constitution [January 16, 1919], which prohibited the sale, manufacture, transportation, importation or exportation of intoxicating liquors "for beverage purposes" within the United States and its territories. The Amendment did not specify what concentration of alcohol constituted an intoxicating beverage; and so Andrew Volstead, a congressman from Minnesota, offered a bill [The Volstead Act of 1919] which declared that any beverage with 5% or more of alcohol was deemed intoxicating. Thus, the 18th Amendment also prohibited beers and wine.

The provisions of the 18th Amendment were poorly enforced but the data nevertheless demonstrated that the frequency of deaths due to acute alcoholic intoxication, cirrhosis of the liver or the various brain diseases caused by alcoholism had appreciably diminished during the 14 years of prohibition. During World War I [1914-1918] both France and England also witnessed a sharp drop in alcohol-related deaths when alcohol production in those nations was deviated to the munitions factories.

The 21st Amendment, ratified on December 5, 1933, declared: "The 18th article of amendment to the Constitution of the United States is hereby repealed."

Many have proclaimed the Prohibition era [1920-1933] to be an interval of utter folly, a madness that defied the principles of civil liberty and individual human responsibility. Still, lives were saved during this interval. "What is madness," said the poet Roetke, "but nobility of soul at odds with circumstance?"

– Stanley M. Aronson, MD

Breastfeeding Practices of Resident Physicians in Rhode Island

Jennifer E. Kacmar, MD, Julie Scott Taylor, MD, MSc, Melissa Nothnagle, MD, Jeffrey Stumpff, MA

Numerous health agencies recommend breastfeeding as the preferred method of feeding for infants for at least one year because of its immediate and long-term benefits for both mother and child.[1-4] Although the *Healthy People 2010* goals for breastfeeding are to have 75% and 50% of women breastfeeding at hospital discharge and at 6 months, respectively, 1998 breastfeeding rates for US mothers were only 64% and 29% at those intervals.[5]

Ten years ago Miller et al, reporting on breastfeeding practices among female US resident physicians across specialties,[6] noted a high breastfeeding initiation rate (80%) but a low rate of continuation at 6 months (15%). To our knowledge, there have been no similar evaluations of resident physicians. Additionally, we found no published assessments of infant feeding practices among male residents or comparisons of male to female residents.

Several studies demonstrated that work environment, specifically adequate time and facilities for milk expression, affected the ability of working mothers to continue nursing.[7] Over 47% of 2005 graduates of US medical schools were women, a 5-fold increase since 1970.[8] Nevertheless, few changes have occurred in residency training to facilitate breastfeeding.

This article describes infant-feeding practices of resident physicians in obstetrics-gynecology and family medicine at Brown Medical School. These are the specialists who primarily counsel prenatal patients about infant feeding choices.

Methods

This is a cross-sectional descriptive study of residents' personal experiences with infant feeding methods based on responses to an anonymous survey. As part of a larger study on breastfeeding education, residents in **obstetrics-gynecology (Ob/Gyn)** and **family medicine (FM)** who have children were asked to describe their own feeding practices.

The survey instrument was adapted from the American Academy of Pediatrics Periodic Survey of Fellows #30, an eight-page, forced-choice questionnaire for physicians on breastfeeding education, knowledge, experience, and practices.[9] The final survey, with 23 questions, took 10 to 15 minutes to complete. Questions included demographic information, personal parenting experience, self-perception of breastfeeding competency, sources of breastfeeding education, clinical knowledge, and clinical experience.

Residents were asked a series of questions for each of their children, including current age in months, whether or not the infant was ever breastfed, and age at which the infant first received formula. If a resident reported ever having a child breastfed, the resident was asked whether the infant was still breastfeeding, or at what age the child was weaned.

Results

Surveys were administered to 66 resident physicians (1st through 4th year). Thirty-five of 39 FM residents (90%) and 23 of 27 Ob/Gyn residents (85%) responded. The average age of residents was 30 years. Seventy-five percent were female. Twenty-three percent of FM respondents and 30% of Ob/Gyn were parents.

Fifteen residents reported having a total of 28 children, aged from 2 to 72 months. At least 8 of the 28 children were born during residency; 8 were born during medical school or earlier. For the remaining children, we could not determine timing.

Twenty-six of 28 children (93%) were breastfed. Four children were currently breastfeeding. There was no information about duration of breastfeeding for 2 of the breastfed children. Fourteen (64%) were breastfed for at least 6 months and 6 (27%) continued for at least one year.

Analysis by resident gender revealed startling differences, (Figure 1) Most (83%) female residents and all (100%) male residents reported their infants were breastfeeding at time of initial hospital discharge. At 6 months, 58% of female residents' children and 50% of male residents' children continued to breastfeed. At one year, 8% of female residents' children were breastfeeding compared to 50% of male residents' children. Female residents were significantly less likely to maintain breastfeeding compared to partners of male residents ($p=0.03$).

Discussion

Consistent with Miller's national results, we found excellent initiation rates for breastfeeding among our residents. In addition, overall continuation rates at six and twelve months were very close to

Figure 1. Breastfeeding Rates of Resident Physicians

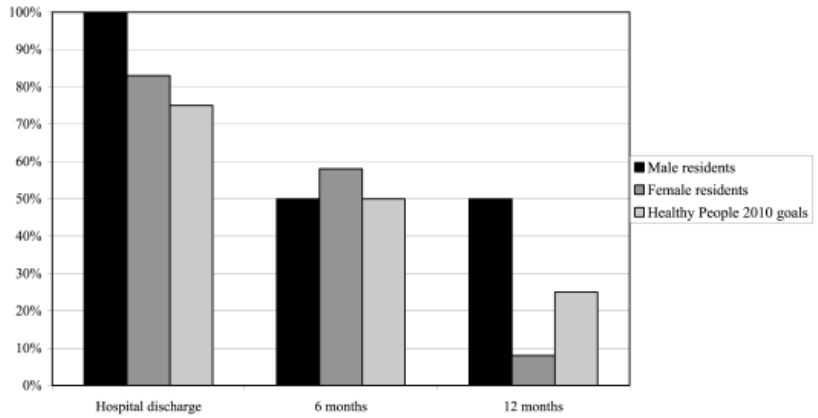

Table 1: Recommendations to support breastfeeding among residents

1. Develop a written policy to support breastfeeding in the workplace.
2. Provide a private, clean, convenient location, other than a bathroom stall, for breastfeeding residents to express milk. This area should include a sink, an electrical outlet for use of an electric breast pump, and refrigeration space if possible.
3. Provide regular breaks for breastfeeding residents to express milk.
4. Provide electric breast pumps for use in the workplace.
5. Provide on-site child care to facilitate breastfeeding in person whenever possible.

the *Healthy People 2010* goals. However, the continuation rates for female residents at one year were well below national standards, while the partners of male residents continued to breastfeed at one year in 50% of cases. This gender-difference suggests that the workplace environment places excessive demands which do not allow for continuation of breastfeeding.

To our knowledge this is the first report of infant feeding practices of male versus female resident physicians. More investigation is warranted to determine whether or not this pattern persists across disciplines and regions.

This study has several limitations. The small sample, consisting of Ob/Gyn and FM residents at a single institution, limits generalizability. Incomplete information on timing of breastfeeding with regard to residency training limits conclusions that might be drawn about the influence of stage of training on breastfeeding. Finally, because the survey did not ask spousal occupation, we cannot be certain that the medical training environment is the true source of the difference between female and male residents.

Recommendations for residency programs

Residents' training environment should promote healthy lifestyles, including the ability to breastfeed children. In their national survey of female residents, Miller et al found that residency work schedule was the most common reason reported for discontinuing breastfeeding. In addition, a substantial portion of residents who breastfed while working reported insufficient time to pump at work, no appropriate place to pump, and no support from attending physicians in their efforts to breastfeed.[6] The Rhode Island Nursing Working Mothers Act (2003) requires employers to provide break time and a clean private space other than a toilet stall for expression of milk. The United States Breastfeeding Committee has published detailed recommendations for workplace breastfeeding support (Table 1).[10] Given the high discontinuation rate for female residents, residency programs should develop breastfeeding policies that address barriers to breastfeeding and that include the recommendations in Table 1.

At one year, 8% of female residents' children were breastfeeding compared to 50% of the male residents' children.

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The Ideal Physician Executive

Patricia R. Recupero, JD, MD, and Samara E. Rainey

Historically, physicians have performed management functions crucial to the successful operation of a clinical practice, whether in solo practice or in managing a team of professionals. In the past, hospitals were often owned and managed by doctors, but growth and a changing healthcare sector saw decreasing numbers of physicians in management and increasing numbers of managers from non-medical backgrounds. Recently this trend has begun to reverse. Today, growing numbers of physicians are found in graduate MBA programs. Since its inception in 1975, the American College of Physician Executives has grown from the inaugural 64 to current estimates of around 10,000 members.[1] Increasingly, many hospitals have physicians as their CEOs or presidents.[2] In Rhode Island, four of the thirteen acute care community hospitals are under the leadership of physician presidents or CEOs: Butler, Kent, Miriam, and Rhode Island Hospitals.

The Ideal Character of the Physician Executive

In 1873, at a conference of superintendents of psychiatric hospitals, Dr. Isaac Ray, Butler Hospital's first "CEO," presented a paper, "Ideal Characters of the Officers of a Hospital for the Insane,"[3] where he described "The Good Superintendent" and "The Good Director." The paragons displayed: a) respect for other physicians and for patients; b) non-judgmental listening skills; c) a willingness to subordinate one's ego to the service of humanity; d) personal accountability; e) immersion in and knowledge of the day-to-day workings of the hospital and its staff; and f) support and encouragement of physicians. The qualities one must strive to avoid were those often found in poor managers: condescending or authoritarian attitudes; scapegoating subordinates; micromanaging employees; false promises; poor time management; judgmental or emotional reactions; excessive pride; and prejudice.

Today, most of Dr. Ray's lessons ring true for physician executives at all levels: CEOs or hospital presidents, medical directors, operations administrators, staff association managers, even doctors in private practice. Successful physician executives have relied on their listening skills to build consensus and show respect for their colleagues. The field of medical management has strong-voiced opponents and proponents. This article will present an overview of physician executives: who they are, why more doctors are choosing management, the pros and cons of physician executives, challenges facing physicians in management, qualities of the ideal physician executive, and implications for future leadership.

Who Are the Physician Executives?

Physician executives come from varied backgrounds, but most combine training in medicine with management experience. Only one-third have obtained or are working toward advanced management degrees, such as business administration (MBA), medical management (MMM), healthcare administration (MHA), public health (MPH), and law (JD).[4,5] 95% of physician executives are board certified, and 62% come from primary care practice.[4] Some physician executives belong to the **American College of Physician Executives** (**ACPE**; formerly the American Academy of Medical Directors) and may hold **CPE** (**certified physician executive**) certification from the ACPE or board certification from specialist organizations. Most physician executives are male, but growing numbers are female.[6]

Why Would An MD Want To Be a CEO?

Commentators believe that managed care, which has left many doctors feeling micromanaged and frustrated, has spurred interest in executive positions. As **health maintenance organizations** (**HMOs**) and **managed care organizations** (**MCOs**) grow more powerful, many physicians understandably resent this shift, objecting to non-medical administrators regulating medical practice. Seeking more autonomy and authority and a more active role in the decision-making process, many physicians see management as an opportunity to regain control of the most important medical decisions facing patients.[7]

For some, money may be a factor. From 2000 to 2002, the overall median compensation for physician executives rose 7.1% from $210,000 to $225,000. During the same period, the median compensation for those who were CEOs and presidents of hospitals jumped from $221,000 to $313,000.[5]

What the Proponents Have To Say

Doctors' education and knowledge make them attractive candidates for executive management positions in healthcare organizations. Physicians can relate to medical staff in a way that non-medically-trained MBAs cannot; physician executives can speak their language and grasp the difficulties and dilemmas faced by doctors. Furthermore, a medical background qualifies physician executives to set standards for acceptable and unacceptable practice; if someone must tell doctors how to do their jobs, should it not be another doctor? The Institute of Medicine's report, *Crossing the Quality Chasm*, notes that defining quality is a medical role.[8] A successful physician executive can function as a bridge between healthcare providers and board members. Even when venturing into executive-level management, physician executives remain physicians, and they can relate to other physicians' frustration with cost-containment measures, managed care, and the practical realities in the day-to-day maintenance of a practice.

In order to diagnose and treat their patients, physicians must hone their verbal and nonverbal communication skills. Poor prognoses and poor outcomes are part of the reality of medical practice; physicians must master the art of breaking the worst possible news to patients and to families. Physicians must develop strong crisis-management skills to deal with distraught patients and families and

effective interpersonal communications skills to help apprehensive patients. These interpersonal skills are critical to the success of an executive, particularly in negotiations between administrators who are concerned about cutting costs and department heads who are worried about quality of care and the work environment.[9] Perhaps most significantly, research has found that medically trained senior managers perform just as well as their managerially educated counterparts in strategic decision-making for quality improvement and financial success within healthcare organizations.[10]

What The Critics Have To Say

While nearly all physicians must utilize strong management skills in their practice, the practice- management style often differs from that of business executives. In a practice, timing is critical in handling medical crises and emergencies, and physicians often make decisions quickly, with limited information. In order to ensure safe and effective treatment of a patient, physicians expect that their orders will be followed promptly and thoroughly. In executive management, decisions are often achieved by discussion and consensus over an extended period of time. These differences have led many to question whether physicians can be effective leaders in today's complex, cost-conscious healthcare environment.

Furthermore, many physicians, accustomed to being "captains of the ship," expect their orders to be followed and think in terms of "I" and "me" instead of "we" or "us."[11] Physicians are trained to be confident that they are right and to act on those beliefs; this approach leaves little room for the consensus-building so important to successful executive management.

