Virtual Mentor
American Medical Association Journal of Ethics

November 2008, Volume 10, Number 11:689-778
Ethics of Preventive Medicine

AMA
AMERICAN
MEDICAL
ASSOCIATION

November 11, 2008

Dear colleagues,

Last week, American medicine lost one of its true leaders. Ronald Davis, MD, immediate past president of the American Medical Association, died on Nov 6 at home surrounded by his family and loved ones. Diagnosed with metastatic pancreatic cancer earlier this year, Dr. Davis approached this serious illness with the courage, conviction, and good humor that he displayed throughout his life.

A powerful champion for public health, Dr. Davis advocated for the centrality of preventive medicine in the everyday work of all physicians. As a gesture of our

affection and respect for him, we dedicate this issue of Virtual Mentor on preventive medicine to Dr. Ronald M. Davis.

For those who had the good fortune to know him, Dr. Davis was a down-to-earth guy who never let the trappings of power get to his head. Ron, you will be missed, but your legacy will live on.

Your friend and colleague,

Audrey

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 691-693.

FROM THE EDITOR
Prevention Finds a New Place in Medicine

Medicine's traditional focus on diagnosing and treating illness has succeeded in increasing life expectancy significantly. More recently, however, life expectancy in developed countries—particularly the United States—has slowed in its growth and is predicted by some to enter a decline in the coming decade, a phenomenon that can be attributed partly to the higher prevalence of chronic conditions such as obesity, hypertension, diabetes, and cardiovascular disease [1]. In a certain sense, it is not incorrect to say that a different approach—prevention—may contribute as much to further improvements in quality and quantity of life as curative medicine.

Preventive medicine is integrated into routine medical care and garners much attention from the media on topics that range from smoking cessation to the controversial ban on trans fats. Most of us have been confronted with prevention in our own medical encounters—counseled to exercise more, for example, follow a better diet, or monitor our own health by breast or testicular self-exams—despite having no overt symptoms or health complaints. How many girls and young women have been offered the HPV vaccine? How many older patients have been prescribed pravastatin to help control their cholesterol or an ACE-inhibitor to lower their blood pressure? As the media continues to wage war on the so-called "obesity epidemic" and hospitals across the country enact smoking bans, it is not surprising that prevention has emerged as one of the most debated topics in medicine. And its consequences, for both the individual and society, are subjects of moral, financial, practical, and ethical scrutiny.

The focus on prevention represents an essential next step for the medical field, but its implementation has raised many concerns and been met with a fair share of criticism and ethical inquiry. Preventive medicine differs from traditional medicine in that its goals are to identify and control risk factors of disease rather than diseases themselves. Implementing preventive measures often means intervening in patient behavior or administering treatment before the onset of symptoms—a measure seen by some as a benefit to public health and by others as an intrusion into personal freedom. Because of this fundamental difference, preventive practice treads upon contested ethical grounds. This issue of *Virtual Mentor* delves into the ethical questions prevention raises and provides insight on how such questions might be tackled in the future by physicians and medical students.

Ethical questions in preventive medicine reach far and wide, touching physicians, patients, employers, insurers, hospital administrators, policy makers, and society. The three clinical cases in this issue present concrete dilemmas that physicians face

in balancing treatment of individual patients with preventive measures that, in general, have wider population goals. Case 1 discusses the conflicts that can arise when prevention becomes the rule for directing physicians' practices and a measure for evaluating their performance. Case 2 examines the challenges that a hospital-wide smoking ban poses to physicians caring for smokers and considers the tensions between hospital policy and the treatment of an individual patient. Case 3 considers expedited partner therapy for sexually transmitted diseases and weighs the physician's obligations to prescribe only for those with whom he has established a patient-physician relationship against his duties to promote public health.

The interplay between insurers and employers in preventive medicine is further explored in the health law and op-ed pieces as well as in the winning entry in the Conley Ethics Essay Contest for medical students. The health law article explains why legal challenges to employer-imposed restrictions on employee smoking have failed. The op-ed presents an overview of the currently attempted carrot and stick methods for encouraging prevention by providing benefits or curtailing privileges based on patient and physician compliance. The winning Conley contest essay seeks to define the physician's role when a patient has been penalized by an employer-based wellness program.

The medicine and society article elaborates on the physician's role—and perhaps obligation—in counseling patients about how to overcome financial obstacles to healthier lifestyles and access to care.

The clinical pearl identifies the characteristics of hypertension and prehypertension and describes preventive practices for managing these widespread conditions. More unusual and controversial applications of preventive medicine are examined in the policy forum, which considers the validity of introducing preventive measures typically reserved for adults into the pediatric population, and the journal discussion, which considers the implications of prevention in the psychiatric and psychological realms through use of drugs to suppress formation of bad memories and prevent posttraumatic stress disorder.

Given the myriad everyday applications of prevention as well as its more rare and contested uses, it is clear that preventive medicine has taken root in today's society and will remain a health care centerpiece. Moreover, the prevalence of preventable acute and chronic illness that dominates health care suggests that there is a great need for this focus. Unfortunately, the United States suffers from an appalling shortage of physicians specifically trained in preventive medicine, as the medical education piece affirms in highlighting the shortcomings of preventive medicine education and the need to direct more resources to this field.

As more Americans succumb to the epidemics of chronic disease, and improvements in science allow us to identify more concrete risk factors, prevention will continue to gain momentum. More ethical dilemmas surrounding prevention will surely emerge in the clinical, financial, and administrative settings, and it is my sincere hope that

this issue of *Virtual Mentor* will help to engage the medical community, and particularly medical students and residents, in a dialogue about the application of preventive medicine to our society.

Anna Shifrin, MS-II
University of Massachusetts Medical School
Worcester, Massachusetts

Reference

1. Olshansky SJ, Passaro DJ, Hershow RC, et al. A potential decline in life expectancy in the United States in the 21st century. *N Engl J Med*. 2005;352(11):1138-1145.

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 694-699.

CLINICAL CASE

Practice Incentives and Professional Responsibility

Commentary by David Satin, MD, and Justin Miles

Drs. Adler, Jones, and Pollman routinely met to discuss their internal medicine practice. One discussion in particular focused on recent measures from Medicare that reward practitioners financially if they adopt new screening and prevention guidelines that result in fewer rehospitalizations and other outcome improvements. Ideally, each of the three physicians could decide whether to adopt the Medicare plan on his own, but since they see each other's patients, one doctor's abstention from the new measures would make it impossible for the others to comply.

If adopted, the new guidelines would significantly expand the amount of screening and prevention performed at each patient visit for many prevalent diseases such as diabetes, congestive heart failure, coronary artery disease, and hypertension. A diabetic patient, for example, would be subjected to 10 different screening or prevention measures, including management of HbA1c, blood pressure, lipids and cholesterol levels, eye and foot exams, immunizations for influenza and pneumonia, and a test for urine protein. Without the guidelines, the clinic doctors would perform only a few of the aforementioned tests, focusing on those indicated for a specific patient.

Since the majority of the clinic's patients are insured by Medicare, Drs. Jones and Adler both supported the new guidelines, arguing that the "pay-for-performance" plan will ensure more effective care for patients and simultaneously bring financial rewards for this small, busy clinic in an underserved, low-income community.

Dr. Pollman, on the other hand, was not supportive of the new measures. While he recognized the potential benefits to his patients, he could not imagine forcing his patients to undergo the extensive list of tests and procedures outlined in the Medicare plan. Providing medical care to patients is one thing, he argued, but assuming rigid control over their health care and subjecting them to strict regimens without offering a choice in the matter is frank paternalism.

Adopting the Medicare plan would mean applying the new guidelines to virtually every patient who visited the clinic. When Dr. Pollman asked his colleagues what would be done if a patient declined a particular screening measure, they suggested that such patients be weeded out of their clinic and referred to other health care centers. "We can't afford to allow our patients to weasel out of these rules," Dr. Jones argued. "Besides, it's not as if we're forcing harm on anyone. It's been shown

that systematic screening and prevention can significantly improve care, especially for chronic conditions like diabetes."

Pollman felt torn between supporting his colleagues in a new plan that could bring more effective care to patients, but he was hesitant to adopt the blanket guidelines and compromise his patients' rights to decide on screening and prevention for themselves.

Commentary

One of our favorite references is the bestselling popular economics book *Freakonomics* [1]. Its authors explain that there are three types of incentives: financial, social, and moral. The case at hand illustrates how tensions can develop when pay for performance (P4P) raises the possibility that these incentives may conflict with one another.

Drs. Adler, Jones, and Pollman struggle with aligning the financial, social, and moral incentives of a new P4P program that offers financial compensation for reaching particular clinical outcomes in their patients. First, they consider the financial benefits and burdens of adopting the P4P program, including maximizing P4P profits by reluctantly "forcing patients to undergo the extensive list of tests" and not allowing patients "to weasel out of these rules." Second, there are social incentives to consider. Although not explicit in this case description, the social impact of scoring poorly on publicly reported measures often weighs heavily on clinicians who consider P4P programs [2]. Third, the doctors wrestle with the moral incentives. Drs. Jones and Adler cite the moral benefits of P4P to their patients' health and the financial health of their clinic that serves a low-income, underserved community. Dr. Pollman, however, expresses concerns about the moral cost of transforming their practice into one that is paternalistic, performs unnecessary tests, and fires non-compliant patients.

Which incentive is most important: financial, social, or moral? As a bioethicist, I (Satin) am partial to the third, but this does not mean we should turn a blind eye to the first two. Moral judgments must take all factors into account, including the financial and social impact of our decisions. For example, if you knew in advance that participating in a voluntary P4P program would result in your clinic's financial ruin or in you becoming a social pariah to your patients, it would be immoral to implement it, especially if the clinic served a patient population in great need. Therefore, the issue at hand can ultimately be understood as a moral question. For Drs. Jones, Adler, and Pollman, is participating in this P4P program ethical?

Eliminating Bad Choices and Facilitating a Good Choice

Although bioethicists cannot typically recommend a single best choice in cases as complex as this, they can eliminate clearly bad options. Bioethicists can also refine questions and clarify ethical issues to facilitate a good choice. This commentary illustrates how two common conceptual tools—respect for patient autonomy and

medical professionalism—can help eliminate some potentially bad choices described in this case, and refine a very specific question to facilitate a good choice.

Respecting Patient Autonomy

In this case, Dr. Pollman's concerns about forcing his patients to undergo screening tests can be understood as a concern about respect for patient autonomy. Autonomy is not my (Satin) favorite conceptual tool. It is often wielded as a trump card to resolve moral dilemmas by alluding to the primacy of a patient's right to self determination. But of course there are limits to patient autonomy. A patient cannot compel you to prescribe antibiotics for his or her viral pharyngitis. So when respect for patient autonomy appears to be an issue, one must narrow the scope of the discussion to a specific exercise of patient autonomy such as informed consent.

Informed Consent: Full Disclosure

The principle of informed consent says that clinicians must provide patients with full disclosure; that is the degree of information about the risks and benefits of treatment, non-treatment, and alternative treatments that a reasonable person in that patient's position would want to know [3, 4]. Following this principle, the three clinic doctors would have to explain the risks and benefits of each screening test, alternatives to each test, as well as the risks and benefits of omitting each test. P4P reimbursements should not factor into the recommendation for screening tests. If a test is clinically indicated, physicians should recommend it and explain why. If it is not, physicians should not recommend it. So, are Medicare's "10 different screening" tests clinically indicated? Only clinicians can answer that by examining the evidence from the literature and determining if it applies to each individual patient in light of his or her age, sex, and clinical conditions [5, 6]. Which screening tests are reimbursed under P4P changes neither the evidence nor the patient. If Dr. Pollman felt that a particular guideline was either scientifically invalid or did not apply to his patient, he ought not to have recommended it then and he ought not to recommend it now.

One reason P4P exists is to bring clinicians up-to-date on the importance of following particular guidelines. Many expect that P4P will accomplish with financial incentives what continuing medical education has so far failed to do. For example, why didn't Dr. Pollman offer all 10 screening tests? If his concern was that 10 tests are too many for his poor, underserved patients, perhaps he should be concerned about his current paternalistic practices. If he chooses to focus on the "most relevant" tests, perhaps he should take note that Medicare has done that job for him, by employing hundreds of national experts selected by the American Medical Association who painstakingly combed through the primary literature and fiercely debated the evidence to determine the best screening tests, which were submitted for public commentary, third-party review, revision, and final submission to Medicare, who then further paired down the recommendations to the 10 most relevant tests [7]. Our question to Dr. Pollman and his colleagues is, "Why weren't you recommending these tests before?"

Informed Consent: Non-Coerced Choice

Once patients understand the information that has been fully disclosed, they must make a non-coerced choice [3, 4]. Coercion is typically described as undue or inappropriate influence. If a patient must decide on a screening test under the threat of being fired from the clinic, I think most experts and laymen would call that coercion. Here Dr. Pollman's moral intuition is accurate in that, "assuming rigid control over their health care and subjecting them to strict regimens without offering them a choice in the matter is frank paternalism." Moreover, proceeding with an invasive test without obtaining proper informed consent is malpractice. Not only must the three doctors know the latest clinical guidelines, they must also determine which guidelines apply to each patient and facilitate a non-coerced decision by the patient.

Dr. Pollman is appropriately concerned by this daunting task. How will he and his partners feel if they make a concerted effort to meet the P4P measures only to be thwarted by their patients' right to self-determination? How will the clinic fare if it hires nurse educators to help facilitate informed patient choices, only to discover it missed the P4P bonus and cannot afford to keep its doors open? How will they cope with public reports of their poor performance on preventative health measures, unaccompanied by an asterisk denoting the demographic and clinical factors that contributed to the missed intervention? Indeed, what would enable clinicians to enter a quality improvement game they could lose?

Professionalism

All reimbursement systems create conditions for financial conflicts of interest [8]. The fee-for-service approach to reimbursement tempts us to see as many patients in as short a period of time as possible, while salaried clinicians are motivated to see fewer patients. Capitation tempts us to spend as little as possible on testing and treating patients. What keeps physicians from giving in to these temptations and maximizing profits? The moral ideal of professionalism.

As professionals, we have a fiduciary responsibility to patients—an implicit contract that places their interests above our own. Professionalism also entails self-regulation, whereby we pledge, both as individual physicians and as a group, that we will police ourselves. Quite simply, we promise not to lie, cheat, or steal. If we do, we expect colleagues to report us to medical boards who will sanction us for the protection of the public [9, 10].

The fact that physicians are professionals keeps us from gaming the system in P4P, despite financial and perhaps even social incentives to do otherwise. Britain implemented P4P in 2004, and a recent study suggests that its clinicians have not taken advantage of ways to game the system [11]. The professionalism of American physicians will be tested with every elderly patient whose risk of falling from hypotension outweighs the benefit of lowering blood pressure below the P4P target. Our integrity is at stake every time we consider not accepting into our practice a diabetic patient whose blood sugar is hopelessly far from the P4P goal [12].

Professionalism also entails that we strive to keep up with the latest improvements in patient care. The basis of requiring continuing medical education is our medical boards' commitment and therefore our commitment to maintain medicine as a reputable profession. Although professionalism does not demand that we participate in P4P, it does demand continuous quality improvement [9, 10].

Conclusions, Bioethics Style

P4P is one small part of a quality revolution dedicated to improving patient care through clinical outcomes measurement. With that in mind, we have seen that professionalism implies a moral imperative of continuous quality improvement. Moreover, it is unethical to improve outcomes at the expense of informed consent—either by withholding information that a reasonable person in that patient's position would want to know or by coercing patients with the threat of dismissal from the clinic. These are the bad choices that ethical reasoning exposes.

Now to refine a question that will help facilitate a good choice. A professional who chooses to participate in a P4P program must participate honestly. Even if P4P were to become mandatory, physicians would still have a professional obligation not to game the system, just as they do within our current systems of reimbursement. Drs. Adler, Jones, and Pollman have a difficult decision to make and need to consider many pragmatic factors discussed elsewhere [13, 14]. But to make a wise choice, the overarching moral question each must ask himself is, "Will my participation in this P4P program render me unable to fulfill my professional responsibilities?"

References

1. Levitt SD, Dubner SJ. *Freakonomics: A Rogue Economist Explores the Hidden Side to Everything*. New York, NY. HarperCollins Pub; 2005.
2. Terry K. Physician report cards: help, ho-hum, or horror? *Med Econ*. 2006. http://medicaleconomics.modernmedicine.com/memag/article/articleDetail.jsp?id=359028. Accessed October 3, 2008.
3. Etchells E, Sharpe G, Walsh P, Williams JR, Singer PA.Bioethics for clinicians: 1. consent. *CMAJ*. 1996;155(2):177-180.
4. American Medical Association, Council on Ethical and Judicial Affairs. Fundamental elements of the patient-physician relationship. *JAMA*. 1990;264(24):3133.
5. Schneider CE. Some realism about informed consent. *J Lab Clin Med*. 2005;145(6):289-291.
6. Satin DJ. More realism about informed consent. *J Lab Clin Med*. 2005;145(6):292-294.
7. Endsley S, Baker G, Kershner BA, Curtin K. What family physicians need to know about pay for performance. *Fam Pract Manag*. 2006;13(7):69-74.
8. Goold S. Trust and physician payment. *Healthc Exec*. 1998;13(4)40-41.

9. American Medical Association. Opinion 9.00 Professional rights and responsibilities. *Code of Medical Ethics*. Chicago, IL. American Medical Association; 2001. http://www.ama-assn.org/ama1/pub/upload/mm/369/section_9pdf. Accessed October 21, 2008.
10. Medical Professionalism Project. Medical professionalism in the new millennium: a physicians' charter. *Lancet.* 2002;359(9305):520-522.
11. Doran T, Fullwood C, Reeves D, Gravelle H, Roland M. Exclusion of patients from pay-for-performance targets by English physicians. *N Engl J Med.* 2008:359(3)274-284.
12. Satin DJ. Paying physicians and protecting the poor. *Minn Med.* 2006;89(4):42-44.
13. Guglielmo WJ. This Doctor made P4P work—you can too. *Med Econ*. 2008;85(14):34-36, 42-44.
14. Satin DJ. The impact of pay for performance beyond quality markers: a call for bioethics research. *University of Minnesota Bioethics Examiner*. 2006;10(1).

David Satin, MD, is a post-doctoral fellow at the University of Minnesota's Center for Bioethics and an assistant professor in the University's Department of Family Medicine and Community Health. He practices at Smiley's Family Medicine Residency Program, serving the inner-city Minneapolis community. Dr. Satin sits on local, state, and national pay-for-performance committees, researches, and speaks publicly on ethical issues in pay for performance.

Justin Miles is a second-year medical student at the University of Minnesota in Minneapolis. His research interests include pay for performance and medical student knowledge of pay for performance.

Related in VM
Avoiding Disincentives to Treat in Designing Pay-for-Performance Measures, July 2007

The people and events in this case are fictional. Resemblance to real events or to names of people, living or dead, is entirely coincidental.

The viewpoints expressed on this site are those of the authors and do not necessarily reflect the views and policies of the AMA.

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 700-707.

CLINICAL CASE
Balancing Health Promotion and Healing
Commentary by Michael F. Roizen, MD, and Iyaad M. Hasan, MSN, CNP, and by David Clive, MD

Mr. Benjamin was a middle-aged construction worker with a history of hypertension and congestive heart failure who sustained a vertebral fracture in a job-related accident. He was admitted to Rockport Hospital's orthopedic surgery ward in unstable condition for treatment of his injuries.

To complicate matters, Mr. Benjamin was angry at having had his cigarettes taken away upon admission, as required under Rockport's smoke-free policy. The policy, part of a wide antismoking initiative, banned smoking on hospital grounds and within 50 feet of hospital property, eliminating even the possibility of walking outside for a cigarette break.

Mr. Benjamin was not doing well. He had smoked for more than 20 years and had no intention of stopping, despite counseling from his primary care physician. Though the hospital provided him with nicotine patches, he made it clear to the entire medical team including Dr. Thorman, the hospitalist in charge of his care, that he just wanted his cigarettes back. Over the course of 5 days, Mr. Benjamin grew extremely irritable and became short-tempered and uncooperative with the treating team. He threatened to leave the hospital against medical advice, refused to hold still for IVs or blood draws, and constantly tried to leave his hospital room despite being told to limit unnecessary movement.

Dr. Thorman realized that Mr. Benjamin's recovery would be greatly expedited if he were more compliant and wondered if Mr. Benjamin's outcome would improve if he were allowed to smoke during his stay. Dr. Thorman offered everything he could think of to help his patient relax—the nicotine patch, smoking-cessation therapy—all of which Mr. Benjamin refused.

Dr. Thorman knew that smoking was bad for his patient, particularly since he had heart disease, and that it was in direct violation of hospital rules. He recognized, however, the importance of speeding his patient's fracture recovery and allowing him to return to his family and work. Faced with this dilemma, he sought the assistance of the ethics consultant.

Commentary 1
by Michael F. Roizen, MD, and Iyaad M. Hasan, MSN, CNP

Mr. Benjamin's situation raises ethical questions because of the effect cigarette smoke can have on the smoker and on bystanders exposed to second-hand smoke. The hospital policy banning smoking is similar to many societal regulations that restrict personal choice in the best interest of the individual and entire population. A comparable regulation is the law requiring individuals to obtain licenses to drive before entering public space behind the wheel of a motor vehicle—a regulation that must be followed in order to enjoy a privileged benefit. Mr. Benjamin's case invites us to consider:

- The effect of an individual's choice to smoke on his or her recovery from congestive heart failure, and the responsibility of the physician and society to hasten that recovery.
- The effect of an individual's choice to smoke on recovery time for orthopaedic injuries, and the responsibility of the physician and society to hasten that recovery.
- In-patient treatment of nicotine withdrawal where withdrawal symptoms may inhibit treatment of other conditions.
- Enforcement of hospital policies designed to protect the health of all patients and staff.
- Whether treatment for the primary acute injury can be delayed by a hospital policy.

We are not given specifics on how many cigarettes Mr. Benjamin smokes per day, but the extent of his withdrawal is not difficult to quantify. Enforcement of the hospital policy banned his cigarettes 5 days ago, and he is displaying physical signs of nicotine withdrawal [1]. Either physiologically or psychologically, he is suffering needlessly. The withdrawal symptoms can be treated with nicotine replacements, via patch, gum, or inhaler. It is the non-nicotine additives and particulates contained in inhaled tobacco products that are carcinogenic and inflammatory; in the short term, nicotine replacement could reduce Mr. Benjamin's symptoms, avoid harming him, and foster his recovery. Initiating replacement therapy is still a viable option if we can overcome Mr. Benjamin's initial resistance to it.

The first clinical ethics topic of concern is that Mr. Benjamin has congestive heart failure. Smoking accelerates the progression of coronary heart disease and diminishes the blood's capacity to carry oxygen to the body [2]. Smoking is also linked to congestive heart failure, and the number of diagnoses is elevated among smoking populations [3]. More smokers die from heart disease and plaque ruptures than cancer [2, 4, 5]. Even second-hand smoke increases incidences of acute coronary syndrome events [6]. Under no circumstances can a caregiver enhance the risk of an adverse condition unnecessarily. Dr. Thorman has not exhausted all of his options with regard to treating Mr. Benjamin.

