

## **PROGRAMMATIC EVALUATION OF COLLEGE INITIATIVES TO REDUCE TOBACCO USE\***

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### **ABSTRACT**

College students are particularly vulnerable to tobacco initiation and use, but college prevention services are rare and often unevaluated. The present project evaluated 27 tobacco use prevention initiatives on college campuses in one southern U.S. state. Each initiative included one 20 hour/week on-campus student coordinator, a faculty or staff advisor, and a monitor. An outside evaluator rated each initiative on compliance with seven activities and five administrative necessities. Most (22) initiatives nearly met, met, or exceeded expectations, but five were noncompliant. Initiative scores correlated positively with students' and advisors' ratings, but were unrelated to the on-campus coordinator's sex, longevity in office, or past tobacco prevention experience. Though limited by not including a rating of the quality of the interventions, this program evaluation provided college tobacco prevention initiatives with an overall rating and specific feedback on how to improve, and allowed each initiative to tailor programs to its specific campus.

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## INTRODUCTION

Tobacco use among college students is a major problem. In a survey of 119 nationally representative U.S. 4-year colleges in 1999, nearly half of students had used a tobacco product in the past year, and one-third currently used tobacco [1]. In a nationally representative survey in 1995 of students in 2- and 4-year colleges and universities, about one-fifth of smokers (19.0%) began when aged 19 or older [2]. Tobacco use among college students has increased in the past dozen years [1], particularly among women [3]. Further, although a large proportion of college students have attempted to quit smoking, only a minority actually succeeded [4]. Thus, college students are highly vulnerable to tobacco use.

Recognizing this problem, the American College Health Association in 2000 adopted a position statement encouraging colleges and universities to adopt a "campus-wide tobacco/smoke-free environment" [5]. Despite this mandate, however, colleges provide little in the way of tobacco prevention or cessation. For example, in a 2003 survey of 19,497 students randomly sampled from 33 campuses, only about one-quarter (25.9%) reported that they had received information from their college or university about tobacco use prevention [6]. Likewise, a review of published literature on programs/intervention targeting tobacco use in colleges and universities identified only 14 studies over 20 years [7].

The scarcity of tobacco prevention programs for college students is particularly regrettable because such programs can be effective (for a review see [7]). One college campus cessation program trained undergraduate peers to lead cessation and relapse-prevention programs, and found that 88.2% of participants quit and 63.3% of these remained smoke-free [8]. Ramsay and Hoffman concluded that peers were effective facilitators, and that college administrators and health educators should integrate tobacco management strategies into their college campuses [8].

In doing so, it would be particularly important to evaluate college anti-tobacco initiatives. Evaluation is challenging for a variety of reasons. First, anti-tobacco initiatives are evolving entities such that different tasks may be more or less salient at different stages of development [9]. Second, anti-tobacco initiatives typically utilize an ever-changing array of interventions, and traditional no-treatment control groups typically are unavailable in community-wide interventions. Third, assessment approaches must contend with the often under-specified connections between the immediate outcomes of the intervention and the ultimately desired impact of reduced substance abuse [10]. Four, the effects of anti-tobacco efforts are often delayed [11]. Five, campus initiatives are often going on at the same time as larger city, state, or national initiatives, so it is hard to tease out the source of any changes that occur. These challenges are substantial.

In addition, reporting strategies must maximize the likelihood of getting the information into the hands of practitioners who can use it. Evaluation

professionals must move away from the traditional objective detachment often ascribed to evaluation to become partners to prevention professionals, adapting designs, assessment techniques, and reporting strategies to fit local needs [10]. The present project describes a program evaluation of anti-tobacco college initiatives in one southern state in the United States.

## METHOD

### Participants

In the fall of 2004, the Partnership for a Healthy Mississippi, a nonprofit agency funded by a pre-Master Settlement Agreement<sup>1</sup> lawsuit against tobacco companies, began an evaluation of its college initiative programs. The college initiatives in 2004-2005 included 9 public universities, 4 private colleges, and 14 community colleges; initiatives at 3 other schools were too new to be evaluated. The goals of the college initiative were to prevent tobacco initiation and decrease the rate of use by college students.

