

The University of Arizona HealthCare Partnership's Participation in Cease Smoking Today (CS2Day), Funded through the Physicians' Institute for Excellence in Medicine: The Right Message at the Right Time

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ABSTRACT

Background: University of Arizona HealthCare Partnership (HCP) provided continuing medical education (CME) courses to physicians and healthcare professionals across Arizona to improve the treatment of nicotine addiction through a grant from the Physicians' Institute for Excellence in Medicine, a partner in Cease Smoking Today (CS2Day). This article describes the content, delivery, and outcomes of 2 courses and compares the impact of longer and shorter programs.

Methods: Healthcare provider participants (n = 290) attended either a 4-hour Basic Tobacco Intervention Skills Certification for Medical and Allied Health Professionals or a 1-hour Tobacco Dependence Treatment Continuing Education Program. Program evaluations were completed by 219 participants (76%). Pre- and posttests administered at the 4-hour program (n = 44) measured satisfaction, knowledge and skills, and confidence levels in assessment, intervention, and treatment of nicotine dependence. Follow-up surveys measured intended implementation of interventions and treatments. Evaluations of the 1-hour program measured satisfaction, knowledge, and intentions to change practice (n = 175). Follow-up surveys measured intended implementation of interventions and treatments.

Results: Participants in both programs reported high levels of program satisfaction and intentions to change practice to effectively address the prevention and treatment of tobacco dependence as recommended by the PHS Guidelines (2000). Participants who attended the 4-hour program reported significant gains in self-confidence to assess and administer brief interventions (not measured in the 1-hour program). Results on the knowledge items were higher among the participants in the 4-hour program than those in the 1-hour program, as were results on intent to incorporate new interventions and treatments to ameliorate tobacco use. Follow-up questionnaires demonstrated sustained incorporation of interventions and treatments at 6 weeks postprogram.

Conclusion: Participants from both programs reported gains in knowledge and skills in implementing brief tobacco dependence treatment interventions. Time was identified as a primary constraint in follow-up surveys regarding the incorporation of interventions and treatments into routine practice.

INTRODUCTION

In 2009, the University of Arizona HealthCare Partnership received a grant to provide education toward improvement in the treatment of nicotine addiction through the Physicians' Institute for Excellence in Medicine. The Physicians' Institute (a nonprofit subsidiary of the Medical Association of Georgia) is a partner

in the Cease Smoking Today (CS2Day) initiative. CS2Day is a multi-organizational education initiative designed to provide physicians and healthcare professionals with effective and clinically relevant strategies targeted to increase the smoking quit rates for patients followed in multiple practice settings. This article describes the content, delivery, and outcomes of 2 continuing

medical education (CME) courses delivered in Arizona to health and human service professionals and compares the impact of longer and shorter programs.

BACKGROUND

CS2Day is a 9-member coalition that formed in 2007 to design an initiative to improve public health by reducing

the number of people who smoke. It was funded by an unrestricted, independent educational grant provided by Pfizer. The initiative includes multiple educational activities and interventions. More than 170 activities were planned and implemented under the grant, including the CS2Day web page with an online toolkit (www.ceasesmoking2day.org). An important component of the project is the evaluation of CME programs using Moore's Model of Outcome Evaluation [1]. As a partner in the CS2Day national collaborative, the Physicians' Institute coordinated with 10 state organizations to provide 32 grants to support local efforts of CME-accredited providers to improve physician strategies for assisting patients to stop smoking. The University of Arizona HealthCare Partnership (HCP) was one of 32 grantees receiving awards to provide tobacco treatment education in 2009.

Since 1998, HCP has certified thousands of health and human service professionals and community health advocates in evidence-based practices to promote the prevention and treatment of tobacco use. HCP is part of the University of Arizona College of Science, Department of Psychology, and receives ongoing funding from the Arizona Department of Health Services Bureau of Tobacco and Chronic Disease (ADHS-BTCD), as well as support from organizations such as Legacy, Indian Health Service, and the American Lung Association, along with numerous public and private affiliates.

