

Getting to zero: The role of academic and professional pharmacy in tobacco cessation

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**Report to the Centers for Disease Control and Prevention as a deliverable outlined in the AACP/CDC
TIPS Campaign partnership scope of work**

Executive Summary

Late in 2015, the Centers for Disease Control and Prevention (CDC) approached the American Association of Colleges of Pharmacy (AACP) to join, as a partner, their *Tips from Former Smokers* initiative. As a partner organization, AACP agreed to a scope of work aimed at sharing the CDC initiative resources with the AACP network of faculty, students and our wide-range of stakeholders. As part of the scope of work, AACP staff suggested that the CDC would benefit from a heightened appreciation for the breadth of teaching, research and service activities that take place at our member institutions related to tobacco cessation. This report presents the analysis of a survey that collected input from colleges and schools of pharmacy about their tobacco cessation activities.

The survey results present a health professions academy strongly committed to working with a broad-array of community-based organizations to help individuals stop smoking or not begin using tobacco products. Academic pharmacy also prepares student pharmacists to engage in public health activities, including tobacco cessation, upon graduation. Pharmacy faculty also engage in research that spans the spectrum from new drug development to implementation of evidence-based tobacco cessation interventions. These teaching, research and service activities create the opportunity for the CDC and AACP to strengthen our tobacco cessation partnership specifically, as well as other opportunities that can further the CDC goals, in general. Together, the CDC and AACP can create effective, evidence-based interventions that can assist current generations to stop smoking and to ensure that future generations never start.

Suggestions for strengthening the CDC/AACP partnership:

1. CDC and AACP should discuss when is the best time for developing public health competencies in student pharmacists so community trust can be leveraged to address important public health issues.
2. CDC and AACP should discuss how community-based organizations with CDC connections can be encouraged to seek partnerships with colleges and schools of pharmacy so collaborative efforts might further CDC goals.
3. CDC and AACP should discuss strategies for increasing the role of team-based care in regard to tobacco cessation and other public health issues.
4. CDC and AACP should discuss how the CDC can build and strengthen pharmacy faculty capacity to develop and test public health interventions including those that keep individuals from starting to use tobacco products.

Alignment of pharmacy education and public policy

The United States incurs significant costs associated with loss of human life and economic productivity due to individual use of tobacco products and associated second-hand smoke.^{1,2} Yet, even in light of a preponderance of evidence that tobacco use negatively impacts nearly every organ of the human body, states continue to short-change funding for tobacco cessation programs at CDC recommended levels.^{1,3} Given the negative consequences of tobacco use and the lack of adequate support at the state level for individuals interested in quitting, the Centers for Disease Control and Prevention (CDC) can benefit from a strong, more collaborative partnership with faculty, students, and graduates of U.S. colleges and schools of pharmacy to move our country toward the tobacco use goals of Healthy People 2020.⁴

The geographic distribution of the current 135 accredited colleges and schools of pharmacy creates the opportunity for any number and type of patient population to be supported in its efforts to access evidence-based tobacco cessation resources. Access to these resources is provided by faculty, students,

and graduates whose competence is required and assessed through institutional accreditation standards and educational outcomes.^{5,6}

Both the accreditation standards and educational outcomes for pharmacy education contain standards and outcomes related to population health. These reflect a long-standing commitment across both academic and professional pharmacy to actively engage with patients and communities to improve health. The accreditation standards⁵ include the following:

Standard No. 12: Professional Competencies and Outcome Expectations

Professional pharmacist competencies that must be achieved by graduates through the professional degree program curriculum are the ability to:

Promote health improvement, wellness, and disease prevention in cooperation with patients, communities, at risk populations, and other members of an interprofessional team of health care providers.

Educational outcome statements for student pharmacists related to wellness and prevention and population health are considered “Essentials for Practice and Care.” Learning objectives include:

1. Health and wellness (Promoter) - Design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness.

Examples of Learning Objectives:

- Describe systematic preventive care, using risk assessment, risk reduction, screening, education, and immunizations.
 - Provide prevention, intervention, and educational strategies for individuals and communities to improve health and wellness.
 - Participate with interprofessional healthcare team members in the management of, and health promotion for, all patients.
 - Evaluate personal, social, economic, and environmental conditions to maximize health and wellness.
2. Population-based care (Provider) - Describe how population-based care influences patient-centered care and influences the development of practice guidelines and evidence-based best practices.

Examples of Learning Objectives:

- Assess the healthcare status and needs of a targeted patient population.
- Develop and provide an evidence-based approach that considers the cost, care, access, and satisfaction needs of a targeted patient population.
- Participate in population health management by evaluating and adjusting interventions to maximize health.

As an organization representing academic pharmacy, the American Association of Colleges of Pharmacy (AACP) members are responsible for the creation and consideration of statements of educational policy.⁷ These policies include statements regarding tobacco use, such as:

- AACP member colleges and schools encourage their students who are seeking employment opportunities in community pharmacy practice to include the sale of cigarettes and other tobacco products among the factors to be considered in their employment decisions. (Source: Members, 2003)
- AACP member colleges and schools give preference to those pharmacies that do not sell cigarettes and other tobacco products at clerkship/experience sites. (Source: Members, 2003)

Tobacco cessation teaching, research, and service activities in U.S. colleges and schools of pharmacy

These requirements, expected competencies, and statements of educational policy lend themselves to the education of health care professionals who are ready to provide care and improve the health of individuals and communities. To strengthen this point, we asked knowledgeable faculty at AACP member institutions to respond to a survey that was designed to assess and characterize their collective teaching, research, and service provision activities related to tobacco cessation. In a letter signed by AACP Executive Vice President Lucinda L. Maine, survey participation was requested of all 135 accredited colleges and schools of pharmacy [Appendix A]. The letter stated the value of the collected information toward strengthening the partnership between the CDC and AACP.

What the survey tells us

Success as a faculty member in higher education, including professional and graduate education, is premised on the individual's contributions to teaching, research, and service. This triad mission of higher education was used to facilitate survey response and to provide a framework for sharing that response.

The survey remained open for 16 days, and a response was received from 94 schools/colleges (70%). Below, the results of the survey are presented in three distinct sections describing how faculty at colleges and schools of pharmacy teach, conduct research, and provide care or other service activities related to tobacco cessation. A final section of the report provides greater insight into these three areas that serve as exemplary approaches to teaching, research, and service.

Tobacco-Related Teaching

Survey items derived largely from prior research⁸ and were constructed to provide detailed characterization of (a) the ways in which tobacco education and intervention skills are integrated into PharmD curricula, (b) the number of hours of formal tobacco cessation instruction in required coursework, (c) the year(s) in which student pharmacists receive tobacco cessation training, (d) whether an interprofessional education (IPE) approach is utilized, (e) whether students learn about the tobacco quitline, (f) methods of assessment used, and (g) to what extent schools utilize the Rx for Change: Clinician-Assisted Tobacco Cessation training program materials (<http://rxforchange.ucsf.edu>),⁹ a shared, comprehensive evidence-based curriculum that was developed by the schools of pharmacy in California^{10,11} and later disseminated, with NIH funding, through train-the-trainer programs for faculty from schools of pharmacy between 2004 and 2006.¹²

Survey results indicate that nearly all (98.9%) colleges/schools integrate tobacco cessation content into required coursework (Table 1), providing a mean of 4.9 hours (standard deviation, 2.3 hours). These data suggest that 60% of schools are providing less than the minimum recommended 6 hours of training, and 11% are providing at or above the recommended 8 hours of training.¹³ The year in which tobacco content was taught was variable, with 40% providing training in the first year of the PharmD curriculum, 60% in the second year, 43% in the third year, 10% in the fourth year, and 2% in the fifth year (categories not mutually exclusive).

Table 1. Integration of tobacco cessation content into PharmD coursework.

Course/activity	Number (%) ^a
Required course devoted only to tobacco education and intervention	1 (1%)

Part of a required course	93 (99%)
An elective course devoted only to tobacco education and intervention	9 (10%)
Part of an elective course	20 (21%)
IPPE ^b rotations that focus primarily on tobacco cessation	5 (5%)
APPE ^c rotations that focus primarily on tobacco cessation	6 (6%)
Community service or outreach (e.g., health fairs)	52 (55%)

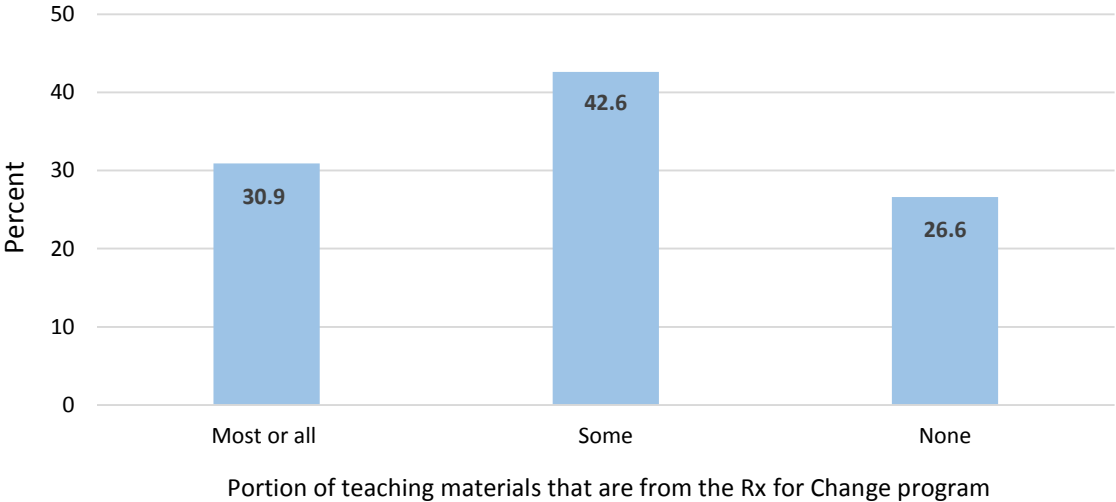
^a Categories not mutually exclusive.