The second clinical ethics concern is Mr. Benjamin's broken vertebrae from a work-related accident. The recommended rest and treatment is inhibited by his agitated state that is triggered by nicotine withdrawal. Most of the symptoms manifest between the third and fifth days of removal, and the majority of patients report that

symptoms begin to improve after the first week. While Dr. Thorman may consider allowing Mr. Benjamin to smoke in order to gain his adherence to treatment, bone-healing time takes longer in smokers than in non-smokers [7]. The net effect of allowing Mr. Benjamin to smoke may not speed his short- or long-term recovery.

Nicotine withdrawal symptoms include cravings, irritability, inability to concentrate, insomnia, and fatigue. With nicotine replacement agents in patch, lozenge, or inhaler form available, and, given the evidence that second-hand smoke is harmful to anyone exposed, Mr. Benjamin should be prohibited from smoking. Medications are available to help reduce the physical symptoms of withdrawal, but they may not be effective due to Mr. Benjamin's unwillingness to quit at this time. It might be useful to ask some ex-smokers to talk to Mr. Benjamin, people whose congestive heart failure symptoms improved after they quit smoking by using a nicotine-replacement agent. Candidates can be found at hospitals with smoking-cessation clinics, and those who have succeeded in giving up smoking often want to help others.

Making an exception to allow Mr. Benjamin to smoke in the hospital would set an extremely poor precedent. If his withdrawal symptoms and resistance to nicotine replacement therapies do not lessen with time, another option is allowing him to sign out against medical advice. A doctor can arrange a home visit from a nurse or other professional who has no ethical opposition to individuals smoking at home. We firmly believe that a doctor should not prescribe or agree to a treatment that poses a direct hazard to other patients.

The job of a medical professional is to help Mr. Benjamin through education and symptom control such as nicotine-replacement therapy. This strategy also reinforces the role of a doctor as a teacher. Even if it is possible to isolate the patient so that tobacco use does not affect others, and to provide staff willing to be exposed to second-hand smoke, the no-smoking policy is an example of regulations that put societal benefit above individual preference. Returning to the driving analogy, everyone needs a license to drive a motor vehicle in a public space. Is it reasonable, safe, or helpful to make exceptions to that regulation?

References

1. Fielding JE, Husten CG, Eriksen MP. Tobacco: health effects and control. In: Maxcy KF, Rosenau MJ, Last JM, Wallace RB, Doebbling BN, eds. *Public Health and Preventive Medicine*. New York, NY: McGraw-Hill. 1998.
2. Centers for Disease Control and Prevention. Annual smoking-attributable mortality, years of potential life lost, and productivity losses—United States, 1997-2001. *MMWR.* 2005;54(25):625.
3. United States Public Health Service. Office of the Surgeon General. The health consequences of smoking: nicotine addiction: a report of the surgeon general. 1998. http://profiles.nlm.nih.gov/NN/B/B/Z/D/. Accessed August 25, 2008.

4. Centers for Disease Control and Prevention. 2001 surgeon general's report—women and smoking. 2001. http://www.cdc.gov/tobacco/sgr/sgr_forwomen/index.htm. Accessed August 25, 2008.
5. United States Public Health Service. Office of the Surgeon General. Reducing the health consequences of smoking: 25 years of progress: a report of the surgeon general: 1989 executive summary. http://profiles.nlm.nih.gov/NN/B/B/X/S/. Accessed August 25, 2008.
6. Pell JP, Haw S, Cobbe S, et al. Smoke-free legislation and hospitalizations for acute coronary syndrome. *N Engl J Med*. 2008;359(5):482-491.
7. Centers for Disease Control and Prevention. 2004 surgeon general's report: the health consequences of smoking. 2004. http://www.cdc.gov/tobacco/data_statistics/sgr/sgr_2004/index.htm. Accessed August 25, 2008.

Michael F. Roizen, MD, is chief wellness officer and chairman of the Wellness Institute at Cleveland Clinic in Ohio. He is a past chair of a Food and Drug Administration advisory committee. He is interested in defining lifestyle changes that allow people to lead healthy, younger-feeling lives.

Iyaad M. Hasan, MSN, CNP, is a nurse-practitioner who specializes in pediatric and adult tobacco treatment. Mr. Hasan is a director of the Tobacco Treatment Center at Cleveland Clinic in Ohio.

Disclosure
Dr. Roizen serves as chair of the advisory board of RealAge, Inc., a web-based supplier of health information that depends on advertising revenue. RealAge clients include all 18 major pharmaceutical firms, including those that produce nicotine-replacement and other anti-craving or cigarette-cessation products. Dr. Roizen developed and sold rights to a drug that is being commercialized by a pharmaceutical firm that sells a nicotine-replacement product.

Commentary 2
by David Clive, MD

Like most clinical ethics problems, this one is a dense, multilayered composite of many questions. In seeking a resolution, it is useful to begin by defining each of the component questions and examining its relative importance. Some may prove irrelevant or trivial and can be eliminated from consideration along the way. Others may require the assistance of additional resources (the patient's orthopedist, internist, nurse, consulting psychiatrist, and the patient himself). With luck, the answers to key questions can be melded into a practicable solution. Following this algorithm allows us to (1) identify the fundamental issue; (2) examine it in the full context of the case, and (3) formulate a resolution that most comprehensively addresses the issue and its ramifications. Let's see how this process plays out in the case of Mr. Benjamin.

Medical Questions

1. How serious are the patient's injuries? How much of a risk is it to the patient if he is allowed to leave without further treatment?

The treating team states that his spine is not stable enough for him to terminate treatment. We can infer from the team's concern that this is a serious safety issue.

2. What is the patient's overall state of health? What is the basis for his congestive heart failure? Would either his new or underlying medical problems be exacerbated by allowing him to smoke?

We do not have all of this information and may need to talk with his primary caregiver. As a general rule of thumb, however, smoking does not acutely exacerbate heart disease or impair bone health. Chronically, it does both, and future efforts should continue to stop Mr. Benjamin's tobacco use. For now, it seems unlikely that a strong medical argument can be marshaled against letting him smoke in the hospital. We could argue that we are justified in permitting him to smoke under the ethical principle of "double effect," which holds that the physician is justified in pursuing a management course that may lead to an unintended consequence if the likelihood of achieving the intended benefit is high.

Psychosocial Questions

1. Why are cigarettes such a highly charged issue for Mr. Benjamin? Is he addicted to nicotine or does the right to smoke really represent a control issue for a relatively young, active man who suddenly finds himself in a position of helplessness?

2. Is he making a rational, authentic decision, or are his thought processes clouded by delirium, depression, or anxiety?

These two psychosocial questions demand due diligence. Interview the patient, but be prepared for an irritable response to any questions as to why he's so angry or upset about being denied cigarettes. Ascertain that he understands the consequences of refusing treatment. Make certain he is not suffering from some medication-related or metabolic derangement that is adversely affecting his sensorium. Ask his nurse and anyone familiar with him if his behavior has changed markedly and whether he is manifesting confusion or signs of depression. Request a psychiatric consultant, if necessary. For the sake of discussion, let's assume that you have eliminated delirium or a primary psychological cause for Mr. Benjamin's anger. He is simply an irritable, nicotine-addicted adult taking a rational—if unproductive—position.

3. If he were to leave the hospital, could he receive necessary care in an alternate environment wherein he would be allowed to smoke?

Many hospitals are adopting strict tobacco-free policies, which may make it difficult to find adequate, acute care for his vertebral fracture in a setting that tolerates

smoking. If the patient is a veteran, a Veterans Administration hospital may offer such a solution, although even the traditionally smoke-laden Veteran's Administration hospitals have joined the smoke-free movement. Depending on his resources, he may be able to receive comprehensive care at home; you will need to ask his social-service case worker and orthopedist if this is feasible from the financial and medical perspectives, respectively.

Policy and Legal Questions

1. Is the hospital's antismoking policy ever waived in extraordinary circumstances?

Antismoking policies are generally inflexible. If exceptions were tolerated, enforcement of the policy would become almost impossible. A valid argument can be made that smoking anywhere on the premises compromises the health and safety of others. This is a critical point. To be sure, we allow narcotic-addicted patients to receive methadone while hospitalized to satisfy their cravings, but one patient's use of methadone has no adverse effect on anyone else on the premises. We can assume that a settlement allowing Mr. Benjamin both to smoke and remain in this hospital is not an option here.

2. What is the hospital's liability if he is discharged prematurely, even at his own instigation?

If this patient were to suffer injury or death as a result of his refusal of treatment or leaving against medical advice, the hospital and physicians should not be held liable. In fact, however, there is no way to prevent him from suing. It is critical to document exactly what the patient has been told about his condition, his need for ongoing inpatient care, and the potential consequences of his refusal. The hospital's risk-management and legal officers must be alerted preemptively.

3. Are there grounds for holding and treating him against his will, without cigarettes, in the hospital on the presumption that his position, "either I smoke or I refuse treatment," is self-destructive?

Definitely not. Mr. Benjamin has the capacity to make his own decisions and is entitled, under the principle of respect for autonomy, to have them honored.

Working toward Resolution

We can now winnow out those questions, namely the last two, that are not immediately relevant to any advice we will offer as ethics consultants. Adequate attempts to educate and negotiate with the patient have been made and documented in the medical record. And the central issue has been identified: this rational, autonomous patient is adamant about continuing to smoke through his hospitalization—one that is necessary for his health and safety—yet the hospital will not permit him to smoke under any circumstances.

When a conflict seems irresolvable—as this one does—negotiation comes into play. The ethics consultant can serve as a mediator between the treating team and patient and may even develop conditions to be "put on the table." Most hospitals also have patient advocates or representatives who can assist in negotiating terms of care with patients. Here are some possible concessions to offer Mr. Benjamin: (1) shorten his inpatient treatment as much as possible under the circumstances if he'll bear with you a little longer, (2) suggest appropriate medications to take the edge off his cigarette cravings (benzodiazepines, buproprion, nicotine supplements, etc.), and (3) ask if there is anything you can do to help him through this difficult period.

Presenting Mr. Benjamin a time frame for discharge and treating him with respect may lead to common ground. It would be glib to argue that any of the above strategies is likely to work. Still, they must be tried. Everyone loses if Mr. Benjamin doesn't get the treatment he needs. The prospect of transfer to an institution that permits smoking or to his home with home health care are last resorts.

The trend toward making hospitals smoke-free is two decades old and spreading rapidly. In spite of this, almost nothing has been written about the implications of patients refusing to comply with smoke-free rules. We can anticipate broader questions ahead. How will we handle such cases if all hospitals become smoke-free? Will we need smokers' and nonsmokers' hospitals or hospital wards? What other self-destructive behaviors will physicians have to use as bargaining chips in negotiating care plans with patients?

Suggested Readings

Bronaugh TA, Frances RJ. Establishing a smoke-free inpatient unit: is it feasible? *Hosp Community Psychiatry*.1990;41(12):1303-1305.

Fiore MC, Jorenby DE. Smoke-free hospitals. A time for universal action. *Chest*. 1992;102(5):1317-1318.

Philpot TK. The ethics of smoke-free zones: an exploration of the implications and effectiveness of a non-smoking policy as a health-promotion strategy in the context of an orthopedic trauma ward. *J Clin Nurs*. 1994;3(5):307–311.

David Clive, MD, is a nephrologist and professor of medicine at the University of Massachusetts Medical Center in Worcester, where he chaired the ethics committee for many years. He has won numerous teaching awards and the 2007 Leonard Tow Humanism in Medicine Award from the Arnold P. Gold Foundation.

Related in VM

Practicing Preventive Medicine through Preventive Employment Practices, November 2008

The Ethics of Requiring Employees to Quit Smoking, January 2007

Managing Prehypertension, November 2008

The people and events in this case are fictional. Resemblance to real events or to names of people, living or dead, is entirely coincidental.

The viewpoints expressed on this site are those of the authors and do not necessarily reflect the views and policies of the AMA.

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 708-718.

CINICAL CASE
Ethics of Expedited Partner Therapy
Commentary by Matthew R. Golden, MD, MPH, and Matthew Hogben, PhD, and by Mark A. Levine, MD

Mr. Seabrook, a telephone company employee, decided to visit the health clinic near his workplace because he had a burning sensation when urinating and occasional discharge. Dr. Ellis was staffing the clinic and welcomed him into his office. Mr. Seabrook was a young man in his 20s, and Dr. Ellis recognized his patient's symptoms as probable signs of a sexually transmitted disease. When Dr. Ellis took a sexual history, Mr. Seabrook answered that he had a girlfriend of 3 months who lived in the same town. Dr. Ellis then tested Mr. Seabrook for gonorrhea and chlamydia.

"I'll prescribe some antibiotics to treat the infection, which I think is very likely to be a sexually transmitted disease," said Dr. Ellis. "There are two different pills—one you take just once, and the other you continue taking twice a day for 7 days. Once the test comes back and we know for sure what the infection is, we can discontinue one of those pills." Mr. Seabrook nodded his head, took the prescription, and stood to walk out of the doctor's office.

But Dr. Ellis asked Mr. Seabrook to stay because he wanted to discuss another important matter. Dr. Ellis explained that it was critical that Mr. Seabrook's girlfriend also get medical care because it was very likely that she had been infected with chlamydia, and if she didn't get treatment, she would pass the infection right back to Mr. Seabrook once he finished his course of antibiotics. Furthermore, Dr. Ellis explained that the infection could cause more serious problems for Mr. Seabrook's girlfriend, such as infertility, ectopic pregnancy, and chronic pelvic pain.

"Can we schedule an appointment for her to come in and see me Monday? It will be a brief exam, the same test I did for you, and I could give her a similar prescription if she turns out to have the infection too."

"Actually," said Mr. Seabrook, "I don't think she'll come in to see you. She works two jobs and we live about 45 miles from here. I only came here because it's near my job. Oh, and she doesn't have health insurance."

Dr. Ellis knew the importance of treating Mr. Seabrook's girlfriend and thought of giving Mr. Seabrook a "partner packet"—a course of antibiotics that Mr. Seabrook could give his girlfriend. He feared, however, that Mr. Seabrook might miscommunicate the necessary medical information in delivering the drugs to his

girlfriend. Maybe Mr. Seabrook would be too embarrassed to talk about STDs and never give her the drugs. Moreover, Dr. Ellis felt ambivalent about prescribing for someone he had never met or examined before, and whose medical history and drug allergies he did not know.

Commentary 1
by Matthew R. Golden, MD, MPH, and Matthew Hogben, PhD

This case is fairly typical of what a physician encounters in caring for a man with chlamydial urethritis. A central aspect of that care is ensuring the treatment of the patient's potentially exposed sex partners. Clinicians often do this without actually seeing a patient's partners through expedited partner therapy (EPT). Most commonly, EPT involves giving patients medication or a prescription for their sex partners, a practice called patient-delivered partner therapy (PDPT). PDPT has recently received a lot of attention, including an AMA report related to the ethics of PDPT [1]. In this article, we outline what we consider to be the major ethical issues related to EPT, drawing particular attention to areas in which we believe the AMA report was not balanced or in error.

What Do We Know?
Ethical decisions don't exist in isolation from medical knowledge. As a result, consideration of the ethics of EPT should start with a summary of what we generally know about partner notification and about EPT in particular. Throughout this discussion, we will focus only on gonorrhea and chlamydial infection, the sexually transmitted diseases (STD) for which evidence related to EPT is most thoroughly developed.

At present, U.S. health departments provide partner notification services to fewer than 20 percent of people diagnosed with gonorrhea or chlamydial infection [2]. Randomized trials have shown that these services—in which health department staff interview patients with STDs and try to assure that their partners are notified—can increase the number of partners of male STD clinic patients who receive treatment [3, 4]. No data exist, however, to support the efficacy of this intervention in other populations, and a trial conducted in the United Kingdom found that traditional public health partner services were ineffective when provided outside of the STD clinic setting [5]. Thus, the efficacy of providing traditional public health partner services to the broad population affected by gonorrhea and chlamydial infection remains uncertain. Moreover, health departments have no resources to help clinicians ensure that their patients' partners are treated, so they leave that responsibility to diagnosing clinicians.

Clinicians seldom know what happens to their patients' partners, however. We found that only 17 percent of clinicians interviewed about a patient they had recently treated for chlamydia in King County, Washington, knew whether or not their patient's partner(s) had been treated [6]. In other words, health departments leave the responsibility for partner notification to diagnosing clinicians, and clinicians

typically give that responsibility to the patients themselves. How do the patients do? It's difficult to estimate precisely the percentage of partners that receive treatment, but across a wide spectrum of studies conducted over the last 30 years it seems that approximately one-half of potentially exposed partners receive treatment [7]. Clearly, we have room for improvement.

As part of a public health research group confronting the issue of how to improve STD partner notification a decade ago, we decided we needed a new system. We wanted to develop an approach that was sustainable, evidence based and could be brought to scale to affect public health. We decided to study EPT. In a population-based study of U.S. physicians, we found that approximately one-half already used EPT at least occasionally [8]. Three subsequent randomized controlled trials evaluated EPT for gonorrhea or chlamydial infection [9-11]. All three of these trials found that EPT increased the proportion of partners treated, and all three observed either a significant reduction in reinfection rates in patients whose partners received EPT or a trend toward such a reduction. Thus, EPT was found to improve patient treatment outcome (i.e., reduced risk of reinfection) and to potentially improve the care of partners. These data were consistent with data from observational studies [12, 13] and led to the development of CDC guidelines on EPT as well as guidelines in Tennessee, California, and Washington [14-16].

Ethical Considerations

In deciding whether to provide a patient with PDPT, clinicians confront a number of important ethical considerations that require balancing their obligations to the patient, patient's partner(s), and larger society. In general, four values are paramount in medical ethics: beneficence, nonmaleficence, respect for autonomy, and justice [17].

What is in the best interest of the patient? Insofar as we have good studies showing that PDPT decreases patient reinfection rates in heterosexuals, evidence supports the conclusion that offering PDPT to patients diagnosed with gonorrhea or chlamydia is a superior standard of care. It is worth noting that in the EPT clinical trials, PDPT was offered to all patients who were randomly assigned to study arms that included EPT. Clinicians did not selectively offer PDPT based on their assessment of whether a patient was, in their judgment, more or less likely to see that his or her partner would be treated in the absence of PDPT. (To our knowledge, no study has assessed whether clinicians can accurately predict the likelihood that a patient will assure a partner's treatment.) In one trial, all patients were offered public health assistance in notifying partners, and EPT plus the offer of assistance was more effective than just offering patients assistance in notifying partners. Thus, evidence supports offering PDPT to heterosexual patients with gonorrhea and chlamydia as a routine.

The AMA report on EPT suggests that asking patients to give their partners medication involves a breach of confidentiality since PDPT requires patients to tell their partners about their STD diagnosis [1]. It is true that partner notification involves a loss of patient privacy—diagnosed patients have to notify their partners

before their partners can seek care. However, PDPT does not affect that reality; the loss of privacy is not changed if a patient is offered medication to give a sex partner. Thus, we believe that the issue of confidentiality is irrelevant to the consideration of EPT. Moreover, we do not think anyone would argue that, except in very specific situations (e.g., sexual or physical abuse), it is ethical for patients to not inform sex partners that they may have an STD. Thus offering patients PDPT strikes us as the most ethical course of action for providing patients with gonorrhea or chlamydial infection the best care available.

What is best for the partner? Here the ethical issues are more complicated. PDPT is not optimal medical care for the partner. That said, we believe that partners' interests are best protected by routinely offering patients PDPT, as long as the therapy includes accurate written instructions and information. Some partners may have medical conditions that would be diagnosed if they underwent a complete evaluation and missed if they simply took medication provided by a partner. There is also some risk for allergic reactions. These are clear potential downsides to PDPT. Fortunately, we have some data on these issues.

In a study of more than 8,000 patients in four U.S. STD clinics, we found that 3.8 percent of women evaluated because of sexual contact with a partner who had gonorrhea, chlamydia or nongonococal urethritis were treated for pelvic inflammatory disease (PID) [18]; these women would not have received standard treatment for PID as part of PDPT. However, some would presumably have sought care because of symptoms, others would have been adequately treated with the medications provided as PDPT [19], and, given the nonspecificity of the clinical diagnosis of PID, some almost certainly did not have an upper genital tract infection. Thus, the number of cases of PID that go untreated as a result of PDPT is most likely very small, and, depending on how much PDPT increases partner treatment, PDPT may actually increase the treatment of PID. With the exception of infection with *Trichomonas vaginalis*—a pathogen for which most providers do not routinely test—other diagnoses appear to be very rare in heterosexuals evaluated because of a partner's STD diagnosis [18].

We have fewer data on the risk of adverse drug reactions resulting from PDPT. PDPT could increase the risk of adverse drug reactions if partners who knew they had a history of an allergic reaction to macrolides, penicillins, or cephalosporins took one of those medications in spite of a written warning not to do so. To date, however, there is no evidence that this is a significant problem. We have provided PDPT to thousands of patients in King County since 1998. The health department distributes PDPT with information and a telephone number to contact about adverse events, and a case of anaphylaxis has yet to be reported. Similarly, the California State Department of Health maintained a hotline for reports of major adverse reactions from EPT for several years and never received a report. Thus, what evidence we have suggests that more partners are treated when patients with gonorrhea or chlamydia receive PDPT; very few have concurrent infections that would routinely

be treated if they sought medical evaluations; and avertable, major adverse drug reactions are very rare.

The ethical dilemma revolves around whether partners can make informed decisions about these risks and their medical care. Here we believe that the principle of respect for autonomy should take precedence. When PDPT includes appropriate written information, we believe that partners can make an informed decision about whether or not they wish to take the provided medication or follow the accompanying advice to seek a complete medical evaluation. (Illiterate patients, very young persons, and other groups may not be good candidates for routine PDPT because of this concern.) As with the issue of confidentiality discussed above, concerns about partner informed consent are not limited to partners receiving PDPT; they also affect partners who do not receive PDPT. When patients are told to notify partners of their STD diagnosis—particularly when they are asked to do so with no written information—we don't really know what they tell their sex partners. Insofar as PDPT promotes more widespread provision of written information for partners, it may improve informed consent. To the extent that PDPT increases notification rates (equivalent or improved rates were seen across all trials evaluating EPT), a larger proportion of partners will be exposed to instructions to seek evaluation and take other appropriate actions (e.g., abstain from sex for 7 days).

The principle of justice also argues for the need for PDPT. Unfortunately, our medical care system is not just, and many people have limited access to care. For some partners, PDPT may be the only way to receive treatment. As medical professionals, we should actively advocate for a more equitable medical care system, one in which everyone who wants to see a medical professional can do so. But until such a system is in place, some access to care is probably better than none at all. Again, we are aware of no evidence to suggest that medical professionals can accurately gauge whether a patient's sex partners have insurance or good access to medical care. Given that reality, the ethical course of action is to offer PDPT routinely to patients with gonorrhea and chlamydial infection.

What is best for the society? Remarkably, it is here that the data are weakest. While we have some data that a public health program promoting EPT use can increase the proportion of partners treated in the population [20], we do not have data that it actually affects the prevalence or incidence of STD. Of course, we don't have that type of data to support any approach to partner notification or intervention currently in place to control STDs. It makes intuitive sense that treating more partners should prevent ongoing STD transmission, and that hypothesis is supported by mathematical modeling studies [21, 22]. Thus, while we certainly need better data on this critical issue, what evidence we have supports that idea that EPT could improve the public health.