Other critics argue that MDs command so much respect that peers and others in the management team may defer to a physician executive's judgment, even when faulty – a mistake that could prove fatal to a hospital's or health organization's survival. For many physicians, the primary barriers to success in administration are lack of relevant management experience and lack of financial management expertise. For others, the physician management style is the primary obstacle impeding their success as an executive. One physician CEO with a successful background in medicine found that his authoritarian management style cost him the support of his colleagues among the medical staff and, eventually, his job.[12]

...many physicians see medical management as an opportunity to regain control of the most important medical decisions facing patients

Challenges For the Physician Executive

Some challenges are universal to all managers; e.g., how to deal with employees' disruptive or unethical behavior, how to motivate a team, how to achieve consensus and agreement. Unprofessional colleagues are a source of concern;[13] top causes of disciplinary action against physicians include substance abuse, unprofessional conduct, prescribing violations, fraud, negligence, sexual misconduct, failure to maintain medical records, criminal conviction, or DWI/DUI conviction.[14] Not surprisingly, physicians in management often face difficulties when dealing with some of their physician colleagues. However, physician executives may be better situated than their non-medically trained counterparts to offer help to physician colleagues. Recognizing and addressing the concerns of physician and nurse burnout and warning signs of problems, such as suicide or substance abuse, may come more easily to clinically-trained physician executives. Furthermore, troubled staff might feel more comfortable confiding in a clinician than a purely managerially-trained administrator. In addition, physician executives themselves are not immune from substance use or other ailments.

Physician executives must struggle with conflicting ethical codes.[15] When a doctor takes the Hippocratic oath, patients' needs become paramount. When she takes a position as an executive, she must balance patients' needs against the needs of preserving the organization. Dilemmas may arise in a for-profit enterprise. This problem may cause conflicts of interest. As an executive, one must help the organization to stay afloat in a highly competitive economy. This often requires cost-containment or cost-reduction measures which go against the grain for many physicians, long frustrated by these same factors' impingement upon their practices. Doctors' ethical codes and the reality of a litigious malpractice environment require that clinicians provide the best possible care to their patients. To balance the demands and expectations of a board of directors against the demands of the medical staff, the executive must be a successful negotiator with strong mediating and consensus-building skills.

Balancing Clinical Care and Organizational Leadership

Three of Rhode Island's doctor-CEOs see patients part-time. Many physician executives find that clinical practice keeps them visible and accessible, provides professional gratification, and helps them to maintain their identity as physicians. Clinical work can also provide valuable information about the state of the organization, as well as strengthening ties with practicing physicians and other staff members. Ultimately, the decision whether or not to continue seeing patients part-time rests with the physician executive and should be made with patients' best interests at heart. By keeping the patients' interests in mind, physician executives also further the interests of the organization; a healthcare organization cannot succeed if its management team is not committed to providing high-quality care or is unaware of what constitutes high-quality care. Continuing clinical practice gives some physician executives a fresh perspective on ways to improve patient care services.

What Qualities Make An Ideal Physician Executive?

The ideal physician executives possess many of the qualities described by Isaac Ray. They must have a high degree of credibility; that is, they must have an excellent clinical reputation to earn the respect of employees. They must have

the trust of other physicians,[16] and they must have exceptional interpersonal communications skills. In a series of surveys, the Physician Executive Management Center found that physician CEOs reported interpersonal communication as the single most important skill enabling them to succceed in upper-level management.[17] A non-judgmental communication style, with an emphasis on questioning and listening,,[18] is the hallmark of a successful physician executive. Charisma and public image are less important than persistence and hard work; leaders do not have to be visible in order to be effective.[19] We find echoes of Dr. Ray's theories in Jim Collins' influential study, *Good to Great: Why Some Companies Make the Leap…and Others Don't.*[20] With data that surprised many management theorists, Collins and his research team found that exceptional leaders – those CEOs who catalyzed remarkable growth in their organizations – were not the charismatic, highly visible personalities so often found in upper-level management, but rather, low-profile executives who approached their jobs with a remarkable personal humility and an unwavering drive to do whatever was necessary to ensure their companies' success.

Management training may be helpful, but management experts agree that training and advanced education credits alone cannot transform a physician into a leader.[7] Far more important are experience in management positions and non-teachable skills, such as creativity and problem-solving ability. Some physician executives have training and experience specifically applicable to their administrative positions. Psychiatrist executives, for example, may draw upon their training in non-verbal communication, group dynamics, and motivation.[21]

Quality Improvement: The Role of the Physician Executive

Some commentators predict that physician executives' numbers will grow rapidly, driven in part by the need to reduce medical errors. In 2000, the Institute of Medicine estimated that 44,000 to 98,000 Americans die from medical errors each year.[22] Following this shocking report, healthcare executives have been struggling to improve medical care and restore the public's faith in the medical community. The push toward **quality improvement** (**QI**) is placing a greater emphasis upon the reduction of medical errors and improvements in the quality-of-care arena.[23] Medical malpractice insurance premiums remain high, and plaintiffs' malpractice verdicts cost hospitals and healthcare organizations millions of dollars. QI initiatives call for strong leadership,[19] and some healthcare organizations' boards recognize that physicians' expertise may be beneficial at the executive level to help formulate realistic goals for the safety of patients and the protection of the organization's assets. Furthermore, the QI movement is reducing physician autonomy,[24] as demonstrated by standardized treatment protocols and evidence-based medicine; this heightens the need for management that will not further alienate physicians.

Physician Executives and Healthcare Technology

Although healthcare has lagged behind other fields in the adoption and integration of new technology, remaining in the unwired dark is no longer an option for an organization. Herbert Pardes, MD, the psychiatrist/President/CEO of the New York-Presbyterian Healthcare System, the largest academic nonprofit hospital system in the country,[25] is an outspoken advocate of integrating healthcare technology. "[B]etter integration allows systems to communicate and prevent errors, protecting patient health," Pardes explains.[26] The introduction of electronic health records, **computerized physician order-entry** (**CPOE**) systems, patients' desire for e-mail communication, and web-based messaging are reshaping the face of modern medicine.[27] Historically, some doctors have resisted this technological change. Often "straddling the digital divide"[27] between Luddite doctors and technophile administrators, physician executives like Pardes can smooth the transition to a more digital healthcare system by helping administrators to understand physicians' concerns, by helping physicians to appreciate the needs of the board, and by helping to mold the technology to serve clinical practice.

Leadership For the Future

Within the next century, healthcare will see numerous advances and corresponding ethical dilemmas associated with the cost of care and developing technology. Tension and strife between physicians and managed care are likely to increase as more expensive treatments become available. In the push toward medical error reduction and quality improvement, healthcare organizations will seek the most advanced technology to reduce the margin of error, thereby increasing patient safety and decreasing the risk of lawsuits, loss of accreditation, and other adverse outcomes for the organization and its staff. Sound risk management in healthcare requires not only financial management of an organization's assets but also the ongoing and continuous evaluation of the quality of care within the organization. Physician executives' medical training and experience offer them an advantage over non-medically trained managers in recognizing and understanding quality-of-care concerns.

Because hospitals' and healthcare organizations' primary purpose is to provide medical treatment to patients, an organization's success in the market depends upon providing the best possible care that is financially feasible. A hospital may boost profits by aggressive cost-cutting, but it may thereby risk malpractice suits, as well as lower profits, due to falling ratings and loss of accreditation. The reputation and leadership of a healthcare organization are paramount in determining its success. Poor management can precipitate the loss of valued medical staff, an employee strike, staff refusal to cooperate with board demands, and inaction. The ideal physician executive understands s/he must integrate his or her medical training, interpersonal communication and listening skills, and a willingness to learn from past mistakes. As with the good superintendent and the good director in Dr. Ray's paper, the good physician executive sees the position not as a means to personal success or prestige, but as an opportunity to faithfully and respectfully serve the interests of humanity. Considering the unique perspective that physicians bring to leadership, healthcare organizations should have at least one physician as part of the executive management team.

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Overtraining In Young Athletes

Erin Teeple, MD, Robert M. Shalvoy, MD, and Edward R. Feller, MD, FACP

The importance of progressive training has been recognized since antiquity. Milo of Croton, a Greek Olympic wrestling champion, supposedly attained his strength by carrying a calf around its yard daily until it grew to adulthood.[1] To achieve performance gains, training schedules balance challenging workouts and short-term fatigue with adequate rest to enable adaptation. When exercise intensity and volume are increased too rapidly and recovery is persistently inadequate, athletes are at risk of developing **overtraining syndrome** (**OTS**), defined as fatigue and suboptimal athletic performance persisting for more than two weeks despite complete rest. Associated findings include altered mood, increased risk of infection, and alterations in several biochemical and immunologic markers.[2,3] Our review discusses the clinical spectrum, predisposing risk factors, detection, and prevention of OTS in pediatric and young adult athletes.

Diagnosis and Treatment

OTS is a diagnosis of exclusion. The non-medical conditions to be investigated first are insufficient sleep and overreaching, a short-term training overload with symptoms similar to OTS that resolve after 48-72 hours of rest. In children and adolescents, the common medical conditions to be ruled out are chronic infection, nutritional deficiencies, anemia, asthma, diabetes, thyroid dysfunction, malignancy, and psychiatric problems including depression and eating disorders.[6]

No diagnostic test exists for OTS, but some researchers estimate that almost all professional athletes have experienced this problem at least once in their careers.[7] Studies of OTS are limited by short follow-up times, small sample sizes, and questions of generalizability to different sports, settings, and levels of fitness. In younger athletes, analogous studies are absolutely limited by ethical considerations. Thus, for a given high school or college sports team, the incidence and prevalence of the problem are unknown.

Muscle fatigue alone does not account for the clinical findings in OTS. Appropriate hormonal modulation is essential to adaptation in training. In a study of male triathletes, overtrained athletes demonstrated an elevated cortisol/cortisone ratio, possibly indicating a failure to inactivate increased cortisol levels following exercise.[8] Persistently elevated cortisol may contribute to OTS by inhibiting cellular recovery pathways. Complementing this theory, exercise stimulates the release of cytokines such as IL-6, which have peripheral metabolic effects inhibiting healing, as well as central receptors in the hypothalamus, potentially contributing to the mood and motivational disturbances seen in OTS. Leptin and IGF-1, hormones with roles in signaling energy balance and regulating cell growth and repair, are also believed to be disregulated in athletes with OTS. OTS likely represents a combination of muscle fatigue and metabolic alterations opposing repair and adaptation to physical stress.[2,7,8,14]

OTS is a diagnosis of exclusion.

Biochemical findings in OTS include decreased hemoglobin, serum iron, and ferritin; negative nitrogen balance; increased blood urea; increased uric acid production; decreased glutamine production; low free testosterone; decreased free testosterone to cortisol ratio of more than 30%; and depletion of minerals Zn, Co, Al, Mn, Se, Cu, and other micronutrients. Attempts to use these alterations for prediction or diagnosis have not proved useful, however, due to inter-athlete variations. Immune system abnormalities include increased susceptibility to and severity of bacterial and viral infections as well as decreased functional neutrophil activity, total lymphocyte counts, and production of immunoglobulins. Another frequent finding in OTS is increased or decreased resting heart rate.[2,3,15]

Several signs and symptoms are helpful for clinical identification of the OTS in an underperforming athlete; e.g., severe fatigue, muscle soreness, changes in appetite, menstrual irregularities, disturbed sleep, depressed mood, irritability, frequent illness, and difficulty concentrating or decreased motivation.[11] Complete rest for 6-12 weeks followed by a gradual return to activity is the accepted treatment for OTS.[4] Modified training programs are not recommended. Athletes who train with OTS risk further performance decline, illness, and overuse injuries.

Susceptible Athletes

Training practices that increase the risk of developing OTS include inadequate rest; poor nutrition; sudden increases in training greater than 5-10% per week; heavy or monotonous training; single-sport participation, especially at a young age; excessive training after recovery from an injury; and intensive interval training. Not surprisingly, OTS has been observed to occur more frequently among athletes in endurance sports such as swimming, cycling, running, and rowing.[12,13] Increased risk also exists in sports with measurable time or other performance goals. Academic and social stresses may heighten susceptibility. Some psy-

Figure 1. Training Survey for Office Use

	Poor	Fair	Good	Excellent
Performance level in training:				
Performance level in competition:				
Mood:				
Appetite:				
Sleep quality:				
Sleep Amount (hours/night):				
Recent injury (yes/no):				

Figure 2. Sample Daily Training Log Entry

Activity Level				
Duration	<30 min	30-60 min	1-2 hours	>2 hours
Intensity	Low	Intermediate	High	
Fatigue and Muscle Soreness				
	1 (None)	2	3	4 (Severe)
Before exercise				
After exercise				
General				
	Poor	Fair	Good	Excellent
Mood				
Motivation				
Appetite				
Sleep				
Diet				
Breakast	Lunch	Dinner	Snacks	Fluids

chosocial factors that increase risk are external pressure to perform, perfectionistic compulsive personality traits, and inadequate or incorrect information or coaching.[3,4,12]

Many of the same training practices that increase the risk of OTS also increase the risk of overuse injury. Overuse injury and OTS both result from imbalances in training stresses and recovery. The difference between the two is that an overuse injury is a focal musculoskeletal injury, while overtraining is a global syndrome of decreased strength, stamina, speed, or other performance measure. Because an overuse injury can cause impairment, it is important for primary care physicians, parents, coaches, and trainers to be aware of the features of the common overuse injuries when evaluating an athlete with suspected OTS.

The lack of validated, authoritative guidelines for developing and following a safe training program is the most significant, modifiable risk factor in the development of OTS in young athletes. Adolescents, influenced by role models, frequently try to follow the published schedules of professional, elite athletes. At times, well-intentioned but inexpert parents and coaches provide those training programs. Time and energy-intensive activities such as sports teach dedication to young athletes, but the lessons of sports should also include guidance on the value of moderation in protecting health and preventing injury.

Prevention

For clinicians, two tools may assist in the detection and prevention of OTS in young patients.

A simple survey can quickly assess training behavior and risk during the office visit. (Figure 1) In the survey suggested here, answers on the "Poor" side of the scale and reports of recent or frequent injury suggest that the patient may be at risk for OTS.

With a training log, athletes compile more specific information. (Figure 2) This log can be reviewed as part of the next office visit. Logs should include notes on mood, diet, and sleeping patterns, as well. Dietary intake is a vital component. Insufficient caloric intake, under-hydration, and diets low in iron or protein may cause or exacerbate performance decline and mood changes. Keeping a training log encourages young athletes to identify issues in their own workout practices. The athlete may also choose to share this information with his or her coach. If OTS develops, athletes must know that only full rest for six weeks or more will resolve the problem.