^b Introductory Pharmacy Practice Experiences; these required experiences occur early in students' PharmD training.

^c Advanced Pharmacy Practice Experiences; these required experiences occur in the final year of students' PharmD training.

In teaching tobacco cessation, 10% applied an interprofessional approach, and at 91% of schools/colleges, students learned about the tobacco quitline (1 800 QUIT NOW). Among assessment methods, multiple-choice examination was most common (90%), followed by case-based multiple-choice examination (60%), short-answer examination (32%), case-based short-answer examination (29%), objective structured clinical examination (OSCEs; 27%), and oral examinations (11%) (categories not mutually exclusive). Nearly three-fourths of schools/colleges utilize shared, evidence-based curricular materials from the Rx for Change program (Figure 1). Because of the recent, rapid expansion of the total number colleges and schools of pharmacy in the US, efforts are underway to disseminate a 6-hour web-based Rx for Change train-the-trainer program for pharmacy faculty who wish to teach tobacco cessation. The goal of this recent effort is to (a) further expand the reach of the shared tobacco cessation curriculum, (b) ensure that at least one faculty member at each school/college of pharmacy is equipped with the necessary knowledge and skills to teach tobacco cessation, and (c) bring all schools up to the minimum recommended 6 hours dedicated to this important topic.

Figure 1. Do instructors utilize the Rx for Change training materials when teaching students?



Tobacco-Related Research

Survey results suggest a wide range of tobacco-related research activities (Table 2), with nearly half of schools/colleges being engaged in at least one type of research over the past five years. The most common type of research was the development/evaluation of evidence-based tobacco cessation interventions (n=18; 19%)

Table 2. Tobacco-related research activities at colleges/schools of pharmacy (past five years).

Type of research	Number (%) ^a
None	49 (52%)
Evaluation of educational approaches for teaching tobacco cessation	11 (12%)
Development/evaluation of evidence-based tobacco prevention interventions	7 (7%)
Development/evaluation of evidence-based tobacco cessation interventions	18 (19%)
Development/testing of new drugs for tobacco cessation	7 (7%)
Testing of existing drugs targeted at tobacco cessation	4 (4%)
Evaluation of interventions (any type) related to tobacco cessation on patients' health outcomes	11 (12%)

^a Categories not mutually exclusive.

Service and Policy-Related Tobacco Cessation Activities

Survey results indicate that in the past three years, 11 schools/colleges (12%) implemented preceptor development activities related to tobacco cessation, and 46 (49%) teamed with a community-based organization to deliver tobacco cessation interventions. Specifically,

- 47 (50%) provided one-on-one counseling to patients
- 21 (22%) participated in group programs for patients
- 36 (38%) participated in efforts to reduce smoking among vulnerable populations
- 38 (40%) integrated routine tobacco cessation counseling in the treatment of patients with specific chronic diseases (e.g., diabetes, cardiovascular disease, pulmonary disease, cancer)

Community-based organization partners working collaboratively with COPs/SOPs

Respondents, when answering questions related to their tobacco cessation service activities, shared the community-based organizations with whom they partner. The following list reflects a broad public-private sector reach with a significant ability to impact tobacco use whenever and wherever an individual is ready to seek input and support.

Table 3. Community-based partners.

Category	Partner
Practice-based settings	Community-based clinics Community pharmacies Employer-based wellness programs Local hospitals Physician practice groups University-based health centers
Tobacco coalitions and organizations	Metro Omaha Tobacco Action Coalition Livewise Coalition Omaha Tobacco Free Allegheny (Pennsylvania) Arkansas Cancer Coalition Bangor Public Health Advisory Board Claremont University Consortium American Cancer Society; Great American Smokeout Health Federation of Philadelphia American Lung Association Panhandle Kicks the Habit Arizona Smokers Helpline

	California Smokers Helpline Asheville Buncombe Community Christian Ministry
Local health departments	Kenton-Hardin, Ohio Philadelphia Department of Health Somerset County, Maryland
State health departments	Arkansas Hawaii Indiana Tennessee Texas
Student professional organizations	American Pharmacists Association: Operation Healthy Living American Pharmacists Association: Operation Heart
Community-based activities	Health fairs Healthcare systems Houses of worship Senior Centers YMCA
Educational institutions	Headstart High schools Universities
Other	State Department of Transportation Juvenile Court Knox County, Tennessee Area Health Education Centers

Reducing the burden of tobacco use

In 2014, the faculty of the Purdue University College of Pharmacy adopted a policy on reducing the health burden associated with tobacco (Figure 2); since this time, the same policy has been adopted at 11 additional colleges/schools of pharmacy (with 3 more pending a faculty vote), and an initiative is currently underway by members of the Tobacco Subcommittee of the AACP Public Health Special Interest Group to advance its adoption nationwide.

Figure 2. Tobacco policy language.

<p>REDUCING THE HEALTH BURDEN ASSOCIATED WITH TOBACCO USE</p> <p>WHEREAS, tobacco is the primary known cause of death in the U.S., contributing to the onset and exacerbation of numerous diseases, be it resolved that the faculty of the [PHARMACY SCHOOL OR COLLEGE NAME] shall:</p> <ol style="list-style-type: none"> 1. Endorse policies, regulations, and legislation that aim to reduce the public health burden associated with tobacco. 2. Endorse widespread dissemination of evidence-based strategies to prevent the onset of tobacco use, increase tobacco cessation rates, and reduce exposure to second-hand smoke. <p>FURTHERMORE, because the sale of tobacco products is not consistent with the role of pharmacists as providers of health services or as advocates for public health, and because the sale of tobacco products are in direct violation of the pharmacist’s code of ethics, the School/College shall:</p> <ol style="list-style-type: none"> 3. Oppose the sale of and use of tobacco products in any facility or establishment where health care services are rendered. 4. Endorse policies to eliminate the sale of tobacco products in all pharmacies and stores that contain a pharmacy.

In the survey of schools, we asked respondents, “Has your school adopted a tobacco policy on reducing the health burden associated with tobacco use?” Just under half (49%) responded “yes,” and of those

who responded “no,” 62% indicated that they would like to learn more about this. It is important to note, however, that although the language presented in Figure 2 was provided as an example of a policy in an appendix to the survey, it is likely that other policies (e.g., tobacco-free campus policies) were included among those who responded positively to this survey question.

Creating opportunities for academic and professional improvement

The survey asked respondents to share what they deem to be exemplary teaching, research, and service activities related to tobacco cessation at their institution. This input provided a wealth of information, reviewed and prioritized by the authors, through a filter of innovation, impact, and sustainability. The breadth of the activities in these three categories (Appendix B) indicates an entire Academy committed to reducing the impact of tobacco use and preparing student pharmacists to be prepared to assist their patients with quitting and their transitions toward a healthier lifestyle. In Appendix C, we provide a White Paper on the Role of Academic Pharmacy in Tobacco Cessation and Control,¹³ published in 2013. This paper summarizes relevant peer-reviewed, pharmacy-specific literature and the position of contributing Academy members. Additionally, it provides direction for future efforts.

Should the reader desire additional information about any of these exemplars or other tobacco-related activities of academy members, they should contact Will Lang at wlang@aacp.org.

