

Adult Cessation Media Impact on Quitline Call Volume and Website Visits: FY 2010 – FY 2011

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Executive Summary

The Connecticut Department of Public Health (CT DPH) has funded a tobacco control counter-marketing campaign with the goals of increasing tobacco cessation among adults, and preventing use among youth and young adults. The majority of the media budget was allocated to a prevention campaign, which used a contest format to solicit self-produced anti-tobacco advertisements from youth and young adults. Winning ads were chosen through a combination of expert panel selection and public voting. The winning spots were placed online and on broadcast and cable television.

The adult cessation media campaign was designed to supplement an existing tobacco cessation campaign known as "Become an EX" which was developed and funded by the American Legacy Foundation (Legacy) and was active in Connecticut from 2009-2010. The DPH purchased existing ads from this campaign, and placed them on broadcast and cable television as well as online. The purpose of the campaign was to encourage tobacco users to quit tobacco, and to connect them to cessation resources including the DPH-funded Connecticut Quitline and an online cessation service provided by Legacy.

PDA is conducting three evaluation studies to assess the effectiveness of the tobacco control counter-marketing campaign. This report presents findings from one of these studies: an exploration of the extent to which the cessation media buys are associated with increased enrollments in the Quitline, and visits to the BecomeAnEx.org website among the target population. This report will cover the entire two-year cessation media effort, and will describe the media's impact on Quitline enrollments and website cessation program enrollments.

Key Findings

Quitline call volume and reach. In FY11, the CT Quitline served a total of 6,729 callers, including 6,235 unique tobacco users who were calling for help with quitting. The Quitline attained a promotional reach of 1.67%, meaning that 1.67% of all cigarette smokers in Connecticut registered with the Quitline. This represents a substantial increase from the reach of .87% achieved in the previous year, and is considered a success. Moreover, the FY 2010 reach figure is higher than the average reach achieved by quitlines nationwide (approximately 1%), though significantly lower than the target reach suggested by the CDC (8%). We recommend that the DPH continue to explore strategies to increase Quitline reach within the budget available, including increasing referrals from physicians, increasing the cigarette tax, and ensuring any additional dollars generated through tobacco tax increases are directed toward the CT Quitline operations. Another strategy may be increased funding for media promotion of the Quitline, and increased precision in the placement of media promotions. Connecticut has a relatively low tobacco use prevalence compared to US as a whole (13.2% vs. 20.8%). This means that Connecticut has a relatively small number and small proportion of residents who use tobacco as compared to the rest of the country. It may be require more precision to place media to effectively reach this smaller group of tobacco users with messages about quitting and the Quitline, which would make it more challenging to increase reach. Additionally, any planning to increase Quitline reach should take into account a potential surge in call volume anticipated to occur after the introduction of cigarette package warning labels in September 2012. The DPH, along with the media and Quitline vendors, will need to plan for the potential volume increase so that the capacity and the budget of the Quitline are not exceeded.

One measure of Quitline quality is the rate of treatment reach, or the percentage of all smokers statewide who receive evidence-based treatment from the Quitline. In FY 2011, the CT Quitline treatment reach rate was 1.34%. This is a significant increase from the FY 2010 treatment reach of 0.74%. About 13% of callers who register with the Quitline were excluded from the treatment reach calculation because they did not participate in any counseling calls. The extent to which the Quitline vendor could better reach and provide service to these individuals would likely increase the number of quitters in Connecticut, and potentially impact state prevalence.

Media implementation. A modest budget was allocated to conduct the adult cessation media effort. The media plan was designed to make those dollars go as far as possible. There was already an existing cessation campaign in CT, funded by the American Legacy Foundation. This campaign had been evaluated and demonstrated to effectively improve tobacco users' attitudes about quitting tobacco. The Connecticut DPH media contractor, Cronin & Co., obtained existing creative materials from this campaign, which provided considerable cost savings as compared to developing new ads. They also placed their supplemental ads in such a way to extend the presence of the ads across a greater portion of the calendar year, and negotiated with media outlets to obtain additional bonus spots at no charge.