Since its inception, HCP has established and maintained a statewide infrastructure for the effective design, development, implementation, and evaluation of tobacco dependence treatment certification programs [2]. HCP has effectively supported community-based projects to integrate comprehensive, innovative evidence-based tobacco prevention and cessation programs into Arizona's schools, worksites, communities, and health and human service

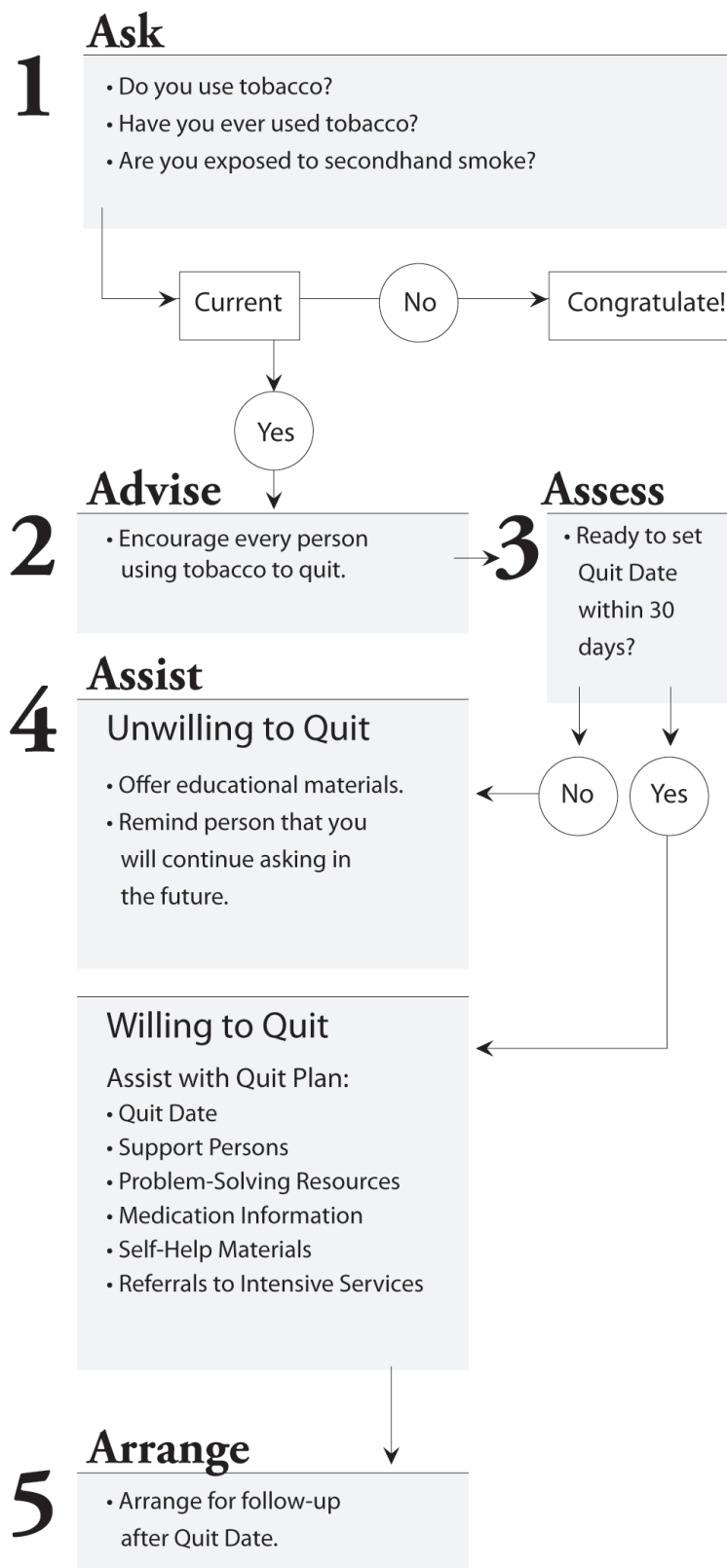


Figure 1. The Five A Model.