Another important element in preventing OTS is educating athletes and coaches about the principles of safe training. Interventions that reduce the risk of overtraining include using personalized training schedules to accommodate individual thresholds for injury or overtraining; varying workout type to avoid repetitive loading and monotony; setting reasonable goals; encouraging healthy diets and keeping a food record to identify nutritional and hydration deficiencies; and requiring athletes to keep a training log. In addition, the pre-participation sports physical is an excellent annual opportunity for doctors to discuss safe training practices.

Conclusion

The benefits of sports participation for young people include improved fitness, increased self-esteem, quality of life, and the development of personal and team skills. OTS is a concern not only for its effects on sports performance, but also because of its association with mood and behavior changes. Excessive training is physically and emotionally draining and interferes with the inclusion of exercise as a needed component of a healthy life. The risk factors, clinical spectrum, and prevention of overtraining in young athletes should be subjects of interest to health care providers, parents, coaches, and teachers.

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Retirement Choices

Melvin Hershkowitz, MD

When in 1991 I told my friends and family that I was going to retire to Providence, after forty-one years of practice in New York City, New Jersey and Washington, DC, their universal response was one of surprise and doubt, epitomized by the query: Melvin, what in the world are you going to do in Providence after living in New York City and Washington, DC ?? I was vigorous and healthy at age 68, and I wanted to pursue my interests in medical education and contacts with medical students. My wife, Leslie, had worked in the Brown University administration for 17 years before moving to Washington, DC, where we met and married. Upon our arrival in Providence, she introduced me to the former Dean of Brown Medical School, Dr. David Greer, who referred me to Dr. Steve Smith. He and I discussed my desire to volunteer my unpaid services to the Brown Medical School. Dean Smith referred me to Dr. Lynn Epstein, Dr. Tom Parrino, and Dr. Rochelle Strenger. After further discussions, I began to teach in the Introduction To Clinical Diagnosis Course at Brown Medical School in 1993, eventually retiring, after 12 years of that enjoyable experience, in May 2004. Although I did not seek it, Brown Medical School, through the generous stimulus of Dr. Charles Carpenter, in 1995 offered me a Faculty appointment as Clinical Assistant Professor of Medicine, which I gratefully accepted. From 1993 through 2004, I spent Thursday afternoons during the academic year at Rhode Island Hospital and the Miriam Hospital, giving occasional lectures and conducting bedside sessions as a Preceptor for Brown students. I derived tremendous pleasure from this experience and have kept in touch with several former students. I now consider some of them my colleagues and friends.

In 1997 I volunteered to become a Faculty Mentor for one of the Affinity Group programs in the Brown Medical School. With my co-mentor, Dr. Carol Wheeler, we supervised detailed discussions of the Doctor-Patient relationship, culminating, after 4 years, in the final project in 2001, a combined display of direct patient quotations and illustrative art works, which was mounted in one of the hallways in the Bio-Medical building and remains on display there at the time of this writing. Dr. Wheeler and I "graduated" from our Affinity Group at a ceremony in the Brown Faculty Club in 2001. I have kept in touch with several of my AG students since their graduation from medical school.

After arriving in Providence, I joined the Rhode Island Medical Society and had a talk with the Executive Director, Dr. Newell Warde. I expressed interest in serving on the Physicians' Health Committee. I had served on a similar Committee for six years in Washington, DC, and knew that this was vital and important work. After talking with Dr. Rakatansky, Committee Founder & Chairman, I was accepted as a member of the Committee and have continued to serve as an active member during the past decade, participating in several interventions with impaired colleagues, with good results for both patients and physicians. I have also volunteered for several years as a Speaker for the Medical Society's Annual Tar Wars Anti-Smoking program and have given anti-smoking talks to fifth grade students at St. Patrick's School and other schools in Providence. I intend to continue these RI Medical Society activities.

While teaching in the Introduction To Clinical Diagnosis course at Rhode Island Hospital, I became friendly with Dr. James Crowley, then Chief of Hematology there. He. and I had several discussions about political and financial problems in Providence, during which I learned that he was about to retire from his *Pro Bono* position as a Public Member of the Providence Pension Retirement Board. I expressed interest in succeeding him and submitted my CV to the Providence City Solicitor and the Providence City Council. After due deliberation, I was elected to succeed Dr. Crowley as a Public Member of the Board in 1997. After six years of arduous and often contentious service on this Board, I retired in 2003. Mayor David Cicilline graciously recognized my years of service with a luncheon in City Hall, attended by several of my friends and colleagues, including Dr. Crowley.

In 1995, after three years of residence in the Regency Plaza Apartment complex, I formed the Regency Plaza Residents' Council, to hold monthly meetings with Management. In these informal meetings, we discussed common concerns of residents and Management, After nine years as President of the Council, I retired in 2004 and was both surprised and delighted to receive as a farewell gift from both residents and Management a handsome engraved table clock.

Living adjacent to the Main Branch of the Providence Public Library, it was easy for me to use its facilities for reference, research, music, films and newspapers. The importance of this Library to the education of thousands of young Rhode Island students was immediately apparent to me. In 1999, my wife and I made a substantial unrestricted gift to the Library, and I subsequently served as Chairman of the Community Campaign for the Library's fund-raising efforts to repair and enlarge its branches. This effort helped in the establishment of new and improved facilities at the South Providence and the Rochambeau Branches, to the great benefit of both those communities.

Having been active for many years in the alumni affairs of my undergraduate alma mater, Columbia University, in 2002 I was elected as Class President at the 60th Reunion of my Class of 1942, and continue in that office, as well as Editor of our Class of 1942 Quarterly Newsletter. At my medical school alma mater, New York University School of Medicine, I serve as a Director of the Medical Library Committee, and with my Class of 1945 classmate, Dr. Stanley Slater, was the co-founder of the Class of 1945 Oral History

Project, part of the school's effort to record and preserve its remote and recent past.

My wife and I pursue our interests in theatre, film, music, and sports. We have been subscribers to Brown University Theatre and Trinity Repertory, and have attended performances at both Perishable and Gamm Theaters. We are season ticket holders for Brown football games, and frequently attend Brown basketball games. I root for Brown, except when they play against Columbia.

I try to read three newspapers every day: *The Providence Journal*, *The Wall Street Journa*l, and the *New York Times*. My bedtime reading includes current medical journals and one non-medical book of history or fiction.

This summarizes my reply to friends and family, who in 1992 asked me what in the world I would do in Providence.

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Information for Contributors

Medicine & Health/Rhode Island

Medicine & Health/Rhode Island is a peer-reviewed publication, listed in the *Index Medicus*. We welcome submissions in the following categories.

Contributions

Contributions report on an issue of interest to clinicians in Rhode Island: new research, treatment options, collaborative interventions, review of controversies. Maximum length: 2500 words. Maximum number of references: 15. Tables, charts and figures should be camera-ready. Photographs should be black and white. Slides are not accepted.

Creative Clinician

Clinicians are invited to describe cases that defy textbook analysis. Maximum length: 1200 words. Maximum number of references: 6. Photographs, charts and figures may accompany the case.

Point of View

Readers share their perspective on any issue facing clinicians (e.g., ethics, health care policy, relationships with patients). Maximum length: 1200 words.

Advances in Pharmacology

Authors discuss new treatments. Maximum length: 1200 words.

Advances in Laboratory Medicine

Authors discuss a new laboratory technique. Maximum length: 1200 words.

Medical Myths

Authors present an iconoclastic, research-based analysis of long-held tenets. Maximum length: 1200 words.

For the above articles: Please submit 4 hard copies and an electronic version (Microsoft Word or Text) with the author's name, mailing address, phone, fax, e-mail address, and clinical and/or academic positions to the managing editor, Joan Retsinas, PhD, 344 Taber Avenue, Providence, RI 02906. phone: (401) 272-0422; fax: (401) 272-4946; e-mail: retsinas@verizon.net

Images in Medicine

We encourage submissions from all medical disciplines. Image(s) should capture the essence of how a diagnosis is established, and include a brief discussion of the disease process. Maximum length: 250 words. The submission should include one reference. Please submit the manuscript and one or two cropped black and white 5 by 7 inch prints with the author's name, degree, institution and e-mail address to: John Pezzullo, MD, Department of Radiology, Rhode Island Hospital, 593 Eddy St., Providence, RI 02903. Please send an electronic version of the text to: JPezzullo@lifespan.org.

The Childhood Obesity Epidemic:
Key Eating and Activity Behaviors To Address In Treatment

Hollie Raynor, PhD, RD, and Deborah Maier, MS, RD

According to the National Health and Nutrition Examination Surveys (NHANES), over the previous three decades, the prevalence of overweight (defined as ≥ 95th percentile **body mass index [BMI]**) in 2- to 5-year-old children has doubled, while the prevalence of overweight in 6- to 11-year-old children has tripled.[1]

Pediatric obesity increases the risk of type 2 diabetes, hypercholesterolemia, hypertension,[2] and psychosocial disorders[3] during childhood. Additionally, childhood obesity is associated with several risk factors for heart disease and other chronic diseases in adulthood.[4] Pediatric obesity increases the likelihood of being overweight as an adult.[5]

Fundamentally, obesity is the result of an imbalance: energy intake is greater than energy expenditure. Epidemiological research has identified several eating and activity behaviors that appear to contribute to an energy imbalance in children: increased intake of fast food, sweet and salty snack foods, and sweetened drinks; decreased intake of low-fat dairy and/or calcium and fruits/vegetables; greater levels of television viewing; and decreased physical activity. (Table 1)

The American Diabetes Association and the National Institutes of Health have funded the Weight Control and Diabetes Research Center, at Brown Medical School/The Miriam Hospital, to conduct two pediatric obesity interventions, designed for children aged 4 to 8 years who are overweight or at risk of being overweight (≥ 85th percentile BMI). Child HELP (**H**ealthy **E**ating and **L**ifestyle **P**rogram) and Kids CAN (**C**hanging **A**ctivity and **N**utrition) will test the effectiveness of targeting a few problematic eating and activity behaviors for reducing overweight in young children. These research programs will provide six months of treatment to eligible families at no cost. The child's pediatrician must refer the family, and the programs will update the pediatrician on the child's growth, eating and activity behaviors over the course of twelve months follow-up. Pediatricians who want more information about the programs, or who would like to refer patients, should contact the Project Coordinator, Debbie Maier, MS, RD, at (401) 793-8965.

This paper briefly reviews recent epidemiological research on the eating and activity behaviors that appear to negatively affect weight status in young children.

Etiology—Environment: Diet

Fast Food

Consumption of fast food in children aged 4 to 19 years has risen to 10% of total energy intake.[6] The large portions, elevated energy density, and increased palatability may lead to increased consumption and energy intake, producing excessive weight gain. One-day, 24-hour dietary recalls from the 1994, 1996 **Continuing Survey of Food Intakes by Individuals (CSFII)** showed that children who reported eating fast food consumed more total energy, fat, and carbohydrate; a greater amount of added sugars; and more sweetened drinks than children who did not report eating fast food. While studies with adults document a positive relationship between fast food intake and weight status,[7] no studies have investigated this relationship in children.

Sweet and Salty Snack Foods

Sweet and salty snacks, foods that are low in nutrient density and high in energy density, account for 20-30% of daily calories in children aged 8 to 18 years.[8] These foods may work through similar mechanisms as fast food to increase overall energy intake. A diet high in snack foods is also associated with poor diet quality. Frary and colleagues[9] reported that children and adolescents whose diets contained the greatest amount of sugars, sweets, and sweetened grains were less likely to meet dietary recommendations;[10] these youth consumed fewer servings of fruits, vegetables, and dairy products, than youth with diets containing the least amount of sugars, sweets, and sweetened grain.[9] Research on the relationship between snack foods and weight status has been mixed.[11,12] Cross-sectionally, consumption of sweet, but not salty, snack foods has been positively related to overweight status in children,[11] but longitudinal studies have not found a relationship between snack food intake and weight status in children.[12]

Sweetened Drinks

Over the past three decades the percentage of children aged 6 to 17 years who consumed soft drinks increased from 37% to 56%; mean daily intake of these drinks more than doubled in children.[13] It is hypothesized that excessive soft/sweetened drink consumption may contribute to increased energy intake due to poor compensation to carbohydrate ingested in a liquid form.[14] Thus, when a child drinks a sweetened drink with a meal, the amount of energy consumed from solid food does not decrease in response to the extra energy consumed from the drink. Instead, energy consumed from solid food remains consistent, thus extra energy is consumed due to the energy from the sweetened drink.[14] The increased energy intake from soft/sweetened drinks appears to influence weight status longitudinally; Ludwig et al[15] found that in school-aged children, the odds of becoming obese was 1.6 times greater for each additional daily serving of a sugar-sweetened drink consumed.