Conclusions

Physicians treating patients for gonorrhea or chlamydia are ethically obliged to make a good faith effort to assure that their patients' sex partners also receive treatment.

Health departments around the United States are increasingly advocating the use of EPT as a tool to help clinicians achieve that goal. EPT is not legal in all states, and clinicians should assess the legal status of EPT in their state before providing it. The CDC maintains an Internet site that provides information on the legality of EPT [23]. While there are genuine ethical dilemmas involved in EPT, we believe that, as long as medications are provided with appropriate written information, the preponderance of ethical consideration favors routinely offering EPT to heterosexuals with gonorrhea or chlamydial infection.

References

1. American Medical Association Council on Ethical and Judicial Affairs. CEJA Report 6-A-08. Expedited partner therapy. 2008. http://www.ama-assn.org/ama1/pub/upload/mm/369/ceja_6a08.pdf.
2. Golden MR, Hogben M, Handsfield HH, St Lawrence JS, Potterat JJ, Holmes KK. Partner notification for HIV and STD in the United States: low coverage for gonorrhea, chlamydial infection, and HIV. *Sex Transm Dis*. 2003,30(6):490-496.
3. Cleveland JQ. A cost-effective study of alternative methods for gonorrhea contact referral and rescreening. Dade County, FL: Dade County Department of Public Health. Undated.
4. Katz BP, Danos CS, Quinn TS, Caine V, Jones RB. Efficiency and cost-effectiveness of field follow-up for patients with chlamydia trachomatis infection in a sexually transmitted diseases clinic. *Sex Transm Dis*. 1988,15(1):11-16.
5. Low N, McCarthy A, Roberts TE, et al. Partner notification of chlamydia infection in primary care: randomised controlled trial and analysis of resource use. *BMJ*. 2006;332(7532):14-19.
6. Golden MR, Whittington WL, Gorbach PM, Coronado N, Boyd MA, Holmes KK. Partner notification for chlamydial infections among private sector clinicians in Seattle-King County: a clinician and patient survey. *Sex Transm Dis.* 1999;26(9):543-547.
7. Golden MR, Faxelid E, Low N. Partner notification for sexually transmitted infections including HIV infection: an evidence-based assessment. In: Holmes KK, Sparling PF, Stamm WE, et al., eds. *Sexually Transmitted Diseases*, 4th ed. New York, NY: McGraw Hill; 2008.
8. Hogben M, McCree DH, Golden MR. Patient-delivered partner therapy for sexually transmitted diseases as practiced by U.S. physicians. *Sex Transm Dis.* 2005;32(2):101-105.
9. Schillinger JA, Kissinger P, Calvet H, et al. Patient-delivered partner treatment with azithromycin to prevent repeated chlamydia trachomatis infection among women: a randomized, controlled trial. *Sex Transm Dis.* 2003;30(1):49-56.
10. Golden MR, Whittington WL, Handsfield HH, et al. Effect of expedited treatment of sex partners on recurrent or persistent gonorrhea or chlamydial infection. *N Engl J Med.* 2005;352(7):676-685.

11. Kissinger P, Mohammed H, Richardson-Alston G, et al. Patient-delivered partner treatment for male urethritis: a randomized, controlled trial. *Clin Infect Dis.* 2005;41(5):623-629.
12. Kissinger P, Brown R, Reed K, et al. Effectiveness of patient delivered partner medication for preventing recurrent chlamydia trachomatis. *Sex Transm Infect.* 1998;74(5):331-333.
13. Ramstedt K, Forssman L, Johannisson G. Contact tracing in the control of genital chlamydia trachomatis infection. *Int J STD AIDS.* 1991;2(2):116-118.
14. Centers for Disease Control and Prevention. Expedited partner therapy in the management of sexually transmitted diseases. 2006. http://www.cdc.gov/std/Treatment/EPTFinalReport2006.pdf. Accessed October 13, 2008.
15. Bauer HM, Wohlfeiler D, Klausner JD, et al. California guidelines for expedited partner therapy for *Chlamydia trachomatis* and *Neisseria gonorrhoeae*. *Sex Transm Dis.* 2008;35(3):314-319.
16. Washington State Department of Health. Washington State Department of Health background and recommendations for incorporating patient delivered partner therapy (PDPT) by health care providers. 2006. http://www.doh.wa.gov/CFH/STD/Pub/DOHPDPTGuidlines2004.pdf.
17. Gillon R. Medical ethics: four principles plus attention to scope. *BMJ.* 1994;309(6948):184-188.
18. Stekler J, Bachmann L, Brotman RM, et al. Concurrent sexually transmitted infections (STIs) in sex partners of patients with selected STIs: implications for patient-delivered partner therapy. *Clin Infect Dis.* 2005;40(6):787-793.
19. Malhotra M, Sharma JB, Batra S, Arora R, Sharma S. Ciprofloxacin-tinidazole combination, fluconazole- azithromicin-secnidazole-kit and doxycycline- metronidazole combination therapy in syndromic management of pelvic inflammatory disease: a prospective randomized controlled trial. *Indian J Med Sci.* 2003;57(12):549-555.
20. Golden MR, Hughes JP, Brewer DD, et al. Evaluation of a population-based program of expedited partner therapy for gonorrhea and chlamydial infection. *Sex Transm Dis.* 2007;34(8):598-603.
21. Hethcote H, York J. Gonorrhea transmission dynamics and control. *Lecture Notes in Biomathematics*. 1984;56:1-105.
22. Kretzschmar M, van Duynhoven YT, Severijnen AJ. Modeling prevention strategies for gonorrhea and chlamydia using stochastic network simulations. *Am J Epidemiol*. 1996;144(3):306-317.
23. Centers for Disease Control and Prevention. Legal status of expedited partner therapy. 2008. http://www.cdc.gov/std/ept/legal/default.htm. Accessed July 31, 2008.

Matthew R. Golden, MD, MPH, is an associate professor of medicine and epidemiology at the University of Washington in Seattle, and is the director of the Public Health-Seattle & King County Sexually Transmitted Diseases Program. He

has conducted numerous studies of HIV and STD partner notification and is a principal investigator on an NIH-funded, community-level, randomized trial of expedited partner therapy.

Matthew Hogben, PhD, is chief of the Behavioral Interventions and Research Branch of the division of STD prevention at the Centers for Disease Control and Prevention in Atlanta. His research interests include improved health care and provision. Since 2000, he has helped conduct a series of innovative STD partner-notification interventions that have yielded scientific outcomes and programmatic guidance.

Commentary 2
by Mark A. Levine, MD

This case outlines a number of issues that have long concerned thoughtful practitioners: issues of trust, effectiveness, safety, confidentiality, liability, and public health. While there has been a recent flurry of policies and publications in this area, the concerns are not new, though perhaps newly nuanced [1-3].

Physicians have a proud tradition of commitment to provide ideal care. They also have obligations to do no harm and help patients whenever they can. As is obvious from this case, it is not always possible to honor those commitments at the same time. Failure to treat both this patient and his partner will continue to expose the patient to chlamydia if their relationship continues, and, even if it does not, his partner is a reservoir of disease that presents a threat to public health. Ideal care would be the simultaneous medical evaluation and treatment of the patient and all of his sexual contacts. The patient in this case has told Dr. Ellis that his partner will not seek medical evaluation. Thus, the practitioner is faced with a choice of less-than-ideal strategies. Which professional imperatives should be honored and which should be ignored?

The provision of therapy for sex partners of patients with certain sexually transmitted diseases, primarily chlamydia, without an intervening medical evaluation or professional prevention counseling is known as expedited partner therapy—named because the treatment is delivered at the discretion of the patient [1, 2].

For years, practitioners surreptitiously provided double doses of therapy to patients with STDs, intending that one-half would be taken by the patient's partner. This was generally done in circumstances where the partner would be unlikely to seek medical attention. The strategy was assumed to be the best practical way of preventing disease recurrence from exposure to a known source of infection. Frequently it was undertaken in violation of state licensing laws that explicitly required an established patient-physician relationship as a condition of treatment. It was also usually performed in the absence of prepared educational material and with great variety in the content and quality of patient instruction. Even today, less than one-quarter of state medical practice laws explicitly approve expedited partner therapy [3].

In the last few years, the Centers for Disease Control and Prevention [1] and the American Medical Association [2, 4] have collaborated on a series of recommendations that clearly outline the circumstances and requirements for the appropriate use of expedited partner therapy. These recommendations are: (1) use only in certain circumstances—currently gonorrheal and chlamydial infections in heterosexual women and men—when other management strategies are impractical or unsuccessful; (2) do not use for the treatment of syphilis or trichomoniasis or for men who have sex with men; (3) encourage the intended recipient of expedited partner therapy to seek medical attention in addition to accepting therapy; (4) educate the recipient through written materials that accompany medication, by counseling of the index case, and, when practical, through personal counseling by a pharmacist or other professional; and (5) be aware of state practice laws and regulations and public health requirements that limit the use of expedited partner therapy.

In addition to providing quality care for their individual patients, physicians have a health policy role. Principle III of the AMA's *Code of Medical Ethics* states, "A physician shall respect the law and also recognize a responsibility to seek changes in those requirements which are contrary to the best interests of the patient" [5]. With the increasing recognition of medical and public health benefits of expedited partner therapy, physicians are encouraged to work with their state legislatures and public health agencies to remove legal and regulatory impediments to its use.

How do these policies pertain to the care of Mr. Seabrook in the above case? Certainly Dr. Ellis was correct to inquire about Mr. Seabrook's sexual partner. Yet, he should not assume that Mr. Seabrook has a single, heterosexual partner. A more open-ended inquiry, such as, "Can you tell me about your sexual activity," could have opened a door to possible acknowledgement of more than one partner or same-sex experiences that would have influenced management significantly. For instance, expedited partner therapy is not recommended for partners of men who have sex with men even if they also have heterosexual partners.

How should Dr. Ellis consider the observation that Mr. Seabrook's girlfriend lacks health insurance? This should not change the clinical recommendation that she receive medical evaluation and treatment, although it may influence her decision of where to seek care.

Dr. Ellis is fortunate to have a "partner pack" available. This implies that some forethought has been given to expedited partner therapy on the health clinic's behalf. The educational packet for the patient and his partner regarding infection with gonorrhea and chlamydia should include information to facilitate the sensitive discussion between a naive patient and his or her partner that encourages the partner to seek medical care.

If Dr. Ellis concludes that expedited partner therapy is the best course of action in this situation, he must give some thought to how the therapy will be delivered. He

could write a prescription in the name of the person that Mr. Seabrook identifies as his partner. If Mr. Seabrook is uncomfortable providing such identifying information, Dr. Ellis might be tempted to double the dosage of the medication he prescribes for Mr. Seabrook, but this could be a violation of state regulation and perhaps even insurance fraud. A third option is to write a prescription for the indicated medication(s) while leaving the name of the patient blank. Unfortunately, this, too, may be a violation of state regulation.

The ideal decisions for Dr. Ellis to make are: (1) obtain as complete a sexual history from Mr. Seabrook as possible; (2) review the partner pack to assure that it contains thorough and sensitive clinical information intended to persuade the partner to seek medical care for the exposure and evaluation of possible concomitant health problems; (3) write a prescription for an unnamed patient for the indicated medications in the event that the partner elects not to seek medical attention; (4) report Mr. Seabrook's infection in compliance with pertinent regulatory requirements; and (5) advocate for changes in a state law or regulations, if necessary, to remove impediments to expedited partner therapy.

References

1. Centers for Disease Control and Prevention. Expedited partner therapy in the management of sexually transmitted diseases. http://www.cdc.gov/std/treatment/EPTFinalReport2006.pdf. Accessed August 31, 2008.
2. American Medical Association Council on Ethical and Judicial Affairs. Report 6, A-08. Expedited partner therapy. 2008. http://www.ama-assn.org/ama1/pub/upload/mm/369/ceja_6a08.pdf. Accessed August 31, 2008.
3. Hodge JG Jr., Pulver A, Hogben M, Bhattacharya D, Brown EF. Expedited partner therapy for sexually transmitted diseases: assessing the legal environment. *Am J Public Health.* 2008;98(2):238-243.
4. American Medical Association Council on Science and Public Health. Report 9-A-05. Expedited partner therapy (patient-delivered partner therapy): an update. 2006. http://www.ama-assn.org/ama/pub/category/16410.html. Accessed August 31, 2008.
5. American Medical Association. *Principles of Medical Ethics*. 2001. http://www.ama-assn.org/ama/pub/category/2512.htm. Accessed August 31, 2008.

Mark A. Levine, MD, is the immediate past chair of the American Medical Association's Council on Ethical and Judicial Affairs. He is an associate professor of medicine at the University of Colorado in Denver, and active in its Center for Bioethics and Humanities. Dr. Levine is also a chief medical officer for the Denver regional office of the Centers for Medicare & Medicaid Services.

Disclaimer
The viewpoints expressed in this article do not reflect the views and policies of the U.S. Department of Health and Human Services or the Centers for Medicare & Medicare Services.

The people and events in this case are fictional. Resemblance to real events or to names of people, living or dead, is entirely coincidental.

The viewpoints expressed on this site are those of the authors and do not necessarily reflect the views and policies of the AMA.

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 719-723.

CONLEY CONTEST WINNING ESSAY

First, Do Not Punish: Individual Incentives in Health Policy

Benjamin M. Howard

Scenario

Dr. Montgomery has been caring for Mr. Carson for almost 5 years, helping him manage his non-insulin-dependent diabetes and weight. Mr. Carson also has hypertension and high cholesterol. At Mr. Carson's 3-month check-up, Dr. Montgomery was surprised to see his patient's blood pressure at an uncharacteristically high 165/90. When asked what he thought was responsible for the jump, Mr. Carson said that he had only been taking his blood pressure medicine sporadically in the last few months.

"Why is that?" asked Dr. Montgomery.

"Well, we've had this new wellness program at the job," said Mr. Carson. "Started almost a year ago, now. We had to fill out a 'lifestyle profile'—did we wear seat belts? How much alcohol did we drink? Did we smoke? How much did we weigh? A whole bunch of stuff like that."

"That doesn't sound like an altogether bad idea. What does it have to do with your blood pressure medication?" Dr. Montgomery asked.

"Well, whoever looks over these things at the insurance company decided that I should lose weight, at least 10 pounds over 6 months. I couldn't do it, doc. You know how hard I've tried and all the plans we've worked out for exercise and the like. I tried, but I ended up actually gaining a few. So now I have to pay $50 more for my health insurance every month until I get my weight down. I can't pay for that and buy all this medicine, too. My wife and I talked it over and we figured out that it's more important to take those two kinds of diabetes pills. That's right, isn't it, doc? I don't get feeling bad from the blood pressure like I do when my sugar's out of whack."

Response

As the soaring price of health care consumes national political campaigns, bankrupts families, and further destabilizes a fragile U.S. economy, it's no wonder that insurers and employers are turning to creative new ways to control costs. Personal health incentives, a prominent example of such efforts, seek to rein in cost by offering individuals positive or negative motivators for maintaining and improving their health. In vogue for years at top global firms, such policies are now finding traction even in state Medicaid plans.

In the heated rhetoric of a political season bent on systemic reform, several calls have been made to increase the role of the consumer in the management of health care in America. And while this trend may seem warranted in a country built on the power of the individual, such policies, especially those that employ penalties and negative incentives, raise larger questions about the determinants of health and stir ethical concerns about the principles of justice and respect for autonomy. Indeed, as in the case of Dr. Montgomery and Mr. Carson, the patient may become a victim of the very policy that was ostensibly implemented to promote his health. Penalties like these may lead to worse outcomes for the patient, and in the end may compromise the physician's ability to provide effective care.

Having subdued much of the infectious disease that once plagued humanity through immunization, sanitation, and medication, and having mastered the management of acute illness and emergency care, biomedicine in the developed world finds itself confronting the growing burden of chronic disease. Downstream manifestations of maladies like hypertension, diabetes, and obesity now overwhelm hospital wards and state budgets. Since the middle of the last century, such insidious illnesses have been recognized as "lifestyle" diseases because factors such as diet, exercise, smoking, weight control, and adherence to prescribed treatment have predictable effects on their progression and outcomes. Once we tie these diseases to personal behaviors and choices, it seems natural to approach their management through policies directed toward the individual making the choices.

After all, as heirs to Mill and Locke, Americans understand that personal responsibility and individual choice form the foundation of our free society. Why shouldn't such responsibility extend to the arena of health? This logic, combined with a context of limited health resources, has led to the recent boom of such approaches in the corporate world and government health programs alike [1]. And while most of those programs, unlike the case study at hand, employ positive rather than negative incentives, surveys show that more than 50 percent of Americans support the implementation of higher insurance premiums and deductibles for patients with unhealthy lifestyles [2].

Incorporating lifestyle incentives into health policy thus seems to be a sensible and appealing idea, and one that accords with American ideology of individual responsibility. What physician has not struggled to enlist patients to take charge of their own health—lose those extra pounds, keep that blood sugar in check, get those 30 minutes of exercise? One could argue that a policy encouraging this type of behavior, or discouraging damaging behaviors, is actually a means of empowerment, giving patients ownership over the progress of their disease. The problem, of course, is that even in the so-called lifestyle diseases, forces larger than individual control are at play.

Situating health at the level of the individual, as controlled by a free agent's choice, fails to acknowledge the wide spectrum of causality that leads to human health and

human disease. On the microscopic side, pointing out the effect of genetics seems almost too obvious; knowing that a strong family history of essential hypertension can predispose someone toward high blood pressure should undercut the notion that disease can be viewed solely, or even primarily, through a lens of individual behavior. And at the macroscopic level, studies correlating rates of chronic disease mortality to socioeconomic class speak for themselves. The fact that members of a certain class, social stratum, or race are more vulnerable to certain chronic diseases undermines any policy that attempts to manipulate disease at the level of individual behavior [3]. By restricting causal analysis to individual responsibility, we fail to follow "health" to its etymological root in "wholeness." When we do recognize the tangled web of health determinants, from genes to neighborhoods to race, it seems inappropriate to hold patients responsible for deficiencies.

Policies with penalizing incentives thus threaten to violate a core principle of biomedical ethics: justice. Understanding that actual determinants of health and disease are deeper than individual choice, and that chronic diseases like diabetes and hypertension disproportionately afflict the disadvantaged and disempowered, individual incentive-based programs may be seen as discriminatory and destructive. In West Virginia, for instance, recent structural changes to Medicaid policy include a "Member Agreement" wherein prospective beneficiaries must agree to attend appointments, take prescribed medications, and strive for overall health. But as Bishop and Brodkey argue, the poverty-affected patients who must sign the agreement are those most influenced by forces beyond their control—be it access to food, transportation, or education. "This plan," Bishop and Brodkey say, "asks the most vulnerable population to do more with less ability to accomplish what we ask of them" [4].

Programs based on individual choice are thus problematic in that "choice" is not equitably distributed across socioeconomic strata. As Harald Schmidt points out, "People in disadvantaged social positions are held responsible for factors that are largely beyond their control" [5]. Mr. Carson is a case in point. Economic penalties for those who fail to adhere may further diminish their ability to maintain health, punishing them when they are most in need. Such policies further widen the already gaping health disparities that define our broken system.

Incentive-based approaches also threaten another core principle of biomedical ethics: respect for autonomy. Cloaked in the language of empowerment, these plans actually operate paternalistically and authoritatively. As apparent in the West Virginia plan and the case of Mr. Carson, proscriptive policies demand compliance and punish deviation. And while compliance certainly has its place—no one denies the importance of following antihypertensive regimens or smoking cessation in slowing the progression of cardiovascular disease—enforcing obedience at the cost of reduced future access to care seems counterproductive.

A patient may not adhere to a treatment regimen for many reasons, from mental illness to simple disagreement with the prescribing physician. Enforcing adherence at

a policy level violates that patient's fundamental right to self-determination. Indeed, the irony is not missed when an intended emphasis on personal responsibility for health produces an environment of punitive enforcement that ultimately infringes upon personal autonomy.

This last point reveals a final disturbing effect of such plans: jeopardizing the patient-physician relationship. In our scenario, Dr. Montgomery finds his treatment options limited by the financial penalties imposed upon Mr. Carson by his employer-based health plan. The relational dynamic between physician and patient has been corrupted by the external pressures of the individual incentive program. Dr. Montgomery's professional interest in Mr. Carson's health has been confounded by the policy's interest in individual-focused cost control.

In West Virginia's plan, the physician is the "enforcer" and reporter of patient behavior, exacerbating the power disparity inherent in most clinical relationships. Here the patient is not only the obedient recipient of the powerful physician's sagacious instruction, but must obey such instruction in order to receive continued care. Such dominance undermines the physician's ability to build trust and work with the patient toward a sustainable long-term plan for health management. It prevents a more engaged cooperation, missing the greater forces at play and focusing instead on patients' failure to control their health.

As physicians, our duty is to serve as advocates who promote our patients' health by listening and collaborating with them to form integrative plans based on the realities of their situation. We best empower patients through partnership, not paternalism. Incentive plans that punish not only interrupt the physician's ability to treat the patient as needed; they threaten to erode the privileged regard granted the healer, and undermine that sacred role of physician as wise counselor, trusted friend, and partner in health.

It would be prudent to emphasize that encouraging healthy behavior through individual incentives is not an inherently bad or unethical idea. As we know, individuals are able to control considerable aspects of their health, and the use of positive incentives to promote healthy choices may serve as a valuable component of a more comprehensive health policy. After all, in the complex realm of human health and behavior, neither strict individualism nor structural determinism tells the whole story. When employed effectively, promotion programs encouraging ownership over one's health have been shown to help patients develop a sense of autonomy that can translate to other facets of life [6].

In the case of Mr. Carson, the use of positive incentives, coordinated through Dr. Montgomery, might lead to healthy choices in a responsible and empowering context. But as the case makes clear, giving undue emphasis to individual responsibility for health and imposing penalties on those who fail to comply with lifestyle modification programs only exacerbates the structural disempowerment of the underserved in American health care. While the long-term efficacy of such

programs remains to be proven [7], we might do well to tread lightly, given the significant threats to justice and autonomy and the potential conflicts that incentives could introduce into the physician-patient relationship. Rather, we should bear in mind the biological, social, and economic realities that contribute to each patient's health. To set aside such considerations in the pursuit of individual-centered cost control policies would be a grave breach of both physician's duty and bioethical principles.

References

1. Mello MM, Rosenthal MB. Wellness programs and lifestyle discrimination—the legal limits. *N Engl J Med*. 2008;359(2):192-199.
2. Steinbrook R. Imposing personal responsibility for health. *N Engl J Med.* 2006;355(8):753-756.
3. Minkler M. Personal responsibility for health? A review of the arguments and the evidence at century's end. *Health Educ Behav.* 1999;26(1):121-140.
4. Bishop G, Brodkey AC. Personal responsibility and physician responsibility—West Virginia's Medicaid plan. *N Engl J Med.* 2006;355(8):757.
5. Schmidt H. Patients' charters and health responsibilities. *BMJ.* 2007;335(7631):1188.
6. Redman BK. Accountability for patient self-management of chronic conditions; ethical analysis and a proposal. *Chronic Illn*. 2007;3(1):88-95.
7. Jochelson K. Paying the patient: improving health using financial incentives. King's Fund publications. 2007. http://www.kingsfund.org.uk/publications. Accessed on July 20, 2008.