The goals of the cessation campaign were to promote cessation among tobacco users, and to connect them to cessation resources, include the Legacy online cessation program and the Connecticut Quitline. Broadcast ads were tagged with the Quitline information and telephone number, and online and paid search results were tagged with the website address BecomeAnEX.com. We recommend that this strategy be reconsidered in favor of tagging the Quitline on all DPH-funded cessation ads. While both the online and Quitline programs are free for CT residents, the Quitline provides free NRT along with a multi-session counseling program, which has been demonstrated to be an intensive, effective cessation aid. The effectiveness of online cessation assistance without NRT is still under investigation. Therefore, in order to have the greatest possible impact on tobacco use prevalence, we recommend that DPH-funded media directly tag and promote the most intensive intervention available – the Quitline – rather than directing callers solely to BecomeAnEx.org. This recommendation should be implemented to the extent that the Quitline budget has sufficient funds to provide service to an increased number of callers. Finally, given that the prevention campaign represents the majority of the media budget, it would be fruitful to clearly display the Quitline number on the Itsawaste.org website. Incorporating all these steps would have minimal financial repercussions, and could result in significantly increased call volume to the Quitline.

Overall Strength of ad buys. Of all the DPH funded media efforts, the campaigns with the strongest presence among target audiences are the two prevention campaigns. These are followed by the Legacy campaigns. The presence of the DPH cessation effort was weaker. However, the placement of the DPH cessation campaign did successfully extend the presence of the Become An Ex campaign in Connecticut, and ensured that there was at least a modest cessation campaign occurring in each calendar quarter.

The strength of the cessation buy was greatly increased from FY 2010 to FY 2011, using essentially the same budget amount, which is a major success of the media effort. This may reflect higher startup costs in FY 2010 (e.g., dollars allocated to purchasing ads and to planning and other startup). However, it may also reflect better ad placement in FY 2011, making the same dollars go farther. The increase in intensity and the longer timespan of the campaign are likely the primary reasons why the Quitline reach showed a large improvement. Connecticut residents were exposed to cessation ads at a similar frequency, but for a much longer period of

time in FY 11. CT DPH and Cronin & Co. should be commended for improving the strength of the media buy while maintaining the same budget across the two years. Finally, we recommend taking advantage of the greater reach of the prevention ads to promote the Quitline. Adding a link to the Quitline online registration on the prevention website www.itsawaste.org is a low-cost way to get more mileage out of the prevention campaign.

Relationship between media, call volume and web visits. Analyses were conducted to determine the relationship between each media campaign component and call volume and visits to BecomeAnEx.org. The one factor that stood out as having a significant and meaningful effect on increasing call volume and web visits is the cessation paid search engine results. Search result clicks had a significant and large impact on web visits, and a significant and moderate impact on calls to the Quitline. There was also significant but small effect on call volume and web visits from the CT Cessation Broadcast campaign.

We conclude that the cessation media campaign successfully connected tobacco users to both the Quitline and the website, and contributed to an increase in the number of people served by these interventions. However, the impact of the media campaigns on volume is modest. Given the relatively low intensity of the campaigns, this is also an expected finding.

Although paid search result had a greater impact as compared to broadcast and online ads, we do not recommend that DPH allocate substantially more resources to this medium. Paid search results reach tobacco users who have already taken some action to obtain cessation help; they are a select group who are demonstrating a certain readiness to quit tobacco. In contrast, broadcast media and online banner ads cast a broader net, and have the potential to reach both tobacco users who are and are not ready to quit tobacco. In addition, viewers of the broadcast ads may be prompted to conduct online searches for more information about quitting tobacco. Therefore, although the three types of media have differential effectiveness in connecting tobacco users to cessation resources, we recommend DPH maintain the current mix of media, including broadcast, online ads and paid search results.