Low-fat Dairy

While sweetened drink consumption is on the rise, low-fat milk intake has decreased.[16] Sweetened drinks displace milk from the diet; Harnack et al.[17] found that school-aged children who consumed more than 9 oz of soda per day were almost three times more likely to consume less than a serving of milk per day. Milk contributes about 60% of calcium for children aged 2 to 19 years.[18] Current recommendations for calcium are 800 mg/day for children four to eight years of age (2 servings of low-fat dairy per day), and 1,300 mg/day for children and adolescents 9 to 18 years of age (3 servings of low-fat dairy per day).[10] Recent epide-

Table 1.
Problematic Eating and Activity Behaviors in Children Contributing to the Development of Overweight

Behavior	Mechanism of Influencing Energy Balance	Outcomes[a]
Eating Behaviors		
High Intake		
Fast Food	Increased energy intake via: - portion size - energy density - palatability	Poor diet quality Weight gain (?)[b]
Snack Foods	Increased energy intake via: - portion size - energy density - palatability	Poor diet quality Weight gain (?)[b]
Sweetened drinks	Increased energy intake due to poor compensation for energy ingested in liquid form	Poor diet quality Weight gain
Low Intake		
Low-Fat Dairy	Elevated calcitrophic hormones, which negatively affect adipocyte metabolism (?)[c]	Poor diet quality Weight gain (?)[b]
Fruits/Vegetables	Increased energy intake due to to poor satiating quality of the diet	Poor diet quality Weight gain (?)[b]
Activity Behaviors		
TV Viewing	Increased energy intake due to TV cueing eating Decreased energy expenditure due to TV viewing competing with time for being physically active	Weight gain
Physical Inactivity	Decreased energy expenditure	Weight gain

Notes.
[a]Based upon epidemiological studies. [b]Outcomes have not yet been investigated or studies have provided mixed results. [c]Theorized mechanism.

miologic and experimental studies suggest that low-fat dairy products and/or calcium intake may have favorable effects on body weight in children and adults.[19] Thus, a diet that is deficient in calcium and/or below the recommended servings for low-fat dairy may contribute to increased body weight in children. While the mechanism for the relationship between low-fat dairy intake and weight status is not clear, it is theorized that high calcium diets suppress calcitrophic hormones, which reduces lipogenesis and increases lipolysis.[20]

Fruits and Vegetables

Recommendations are 2 cups of fruit and 2.5 cups of vegetables per day.[10] Only 17% and 28% of the population age two and older meet these two recommendations, respectively.[21] Besides being a source of vitamins and minerals, fruits and vegetables are low in energy density due to their high fiber and water and low fat content. Foods that are low in energy density allow for a greater volume of food to be consumed for a smaller amount of calories. This improves the satiating quality of the diet. While longitudinal studies have not found any relationship between fruit and vegetable intake and weight status in children, the 1994 CSFII showed that overweight children consumed significantly fewer servings of fruits (1.2 vs. 1.5) and vegetables (2.4 vs. 2.7) per day than their healthy-weight counterparts.[22]

Etiology—Environment: Activity

TV Viewing

Leisure time for children has become sedentary: 61% of children aged 8 to 16 watch more than 2 hours of TV per day ($\leq$ 2 hours of TV per day is the recommendation from the American Academy of Pediatrics[23]). TV viewing may affect both sides of the energy balance equation. TV watching may increase energy intake through eating cued from commercials. Also, watching TV competes with physical activity. In children, cross-sectional and longitudinal studies have reported that TV watching is positively related to weight status.[24,25]

Physical Activity

Among children and adolescents, lower levels of physical activity are associated with being overweight.[26] Increasing physical activity is a standard component of weight loss programs for all ages, and

the current recommendation for children is 60 minutes of moderate-intense physical activity per day, or most days.[10] However, children are less active now than in previous years, [26] which is a consequence of many factors (e.g., fewer children walk to school, fewer schools offer intensive physical education programs). Moreover, as more leisure time is spent being sedentary, physical activity has decreased. Consequently, low-levels of physical activity have been identified as contributing to childhood obesity.

Table 2.
Eating and Activity Behaviors Occurring in at Risk for Overweight and Overweight 2- to 12-year-old Children in Rhode Island (M ± SD)

	Preschool (2 to 5.9 years)	School-aged (6 to 12 years)
N	19	41
M/F	9/10	18/23
Fruits (servings/day)	2.1 ± 0.1	1.9 ± 0.2
Vegetables (servings/day)	1.4 ± 0.1	1.4 ± 0.1
Low-fat dairy (servings/day)	2.3 ± 0.5	1.5 ± 0.3
Sweetened drinks (servings/day)	1.4 ± 1.8	2.5 ± 2.8
Consume fast food ≥ once per week (%)	73.7	87.8
Consume sweet/salty snack foods ≥ daily (%)	21.1	31.7
Did activity that caused sweating and hard breathing < 5 days per week (%)	47.4	46.3
Hours of TV watched on week day	2.4 ± 1.4	2.6 ± 1.7
Hours of TV watched on weekend day	2.7 ± 1.8	3.0 ± 1.5
TV in child bedroom (%)	42.1	48.8

Note. M = male; F = female; No significant differences between age groups were found.

Children in Rhode Island

To assess these eating and activity behaviors in Rhode Island, Raynor et al[27] collected surveys in pediatricians' offices from 185 parents of children aged 2- to 12-years while they waited for their child's appointment. Child's height and weight were collected from medical records. Of the 185 children, 32% (n= 60) were ≥ 85th percentile BMI, and children who were ≥ 85th percentile BMI had mothers who had significantly greater BMIs (p = .05) than children < 85th percentile BMI (28.3 ± 6.3 vs. 26.0 ± 5.2). For children with a BMI ≥ 85th percentile, mean intake of daily servings of fruits and vegetables was 1.9 ± 0.3 and 1.4 ± 0.1, respectively, mean intake of low-fat dairy was 1.8 ± 0.4 servings/day, and mean intake of sweetened drinks was 2.1 ± 2.6 servings/day. Eighty-three percent of the children with a BMI ≥ 85th percentile consumed fast food at least once/week, while 28% consumed sweet and salty snack foods daily. Fifty-three percent of children with a BMI ≥ the 85th percentile did activity that made them sweat and breath hard less than 5 days per week, and mean hours of TV watched on week- and weekend-days was 2.5 ± 1.6 and 2.9 ± 1.6, respectively. Table 2 shows dietary intake, and amount of physical activity and TV watching for children ≥ 85th percentile BMI by age (preschool vs. school-aged). These data suggest that most overweight and at risk of overweight children between the ages of 2- to 12-years in Rhode Island fail to meet dietary or activity recommendations.

The Role of Pediatricians in the Childhood Obesity Epidemic

The **Maternal and Child Health Bureau (MCHB)**[28] has developed recommendations for treatment in a primary care setting . (Table 3) The first recommendation is to begin treatment in children as young as three years of age: pediatricians need to identify children who are at risk of overweight and overweight at a young age. A child's BMI should be calculated, followed by the child's BMI percentile. BMI percentile needs to be determined to assess for risk status; visual determination of overweight in children is often inaccurate: in children under the age of five, fewer than 10% of children at the 95th percentile BMI were visually identified as being overweight by their primary health care provider. For children aged five to eleven years, only 21% of those at the 95th percentile BMI were identified as being overweight. Additionally, if BMI percentile is assessed at a young age and tracked over time, objective information can be used to determine if a child is "growing out" of being at risk of overweight or overweight status.

Once a child has been assessed as being overweight and the family is ready to address this problem, other MCHB recommendations are to apply a family-based treatment model, use behavior modification techniques, and help families make small changes (i.e., changing two to three behaviors at a time).[28] Child HELP and Kids CAN meet all the MCHB guidelines. The Child HELP and Kids CAN intervention team, composed of psychologists, dietitians, and exercise specialists, provides family-based treatment to young children who are at risk of overweight and overweight. These programs emphasize the development of a healthy lifestyle, using positive parenting approaches, to improve weight status.

Table 3.
Maternal and Child Health Bureau Recommendations for Treatment in a Primary Care Setting

1. Start treatment in children as young as 3 years of age
2. Apply a family-based model in treatment
3. Use behavior modification techniques
4. Help families make small changes
5. Target changing two or three eating and activity behavior at a time

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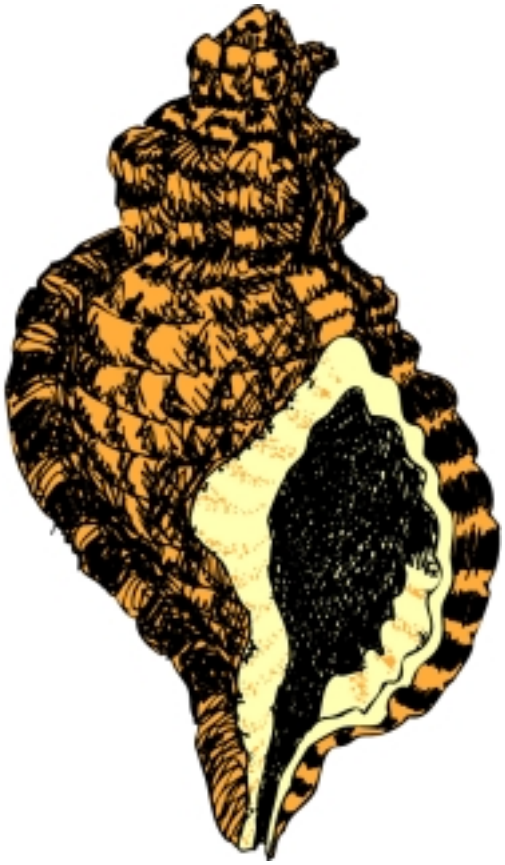

The Nantucket Native American Sickness of 1763-1764

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In 1763-1764, an epidemic ravaged the Native American population of Nantucket, an island 40 kilometers off the Atlantic coast of Massachusetts. Of 358 Native American residents of the island, 258 were afflicted with "… an uncommon mortal distemper" resulting in 222 deaths.[1] Despite contact between the European and Native American inhabitants on an island of 39 square miles, no person died "but such as were entirely of Indian blood.".

In the 1760s Nantucket was a prosperous trading and whaling center with ships sailing to and from the Caribbean, Nova Scotia, and West Africa. Between voyages, hundreds of sailors lodged in small rooming houses and inns in the Nantucket town of Sherburne. Nantucket Indian Sickness, as it had been called, decimated the Native population which had increasingly left isolated farming villages to participate in the commercial industries of the Island. In 1659, about 3,000 Native Americans lived on the island. By 1792, the census had dropped to 20.[2] Before 1763, a gradual decline in the Native population had occurred, due to sporadic illness, including tuberculosis, pneumonia, and diarrheal diseases. This report documents features of the outbreak, presumed to be contagious, and assesses accounts of this virulent event.

Re-discovery and Origin of the Outbreak

In 1973, Edouard Stackpole, a Nantucket historian, while studying records at the Royal Society in London, encountered an October, 1764, letter from the Massachusetts Bay Colony Governor, Andrew Oliver, to Israel Maudit, the Colony's agent in London. Oliver wrote, "At the beginning of August, 1763, when the sickness began, the whole number of Indians belonging there [Nantucket] was 358; of these, 258 had the distemper betwixt that time and the 20th of February following, only 36 recovered."[1] Governor Oliver's account provided additional details about those Native Americans who did not contract the illness: "Of the 100 who escaped the distemper, 34 were conversant with the sick, 8 dwelt separately,18 were at sea, and 40 lived in English families." (Figure 1)

The source of this contagion was said to be an Irish brig moored off the northwestern coast of the island in the summer of 1763 . The bodies of two women "were found in the surf who died on the vessel and were thrown into the sea."[3] Nantucket selectmen quarantined the ship; however, a dying sailor had already landed and was cared for at the southeastern edge of the town of Sherburne, at a rooming house "whither Indians frequently resorted."[4] There, at an inn belonging to Joseph and Molly Quin on Pleasant St, just south of what is now Atlantic Avenue, an Indian woman, Mary Norquarta, became ill "after washing the clothes of sick sailors."[5] Initially, she complained of headache, had spiking fever and jaundice, forcing her return to Miacomet, the local Indian village . Within 3 days, her illness progressed to coma and death. In the ensuing days, similar symptoms appeared in family members, then spread to Native Americans in adjacent homes.

Epidemiologic Observations

A distinctive feature of this episode was its ethnic selectivity. Records indicate that only Native Americans became ill [see exception, Molly Quin, below] and died, despite evidence that some Europeans had direct contact with the Native population. Support for the selective nature of the epidemic was provided by the notes of Moses Brown., a Providence merchant with business interests in Nantucket. In 1797, Brown undertook a retrospective investigation of this outbreak; he was motivated, in part, by his scholarly interest in epidemic diseases. Brown was also concerned about the geographic origins of the illness and the need to quarantine vessels arriving from the Caribbean. He corresponded with Nantucket residents who had lived through the outbreak. In a 1797 letter to Brown , Christopher Starbuck noted Zaccheus Macy's comment " …that it should not spread among white people may serve to show us… that the works of

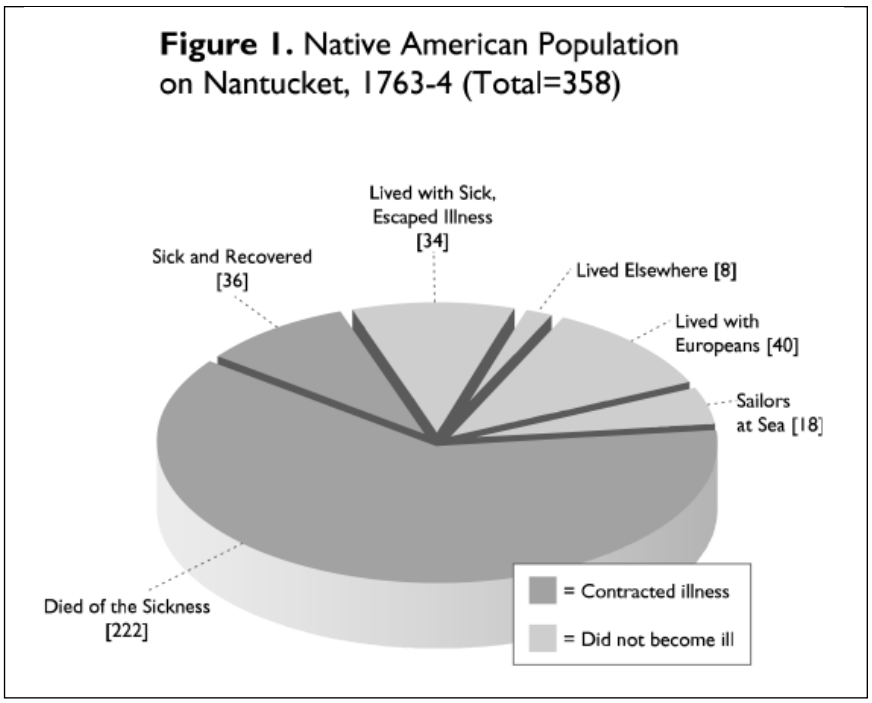

Figure 1. Native American population on Nantucket Island, 1763-1764 (Total=358).