Table 1. Moore's Outcomes Framework for Planning and Assessing CME Activities

CME Framework	Description	Source of Data
LEVEL 1 Participation	The number of physicians and others who participated in the CME activity	Attendance records
LEVEL 2 Satisfaction	The degree to which the expectations of the participants about the setting and delivery of the CME activity were met	Questionnaires completed by attendees after a CME activity
LEVEL 3A Learning: Declarative Knowledge – Knows	The degree to which participants state what the CME activity intended them to know	Objective: pre- and posttests of knowledge; subjective: self-report of knowledge gain
LEVEL 3B Learning: Procedural Knowledge – Knows How	The degree to which participants state how to do what the CME activity intended them to know how to do	Objective: pre- and posttests of knowledge; subjective: self-report of knowledge gain
LEVEL 4 Competence – Shows How	The degree to which participants show in an educational setting how to do what the CME activity intended them to be able to do	Objective: observation in educational setting; subjective: self-report of competence, intention to change
LEVEL 5 Performance	The degree to which participants do what the CME activity intended them to be able to do in their practices	Objective: observation of performance in patient care setting, patient charts, administrative databases; subjective: self-report of performance
LEVEL 6 Patient Health	The degree to which the health status of patients improves due to changes in the practice behavior of participants	Objective: health status measures recorded in patient charts or administrative databases; subjective: patient self-report of health status
LEVEL 7 Community Health	The degree to which the health status of a community of patients changes due to changes in the practice behavior of participants	Objective: epidemiological data and reports; subjective: community members self-report

Adapted from [1] with permission.

systems [3]. With community-based local and tribal projects and their community partners, HCP has designed and evaluated 15 evidence-based certification programs that recognize and are intended for differing contexts, intensities, and provider roles in the delivery of tobacco dependence treatment. Promoting intervention strategies that are simple, practical, and easy to understand, the HCP programs support change at the individual and system levels [4]. The programs use multimodal educational methods and techniques and are based on a stepped-care model.

In its certification programs and customized presentations, the HealthCare Partnership disseminates the recommendations of the US Public Health Service Clinical Practice Guideline Treating Tobacco Use and Dependence and the USDHHS Interagency Committee on Smoking and Health's National Action Plan for Tobacco

Cessation [5]. Programs are approved by nationally accredited health and human service boards and fulfill requirements that all activities demonstrate educational, ethical, and medical standards of the highest quality. Since 1998, HCP's evaluation design has measured learning, future intentions, and behavior change through a 3-pronged approach that entails Moore's Model of Outcomes Evaluation [1], Bandura's model of self-efficacy [6], and Ajzen's Theory of Planned Behavior [7].

HCP'S CS2DAY ACTIVITIES

HCP provided 12 CME tobacco dependence treatment programs from June through October 2009. All programs included the resources found in the "Toolkit for Educational Planning" section of the CS2Day website (www.ceasesmoking-2day.org). HCP initiated the series of programs with a launching event attended by

24 health and human service providers in Scottsdale, Arizona. The all-day event introduced the CS2day Grant Process for Arizona and covered the benefits of incorporating basic tobacco treatment interventions into clinical practice; motivational interviewing for tobacco dependence; and coding, reimbursement, documentation, and quality indicators for tobacco dependence treatment. Participants were awarded 6.5 *AMA PRA Category 1*TM CME credits for this program. Program participants received a menu of 4 CME programs from which they were encouraged to select for scheduling at their healthcare facility.

From the menu of CME programs, 8 program requests were submitted: 3 for the 4-hour Basic Tobacco Intervention Skills Certification for Medical and Allied Health Professionals and 5 for the 1-hour Tobacco Dependence Treatment Continuing Education for Healthcare

Degree (n = 185)	MD/DO	Nurse	Other		
	29%	10%	61%		
Specialty Focus (n = 179)	Primary Care	Psychiatry	Other Medical Specialties	Other	
	28%	15%	6%	51%	
Years in Practice (n = 177)	<5	5-10	11-20	>20	
	42%	13%	18%	27%	
Type of Practice (n = 176)	Private	Hospital	Academic	HMO	Other
	37%	33%	17%	1%	12%
Location of Practice (n = 163)	Urban	Suburban	Rural		
	55%	14%	31%		
Estimated Percent of Patients with Tobacco Dependence (n = 156)	0%–20%	21%–40%	41%–60%	61%–80%	81%–100%
	31%	28%	22%	13%	6%

Professionals Program. Three additional requests occurred after the launching event, resulting in a total of 12 programs provided through the grant.