Conclusions

U.S. colleges and schools of pharmacy are actively engaged in teaching, research, and service related to tobacco cessation and control. To ensure that student pharmacists graduate with contemporary knowledge to impact a wide-range of public health issues, including tobacco cessation, faculty regularly incorporate evidence-based interventions into their curricula. While much of the impetus for this public health focus is related to accreditation standards and education outcomes, academic pharmacy recognizes the explicit trust that the public places in the pharmacist. This trust creates a substantial opportunity for academic pharmacy to develop new and strengthen existing partnerships with community-based organizations engaged in efforts to reduce and eventually stop all forms of tobacco use. **CDC and AACP should discuss when is the best time for developing public health competencies in student pharmacists so this trust can be leveraged to address important public health issues.**

Colleges and schools of pharmacy are located across the United States. This broad geographic distribution puts a college or school near many urban as well as rural communities. The survey verifies that colleges and schools seek, develop and sustain partnerships with community-based organizations to promote mutually identified goals. Some of these community-based organizations, including local health departments, benefit from some form of support from the CDC. Whether that support is technical assistance, grant funding or education, the CDC influences the operations of the community-based organization. Because of this ability to influence organizations through information sharing, in its many forms, **AACP and the CDC should discuss how community-based organizations with CDC connections can be encouraged to seek partnerships with colleges and schools of pharmacy so collaborative efforts might further CDC goals.**

These academic/community-based partnerships provide the CDC with an ideal platform for developing implementation strategies around the consistent use of evidence-based interventions. As a leader in the interprofessional arena, AACP is a conduit to furthering tobacco cessation and other Healthy People 2020 goals along with other health professional education organizations. Public health issues are important issues to address through interprofessional education (IPE), because IPE competencies are focused on greater success in team-based care. AACP recognizes the emerging recognition at the CDC of the impact of team-based care on improving population health. **The CDC and AACP should discuss strategies for increasing the role of team-based care in regard to tobacco cessation and other public health issues.**

Evidence provided in this report supports the role of pharmacy faculty engaging in a wide range of research related to tobacco cessation and control. New drug development and testing of new and current tobacco cessation drugs provide options for helping individuals achieve cessation. Pharmacists operating at the interface with patient care can help patients achieve optimal outcomes of cessation therapy as well as connect patients with other evidence-based resources for quitting, such as the tobacco quitline. Additionally, ongoing policy-related efforts aim to remove tobacco from pharmacies and to elevate patients' recognition of pharmacists as a resource for tobacco cessation. While each of these is an important opportunity for AACP and CDC to recognize and discuss, **we should also discuss how the CDC can build and strengthen pharmacy faculty capacity to develop and test public health interventions that keep individuals from starting to use tobacco products.**

Through this survey, AACP reflects an actively engaged academy that is committed to improving public health through teaching, research, and service. Faculty and students are partners with a wide array of

community-based partners who are eager to improve the lives of their constituents. The CDC continues to recognize the benefit of pharmacists being integrated into intervention implementation strategies aimed at improving population health. If our individual organizational priorities are the primary indication of our commitment, together the CDC and AACP can create a healthier United States.

References cited

1. U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. Printed with corrections, January 2014.
2. Xu X, Bishop EE, Kennedy SM, Simpson SA, Pechacek TF. Annual healthcare spending attributable to cigarette smoking: an update. *American Journal of Preventive Medicine*. 2015;48(3):326-333.
3. Centers for Disease Control and Prevention. Best Practices for Comprehensive Tobacco Control Programs—2014. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.
4. USDHHS. *Healthy People 2010*. Washington, D.C.: U.S. Department of Health and Human Services; 2000.
5. Accreditation Council for Pharmacy Education (ACPE). Accreditation Standards and key elements for the professional program in pharmacy leading to the Doctor of Pharmacy degree: Standards 2016. Available at: <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf> Accessed April 22, 2016.
6. Medina MS, Plaza CM, Stowe CD, et al. Center for the Advancement of Pharmacy Education 2013 educational outcomes. *American Journal of Pharmaceutical Education*. 2013;77(8):162.
7. American Association of Colleges of Pharmacy (AACP). Cumulative Policies, 1980-2015. Available at: <http://www.aacp.org/governance/HOD/Documents/Cumulative%20Policies%201980-2015.pdf>. Accessed April 22, 2016.
8. Hudmon KS, Bardel K, Kroon LA, Fenlon CM, Corelli RL. Tobacco education in U.S. schools of pharmacy. *Nicotine & Tobacco Research*. 2005;7(2):225-232.
9. UC Regents. Rx for Change: Clinician-Assisted Tobacco Cessation. San Francisco, CA: University of California San Francisco, 1999-2016. Available at <http://rxforchange.ucsf.edu>. Accessed April 22, 2016.
10. Hudmon KS, Corelli RL, Chung E, et al. Development and implementation of a tobacco cessation training program for students in the health professions. *Journal of Cancer Education*. 2003;18(3):142-149.
11. Corelli RL, Kroon LA, Chung EP, et al. Statewide evaluation of a tobacco cessation curriculum for pharmacy students. *Preventive Medicine*. 2005;40(6):888-895.
12. Corelli RL, Fenlon CM, Kroon LA, Prokhorov AV, Hudmon KS. Evaluation of a train-the-trainer program for tobacco cessation. *American Journal of Pharmaceutical Education*. 2007;71(6):Article 109.
13. McBane SE, Corelli RL, Albano CB, et al. The role of academic pharmacy in tobacco cessation and control. *American Journal of Pharmaceutical Education*. 2013;77(5):93.

Appendix A

Survey introduction letter to CEO Deans



1727 King Street • Alexandria, VA 22314
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February 10, 2016

Dear CEO Dean:

AACP continues to create opportunities to strengthen the partnership, between academic pharmacy and the Centers for Disease Control and Prevention (CDC). We leverage the teaching, service, and research activities of pharmacy education to encourage support from CDC to sustain and scale up activities that improve public health. A current public health focus of the CDC is the reduction of cardiovascular disease. The CDC's ABCS initiative - Aspirin, Blood pressure control, Cholesterol control, Smoking cessation - has already provided the opportunity for academic and professional pharmacy to develop and integrate evidence-based interventions related to blood pressure control into education and practice. Tobacco cessation is the newest opportunity for academic pharmacy to build on the existing CDC partnership toward improving the health of our nation.

We are asking that you, as the leader of your institution, seek the input of your faculty to provide AACP staff with information that will be shared with the CDC. This information will be combined into a report to the CDC describing exemplary teaching, service, and research activities across our academy related to tobacco cessation.

To help us with preparing the report, we are asking for your assistance by completing a survey that is designed to characterize: (a) the extent to which tobacco education is incorporated into your PharmD curriculum, and corresponding methods of assessment, (b) preceptor development activities related to tobacco cessation, (c) collaboration with community-based organizations on tobacco-related initiatives, and (d) faculty engagement in tobacco-related research.

We are attaching a PDF of the survey for your convenience, but please complete the survey at this link:

The survey can be accessed at:

https://purdue.qualtrics.com/SE/?SID=SV_b3F5nh1LzPZCkzr

Your response within **two weeks (February 24, 2016)** will enable us to meet our March 31 report submission deadline. Your input is essential to strengthening our relationship with the

CDC and that agency's recognition of colleges and schools of pharmacy as partners in improving public health.

Please direct any questions or concerns to Will Lang, at wlang@acp.org.

Thank you in advance,

A handwritten signature in black ink that reads "Lucinda L. Maine". The signature is written in a cursive style and is positioned to the left of a vertical line.

Lucinda L. Maine PhD., R.Ph.
Executive Vice President and CEO

Appendix B

Exemplary Activities

Tobacco-Related Teaching Activities at Colleges/Schools of Pharmacy

Duquesne University

“In 2014, Duquesne was accredited through the Association for the Treatment of Tobacco Utilization and Dependence (ATTUD) as one of only 12 national providers of the “Tobacco Treatment Specialist” (TTS) certification program. This 24-hour live training program certifies an interdisciplinary audience of healthcare professionals as Certified Tobacco Treatment Specialists (CTTS). These CTTS are well equipped with the knowledge and skills to assist patients with tobacco cessation.”

Nova Southeastern

“Working with our AHEC to implement required smoking cessation programs in the curricula of all Health Professions Division programs (e.g., medicine, nursing, pharmacy, PT, OT, optometry, dentistry, etc.). We are in the process of having the pharmacy faculty trained, which will be followed by curricular integration. While we currently have smoking cessation in the curriculum, this will be a more interprofessional approach, including the College of Psychology.”

Ohio Northern University

“In August 2015, the college of pharmacy partnered with a local hospital to provide a 6-week multidisciplinary tobacco cessation class series that is available to anyone in the community. Participants in this class learn a positive approach to becoming a non-tobacco user, strategies to recover from tobacco addiction, the barriers to tobacco cessation, the health benefits of choosing a tobacco-free lifestyle, nicotine-replacement options, and motivational exercises and techniques for stress management.”

Purdue University/University of California, San Francisco

“With funding from the NIH, faculty at Purdue University and UCSF are developing virtual patients and standardized patients for tobacco cessation counseling. These shared teaching tools will become broadly available to all health professional schools, for integration into formal coursework for health professional students. Additionally, UCSF and Purdue have collaborated on the maintenance of the shared Rx for Change tobacco cessation curricular resources since 1999.”