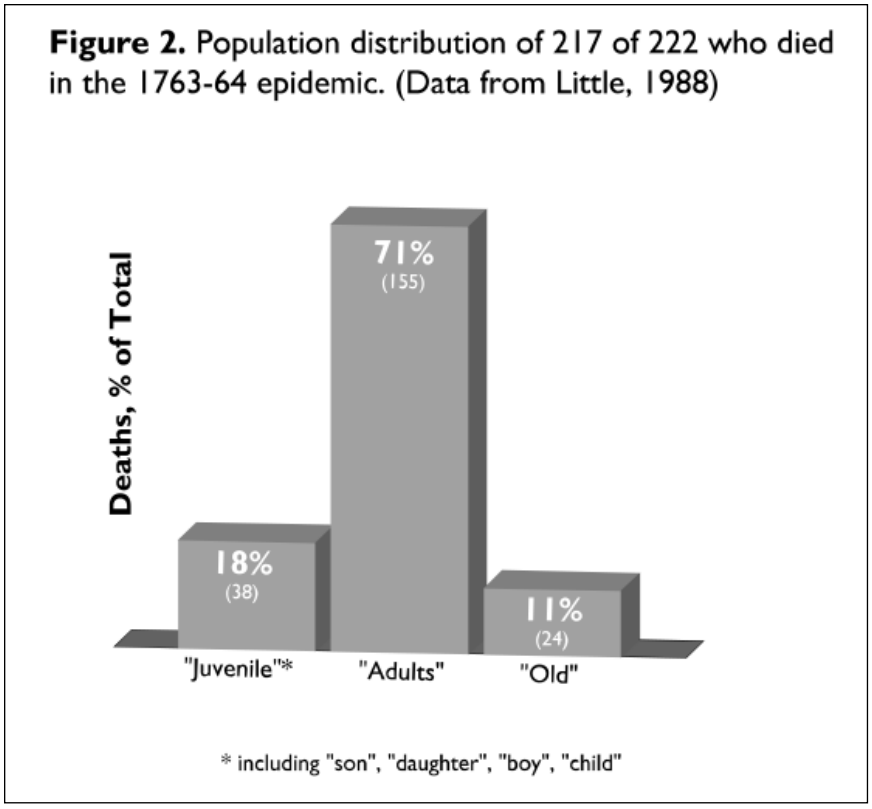

Figure 2. Population distribution of those who died in the 1763-1764 epidemic (data from Little, 1988).

the Almighty are beyond our comprehension."[3] Indeed, a few Europeans reportedly aided the sick without contracting the disease. The journal of Zaccheus Macy, the island bonesetter and local historian, confirmed that the European islanders recognized quickly that this strange malady afflicted Native Americans only, "for soever they exposed themselves, not one was taken sick."[5] Governor Oliver's letter declared , "…what is still more remarkable … is that not one English person had it…and that some persons in one family, who were of mixed breed …had the distemper, and all recovered; no person at all died of it, but such as were entirely of Indian blood. "[1] Obed Macy related that "this discovery emboldened the English to go amongst them and render such assistance as their situation demanded." [4] As Shubel Coffin noted in an April 30, 1798, letter to Moses Brown: "Richard Mitchell tells me he was much amongst it and went several times into their homes to help them and some others did the same."[6]

The Disease

Dr. Joseph Parrish, a physician visiting Nantucket in 1805, interviewed islanders and reported clinical details of the outbreak: "Pain in the head, soon followed by yellowness of the skin and eyes."[7] He confirmed that "before death, the yellow changed to a livid hue with delirium in fatal cases." In his memoir, published in 1853 by his son, then editor of the *Transactions of the Medical Society of New Jersey,* Parrish related, " some appeared to die from suffocation apparently produced by tumefaction around the throat…hemorrhage from the nose also occurred; the face and eyes, particularly, of those who died of a short illness, were swelled in a shocking manner…some who survived the first shock of the disease, died with lingering complaints. "

Responses to Moses Brown's written inquiries yielded additional information. Of those ill, Shubael Coffin affirmed that "their bodies were yellow…about three-fifths of them had a sore break out under the ear" . The only other description of skin lesions is Dr. Parrish's note that "…some had glandular swellings which erupted."[7] One of Brown's correspondents described a clinical scenario of the afflicted "seized by much pain and high fever, soon appeared yellow, some dying in two, some in 3 or 4 days."[3] This account depicted "instances when the whole number in a house were sick at one time, and all found dead at one time" .

The incubation period of this putative infectious disorder has been estimated from 8 to 11 days. Shubel Coffin' (April , 1798) wrote Moses Brown that Mary Norquarta, the Native American washing clothes in the inn, "became ill in about 8 days. " Dr. Parrish stated that "in nine, or at the farthest eleven days after being at the boarding house, she [Mary Norquarta] was taken with the disease."[8] A January 1, 1798, letter to Moses Brown from Christopher Starbuck reaffirmed the chronology: " it was thought that the sickness spread from washing some people's clothes."[8]

Elizabeth Little, a modern Nantucket historian, documented the outbreak from local death records.[9,10] At Nantucket's Folger Museum, Little found a manuscript list of 217 of the 222 islanders dying in the outbreak: (Figure 2) 24 "old" people (12%), 155 "adults" (70%), and 38 children (17%, including "son" , "boy", "daughter" and "child"). Little's data , with a very high percentage mortality in adults, suggest a virgin soil epidemic, a disease for which the Native population may have had little pre-existing immunity compared to Europeans.

Discussion

The cause of the Nantucket Indian Sickness remains elusive. Some settlers were familiar with common infectious scourges, but accurate diagnosis might be hampered by incomplete descriptions from untrained sources; lack of 18th century medical expertise; possible variant, atypical presentation of known disorders; or a hitherto unknown disease. Additionally, the bulk of our review of primary source documents was of non-contemporaneous writings [1792, 1797-99; 1805, 1835]. The signs and symptoms were spiking fever, headache, jaundice, coagulopathy, a skin eruption and delirium. The clinical course suggests a highly contagious, rapidly fatal toxemic event with likely multi-organ failure and a high attack and mortality rate [222 dead of the 258 afflicted, 85 %].

Parrish noted in his memoirs that Nantucket officials investigating the docked ship allegedly transporting the

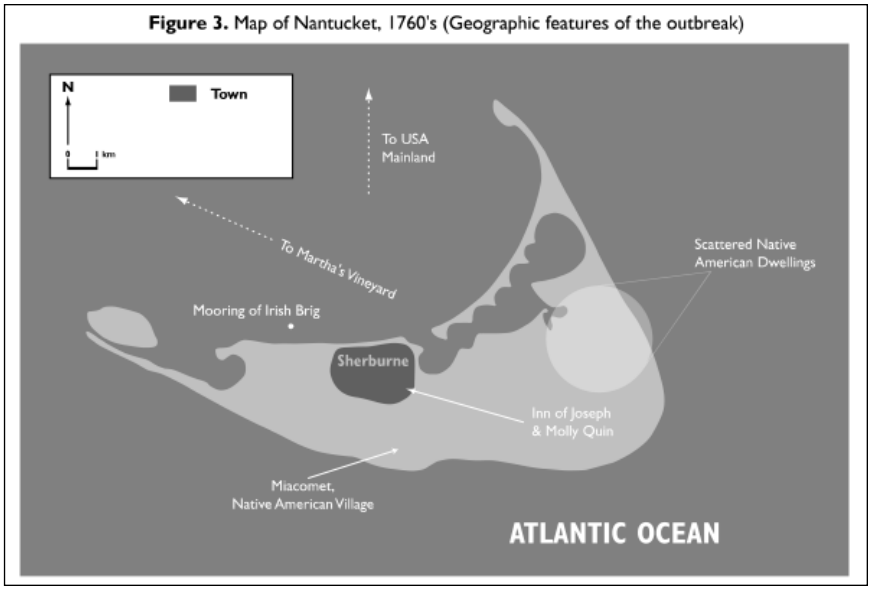

Figure 3. Map of Nantucket, 1760's,(with geographic features of the outbreak).

sick sailor "supposed it was the small pox…several of the inhabitants who had had small pox were deputed to certain the fact…they returned from the ship with information that it was yellow fever."[7] Shubael Coffin added, "the selectmen ordered the brig to be visited by a doctor to know if it was the small pox and found it was not…Brother Richard [Mitchell] was much amongst it and seems clear it was the yellow fever." Christopher Starbuck , however, in a January, 1798, letter to Moses Brown, wrote astutely that, "the Yellow fever in Philadelphia [1793] decreased as the cold weather came on. This Yellow fever did not , but continued through the winter."[8] This statement supported Governor Oliver's report that the illness lasted until February 20, 1764, where the Philadelphia epidemic lasted only until 12 days after the first November frost.[11] These observations did not support the highly unlikely possibility that yellow fever-infected mosquitoes survived a New England winter and were the vector for the epidemic.

Dr. Parrish concluded that some islanders believed the illness was an airborne miasma.: "…the two Indians who buried the dead were in the habit of filling their mouths with tobacco [so as not to breathe], and taking a dram of rum before entering a house to take out a corpse…both survived."[7] Unconfirmed, somewhat fanciful support for this mode of transmission continued in an 1835 history of Nantucket. Obed Macy declared that when a flock of quail flew over the chimney in which several afflicted individuals lived, "five birds fell dead on the spot, natural in view of the high concentration of infected air."[4]

The Nantucket Island Indian Sickness of 1763-4 contributed to the destruction of the island's Native American population and permanently changed the demographic composition of the island.

The mode of presumed contagion is unclear. Possible vectors, including rats, lice, mosquitos, and ticks, were common on ships and on Nantucket Island in the 18th century, though we did not locate reports of other epidemics.[12] We found no record of ingested toxin exposure, water-borne illness or zoonosis involving domestic or wild animals. Airborne transmission would be excluded unless similarly exposed Europeans were immune. An alternative possibility is that non-transmissibility to Europeans, "soever they exposed themselves," may not reflect prior immunity, but rather less intimate contact with the sick by the non-Native Americans who visited and comforted those afflicted. Differential racial susceptibility, a pervasive 18th century notion, need not be a factor if disease was spread only by contagion via direct contact with blood, body secretions, or clothing of diseased victims. A 1798 letter to Moses Brown stated that the only European who washed Indian clothes was Molly Quin, wife of the innkeeper who provided residence for the sailor alleged to be the index case. She supposedly contracted the illness " very severe and was very yellow with it, but recovered."[8] Dr. Parrish supports this mode of infection , writing ,"Mary Norquarta was "engaged in washing the clothes of sick sailors."

Colonists had experience with common epidemic diseases such as plague and smallpox, the latter described first in Native Americans in 1519 at the time Cortez invaded Mexico.[13] The 1616-1619 pandemic, destroying up to 90% of the native population of many Atlantic coastal tribes from Maine to southern New England, was variously termed "plague", "small pox", and "yellow fever", with " so many sick Indians that there were none to provide care or bury the dead."[14] In the 17th century outbreak , colonists were also resistant compared to the Native population. One diary noted that Europeans " lay in the cabin with those that died and not one ever felt their head to ache."[15] In addition to headache, jaundice was common to both outbreaks. In recording interviews, published in 1674, with elderly Indians who had survived the 1616-19 epidemic, Gookin stated, " the bodies all over were exceedingly yellow, describing it by a yellow garment they showed me."[16] Smallpox has been considered a possible diagnosis for this catastrophic event. Oliver Wendell Holmes, a physician with considerable practical experience with smallpox, suggested this as the cause of the 1616 outbreak. Holmes wrote, "…as for the yellowness like a garment, that is too familiar to the eyes of all who have looked on the hideous mask of confluent variola."[17] Modern observers have noted that, uncommonly, smallpox may occur as a highly lethal illness lacking the typical

vesiculo-papular rash.[18] The tantalizing clues described in the Nantucket outbreak of a "sore breaking out under the ear" noted that "some had glandular eruptions that suppurated" could represent bubos or the parotitis of smallpox. among other possibilities. The Nantucket outbreak and the 1616-19 pandemic might have the same etiology, despite cogent objections to diverse potential diagnoses in each case.[19]

Isolation of those affected was standard 18th century medical management. The Nantucket selectmen, upon discovering bodies washed up on the shores, quarantined the ship, but sailors had already gone ashore. Starbuck's January, 1798 letter to Moses Brown reported that the " two or three dead bodies that were found on shore were taken up and buried by the people of the vessel."[8] Zaccheus Macy stated that after a death, the survivors would, " set fire to the wigwam to burn all that was left in the house" Records do not indicate if this was common tribal practice or disease-specific management. An October, 1763, Nantucket town meeting voted that, "houses be built for reception of such persons as are infected with small pox…and to suffer inoculation of the small pox to be practiced."[20] Macy noted, " the small pox has frequently made its appearance on the island…any affected by it have been immediately conveyed to some secluded location "[5] Unaccountably, the October, 1763, meeting, while detailing plans for variolation against smallpox, did not mention the illness then decimating the island's Native population. We note the possibility that the outbreak was not mentioned because it was so widely known or because it did not affect Europeans. Additionally, the October, 1763, variolation against smallpox may reflect a prudent response to an ongoing epidemic with fear that the disease would spread to Europeans.

There are yet other pieces to the puzzle. In a June 1, 1799, letter to Shubael Coffin, Moses Brown doubted the presumption that the Irish brig was the initial source of the outbreak. He declared, " Thy account…from Zaccheus Macy's journal states the sickness to have arrived on the 6th of the 8th month[August] of '63 and thy letter states the brig to have arrived on the 20th (of the 8th)…thus, the sickness not only did not but could not come in from that vessel…this may be that there is some mistake and error as to dates…yet dates are stubborn things where they must precede memory where they don't agree."[21] This communication contradicts the contentions of Governor Oliver, prior writings of Brown's correspondents, and the journal of Dr. Joseph Parrish concerning the Irish brig. The discrepancy is unexplained. Another enigma in Governor Oliver's 1764 letter is his report of an apparently similar illness on the neighboring island of Martha's Vineyard. Commerce between the two islands was brisk, involving both Europeans and Native Americans. Oliver noted: "the distemper made its appearance at Martha's Vineyard the beginning of December, 1763. It went through every family", eventually, killing 39 of the 52 Native Americans affected (mortality rate of 75%)" Those who recovered were "…chiefly of the younger sort." Again, only Native Americans were afflicted, although "…the English breathed the same air…they yet escaped the sickness." [1]

The Nantucket Island Indian Sickness of 1763-4 contributed to the destruction of the island's Native American population and permanently changed the demographic composition of the island. The origin and etiologic agent of this virulent 18th century pestilence remain unknown.