Basic Tobacco Intervention Skills Certification for Medical and Allied Health Professionals: 4-Hour CME Program

This program was provided at 3 medical care venues in Tucson, Cottonwood, and Tuba City, Arizona. A total of 22 participants attended these programs. This 4-hour adaptation of the Basic Tobacco Intervention Skills Certification program provided participants with the basis for understanding tobacco dependence as a chronic condition. It is designed to equip medical and allied health professionals with a consistent, evidence-based, evaluative process for delivering a low-intensity/brief intervention to those who use tobacco and for documenting the intervention [8,9]. Participants learned to use an integrated “Five A” Brief Intervention Model specific to the individual’s readiness to quit and to provide resources and referrals to assist clients in abstaining from tobacco use (Figure 1). This adaptation incorporates medical terminology, utilizes case studies, and provides health and human service professionals

with comprehensive information on tobacco cessation treatment medications that increases their knowledge, skills, and confidence in assessing tobacco use and providing effective treatments. More than a dozen practical resources and client education materials are included to assist providers in implementing tobacco treatment as a regular part of their clinical practice, including the patient quit plan, the brief intervention flowchart, medication cards, relapse intervention strategies, and tobacco cessation services and resource information [10-14]. The program included a DVD containing didactic content and role-play cases. After completing the workshop, providers are able to intervene with all tobacco users, including those who are not yet considering quitting.

Participants learn to:

- Screen and assess for tobacco use and exposure to environmental tobacco smoke.
- Conduct an integrated, stage-specific “Five A” Model brief intervention for tobacco cessation.
- Demonstrate effective use of patient materials to encourage tobacco cessation.
- Describe pharmacotherapy for tobacco cessation.

- Document intervention(s) for tobacco cessation.
- Establish office protocols to systematically treat tobacco use and dependence.
- Refer patients/clients who use tobacco to intensive cessation services [15-19].

In addition to core curriculum, participants in the CS2Day-sponsored workshops received packets that included a CS2Day Toolkit overview as well as electronically provided resource updates after the program.

Tobacco Dependence Treatment Continuing Education: 1-Hour CME Program

This 1-hour program, aimed at medical professionals, paraprofessionals, and community health workers, is designed to increase knowledge, skills, and confidence in implementing evidence-based practices in tobacco prevention and treatment. Eight programs took place in Tucson, Phoenix, and Sun City, Arizona, including 1 telemedicine videoconference hosted from the University of Arizona College of Medicine, Phoenix campus. A total of 244 participants attended these programs.

This program teaches participants to deliver a brief intervention using the “Five

Table 3. Basic Skills Participant Self-Confidence Pretest and Posttest Mean (Standard Deviation) (n = 39)*

	Pretest	Posttest
1. I can screen for and assess tobacco use	3.4 (0.7)	4.6 (0.5)
2. I can accurately assess my clients' motivation to quit	2.9 (0.7)	4.6 (0.5)
3. I can perform a brief intervention for tobacco cessation	3.0 (1.0)	4.7 (0.5)
4. I can explore issues related to smoking and quitting even with someone NOT INTERESTED in quitting	2.8 (1.0)	4.7 (0.6)
5. I can accurately assess the dependence level of my clients	2.7 (1.0)	4.5 (0.7)
6. I can effectively use patient education materials for tobacco cessation	3.3 (0.8)	4.8 (0.5)
7. I can provide clients with accurate information regarding the health benefits of quitting	3.4 (0.7)	4.8 (0.5)
8. I can personalize the benefits of quitting with each individual client	3.0 (0.9)	4.6 (0.5)
9. I can create office protocols to support tobacco cessation	2.9 (1.0)	4.5 (0.8)
10. I can provide clients with simple advice and instructions about nicotine replacement therapy	3.0 (0.9)	4.5 (0.8)
11. I can describe first-line pharmacotherapies for tobacco cessation	2.6 (1.1)	4.3 (0.8)
12. I can help clients develop a personalized plan for quitting	2.7 (1.0)	4.8 (0.5)
13. I can list at least two community resources to assist patients with tobacco cessation	3.1 (1.0)	4.6 (0.7)
14. I can arrange for appropriate follow-up for my clients	3.2 (1.0)	4.7 (0.7)
*1 = Definitely not confident, 5 = definitely confident.		

A" Model. The curriculum covers a menu of topics including:

- Diseases and deaths associated with tobacco use in the United States;
- The biological, psychological, and sociocultural factors associated with nicotine dependence;
- Clinical practice recommendations for clinician interventions;
- Brief versus intensive cessation counseling;
- The "Five A" Model;
- Clinical practice recommendations for pharmacotherapy and treatment options;
- Relapse prevention and intervention;
- Coding and billing for reimbursement; and
- Quality and performance measures [20,21].