Benjamin M. Howard is a third-year student in the Program in Medical Education for the Latino Community at the University of California Irvine School of Medicine. As a part of that program, he studied health policy at the Harvard School of Public Health in 2008-2009. Mr. Howard is considering a career in trauma and critical care surgery.

Related in VM

Practicing Preventive Medicine through Preventive Employment Practices, November 2008

Motivating Prevention: From Carrots and Sticks to "Carrots" and "Sticks," November 2008

The viewpoints expressed on this site are those of the authors and do not necessarily reflect the views and policies of the AMA.

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 724-729.

MEDICAL EDUCATION

A Larger Role for Preventive Medicine

Sharon K. Hull, MD, MPH

In an era of rising medical costs, reduced state and federal budgets, and escalating economic difficulties, the United States is beginning to engage in serious public dialogue about the value received for each health care dollar spent. Issues of quality care, patient safety, and equitable distribution of health care resources are at the forefront of this discussion. One medical specialty—preventive medicine—is uniquely positioned to address these concerns from a sound basis of clinical evidence on population health. Preventive medicine has been a recognized specialty in the United States since 1954, which may surprise many and cause us to wonder to why we aren't fully utilizing experts in this field at a time when our society needs them the most.

This article outlines the attributes of preventive medicine, describes the current state of preventive medicine specialty education in U.S. medical schools, and provides an ethical rationale for directing more public attention and resources toward this important specialty.

What is Preventive Medicine?

Preventive medicine was established as a specialty to gather physicians working in illness prevention and public health, to incorporate teaching about these topics into medical school curricula, and to advance opportunities for training in the specialty [1]. Preventive medicine physicians are "uniquely trained in both clinical medicine and public health. They have the skills needed to understand and reduce the risks of disease, disability, and death in individuals and in population groups" [2]. The core disciplines of public health are biostatistics, epidemiology, health policy and administration, health behavior, and environmental health. Board certification can be obtained in public health and general preventive medicine or in the subspecialties of aerospace medicine, medical toxicology, or occupational medicine.

Public Policy Case for Preventive Medicine

Rising levels of obesity and the chronic diseases associated with it characterize the health of the American public today, driving up our caseloads of cardiovascular disease, diabetes, and cancer. Many infectious diseases controlled during the 20th century through vaccines and antibiotics (tuberculosis, pertussis, and measles) are exhibiting resurgence and being joined by emerging conditions such as HIV/AIDS, severe acute respiratory syndrome (SARS), and the potential for pandemic avian influenza. The threats of man-made and natural disasters such as biological warfare and weather-related events focus attention on how medicine manages to care for

large numbers of people who have been injured or don't have access to uncontaminated food and drinking water. These conditions have in common their effects upon large populations rather than on one patient with a given condition.

In 2002, preventive medicine specialists represented only 0.8 percent of the physician workforce, down from 2.3 percent in 1970 [3]; the number of residencies in preventive medicine has decreased to 75, a decline from 90 in 1999, and the number of residents enrolled in preventive medicine training programs has fallen from 434 in 1996 to 348 [4]. More than 95 percent of curriculum time in medical schools is devoted to the patient encounter, and less than 0.5 percent of medical school faculty are trained in public health, preventive medicine, or related subspecialties [3]. How adequate can a health care system be for today's public health challenges with so little emphasis on the disciplines devoted to caring for large populations with acute or chronic illness? Several public efforts are under way to alter these trends.

The Institute of Medicine has called for all medical students to "receive basic public health training in the population-based prevention approaches to health" [5], including the core disciplines of public health. Medical school objectives at the national level ask that each school "develop an explicit list of mechanisms by which population health objectives are to be met" [6]. The Healthy People Curriculum Task Force outlined a framework for teaching all health professionals [7]. Through a cooperative agreement between the Centers for Disease Control and Prevention and the Association of American Medical Colleges, the Regional Medicine and Public Health Education Centers initiative has proposed methods for integrating the teaching of preventive medicine and related topics into medical school curriculum [8]. Early outcomes of these schools' efforts have recently been published [9]. Several schools have implemented electives or stand-alone courses in population health [10, 11], and a few are attempting in-depth, integrated courses during the basic science years [12, 13].

Other early initiatives of population health curricula include preprofessional population health education [14], master's level training during professional education [15, 16], and bedside teaching of health policy issues [17]. Efforts to design and implement curriculum in population health and preventive medicine face steep competition for instruction time, faculty, and other resources. Evaluation of such programs and the appropriate outcome measures of their success remain challenging.

The Least-Supported Specialty

U.S. residency programs now require training in practice-based learning and systems-based practice at the behest of the Accreditation Council on Graduate Medical Education [18]. These competencies heavily draw on biostatistics, epidemiology, and health policy and require that learners pay attention to the population perspective during their training. Given this focus for graduate medical education programs, it is discouraging to note that the number of residency programs

in general preventive medicine and public health have been declining over the past several years. Federal funding provides only 26 residency slots in five preventive medicine programs nationwide [4], making this the least-supported medical specialty in the U.S. health care system. A group of factors contribute to this dearth of funding. The specialty has roots in the military medical training system, and traditional residency funding mechanisms available to develop other medical specialties were not tapped when the specialty of preventive medicine developed.

Ethical Case for State-of-the-Art Medicine

At a time when the United States is considering structural reform to its health care infrastructure and attempting to transition from a disease-care industry to a system devoted to enhancing health, ethical consideration must be given to the role that prevention plays. Principlist ethics, with five core tenets—beneficence, nonmaleficence, justice, respect for autonomy, and utility—can aid in the analysis of this role [19-21].

Beneficence and nonmaleficence require us to consider implementation of population-level measures to address the root causes of chronic disease. Biomedical science has not yet yielded cures for these conditions, and the burden of disease for the population at large is substantial, but there are known behavioral and lifestyle modification approaches to its mitigation. While all primary care specialties pay particular attention to these issues in the one-on-one patient encounter, preventive medicine is the specialty most closely focused on these problems and their application to large populations. It is neither beneficent nor nonmaleficent to stand by while people pursue lifestyle courses that will cause serious illness, only to treat that illness when it inevitably occurs.

The ethical principles of justice and utility—distribution of society's goods for the benefit of the greatest number—force us to examine the decisions we make as a society about how to spend scarce health care dollars. Health disparities among racial and ethnic groups, income strata, gender, and age groups highlight the degree to which our market-driven health care falls short of the ideal. Quantitative sciences such as epidemiology, health economics, and health policy enable us to address just and equitable resource allocation.

A very high premium is placed on respect for autonomy in the United States, often to the relative dismissal of other ethical considerations. Respect for autonomy entails the patient's right to full disclosure about the risks, benefits, costs, and alternatives for any health care treatment. At the close of the first decade of the 21st century, medicine is poised to witness the rise of a variety of new therapeutic and diagnostic modalities, each of which will bring its own cost/benefit considerations. Full disclosure will require a broader discussion of the preventive measures that may be undertaken, either before disease begins or after it has arisen. Discussion of the cost and benefit to society will also become a necessary consideration for the fully informed patient. The quantitative sciences that are central to the specialty of preventive medicine, particularly clinical epidemiology, will be in demand more than

ever as we attempt to help patients become informed and empowered decision makers about their own care and its impact on society.

Conclusion

The most serious, far-reaching, and morally challenging problems in our health care today are not about medical science's ability or inability to treat acute illness, but rather about how most people in the United States and around the world gain access to low-tech care for the common, treatable diseases that thwart their opportunity to achieve life goals. Physicians in the specialty of preventive medicine, who alone are trained specifically in both clinical medicine and public health and whose discipline is uniquely positioned to address the serious ethical questions raised by our current disease-care industry, have an opportunity for serious moral leadership as the United States develops what could finally become a true health care system for the 21st century.

References

1. American College of Preventive Medicine. Fifty years of leadership: improving health yesterday, today, and tomorrow. http://www.acpm.org/50years/ACPM_History.pdf. 2004. Accessed August 16, 2008.
2. American College of Preventive Medicine. What is ACPM? http://www.acpm.org/about.htm. 2008. Accessed August 26, 2008.
3. Association of American Medical Colleges. U.S. medical school faculty, faculty roster reports. http://www.aamc.org/data/facultyroster/reports.htm. 2008. Accessed August 26, 2008.
4. American College of Preventive Medicine. Preventive medicine (PM) residency funding fact sheet. http://acpm.org/RPS/PMFundingFacts.pdf. 2008. Accessed August 26, 2008.
5. Gebbie K, Rosenstock L, Hernandez LM; Committee on Educating Public Health Professionals for the 21st Century. *Who Will Keep the Public Healthy? Educating Public Health Professionals for the 21st Century*. Washington, DC: National Academies Press; 2003.
6. Contemporary issues in medicine—medical informatics and population health: report II of the Medical School Objectives Project. *Acad Med*. 1999;74(2):130-141.
7. Allan J, Barwick TA, Cashman S, et al. Clinical prevention and population health: curriculum framework for health professions. *Am J Prev Med*. 2004;27(5):471-476.
8. Association of American Medical Colleges. The development of regional centers to improve medical students' exposure to public health and population medicine. http://www.aamc.org/members/cdc/aamcbased/regionalcenters.htm. 2008. Accessed August 26, 2008.
9. Maeshiro R. Responding to the challenge: population health education for physicians. *Acad Med*. 2008;83(4):319-320.

10. Finkelstein JA, McMahon GT, Peters A, Cadigan R, Biddinger P, Simon SR. Teaching population health as a basic science at Harvard Medical School. *Acad Med*. 2008;83(4):332-337.
11. Ornt DB, Aron DC, King NB, et al. Population medicine in a curricular revision at Case Western Reserve. *Acad Med*. 2008;83(4):327-331.
12. Chamberlain LJ, Wang NE, Ho ET, Banchoff AW, Braddock CH 3rd, Gesundheit N. Integrating collaborative population health projects into a medical student curriculum at Stanford. *Acad Med*. 2008;83(4):338-344.
13. Kerkering KW, Novick LF. An enhancement strategy for integration of population health into medical school education: employing the framework developed by the Healthy People Curriculum Task Force. *Acad Med*. 2008;83(4):345-351.
14. Riegelman RK, Garr DR. Evidence-based public health education as preparation for medical school. *Acad Med*. 2008;83(4):321-326.
15. Harris R, Kinsinger LS, Tolleson-Rinehart S, Viera AJ, Dent G. The MD-MPH program at the University of North Carolina at Chapel Hill. *Acad Med*. 2008;83(4):371-377.
16. Stellman JM, Cohen S, Rosenfield A. Evaluation of a one-year masters of public health program for medical students between their third and fourth years. *Acad Med*. 2008;83(4):365-370.
17. Jacobsohn V, DeArman M, Moran P, et al. Changing hospital policy from the wards: an introduction to health policy education. *Acad Med*. 2008;83(4):352-356.
18. Accreditation Council for Graduate Medical Education. Common program requirements currently in effect. http://www.acgme.org/outcome/comp/compMin.asp. 2007. Accessed August 26, 2008.
19. Beauchamp, TL, Childress JF. *Principles of Biomedical Ethics.* 4th ed. New York, NY: Oxford University Press; 1994.
20. Munson, R. *Intervention and Reflection: Basic Issues in Medical Ethics*. 8th ed. Belmont, CA: Thomson-Wadsworth Publishers; 2008.
21. The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. The Belmont report: ethical principles and guidelines for the protection of human subjects of research. 1979. http://ohsr.od.nih.gov/guidelines/belmont.html. Accessed August 26, 2008.

Sharon K. Hull, MD, MPH, is chair of the Department of Community Health Sciences at Northeastern Ohio Universities Colleges of Medicine and Pharmacy in Rootstown. She is board certified in both family medicine and public health/general preventive medicine, and her public health discipline is health policy and administration. Dr. Hull's academic interests include access to quality health care, health system reform, and health professionals workforce development.

The viewpoints expressed on this site are those of the authors and do not necessarily reflect the views and policies of the AMA.

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 730-734.

JOURNAL DISCUSSION
Preventing Bad Memories: Is It Ethical?
By Donald J. Phillips, MPH

Liao SM, Sandberg A. The normativity of memory modification. *Neuroethics.* 2008;1:85-99.

Terrorist attack, robbery, rape, and assault are a few of the many extreme stressors known to induce posttraumatic stress disorder (PTSD). PTSD is described in the Diagnostic and Statistical Manual of Mental Disorders, 4th ed. as "persistent reexperiencing of [a] traumatic event, persistent avoidance of stimuli associated with the trauma...and persistent symptoms of increased arousal" [1]. According to the National Institute of Mental Health, approximately 7.7 million adult Americans suffer from PTSD, with women about twice as likely to be affected [2, 3]. Studies have shown that anywhere from 3 to 58 percent of individuals who suffer an extreme traumatic stressor go on to develop PTSD [1].

Research in neuroscience and neuropharmacology suggests that medicine might be able to break the connection between trauma and PTSD. The degree to which memories—including memory of trauma—are encoded and consolidated determines their strength. Extremely traumatic events are thought to stimulate a large release of epinephrine and norepinephrine (NE), neurotransmitters that cause over-consolidation of the corresponding memory [4]. PTSD sufferers persistently have too much NE and too great a response to it, likely adding to their chronic symptoms [5]. The effect on PTSD of several drugs that modify the noradrenergic system (the system that uses norepinephrine as its neurotransmitter) has been examined, with the most successful results from the beta-blocker propranolol. Several studies have shown that if propranolol is administered shortly before exposure to a traumatic story, subsequent recall of the event is attenuated when compared to the recollection of a control group [6-8]. Other studies have demonstrated decreased incidences of PTSD in traumatized patients who took propranolol compared with those who received a placebo [9-10]. Encouraging early results have prompted ethical concerns over the use of drugs like propranolol to modify memory.

Liao and Sandberg examine the potential effects of propranolol and other hypothetical memory-modifying technologies (MMTs) through the lens of normative values. Their first concern is truthfulness. Modifying our memories may alter what we believe to be true. Consider a soldier who uses propranolol before battle. By reducing the emotional strength of his memory, the soldier "may come to remember and believe that he did not really want to kill the enemy, when in fact he lusted after the killing" [11]. Indeed, modifying our memories may alter what we think of our

core selves. Would John McCain consider himself a maverick if he did not have strong memories of voting against his party? Of course there are situations where not remembering an event or remembering it differently would be therapeutic. And if a person's core self had been formed by bad memories, perhaps modifying them would allow the expression of his or her true identity. We constantly construct ourselves from memories that are largely inaccurate, biased, or even false. Would modifying a few memories really change our narrative identities?

The second area of concern is appropriate moral reaction. In contemplating committing a crime, "the appropriate moral reaction is to feel guilt and repugnance" [12]. Liao and Sandberg argue that weakening the emotional memories of such situations could alter one's response. Diminished guilt might allow a person to commit the crime and not feel the regret that normally follows. Could criminals strategically take propranolol before their crimes?

Related to moral response is the idea of moral obligation. A victim of a crime may have a duty to society to remember the event to assist in prosecution of the perpetrator. A Holocaust survivor may have a duty to remember the experience for the sake of humankind, even though the memory is horrifying. Here the authors ask whether it is enough to remember simply the facts of an event or must one retain the emotional component also. If only the facts were necessary, (e.g., to identify one's assailant) propranolol could be used to attenuate the associated emotional burden. Finally, the authors raise the connection between agency and self-knowledge. We often learn most about ourselves and respect ourselves as independent agents when we relive difficult or traumatic memories. Would pharmacologically avoiding unpleasant memories hinder our self-growth?

Liao and Sandberg conclude that individuals should be able to choose whether they wish to use MMTs such as propranolol. When the choice does not harm themselves or others, "it is up to individuals to determine the relative weightings of these different values of well-being and how much they would allow MMTs to affect these values" [13].

Henry, Fishman, and Youngner [14] take a different approach to propranolol and PTSD by focusing on rebutting arguments put forth by The President's Council on Bioethics [15]—points that cannot be fully addressed in this review. Some of the council's concerns were the same as those mentioned by Liao and Sandberg, namely appropriate moral reaction, moral obligation (i.e., the duty to remember), and self-knowledge. Henry et al. argue that most of these concerns remain hypothetical and should not stand in the way of further research with propranolol. Conceding that the competence of a patient or research subject to give informed consent may be diminished in the immediate aftermath of a psychic trauma, the authors remind us that patients are still regarded as competent to accept general medical diagnosis and treatment, thus dismissing the need for special consideration. In response to this point, Tenenbaum and Reese offer another point of view—that propanolol, when taken to attenuate memory, necessarily "creates a conflict between the interests of

the individual and those of society" [16]. They propose that patients be informed of the possible social consequences of their actions, such as diminishing their effectiveness as a court witness during the informed-consent process [17].

Finally, Henry and colleagues worry that if memory-attenuating drugs like propronalol prove effective, bad memories will be over-medicalized and exploited by the pharmaceutical industry. The authors enumerate several examples of normal conditions that have come under the "medical gaze" in modern society, including childbirth and menopause, and imply that PTSD is undergoing that same change, through the combined forces of physicians, patients who desire recognition for their suffering, and pharmaceutical companies. The authors claim that the pharmaceutical industry plays a key role in promoting the expansion and coding of diagnoses to increases sales, and they warn that propranolol may be ripe for pharmaceutical rebranding. A rebranding would not only create a more expensive formulation of a generic drug (impeding equitable distribution) but would further medicalize human suffering. Henry et al. fear that our conception of what constitutes a trauma would be expanded to serve the financial needs of Big Pharma, altering our sense of PTSD and our interpretations of the experiences that might cause it.

The common ground between the Liao and Sandberg and Henry et al. articles illustrates that the ethical questions raised by memory modification differ from those of other drug therapies and deserve contemplation. Questions about modifying memory—like other questions in the emerging field of neuroethics—will only grow as we learn more ways to manipulate the organ that most makes us who we are [18]. The articles share a belief that research on propranolol should proceed. Ethical challenges should not bring scientific investigation to a halt, they say. Rather, the rich debate that surrounds these questions should propel us forward in an ethically responsible way.

The position of these two teams of authors is not above scrutiny, however. In responding to the Henry et al. article, Leah Rosenberg challenges the arguments against the use of MMTs, charging that they "rest upon the implicit assumption that retained memories have intrinsic value" [19]. This intrinsic value is by no means obvious, says Rosenberg, especially in the case of PTSD. The value and meaning of any memory comes from the person whose memory it is. The same traumatic event may cause one person to change his or her life for the better, while inducing a crippling disorder in another. What value does the latter sort of memory really have to society?

It is often argued that "working through" a traumatic memory has value—the self-knowledge thesis put forth by Liao and Sandberg. Can we say the same about the value of working through a physical illness without medication—that it could be a real character builder? Neurologist and author Oliver Sacks often writes about the remarkable personal adaptations and transformations his patients undergo as a result of living with their neurologic disorders [20]. As a future neurologist myself, I have begun to witness similar stories. I treated a patient with Guillain-Barré disease who

spent 90 days in the hospital. His personal transformation was truly amazing to witness as he fought the disease. If I had a drug that could cure Guillain-Barré and prevent the associated protracted suffering, however, I would use it in a heartbeat.

Once we gain the ability to treat a given type of human suffering, we usually do so, even though the suffering may have been "medicalized" from a previously normal state. In the future, neuroethical arguments will become increasingly complex and should be debated. Through the debate, patient interest should retain highest priority. Patients should be made aware of possible consequences to their therapy decisions and allowed to consent or refuse treatment.

References

1. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR*. 4th ed. Washington, DC: American Psychiatric Association; 2000: 424.
2. Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the National Comorbidity Survey. *Arch Gen Psychiatry*. 1995;52(12): 1048-1060.
3. Kessler RC, Chiu WT, Demler O, Merikangas KR, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62(6):617-627.
4. Southwick SM, Bremner JD, Rasmusson A, Morganill CA 3rd, Arnsten A, Charney DS. Role of norepinephrine in the pathophysiology and treatment of posttraumatic stress disorder. *Biol Psychiatry*. 1999;46(9):1192-1204.
5. Strawn JR, Geracioti TD Jr. Noradrenergic dysfunction and the psychopharmacology of posttraumatic stress disorder. *Depress Anxiety*. 2008;25(3):260-271.
6. Reist C, Duffy JG, Fujimoto K, Cahill L. Beta-adrenergic blockade and emotional memory in PTSD. *Int J Neuropsychopharmacol*. 2001;4(4):377-383.
7. Cahill L, Prins B, Weber M, McGaugh JL. Beta-adrenergic activation and memory for emotional events. *Nature*. 2002;371(6499):702-704.
8. Maheu FS, Joober R, Lupien SJ. Declarative memory after stress in humans: differential involvement on the beta-adrenergic and corticosteroid systems. *J Clin Endocrinol Metab*. 2005;90(3):1697-1704.
9. Pitman RK, Sanders KM, Zusman RM, et al. Pilot study of secondary prevention of posttraumatic stress disorder with propranolol. *Biol Psychiatry*. 2002;51(2):189-192.
10. Vaiva G, Ducrocq F, Jezequel K, et al. Immediate treatment with propranolol decreases posttraumatic stress disorder two months after trauma. *Biol Psychiatry*. 2003;54(9):947-949.
11. Liao SM, Sandberg A. The normativity of memory modification. *Neuroethics*. 2008;1:90.
12. Liao, Sandberg, 92.
13. Liao, Sandberg, 96

14. Henry M, Fishman JR, Youngner SJ. Propranolol and the prevention of post-traumatic stress disorder: is it wrong to erase the "sting" of bad memories? *Am J Bioeth*. 2007;7(9):12-20.
15. President's Council on Bioethics. Beyond therapy: biotechnology and the pursuit of happiness. 2003. http://www.bioethics.gov/reports/beyondtherapy/chapter6.html. Accessed October 5, 2008.
16. Tenenbaum EM, Reese B. Memory-altering drugs: shifting the paradigm of informed consent. *Am J Bioeth*. 2007;7(9):40.
17. Tenenbaum, Reese, 40-42.
18. Glannon W. *Defining Right and Wrong in Brain Science: Essential Readings in Neuroethics*. New York, NY: Dana Press; 2007.
19. Rosenberg LB. Necessary forgetting: on the use of propranolol in post-traumatic stress disorder management. *Am J Bioeth*. 2007;7(9):27.
20. Sacks O. *An Anthropologist on Mars: Seven Paradoxical Tales.* New York, NY: Knopf; 1995.

Donald J. Phillips, MPH, is a fourth-year medical student at the University of Southern California Keck School of Medicine and is applying for a residency in adult neurology. He has a bachelor of science degree in chemistry from the University of Michigan and a master's in public health with concentration in international public health from Boston University. His research has focused on potential new drug therapies for brain tumors, both primary and metastatic.

Related in VM
Cosmetic Psychopharmacology and the Goals of Medicine, June 2007

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 735-739.

CLINICAL PEARL
Managing Prehypertension
David S. Hatem, MD

Treatment of hypertension is the most common reason for non-pregnant patient visits to a doctor's office in the United States [1]. National data estimates that 29 to 31 percent of U.S. adults over age 18 (58 to 65 million individuals) suffer from hypertension [2, 3]. Worldwide, hypertension contributed to 7.6 million premature deaths and 92 million deaths and disability-adjusted life years (DALYs) in 2001, with a disproportionate effect among low- and middle-income economies and people between the ages of 45 and 69 [4].