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Computerized Physician Order Entry at Hospitals in Rhode Island: A State-Wide Survey

Stephen Kogut, PhD, MBA, RPh, Cathy E. Duquette, PhD, RN, CPQH, Greg Low, PhD, RPh, Mark Regine

With Computerized Physician Order Entry (CPOE), physicians or other medical providers enter orders into a computerized system designed to reduce error and enhance efficiency. Numerous public and private organizations advocate for CPOE systems.[1] The Leapfrog Group, representing health care purchasers, has encouraged its members to consider CPOE when choosing hospitals. Support for the use of CPOE systems is based upon evidence indicating that rates of adverse drug events in hospitals are alarmingly high[2] and that CPOE systems can be effective in reducing many types of medication error.

According to the Institute of Medicine's report *To Err Is Human: Building a Safer Health System*, 44,000 to 98,000 inpatients die yearly because of medical error, and many of these deaths are attributable to errors in medication use.[2] In reviewing over 30,000 randomly sampled patient records, researchers from the Harvard School of Public Health determined that nearly 4% of inpatients experienced a disabling injury resulting from medical treatment.[3] Drug complications were identified as occurring in nearly one in five cases. Many of these adverse drug events are avoidable. For example, Bates et al.[4] estimated that approximately one in four adverse drug events can be attributed to medication error, and are thus preventable. Moreover, this research found that 56% of preventable events occur during the drug-ordering process. Additionally, adverse drug events are estimated to cost between $2,013 - $2,595 in incremental cost per event.[5,6] The Leapfrog Group estimates that a hospital with 25,000 admissions per year accrues over $5 million dollars in additional costs annually from adverse drug events.[7]

The precise impact of CPOE on preventing medication errors is not fully known. While CPOE has been reported to be useful in reducing error rates, its effect on adverse drug events remains unclear.[8] While studies provide evidence that CPOE can be helpful in reducing ordering error,[9] some caution that CPOE implementation can be problematic[10] and may facilitate certain types of error.[11] Other reports praise CPOE for controlling utilization and reducing hospital spending.[12-14]

Given this context, the **Rhode Island Quality Institute** (**RIQI**) in collaboration with the Lieutenant Governor's office, the Hospital Association of Rhode Island, and Quality Partners of Rhode Island formed a working group to ascertain the status of the State's hospitals in regards to the use of CPOE systems. The workgroup's objective was to better understand how the RIQI and state policymakers can address barriers to the implementation of technologies such as CPOE that are known to enhance patient safety.

Researchers from the University of Rhode Island College of Pharmacy examined the status of CPOE use and planning among hospitals in Rhode Island. The results of this study are described here.

METHODS

We conducted in-person surveys of leadership from all hospitals in Rhode Island, and followed up with telephone interviews. The in-person surveys were completed in January 2005; telephone follow-up occurred in February 2006. Initial contact was made to the director, president or CEO via e-mail, followed by a telephone call inviting hospital representatives to participate in the survey. If the director, president or CEO was unavailable for interview, a request was made for an alternative contact. The process proceeded until a meeting was scheduled with one of the hospital's representatives. When an interviewee represented a hospital network, we completed separate surveys with that individual, each pertaining to a particular facility. While Hasbro Children's Hospital is a unit of Rhode Island Hospital and is not a separately licensed hospital, for the purposes of this research it was considered a separate hospital. The interviews were conducted by pharmacy graduate students, guided by a questionnaire developed for this project. Each survey took approximately 30 minutes.

This work built upon a previous survey of CPOE adop-

Table 1. Hospitals Participating in the Survey

Bradley Hospital
Butler Hospital
Eleanor Slater Hospital
Hasbro Children's Hospital*
Kent County Memorial Hospital
Landmark Medical Center
Memorial Hospital of RI
Miriam Hospital
Newport Hospital
Our Lady of Fatima Hospital
Rhode Island Hospital
Roger Williams Medical Center
South County Hospital
St. Joseph Hospital
VA Medical Center
Westerly Hospital
Women & Infants Hospital

* While Hasbro Children's Hospital is a unit of Rhode Island Hospital and is not a separately licensed hospital, for the purposes of this research it was considered as a separate hospital.

Table 2. Description of Interviewees

Job Title	Number
Hospital CEO	5
Chief Information Officer	4
Director of Pharmacy	2
Clinical Project Manager	1
VP of Clinical Information Management	1
VP of Medical Affairs	1
Senior VP of Finance	1
VP Professional Practice	1
Assistant Chief IRM/TM	1

tion and planning, conducted by the Hospital Association of Rhode Island. This CPOE survey's questionnaire included several items from the original HARI instrument, and was reviewed and approved by the working group members. Preliminary results were presented at the March 2005 meeting of the Rhode Island Quality Institute.

Results

We visited representatives from each of the state's hospitals. (Table 1) Thirteen hospitals identified themselves as " acute care," two as "psychiatric," and one as a Veterans' Affairs Hospital. Seventeen interviewees (amid 8 different titles) participated. A chief executive officer or a chief information officer provided the majority of data. (Table 2)

CPOE systems are available in four of the 17 hospitals. Where CPOE is available, it was reported that use is required as the standard of care, except in emergencies. Interviewees from these hospitals reported that CPOE is used for at least 80% of orders. Where CPOE is not in place, the majority of interviewees reported that their institution was committed to its implementation. However, approximately half of these interviewees noted that the hospital has not yet dedicated resources to its execution.

Approximately three of four interviewees believed that the cost of CPOE implementation was a significant or an extremely significant barrier. When asked about their views of the cost versus benefits of CPOE in the long run (5+ years), 56% of interviewees were uncertain how costs would compare to savings; 31% believed the costs of CPOE implementation would be outweighed by the savings; and one interviewee believed that the savings would not outweigh the costs.

When asked about their institution's view of the impact of CPOE on patient safety, 97% of respondents believed that CPOE would substantially reduce the incidence of medication errors. Only one person believed that there would be relatively limited reduction of medication errors associated with CPOE use. No interviewee believed that CPOE would increase the risk of medication errors.

Because some administrators may believe that physician training presents a formidable barrier to the implementation of CPOE systems, we asked interviewees about their beliefs regarding physician training as a barrier. Interestingly, respondents from hospitals that have not yet implemented CPOE more frequently identified physician training as a barrier, while interviewees from CPOE hospitals were less likely to describe it as a significant or extremely significant barrier. (Figure 1) Interviewees from non-teaching hospitals in particular were more concerned with physician training, while interviewees from four of the hospitals having CPOE reported that physician training is not a barrier. These four hospitals were teaching hospitals.

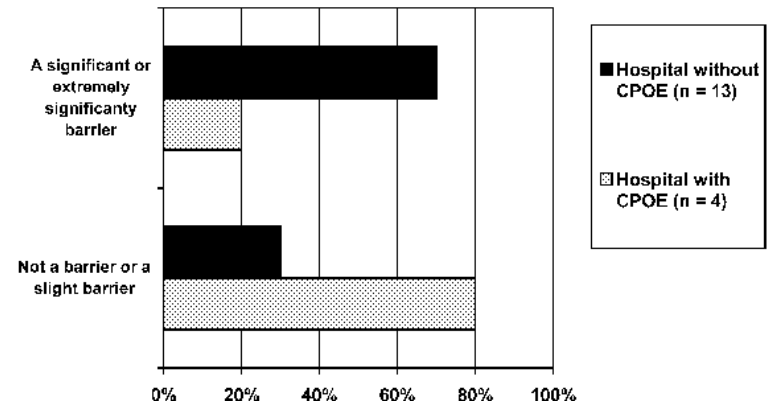
Discussion

CPOE is available in 4 of 17 hospitals in Rhode Island. Most of the hospitals without CPOE have initiated planning to implement systems, and some have allocated resources for this purpose. However, many hospitals that were planning for CPOE were likely to be months, perhaps years, away from implementation.

If the reports describing the benefits of CPOE are to be believed, patients are presumably safer in hospitals with CPOE systems. Indeed, one interviewee noted that a pre-post study conducted within his/her institution found that CPOE reduced error rates and provided utility for quality improvement efforts. Unfortunately, such internal studies are generally not shared for the benefit of others. In our survey, we did not seek to obtain quantitative data describing the impact of CPOE on error occurrences. However, we believe that such a study is important, and we urge hospitals that have implemented CPOE systems to share their experiences with external stakeholders, particularly with personnel from hospitals that will soon implement CPOE systems.

While the literature provides numerous examples of the safety benefits of CPOE, less is known about the impact of CPOE in reducing rates of serious harm or death resulting from errors in the drug-ordering process. Moreover, the role of CPOE in causing new types of error must be recognized.

Figure 1. View of Physician Training as a Being a Barrier to Computerized Physician Order Entry Implementation



Hence, the impact of a CPOE system, or lack thereof, must be considered within the overall context of the institution's medication use system, and the hospital's environment (e.g., barcoding and 24-hour pharmacy availability). In sum, hospitals with CPOE systems may be safer, but we do not know how much safer. With no state-wide program to compare medication error rates across hospitals, stakeholders are left to draw their own conclusions about the likely impact of CPOE on patient safety.

Thus, more data are needed to fully understand the role of CPOE in improving the safety and quality of care. Such data will also lead to a better understanding of the true cost-effectiveness of CPOE. While CPOE systems are expensive to install and maintain, these costs could be at least partially offset if they yield better patient outcomes, manifest as reduced medical complications and length of stay.

One other finding merits highlighting. In hospitals where CPOE is available, physician training issues were reported to be much less of a barrier, as compared with the perceptions of those from non-CPOE hospitals. This may reflect differences in physician types, as the CPOE hospitals were more commonly larger teaching hospitals having a greater presence of younger physicians and medical students. These clinicians may be more accustomed to using computers, and may also spend a greater portion of their working time within the hospital, compared to physicians at non-teaching hospitals. Additionally, perhaps this finding illustrates misperceptions that exist within non-CPOE hospitals regarding the willingness and capacity of physicians to adopt new processes. According to the experiences of interviewees from hospitals that have implemented CPOE, the perception that physician training issues will pose a formidable barrier is unwarranted.

Finally, our findings must be considered in light of the limitations of our methodology. This cross-sectional survey captured the hospital representative's understanding of the status of CPOE in his/her institution. We encouraged interviewees to respond to questions by considering the philosophy and beliefs of the hospital, yet the interviewees' own perceptions and responses may have differed from actual hospital experience. The interviewee's role in the organization may have also influenced his/her beliefs. Overall, however, we believe that those interviewed provided a valid representation of hospital leadership.

Conclusion

Hospital representatives appear optimistic about the promise of CPOE for improving patient care; however, many believe that the financial and logistical challenges in implementing CPOE are great. Many interviewees were also uncertain of the ability of CPOE to save money. Despite these concerns, hospitals in Rhode Island are committed to CPOE implementation due to the promise of CPOE in reducing medication errors. In an era of skyrocketing healthcare costs, policies must encourage decisions that embrace cost-effective methods for delivering quality health care. For hospitals in Rhode Island, CPOE is playing a limited yet expanding role in these efforts.

Acknowledgements

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Hospital Case Files

Miriam Hospital Morbidity Conference: Ulcerative Colitis

Daniel Selo, MD

Chief Complaint: Diarrhea

History of Present Illness: This 67-year-old woman with a history of ulcerative colitis and hypothyroidism presented with watery diarrhea for 4 to 5 days. Two weeks prior, she had diarrhea and fatigue lasting 5-6 days that resolved spontaneously. Over the last 4 to 5 days she experienced crampy abdominal pain with every bowel movement. Two days prior to presentation her son died from substance abuse related-liver disease. Her symptoms worsened at that time, and she was seen at an outside hospital and treated with intravenous fluids, loperamide, potassium supplementation, and ondansetron. She had continued symptoms and presented to the Miriam Hospital Emergency Department.

Review of Systems: Positive for up to 20 bowel movements a day, dry mouth, and fever to 103.3 F. No hematochezia, melena, mucus, nausea, vomiting, chills, sweating, myalgias, or arthralgias.

Prior Medical History: Ulcerative colitis diagnosed six months prior following several months of diarrhea with occasional hematochezia. At that time colonoscopy revealed confluent inflammation from the transverse colon to the rectum, sparing the right colon, with a patch of periappendiceal inflammation. Biopsy was consistent with inflammatory bowel disease, most likely ulcerative colitis.

Medications: Levothyroxine 50 mg per day, pravastatin 40mg per day, alendronate 70mg weekly, mesalamine 400mg three times per day, multivitamin 1 tab per day, and folic acid 1 mg per day.

Allergies: None

Social History: Lives with husband. Retired director of human resources. Former tobacco user with 2 cocktails-per-evening alcohol consumption.

Family History: Brother with myocardial infarction (MI) in his 50s

Physical Exam:
Temp = 38.2C HR = 104BP = 105/54 RR = 16
General: In no acute distress
HEENT: Apthous ulcers on tongue
Neck: Supple, no thyromegaly, no lymphadenopathy
Lungs: Clear to auscultation bilaterally
CV: Tachycardic , no murmurs
Abdomen: Soft, non-distended, hyperactive bowel sounds
Extremities: No clubbing, cyanosis, or edema
Rectal: External hemorrhoid, brown occult blood positive stool
Neuro: Alert and oriented. Normal

Labs:
CBC:
WBC count: 9,200 per mL; WBC differential: 76% bands, 10% neutrophils
Hemoglobin: 11.7 g/dL
Hematocrit: 35.8%
Platelet count: 406 per mL

Chem 7:
Sodium: 135 mmol/L
Potassium: 3.4 mmol/L
Chloride: 101 mmol/L
Bicarbonate: 22 mmol/L
BUN: 9 mg/dL
Creatinine: 0.7 mg/dL
Glucose: 110 mg/dL

Lipase 13 IU/L
Troponin <0.15 ng/mL
Fecal Wright stain: many WBC's

Hospital Course: The patient was admitted with the provisional diagnosis of ulcerative colitis flare. Stool cultures were obtained and eventually returned negative. She was started on hydrocortisone 60mg intravenously every 8 hours. On hospital day #2 her steroid dose was increased to 100mg intravenously every 8 hours.