The curriculum was delivered through PowerPoint slides with open question-and-answer sessions. In certain venues, audience response technology was used so that participants could respond to multiple-choice questions and see the tally of their responses,

resulting in engaging discussions and exchanges. Participants received the same practical resources and client education materials provided in the 4-hour program (the patient quit plan, the brief intervention flow chart, medication cards, relapse intervention strategies, and tobacco cessation services and resource information).

EVALUATION OF THE CME PROGRAMS

HCP worked closely with Educational Measures, the evaluation firm contracted by CS2Day to ensure that the continuing education programs incorporated uniform evaluation questions [22]. As required by the grant, the HCP evaluation collected both quantitative and qualitative data to capture Levels 1 through 4 on the Moore Model of Outcomes Evaluation (Table 1). These levels measure participation, satisfaction, knowledge, competence, and intentions to change practice. Participants who attended the launching event (6.5 CME credits) and the Basic Tobacco Intervention Skills Certification for Medical and Allied Health Professionals (4 CME credits)

completed pre- and posttests that included knowledge, satisfaction, case study test questions, and confidence levels in assessment, intervention, and treatment aligned with measures developed by Educational Measures. Participants who attended the Tobacco Dependence Treatment Speaker Continuing Education Program (1 CME credit) responded to a post-program questionnaire that included satisfaction, case study test questions, and intended implementation of interventions and treatments. Both groups were contacted via surface mail at a later date to respond to follow-up questionnaires detailing post-program changes in routine practice regarding tobacco use interventions and treatments.

Participant Background and Attendance (Level 1)

A total of 290 health and human service providers attended the 12 CS2Day/HCP programs. Program evaluations were completed by 219 participants (76%). The reported age span was 21 to 77 years of age, and 63% of the participants were female (Table 2). Twenty-nine percent of

respondents were MDs/DOs, 10% were nurses, and the remainder represented a wide range of other medical professionals, paraprofessionals, and community health workers. Twenty-eight percent provided primary care, and 15% provided psychiatric care. The participants had a diverse range of years of experience in the field, with 42% reporting less than 5 years in practice and 27% reporting more than 20 years in practice. Hospitals and private practices comprised 70% of professional venues represented. Seventeen percent worked in academic settings, and 12% worked in non-profit and government organizations (other category). Just over half (55%) worked in urban locations. Many participants (41%) reported practicing in settings where a high percentage of patients use tobacco (more than 40%).

Outcomes for the Basic Tobacco Intervention Skills Certification for Medical and Allied Health Professionals: 4-Hour CME Program

Satisfaction (Level 2)

Responses to the Participant Satisfaction Survey are based on a 5-point Likert scale with 5 indicating strong agreement and 1 indicating strong disagreement. The objectives, format, and presentation of the programs received high levels of satisfaction (mean, 4.2), thereby achieving the program goals. Eighty-eight percent reported that the content was appropriate to their practice (n = 41).

Knowledge and Skills Assessment (Level 3)

On average across groups, participants (n = 46) responded correctly to 14 of the 15 knowledge questions on the evaluation posttest. Skills were measured through an observation checklist whereby participants scored each other on delivering the “Five A Brief Intervention Model” with a patient who is not willing to quit and with a patient who is willing to quit. Participants worked in pairs alternating the role of provider and patient.

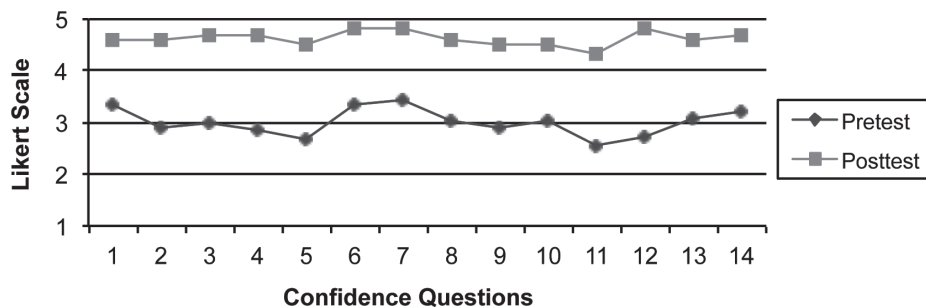


Figure 2. Basic skills participant self-confidence: pretest versus posttest (N = 39).