In the present college initiative, the Partnership funded an on-campus coordinator, a student who worked 20-hours/week on tobacco prevention. The student's scope of work included 12 components: 7 anti-tobacco activities and 5 administrative necessities. The seven anti-tobacco activities included: conducting one tobacco awareness activity per month, collaborating with campus organizations on one drug or alcohol awareness activity per semester, conducting at least one cessation activity per semester, developing a plan to evaluate clean indoor air (CIA) policies on-campus by the end of fall semester, developing enforcement strategies for existing campus CIA policies by the end of fall semester, executing a clean indoor air enforcement plan beginning in spring semester, and collaborating with campus staff and organizations on other substance abuse issues. The five administrative activities included: program reports, fiscal reports, coalition development plans, two coalition meetings per semester, and active membership in at least two additional campus organizations. Though not calculated into the total score, the on-campus coordinator was also expected to maintain at least a C+ grade point average and to cooperate with the Partnership on other health initiatives.

The student on-campus coordinators received a yearly operating budget of \$2,725/academic year to defray the cost of activities, an on-campus advisor (a campus staff or faculty member) to consult with regarding daily operations, and one of two grant monitors who met with them monthly to oversee budget

<sup>1</sup> State attorneys general and the tobacco industry signed the landmark Master Settlement Agreement (MSA) on November 23, 1998. The MSA requires four major tobacco companies to pay 46 states and the District of Columbia a total of \$206 billion over a 25-year period to reimburse the excess costs of treating smoking-related illnesses under Medicaid programs. The other four states, one of which was Mississippi, settled prior to the MSA in June 1997.

expenditures and scope of work activities. In addition, student on-campus coordinators attended two preliminary introductory/planning meetings, which some campus advisors also attended. Student coordinators completed monthly reports and an end-of-year summary of all activities.

Funding for the 4-year colleges and universities started in fall semester, 2003, and for the community colleges started in July or August, 2004. Times varied occasionally because some institutions hired an on-campus coordinator more quickly than others.

In the present evaluation, interviewees consisted of the 27 on-campus student coordinators (18 women, 9 men), and their 27 advisors. Of the 27 student coordinators, 5 had prior experience with a high school tobacco prevention initiative sponsored by the Partnership. Staff trained in telephone interviewing conducted the 54 telephone interviews in March, 2005. The interviews took approximately 10-15 minutes each.

## Materials

*On-Campus Coordinator Interview* was 17 open-ended questions selected about general coalition development (i.e., "What is your vision of your coalition?") and contractual obligations ("What links do you have to other campus organizations?"). In addition, student coordinators rated the overall success of their college initiative on a 5-point scale from 1 = Least Successful to 5 = Most Successful.

*On-Campus Advisor Interview* was 10 Likert questions (i.e., "The students on my campus are interested in participating in a Tobacco Prevention Coalition") on a scale from 1 = Strongly Disagree to 5 = Strongly Agree, worded so that total scores could range from 10 to 50, and higher scores indicated higher functioning of the campus coalition. In addition, three open-ended questions asked about campus tobacco coalition meetings, whether tobacco prevention is an important topic, and whether the campus initiative is making a difference; and four open-ended questions asked about the grant monitor. Among present advisors, the 10 Likert items were modestly internally consistent (Cronbach alpha = .73).

## Procedure

An outside evaluator used a predetermined key similar to a key for an essay examination to evaluate information from the programmatic and fiscal reports, the on-campus student coordinator, the advisor, and the grant monitors. This key contained 12 compliance components (7 activities and 5 administration), on which Expectation scores could be 0 = Not Met, 2 = Nearly Met, and 4 = Met, with a few components offering an additional score of 6 = Exceeded, for a possible total score of 0 to 62 (see Table 1).