The Report of the Joint National Committee on Prevention Detection, Evaluation, and Treatment of High Blood Pressure, relabeled what had previously been called "high normal" blood pressure as prehypertension [5]. Defining prehypertension as a new category recognized blood pressure as a continuous variable, predictor of later hypertension [6], and marker of higher-than-normal risk for the development of cardiovascular disease [7].

Current Blood Pressure Classification Guidelines

	Systolic	**Diastolic**
Normal blood pressure	Less than 120 mm Hg	Less than 80 mm Hg
Prehypertension	120 to 139 mm Hg	80 to 89 mm Hg
Stage I hypertension	140 to 159 mm Hg	90 to 99 mm Hg
Stage II hypertension	Greater than or equal to 160 mm Hg	Greater than or equal to 100 mm Hg

Based on the National Health and Nutrition Examination Survey (NHANES-III;1999-2000), the overall prevalence of prehypertension in the population is 31 percent, with no significant differences among racial or ethnic groups, although women are less likely to have prehypertension than men (23 percent versus 40 percent) [8]. Prehypertension clusters with other cardiovascular disease risks including dyslipidemia and obesity [8, 9]. Progression to clinical hypertension depends on baseline blood pressure and age, higher age being associated with progression. By age 65, prehypertension diagnosis decreases since so many people progress to clinical hypertension [6]. Evidence from a placebo-controlled study in which angiotensin receptor blockade was associated with decreased progression to clinical hypertension over 2 years suggests that the rennin-angiotensin system and the sympathetic nervous system are important in determining who progresses to clinical hypertension [10].

Treatment of prehypertension is multifaceted, and physicians must possess a vast knowledge base as well as behavioral skills to aid patients with behavior change. They must clearly explain the diagnosis of prehypertension and its predictive ability for future clinical hypertension. This must be done in a way that motivates patients to take charge of behaviors that influence the development of hypertension—namely diet, physical activity, sodium intake, weight, and alcohol use [11].

Dietary patterns rich in potassium (fruits and vegetables and calcium from dairy), low in total and saturated fats, and limited in meats and sweets have been shown to reduce blood pressure. The Dietary Approach to Stop Hypertension (DASH) is a model that reduced prehypertensive blood pressure to a normal level in 62 percent of study participants in one trial [12]. The approach also tends to lower systolic blood pressure by 3.5 mm Hg [13].

Weight loss has been found to lower blood pressure in numerous clinical trials. A meta-analysis of 25 randomized controlled trials demonstrated that 1 kg of weight loss resulted in approximately 1 mm Hg reduction in systolic blood pressure and diastolic blood pressure [14]. The benefits of reducing sodium intake are well-supported; an overview of randomized trials concluded that, on average, reduction of sodium intake by 76 mmol/L per day was associated with a reduction in blood pressure of 1.9/1.1 mm Hg [15].

Physical activity also lowers blood pressure, and most studies conclude that this correlation is independent of weight reduction. Two meta-analyses examined hypertensive, prehypertensive, and normotensive individuals and found that moderate intensity exercise (30 minutes at least 4 days per week) led to 3 to 4 mm Hg reduction in systolic blood pressure [16, 17].

Current recommendations for alcohol intake indicate that men should have no more than two alcoholic drinks per day and women should have no more than one. Pooled results from one meta-analysis showed reductions of 3 mm Hg in systolic and 2 mm Hg in diastolic blood pressure in patients able to reduce their alcohol intake. The baseline alcohol consumption in these studies was 3 to 6 drinks per day with a 67 percent reduction on average [18].

The behavioral risks for prehypertension and hypertension described above are based, for the most part, on results from controlled clinical trials. Clinicians must be able to assess each patient's behavior, motivation, and ability to change in the context of his or her life, which is different from the context of clinical trials in which research is done. A variety of models of behavioral-change counseling is available, but having a single model that applies to the behaviors listed above is helpful in clinical practice.

Many studies use the 5As model of behavior change in which physicians: anticipate that they will ask about behavior; ask about the behavior in a patient-centered and open-ended manner ("Are you interested in changing your diet/alcohol/smoking

behavior?"); advise change ("I would recommend that you stop or change…"); assist the patient in planning the change (through exploration of facilitators and barriers to change and setting a concrete plan); and arrange a follow-up discussion to evaluate the success of the change and make plans for further change if needed, reinforce the new behavior, or deal with a relapse of the old behavior. The 5As model has been proven to lead to greater quit rates for smokers, reduction in cholesterol intake, decrease in cholesterol and weight, and reduction of high-risk drinking [19-21].

Change rates are influenced by various factors, some related to patients (willingness to change, ability to change now), some to clinicians (willingness to counsel, belief in effectiveness of counseling, belief in the resiliency of their patients and their ability to change), and some related to practice setting and supports available to reinforce success [20]. While physician advice is among the strongest interventions from the patient's perspective, other health professionals trained in patient-centered behavior-change counseling in the alcohol study helped reduce drinking in their patients from 18.3 to 12.6 drinks per week [19].

Twelve-month quit rates for smokers in the meta-analysis ranged from 8 percent to 14.3 percent of patients counseled by trained clinicians [20]. These studies used practice-level support to behavior-change counseling, such as lifestyle interview summaries, which reported participants' alcohol history in drinks per week, history of binge drinking, and family history of alcoholism; intervention algorithms to remind a physician of the counseling sequence; and patient education materials. It is important for counselors to have a realistic expectation of success for behavior change so they will not be discouraged by relatively low percentages of patients who can change.

Also needed is an approach that extends beyond the physician's office and hospital. If the newly defined classification of prehypertension is going to be meaningful, behavior-change counseling should be supplemented by public health messages and information that reinforces sound choices about nutrition, smoking, alcohol use, and healthy weight. Managing prehypertension is challenging, but has much to offer in the prevention of cardiovascular disease. If we can intervene earlier with behavioral and pharmacologic means to prevent the onset of hypertension, the public and patients will benefit.

References

1. Hing ES, Burt CW, Woodwell DA. Electronic medical record use by office-base physicians and their practices: United States, 2006. Centers for Disease Control. Advance Data from Vital and Health Statistics. 2007;337:1-8. http://www.cdc.gov/nchs/data/ad/ad393.pdf. Accessed October 3, 2008.
2. Hajjar I, Kotchen TA. Trends in prevalence, awareness, treatment and control of hypertension in the United States, 1988-2000. *JAMA*. 2003;290(2):199-206.
3. Fields LE, Burt VL, Cutler JA, Hughes J, Roccella EJ, Sorlie P. The burden of adult hypertension in the United States 1999 to 2000: a rising tide. *Hypertension*. 2004;44(4):398-404.

4. Lawes CM, Vander Hoorn S, Rodgers A; International Society of Hypertension. Global burden of blood-pressure-related disease, 2001. *Lancet*. 2008;371(9623):1513-1518.
5. Chobanian AV, Bakris GL, Black HR, et al. Seventh report of the joint national committee on prevention, detection, evaluation, and treatment of high blood pressure. *Hypertension*. 2003;42(6):1206-1252.
6. Vasan R, Beiser A, Seshadri S, et al. Residual lifetime risk for developing hypertension in middle-aged women and men: The Framingham Heart Study. *JAMA*. 2002;287(8):1003-1010.
7. Lewington S, Clarke R, Qizilbash N, Peto R, Collins R; Prospective Studies Collaboration. Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies. *Lancet*. 2002;360(9349):1903-1913.
8. Wang Y, Wang QJ. The prevalence of prehypertension and hypertension among US adults according to the new joint national committee guidelines: new challenges of the old problem. *Arch Intern Med*. 2004;164(19):2126-2134.
9. Greenlund KJ, Croft JB, Mensah GA. Prevalence of heart disease and stroke risk factors in persons with prehypertension in the United States, 1999-2000. *Arch Intern Med*. 2004;164(19):2113-2118.
10. Julius S, Nesbitt S, Egan B, et al. Trial of preventing hypertension: design and 2-year progress report. *Hypertension*. 2004;44(2):146-151.
11. Svetkey LP. Management of prehypertension. *Hypertension*. 2005;45(6):1056-1061.
12. Svetkey LP, Simons-Morton DG, Proschan MA, et al. Effect of the dietary approaches to stop hypertension diet and reduced sodium intake on blood pressure control. *J Clin Hypertens (Greenwich)*. 2004;6(7):373-381.
13. Svetkey LP, Simons-Morton D, Vollmer WM, et al. Effects of dietary patterns on blood pressure: subgroup analysis of the dietary approaches to stop hypertension (DASH) randomized clinical trial. *Arch Intern Med*. 1999;159(3):285-293.
14. Staessen J, Fagard R, Amery A. The relationship between body weight and blood pressure. *J Hum Hypertens*. 1988;2(4):207-217.
15. Cutler JA, Follmann D, Allender PS. Randomized trails of sodium reduction: an overview. *Am J Clin Nutr*. 1997;65(2 Suppl):643S-651S.
16. Kelley GA, Kelley KS. Progressive resistance exercise and resting blood pressure: a meta-analysis of randomized controlled trials. *Hypertension*. 2000;35(3):838-843.
17. Whelton SP, Chin A, Xin X, He J. Effect of aerobic exercise on blood pressure: a meta-analysis of randomized, controlled trials. *Ann Intern Med*. 2002;136(7):493-503.
18. Xin X, He J, Frontini MG, Ogden LG, Mosamai OI, Whelton PK. Effects of alcohol reduction on blood pressure: a meta analysis of randomized controlled trials. *Hypertension*. 2001;38(5):1112-1117.
19. Reiff-Hekking S, Ockene JK, Hurley TG, Reed GW. Brief physician and nurse practitioner-delivered counseling for high-risk drinking. Results at 12-

month follow-up. *J Gen Intern Med.* 2005;20(1):7-13.
20. Ockene JK, Zapka JG. Physician-based smoking intervention: a rededication to a five-step strategy to smoking research. *Addict Behav*. 1997;22(7);835-848.
21. Ockene IS, Hebert JR, Ockene JK, Merriam PA, Hurley TG, Saperia GM. Effect of training and a structured office practice on physician-delivered nutrition counseling: the Worcester-area trials for counseling in hyperlipidemia (WATCH). *Am J Prev Med.* 1996;12(4):252-258.

David S. Hatem, MD, is an associate professor of clinical medicine in general medicine at the University of Massachusetts Medical School. He is the director of the Physician, Patient, and Society course at the medical school and an associate director of the Center for Clinical Communication and Performance Outcomes—a multidisciplinary center devoted to teaching and research on the connection among communication, quality of care, and patient safety. Dr. Hatem's research interests include investigating the role of caregiver attitudes in patient care and as a measure of organizational performance, and the use of reflection in supporting the professional development of trainees.

Related in VM
Balancing Health Promotion and Healing, November 2008

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 740-746.

HEALTH LAW

Practicing Preventive Medicine through Preventive Employment Practices

Kristin E. Schleiter, JD

As the cost of health insurance cuts deeper and deeper into company bottom lines, employers have taken a critical eye to employee health and its effect on health care costs. Wellness programs and exercise facilities have become standard as large corporations promote the health and wellness of their employees. Yet some employers have gone a step further, imposing strict policies that attempt to curb the off-duty smoking habits of their employees. These policies range from positive reinforcement with monthly bonuses to nonsmokers, to negative reinforcement, the most severe of which triggers the immediate termination of individuals known to smoke during work or nonworking hours. Employers point to effects on employee health and productivity to justify these policies.

Critics call these policies "lifestyle discrimination" and charge that they interfere in the private lives of employees and penalize them for participating in what is, after all, a lawful activity. Critics also employ a "slippery slope" argument, calling attention to the risk that allowing employers to consider smoking habits in their hiring and firing practices will serve as a gateway for considering such lifestyle factors as weight, alcohol consumption, and risky recreational activities. The concern is not unmerited; Alabama will soon become the first state in the nation to impose a surcharge on overweight workers who do not attempt to slim down [1]. Some states have responded by enacting policies that bar employers from making employment-related decisions based on an employee's off-duty activities [2]. Nevertheless, off-duty smoking policies have withstood state and federal court challenges that have attempted to label them discrimination and violations of individual privacy rights.

Economic and Health Threats of Tobacco

Tobacco use is tied to negative consequences on health and economy. Tobacco is unique in that it is the only legal consumer product that causes harm to those who use it as intended [3]. The World Health Organization (WHO) has called the tobacco epidemic a "global problem with serious consequences for public health," in recognizing that "tobacco consumption and exposure to tobacco smoke cause death, disease, and disability" [4]. Despite widespread awareness of smoking, approximately 20 percent of the U.S. population continues to smoke [5].

Hundreds of billions of dollars are lost each year as a result of tobacco use [3]. Employers of smokers in the United States suffer a substantial loss of productivity attributable to smoking—an estimated $92 billion annually [3, 5]. Loss of production costs arise due to an increase in absenteeism for smokers, as well as a greater use of

health care services for smokers younger than age 65 [5]. Health care costs borne by employers who subsidize employee health insurance plans are also increasing. In the United States, annual tobacco-related health care costs are estimated at between $24 billion and $81 billion [3, 6], as much as 40 percent higher than those for nonsmokers [5].

Costs for nonsmokers are also influenced by tobacco. Second-hand smoke exposure in the United States costs an estimated $5 billion annually in direct medical costs and more than $5 billion in indirect medical costs such as disability and lost wages [3]. As employer health care costs have risen—companies such as General Motors spend as much as $5 billion annually on health care [7]—tension has inevitably escalated between employees' personal choices and the employer's bottom line.

Employer Consideration of Off-Duty Smoking

It is undisputed that employers incur costs as a result of employing smokers. The attempts by employers to control costs by screening job applicants and implementing no-smoking policies that have received most attention are those that broaden workplace bans on smoking to off-duty smoking bans.

In 2005, Weyco, a Michigan-based insurance and medical-benefits company, implemented a policy that required its employees to maintain a tobacco-free status at all times or be subject to termination of employment [2, 5]. Employees were subjected to random breath tests for carbon monoxide, as well as confirmatory urine tests in the event of a positive breath test result [5]. Employees were given a 15-month grace period to quit smoking before the policy went into effect [2]. Weyco offered hypnosis, acupuncture, and other programs to assist with smoking cessation [2]. Fourteen out of 200 employees quit before the policy went into effect, and at least four employees have been terminated for refusing to take an antismoking test since the policy went into effect [2].

Scotts Miracle-Gro, an Ohio-based lawn-care company, made a similar effort to control health care costs after it experienced a 42 percent increase in its annual health care bill [8]. Scotts implemented a policy in October 2006 stating that on- and off-duty smoking would cost employees their jobs [2]. Employees, 25 percent of whom were smokers at the time [8], were given 1 year to quit smoking and offered assistance programs including free counseling, nicotine patches, and cessation classes [2]. To address the fact that half of its employees were overweight or morbidly obese, the company also opened an extensive fitness facility, instituted a wellness program, and improved the nutritional aspects of the food served in its cafeteria and vending machines [2].

Some employers have taken a less severe approach than Weyco's and Scotts' by charging higher insurance rates to employees who smoke or offering perks such as lower health insurance rates to employees who do not. Health insurer Humana, for example, offers a $5 bonus per pay period to employees who indicate that they have not used tobacco in the past 12 months [2]. Gannett Company, Inc., publisher of the

USA Today, gives employees who smoke the option of enrolling in a company-funded cessation program or paying a $50 monthly surcharge for health insurance [2]. Other employers such as PepsiCo and General Mills charge employees who smoke higher annual health insurance premiums [2].

Some public-sector employers follow similar practices. Alabama, Georgia, Kentucky, and West Virginia all impose a health insurance surcharge for government employees who smoke [2]. And the WHO has implemented a hiring policy that rejects applicants who smoke. These and the employment policies described above demonstrate the range of programs employers have enacted to control health insurance and other costs incurred as a result of employing smokers. These policies have not come without resistance.

Legal Challenges to Off-Duty Smoking Policies

Employers have generally been successful in defending smoking policies in the face of lawsuits brought by disgruntled employees. Challenges to off-duty smoking policies rely on privacy considerations, alleging that employer regulation of leisure-time activities, such as smoking, constitutes an unlawful infringement on an individual's right to privacy. Smoking is not yet an interest protected by the privacy protections of the U.S. Constitution, however, and because nicotine addiction is not yet considered a disability protected by the Americans with Disabilities Act [9], company no-smoking policies have generally been upheld.

Grusendorf v. City of Oklahoma City. Brought before the Tenth Circuit Court of Appeals, this case challenged the constitutionality of a no-smoking rule imposed by the Oklahoma City Fire Department on its firefighter trainees [10]. A trainee was terminated for violating the department's no-smoking policy after he was caught smoking during a lunch break. The firefighter argued that the no-smoking rule required him to surrender his constitutional rights of liberty and privacy. The Tenth Circuit Court found that the rule did not infringe upon a federal constitutional right to privacy.

The court considered whether the right to smoke was a fundamental right subject to heightened constitutional protection. While holding that smoking was distinguishable from recognized fundamental rights such as marriage, procreation, contraception, family relationships, child rearing, and education, the court acknowledged that the list of fundamental rights is not absolute and that, in the future, currently unprotected rights might be given the added strength of constitutional protection. Nonetheless, the court did not use the case as an opportunity to add smoking to the list of rights protected by the Constitution's right to privacy.

While holding that the no-smoking regulation did infringe upon the liberty interest of the firefighter trainees, the court recognized that "governments have interests sufficient to justify comprehensive and substantial restrictions upon the freedoms of their employees that go beyond the restrictions they might impose upon the rest of the citizenry" [11]. For a restriction of this type to be overturned, its challengers

must demonstrate that the regulation is so irrational as to be branded arbitrary and therefore a deprivation of liberty. Conversely, the government must offer a sufficiently rational justification for the regulation to outweigh the challenger's claim.

The Tenth Circuit Court found a rational connection between the no-smoking regulation and the promotion of health and safety of the firefighter trainees. In supporting its decision, the court cited the Surgeon General's warning on every box of cigarettes sold in the United States, as well as the good health and physical conditioning essential for performance of firefighters' duty. Ultimately the court upheld the no-smoking regulation as a valid and enforceable rule not in violation of the of the firefighter's liberty and privacy interests under the Fourteenth Amendment.

City of North Miami v. Kurtz. In this case, the Supreme Court of Florida considered a challenge to the constitutionality of a regulation that required government job applicants to sign affidavits stating that they had not used tobacco during the preceding year as a precondition of having their applications considered [12]. The policy represented the city's attempt to reduce costs and increase productivity by eventually eliminating a substantial number of smokers from the workforce. Evidence presented at trial—such as the estimate that the city incurred more than $4,000 per year in additional costs for every employee who smoked—indicated that the city's regulation would accomplish its stated goals. The court held that the Florida state constitution did not provide a right of privacy regarding their smoking habits to applicants seeking government employment.

Florida's state constitution provides for a right of privacy that protects Florida's citizens from the government's uninvited observation of or interference in areas of activity that fall within the provision's zone of privacy. The court examined the privacy provision under a strict "compelling state interest" standard and took a four-step approach to the challenge, asking: (1) Was the action performed by the government? (2) Did the individual have a legitimate expectation of privacy? (3) If yes, did the state have a compelling interest to justify its intrusion? (4) If yes, did the state use the least-intrusive means to accomplish that goal?

The court found the answer to the first question to be affirmative; when Kurtz applied for a job as a typist with the city, the applicant was asked to sign a no-smoking affidavit. But the court answered the second question in the negative, reasoning that in today's society smokers are constantly required to reveal whether they smoke. The court used car rental, hotel reservations, and restaurant seating as examples of situations in which smoking preference is revealed. Since the answer to this question was "no," the court did not continue with questions 3 and 4.

Given that the Florida constitution does not guarantee a reasonable right of privacy in revealing whether an applicant for a government position is a smoker, the court

moved on to address whether the Florida statute violated the right of privacy under the U.S. Constitution. The court held that the right to smoke was not included in the Constitution's implicit privacy provisions. It then distinguished the right to smoke from fundamental rights, such as marriage, procreation, contraception, family relationships, and the rearing and education of children.

Moreover, the court commented that, even if it found that a protected interest existed under the Constitution, the city's regulation would still pass the "rational basis" test. The city had a legitimate and compelling interest in attempting to increase productivity and reduce health insurance costs—it was a self-insured employer that paid all of its employees' medical expenses. The court found that the city's policy gradually eliminated employers from the workforce through attrition and restricted hiring, rather than by preventing current employees from smoking or affecting the present health care benefits of employees. During its discussion of the constitutionality of Florida's statute, the court noted the existence of a compelling interest accomplished by minimally intrusive means, thus providing answers to questions 3 and 4 above. In the end, the court found that the city had a rational basis for the regulation, given the cost savings of the city in refusing to hire smokers.

Note that *Kurtz* did not address the issue of whether an applicant, once hired, could be compelled by a government agency to stop smoking. The same can also be said for *Grusendorf* since it can be assumed that applicants for firefighting positions who refused to sign the affidavit of compliance would not have been hired by the city. More importantly, neither *Grusendorf* nor *Kurtz* discussed the legality of no-smoking policies implemented by non-governmental employers. *Rodrigues v. Scotts Miracle-Gro* [13] is currently working its way through the Massachusetts federal court system. *Rodrigues*, which has withstood a motion to dismiss, challenges the legality of Scotts Miracle-Gro's above-described policy against employing smokers.

Conclusion

Employers face billions of dollars in lost revenues due to decreased productivity and increased health costs incurred by smoking employees. Their attempts to control costs through management of employee health are sure to rise in number as a result. Quite possibly employers will focus next on obesity prevention through wellness programs and preventive hiring practices. For the time being, however, antismoking policies have gained support through federal and state courts in states that have not implemented "lifestyle discrimination" statutes that ban such policies.

Given the wealth of information on the health risks and correlative financial effects of smoking, in addition to the adoption of no-smoking policies by organizations such as the WHO, it is not surprising that no-smoking policies have been upheld by courts confronted with the topic. But have employers reached too far into the personal lives of their employees? Is it ethical to allow employers to consider legal off-duty behavior in their hiring and firing practices? If so, where will the line be drawn? Until the day that smoking gains status as a protected behavior or disability covered by the Americans with Disabilities Act, it is likely that current trends toward

adoption of no-smoking policies will continue, with severe employment consequences for smokers.

Notes and References

1. Associated Press. Heavy people to feel lighter wallets with Alabama surcharge. *USA Today*. August 22, 2008: http://www.usatoday.com/news/health/weightloss/2008-08-22-obesity-penalty_N.htm.
2. Valleau C. If you're smoking you're fired: how tobacco could be dangerous to more than just your health. *DePaul J Health Care L*. 2007;10:457.
3. World Health Organization. *WHO Report on the Global Tobacco Epidemic, 2008—The MPOWER Package*. Geneva, Switzerland: WHO; 2008.
4. World Health Organization. *WHO Framework Convention on Tobacco Control*. http://www.who.int/fctc/en/. 2003. Accessed September 26, 2008.
5. Chadwick KL. Is leisure-time smoking a valid employment consideration? *Alb L Rev.* 2006;70(1):117-142.
6. Pugsley MW. Nonsmoking hiring policies: examining the status of smokers under Title I of the Americans with Disabilities Act of 1990. *Duke L J.* 1994;43:1089-1114.
7. Terlep S. GM to crack down on health coverage. *Wall Street Journal*. August 13, 2008:B6.
8. Conlin M. Get healthy—or else. *BusinessWeek*. February 26, 2007.
9. Proposed changes to the ADA would ease the "major life activity" burden, which to this point is the main obstacle for smokers who seek protection under the ADA.
10. *Grusendorf v City of Oklahoma City, et al.* 816 F2d 539 (10th Cir 1987).
11. *Grusendorf v City of Oklahoma City, et al.*, 542.
12. *City of North Miami v Kurtz*, 653 So2d 1025 (Fla 1995).
13. *Rodrigues v Scotts Miracle-Gro*, 2008 WL 251971 (D. Mass Jan. 30, 2008).