Table 4. 4-Hour CME Program: Intentions to Change Practice Systems (n = 42)

79%	Ask every patient about tobacco use at every visit
64%	Advise all tobacco users to quit using clear, strong, and personalized language
74%	Ask every tobacco user if he/she is willing to make a quit attempt at this time
74%	Assist the tobacco user to set a quit date
76%	Assist the tobacco user to identify reasons for quitting and benefits of quitting
74%	Assist the tobacco user to anticipate challenges, particularly during the critical first few weeks
55%	Assist the tobacco user to use FDA-approved medication
74%	Assist the tobacco user to engage in counseling support (face to face with clinician, Quit Line 800-QUIT-NOW, local program)
62%	Schedule follow-up contact (in person or phone) with patients attempting to quit, to review progress toward quitting and medication adherence
74%	If a relapse occurs, encourage repeat quit attempt

The skills demonstrations were performed after viewing a simulated provider–patient intervention on the DVD and discussing material in the Guidebook. The brief intervention trifold, My Quit Plan brochure, medication cards, and resource guides were also used in these activities. Participants coached each other and checked-off each activity as their partner practiced it, then totaled the scores. On average across groups, participants scored 12 out of 12 on the skills assessment.

Confidence in Implementing Tobacco Treatment Interventions (Level 3)

The pre- and posttests resulted in a significant increase in self-confidence for assessing and administering brief interventions and treatment, $t(38) = -7.66, P < .0001$ (Table 3, Figure 2).

Intentions to Change (Level 4)

Participants were asked what they might do differently when treating tobacco dependence subsequent to the program. Responses about intended changes to practice based on the curriculum content showed that three-quarters of the participants reported intending to integrate 7 practices systematically in their practice. More than half reported that they would integrate the 3 remaining practices into their organization (Table 4).

Outcomes for the Tobacco Dependence Treatment Continuing Education: 1-Hour CME Program

Satisfaction (Level 2)

Eighty-six percent of the participants (n = 134) agreed that the educational objectives of the program were met. Eighty-seven

Table 5. 1-Hour CME Program: Intentions to Change Practice Systems (n = 125)

68%	Ask every patient about tobacco use at every visit
60%	Advise all tobacco users to quit using clear, strong, and personalized language
73%	Ask every tobacco user if he/she is willing to make a quit attempt this time
58%	Assist the tobacco user to set a quit date
62%	Assist the tobacco user to identify reasons for quitting and benefits of quitting
52%	Assist the tobacco user to anticipate challenges, particularly during the critical first few weeks
51%	Assist the tobacco user to use FDA-approved medication
58%	Assist the tobacco user to engage in counseling support (face to face with clinician, Quit Line 800-QUIT-NOW, local program)
48%	Schedule follow-up contact (in person or phone) with patients attempting to quit, to review progress toward quitting and medication adherence
66%	If a relapse occurs, encourage repeat quit attempt

percent agreed that the content of the program was appropriate to their practice (n = 166).

Knowledge Assessment (Level 3)

Participants responded to 2 case study questions in a multiple choice format identifying evidence-based interventions in a specific scenario. The correct responses were 39% in identifying which strategies are most appropriate to help this particular patient quit (90/228), and 31% on the appropriate response to patient's lack of success in quitting 3 months later (62/201). Seventy-three percent of the respondents correctly responded that intensive program counseling and support combined with medication add significantly to the likelihood of success in helping patients stop smoking.

Intentions to Change (Level 4)

When asked what they might do differently when treating tobacco dependence subsequent to the program, about two-thirds of the participants reported that they intended to minimally incorporate 4 activities into their practice (Table 5). About half reported that they would use the additional 6 activities on a regular basis. The activity most commonly chosen to incorporate was asking every tobacco user if he or she is willing to make a quit attempt at this

time. These results indicate that the 1-hour program had a large impact on caregiver intentions to apply new interventions and treatments with their patients and clients, especially assisting their patients and clients with quitting.