In summary, the CT Quitline has experienced an increase in the number of people served and in reach among cigarette smokers in the state, although efforts to increase reach should continue. The current media plan includes some strategies to maximize return on a modest budget, but additional refinements could increase call volume and web visits further. Recommendations for refining the media plan include placing broadcast ads to produce higher TRP levels, and reviewing placement of broadcast ads to maximize reach within the target audience. Additionally, any planning to increase Quitline reach should take into account a potential surge in call volume anticipated to occur after the introduction of cigarette package warning labels in September 2012. Finally, we recommend more direct promotion of the Quitline by tagging the Quitline on all available anti-tobacco media.

Introduction to the Connecticut Quitline Call Volume Evaluation

About the Initiative

The Media Campaign

The CT DPH has funded a tobacco control counter-marketing campaign with the goals of preventing tobacco use among youth and young adults, and increasing cessation among adults. The main focus of the media effort was on prevention; 75% of the 2-year media budget was allocated to prevention and 25% to cessation. The prevention campaign used a contest format to solicit self-produced anti-tobacco advertisements from youth and young adults. Winning ads were chosen through a combination of expert panel selection and public voting. The winning spots were placed online, on broadcast and cable television, and in print ads.

The adult cessation campaign was designed to supplement an existing tobacco cessation campaign known as “Become an EX” which was developed and funded by the American Legacy Foundation and was active in Connecticut from 2009-2010. The DPH purchased existing ads from this campaign, and from 2010-2011 placed them on broadcast and cable television, as well as online. The purpose of the campaign was to encourage tobacco users to quit tobacco, give some guidance on how to quit, and drive viewers to online resources where they could obtain information and support for quitting. In addition, the DPH added tags to the some of the ads directing viewers to the Quitline.

Evaluation of the Campaign

PDA has conducted several evaluation studies to assess the effectiveness of the tobacco control counter-marketing campaign. First, PDA conducted a process evaluation of the prevention media campaign to assess the extent to which selected ads and the media buys are in alignment with best practices in tobacco control, and provide guidance to the media contractor as the campaign is being implemented. Second, an outcome evaluation of the prevention campaign (in progress) utilizes a longitudinal, population-based survey to assess recognition and recall of the contest and winning spots, as well as the extent to which the campaign is successful in changing attitudes about tobacco and other key outcomes.

Finally, PDA is conducting an outcome evaluation of the adult cessation media campaign, which is the subject of this report. The study explores the extent to which the cessation media buys are associated with increased enrollments in the Quitline and increased visits to the Legacy cessation website.

The Connecticut Quitline

The Connecticut Quitline is a service provided to all residents in the state who seek information about quitting tobacco, or who would like to receive materials and counseling to personally quit

or stay quit. The service is provided all days of the week, 24-hours a day, and counselors are available who are fluent in English, Spanish, and other languages. For those who choose counseling, up to five telephone coaching sessions are available, along with access to an interactive web-based smoking cessation website, home mailings of educational materials, and referral to support groups in the community. Free nicotine replacement therapy (NRT patch, gum or lozenge) is provided to interested callers who meet eligibility requirements.

The BecomeAnEx.org Website

EX is sponsored by Legacy, a national non-profit organization. Working in partnership with Mayo Clinic, Legacy developed BecomeAnEX.org, an online cessation resource. After successful pilot testing, EX was launched nationally in 2008. Between 2008 and 2011, the campaign received support from the National Alliance for Tobacco Cessation (NATC) a group of states, non-profit organizations, foundations and corporations brought together by Legacy to help people quit smoking. BecomeAnEX.org offers smokers a free plan to quit and provides information about quitting. The site also includes a virtual community, where smokers who are trying to quit can connect with others to share support and encouragement.

About this Report

This report is the second of three planned reports on the effectiveness of adult cessation media campaign. The first report, submitted in January 2011, presented preliminary findings from the analysis of cessation media buy effectiveness. At the time of the first report, the cessation media campaign was still in progress and complete media buy data were not yet available. The present report will cover cessation media efforts over a period of about two years, May 2009 to June 2011, and will describe the media's impact on not just Quitline enrollments but BecomeAnEx.org website enrollments as well. Its purpose is to provide information for future improvement and decisions regarding media.