Temple University

“Temple University School of Pharmacy and School of Dentistry have developed an interprofessional practice experience for PY3 pharmacy students and junior and senior dental students. Pharmacy and dental students work together to conduct health and medication histories for patients at the Diagnostic Radiology Clinic. While conducting these histories, dental and pharmacy students ask patients about their smoking status. If patients are current smokers, the students collaborate to conduct smoking cessation counseling. Dental students advise patients to quit and review the effects of smoking on oral health. Additionally, pharmacy students (1) reinforce the importance of quitting, (2) assess smoking history and past quit attempts, (3) assist with quitting by recommending cognitive and behavioral strategies and pharmacotherapy when appropriate, and (4) refer interested patients to the Pennsylvania quit line.”

The University of Texas at Austin

“Tobacco education and intervention skills are taught by Dr. Kentya Ford: Exploratory Research Rotation Courses. Students conducted research targeting tobacco control, targeting smoking cessation approaches for the pharmacy profession and health disparities; additionally, they developed manuscripts targeting evidenced-based approaches to smoking cessation, student pharmacist knowledge of tobacco products.”

University of Florida

“The University of Florida College of Pharmacy participates in the University of Florida Area Health Education Centers (UF AHEC) Tobacco Training and Cessation - Initial Training (ATTAC-IT) program, which is an interprofessional activity involving all first year health science center students (medicine, nursing, pharmacy, dental, public health and health professions students). This is a 4-hour workshop program where students work in small interprofessional teams (5 to 6 students) in order to prepare them to work with tobacco users to deliver brief interventions to promote tobacco cessation. During the workshop, content focuses on introduction of motivational interviewing skills, engaging with a tobacco user using role-play activities to deliver brief interventions and practice motivational interviewing skills, and discussing the role of each profession in helping the tobacco user. This past year, 740 health science center students participated in this event. Since 2007, this program has trained approximately 6,000 health science center students.”

Tobacco-Related Research Activities at Colleges/Schools of Pharmacy

Biomedical Research

Creighton University

“The Creighton Cardiac Center has been spearheading efforts in investigating outcomes (both clinical and translational) after use of e-cigarettes.”

Pacific University Oregon

“John Harrelson is conducting research evaluating a natural product (cinnamic aldehyde from cinnamon) as a potential cessation agent, which may be an attractive option for tobacco-users who are unwilling or able to use current medications.”

Western University of Health Sciences

“Dr. Fadi Khasawneh’s laboratory is obtaining evidence regarding the negative health consequences of exposure to a newly realized or discovered form of tobacco exposure known as third-hand smoke (THS) in the context of thrombotic disorders. THS is defined as the residual tobacco smoke contaminant that remains after a cigarette is extinguished. It is well established that both active/first hand smoke (FHS) and passive/second hand smoke (SHS) exposure increase the risk of coronary thrombosis. However, it remains to be determined whether THS can also enhance the risk of thrombogenesis, much like FHS and SHS. Therefore, his studies investigated the impact of THS exposure in the context of platelet biology and related disease states, using a validated mouse model of THS. He found that THS-exposed mice exhibited enhanced platelet activation responses (i.e., their platelets were hyperactive); that THS exposure shortens the tail bleeding time, as well as the occlusion time in a model of thrombosis. Thus, his data demonstrated for the first time (at least in mice) that THS exposure increases the risk of thrombosis based disease states, which is attributed, at least in part, to their hyperactive platelets. Ultimately, his studies are expected to help spread/create (more) awareness of the negative public health consequences of THS, underscore the need for prevention of exposure to this form of tobacco, guide/shape policy for further evidence-based tobacco control, and lay down the foundation for more targeted management of THS-dependent thrombotic disease states.”

Research: Health Services

Harding University

“We are partnering with the Arkansas Health Department Tobacco Prevention and Cessation Service to learn how the state tobacco quitline has performed and what characteristics predict which patients successfully quit.”

MCPHS University

“Evaluation of smoking cessation collaboration between a Community Health Worker and Pharmacist in helping indigent patients quit smoking.”

Purdue University/University of California, San Francisco

“With NIH funding, a team of faculty at Purdue and UCSF have collaborated in developing and implementing a 2-state, randomized trial evaluating the impact of 64 community pharmacies (pharmacists, technicians) in delivering brief interventions for tobacco cessation using the Ask-Advise-Refer (to the tobacco quitline) approach. This study demonstrated positive effects of the pharmacy team on incoming calls to the quitlines in Connecticut and Washington State. This model was later replicated within 20 Safeway Pharmacies in a randomized trial, and with funding from Pfizer, corporate-wide Ask-Advise-Refer trainings were conducted and evaluated for Giant Eagle pharmacies.”

University of Pittsburgh

“Research in past years has been completed evaluating the need/desire of smoking cessation in patients in underserved populations, specifically homeless and/or in Adult Rehabilitation Programs for patients with concomitant substance abuse disorders. This research was based on a belief that vulnerable patients in these populations are not interested in quitting tobacco. Our research indicated quite the opposite - patients in these vulnerable populations are interested in tobacco cessation to a higher degree than the general population, however, barriers to therapy exist.”

Tobacco-Related Service Activities at Colleges/Schools of Pharmacy

Campbell University

“Health coach: PharmD/DO/PA students are trained as health coaches at the health center and participate in our tobacco cessation program “CU Quit Now,” where the patient receives individualized counseling (in person or on the phone) at key days in the quitting process. Anyone who works on campus or attends CU is eligible to participate in the program free of charge.”

Ohio Northern University

“In 2013, a community health assessment report identified priorities for health care in our county. Tobacco cessation was among the priorities identified to improve health. In light of information from this assessment, the college of pharmacy initiated a rural mobile health clinic to serve those who have limited or no access to health care services.”

Philadelphia College of Pharmacy at University of the Sciences in Philadelphia

“Participation in the development and adoption of the tobacco cessation-related policies of the American Pharmacists Association and the American Association of Colleges of Pharmacy and advocacy through numerous editorials/commentaries in pharmacy publications for the discontinuation of the sale of tobacco products in pharmacies and stores that contain pharmacies, (letters and phone calls to the CEOs of chain pharmacies for the discontinuation of the sale of tobacco products in their pharmacies, meeting with the Pennsylvania State Board of Pharmacy to recommend adoption of a policy that would result in the Board not issuing or renewing licenses for pharmacies that sell tobacco products or to pharmacies that are in stores that sell tobacco products. Additionally, advocacy through editorials and participation in Food and Drug Administration hearings for varenicline, nicotine nasal spray, and nicotine inhalation system to be available without a prescription from a pharmacist.”

Purdue University

“Through a state-funded grant, Purdue is working with the Department of Health to advance tobacco cessation activities and policies to reduce the health burden of tobacco use in patients with mental illness. This includes providing technical support for promotion of tobacco-free facilities and grounds where mental health services are provided, as well as providing evidence-based cessation training for mental health providers. Additionally, in collaboration with UCSF, tobacco cessation training programs have been developed for broad-scale dissemination within the US Public Health Service.”

Temple University

“Our PY3 students spend 40 hours at Temple University Hospital counseling inpatients on smoking cessation and anticoagulation therapy during their PY3 IPPE experience. Students are oriented through lecture and then divided in groups of 8-10 students to complete role playing to practice patient counseling strategies for tobacco cessation. Students must also pass a competency exam before they may counsel inpatients. Pairs of students speak to inpatients and present the following information; risks of smoking and benefits of quitting, non-pharmacologic support and available pharmacologic therapy. Patients who are interested in the Quitline are asked to sign a referral form which is faxed so that the PA Quitline calls them upon hospital discharge. Patients who are interested and appropriate for pharmacologic therapy receive counseling. Students also complete appropriate screening and contact medical residents to initiate or optimize pharmacologic agents.”

University of California, San Francisco (UCSF)

“Working with the California Pharmacists Association, UCSF faculty are leading a training initiative for pharmacists who wish to furnish prescription formulations of NRT, without a prescriber’s order, under new regulations set forth by Senate Bill 493. Additionally, for the past 10 years, faculty and students members of the Tobacco Awareness Project at UCSF have participated in the delivery of group tobacco cessation programs at the UCSF Fontana Tobacco Treatment Center.”

Appendix C

The Role of Academic Pharmacy in Tobacco Cessation and Control

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ABSTRACT

Despite decades of public health initiatives, tobacco use remains the leading known preventable cause of death in the United States. Clinicians have a proven, positive effect on patients' ability to quit, and pharmacists are strategically positioned to assist patients with quitting. The American Association of Colleges of Pharmacy recognizes health promotion and disease prevention as a key educational outcome; as such, tobacco cessation education should be a required component of pharmacy curricula to ensure that all pharmacy graduates possess the requisite evidence-based knowledge and skills to intervene with patients who use tobacco. Faculty members teaching tobacco cessation-related content must be knowledgeable and proficient in providing comprehensive cessation counseling, and all preceptors and practicing pharmacists providing direct patient care should screen for tobacco use and provide at least minimal counseling as a routine component of care. Pharmacy organizations should establish policies and resolutions addressing the profession's role in tobacco cessation and control, and the profession should work together to eliminate tobacco sales in all practice settings where pharmacy services are rendered.