On hospital day #4 the patient's diarrhea continued, but was slightly decreased and she was switched to oral prednisone 60mg per day. Her hemoglobin dropped to 9.7 mg/dL. Her temperature rose to 38.9C, and she complained of increasing abdominal pain. CT of the abdomen and pelvis revealed thickening of the ascending and descending colon with apparent sparing of the transverse colon.

On hospital day #6 the steroids were changed back to intravenous and loperamide was discontinued. At that time adding infliximab to the patient's regimen was considered. On hospital day #7 a PPD was placed in preparation for possible infliximab treatment.

On hospital day #8 colonoscopy revealed severe colitis from the rectum to the cecum with evidence of backwash ileitis. On hospital day #10 the PPD was negative and infliximab infusion was started. By hospital day #12 the patient's diarrhea was improving, but she again complained of increasing abdominal pain.

On hospital day #14 the patient was not improved, continuing to complain of tenderness to palpation on exam, but without rebound or guarding. A CT of the abdomen and

pelvis revealed a large amount of free air under the diaphragm with no obvious source of perforation. Laparotomy was performed with an immediate rush of air upon entering the abdomen. Fibrinous exudates and pus were noted throughout the abdominal cavity, but mostly in the right side near the cecum. A small perforation without gross fecal contamination was identified in the cecum. The perforation had likely been present for several days given the quantity of exudates and pus within the abdominal cavity. The patient underwent a total colectomy with placement of an ileostomy.

She had an unremarkable post-operative course and was discharged to home on hospital day # 23.

Discussion:

1) *What is the role of infliximab in the treatment of ulcerative colitis?*

Infliximab (Remicade) is well established as a treatment for Crohn's disease, but its role in the treatment of ulcerative colitis has only recently been addressed. Several recent trials have investigated the utility of infliximab in the treatment of ulcerative colitis refractory to standard therapy. While the methodology and end-points in each of the studies were different, two recent randomized double-blind placebo controlled trials show infliximab to be effective and safe in moderate to severe ulcerative colitis not responsive to conventional treatment. In particular reference to this case, one of the trials studied the use of infliximab in moderate to severe flares of ulcerative colitis not responsive to steroids with the end point being colectomy in 45 patients. In that study, 29% in the infliximab and 67% in the placebo group went on to colectomy. The role of infliximab in the long-term treatment of ulcerative colitis has not been studied to date.

2) *Is there evidence that stressful life events can precipitate a flare of inflammatory bowel disease?*

Until relatively recently **inflammatory bowel disease (IBD)** was thought to be primarily a psychosomatic disorder. As both ulcerative colitis and Crohn's disease were studied further, immunologic, biochemical, and genetic causes have moved to the forefront of discussion regarding the etiology of these diseases. However, within the past few years a reexamination of psychological stressors and their relationship to IBD has begun. While a number of studies exist looking at this topic, no clear conclusion can be made. There are several studies that show an association of stressful life events and exacerbation of IBD, but the design of these studies has been called into question. Additionally, the majority of the studies investigating stress and IBD look at both Crohn's disease and ulcerative colitis collectively rather than as separate entities. Furthermore, evaluation of psychosocial factors related to stress, the chronicity of stress, and the outcome measures were different in all of the studies. While recent review articles both state there is likely a relationship between stress and intensity of IBD symptoms and disease, the significance of this relationship is still debated.

3) *Could the use of steroids have masked the cardinal signs and symptoms of a perforated viscous?*

The association between the anti-inflammatory effects of steroids and subsequent decrease in symptoms of peritonitis has long been described. Cope's classic text (1968) states, "It is well known that adrenal steroid therapy diminishes the symptoms produced by inflammation. Any acute inflammation may arise, with either localized or generalized peritonitis, without the usual symptoms and signs of such inflammation being sufficiently clear to cause alarm…. The assessment of abdominal pain in persons on steroid therapy is therefore very difficult and laparotomy may be desirable in ambiguous cases." However, clinical studies detailing this anecdotal evidence are relatively scarce. Some limited data suggest that abdominal pain tends to remain present, but physical exam findings such as rebound tenderness and guarding may be decreased in patients with intestinal perforation taking steroids. Additionally, there is some data that the diagnosis of perforation can be delayed by concomitant administration of steroids. Given volumes of anecdotal and albeit limited clinical data, the clinician's suspicion for perforated viscous must remain high in patients with abdominal pain on steroids. However, as Cope reminds us, "Opening of the abdomen is not to be advised with too light a heart. The dextrous hand must not be allowed to reach before the imperfect judgement (sic). Abdominal section is only to be made on the recommendation of a mature judgement (sic) after a thorough examination….Correct diagnosis is the basis of firm counsel." I found no studies published addressing the impact of steroids masking abdominal pain since the 1980s.

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Health By Numbers
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Obesity and Overweight Among Adults in Rhode Island

Patricia Markham Risica, DrPH, RD, Samara Viner-Brown, MS, Jana Hesser, PhD

The proportion of US[1] and Rhode Island adults who are overweight or obese has grown significantly over the past 15 years. This increase is alarming due to the anticipated increases in diseases associated with overweight and obesity [2,3] and growth in the already high associated health care costs and loss of productivity.[4] This report presents Rhode Island survey data on obesity and associated risk factors.

Methods

Obesity is defined as having a **body mass index** (**BMI**, defined as weight divided by the square of height measured in kg/m^2) at or above 30, and overweight is defined as having a BMI between 25 and 30. Obesity and overweight proportions were calculated using heights and weights reported by respondents to the **Rhode Island Behavioral Risk Factor Survey** (**RIBRFS**).[5] The RIBRFS is part of a state-based national telephone survey of randomly selected samples of adults aged 18 or older; the national BRFS is the source of the US data presented here.[6] For analysis, the Rhode Island survey data are weighted to be representative of the state's adult population on the basis of age, sex and race. Between 1991 and 2005, the annual number of respondents to the RIBRFS ranged from 1800 to 4500. During 2002-2004, the period for which most of the analysis was performed, there were 11,895 respondents to the RIBRFS, or approximately 330 per monthly panel.

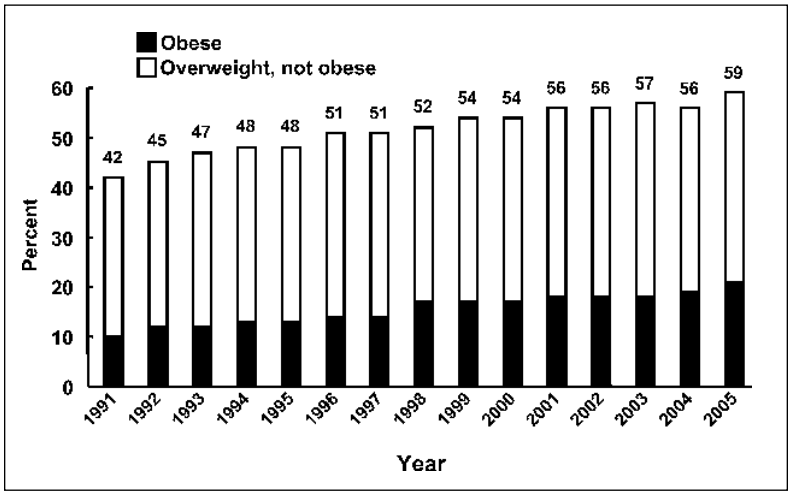

Figure 1. Obesity and Overweight, Ages 18 and Older, by Year, Rhode Island, 1991-2005

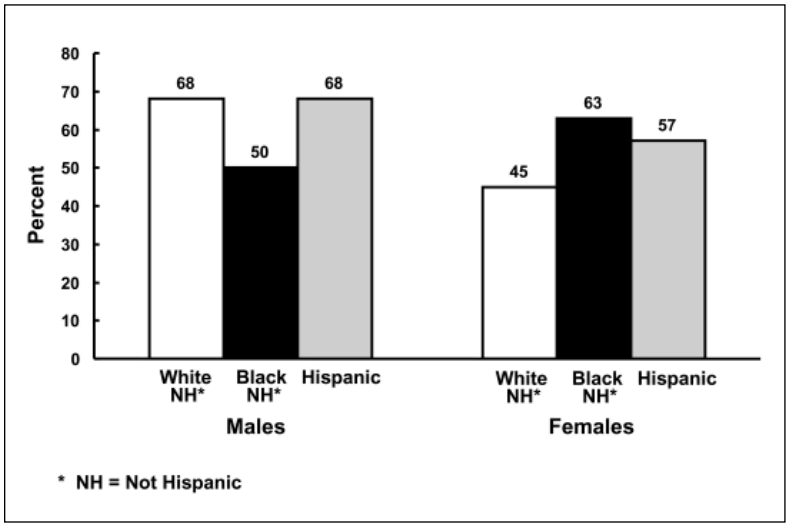

Figure 2. Obesity and Overweight, Ages 18 and Older, by Sex and Race/Ethnicity, Rhode Island, 2002-2004

Results

Figure 1 shows the rise in the proportion of Rhode Island adults who were overweight or obese during 1991-2005. Although the percentages of both obese and overweight Rhode Islanders rose during this period, the percentage of obese adults doubled from 10% to 21%. During 2002-2004, 37.8% of Rhode Island adults aged 18 or older (approximately 292,000) were overweight and 18.7% (about 144,000) were obese. More than half (56.5%) of all adults in the state were overweight or obese in 2002-2004. This compares with 37% overweight and 22% obese reported for the United States in 2002. The actual proportions that are obese and overweight are likely to be higher because many adults under-report their weight when asked. (Actual measures of height and weight for Rhode Island adults are not available. However, results from a national study in 2003-4 that weighed and measured adults ages 20 and older found 66.3% were overweight or obese.[7])

Which Adults are at Risk?

During 2002-2004, Rhode Island men were more likely to be either overweight (47.3%) or obese (19.2%) compared with Rhode Island women (28.8% overweight and 18.1% obese). Although Rhode Island men exceeded men nationally in the proportion who were overweight (47.6% vs. 44.7% in 2002), they were less likely to be obese (19.7% vs. 23.1% in 2002). Women in Rhode Island were less likely to be overweight or obese than women nationally (45.7% vs. 50.9% in 2002).

Of the approximately 436,000 Rhode Island adults who are overweight or obese, the vast majority (84.1%), about 367,000 persons, are White non-Hispanics. However, a higher proportion of Hispanic Rhode Islanders is overweight or obese (62.2%) than for White non-Hispanic (56.1%) and Black non-Hispanic (55.9%) Rhode Islanders.

There are also considerable disparities between racial/ethnic groups when males and females are considered separately. (Figure 2) White non-Hispanic men (67.6%) and Hispanic men (67.9%) are more likely to be overweight or obese than Black non-Hispanic men (49.8%). White non-Hispanic women (45.4%) are less likely to be overweight or obese than either Black non-Hispanic (63.0%) or Hispanic (56.6%) women. These racial and ethnic disparities have not been adjusted for differences in income or education that might explain some of the differences observed.

Overweight and obesity are more common among women who are less educated (56.8% among those with no college) compared to college graduates (37.1%) and are more common among those with lower annual incomes (57.6% among those with less than $25,000) compared to those with higher incomes (36.1% among those with incomes at or above $75,000). While education does not make a difference for men, men with incomes of $75,000 or above are more likely to be overweight or obese (70.9%) than those with incomes below $25,000 (62.5%).

Risk Factors for Overweight and Obesity

Nutrition and physical activity are important factors in weight control. Approximately 73% of Rhode Island adults eat fewer than five servings of fruits and vegetables per day (2003);[6] 63% have soda available at home (2004)[8] and 21% eat fast food more than once per week (2004).[8] In addition, 23% of Rhode Islanders report no leisure time physical activity at all (2004).[5] Obese adults in Rhode Island eat fewer fruits and vegetables, eat more frequent fast food, and are less active than those who are not obese.[5,8]

Discussion

Adults in Rhode Island are at high risk of overweight and obesity, particularly White and Hispanic men, and both Black and Hispanic women as well as low-income women of all races and ethnicities. Although some Rhode Islanders report adequate leisure time activity and fruit and vegetable intake, the proportion who do so is clearly not enough to stem the tide of this very important and growing public health problem.

While any discussion of race or ethnicity cannot disentangle the influences of genetics, culture and economic circumstance, Rhode Island communities can be assured that targeting interventions toward low-income families, especially those of color, will likely impact some of the highest risk Rhode Islanders.

The reporting of insufficient fruit and vegetable intake and low physical activity serves as a call to action for families, schools, towns, and the entire state to identify opportunities and find creative ways to motivate Rhode Islanders to eat more nutritiously and to be more active. A population that is more active, less sedentary and eats nutritiously will likely be at lower risk of obesity, overweight and all associated health conditions.

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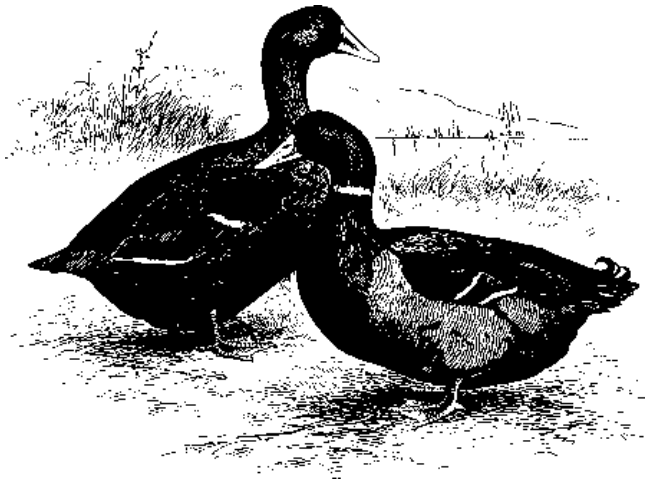

The Rhode Island Health IT e-Newsletter, May 2006; 2(3)

E-Rx Update:

Dr. David Gifford, Director of the Rhode Island Department of Health, and Jeffrey Newell, COO of Quality Partners of Rhode Island, acting as co-chairs of the Rhode Island Quality Institute E-prescribing work group, have been working to identify barriers for both prescribers and pharmacies to utilize e-prescribing for all their prescription transactions.