The primary audience for this report is the Connecticut Department of Public Health (DPH), so that staff responsible for current Quitline and media administration can reflect upon the previous campaign and apply lessons learned to upcoming media efforts. The evaluation may also provide early indications that resources spent on Quitline-related media are justified or not. Findings may be helpful in responding to Legislative and public inquiries about the current use of funds to support Quitline media. The PDA evaluation team welcomes comments, suggestions, and questions' regarding this report, as the intent is to make this information optimally useful to the DPH, the CT Tobacco and Health Trust Fund Board, and other identified stakeholders.

Report Content and Organization

Evaluating the impact of this anti-tobacco media campaign is complex not only because of the multi-faceted nature of the media design, but also because the CT DPH media campaign supplemented other campaigns that used similar (sometimes identical) media. However, it is vital that DPH receive information on the extent that the media campaigns may have helped to connect tobacco users with cessation resources, namely the Quitline and the BecomeAnEx website. In the longer-term, increased calls to the CT Quitline and use of web-based cessation assistance may lead to decreased prevalence in tobacco use among Connecticut residents.

Therefore, PDA conducted an outcomes analysis to examine the impact of media on CT Quitline call volume and reach.

This report contains three main sections. First, we describe the CT Quitline call volume and Quitline reach, which is the extent to which the Quitline has served all smokers in the state. Next, we describe the implementation of anti-tobacco media campaigns present in CT, including their budgets, purpose, timing, and intensity. Finally, we explore the relationship between the DPH-funded media and Quitline call volume and website visits.

Evaluation Design and Questions

The purpose of this outcome evaluation is to determine the effectiveness of the cessation media campaign in generating calls to the CT Quitline and web visits to [BecomeAnEx.org](http://www.BecomeAnEx.org). The study will answer these evaluation questions:

1. What are the promotional and treatment reach of the CT Quitline?
2. What was the nature of the media campaign and ads?
3. What was the intensity of the campaign, and how does this compare to targets set by the CDC?
4. To what extent are media campaign buys associated with increased enrollments in the Quitline?
5. To what extent are media campaign buys associated with increased visits to www.BecomeAnEx.org?
6. Overall, what are successes and areas for improvement of the adult cessation media campaign outcomes? What are areas for programmatic changes?

Desired outcomes are increased Quitline enrollments among adults age 25 and older, and increased visits to the online cessation resource www.BecomeAnEX.org. In our analysis we examined adults 25 and older—the target audience for the campaign. The nature of results may inform future media buys.

Methodology

The studies in this report are observational in nature and are based on call volume and caller-provided information gathered by Alere Wellbeing Inc, the Quitline vendor. Additionally, information on media campaigns was provided by Cronin and Company, the media vendor, as well as CT DPH and American Legacy Foundation.

PDA received media buy data from the media vendor Cronin & Company in PDF, rich text format, Word documents, and Excel documents. PDA imported data into the statistical software package SPSS for descriptive analysis. These data provide information about the timing of the media buys, the audience reached, and the intensity of the media effort. For broadcast and cable television, the data provided includes the target audience, gross rating points, station, affiliation, day, day part, time, program, duration of ad, reach, and frequency. PDA weighted the broadcast television data by population within each DMA, since the majority of the state lies within the Hartford/New Haven DMA. Online advertisement data files provide weekly impressions served, clicks, and click-through rates for each ad placed. Paid internet search files include weekly impressions, clicks, and click through rates. For print media, daily impressions were provided.

Analyses were conducted using Excel and the statistical software packages SPSS. Descriptive statistics, crosstabulations, and regression modeling were employed. Reach was calculated based on call volume divided by population estimates of smoking using the 2009 and 2010 Connecticut Behavioral Risk Factor Surveillance System (BRFSS), according to standards set by the North American Quitline Consortium (NAQC). More detailed descriptions of study methodologies may be found in each of the respective study sections below.