INTRODUCTION

In 1982, US Surgeon General C. Everett Koop stated that cigarette smoking is the “chief, single, avoidable cause of death in our society and the most important public health issue of our time.”¹ This statement remains true today, 3 decades later. In the United States, cigarette smoking is the primary known cause of preventable death, resulting in an estimated 443,595 deaths annually.² Because of smoking, half of all long-term smokers die prematurely;³ for every 1 person who dies because of tobacco use, another 20 suffer with at least 1 tobacco-attributable disease.⁴

Over the past 50 years, substantial progress has been made toward controlling the tobacco epidemic and reducing the prevalence of smoking in the United States. However, the significant reductions achieved in the 1980s and early 1990s have not continued in recent decades. In 2011, 19% of the adult population reported current smoking.⁵ In 2010, the tobacco industry spent \$8.5 billion (more than \$23 million per day) for product advertising and promotion, outspending tobacco prevention funding nationwide by 23 to 1.^{6,7} In an effort to counteract the tobacco industry influence, and to aid achievement of the Healthy People 2020 goal to reduce the prevalence of smoking to 12%,⁸ the Centers for Disease Prevention and Control (CDC) published an evidence-based guide to assist states with establishing effective tobacco control programs. This guide, *Best Practices for Comprehensive Tobacco Control Programs-2007*,⁹ defines 5 overarching components for population-based approaches (Appendix 1). Although the pharmacy profession and individual pharmacists can play important roles in each of these components, it is the “cessation interventions” component that is most closely aligned with the practice of pharmacy and therefore is most relevant to academic pharmacy.

An estimated 69% of current adult smokers want to stop smoking, and 52% reported having made an attempt to quit in the past year.¹⁰ As a key interface between patients and the healthcare community, pharmacists are well positioned to help patients initiate attempts to quit or complement the cessation efforts initiated by other providers. Unlike most other clinicians, advice from a pharmacist does not require an appointment or medical insurance; as such, pharmacists have the opportunity to reach and assist underserved populations, which exhibit a disproportionately higher incidence of tobacco-related diseases.¹¹ Furthermore, because 3 nicotine replacement therapy formulations - the nicotine gum, lozenge, and transdermal patch - are available without a prescription, pharmacists might be the only health professionals with an opportunity to address cessation with these patients prior to or during their attempts to quit.

The concept of pharmacist involvement in tobacco cessation and control activities is not new (readers can obtain a comprehensive listing of relevant citations from the corresponding author). Nearly 3 decades ago, Koop described a “Pharmacists’ Helping Smokers Quit” program in a pharmacy journal.¹² While the impact of US pharmacists on quit rates is not well established, preliminary findings appear favorable,^{13,14} and pharmacists have proven to be cost-effective participants in tobacco cessation programs.^{15,16} Research consistently shows that pharmacists are interested in providing cessation assistance; 86% of pharmacists¹⁷ and 96% of pharmacy students¹⁸ believe that the pharmacy profession should be more active in helping patients quit smoking/using tobacco.

In line with the current environment of escalating medical care costs, healthcare reform, and an increased focus on preventive care, all health disciplines and the healthcare system in general must ensure that all patients seen are screened for tobacco use and are offered interventions to help them quit. As such, health degree programs must train their graduates to implement effective,

comprehensive evidence-based interventions for cessation.¹⁹ Furthermore, organizations representing health professionals should take a more active role in the development and promotion of policies that support tobacco control efforts. Consistent with this goal, members of the Tobacco Control Committee of the Public Health Special Interest Group (SIG) of the American Association of Colleges of Pharmacy (AACP) developed the white paper presented herein to characterize the role of and provide key recommendations for academic pharmacy in tobacco cessation and control efforts.

TREATING TOBACCO USE AND DEPENDENCE: EDUCATION FOR THE PHARMACY PROFESSION ▲▼

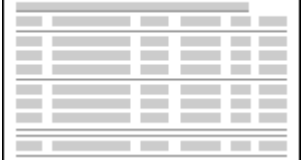
Despite the direct link between tobacco use and morbidity and mortality, health professional schools, including but not limited to pharmacy, historically have failed to integrate adequate levels of tobacco cessation education into their core curriculum. In pharmacy colleges and schools,²⁰ the most frequently reported barrier to enhanced tobacco cessation education is lack of available time in the curriculum.

As delineated in the US Public Health Service document, *Clinical Practice Guideline for Treating Tobacco Use and Dependence*, all clinicians and students in the health professions should be trained in effective strategies to assist tobacco users willing to attempt to quit and to motivate those unwilling to quit.¹⁹ The *Guideline* further recommends that clinicians incorporate a 5-component care model in the delivery of comprehensive tobacco cessation treatment interventions. Known as “the 5 A’s,” these are (1) *ask* about tobacco use, (2) *advise* tobacco users to quit, (3) *assess* readiness to quit (4) *assist* with quitting, and (5) *arrange* follow-up care.

While it is well established that counseling from a clinician can approximately double patients’ odds of quitting, and that providers who receive training are more likely to intervene with their patients who use tobacco, few health professionals provide comprehensive tobacco cessation counseling as a routine component of care.^{19,21} Commonly-cited barriers to providing cessation counseling include time constraints and lack of knowledge and skills. Because of the time pressures in clinical practice, and a general public health movement toward simplifying the burden of tobacco cessation for clinicians,^{22,23} trends in healthcare provider education advocate that when time constraints or limited expertise preclude provision of comprehensive tobacco cessation counseling, clinicians should apply a truncated 5 A’s model, whereby they *ask* patients about tobacco use and *advise* tobacco users to quit. The cessation assistance, which is the more time- and expertise-intensive component of the 5 A’s, is achieved by *referring* patients to other resources for quitting, such as a tobacco quitline, group program, or web-based cessation program. This brief, minimal approach is known as the Ask-Advise-Refer model. Because most pharmacists are interested in providing cessation services,¹⁷ yet few are able to integrate comprehensive tobacco cessation counseling into routine practice,²⁴ brief interventions are inherently appealing for the pharmacy profession and appear to be feasible in the pharmacy practice environment.²⁵⁻²⁹ If broadly implemented, brief interventions (3 minutes or less)¹⁹ could lead to a significant reduction in the national prevalence of tobacco use.

Because of the significant impact of tobacco use on health,³⁰ all healthcare providers should achieve at least minimal competency for tobacco cessation counseling, and cessation education should be a

required curricular component in all health professions schools. A variety of training programs and Web-based educational resources (Table 1) are available and relevant to pharmacy students and licensed pharmacists. Options range from comprehensive, multi-day, accredited Tobacco Treatment Specialist (TTS) programs³¹ to brief-intervention continuing-education webinars designed for busy clinicians. With the exception of the Rx for Change program (Table 1),³² none of the comprehensive tobacco cessation programs are specifically designed for use in colleges and schools of pharmacy.

<p>Click to view table</p> 	<p>Table 1. Tobacco Cessation Training and Educational Resources Relevant to the Pharmacy Profession</p>
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To bridge a decades-long gap in tobacco education, efforts are needed to engage and mobilize the current and future healthcare workforce through: (1) education of faculty members and preceptors in health degree programs, (2) integration of tobacco cessation content into health professions curricula, and (3) educational activities directed toward licensed clinicians.³³

Faculty Members and Preceptors

Pharmacy faculty members who are responsible for tobacco cessation-related content in the classroom curriculum should, at a minimum, be knowledgeable and proficient in providing comprehensive cessation counseling (e.g., the 5 A’s). Faculty members providing instruction on medical conditions caused or exacerbated by tobacco use (e.g., cardiovascular disease, respiratory disease, diabetes, oncology) should, at a minimum, advocate and promote brief tobacco cessation interventions (e.g., Ask-Advise-Refer) as an essential component of care. In 2003-2005, a nationwide training initiative was implemented for pharmacy faculty members through grant funding from the National Institutes of Health.³⁴ To foster development of skills for implementing the Rx for Change program, a series of five 2.5-day train-the-trainer programs were offered to 2 faculty members at each school. One hundred ninety-one faculty members participated, representing 98% of the 91 accredited pharmacy programs at the time. Because of faculty turnover/attrition and to develop faculty members at the new colleges and schools of pharmacy, additional training programs are needed. These training sessions or workshops could be provided through a variety of mechanisms, including live webinars hosted by the Public Health SIG, local/regional trainings taught by pharmacy faculty members who have tobacco cessation expertise (e.g., Rx for Change-trained faculty members), or as a program or workshop at a national pharmacy conference (e.g., AACP annual meeting).

Because experiential education comprises 30% of the professional curriculum, introductory pharmacy practice experience (IPPE) and advanced pharmacy practice experience (APPE) preceptors play an important role in the integration and application of tobacco cessation counseling in “real world” practice environments. For preceptors who lack the necessary training and skills, experiential education program directors could offer brief (e.g., 1-2 hour) continuing education programs as a preceptor development strategy, using evidence-based materials. When relevant and feasible for the

practice setting, IPPE and APPE preceptors can apply and reinforce classroom instruction by having students provide tobacco cessation counseling to patients using the 5 A's.