For example, on anti-tobacco awareness activities, college initiatives received a score of 0 (not met expectations) if they conducted fewer than 3 anti-tobacco

Table 1. College Initiative Scoring Key

	Score			
	0	2	4	6
<b>Anti-tobacco activity:</b>				
Awareness	<3	3-5	6	>6
Alcohol/Drug	0	1*	2*	>2
Cessation	0	1*	2*	>2
CIA plan made	No		Yes	—
CIA plan executed	No		Yes	—
CIA evaluation	No		Yes	—
Collaboration with campus organizations (#)	0-1	2	3	>3
<b>Administrative:</b>				
Program reports	0-2	3-5	6	—
Fiscal reports	0-2	3-5	6	—
Coalition development				
Organizations	0-1	2-3	4	>4
Members	0-3	4-7	8	>8
Active member of campus organizations	0	1	2	>2

**Note:** Numbers represent the total activities over the six-month evaluation period.

CIA = clean indoor air.

\*Could be scheduled but not yet completed.

awareness activities in the 6-month period, a score of 2 (nearly met expectations) if they conducted 3-5 activities, a score of 4 (met expectations) if they conducted 6 activities, and a score of 6 (exceeded expectations) if they conducted more than 6 activities. The scope of work specified that anti-tobacco awareness activities occur at the rate of 1 per month, so it was not possible for on-campus coordinators to bunch all their activities into 1 or 2 months.

Alternatively, on the administrative component of fiscal reports, college initiatives received a score of 0 (not met expectations) if they completed 0-2 fiscal reports, a score of 2 (nearly met expectations) if they completed 3-5 fiscal reports, and a score of 4 (met expectations) if they completed 6 fiscal reports, 1 for each month of operation. One fiscal report per month of operation was specified in their contract. In this category, college initiative programs could not earn a score of 6 (exceeded expectations). Fiscal reports with insufficient content were returned for revision, and counted as unmet. However, if coordinators resubmitted a complete report, it was counted as met even though it was late.

Each college initiative received an overall compliance score as well as recommendations based on each of the 12 components. Individualized feedback

included strengths, areas needing attention, and weaknesses. All questions focused on the previous 6 months, which was August 1, 2004 to February 1, 2005. The present evaluation was the first one for these college initiatives.

## RESULTS

On the present scoring key, these college initiatives obtained an average compliance score of 39.6 ( $SD = 10.4$ , actual range = 18-52). Based on their overall percentage score, the evaluator categorized them as Noncompliant ( $n = 5$ ), Nearly Met Expectations ( $n = 9$ ), Met Expectations ( $n = 8$ ), and Exceeded Expectations ( $n = 5$ ).

There was no significant correlation between length of time in existence and compliance score. Public, private, and community colleges were not significantly different in their compliance scores. Note that, because community colleges were funded later than 4-year institutions, these 2 tests overlap. The total scores of the 7 activities components correlated with the total scores of the 5 administrative components,  $r(27) = .61, p = .001$ .

In the present evaluation, both students and advisors rated their college initiatives independently from the 12 compliance components. Student ratings on the one 5-point Likert question about the success of their college initiative were, on average, 3.5, a score which indicates about a C+ level. Students' success ratings correlated significantly with the campus initiative compliance score, Pearson  $r(27) = .55, p = .003$ . Advisor ratings on the 10 5-point Likert items about the functioning of the college initiative were, on average, 44.8 ( $SD = 4.4$ , range = 32-50), a score which indicates about a B+ level of functioning. Advisor's ratings correlated significantly with the campus initiative compliance score, Pearson  $r(24) = .51, p = .01$ . However, students' and advisors' ratings did not correlate significantly with each other.