Limitations

First, this study is limited by several methodological factors. Since this study is observational and not a controlled, randomized experiment, it is impossible to conclude from this study that media “caused” call volume to rise or fall. Instead, this report describes the relationship of call volume to media campaign strength, a relationship which may be influenced by many other factors, such as national trends in smoking or quitting prevalence; the availability of other, local assistance to quit; personal household factors such as a relative who died of lung cancer; and the like.

Second, the evaluation is built around a theory of change that well-executed media products, when distributed through appropriate media channels and at an adequate frequency, will reach Connecticut tobacco users. The expectation is that once ads reach tobacco users, viewers will become aware of and receptive to the ads, which will motivate them to engage in quitting behaviors. However, this evaluation focuses on the relationship between media buys and quitting behaviors as expressed by Quitline calls and website visits. Due to the nature of the analysis, viewers’ awareness of and receptivity to the ads is not accounted for. While a strong relationship between media buys and call volume is a strong indication of media success, understanding the relationship between media buys, viewer ad awareness and receptivity, and call volume provides more comprehensive information.

Quitline Reach

Introduction

Although the primary aim of the Connecticut cessation media campaign was preventing tobacco use among youth, another goal was to connect tobacco users with cessation services. In this section an examination of the “reach” of the Quitline is provided. Reach is a measure of the degree of program enrollment. The “reach” of cessation programs describes the extent to which the program has been successful in drawing in and engaging members of target populations. This section reports the overall rate of reach of the Connecticut Quitline for FY 2011, provides a comparison to the rate of reach achieved in FY 2010, and presents the reach among specific age groups.

Methodology

Reach can be calculated in several different ways depending on the purpose of the investigation. There has been debate within the tobacco cessation community about standards for reach rate calculations. An issue paper¹ was developed on behalf of the North American Quitline Consortium (NAQC, 2009) which provides a rationale and methodology for measuring different types of reach.

PDA calculates two types of program reach, using NAQC-recommended processes:

- **Promotional reach** is a measure of the effectiveness of media and other promotional efforts. Promotional reach is calculated by dividing the number of tobacco users that registered or enrolled in the Quitline by the number of tobacco users residing in the state.
- **Treatment reach** describes the percent of tobacco users in the state that received evidence-based cessation treatment from the Quitline. The treatment reach rate will usually be lower than the promotional reach rate, since treatment reach is based only on those callers who go on to participate in Quitline counseling after enrollment.

Limitations

NAQC recommends that reach be calculated using a numerator and denominator that are as comparable as possible. Ideally, both the numerator and denominator should match the definition of the Quitline target population. For the Connecticut Quitline, this would be all tobacco users residing in Connecticut who are at least 13 years of age. However, due to a number of limitations in the Quitline and BRFSS datasets, we must report reach among a subset of this target population.

- First, we are limited to presenting reach among *cigarette users* only, rather than people who use tobacco of any type (including cigars, pipes, or smokeless tobacco)².

¹ NAQC. (2009). *Measuring Reach of Quitline Programs. Quality Improvement Initiative* (S. Cummins, PhD). Phoenix, AZ.

² The 2009 and 2010 CT BRFSS did not ask the complete set of questions needed to calculate the number of people who use tobacco of any/all types. Data on pipe or cigar use was not collected in either year. Information about smokeless tobacco use was collected in 2010, which would have allowed expansion of the denominator to include

- Second, the BRFSS estimates of tobacco users in the Connecticut are based only on adults ages 18 and older; therefore youth who use the Quitline are excluded from reach calculations.
- Finally, the CT BRFSS uses a relatively small sample size, which can result in somewhat unstable smoking prevalence estimate from year to year. For example, the 2009 CT BRFSS reports that 15.4% of adults are current cigarette users, while the 2010 CT BRFSS reports a smoking prevalence rate of 13.2%. While it is possible that smoking did decline by more than 2 percentage points from 2009 to 2010, the prevalence figures are estimates, and include a margin of error. To compensate for this, we calculated a 95% confidence interval for the reach rates. The confidence interval describes the range within which the actual prevalence estimate would fall 95% of the time.