Kristin E. Schleiter, JD, is a senior research associate for the Council on Ethical and Judicial Affairs for the American Medical Association in Chicago. She analyzes ethics policy and law and assists in the development and dissemination of ethics policy and related educational material. Ms. Schleiter received her law degree from Loyola University Chicago School of Law, where she was a contributing writer for the *Annals of Health Law*. She is working toward completion of an LLM in health law.

Related in VM

Motivating Prevention: from Carrots and Sticks to "Carrots" and "Sticks," November 2008

Balancing Health Promotion and Healing, November 2008

The Ethics of Requiring Employees to Quit Smoking, January 2007

First, Do Not Punish: Individual Incentives in Health Policy, November 2008

The viewpoints expressed on this site are those of the authors and do not necessarily reflect the views and policies of the AMA.

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 747-749.

POLICY FORUM

Uncertainties in the Absence of Data: Use of Pravastatin in Young Children

Anna Shifrin and Darshak Sanghavi, MD

Ethical dilemmas arise when there is insufficient scientific evidence to support a clear clinical decision. When a treatment is nearly perfect in its efficacy and outcome and bears tolerable adverse side-effects—such as surgery for acute appendicitis—there is little left to argue against its implementation in the clinical setting. When data is unavailable or particularly difficult to gather, however, physicians face clinical uncertainty. Questions of this sort come up frequently in the pediatric population due to the shortage of clinical pediatric data, difficulty in obtaining data over lengthy follow-up periods, and the vulnerable nature of children.

Preventive medicine is also particularly prone to clinical dilemmas, since the future benefits of prevention must compete with potential present risks and discomforts inherent in the intervention. In many cases, this competition pits individual rights against the collective good, as demonstrated in such interventions as vaccination, gun control, and antismoking measures. When we look at prevention and the pediatric population together, the clinical and ethical questions multiply. How do physicians manage this degree of uncertainty? Often it is possible to resolve seemingly complex ethical dilemmas through re-examination or a better presentation of the existing evidence. Better data presentation can help us weigh the pros and cons objectively. Data allow us to put a price, whether in terms of lives, dollars, or other values, on the proposed preventive interventions. It is crucial to exhaust the data before turning to the ethical questions.

Consider the case of heart disease—the leading cause of death in the United States. We can agree on the obvious: prevention of cardiovascular disease is a worthwhile goal. Numerous longitudinal studies such as the Framingham Heart Study and the Nurses Health Study identified an assortment of physiological factors that correlated with higher risk of cardiovascular disease (CVD) and heart attack, including obesity, cigarette smoking, hypertension, and a family history of CVD, among others [1]. In some populations, such as men over age 50, the relationship of hyperlipidemia to heart disease appears causative based on prospective clinical trials of cholesterol-lowering drugs. No long-term prospective studies have been conducted with other groups such as children, leaving only retrospectively identified correlations of individual risk factors to guide clinical practice.

Based on this kind of retrospective data, the American Academy of Pediatricians (AAP) published updated guidelines in July 2008, titled “Lipid Screening and Cardiovascular Health in Childhood” [2]. This document contains a variety of

recommendations for pediatricians tending to children aged 2 and older with cardiovascular risk factors. The measures range from dietary and lifestyle modifications (e.g., switching to low-fat milk after the first year); to systematic serum lipid screenings starting at age 2 if there are certain cardiac risk factors such as a positive family history of CVD, hypertension, diabetes mellitus or obesity; to prescribing an LDL cholesterol-lowering pharmacologic agent, or statin. These guidelines provoke concerns for at least two reasons: first, the screening strategy is not validated for widespread use in asymptomatic young children, and second, the benefits of drug therapy are not well defined.

The AAP's guidelines raise ethical concerns about the fundamental purpose of prevention and its role in balancing individual autonomy with the benefits of society at large. By improving quality of life and freeing up hospital resources, preventive measures fulfill the ethical concepts of justice and beneficence. Prior to beneficence, however, is nonmaleficence—doing no harm—and the benefits of prevention to the individual and to society must be weighed against its risks and side-effects before we can employ the preventive measure or make it a standard. In the absence of certainty, or if the potential for harm exists, all available data must be clearly presented to the patient to assure that he or she can make a truly informed, autonomous decision.

One rarely publicized, but highly informative measure for determining the efficacy of screening and preventive efforts is the "number needed to treat," or NNT. This statistical tool determines how many individuals must receive a clinical treatment in order to save one life or prevent one undesired outcome. For pravastatin, the statin recommended for at-risk children by the AAP, the NNT has been measured only in men aged 50 or older, and it comes out to 50 [3]. For every 50 men with CVD risk factors who take the drug for 1 decade, one man will be spared the heart attack he would have suffered without the medication. The other 49 will receive no measurable benefit. In the pediatric population, where few studies of pravastatin use have been conducted and 60 year-long follow-up periods render future studies unlikely or impossible, the NNT remains an estimate—but one that is bound to be high. It is quite unlikely that a pravastatin study will ever be conducted in children since it would require administering pravastatin before age 10 and then tracking this cohort of children (study subjects) for more than a half century.

To help parents make an informed decision about treating their children with pravastatin, the NNT can serve as an easy-to-understand presentation of the current data. Parents also need to know about the potential risks of the medication, which include liver problems, gastrointestinal discomfort, muscle aches, and, in extreme cases, rhabdomyolysis, perhaps by presentation of the Number Needed to Harm (NNH). Finally, children taking pravastatin must be monitored with blood tests, which translates to costs and physical discomfort. These data, presented in an understandable way, are critical to empowering patients and allowing true decision-making autonomy.

Hormone replacement therapy (HRT) is a well-known example of neglecting autonomy for the sake of easing the burden of disease on society. HRT was widely recommended to help alleviate cardiac risk factors in postmenopausal women but later associated with an increase in breast cancer risks [4]. While the intention was good, a crucial step was left out in the process of popularizing HRT: a lack of long-term data precluded women from making informed decisions about whether or not to subscribe to the therapy. More clear data allowing women to make autonomous decisions was not easily accessible.

Prescribing statins to children based on evidence gathered from men over age 50 undoubtedly constitutes an ethical dilemma, and, for now, the best we can do is help individuals make up their own minds by presenting the available data clearly and thoroughly—a goal not yet satisfied by current practice.

References

1. Lauer MS. Clinical practice. Aspirin for primary prevention of coronary events. *N Engl J Med*. 2002;346(19):1468-1474.
2. Daniels SR, Greer FR; Committee on Nutrition. Lipid screening and cardiovascular health in childhood. *Pediatrics*. 2008;122(1):198-208.
3. Ford I, Murray H, Packard C, et al. Long-term follow-up of the West of Scotland Coronary Prevention Study. *N Engl J Med*. 2007;357(15):1477-1486.
4. Clemons M, Goss P. Estrogen and the risk of breast cancer. *N Engl J Med*. 2001;344(4):276-285.

Anna Shifrin is in her second year of study at the University of Massachusetts Medical School in Worcester. Her interest is in the relationship between the humanities and medicine.

Darshak Sanghavi, MD, is the chief of pediatric cardiology and assistant professor of pediatrics at the University of Massachusetts Medical School in Worcester. He writes on children's health issues for the public and is author of *A Map of the Child: A Pediatrician's Tour of the Body*.

Related in VM

Managing Prehypertension, November 2008

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 750-755.

MEDICINE AND SOCIETY

Patients Are Hardly Too Thin or Too Rich: Doctors' Preventive Medicine Duties

Henry S. Perkins, MD

Dorothy Parker, a 20th-century humorist, once famously quipped, "You can never be too thin or too rich." Her comment comes to me occasionally as I care for patients at a publicly funded, inner-city clinic in San Antonio, Texas—one of the poorest, most obese cities in the country. All my patients are poor, and most suffer obesity-related diseases—especially diabetes, hypertension, and osteoarthritis. One patient I care for is a middle-aged woman with uncontrolled diabetes who is overweight. She recently quit her house-cleaning jobs due to painful foot neuropathies and now lives on her husband's small Social Security check. Another patient is an intermittently employed used-car salesman who weighs 400 pounds, eats a steady diet of fast foods, and has hypertension. A third patient is a cook who is morbidly obese and has painful, unstable osteoarthritic knees that limit her ability to work. She wants bariatric surgery but cannot afford it.

Obesity and poverty are notoriously intractable problems that often cause doctors and patients to despair. Nonetheless, I find myself spending considerable practice time encouraging patients to lose weight and suggesting how they might get the most health benefit from limited personal finances. Like most doctors I consider weight-loss counseling an important professional duty [1].Yet many colleagues might not agree with me that counseling about medical finances is also a professional duty. To support that view I rely on the concept of health promotion.

What Is Health Promotion?

Medicine's purpose throughout history has been to treat established disease (identifiable somatic dysfunction) and illness (a patient's experience of symptoms). Treatment has long sought to correct functional disability, relieve suffering, and prevent premature death [2-3]. But recent advances in public health have expanded medicine's purpose to include using preventives and enhancements to promote health even before disease or illness arises. I contrast the two kinds of interventions here and conclude that preventives, but not enhancements, impose valid professional duties on doctors. Then I argue that medical-finances counseling, like weight-loss counseling, is a preventive, not an enhancement. Both types of counseling are professional duties. Thus, I urge doctors to address the medical-finances problems of patients as an essential part of care.

Preventives

Preventives are measures taken to preserve some physical or mental condition considered healthful or "normal." Examples include sunscreens, influenza vaccine, and postmenopausal calcium and vitamin D supplements. Preventives succeed to the extent that the unwanted diseases or illnesses do not occur. Medical science documents the success of preventives across populations, but patients' understanding of how well preventives work is often incomplete or inaccurate. Patients know that the zoster vaccine succeeds when they do not incur zoster symptoms and that birth control pills succeed as long as pregnancy does not occur. Yet a doctor may need to help patients understand correctly the success of other preventives with less-obvious aims, such as compression stockings for preventing deep-venous thromboses in legs, or cardiac defibrillators for preventing specific life-threatening arrhythmias.

A doctor may also need to educate patients about the different kinds of "normals" that are prevention targets. Some normals are strictly categorical: the patient's condition is normal or not, and preventives aimed at these normals succeed completely or not at all. Sunscreens, for example, succeed by keeping the patient free of all sun-induced skin cancers; antibiotic prophylaxis against meningitis succeeds by preventing secondary infection among a patient's college roommates. Other normals are quantitative, having numerical ranges with upper limits, lower limits, or both. These normals allow for graded success. Interventions aimed at preventing myocardial infarctions by controlling blood pressure or low-density lipoprotein (LDL) cholesterol in diabetics succeed more and less, depending on how close to 130/80 a patient's high blood pressure comes or how close to 100 mg/dl a patient's high LDL cholesterol falls.

A doctor may also need to explain the factors that determine the significance or relative importance of different preventive interventions. One factor is how conclusively medical evidence defines normal ranges. Morbidity and mortality data define normal ranges with the greatest conclusiveness; population means and standard deviations define normal ranges with intermediate conclusiveness; and personal opinions of health professionals or others define normal ranges with the least conclusiveness. Glycated hemoglobin and body-mass index (BMI) illustrate the first level of conclusiveness; triglycerides (in nondiabetics) and bone mineral density, the second level; and prostate-specific antigen, the third level.

Another significance factor is health promotion benefit, which is greater with some preventives than others. Naturally, doctors should emphasize the more beneficial interventions over the less beneficial (such as smoking cessation over folate supplements for preventing myocardial infarctions). These significance factors—the conclusiveness of normal ranges and the efficacy of interventions—should help guide doctors in tailoring preventive regimens to individual patient's needs.

Enhancements

A second type of health promotion is enhancements—measures intended to improve conditions considered healthy but not perfect. Enhancements address no specific

disease and are often marketed to the public as products or services available on demand. Examples include liposuction, hair removal or implants, exogenous growth hormone supplements, and other cosmetic interventions. Unlike preventives, enhancements provide little objective basis for scientific measurement of success. Instead, they are judged solely by how much they satisfy patients' subjective expectations. Still, our health care system permits the provision of enhancement services for people who can pay for them.

Mainstream medicine and society at large remain uneasy about enhancements. They do not fit well under medicine's traditional patient-care objectives. Despite rare exceptions, enhancements typically do not maximize function, relieve much suffering, or prevent premature death; they seem to fall outside standard medical care. Furthermore, providing enhancements (even to people who can pay for them) may have far-reaching, unintended adverse social consequences. It may siphon off precious medical resources from life- or limb-saving care, exaggerate the divide between society's haves and have-nots, and reinforce an unhealthy self-centeredness that undermines social solidarity. If the ideal of physical or mental perfection that people pursue narrows too drastically (say, to strictly the tall, blond, beautiful, athletic, and brilliant), enhancements could promote discrimination against those who do not naturally meet those ideals and cannot afford the medical procedures to attain them. Discrimination of this sort could erode important stabilizing diversities in society.

In sum, several characteristics distinguish preventives from enhancements. Preventives serve medicine's traditional patient-care goals, have objective endpoints, and scientific documentation of efficacy. Enhancements have none of these characteristics. Such differences suggest that preventives impose bona fide medical duties, but enhancements do not.

Weight-Loss Counseling as a Preventive Medicine Duty

Most doctors consider excessive weight a serious health risk. The particular risk for individual patients is gauged by their BMIs, that is, weight in kilograms divided by the square of height in meters. Individuals with BMIs between 20 and 25 are considered normal; those with BMIs from 25 to 30, overweight; and those with BMIs over 30, obese [4]. Doctors appreciate the striking coexistence of excessive weight with such chronic diseases as osteoarthritis, diabetes, and hypertension and with early death. For that reason, they believe combating excessive weight to promote health, not beauty, is one of their most important preventive medicine duties.

Careful analysis supports that belief. As with other preventive medicine duties, medically indicated weight loss has traditional medical goals, objective endpoints, and scientific proof of efficacy. It can provide patients with quick benefits by teaching self-discipline and bolstering self-confidence. But more importantly, it yields long-term benefits by improving function, relieving suffering, and preventing premature death [5-7]. The target range for medically indicated weight loss is

determined by the most conclusive data: mortalities are lowest in the normal BMI range and rise steadily above that [1]. Scientific studies also document the efficacy of diet and exercise in achieving at least short-term, modest weight loss and of even small weight losses (as little as 10 pounds) in reducing risks for hypertension, diabetes, and coronary artery disease [1, 8].

Weight-loss counseling need impose only a modest burden on doctors—to identify overweight patients, encourage them to lose weight, and offer practical suggestions for doing so. Yet because weight loss is difficult to achieve and sustain, patients often backslide, and doctors need to support their patients in maintaining hope.

Doctors might consider the following specific steps in carrying out the duty:

1. Explain at the outset of counseling the great health benefits of even small weight losses and express optimism about the patient's prospects.
2. Caution them that safe weight loss occurs slowly (about 1 to 2 pounds per week).
3. Emphasize that a sensible goal should not be some arbitrary weight or a specific dress size but the modest reduction necessary to improve long-term health [8].
4. Recommend daily weigh-ins on a home scale; simple caloric restriction; brisk walks for 30 to 40 minutes a day; and participation in Weight Watchers, Overeaters Anonymous, or a similar support group.
5. Praise patients who lose weight and encourage them to continue the effort.

Medical-Finances Counseling Is Also a Preventive Medicine Duty

Many doctors who accept weight-loss counseling as an important preventive medicine duty view counseling patients about medical finances as an optional service. But I believe doctors must respond to the financial problems of patients that affect care. Just as medically indicated weight loss aims at good physical health, not excessive thinness, medical-finances counseling aims at good fiscal health, not excessive richness. Ever more patients struggle to pay their medical bills—not only the poor. Thus, doctors should commit to a new preventive medicine duty that addresses patient financial problems before those problems disrupt care.

Although the parallels are not perfect, counseling patients about medical finances shares many characteristics of other preventive medicine duties. Most importantly, when preventing finance-related gaps in care, medical-finances counseling serves medicine's basic patient-care goals—maximizing function, relieving suffering, and preventing early death [9, 10]. Effective counseling might improve the functional recovery of a patient following a stroke by helping him afford bus fare to physical therapy appointments. It might prevent a patient who has used all her allotted monthly Medicaid prescriptions from suffering back pain without analgesics. Effective counseling might also avoid the life-threatening postponement of an emergency-room visit by a patient who has angina and is afraid he cannot afford the copayment. Medical-finances counseling also has a specific, objective, and

measurable goal—adequate funding to meet the patient's care needs. Scientific studies document that increased access to medical care improves health. To the extent that medical-finances counseling succeeds at increasing access, it should succeed in improving health.

The duty to provide medical-finances counseling need not be burdensome. Doctors can prepare to fulfill the duty by asking new patients about work status and asking established patients about any recent problems with "making ends meet." Doctors can learn the sliding-scale payment policy of the hospital or clinic. The counseling itself might take various forms, such as coordinating care under patients' insurance policies, suggesting additional outside resources, or planning ways to cope with potential financial hardships. Doctors might even request notification about patient payment problems and offer to help negotiate solutions. (Obviously, medical-finances counseling should never appear to satisfy mere curiosity or to harass patients for reimbursements.) Doctors should feel free to refer patients to social workers for advice about programs such as food stamps, low-cost exercise programs, and public subsidies for rent or transportation. Some doctors may even want to give general counseling about finances such as urging high school completion, household budgeting, debt counseling, or participation in retirement-savings programs.

Nonetheless, the doctor's help cannot be open-ended. He or she may rightfully limit help to realistic options, technical input, and available time. For example, the doctor may inform patients about pharmaceutical companies' payment-assistance programs but can expect applicants to collect the necessary paperwork, complete it as fully as possible, and only then bring it to the doctor's office for technical details, review, and signature.

Conclusion

Patient-care demands already overwhelm doctors. Why, then, do I suggest medical-finances counseling as yet another patient-care duty? Today's medicine is shifting care increasingly from hospitals to clinics. The new outpatient care depends heavily on patient follow-through and must be compatible with patients' life circumstances. Because medical-insurance coverage for many patients is spotty or completely unavailable, their personal finances are more critical than ever for accessing care. If patients cannot afford medical care, they will not seek it. Thus, doctors face a critical choice: either actively address patients' medical-finance problems or waste much effort at care.

References

1. Report of the U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services*. 2nd ed. Alexandria, VA: International Medical Publishing, Inc.; 1996.
2. Perkins HS. The physician as fiduciary: the basis for an ethics of patient care. In: Stein JH, ed. *Internal Medicine*. St. Louis: Mosby-Yearbook, Inc.; 1994.
3. Jonsen AR, Siegler M, Winslade WJ. *Clinical Ethics.* 3rd ed. New York, NY: McGraw-Hill; 1992.

4. McPhee SJ, Papadakis MA, Tierney LM. *2008 Current Medical Diagnosis & Treatment*. New York, NY: The McGraw-Hill Companies, Inc.; 2008.
5. Pi-Sunyer FX. Medical hazards of obesity. *Ann Intern Med.* 1993;119(7 Pt 2):655-660.
6. Must A, Spadano J, Coakley EH, Field AE, Colditz G, Dietz WH. The disease burden associated with overweight and obesity. *JAMA.* 1999;282(16):1523-1529.
7. Muennig P, Lubetkin E, Jia H, Franks P. Gender and the burden of disease attributable to obesity. *Am J Public Health*. 2006;96(9):1662-1668.
8. Hollis JF, Gullion CM, Stevens VJ, et al. Weight loss during the intensive intervention phase of the weight-loss maintenance trial. *Am J Prev Med*. 2008;35(2):118-126.
9. Schroeder SA. The medically uninsured—will they always be with us? *N Engl J Med*. 1996;334(17):1130-1133.
10. McCally M, Haines A, Fein O, Addington W, Lawrence RS, Cassel CK. Poverty and ill health: physicians can, and should, make a difference. *Ann Intern Med.* 1998;129(9):726-733.

Henry S. Perkins, MD, is a consultant in bioethics at the Ecumenical Center for Religion and Health and a professor of medicine at The University of Texas Health Science Center, both in San Antonio. He writes and teaches about everyday ethics issues in medical practice.

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 756-762.

OP-ED

Motivating Prevention: from Carrots and Sticks to "Carrots" and "Sticks"

Nir Eyal, DPhil

When patients do not follow sound medical advice that would help prevent and treat disease, is it ethical to deny them benefits that more adherent patients enjoy? Some argue that making benefits contingent on adherence increases adherence without any unfairness: non-recipients have only themselves to blame.

Recent years have seen growing support for the idea of patient responsibility. Some writers argue that patients with alcohol-related end-stage liver disease should receive lower priority on waiting lists for livers than other end-stage liver disease patients [1]. Corporate wellness programs are sweeping the country, offering employees DVDs, iPods, plane tickets, and $150 to participate in on-site exercise programs and health screenings or to sign up their children for anti-obesity programs [2]. A reduction in the rate of increase in national health expense was partly credited to programs such as these [3].

West Virginia currently operates a pilot program in three counties that gives enhanced benefits to adherent Medicaid patients who keep medical appointments, take their medications, and follow health-improvement plans. The enhanced-benefits package includes weight-loss programs, cardiac rehabilitation, chemical-dependency treatment, mental-health services, diabetes-management classes, and waiver of the general cap on reimbursed prescription drugs at $4 per month [4]. Other states are eying developments in West Virginia closely. Redesigned Medicaid programs that incorporate patient responsibility are being introduced in Florida, Idaho, and Kentucky. Also of interest are patient-responsibility reforms in Germany and Scotland [5].

Offering carrots and sticks to encourage adherence to medical advice makes sense in some ways. Epidemiologists recognize the dramatic contribution of personal and lifestyle choices to health, particularly in relation to chronic conditions like diabetes, hypertension, and cardiovascular disease and also in preventing and treating HIV/AIDS and other infectious diseases. Many ethicists and political philosophers, including some egalitarians, see no injustice in holding people responsible for their voluntary choices [6-9].

Traditionally, physicians and ethicists opposed holding patients responsible for unhealthy choices, often pointing to factors within and external to the patient that limited his or her capacity for compliance and healthy behaviors. Is it really just, they asked, to treat the unhealthy choice of an addict as voluntary and to hold her

fully responsible for it? If not, is it just to treat the failure of an impoverished patient to maintain a healthy diet or keep appointments as voluntary when she has two jobs, a family, and little access to healthful food, childcare, and adequate transportation to the clinic? Given the well-established correlation across cultures between poverty and unhealthy lifestyles, can it be just to hold individuals responsible for choices typical of their socioeconomic sector [10]?