Pharmacy Students

For pharmacists to be recognized as viable tobacco cessation providers, all pharmacy graduates must be equipped with the knowledge and skills to intervene with their patients who use tobacco. As such, all colleges and schools of pharmacy should incorporate comprehensive tobacco cessation training (5 A's) within the required curriculum. In addition to experiential components, several sources have previously described critical components to be incorporated into the classroom curriculum (Table 2).^{20,31,32,34,35}

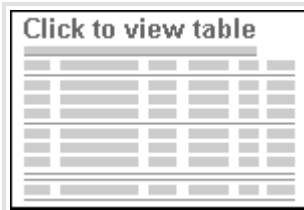


Table 2. Essential and Recommended Components for Tobacco Cessation Education in Pharmacy Curricula^{32,35}

These topics should be initiated early in the curricula of health professional schools to instill the concept of tobacco cessation as an essential element in the treatment and prevention of a wide range of medical conditions.³⁶ Web-based training has been used as a method for enhancing pharmacy students' knowledge, self-efficacy, and readiness to address tobacco cessation;^{37,38} however, research is needed to assess the comparative effectiveness of live versus computer-assisted instruction in health professional education.³⁹ Given the scope of content and the complexity of counseling for tobacco dependence, a minimum of 6 hours of training is necessary for students to master the basic 5 A's approach to counseling, including patient education for cessation medications.³⁶ Inclusion of case-based problem solving, role-playing or videos with case scenarios, and virtual or standardized patients will foster development of self-efficacy, which has been shown to be the primary predictor of the number of patients that pharmacists counsel regarding tobacco cessation.^{17,40} While 6 hours of training is recommended for mastery, data suggest that 2 hours of lecture in combination with 2 hours of skills workshops (case-based role-playing exercises) can lead to a significant and sustained increase in students' self-efficacy for providing tobacco cessation counseling.⁴¹ In the United States in 2006, the median number of minutes taught in PharmD programs was estimated at 360;³⁶ this amount had more than doubled (from 170 minutes in 2002)²⁰ as a result of the national training initiative described above.³⁴

Experiential courses represent an opportunity to reinforce classroom instruction through the application of tobacco cessation skills in actual patient care settings. Regardless of the practice location, students are likely to encounter tobacco users in the vast majority of IPPE and APPE sites, and cessation activities should be expanded within this part of the curriculum to the furthest extent possible.

Practicing Clinicians

Ideally, all practicing pharmacists would have the necessary time and expertise to integrate comprehensive cessation counseling (5 A's) into routine practice. However, the majority of pharmacy practitioners lack the time and training to provide this level of service.^{17,24} As an acceptable alternative, pharmacists in direct patient-care practice settings should receive training in how to conduct brief tobacco cessation interventions using the Ask-Advise-Refer approach. Community pharmacists could increase the number of brief cessation interventions conducted by assessing tobacco use status when creating new or updating existing patient profiles. All practicing pharmacists should promote tobacco avoidance for non-users and apply behavioral and/or pharmacologic methods, as appropriate, among patients who use tobacco.¹⁹ While not essential, in selected settings (e.g., smoking cessation clinics) or when working with special populations (e.g., patients with mental illness), licensed pharmacists should consider additional training. Developing higher-level competencies, such as those achieved by individuals completing accredited TTS training programs (Table 1), requires more in-depth education in combination with practice-based service hours dedicated to tobacco cessation counseling.³¹ Clinicians completing accredited TTS curricula are well-equipped to serve more complicated patient populations with unique cessation needs, such as those with multiple comorbidities or mental illness.

TOBACCO CONTROL POLICY AND ADVOCACY ISSUES ▲▼

Pharmacists are charged with acting in the best interest of patients' health as delineated by their code of ethics, which states "a pharmacist promises to help individuals achieve optimum benefit from their medications, to be committed to their welfare, and...avoids...actions that compromise dedication to the best interests of patients."⁴² Studies published during the last decade clearly show that few members of the pharmacy profession are in favor of tobacco sales in pharmacies.^{17,43-46} This position is further evidenced by resolutions set forth by state and national pharmacy organizations,⁴⁷ including AACP,⁴⁸ the American Pharmacists Association,^{49,50} and the American Society of Health-System Pharmacists,⁵¹ as well as the International Pharmaceutical Federation⁵² and the American Medical Association.⁵³

Nevertheless, cigarette sales in pharmacies significantly increased (23%) from 2005-2009, accounting for nearly 5% of total US cigarette sales in 2009.⁵⁴ While there is a clear trend toward elimination of tobacco sales in independently-owned pharmacies,^{55,56} tobacco sales persist in nearly all retail chain pharmacies, with the exception of a few (e.g., Target, Wegmans). Surveys of consumers indicate support for prohibiting the sale of tobacco products in pharmacies,^{43,57,58} and through the efforts of public health leaders and elected officials, several cities and municipalities (e.g., San Francisco, Boston, others) have enacted legislation that prohibits the sale of tobacco products in pharmacies.⁵⁹⁻⁶¹

Given that the sale of tobacco products contradicts both the clinician's role in promoting health and the pharmacist's code of ethics, academic pharmacy should assume a proactive role in advancing policies and legislation that oppose the sale or distribution of tobacco products in all establishments where health care services are rendered (e.g., hospitals, clinics, and community pharmacies). This would include policies that (1) discontinue issuance or renewal of licenses for pharmacies that sell tobacco products, and (2) enforce government payer programs to permit only pharmacies that do not sell tobacco products to participate in government-funded prescription programs.^{50,52} Any regulation on

this topic should apply to all entities that operate pharmacies—this would include free-standing entities as well as the stores (e.g., grocery stores, big box stores) in which a pharmacy dispensing area is present. Although implementing AACP’s resolution (Appendix 2)⁴⁸ regarding the exclusive use of tobacco-free experiential training sites might not be possible immediately, the tobacco sales status should be clearly designated for each IPPE and APPE site, and until settings that sell tobacco can be eliminated completely, tobacco-free locations should be assigned priority over ones that sell tobacco.⁴⁵ Furthermore, individual colleges and schools of pharmacy should consider adopting a policy that endorses legislation and activities that reduce the health burden associated with tobacco use, advances the role of the pharmacy profession in tobacco cessation and control, and opposes the sale of tobacco products in establishments where pharmacy services are rendered.

Although the prevalence of tobacco use among pharmacists is low (<5%),^{62,63} all pharmacy professionals who currently use tobacco should be offered treatment. Because clinicians who smoke are less likely to intervene with their patients who use tobacco,⁶² colleges and schools of pharmacy might consider an assessment of tobacco use as part of the admissions process. This information should be used to direct candidates to available cessation services and could be considered as one of the many factors that inform the candidate selection process.

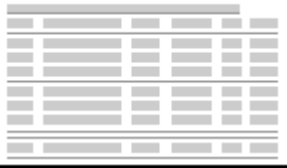
With respect to patient care, academic pharmacy should proactively initiate and support efforts to reduce the prevalence of tobacco use through application of evidence-based practices for cessation as delineated in the *Clinical Practice Guideline for Treating Tobacco Use and Dependence*.¹⁹ This includes supporting policies to ensure that (1) all pharmacy dispensing systems include fields for entering tobacco use status^{50,64} and screening for potential drug interactions with tobacco smoke,⁶⁵ (2) nonprescription nicotine replacement therapy products are available at pharmacies, without disparity by race, ethnicity, or socioeconomic status of the patient population that they serve,⁶⁶ and (3) third-party insurers cover costs (counseling and FDA-approved medications for cessation) associated with treating tobacco use and dependence. Academic pharmacy should also promote efforts to improve access to nicotine replacement therapy products, such as making all formulations (including the nicotine inhaler and nasal spray) available without a prescription.

AACP, its members, and state-level pharmacy associations are encouraged to collaborate with state health departments, other healthcare provider organizations, and colleges and schools of pharmacy to promote tobacco control. Advocacy is vital to public health initiatives, and the pharmacy profession must advocate for patients and the profession’s role in tobacco cessation and control as mentioned in the report by the 2010-2011 AACP Standing Committee on Advocacy.⁶⁷ Unlike other health disciplines, the pharmacy profession has effectively disseminated tobacco cessation training programs across an entire generation of faculty members and students^{34,36} and therefore is well-equipped to contribute, on multiple levels, to a wide range of initiatives within the CDC’s *Best Practices for Comprehensive Tobacco Control Programs* framework.⁹ Given the broad accessibility of pharmacists, the pharmacy profession is strategically positioned to reduce the prevalence of tobacco use substantially—particularly among key population groups for which tobacco use is a major risk factor for development or exacerbation of diseases requiring prescription medications (e.g., cardiovascular disease, pulmonary disease, and diabetes).