Demographics made no difference in average college initiative scores (univariate tests). Average compliance scores of the college initiatives whose on-campus coordinators were women were not significantly different from initiatives whose on-campus coordinators were men. Average compliance scores of the schools of the two grant monitors were not significantly different. Average compliance scores of schools where the on-campus coordinator had previous experience with a high school anti-tobacco initiative ( $n = 5$ ) were not significantly different ( $M = 44.0, SD = 4.7$ ) than schools where the on-campus coordinator had no such background experience ( $M = 38.6, SD = 11.2$ ). Note that previous experience had non-equal variances, so a Mann-Whitney U test was used; however, like the ANOVA, it was non-significant.

One college initiative program that obtained a high score (52) met or exceeded expectations on most of the 12 components. Its strengths were conducting more than one awareness activity per month, holding more than two coalition meetings per semester, and the coordinator being an active member of more than two

campus organizations. One component of this program needing attention was cessation activities, and a recommendation was to increase cessation activities to one per semester. No components of this program were characterized as weaknesses.

One college initiative program that obtained a low score (24) had no strengths, 3 weaknesses, and 6 areas needing attention. Addressing weaknesses, its recommendations were to conduct one tobacco awareness activity per month, to begin amending, strengthening, and or enforcing the clean indoor act, and for the coordinator to become a member of at least two campus organizations. Addressing areas needing attention, its recommendations were to conduct at least one cessation activity per month, complete fiscal reports by deadline, conduct at least two coalition meetings per semester, conduct at least one alcohol or drug awareness activity in collaboration with other organizations every semester, recruit more organizations at meetings and increase attendance, and increase collaboration with other organizations.

Accomplishments at the different institutions varied. For example, regarding the CIA requirements, the college initiative at one institution promoted a policy prohibiting smoking in campus housing that was passed by the student government association and submitted for approval to the appropriate institutional office. At another institution, the college initiative promoted a petition prohibiting smoking within 25 feet of building entrances/exits that was signed by 256 students and presented to the student body. At the time of the evaluation, institutional actions were pending.

## DISCUSSION

The present 27 college anti-tobacco initiatives across one southern U.S. state varied in effectiveness, with about half (48%) meeting or exceeding their contractual obligations, and another third (33%) nearly meeting their contractual obligations. This first-time evaluation identified five programs that failed to live up to their contractual obligations. Further, the present evaluation gave all programs specific feedback on how to improve, whether it was from how to move from unsatisfactory to satisfactory, or from meeting to exceeding expectations.

The present evaluation of college initiatives is similar to one of community coalitions in that both assessments provided specialized feedback on how to improve, and both allowed the coalitions to tailor the activities to fit their circumstances [12]. An advantage of the Reinert et al. evaluation of community coalitions was that scores carried funding ramifications, an aspect that probably increased the power of the feedback and, ultimately, the functioning of the anti-tobacco coalitions [12]. In contrast, the present categories conveyed information about how well the college initiatives met expectations, but carried no direct funding ramifications. One possible modification of the present system would be to add

funding ramifications for noncompliance. An advantage of the present evaluation was that it provided a correlation between college initiative functioning and students' ratings of success as well as advisors' ratings of how well the college initiative was functioning.

The present evaluation system gave more weight to anti-tobacco activities than to administrative components. The underlying assumption was that activity contributed to effectiveness more than administrative details, but both were important. Further, the present system allowed flexibility in the types of activities, so that on-campus coordinators could choose activities particularly suited to their college environment. For example, one on-campus coordinator developed a power point presentation on the dangers of tobacco use and gave this presentation immediately prior to a campus free movie. Another on-campus coordinator prepared free hot dogs for those attending home baseball games and provided them at a booth that gave information about tobacco and posted signs saying "the only thing smoking should be the grill." The present evaluation was early in the lifetime of the present coalitions, and it was their first evaluation, so counting activities was deemed acceptable.

However, a problem in the present evaluation was that the scope of work and reporting was sometimes unclear to on-campus coordinators, monitors, or the outside evaluator. For example, one activity that counted in the awareness category was passing out pizza at the campus movie. Reports by on-campus coordinators were unclear about how this activity reduced tobacco use. Monitors provided some oversight about what types of activities would actually count, but providing a list and examples of possible activities would be important in the future, especially for inexperienced on campus coordinators. An evaluation system needs to emphasize clarity in the scope of work before the fact as well as detailed reporting after the fact.