And even if risky choices of certain kinds—climbing mountains, driving recklessly, becoming pregnant—are typically voluntary, can an insurer tell in a specific case whether the choice was fully voluntary? If it were truly voluntary, would it not still be cruel to deny treatment to those who, owing to their own choices, need it [11]? Aren't patient-responsibility programs simply conspiracies to cut back Medicaid or shrink benefits to the poor [12, 13]?

There are problems from the care-provider perspective as well. Would it really boost health outcomes or cut costs if physicians monitored and reported their own patients' adherence, or would it only build distrust, stigma, and humiliation [10, 14]? If health is affected by personal choice, isn't it best to institute policies "upstream" that encourage healthy choices through increasing access to education, sufficient income, and attractive, user-friendly health services [15]? In short, where some see promise of significant financial and health gains in holding patients responsible for (non)adherence, others see injustice, cruelty, and little if any gain [16].

Which Incentives?

Assessments of patient-responsibility programs seldom focus on the kinds of incentives used to motivate adherence, when, in fact, the choice of incentive can be wise or harmful. Consider one incentive in West Virginia's Medicaid reform program: funding for chemical-dependency services—presumably for smoking cessation and substance-abuse rehabilitation programs. Prior to the reform, all West Virginian Medicaid patients in need were entitled to such services [17]. Now, access to chemical-dependency services, both inpatient and outpatient, is among the "prizes" for adherent patients [4]. Those who are addicted to drugs need detoxification to restore themselves physically, emotionally, and socially. Blocking their access to chemical-dependency services is cruel and may contravene their rights to urgent care.

By definition, those addicted to chemical substances enjoy only partial control over certain unhealthy choices, so denial of chemical-dependency services typically remains unjust even if we accept that fully voluntary, unhealthy choices could have justified sanctions. (West Virginia makes no formal exceptions for patients who develop addiction before the age of maturity or by using prescription medications for medical conditions.) Continued addiction produces negative consequences for others, ranging from secondhand smoke to domestic violence. Affected family, friends, and coworkers clearly made no choices that might have justified holding them responsible.

From Carrots and Sticks to "Carrots" and "Sticks"

West Virginia's use of chemical-dependency programs as an incentive for adherence is inopportune. If Medicaid and other public programs wish to offer incentives to encourage adherence, what kinds of incentives might they use instead? I propose that incentives for adherence should be products or services that patients desire strongly but that have little or no intrinsic value and small impact on their health and well-being. Such incentives are desired but not truly desirable. Rather than real carrots and sticks, they constitute stimulating, yet illusory, "carrots" and "sticks."

Consider a health practitioner's deliberate use of patients' embarrassment as a "stick" that motivates healthy choice. Last year, a new dentist got me finally to start flossing regularly by looking convincingly perturbed at my poor adherence and inviting me to frequent follow-ups until I become adherent. I am still under "probation," but I flossed regularly this past year and feel good about my chances to stick to the new patterns, because after a couple of meetings it became too embarrassing to return without results.

Health-system design can also use our superficial but often overwhelming sense of embarrassment to promote healthy behavior. In directly observed therapy (DOT), patients are watched when they take medication or receive treatment. A form of this method is central to the World Health Organization's Stop TB Strategy [18]. DOT is now used in the treatment of many additional infectious and chronic diseases. Consider how this method works. Admittedly, the visit from a health worker reminds patients to take their medication, but it seems to ensure they take it mainly by creating a situation in which it would be too embarrassing not to take it.

Patients with obstructive sleep apnea provide another example. These patients benefit from connecting to oxygenation machines during sleep hours, but adherence is often poor. Here, direct observation of patient compliance would have been too intrusive. Nevertheless, many new oxygenation machines are equipped with an embedded card that registers both sleep patterns and the patient's use of the machine. If physicians regularly read the card in front of patients it might increase adherence.

Automatic registration of apnea patients' behavior might also improve adherence through a very different route: by allowing insurers to deny coverage or increase premiums for nonadherent patients. I propose that the first kind of disincentive—embarrassment from one's physician—is preferable to the latter, which can result in real harms to patients. Hence, instead of using real carrots and sticks, it is usually better to use "carrots" and "sticks"—outcomes that patients strongly desire or dread, but that do not benefit or harm them dramatically. Unlike steep fines (or profound stigma and humiliation), embarrassment is usually benign.

Medicaid and other public programs could also use these "carrots" and "sticks." Their standard packages could dramatically improve for all patients, so long as adherent patients alone receive something that most target patients strongly desired. Suppose that in West Virginia the prize for adherence was exclusive funding, not for

chemical-dependency services, but for using a "dream" private hospital. Suppose also that public facilities for Medicaid patients greatly improved. While the products and services offered at the private hospital could not be far superior to those at highly improved public facilities, the private hospital's advertising could make them appear far more attractive. Advertisements could feature the private hospital's newer, shinier equipment (which achieves the same results as the equipment in the public hospital); the even shorter wait periods (for non-emergent conditions); alternative treatments that it alone performs (to little medical effect); and plush lobbies, greater food choice, and fancier cutlery. Advertisements would neglect to mention that public institutions reach similar or better clinical outcomes, handle patients' records more efficiently, and never offer unnecessary procedures.

Many Medicaid patients might take better care of themselves to win prizes they desire strongly, and at the same time justice and compassion would be respected so long as the highly desired prizes are not highly desirable: there is little inequity or cruelty in denying nonadherent patients a benign "prize," or even in visiting a benign "burden" on them. Justice and compassion matter only in the distribution of real benefits—genuinely desirable goods and privileges; "misdistribution" of things with little or no real value is neither iniquitous nor harsh. Thus, tying distribution of desired but nondesirable products and services to patients' adherence may suffice to motivate patients, while avoiding gross injustice and cruelty.

The Possibility of "Carrots" and "Sticks" in Health Care

One reason why products and services can be desired but not desirable is our "bounded rationality." For example, experiments in behavioral economics show that we put more weight on losing benefits that are already ours and that how available options are framed affects our decisions dramatically [19].

Physicians are aware of their own bounded rationality, as well as that of their patients and research participants—for example, their difficulties and systematic biases in calculating and grasping probabilities. Bounded rationality often leads us to desire treatments more or less than they are desirable given their risks and benefits. Judging from the dearth of kidneys for transplantation, it seems fair to conclude that few people fully realize that the 1-in-3,000 risk of death due to kidney extraction is lower than other risks they regularly confront. It is surprisingly rare to find a research participant who fully grasps that, if 50 percent of participants in a trial are in the placebo arm, she stands a 50 percent chance of not receiving the trial treatment [20]. Patients' desire to avoid health problems and unpleasant procedures is notoriously "adaptive," weakening as they grow accustomed to them [21]. Either before or after adaptation, there was mismatch between the respective levels of desire and desirability.

The potential in using patients' systematic biases to promote health is also increasingly recognized. Cafeteria design that tends to manipulate diners into making healthier food choices (salad bars are located at the entrance to the cafeteria, complete with big salad containers) exploits our bounded rationality. So do opt-out

programs for kidney donation already in place in several European countries. By requiring a positive action to opt out of donating, these programs use our biases to boost the pool of organs available for transplantation [22].

Conclusion

One important desideratum in incentives for healthy choice is that many members of the target group desire them although the incentives are not truly desirable. Using incentives that patients strongly crave increases health outcomes and cost-efficiency by motivating adherence—but it involves little injustice or cruelty when these incentives lack real value.

There are two caveats. My examples of such incentives are merely illustrative. To establish that these particular incentives are strongly desired but nondesirable lies beyond the scope of the present hypothesis-generating article. If the particular incentives I mentioned do not answer that description, then the proposed principle still stands: desired but nondesirable is usually an important desideratum in incentives for healthy choice.

A second caveat is that this is only one desideratum in incentives for adherent choice. An incentive that satisfies this desideratum may remain problematic in other respects. For example, many cosmetic treatments are strongly desired and arguably not truly desirable, but some are so objectively undesirable as to be dangerous; Medicaid clearly should not use dangerous treatments as incentives. Nor should Medicaid use other desired and nondesirable incentives if using them would foil initiatives to educate the public against desiring them. It is for that reason that benign but wholly unnecessary cosmetic treatments may also disqualify as incentives. Finally, use of many—but not all—benign "carrots" and "sticks" as incentives would involve regular reliance on manipulation, which would count somewhat against their use [23].

Having said that, "desired-but-nondesirable" remains a valuable attribute, other things being equal, of incentives to prevent disease. Certainly we should not prevent disease by threatening to deny the nonadherent access to products and services that are lifelines to a dignified, minimally autonomous existence. Chemical-dependency treatments often fall under that category.

References

1. Moss AH, Siegler M. Should alcoholics compete equally for liver transplantation? *JAMA*. 1991;265(10):1295-1298.
2. Firms use carrot, stick to encourage healthy habits. *Morning Edition*. National Public Radio. October 31, 2007. http://www.npr.org/templates/story/story.php?storyId=15800056. Accessed August 17, 2008.
3. PRNewswire. Employers face 10.6 percent health care cost increases, says Aon Consulting. 2008.

http://aon.mediaroom.com/index.php?s=43&item=1285. Accessed September 8, 2008.
4. Centers for Medicare & Medicaid Services. Approval of West Virginia 's Medicaid plan amendment. Letter from Dennis G. Smith. http://www.wvdhhr.org/bms/oAdministration/bms_admin_WV_SPA06-02_20060503.pdf. Accessed August 6, 2008.
5. Schmidt H. Patients' charters and health responsibilities. *BMJ.* 2007;335(7631):1187-1189.
6. Cohen GA. On the currency of egalitarian justice. *Ethics.* 1989;99(4):906-944.
7. Dworkin R. What is equality? Part 2: equality of resources. *Philos Public Aff.* 1981;10(4):283-345.
8. Arneson RJ. Equality and equality of opportunity for welfare. *Philos Stud.* 1989;56:77-93.
9. Eyal N. Egalitarian justice and innocent choice. *J Ethics Soc Philos*. 2007;2(1):1-18.
10. Bishop G, Brodkey AC. Personal responsibility and physician responsibility—West Virginia's Medicaid plan. *N Engl J Med.* 2006;355(8):756-758.
11. Anderson ES. What is the point of equality? *Ethics* 1999;109:287-337.
12. Inglehart JK. Medicaid revisited—skirmishes over a vast public enterprise. *N Engl J Med.* 2007;356(7):734-740.
13. Solomon J. West Virginia's Medicaid changes unlikely to reduce state costs or improve beneficiaries' health. *Center on Budget and Policy Priorities. 2006.* http://www.cbpp.org/5-31-06health.pdf. Accessed August 6, 2008.
14. Wolff J. Fairness, respect, and the egalitarian ethos. *Philos Public Aff.* 1998;27:97-122.
15. Mechanic D. Disadvantage, inequality, and social policy. *Health Aff.* 2002;21(2):48-59.
16. Wikler D. Personal and social responsibility for health. In: Anand S, Peter F, Sen AK, eds. *Public Health, Ethics, and Equity*. New York, NY: Oxford University Press; 2006.
17. The Henry J. Kaiser Foundation. *Medicaid Benefits: Online Database. 2008*. www.kff.org/medicaid/benefits. Accessed August 6, 2008.
18. Raviglione MC. The new stop TB strategy and the global plan to stop TB, 2006-2015. *Bull World Health Organ.* 2007;85(5):327.
19. Tversky A, Kahneman D. *Judgment under Uncertainty: Heuristics and Biases*. Cambridge, UK: Cambridge University Press; 1982.
20. Lidz CW, Appelbaum PS, Grisso T, Renaud M. Therapeutic misconception and the appreciation of risks in clinical trials. *Soc Sci Med.* 2004;58(9):1689-1697.
21. Menzel P, Dolan P, Richardson J, Olsen JA. The role of adaptation to disability and disease in health state valuation: a preliminary normative analysis. *Soc Sci Med.* 2002;55(12):2149-2158.

22. Thaler RH, Sunstein CR. Nudge: *Improving Decisions about Health, Wealth, and Happiness*. New Haven, CT: Yale University Press; 2008.
23. Eyal N. Poverty reduction and equality with strong incentives: the brighter side of false needs. In: Ryberg J, Petersen TS, Wolff C, eds. *New Waves in Applied Ethics*. London, UK: Palgrave MacMillan; 2008.

Nir Eyal, DPhil, is an assistant professor in global health and social medicine at Harvard Medical School and is affiliated with the program in ethics and health at Harvard University in Boston. Dr. Eyal's work focuses on informed consent, markets in organs, ownership over the body, the global medical brain-drain crisis, health resource allocation, egalitarianism, consequentialism, and respect for persons.

Acknowledgement
The author is grateful to Yaron Klein, Faith Lagay, Anna Shifrin, and Dan Wikler for their helpful comments.

Related in VM
Practicing Preventive Medicine through Preventive Employment Practices, November 2008

First, Do Not Punish: Individual Incentives in Health Policy, November 2008

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 763-775.

SUGGESTED READINGS AND RESOURCES

Accreditation Council for Graduate Medical Education. Common program requirements currently in effect. http://www.acgme.org/outcome/comp/compMin.asp. 2007. Accessed August 26, 2008.

Allan J, Barwick TA, Cashman S, et al. Clinical prevention and population health: curriculum framework for health professions. *Am J Prev Med*. 2004;27(5):471-476.

American College of Preventive Medicine. Fifty years of leadership: improving health yesterday, today, and tomorrow. http://www.acpm.org/50years/ACPM_History.pdf. 2004. Accessed August 16, 2008.

American College of Preventive Medicine. Preventive medicine (PM) residency funding fact sheet. http://acpm.org/RPS/PMFundingFacts.pdf. 2008. Accessed August 26, 2008.

American College of Preventive Medicine. What is ACPM? http://www.acpm.org/about.htm. 2008. Accessed August 26, 2008.

American Medical Association Council on Ethical and Judicial Affairs. Report 6-A-08. Expedited partner therapy. 2008. http://www.ama-assn.org/ama1/pub/upload/mm/369/ceja_6a08.pdf.

American Medical Association Council on Ethical and Judicial Affairs. Fundamental elements of the patient-physician relationship. *JAMA.* 1990;264(24):3133.

American Medical Association Council on Ethical and Judicial Affairs. Report 6, A-08. Expedited partner therapy. 2008. http://www.ama-assn.org/ama1/pub/upload/mm/369/ceja_6a08.pdf. Accessed August 31, 2008.

American Medical Association Council on Science and Public Health. Report 9-A-05. Expedited partner therapy (patient-delivered partner therapy): an update. 2006. http://www.ama-assn.org/ama/pub/category/16410.html. Accessed August 31, 2008.

American Medical Association. Opinion 9.00 Professional rights and responsibilities. *Code of Medical Ethics*. Chicago, IL. American Medical Association; 2001. http://www.ama-assn.org/ama1/pub/upload/mm/369/section_9.pdf.

American Medical Association. *Principles of Medical Ethics*. 2001. http://www.ama-assn.org/ama/pub/category/2512.html. Accessed August 31, 2008.

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR*. 4th ed. Washington, DC: American Psychiatric Association; 2000: 424.

Anderson ES. What is the point of equality? *Ethics.* 1999;109:287-337.

Arneson RJ. Equality and equality of opportunity for welfare. *Philos Stud.* 1989;56:77-93.

Associated Press. Heavy people to feel lighter wallets with Alabama surcharge. *USA Today*. August 22, 2008: http://www.usatoday.com/news/health/weightloss/2008-08-22-obesity-penalty_N.htm.

Association of American Medical Colleges. The development of regional centers to improve medical students' exposure to public health and population medicine. http://www.aamc.org/members/cdc/aamcbased/regionalcenters.htm. 2008. Accessed August 26, 2008.

Association of American Medical Colleges. U.S. medical school faculty, faculty roster reports. http://www.aamc.org/data/facultyroster/reports.htm. 2008. Accessed August 26, 2008.

Bauer HM, Wohlfeiler D, Klausner JD, et al. California guidelines for expedited partner therapy for chlamydia trachomatis and Neisseria gonorrhoeae. *Sex Transm Dis.* 2008;35(3):314-319.

Beauchamp, TL, Childress JF. *Principles of Biomedical Ethics.* 4th ed. New York, NY: Oxford University Press; 1994.

Bishop G, Brodkey AC. Personal responsibility and physician responsibility—West Virginia's Medicaid plan. *N Engl J Med.* 2006;355(8):756-758.

Bronaugh TA, Frances RJ. Establishing a smoke-free inpatient unit: is it feasible? *Hosp Community Psychiatry.*1990;41(12):1303-1305.

Cahill L, Prins B, Weber M, McGaugh JL. Beta-adrenergic activation and memory for emotional events. *Nature*. 2002;371(6499):702-704.

Centers for Disease Control and Prevention. 2001 surgeon general's report—women and smoking. 2001. http://www.cdc.gov/tobacco/sgr/sgr_forwomen/index.htm. Accessed August 25, 2008.

Centers for Disease Control and Prevention. 2004 surgeon general's report: the health consequences of smoking. 2004. http://www.cdc.gov/tobacco/data_statistics/sgr/sgr_2004/index.htm. Accessed August 25, 2008.

Centers for Disease Control and Prevention. Annual smoking-attributable mortality, years of potential life lost, and productivity losses—United States, 1997-2001. *MMWR.* 2005;54(25):625.

Centers for Disease Control and Prevention. Expedited partner therapy in the management of sexually transmitted diseases. 2006. http://www.cdc.gov/std/treatment/EPTFinalReport2006.pdf. Accessed August 31, 2008.

Centers for Disease Control and Prevention. Legal status of expedited partner therapy. 2008. http://www.cdc.gov/std/ept/legal/default.htm. Accessed July 31, 2008.

Centers for Medicare & Medicaid Services. Approval of West Virginia 's Medicaid plan amendment. Letter from Dennis G. Smith. http://www.wvdhhr.org/bms/oAdministration/bms_admin_WV_SPA06-02_20060503.pdf. Accessed August 6, 2008.

Chadwick KL. Is leisure-time smoking a valid employment consideration? *Alb L Rev.* 2006;70(1):117-142.

Chamberlain LJ, Wang NE, Ho ET, Banchoff AW, Braddock CH 3rd, Gesundheit N. Integrating collaborative population health projects into a medical student curriculum at Stanford. *Acad Med*. 2008;83(4):338-344.

Chobanian AV, Bakris GL, Black HR, et al. Seventh report of the joint national committee on prevention, detection, evaluation, and treatment of high blood pressure. *Hypertension*. 2003;42(6):1206-1252.

City of North Miami v Kurtz, 653 So2d 1025 (Fla 1995).

Clemons M, Goss P. Estrogen and the risk of breast cancer. *N Engl J Med*. 2001;344(4):276-285.

Cleveland JQ. A cost-effective study of alternative methods for gonorrhea contact referral and rescreening. Dade County, FL: Dade County Department of Public Health. Undated.

Cohen GA. On the currency of egalitarian justice. *Ethics.* 1989;99(4):906-944.

Conlin M. Get healthy—or else. *BusinessWeek*. February 26, 2007.

Contemporary issues in medicine—medical informatics and population health: report II of the Medical School Objectives Project. *Acad Med*. 1999;74(2):130-141.

Cutler JA, Follmann D, Allender PS.Randomized trails of socium reduction: an overview. *Am J Clin Nutr*. 1997;65(2 Suppl):643S-651S.

Daniels SR, Greer FR; Committee on Nutrition. Lipid screening and cardiovascular health in childhood. *Pediatrics*. 2008;122(1):198-208.

Doran T, Fullwood C, Reeves D, Gravelle H, Roland M. Exclusion of patients from pay-for-performance targets by English physicians. *N Engl J Med.* 2008:359(3)274-284.

Dworkin R. What is equality? Part 2: equality of resources. *Philos Public Aff.* 1981;10(4):283-345.

Endsley S, Baker G, Kershner BA, Curtin K. What family physicians need to know about pay for performance. *Fam Pract Manag*. 2006;13(7):69-74.

Etchells E, Sharpe G, Walsh P, Williams JR, Singer PA. Bioethics for clinicians: 1. consent. *CMAJ.* 1996;155(2):177-180.

Eyal N. Egalitarian justice and innocent choice. *J Ethics Soc Philos.* 2007;2(1):1-18.

Eyal N. Poverty reduction and equality with strong incentives: the brighter side of false needs. In: Ryberg J, Petersen TS, Wolff C, eds. *New Waves in Applied Ethics*. London, UK: Palgrave MacMillan; 2008.

Fielding JE, Husten CG, Eriksen MP. Tobacco: health effects and control. In: Maxcy KF, Rosenau MJ, Last JM, Wallace RB, Doebbling BN, eds. *Public Health and Preventive Medicine*. New York, NY: McGraw-Hill. 1998.

Fields LE, Burt VL, Cutler JA, Hughes J, Roccella EJ, Sorlie P. The burden of adult hypertension in the United States 1999 to 2000: a rising tide. *Hypertension*. 2004;44(4):398-404.

Finkelstein JA, McMahon GT, Peters A, Cadigan R, Biddinger P, Simon SR. Teaching population health as a basic science at Harvard Medical School. *Acad Med*. 2008;83(4):332-337.

Fiore MC, Jorenby DE. Smoke-free hospitals. A time for universal action. *Chest*. 1992;102(5):1317-1318.

Firms use carrot, stick to encourage healthy habits. *Morning Edition.* National Public Radio. October 31, 2007.

http://www.npr.org/templates/story/story.php?storyId=15800056. Accessed August 17, 2008.

Ford I, Murray H, Packard C, et al. Long-term follow-up of the West of Scotland Coronary Prevention Study. *N Engl J Med*. 2007;357(15):1477-1486.

Gebbie K, Rosenstock L, Hernandez LM; Committee on Educating Public Health Professionals for the 21st Century. *Who Will Keep the Public Healthy? Educating Public Health Professionals for the 21st Century*. Washington, DC: National Academies Press; 2003.

Gillon R. Medical ethics: four principles plus attention to scope. *BMJ.* 1994;309(6948):184-188.

Glannon W. *Defining Right and Wrong in Brain Science: Essential Readings in Neuroethics*. New York, NY: Dana Press; 2007.

Golden MR, Faxelid E, Low N. Partner notification for sexually transmitted infections including HIV infection: an evidence-based assessment. In: Holmes KK, Sparling PF, Stamm WE, et al, eds. *Sexually Transmitted Diseases.* 4th ed. New York, NY: McGraw Hill; 2008.

Golden MR, Hogben M, Handsfield HH, St Lawrence JS, Potterat JJ, Holmes KK. Partner notification for HIV and STD in the United States: low coverage for gonorrhea, chlamydial infection, and HIV. *Sex Transm Dis*. 2003,30(6):490-496.

Golden MR, Hughes JP, Brewer DD, et al. Evaluation of a population-based program of expedited partner therapy for gonorrhea and chlamydial infection. *Sex Transm Dis.* 2007;34(8):598-603.

Golden MR, Whittington WL, Gorbach PM, Coronado N, Boyd MA, Holmes KK. Partner notification for chlamydial infections among private sector clinicians in Seattle-King County: a clinician and patient survey. *Sex Transm Dis.* 1999;26(9):543-547.

Golden MR, Whittington WL, Handsfield HH, et al. Effect of expedited treatment of sex partners on recurrent or persistent gonorrhea or chlamydial infection. *N Engl J Med.* 2005;352(7):676-685.

Goold S. Trust and physician payment. *Healthc Exec*. 1998;13(4)40-41.