The workgroup has compiled a comprehensive list of barriers, which include:

1. The ability to provide accurate medication formularies from the managed care organizations so that prescribers can make sure a medication is covered by the patient's plan before it is sent to the pharmacy. This will greatly decrease the return calls from the patient or the pharmacy.
2. Only twelve pharmacies remain to be certified to accept electronic prescriptions. The group is working to bring this final group on board.

Rhode Island Selected as "RHIO Best Practices" Site by Office of the National Coordinator:

Rhode Island has been selected as one of nine **RHIOs** (**Regional Health Information Organizations**) in the country to produce a state-level "RHIO Best Practices" consensus document for the Office of the National Coordinator for Health Information Technology. The RHIOs named at this point are: Rhode Island, Massachusetts, Florida and Tennessee. The other five should be named soon.

The RHIOS involved will conduct a public consensus meeting on July 18-19 in Washington, DC. A final report and recommendations are due September 1, 2006.

For more information visit: www.hhs.gov/healthit

Governor Carcieri's Health IT Bond Update:

Governor Carcieri has asked the Legislature for $20 million to complete development of a technological infrastructure to provide statewide healthcare-information connectivity. A budget hearing with the Rhode Island General Assembly convened April 12, 2006. Letters of support for the IT bond, addressed to the House Finance Committee, were received and members of the RI Health IT Project Steering Committee and other interested parties testified before the House and Senate in support of the HIT Bond. A legislative decision on the issue is pending.

The Certification Commission for Healthcare Information Technology (CCHIT):

The **Certification Commission for Healthcare Information Technology** (**CCHIT**) was launched in July 2004 as a voluntary, private-sector organization to certify **Health Information Technology** (**HIT**) products. CCHIT was awarded a three-year contract by the federal **Department of Health and Human Services** (**HHS**) in 2005 to develop and evaluate certification criteria and create an inspection process for HIT in three areas, including ambulatory EHRs for the office-based physician or provider. These criteria for the office-based physician encompass all processes from registration to reporting.

CCHIT will assess the vendor's ambulatory EHR product for conformance with its criteria for functionality and security beginning June 2006. Vendors that meet the standards will become "CCHIT Certified" and recognized as distinguished among vendors in the industry.

For a physician practice embarking on an EHR implementation journey, ask vendors about their certification status. Vendor evaluation should include focus on those EHRs that are working towards or meet the rigorous CCHIT certification process.

For more information on CCHIT certification, visit: www.cchit.org/work/overview.htm

Quality Improvement Organizations Help Push Health IT:

A new report says Medicare-funded health care quality-improvement organizations in 41 states are aiding progress toward Health Information Exchanges (HIEs). The American Health Quality Foundation report says HIEs are helping both medical clinics and exchanges to adopt health care technology.

To learn more visit: www.govhealthit.com/article92836-04-05-06-Web

Rhode Island Tops In Key Indicator For Patient Safety; Ranked #1 State In The Nation For Electronic Prescribing

Governor Carcieri Accepts First-Ever SafeRx Award for State and Recognizes Rhode Island's Own Top e-Prescribing Physicians

Governor Joins Quality Partners of Rhode Island, Rhode Island Quality Institute, Rhode Island Medical Society, and Rhode Island Pharmacy Association to Launch Statewide Technology Assessment to Help Thousands More Physicians "Get Connected"

PROVIDENCE - May 8, 2006: Governor Donald Carcieri and leaders from the Rhode Island healthcare community cited three physicians for their outstanding efforts to improve patient safety and practice efficiency through the use of electronic prescribing technology. Dr. Conrad Granito, Dr. Christine Rayner and Dr. Diane Siedlecki were commended by the Governor during a ceremony at the Statehouse where they were given the first annual SafeRx award. The ceremony opened with Governor Carcieri receiving a SafeRx award on behalf of the State of Rhode Island for finishing number one in the na-

tion as part of the first ever nationwide review and ranking of electronic prescribing activity.

"SafeRx" recognizes how e-prescribing enhances patient safety by providing a more secure and accurate prescribing process. The award goes to the top ten e-prescribing states in the nation and three physicians within the winning states who have demonstrated outstanding leadership through their use of e-prescribing technology. Results are based on an analysis of data from new prescriptions and refill requests transacted over the SureScripts Electronic Prescribing Network. States are ranked based on the number of prescriptions routed electronically in 2005 as a percentage of the total number of prescriptions eligible for electronic routing.

Rhode Island is being recognized for its efforts in improving e-prescribing rates. As this process gains momentum, the Rhode Island Quality Institute E-Prescribing workgroup continues to work towards breaking down barriers to make e-prescribing occur in as seamless a manner as possible. The Governor was joined by other state leaders to announce a campaign to help the state meet the e-prescribing adoption goals and extend its leadership in electronic prescribing.

For more information about Rhode Island e-prescribing, visit: www.GetRxConnected.com/RI. Or call: 1-866-RxReady (1-866-797-3239).

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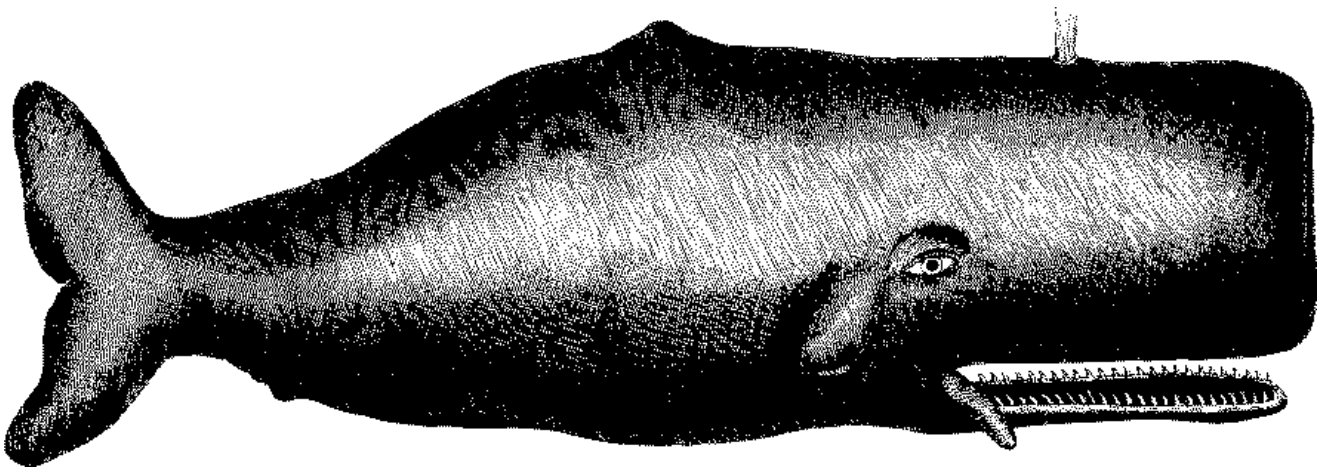

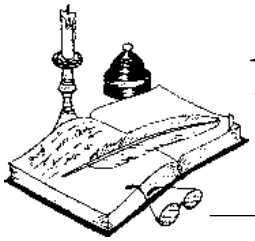

Physician's Lexicon

The Words of Hematology

Hematology required the invention of the clinical microscope to achieve its status as a major subspecialty of internal medicine. Therefore most of the operative words in the hematological vocabulary refer to structures made visible and identifiable solely by microscopic examination.

The erythrocyte, the red blood cell, derives its name from two Greek roots: *erythro-*, meaning red, and *cytos*, meaning a hollow structure, a cell or a vault. Other words rooted in *erythro-* include erythroderma, erythrogenesis imperfecta [an archaic term for neonatal anemia] and erythromycin. Yet other Greek roots denoting shades of red include *rhodo-* meaning rose-colored [as in rhodomycin, rhododendron and rhodium] and *eos* [meaning pink dawn] as in words such as eosinophile and eosophobia [fear of the dawn.]

The leukocyte, the white blood cell, is derived from the Greek, *leukos*, meaning white, as in words such as leukemia [the *haema* root meaning blood], leukodystrophy, leukopenia [with the Greek root, *penia*, meaning poverty], leukoplakia and leucomycin.

A Mediterranean plant with white blossoms, Leucothoe, is named after the daughter of Orchamos, king of Babylon, who [for obscure reasons] was turned into a shrub by Apollo.

There is a Latin word, *lucens*, which is cognate with the Greek, *leukos*, and means light or bright. It appears in such English words as lucid, translucent, Lucifer [the expelled archangel whose name means the carrier of light] and Lucina, the Roman goddess of childbirth [she who brings the newborn to light.]

The word platelet is derived from the Greek, *plattus*, meaning flat or broad as in words such as plateau, platform, platitude [a dull, flat remark] and platinum. The source of the platelets, the very large, nucleated cell called the megakaryocyte, gets its name from the Greek, *megas*, meaning large, and *karyon*, meaning a nut or a nucleus as in English words such as karyogenesis, karyolysis, karyomitosis, karyotyping and karyorrhexis.

The Greek word, *myelos*, meaning marrow-derived, has evolved into a number of medical words with divergent meanings. Virchow coined the word, myelin, to define the coating of axons and similar words such as poliomyelitis, myelocele, syringomyelia, myelencephalon and myelogenesis all refer to the spinal cord or neighboring medulla oblongata. However, such words as myeloblast, myeloma, myelocyte and myelofibrosis pertain to the cellular components of the bone marrow and are thus in the proper domain of hematology.

– Stanley M. Aronson, MD

Rhode Island Department of Health
David Gifford, MD, MPH
Director of Health

Vital Statistics

Edited by Roberta A. Chevoya, State Registrar

Rhode Island Monthly Vital Statistics Report Provisional Occurrence Data from the Division of Vital Records

Underlying Cause of Death	Reporting Period			
	July 2005	12 Months Ending with July 2005		
	Number (a)	Number (a)	Rates (b)	YPLL (c)
Diseases of the Heart	232	3,024	282.7	4,708.0
Malignant Neoplasms	188	2,418	225.8	6,485.0**
Cerebrovascular Diseases	46	515	48.1	817.5
Injuries (Accidents/Suicide/Homicde)	36	422	39.4	6,426.5
COPD	32	542	50.7	490.0

Vital Events	Reporting Period		
	January 2006	12 Months Ending with January 2006	
	Number	Number	Rates
Live Births	1124	13,403	12.5*
Deaths	795	9,881	9.2*
Infant Deaths	(10)	(95)	7.1#
Neonatal Deaths	(9)	(77)	5.7#
Marriages	237	7,406	6.9*
Divorces	228	3,156	3.0*
Induced Terminations	397	5,075	378.6#
Spontaneous Fetal Deaths	52	969	72.3#
Under 20 weeks gestation	(50)	(895)	66.8#
20+ weeks gestation	(2)	(74)	5.5#

(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 1,069,725

(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.*

* Rates per 1,000 estimated population

\# Rates per 1,000 live births

** Excludes 1 death of unknown age

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SINGLE COPY, 25 CENTS

Ninety Years Ago, July 1916

An Editorial explained the decision to transfer ownership of the Medical Society Journal, which was self-supporting from advertisements, from the Providence Medical Association to the Rhode Island Medical Society. The hope was that by bringing the journal under the larger AMA umbrella, the journal would be able to attract even more advertisements.

A second Editorial bemoaned the "Waste of Clinical Material." "A physician from an adjoining state had asked why so few of the medical men in Providence were affiliated with the National Societies, and why with the wealth of clinical material at their disposal there was so little scientific work done by them." The Editor responded: "…[Rhode Island physicians] lack the stimulus which is essential to the fullest intellectual attainment. Providence is not a teaching center and there is nothing more necessary to medicine…than the competition which is engendered by the close proximity of a mass of students eager to acquire knowledge."

Arthur D. Hill, Esq, Boston, discussed "Some Random Thoughts on Law and Medicine [at the Annual Meeting of RIMS, June 1, 1916]. Mr. Hill, counsel to the Massachusetts Medical Society, offered "free defense to members where they do not carry other insurance…" He noted, "Doctors are generally popular [with jurors]."

Albert H. Miller, MD, in "Anesthetics of the Future," cited death rates (e.g., 35,062 cases of spinal anesthesia with 68 deaths). "From the standpoints of safety and efficiency, we can predict that ether will be the normative anesthesia of the future, with nitrous oxide and local anesthesia as valuable adjuncts."

Fifty Years Ago, July 1956

R. Kenneth Loeffler, MD, of Houston, gave the 73rd Caleb Fiske Essay, "The Radioiron Turnover Test in Clinical Medicine" The Journal reprinted the talk.

Charles H. Smiley, PhD, Professor of Anatomy at Brown, contributed "The Challenge of Science."He bemoaned the dearth of scientists, urged recruitment of young people into careers as public school teachers in science and math.

Richard P. Sexton, MD, in "Recent Advances in Plastic Surgery," discussed skin grafting.

Twenty-Five Years Ago, July 1981

The Rhode Island Chapter, American College of Surgeons, and Brown University held a symposium on morbid obesity in November 1979.

Warren W. Francis, MD, in "Small Bowel Bypass for Morbid Obesity," warned: "Surgery for this disorder remains a dangerous method for losing weight. He cited "the most serious potential" for liver disease. From 1970-75 surgeons at Rhode Island Hospital treated 85 morbidly obese patients with small bowel bypass. The average length of stay was 15.2 days (in later years, it decreased). There was 1 death (in 1971, the second patient). Sixty-one patients were readmitted at least once. Four others died, though not in the hospital.

Martin E. Felder, MD, FACS, and Joseph F. Amaral, MD, in "Gastric Surgery for Morbid Obesity: Experience with 72 Consecutive Patients," noted: "Gastric procedures appear to have a favorable outlook, but must still be considered investigational." As of 1979, surgeons had performed 72 gastric procedures on patients aged 14-55. The average preoperative weight for women was 202 lb; for men, 342 lb. There were no perioperative deaths (compared with a perioperative death rate of .5% at the University of Kansas), a 1.4% perioperative morbidity rate. The complications consisted of 2 definite, and 2 possible, pulmonary emboli.