Among the present 27 college initiatives, the amount of time that the student coordinator held office was unrelated to compliance. Given that the present evaluation was the first of these college initiatives, there was little variability in length of time in position, with the longest time being 18 months and the shortest being 3 months. Thus, it would have been surprising to find that time in office was related to functioning. Also, present on-campus coordinators were all students, so longevity on the job would be unlikely. In future evaluations, however, the present college initiatives will have been in place longer. So, inasmuch as turnover is a barrier to coalition effectiveness, future research could reassess whether length of time influences the functioning of student on-campus coordinators of anti-tobacco initiatives [13].

Further, in the present evaluation, the 5 on-campus coordinators who had previously worked with a high school anti-tobacco initiative tended to have higher-functioning college initiatives than the other 22 on-campus coordinators who had no previous high school experience. This difference was not statistically significant, perhaps partly due to the low number in the experienced group, but



future research should examine whether high school experience benefited the college student on-campus coordinators.

It was not surprising that the present college initiative score correlated significantly with advisors' ratings and students' ratings. Oddly, however, students' and advisors' ratings did not correlate significantly with each other. Further, among present students and advisors, advisors typically had a more positive view of the present college initiative than did students. Although possible, it seems unlikely that they were ignorant of their own initiative activities; rather, they may have been more idealistic than advisors, or more self-critical. It was good to have the inside perspective of the on-campus coordinator, as well as the outside perspectives of the campus advisor and grant monitor.

In the present system, two grant monitors each served about half the institutions. The fact that the schools of these two monitors scored about the same suggests that the monitors were functioning equally. Monitors can provide much needed assistance and direction to on-campus coordinators; thus, continued monitoring of them is prudent.

One limitation of the present scoring system was that it included 12 components, most of which were prevention rather than cessation, but other components might also be relevant to success, and the quality of the activity or program may be very important. Future evaluations should add a rating of the quality of the activity, perhaps from students themselves as well as outside sources. A second limitation is that the present evaluation involved only 27 college initiatives across one southern U.S. state. Other areas may respond differently. A third limitation was that the present evaluation was partly based on ratings from student coordinators, who were directly involved in delivering the interventions. However, other ratings from grant monitors, student advisors, and an outside evaluator's assessment of reports were independent of service delivery or funding. Fourth, the present evaluation system transformed all information into quantitative data, but qualitative information could provide important insights into present functioning and would be important to collect as well. The ultimate measure of effectiveness would be the level of tobacco use on the participating campuses, which should be a goal for future evaluations.

Despite these limitations, the present evaluation had some strengths. One, the target was college students, a particularly vulnerable group, and the arena was their college campus. Thus, the present initiative fit with experts' recommendation that smoking cessation interventions target naturally occurring social groups such as friendship cliques or social organizations [14]. Two, the present evaluation provided valuable feedback to students who were working on a tobacco prevention initiative at the college level. The feedback consisted not only of an overall rating of whether or not they met expectations, but also specific recommendations on how to improve in the future. The focus on prevention as well as cessation was different from Ramsay and Hoffmann [8], a project focusing solely on cessation. Three, the present scoring key allowed an outside evaluator to

assess 27 different initiatives at a variety of 2- and 4-year institutions of higher learning across one southern U.S. state.

The present college initiatives were new, and this evaluation was their first. Thus, the variability in the amount of time on the job was limited. Nevertheless, time in existence was not correlated with success, at least in this limited sample. Although experience at the high school level on the same kind of job was not significantly related to success, one group was small. Directly relevant experience may, therefore, be related to success, and should be examined in the future. Inasmuch as the present scoring key applied to a variety of college initiatives, similar evaluation systems might be effective with other college anti-smoking initiatives.

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