CONCLUSION ▲▼

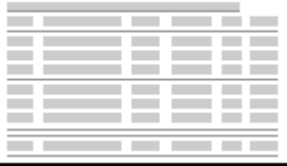
The adverse effects of tobacco use are well documented, and healthcare professionals have both the responsibility and capacity to significantly reduce the prevalence of tobacco use. Despite the availability of evidenced-based and effective tobacco training programs for current and future healthcare professionals, tobacco use remains a significant public health problem, and a large segment of the pharmacy profession is deficient in their knowledge and skills for assisting patients with quitting. Pharmacy organizations have established policies and resolutions addressing the profession’s role in tobacco cessation and control, but the profession has not effectively integrated these recommendations into practice. The Tobacco Control Committee members of the Public Health SIG of AACP urge academic pharmacy to prioritize tobacco cessation and control, rendering pharmacists as integral members of the public health community.

Click to view table



Appendix 1. Best Practices for Comprehensive Tobacco Control Programs–
2007: CDC-Recommended Components for State Tobacco Control Programs⁹

Click to view table



Appendix 2. AACP 2003 Resolution on Tobacco Sales in Pharmacies⁴⁸

ACKNOWLEDGEMENTS

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REFERENCES ▲▼

1. US Department of Health and Human Services. *The Health Consequences of Smoking: Cancer. A Report of the Surgeon General.* Rockville, MD: Public Health Service, Office on Smoking and Health; 1982.

2. Centers for Disease Control and Prevention. Smoking-attributable mortality, years of potential life lost, and productivity losses—United States, 2000-2004. *MMWR Morb Mortal Wkly Rep.* 2008;57(45):1226-1228. [Medline]
3. Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years' observations on male British doctors. *Br Med J.* 2004;328(7455):1519. [CrossRef] [Medline]
4. Centers for Disease Control and Prevention. Cigarette smoking-attributable morbidity—United States, 2000. *MMWR Morb Mortal Wkly Rep.* 2003;52(35):842-844. [Medline]
5. Centers for Disease Control and Prevention. Current cigarette smoking among adults—United States, 2011. *MMWR Morb Mortal Wkly Rep.* 2012;61(44):889-894. [Medline]
6. Campaign for Tobacco-Free Kids. Spending vs. tobacco company marketing. <http://www.tobaccofreekids.org/research/factsheets/pdf/0201.pdf>. Accessed May 26, 2013.
7. Campaign for Tobacco-Free Kids. State-specific estimates of tobacco company marketing expenditures: 1998-2010. <http://www.tobaccofreekids.org/research/factsheets/pdf/0271.pdf>. Accessed May 26, 2013.
8. US Department of Health and Human Services. Healthy people 2020: tobacco use. <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicId=41>. Accessed May 26, 2013.
9. Centers for Disease Control and Prevention. *Best Practices for Comprehensive Tobacco Control Programs—2007*. Atlanta, GA: National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2007.
10. Centers for Disease Control and Prevention. Quitting smoking among adults—United States, 2001-2010. *MMWR Morb Mortal Wkly Rep.* 2011;60(44):1513-1519. [Medline]
11. US Department of Health and Human Services. *Tobacco Use Among US Racial/Ethnic Minority Groups - African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics: A Report of the Surgeon General*. Atlanta, GA: Department of Health and Human Services, Centers for Disease Control and Prevention; 1998.
12. Koop CE. Pharmacists' 'Helping Smokers Quit' program. *Am Pharm.* 1986;NS26(7):25-33. [Medline]
13. Sinclair HK, Bond CM, Stead LF. Community pharmacy personnel interventions for smoking cessation. *Cochrane Database Syst Rev.* 2004(1):CD003698. [Medline]
14. Dent LA, Harris KJ, Noonan CW. Tobacco interventions delivered by pharmacists: a summary and systematic review. *Pharmacotherapy.* 2007;27(7):1040-1051. [CrossRef] [Medline]
15. McGhan WF, Smith MD. Pharmacoeconomic analysis of smoking-cessation interventions. *Am J Health-Syst Pharm.* 1996;53(1):45-52. [Medline]

16. Tran MT, Holdford DA, Kennedy DT, Small RE. Modeling the cost-effectiveness of a smoking-cessation program in a community pharmacy practice. *Pharmacotherapy*. 2002;22(12):1623-1631. [CrossRef] [Medline]
17. Hudmon KS, Prokhorov AV, Corelli RL. Tobacco cessation counseling: pharmacists' opinions and practices. *Patient Educ Couns*. 2006;61(1):152-160. [CrossRef] [Medline]
18. Corelli RL, Kroon LA, Chung EP, . Statewide evaluation of a tobacco cessation curriculum for pharmacy students. *Prev Med*. 2005;40(6):888-895. [CrossRef] [Medline]
19. Fiore MC, Jaén CR, Baker TB, . *Treating Tobacco Use and Dependence: 2008 Update. Clinical Practice Guideline*. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service; 2008.
20. Hudmon KS, Bardel K, Kroon LA, Fenlon CM, Corelli RL. Tobacco education in US schools of pharmacy. *Nicotine Tob Res*. 2005;7(2):225-232. [CrossRef] [Medline]
21. Carson KV, Verbiest ME, Crone MR, . Training health professionals in smoking cessation. *Cochrane Database Syst Rev*. 2012;5:CD000214. [Medline]
22. Bonniot Saucedo C, Schroeder SA. Simplicity sells: making smoking cessation easier. *Am J Prev Med*. 2010;38(3 Suppl):S393-S396. [CrossRef] [Medline]
23. Schroeder SA. What to do with a patient who smokes. *JAMA*. 27 2005;294(4):482-487. [CrossRef] [Medline]
24. Prokhorov AV, Hudmon KS, Marani S, . Engaging physicians and pharmacists in providing smoking cessation counseling. *Arch Intern Med*. 2010;170(18):1640-1646. [CrossRef] [Medline]
25. Purcell JL, Farris KB, Aquilino ML. Feasibility of brief smoking cessation intervention in community pharmacies. *J Am Pharm Assoc*. 2006;46(5):616-618. [CrossRef]
26. Baggaly SA, Jenkins TL, Biglane GC, Smith GW, Smith CM, Blaylock BL. Implementing a referral to telephone tobacco cessation services in Louisiana community pharmacies: a pilot study. *Ann Pharmacother*. 2010;44(9):1395-1402. [CrossRef] [Medline]
27. Hoch MA, Hudmon KS, Lee L, . Pharmacists' perceptions of participation in a community pharmacy-based nicotine replacement therapy distribution program. *J Community Health*. 2012;37(4):848-854. [CrossRef] [Medline]
28. Patwardhan PD, Chewing BA. Effectiveness of intervention to implement tobacco cessation counseling in community chain pharmacies. *J Am Pharm Assoc*. 2012;52(4):507-514. [CrossRef]
29. Carpenter KM, Carlini BH, Painter I, Mikko AT, Stoner SA. Refer2Quit: Impact of Web-based skills training on tobacco interventions and quitline referrals. *J Cont Educ Health Prof*. 2012;32(3):187-195. [CrossRef] [Medline]

30. US Department of Health and Human Services. *The Health Consequences of Smoking: A Report of the Surgeon General*. Washington, DC: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2004.
31. Association for the Treatment of Tobacco Use and Dependence. Core competencies for tobacco treatment specialists. April, 2005. <http://attudaccred.org/extras/attud/ATTUD-Core-Competencies.pdf>. Accessed May 26, 2013.
32. Rx for Change: Clinician-Assisted Tobacco Cessation. University of California, San Francisco, Schools of Pharmacy and Medicine. <http://rxforchange.ucsf.edu>. Accessed May 26, 2013.
33. Hudmon KS, Addleton RL, Vitale FM, Christiansen BA, Mejicano GC. Advancing public health through continuing education of health care professionals. *J Contin Educ Health Prof*. 2011;31(Suppl 1):S60-S66. [CrossRef] [Medline]
34. Corelli RL, Fenlon CM, Kroon LA, Prokhorov AV, Hudmon KS. Evaluation of a train-the-trainer program for tobacco cessation. *Am J Pharm Educ*. 2007;71(6):Article 109. [Abstract]
35. Geller AC, Zapka J, Brooks KR, . Tobacco control competencies for US medical students. *Am J Public Health*. 2005;95(6):950-955. [CrossRef] [Medline]
36. Hudmon KS, Corelli RL, Kroon LA. Dissemination and implementation of a shared tobacco cessation curriculum for pharmacy schools. Presented at: American Association of Colleges of Pharmacy Annual Meeting, Kissimmee, FL, July 2012.
37. Schmelz AN, Nixon B, McDaniel A, Hudmon KS, Zillich AJ. Evaluation of an online tobacco cessation course for health professions students. *Am J Pharm Educ*. 2010;74(2):Article 36. [Abstract]
38. Maynard A, Metcalf M, Hance L. Enhancing readiness of health profession students to address tobacco cessation with patients through online training. *Int J Med Educ*. 2012;3:57-62. [CrossRef]
39. Cook DA. If you teach them, will they learn: why medical education needs comparative effectiveness research. *Adv Health Sci Educ*. 2012;17:305-310.
40. Martin BA, Bruskiwicz RH, Chewing BA. Effect of a tobacco cessation continuing professional education program on pharmacists' confidence, skills, and practice-change behaviors. *J Am Pharm Assoc*. 2010;50(1):9-16. [CrossRef]
41. Waheedi M, Al-Tmimy AM, Enlund H. Preparedness for the smoking cessation role among health sciences students in Kuwait. *Med Princ Pract*. 2011;20(3):237-243. [CrossRef] [Medline]
42. American Pharmacists Association. Code of ethics for pharmacists. <http://www.pharmacist.com/code-ethics>. Accessed May 26, 2013.

