Improving Tobacco Dependence Treatment Delivery
Medical Student Training and Assessment

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Tobacco dependence is a chronic condition, with cigarette smoking considered the leading cause of preventable death, disease, and disability in the U.S. Currently, the U.S. adult smoking rate is 17.8%. National surveys reveal that approximately half of all smokers who have been treated by a healthcare provider in the last 12 months received Public Health Service–recommended guideline-concordant tobacco dependence treatment. Although smoking prevalence has been declining, several disparate groups continue to smoke at rates significantly higher than the national average, including those with low income, low educational attainment, or mental health disorders. To address these disparities and more effectively address tobacco use, provision of guideline-concordant tobacco dependence treatment within the healthcare system must improve. We discuss changes to the medical licensing examination that may result in enhanced tobacco dependence treatment education and skills training for students in medical school.

Introduction

The New York State (NYS) Department of Health’s (DOH’s) Bureau of Tobacco Control (BTC) funded the work of 19 Cessation Centers throughout the state from 2004 to 2014. The overarching goal of the Cessation Centers was to reduce the adult tobacco use rate in NYS by increasing access to evidence-based practice and educating healthcare providers on the provision of those practices. In 2007, the NYS Tobacco Education Task Force (TETF) was formed from leaders within the Cessation Centers to address sustainable tobacco control education for practitioners. The TETF focused on curriculum change within medical school education as a population-level approach to promote tobacco dependence treatment (TDT) education for all physicians. In 2012, the TETF made recommendations to the National Board of Medical Examiners (NBME) concerning assessment of TDT on all Steps of the U.S. Medical Licensing Examination (USMLE) sequence of examinations.

The Challenge

According to the Public Health Service’s Treating Tobacco Use and Dependence: 2008 Update Clinical Practice Guideline (PHS Guideline), quit attempts are 30% more likely to occur with the advice and support of a healthcare provider. In 2010, patient surveys indicated that fewer smokers were offered cessation counseling by their practitioners, as compared with prior years. The percentage of smokers who reported having received counseling in 2000 and 2005 was 53% and 59%, respectively; however, in 2010, only 50% were offered assistance for their tobacco dependence.

Currently, 17.8% of the U.S. adult population are smokers. However, certain disparate populations continue to smoke at rates higher than the national average, including those with low income (29.2%); low educational attainment (24.2%); and those who report poor mental health (36%). More-flexible and -customized programs and treatment may be needed to assist these individuals, particularly those with poor mental health, to successfully quit tobacco use.

Nationally, tobacco use is associated with 480,000 deaths and approximately $175 billion in healthcare costs each year.

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year. Although no single treatment is uniformly effective, evidence-based treatments that enhance the likelihood of long-term cessation are available, and long-term abstinence rates increase with the advice and support of a healthcare provider. Moreover, combining counseling and cessation medications can double or triple successful quit attempts, depending on the medication used and duration of the counseling sessions. The U.S. Preventive Services Task Force recommends using the PHS Guideline as a resource for physician counseling. As new evidence-based practices for tobacco dependence evolve, they will be incorporated into the body of evidence to assist physicians advising and treating their tobacco-dependent patients.

Healthcare reform in the U.S. emphasizes the importance of evidence-based preventive services for a variety of health conditions, including tobacco dependence. The Centers for Medicare and Medicaid Services provide payments to clinicians who reach meaningful use objectives through the electronic health record incentive program. One of the criteria for meaningful use objectives is to provide TDT to patients. In addition, the Joint Commission has developed tobacco treatment measure sets. These measure sets recommend that hospitals provide evidence that all hospitalized patients are assessed for tobacco use; offered counseling, medications, and additional resources while hospitalized and at discharge; and are provided follow-up contact regarding their tobacco use within 30 days of discharge.

The Affordable Care Act also addresses tobacco dependence through its health plan directives, which include coverage of tobacco dependence counseling and evidence-based interventions. In consideration of these reforms and the increased emphasis on prevention, physicians would be better prepared to meet the challenges of these requirements if they received education about guideline-concordant TDT, beginning with medical school training. Recently, a review by Hayes et al. found that the level of TDT education and training provided in medical schools is inadequate. Once the NBME incorporates the TDT changes into the exams, evaluation of the impact of these changes on medical school curriculum will provide an area for future study.

The Recommendation

The Federation of State Medical Boards and NBME jointly sponsor the USMLE, a sequence of examinations that allopathic physicians must pass as part of the requirements for licensure in the U.S. Students and graduates of medical schools accredited by the Liaison Committee on Medical Education in the U.S. typically take the Step 1 and 2 exams during medical school, and the Step 3 exam is usually taken during residency. In addition, students and graduates of foreign medical schools seeking to enter residency programs in the U.S. must pass Step 1 and Step 2 before they can enter a residency in the U.S.