Sustainability of Learned Tobacco Dependence Treatment at 6 Weeks Post-Program

Participants were contacted via surface mail to complete a follow-up questionnaire. In a few cases, program timing caused follow-up measurement to occur in less than 6 weeks post-program. Thirty-six participants submitted completed forms (13% response rate). Non-responders were contacted in the first group of program participants (n = 25) by mail resulting in a response rate of 64% for this group (n = 16). Subsequent groups received an incentive for completion with the questionnaire, but the response rate dropped dramatically. The low response rate obviously constrains the interpretation of the follow-up results due to the potential for responder bias. We believe, however, that the findings at follow-up are consistent with the remainder of the data, and they are in line with results of our other studies. Moreover, we noted no obvious differences in the patterns of responding between the 2 waves during which response rates were

different. The results of the follow-up questionnaires are therefore presented with the limitation duly noted.

Changes in Practice Post-Program

At follow-up, HCP respondents who attended the 4-hour or 1-hour CME programs were asked if the program led to changes in their practice, and if so, what changes? A menu of 10 areas for practice change as recommended by the US Public Health Service Guideline Treating Tobacco Use and Dependence (2008) were listed. Seventy-nine percent reported that they had made changes in their practices. The top 4 changes identified were 1) screening for tobacco use at every visit (60%); 2) assessing willingness to quit at every visit (60%); 3) assisting tobacco users to identify reasons to quit (54%); and 4) assessing level of motivation to quit (49%). Participants recorded regularly implementing an average of 5 activities in their practice during the 30 days after program participation, with 28% implementing 8 activities. Seventy-one percent made referrals to an intensive tobacco cessation program. The average number of referrals made during that time period was 6 per respondent.

At follow-up, participants who attended the CS2Day launch event were asked what resources and strategies enabled them to make practice changes using the methods and techniques learned during the CS2Day program. Fifty-one percent noted heightened awareness of efficient techniques. Integrating tobacco dependence interventions as part of routine were reported by 55%, followed by support staff utilization (20%).

The principle barrier across programmatic evaluations, and almost the only one reported to changes in practice, was lack of time (44%). This finding provides evidence that a low-intensity/brief intervention, as opposed to an intensive intervention, may be the most effective and efficient strategy to teach providers because it can be implemented in approximately 3 minutes or less.

Finally, 94% of respondents felt that the information presented in the program allowed them to provide a more targeted treatment to patients who use tobacco.

CONCLUSION

A number of conclusions can be drawn from the CS2Day/HCP programs and evaluations. First, the vast majority of participants in all of the programs reported that their objectives were met with regard to content and delivery and that the activity was free of commercial bias.

Second, time limitations of the 1-hour program precluded the possibility of collecting several of the measures collected in the 4-hour program (pre-post test, measures of skill practicing, and measures of confidence in ability to carry out new practices). Therefore, differences in evaluation tools used to measure program outcomes do not permit comparison across all outcomes. Two common measures, satisfaction and intentions to change, were reported at high levels.

Third, both the 4- and 1-hour programs impacted participant knowledge of interventions and treatments regarding tobacco use and intentions to systematically incorporate new clinical activities into their practice. Participants who attended the 4-hour program, where the curriculum went into more depth about each of the practices and where participants had the opportunity to practice new skills, reported higher levels of intent to incorporate new interventions and treatments to ameliorate tobacco use.

Fourth, posttest confidence gains in the 4-hour program were higher than posttest knowledge gains, particularly answers to case study questions. Therefore, participants may need additional time to absorb and process the factual information imparted in the program.

Fifth, among those who participated in the follow-up, many reported an increase in patient referral to intensive cessation programs.

Sixth and most important, healthcare practitioners and providers are constrained by time with regard to attending CME

programs, even programs regarding one of the country's most pervasive and harmful health problems. This is demonstrated in the distribution of participants across programs: 8% of the total participants attended the launch program (6.5 CME credits), 8% attended the 4-hour CME program, and 84% attended the 1-hour CME program. Furthermore, time was identified in the follow-up survey as being the primary constraint in incorporating interventions and treatments into routine practice. As a result, time is a critical variable in the treatment of tobacco use, in terms of both acquiring the knowledge, skills, and confidence required to implement a brief intervention as well as interacting with clients and patients in point-of-care settings to impact health outcomes.

In conclusion, the combination of HCP curriculum with the CS2Day resources resulted in 290 new health and human service providers in Arizona added to the index of tobacco control advocates with incentives and commitment to interact with their patients and clients to prevent and abstain from long-term tobacco use. The impact of these CME programs will undoubtedly result in positive outcomes for numerous tobacco users and their families as these providers gain experience in implementing the interventions and treatments discussed.

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