The exact definitions used in the reach calculations for this report are as follows:

- For promotional reach, the numerator is the number of adults who are current “every day” or “some day” cigarette users, and enrolled in the Quitline during the fiscal year, as indicated by Quitline caller intake data. The denominator for the reach calculations is the number of current adult cigarette users in Connecticut. To obtain the denominator, we took the total number of adult (18+) residents in Connecticut according to the U.S. Census, and multiplied it by the percent of all CT adults (18+) who are “every day” or “some day” cigarette smokers, according to the CT BRFSS.
- For treatment reach, the numerator is limited to adult cigarette smokers who enrolled in the Quitline during the fiscal year, and receive at least one telephone counseling from the Quitline, with or without receipt of nicotine replacement therapy (NRT) from the Quitline³. We used the Quitline vendor’s utilization data to identify callers who met this criterion. The denominator is the same as that used for promotional reach.

Results

EQ1. What are the promotional and treatment reach of the CT Quitline?

Overall Promotional Reach

The Connecticut Quitline reached approximately **1.67%**, of cigarette users in the state (see Table 1). In other words, nearly 17 out of every 1,000 smokers in the state called the Quitline last year. We also calculated a 95% confidence interval for promotional reach. This calculation yielded a confidence interval on promotional reach of **1.50%** to **1.86%**. In other words, we can report with 95% accuracy that the overall promotional reach of the Connecticut Quitline is between 1.50% and 1.86%.

cigarette and smokeless tobacco users. However, in the Quitline intake dataset the proportion of missing data in the smokeless tobacco item was so high that we judged the data field to be unreliable. Therefore the numerator and denominator in the reach calculations are limited to the number of cigarette smokers rather than tobacco users.

³ Nicotine replacement therapy is also an evidence-based cessation treatment. However, since the Connecticut Quitline requires callers to complete one counseling call prior to distribution of NRT, minimal evidence-based treatment is defined as completing at least one counseling call, with or without NRT.

The reach rate was calculated as follows: There were **363,935** current cigarette smokers in CT, according to the BRFSS 2010 and 2010 U.S. Census. This is the denominator for the reach rates. The numerator is the total number of callers to the Quitline from July 1, 2010 through June 30, 2011. While there were a total of **6,729** unique callers to the Quitline during this time, the purpose of the CT Quitline is to reach tobacco users. Therefore, callers who do not call the Quitline for personal help in quitting or staying quit, but are instead calling as a proxy for a friend or family member, or as a healthcare professional or community organization calling for information, are not included in the numerator. There were **6,235** callers to the Quitline who were tobacco users. As described in the limitations above, we further reduced this number to cigarette users only, in order to match the BRFSS numbers, resulting in a count of **6,040** current cigarette users.

The number of cigarette users who called the Quitline (6,040) is divided by the number of cigarette users in Connecticut as estimated by BRFSS (361,178), indicating a reach rate of 1.67%

Change in Reach Over Time

Compared to FY 2010, the FY 2011 promotional reach is substantially higher (0.87% vs. 1.67%). In fact, reach nearly doubled during the past year, a very positive finding for the campaign.

Table 1. Promotional Reach of the Connecticut Quitline by fiscal year

	FY 2010	FY 2011
State population estimate, age 18 and over	2,740,650 ⁴	2,757,082 ⁵
Tobacco use prevalence (95% confidence interval)	15.4% ⁶ (13.9% - 17.0%)	13.2 ⁷ (11.8% - 14.6%)
Estimated number of smokers	422,060	361,178
Quitline call volume ⁸	3,611	6,040
Reach percentage (95% confidence interval)	0.86% (0.78% - 0.95%)	1.67% (1.50% - 1.86%)

As a guide for interpreting these numbers, results from a recent study published in the Journal of Tobacco Control indicates the average quitline in the United States during 2005 achieved a reach of approximately 1%, although individual state quitline reach ranged from 0.01% to 4.3%.⁹

⁴ Source: 2009 U.S. Census population estimates

⁵ Source: 2010 U.S. Census

⁶ Source: 2009 Connecticut BRFSS

⁷ Source: 2010 Connecticut BRFSS

⁸ Source: Alere Wellbeing, Inc., Quitline caller intake data

⁹ Sharon E Cummins, Linda Bailey, Sharon Campbell, Carrie Koon-Kirby, and Shu-Hong Zhu. Tobacco cessation quitlines in North America: a descriptive study. *Tob. Control*, Dec 2007; 16: i9 - i15.