43. Hudmon KS, Fenlon CM, Corelli RL, Prokhorov AV, Schroeder SA. Tobacco sales in pharmacies: time to quit. *Tob Control*. 2006;15(1):35-38. [CrossRef] [Medline]
44. Kotecki JE, Hillery DL. A survey of pharmacists' opinions and practices related to the sale of cigarettes in pharmacies-revisited. *J Community Health*. 2002;27(5):321-333. [CrossRef] [Medline]
45. Hudmon KS, Hussar DA, Fenlon CM, Corelli RL. Pharmacy students' perceptions of tobacco sales in pharmacies and suggested strategies for promoting tobacco-free experiential sites. *Am J Pharm Educ*. 2006;70(4):Article 75. [Abstract]
46. Smith DM, Hyland AJ, Rivard C, Bednarczyk EM, Brody PM, Marshall JR. Tobacco sales in pharmacies: a survey of attitudes, knowledge and beliefs of pharmacists employed in student experiential and other worksites in Western New York. *BMC Res Notes*. 2012;5:413. [CrossRef]
47. Chai T, Karic A, Fairman M, Baez K, Hudmon KS, Corelli RL. Tobacco and alcohol sales in community pharmacies: Policy statements from US professional pharmacy associations. Presented at: American Society of Health-System Pharmacists Midyear Meeting & Exhibition, Las Vegas, NV, December, 2012.
48. Leslie SW, Beck DE, Ives TJ, . Final Report of the 2002-2003 Bylaws and Policy Development Committee. *Am J Pharm Educ*. 2003;67(3):Article S04. [Abstract]
49. American Pharmacists Association. Report of the 1971 APhA House of Delegates. *J Am Pharm Assoc*. 1971;NS(11):270.
50. American Pharmacists Association. Current adopted APhA policy statements: 2010 discontinuation of the sale of tobacco products in pharmacies and facilities that include pharmacies. http://www.pharmacist.com/sites/default/files/files/HOD_APhA_Policy_Manual_0.pdf. Accessed May 26, 2013.
51. Hudmon KS, Corelli RL. ASHP therapeutic position statement on the cessation of tobacco use. *Am J Health-System Pharm*. 2009;66:291-307. [CrossRef]
52. International Pharmaceutical Federation (FIP). FIP statement of policy: the role of the pharmacist in promoting a tobacco free future. http://www.fip.org/www/uploads/database_file.php?id=172&table_id=. Accessed May 26, 2013.
53. American Medical Association. Resolutions of the 2009 AMA annual meeting: Banning tobacco product sales in pharmacies. <http://www.ama-assn.org/resources/doc/hod/a-09-resolutions.pdf>. Accessed May 26, 2013.
54. Seidenberg AB, Behm I, Rees VW, Connolly GN. Cigarette sales in pharmacies in the USA (2005-2009). *Tob Control*. 2012;21(5):509-510. [CrossRef] [Medline]
55. Eule B, Sullivan MK, Schroeder SA, Hudmon KS. Merchandising of cigarettes in San Francisco pharmacies: 27 years later. *Tob Control*. 2004;13(4):429-432. [CrossRef] [Medline]

56. Corelli RL, Aschebrook-Kilfoy B, Kim G, Ambrose PJ, Hudmon KS. Availability of tobacco and alcohol products in Los Angeles community pharmacies. *J Community Health*. 2012;37(1):113-118. [CrossRef] [Medline]
57. Kroon LA, Corelli RL, Roth AP, Hudmon KS. Public perceptions of the ban on tobacco sales in San Francisco pharmacies. *Tob Control*. 2012; e-pub ahead of print. [Medline]
58. McDaniel PA, Malone RE. Why California retailers stop selling tobacco products, and what their customers and employees think about it when they do: case studies. *BMC Public Health*. 2011;11:848. [CrossRef] [Medline]
59. Katz MH. Banning tobacco sales in pharmacies: the right prescription. *JAMA*. 2008;300(12):1451-1453. [CrossRef] [Medline]
60. Tobacco-free Pharmacies. Tobacco-free Pharmacies: Local Efforts. http://www.tobaccofreerx.org/local_efforts.html. Accessed May 26, 2013.
61. Woodward AC, Henley PP, Wilson DJ. Banning tobacco sales in Massachusetts' pharmacies. *J Am Coll Nutr*. 2012;31(3):145-148. [CrossRef] [Medline]
62. Tong EK, Strouse R, Hall J, Kovac M, Schroeder SA. National survey of U.S. health professionals' smoking prevalence, cessation practices, and beliefs. *Nicotine Tob Res*. 2010;12(7):724-733. [CrossRef] [Medline]
63. Sarna L, Bialous SA, Sinha K, Yang Q, Wewers ME. Are health care providers still smoking? Data from the 2003 and 2006/2007 Tobacco Use Supplement-Current Population Surveys. *Nicotine Tob Res*. 2010;12(11):1167-1171. [CrossRef] [Medline]
64. Meyer R, Farris KB, Zillich A, Aquilino M. Documentation of smoking status in pharmacy dispensing software. *Am J Health-System Pharm*. 2004;61(1):101-102. [Medline]
65. Kroon LA. Drug interactions with smoking. *Am J Health-System Pharm*. 2007;64(18):1917-1921. [CrossRef] [Medline]
66. Bernstein SL, Cabral L, Maantay J, . Disparities in access to over-the-counter nicotine replacement products in New York City pharmacies. *Am J Public Health*. 2009;99(9):1699-1704. [CrossRef] [Medline]
67. Coffman RE, Bratberg JP, Flowers SK, . Report of the 2010-2011 Standing Committee on Advocacy: leveraging faculty engagement to improve public policy. *Am J Pharm Educ*. 2011;75(10):Article S7. [Abstract]

Cited by

KatherineRider, HaticeKaya, VinayakJha, Karen SuchanekHudmon. (2016) Attitudes of experiential education directors regarding tobacco sales in pharmacies in the USA. *International Journal of Pharmacy Practice* 24:10.1111/ijpp.2016.24.issue-2, 134-138.

Online publication date: 1-Apr-2016.

CrossRef

VarunVaidya, Neha S.Gangal, SurbhiShah, NileshGangan, RobertBechtol. (2016) Trends in Smoking Status and Utilization of Smoking Cessation Agents Among Females with Cardiovascular Diseases. *Journal of Women's Health* **25**, 270-275.

Online publication date: 1-Mar-2016.

CrossRef

JoaquinBarnoya, LindaJin, Karen SuchanekHudmon, MarioSchootman. (2015) Nicotine replacement therapy, tobacco products, and electronic cigarettes in pharmacies in St. Louis, Missouri. *Journal of the American Pharmacists Association* **55**, 405-412.

Online publication date: 1-Jul-2015.

CrossRef

K. S.Hudmon, M.Mark, A. L.Livin, R. L.Corelli, S. A.Schroeder. (2014) Tobacco Education in U.S. Respiratory Care Programs. *Nicotine & Tobacco Research* **16**, 1394-1398.

Online publication date: 1-Oct-2014.

CrossRef

M.Saba, J.Diep, B.Saini, T.Dhippayom. (2014) Meta-analysis of the effectiveness of smoking cessation interventions in community pharmacy. *Journal of Clinical Pharmacy and Therapeutics* **39**:10.1111/jcpt.2014.39.issue-3, 240-247.

Online publication date: 1-Jun-2014.

CrossRef

Robin L.Corelli, TiffanyChai, AldaKaric, MelindaFairman, KarinaBaez, Karen SuchanekHudmon. (2014) Tobacco and alcohol sales in community pharmacies: Policy statements from U.S. professional pharmacy associations. *Journal of the American Pharmacists Association* **54**, 285-288.

Online publication date: 1-May-2014.

CrossRef

Mark A.Strand, Donald R.Miller. (2014) Pharmacy and public health: A pathway forward. *Journal of the American Pharmacists Association* **54**, 193-197.

Online publication date: 1-Mar-2014.

CrossRef

Karen SuchanekHudmon, Matthew A.Hoch, Frank M.Vitale, Kimberly R.Wahl, Robin L.Corelli, Carl deMoor. (2014) Tobacco cessation education for pharmacists: Face-to-face presentations versus live webinars. *Journal of the American Pharmacists Association* **54**, 42-44.

Online publication date: 1-Jan-2014.

CrossRef

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