1. Step 1 evaluates an individual’s understanding and ability to apply basic scientific concepts to the practice of medicine.
2. Step 2 focuses on the application of clinical knowledge and clinical skills needed to provide patient care, emphasizing health promotion and disease prevention.
3. Step 3 assesses an individual’s ability to apply medical knowledge and understanding of biomedical and clinical science essential for assuming independent responsibility for providing general medical care to patients.

In April 2012, the TETF submitted a recommendation to the NBME accompanied by letters of support from state commissioners of health, professional medical organizations, and leaders in the field of tobacco control. The recommendations were as follows:

1. Tobacco dependence and nicotine addiction should be included in the content outline for USMLE Steps 1, 2, and 3; and
2. Items and cases that require knowledge of behavior change counseling for tobacco-dependent individuals, current nicotine pharmacotherapy recommendations, as well as other guideline-concordant TDT interventions should be developed.

Clinical practice guidelines recommend that practitioners assess current tobacco use and provide advice to quit at every provider visit. Assistance to quit should include brief counseling sessions and the use of cessation medications when appropriate. When patients are reluctant to make a quit attempt, motivational counseling techniques that promote discussion of the risks, rewards, and barriers to quitting are recommended interventions.

In November 2013, the NBME notified the TETF that all three Step committees agreed that tobacco-related disease is a major health concern in the U.S. and that knowledge of TDT should be assessed throughout the sequence of USMLE in accordance with the recommendations submitted by the TETF. Physicians and medical school educators with knowledge and expertise of TDT were asked to contact the NBME for consideration to participate in future USMLE test development committees. As a result, approximately ten potential new committee members with this type of expertise were identified and added to the NBME pool of test committee members.
nominees. Any test content requiring knowledge of TDT developed in 2014 and 2015 will be available for examinations administered after 2016, and will supplement existing test content related to tobacco dependence and nicotine addiction.

In 2014, a unified content outline that provides a common organization of content across all USMLE examinations was adopted, replacing the content outlines specific to each Step. The new outline includes tobacco and nicotine abuse/dependence, tobacco cessation treatment interventions, or prevention in four sections: Behavioral Health; Respiratory System; Pregnancy, Childbirth, & the Puerperium; and Multisystem Processes and Disorders.

The Step 1 and 2 exams are taken during medical school by approximately 60,000 students annually. Nearly 19,000 take Step 3 each year. Although currently licensed practicing physicians will not be influenced directly by the changes in the USMLE or the anticipated changes in medical school curriculum, they will be affected by the adoption of systems-level changes recommended by the clinical practice guidelines and supported by current tobacco control practices. These strategies include use of tobacco cessation screening systems (e.g., in the electronic health record), provision of ongoing training, and ensuring that evidence-based cessation treatment is a widely available benefit. Systems changes such as these will impact the practice of current and future physicians.1

Public Health Benefit

It is critical that physicians have knowledge of evidence-based guidelines for tobacco dependence and treatment, such as those sponsored by the PHS Guideline. Smoking-related behavioral counseling cases may eventually be incorporated into the advanced communications skills section of the Step 2 Clinical Skills examination. Although medical school faculty will likely provide TDT education for students, there are also web-based programs16,17 to teach students and physicians about effective screening and treatment techniques for tobacco use. Because many patients who smoke have co-occurring disorders requiring medications, knowledge of mechanisms related to relationships between nicotine and uptake of pharmacotherapies such as antihypertensives, glucose-lowering medication, lipid-lowering medication, psychotherapeutic medications, nicotine pharmacotherapy, and TDT for adult and pediatric populations, including pregnant women, is also critical.18 The presence of test items and cases that assess this knowledge in the USMLE sequence of examinations will be a strong incentive for examinees to ensure that their preparation for testing includes TDT-related topics.

Discussion

The implication of incorporating TDT questions into the USMLE is that the training of physicians in medical schools across the U.S. will be changed as well. According to the IOM’s Committee on Behavioral and Social Sciences in medical school curricula, “subject matter covered by questions on the U.S. Medical Licensing Examination has a significant impact on the curricular decisions made by U.S. medical schools.”19 Systems change of this type is consistent with broad population-level approaches to tobacco control and will yield the delivery of more evidence-based interventions, improved health, and reduction in disease and death. Physicians who have been prepared through education and experience to implement guideline-concordant TDT will be more apt to assist smokers to quit by offering evidence-based treatments. Guideline-concordant TDT education and its translation into physician practice will more effectively combat this devastating addiction.

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