Greenlund KJ, Croft JB, Mensah GA. Prevalence of heart disease and stroke risk factors in persons with prehypertension in the United States, 1999-2000. *Arch Intern Med*. 2004;164(19):2113-2118.

Grusendorf v City of Oklahoma City, et al. 816 F2d 539 (10th Cir 1987).

Guglielmo WJ. This doctor made P4P work—you can too. *Med Econ*. 2008;85(14):34-36, 42-44.

Hajjar I, Kotchen TA. Trends in prevalence, awareness, treatment and control of hypertension in the United States, 1988-2000. *JAMA*. 2003;290(2):199-206.

Harris R, Kinsinger LS, Tolleson-Rinehart S, Viera AJ, Dent G. The MD-MPH program at the University of North Carolina at Chapel Hill. *Acad Med*. 2008;83(4):371-377.

Henry M, Fishman JR, Youngner SJ. Propranolol and the prevention of post-traumatic stress disorder: is it wrong to erase the "sting" of bad memories? *Am J Bioeth*. 2007;7(9):12-20.

Hethcote H, York J. Gonorrhea transmission dynamics and control. *Lecture Notes in Biomathematics*. 1984;56:1-105.

Hing ES, Burt CW, Woodwell, DA. Electronic medical record use by office-base physicians and their practices: United States, 2006. Centers for Disease Control. Advance Data from Vital and Health Statistics. 2007;337:1-8. http://www.cdc.gov/nchs/data/ad/ad393.pdf. Accessed October 3, 2008.

Hodge JG Jr., Pulver A, Hogben M, Bhattacharya D, Brown EF. Expedited partner therapy for sexually transmitted diseases: assessing the legal environment. *Am J Public Health.* 2008;98(2):238-243.

Hogben M, McCree DH, Golden MR. Patient-delivered partner therapy for sexually transmitted diseases as practiced by U.S. physicians. *Sex Transm Dis.* 2005;32(2):101-105.

Hollis JF, Gullion CM, Stevens VJ, et al. Weight loss during the intensive intervention phase of the weight-loss maintenance trial. *Am J Prev Med*. 2008;35(2):118-126.

Inglehart JK. Medicaid revisited—skirmishes over a vast public enterprise. *N Engl J Med*. 2007;356(7):734-740.

Jacobsohn V, DeArman M, Moran P, et al. Changing hospital policy from the wards: an introduction to health policy education. *Acad Med*. 2008;83(4):352-356.

Jochelson K. Paying the patient: improving health using financial incentives. King's Fund publications. 2007. http://www.kingsfund.org.uk/publications. Accessed on July 20, 2008.

Jonsen AR, Siegler M, Winslade WJ. *Clinical Ethics.* 3rd ed. New York, NY: McGraw-Hill; 1992.

Julius S, Nesbitt S, Egan B, et al. Trial of preventing hypertension: design and 2-year progress report. *Hypertension*. 2004;44(2):146-151.

Katz BP, Danos CS, Quinn TS, Caine V, Jones RB. Efficiency and cost-effectiveness of field follow-up for patients with chlamydia trachomatis infection in a sexually transmitted diseases clinic. *Sex Transm Dis*. 1988,15(1):11-16.

Kelley GA, Kelley KS. Progressive resistance exercise and resting blood pressure: a meta-analysis of randomized controlled trials. *Hypertension*. 2000;35(3):838-843.

Kerkering KW, Novick LF. An enhancement strategy for integration of population health into medical school education: employing the framework developed by the Healthy People Curriculum Task Force. *Acad Med*. 2008;83(4):345-351.

Kessler RC, Chiu WT, Demler O, Merikangas KR, Walters EE. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005;62(6):617-627.

Kessler RC, Sonnega A, Bromet E, Hughes M, Nelson CB. Posttraumatic stress disorder in the National Comorbidity Survey. *Arch Gen Psychiatry*. 1995;52(12): 1048-1060.

Kissinger P, Brown R, Reed K, et al. Effectiveness of patient delivered partner medication for preventing recurrent chlamydia trachomatis. *Sex Transm Infect.* 1998;74(5):331-333.

Kissinger P, Mohammed H, Richardson-Alston G, et al. Patient-delivered partner treatment for male urethritis: a randomized, controlled trial. *Clin Infect Dis.* 2005;41(5):623-629.

Kretzschmar M, van Duynhoven YT, Severijnen AJ. Modeling prevention strategies for gonorrhea and chlamydia using stochastic network simulations. *Am J Epidemiol*. 1996;144(3):306-317.

Lauer MS. Clinical practice. Aspirin for primary prevention of coronary events. *N Engl J Med*. 2002;346(19):1468-1474.

Lawes CM, Vander Hoorn S, Rodgers A; International Society of Hypertension. Global burden of blood-pressure-related disease, 2001. *Lancet*. 2008;371(9623):1513-1518.

Levitt SD, Dubner SJ. *Freakonomics: A Rogue Economist Explores the Hidden Side to Everything*. New York, NY. HarperCollins Pub; 2005.

Lewington S, Clarke R, Qizilbash N, Peto R, Collins R; Prospective Studies Collaboration. Age-specific relevance of usual blood pressure to vascular mortality: a meta-analysis of individual data for one million adults in 61 prospective studies. *Lancet*. 2002;360(9349):1903-1913.

Liao SM, Sandberg A. The normativity of memory modification. *Neuroethics.* 2008;1:90-96.

Lidz CW, Appelbaum PS, Grisso T, Renaud M. Therapeutic misconception and the appreciation of risks in clinical trials. *Soc Sci Med.* 2004;58(9):1689-1697.

Low N, McCarthy A, Roberts TE, et al. Partner notification of chlamydia infection in primary care: randomised controlled trial and analysis of resource use. *BMJ.* 2006;332(7532)14-19.

Maeshiro R. Responding to the challenge: population health education for physicians. *Acad Med*. 2008;83(4):319-320.

Maheu FS, Joober R, Lupien SJ. Declarative memory after stress in humans: differential involvement on the beta-adrenergic and corticosteroid systems. *J Clin Endocrinol Metab*. 2005;90(3):1697-1704.

Malhotra M, Sharma JB, Batra S, Arora R, Sharma S. Ciprofloxacin-tinidazole combination, fluconazole- azithromicin-secnidazole-kit and doxycycline-metronidazole combination therapy in syndromic management of pelvic inflammatory disease: a prospective randomized controlled trial. *Indian J Med Sci.* 2003;57(12):549-555.

McCally M, Haines A, Fein O, Addington W, Lawrence RS, Cassel CK. Poverty and ill health: physicians can, and should, make a difference. *Ann Intern Med.* 1998;129(9):726-733.

McPhee SJ, Papadakis MA, Tierney LM. *2008 Current Medical Diagnosis & Treatment*. New York, NY: The McGraw-Hill Companies, Inc.; 2008.

Mechanic D. Disadvantage, inequality, and social policy. *Health Aff.* 2002;21(2):48-59.

Medical Professionalism Project. Medical professionalism in the new millennium: a physicians' charter. *Lancet.* 2002;359(9305):520-522.

Mello MM, Rosenthal MB. Wellness programs and lifestyle discrimination—the legal limits. *N Engl J Med*. 2008;359(2):192-199.

Menzel P, Dolan P, Richardson J, Olsen JA. The role of adaptation to disability and disease in health state valuation: a preliminary normative analysis. *Soc Sci Med.* 2002;55(12):2149-2158.

Minkler M. Personal responsibility for health? A review of the arguments and the evidence at century's end. *Health Educ Behav.* 1999;26(1):121-140.

Moss AH, Siegler M. Should alcoholics compete equally for liver transplantation? *JAMA.* 1991;265(10):1295-1298.

Muennig P, Lubetkin E, Jia H, Franks P. Gender and the burden of disease attributable to obesity. *Am J Public Health*. 2006;96(9):1662-1668.

Munson, R. *Intervention and Reflection: Basic Issues in Medical Ethics*. 8th ed. Belmont, CA: Thomson-Wadsworth Publishers; 2008.

Must A, Spadano J, Coakley EH, Field AE, Colditz G, Dietz WH. The disease burden associated with overweight and obesity. *JAMA*. 1999;282(16):1523-1529.

Ockene IS, Hebert JR, Ockene JK, Merriam PA, Hurley TG, Saperia GM. Effect of training and a structured office practice on physician-delivered nutrition counseling: the Worcester-area trials for counseling in hyperlipidemia (WATCH). *Am J Prev Med.* 1996;12(4):252-258.

Ockene JK, Zapka JG. Physician-based smoking intervention: a rededication to a five-step strategy to smoking research. *Addict Behav*. 1997;22(7);835-848.

Olshansky SJ, Passaro DJ, Hershow RC, et al. A potential decline in life expectancy in the United States in the 21st century. *N Engl J Med*. 2005;352(11):1138-1145.

Ornt DB, Aron DC, King NB, et al. Population medicine in a curricular revision at Case Western Reserve. *Acad Med*. 2008;83(4):327-331.

Pell JP, Haw S, Cobbe S, et al. Smoke-free legislation and hospitalizations for acute coronary syndrome. *N Engl J Med*. 2008;359(5):482-491.

Perkins HS. The physician as fiduciary: the basis for an ethics of patient care. In: Stein JH, ed. *Internal Medicine*. St. Louis: Mosby-Yearbook, Inc.; 1994.

Philpot TK. The ethics of smoke-free zones: an exploration of the implications and effectiveness of a non-smoking policy as a health-promotion strategy in the context of an orthopedic trauma ward. *J Clin Nurs*. 1994;3(5):307-311.

Pi-Sunyer FX. Medical hazards of obesity. *Ann Intern Med.* 1993;119(7 Pt 2):655-660.

Pitman RK, Sanders KM, Zusman RM, et al. Pilot study of secondary prevention of posttraumatic stress disorder with propranolol. *Biol Psychiatry.* 2002;51(2):189-192.

President's Council on Bioethics. Beyond therapy: biotechnology and the pursuit of happiness. 2003. http://www.bioethics.gov/reports/beyondtherapy/chapter6.html. Accessed October 5, 2008.

PRNewswire. Employers face 10.6 percent health care cost increases, says Aon Consulting. 2008. http://aon.mediaroom.com/index.php?s=43&item=1285. Accessed September 8, 2008.

Pugsley MW. Nonsmoking hiring policies: examining the status of smokers under Title I of the Americans with Disabilities Act of 1990. *Duke L J.* 1994;43:1089-1114.

Ramstedt K, Forssman L, Johannisson G. Contact tracing in the control of genital chlamydia trachomatis infection. *Int J STD AIDS.* 1991;2(2):116-118.

Raviglione MC. The new stop TB strategy and the global plan to stop TB, 2006-2015. *Bull World Health Organ*. 2007;85(5):327.

Redman BK. Accountability for patient self-management of chronic conditions; ethical analysis and a proposal. *Chronic Illn*. 2007;3(1):88-95.

Reiff-Hekking S, Ockene JK, Hurley TG, Reed GW. Bried physician and nurse practitioner-delivered counseling for high-risk drinking. Results at 12-month follow-up. *J Gen Intern Med.* 2005;20(1):7-13.

Reist C, Duffy JG, Fujimoto K, Cahill L. Beta-adrenergic blockade and emotional memory in PTSD. *Int J Neuropsychopharmacol*. 2001;4(4):377-383.

Report of the U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services*. 2nd ed. Alexandria, VA: International Medical Publishing, Inc.; 1996.

Riegelman RK, Garr DR. Evidence-based public health education as preparation for medical school. *Acad Med*. 2008;83(4):321-326.

Rodrigues v Scotts Miracle-Gro, 2008 WL 251971 (D. Mass Jan. 30, 2008).

Rosenberg LB. Necessary forgetting: on the use of propranolol in post-traumatic stress disorder management. *Am J Bioeth*. 2007;7(9):27.

Sacks O. *An Anthropologist on Mars: Seven Paradoxical Tales.* New York, NY: Knopf; 1995.

Satin DJ. More realism about informed consent. *J Lab Clin Med*. 2005;145(6):292-294.

Satin DJ. Paying physicians and protecting the poor. *Minn Med.* 2006;89(4):42-44.

Satin DJ. The impact of pay for performance beyond quality markers: a call for bioethics research. *University of Minnesota Bioethics Examiner*. 2006;10(1).

Schillinger JA, Kissinger P, Calvet H, et al. Patient-delivered partner treatment with azithromycin to prevent repeated chlamydia trachomatis infection among women: a randomized, controlled trial. *Sex Transm Dis.* 2003;30(1):49-56.

Schmidt H. Patients' charters and health responsibilities. *BMJ.* 2007;335(7631):1187-1189.

Schneider CE. Some realism about informed consent. *J Lab Clin Med*. 2005;145(6):289-291.

Schroeder SA. The medically uninsured—will they always be with us? *N Engl J Med*. 1996;334(17):1130-1133.

Solomon J. West Virginia's Medicaid changes unlikely to reduce state costs or improve beneficiaries' health. Center on Budget and Policy Priorities. 2006. http://www.cbpp.org/5-31-06health.pdf. Accessed August 6, 2008.

Southwick SM, Bremner JD, Rasmusson A, Morganill CA 3rd, Arnsten A, Charney DS. Role of norepinephrine in the pathophysiology and treatment of posttraumatic stress disorder. *Biol Psychiatry*. 1999;46(9):1192-1204.

Staessen J, Fagard R, Amery A. The relationship between body weight and blood pressure. *J Hum Hypertens*. 1988;2(4):207-217.

Steinbrook R. Imposing personal responsibility for health. *N Engl J Med.* 2006;355(8):753-756.

Stekler J, Bachmann L, Brotman RM, et al. Concurrent sexually transmitted infections (STIs) in sex partners of patients with selected STIs: implications for patient-delivered partner therapy. *Clin Infect Dis.* 2005;40(6):787-793.

Stellman JM, Cohen S, Rosenfield A. Evaluation of a one-year masters of public health program for medical students between their third and fourth years. *Acad Med*. 2008;83(4):365-370.

Strawn JR, Geracioti TD Jr. Noradrenergic dysfunction and the psychopharmacology of posttraumatic stress disorder. *Depress Anxiety.* 2008;25(3):260-271.

Svetkey LP, Simons-Morton D, Vollmer WM, et al. Effects of dietary patterns on blood pressure: subgroup analysis of the dietary approaches to stop hypertension (DASH) randomized clinical trial. *Arch Intern Med*. 1999;159(3):285-293.

Svetkey LP, Simons-Morton DG, Proschan MA, et al. Effect of the dietary approaches to stop hypertension diet and reduced sodium intake on blood pressure control. *J Clin Hypertens (Greenwich)*. 2004;6(7):373-381.

Svetkey LP. Management of prehypertension. *Hypertension*. 2005;45(6):1056-1061.

Tenenbaum EM, Reese B. Memory-altering drugs: shifting the paradigm of informed consent. *Am J Bioeth*. 2007;7(9):40-42.

Terlep S. GM to crack down on health coverage. *Wall Street Journal*. August 13, 2008:B6.

Terry K. Physician report cards: help, ho-hum, or horror? *Med Econ*. 2006. http://medicaleconomics.modernmedicine.com/memag/article/articleDetail.jsp?id=359028. Accessed October 3, 2008.

Thaler RH, Sunstein CR. *Nudge: Improving Decisions about Health, Wealth, and Happiness*. New Haven, CT: Yale University Press; 2008.

The Henry J. Kaiser Foundation. *Medicaid Benefits: Online Database*. 2008. www.kff.org/medicaid/benefits. Accessed August 6, 2008.

The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. The Belmont report: ethical principles and guidelines for the protection of human subjects of research. 1979. http://ohsr.od.nih.gov/guidelines/belmont.html. Accessed August 26, 2008.

Tversky A, Kahneman D. *Judgment under Uncertainty: Heuristics and Biases*. Cambridge, UK: Cambridge University Press; 1982.

United States Public Health Service. Office of the Surgeon General. The health consequences of smoking: nicotine addiction: a report of the surgeon general. 1998. http://profiles.nlm.nih.gov/NN/B/B/Z/D/. Accessed August 25, 2008.

United States Public Health Service. Office of the Surgeon General. Reducing the health consequences of smoking: 25 years of progress: a report of the surgeon general: 1989 executive summary. http://profiles.nlm.nih.gov/NN/B/B/X/S/. Accessed August 25, 2008.

Vaiva G, Ducrocq F, Jezequel K, et al. Immediate treatment with propranolol decreases posttraumatic stress disorder two months after trauma. *Biol Psychiatry*. 2003;54(9):947-949.

Valleau C. If you're smoking you're fired: how tobacco could be dangerous to more than just your health. *DePaul J Health Care L*. 2007;10:457.

Vasan R, Beiser A, Seshadri S, et al. Residual lifetime risk for developing hypertension in middle-aged women and men: The Framingham Heart Study. *JAMA*. 2002;287(8):1003-1010.

Wang Y, Wang QJ. The prevalence of prehypertension and hypertension among US adults according to the new joint national committee guidelines: new challenges of the old problem. *Arch Intern Med*. 2004;164(19):2126-2134.

Washington State Department of Health. Washington State Department of Health background and recommendations for incorporating patient delivered partner therapy (PDPT) by health care providers. 2006. http://www.doh.wa.gov/CFH/STD/Pub/DOHPDPTGuidlines2004.pdf.

Whelton SP, Chin A, Xin X, He J. Effect of aerobic exercise on blood pressure: a meta-analysis of randomized, controlled trials. *Ann Intern Med*. 2002;136(7):493-503.

Wikler D. Personal and social responsibility for health. In: Anand S, Peter F, Sen AK, eds. *Public Health, Ethics, and Equity*. New York, NY: Oxford University Press; 2006.

Wolff J. Fairness, respect, and the egalitarian ethos. *Philos Public Aff.* 1998;27:97-122.

World Health Organization. WHO Framework Convention on Tobacco Control. http://www.who.int/fctc/en/. 2003. Accessed September 26, 2008.

World Health Organization. WHO Report on the global tobacco epidemic, 2008—The MPOWER Package. Geneva, Switzerland: WHO; 2008.

Xin X, He J, Frontini MG, Ogden LG, Mosamai OI, Whelton PK. Effects of alcohol reduction on blood pressure: a meta analysis of randomized controlled trials. *Hypertension*. 2001;38(5):1112-1117.

Virtual Mentor
American Medical Association Journal of Ethics
November 2008, Volume 10, Number 11: 776-778.

About the Contributors

Theme Issue Editor

Anna Shifrin is in her second year of study at the University of Massachusetts Medical School in Worcester. Her interest is in the relationship between the humanities and medicine.

Contributors

David Clive, MD, is a nephrologist and professor of medicine at the University of Massachusetts Medical Center in Worcester, where he chaired the ethics committee for many years. He has won numerous teaching awards and the 2007 Leonard Tow Humanism in Medicine Award from the Arnold P. Gold Foundation.

Nir Eyal, DPhil, is an assistant professor in global health and social medicine at Harvard Medical School and is affiliated with the program in ethics and health at Harvard University in Boston. Dr. Eyal's work focuses on informed consent, markets in organs, ownership over the body, the global medical brain-drain crisis, health resource allocation, egalitarianism, consequentialism, and respect for persons.

Matthew R. Golden, MD, MPH, is an associate professor of medicine and epidemiology at the University of Washington in Seattle, and is the director of the Public Health-Seattle & King County Sexually Transmitted Diseases Program. He has conducted numerous studies of HIV and STD partner notification and is a principle investigator on an NIH-funded, community-level, randomized trial of expedited partner therapy.

Iyaad M. Hasan, MSN, CNP, is a nurse-practitioner who specializes in pediatric and adult tobacco treatment. Mr. Hasan is a director of the Tobacco Treatment Center at Cleveland Clinic in Ohio.

David S. Hatem, MD, is an associate professor of clinical medicine in general medicine at the University of Massachusetts Medical School. He is the director of the Physician, Patient, and Society course at the medical school and an associate director of the Center for Clinical Communication and Performance Outcomes—a multidisciplinary center devoted to teaching and research on the connection among communication, quality of care, and patient safety. Dr. Hatem's research interests include investigating the role of caregiver attitudes in patient care and as a measure of organizational performance, as well as the use of reflection in supporting the professional development of trainees.

Matthew Hogben, PhD, is chief of the Behavioral Interventions and Research Branch of the division of STD prevention at the Centers for Disease Control and Prevention in Atlanta. His research interests include improved health care and provision. Since 2000, he has helped conduct a series of innovative STD partner-notification interventions that have yielded scientific outcomes and programmatic guidance.

Benjamin M. Howard is a third-year student in the Program in Medical Education for the Latino Community at the University of California Irvine School of Medicine. As a part of that program, he studied health policy at the Harvard School of Public Health in 2008-2009. Mr. Howard is considering a career in trauma and critical care surgery.

Sharon K. Hull, MD, MPH, is chair of the Department of Community Health Sciences at Northeastern Ohio Universities Colleges of Medicine and Pharmacy in Rootstown. She is board certified in both family medicine and public health/general preventive medicine, and her public health discipline is health policy and administration. Dr. Hull's academic interests include access to quality health care, health system reform, and health professionals workforce development.

Mark A. Levine, MD, is the immediate past chair of the American Medical Association's Council on Ethical and Judicial Affairs. He is an associate professor of medicine at the University of Colorado in Denver, and active in its Center for Bioethics and Humanities. Dr. Levine is also a chief medical officer for the Denver regional office of the Centers for Medicare & Medicaid Services.

Justin Miles is a second-year medical student at the University of Minnesota in Minneapolis. His research interests include pay for performance and medical student knowledge of pay for performance.

Henry S. Perkins, MD, is a consultant in bioethics at the Ecumenical Center for Religion and Health and a professor of medicine at The University of Texas Health Science Center, both in San Antonio. He writes and teaches about everyday ethics issues in medical practice.

Donald J. Phillips, MPH, is a fourth-year medical student at the University of Southern California Keck School of Medicine and is applying for a residency in adult neurology. He has a bachelor of science degree in chemistry from the University of Michigan and a master's in public health with concentration in international public health from Boston University. His research has focused on potential new drug therapies for brain tumors, both primary and metastatic.

Michael F. Roizen, MD, is a chief wellness officer and chairman of the Wellness Institute at Cleveland Clinic in Ohio. He is a past chair of a Food and Drug Administration advisory committee. He is interested in defining lifestyle changes that allow people to lead healthy, younger-feeling lives.

Darshak Sanghavi, MD, is the chief of pediatric cardiology and assistant professor of pediatrics at the University of Massachusetts Medical School in Worcester. He writes on children's health issues for the public and is author of *A Map of the Child: A Pediatrician's Tour of the Body*.

David Satin, MD, is a post-doctoral fellow at the University of Minnesota's Center for Bioethics and an assistant professor in the University's Department of Family Medicine and Community Health. He practices at Smiley's Family Medicine Residency Program, serving the inner-city Minneapolis community. Dr. Satin sits on local, state, and national pay-for-performance committees, researches, and speaks publicly on ethical issues in pay for performance.

Kristin E. Schleiter, JD, is a senior research associate for the Council on Ethical and Judicial Affairs for the American Medical Association in Chicago. She analyzes ethics policy and law and assists in the development and dissemination of ethics policy and related educational material. Ms. Schleiter received her law degree from Loyola University Chicago School of Law, where she was a contributing writer for the *Annals of Health Law*. She is working toward completion of an LLM in health law.