The 2010 NAQC Annual Survey of Quitlines¹⁰ provides similar but more recent contextual information. In 2010, the average quitline reach for states responding to the survey was 1.11% (N=48 quitlines). The FY 2011 reach for the Connecticut Quitline of 1.67% is moderately higher than the mean reach of other state quitlines.

The Center for Disease Control and Prevention (CDC) provides additional guidance for quitlines with regard to reach. The 2007 Best Practices for Comprehensive Tobacco Control Programs suggests that “with sufficient promotion and clinician referral, and with NRT made more easily available, a state quitline could serve 8% of tobacco users aged 18 years and older” and that “approximately 75% of callers (6% of a state’s tobacco users) would seek counseling services.” It is understandable that Connecticut’s Quitline reach did not reach CDC’s benchmarks because the benchmarks are based on media spending of \$2.00 per capita for health communications. In contrast, Connecticut spent an estimated \$0.02 per capita in FY 2011 (based on an estimated media budget of \$75,000 and state population of 3,574,097 based on the 2010 United States Census).

Finally, sustainable methods to achieve greater reach have been found in other states, including Maine, a state that increased quitline reach from 1.9% to 6% in a four-year span by increasing the cigarette tax, expanding hours of quitline operation, and increasing referrals from physicians from 10% to 38% of quitline callers¹¹. A sustainable method may be to increase the number of callers who are referred by physicians, and to ensure any additional dollars generated through tobacco tax increases are directed toward the CT Quitline operations.

Planning for potential increases in call volume

Efforts to increase reach must take into account a potential surge in call volume anticipated in the coming year. The FDA has approved new requirements for cigarette package warning labels in the United States. The requirements are scheduled to be implemented in September, 2012, and will include a graphic image depicting the harm of cigarettes, and will include the 1-800-QUIT-NOW telephone number. Quitlines across the U.S. anticipate that call volume will increase as a result of the labels. In fact, there were spikes in call volume noted by several quitlines immediately following a June 21, 2011 press release announcing the FDA regulation. Once the warning labels begin to circulate, the number of calls generated to the Quitline is likely to increase.

The DPH, the media vendor, and the Quitline vendor will need to plan for the potential call volume surge, and consider whether to make any changes in funding or promotion to avoid outstripping the capacity of the Quitline to serve callers. Experience from other countries such as New Zealand¹², Australia¹³, and the Netherlands¹⁴ may help to guide this planning process.

¹⁰North American Quitline Consortium. 2011. Results from the 2010 NAQC Annual Survey of Quitlines. Available at <http://www.naquitline.org/?page=survey2010>

¹¹ Susan S. Woods, and Amy Haskins. Increasing reach of quitline services in a US state with comprehensive tobacco treatment. *Tob. Control*, 2007, 16(Suppl I):i33-i36.

¹² Wilson N, Weerasekera D, Hoek J (2010) Increased smoker recognition of a national quitline number following introduction of improved pack warnings: ITC Project New Zealand. *Nicotine & Tobacco Research*, (12): 72-77.

¹³ Miller CL, Hill DJ, Quester, PG et al (2009) Impact on the Australian Quitline of new graphic cigarette pack warnings including the Quitline number. *Tobacco Control* (18):235-237.

¹⁴ Willemsen MC, Simons C, Zeeman G. (2002). Impacts of the new EU health warnings on the Dutch quit line. *Tobacco Control* (11):381-382.

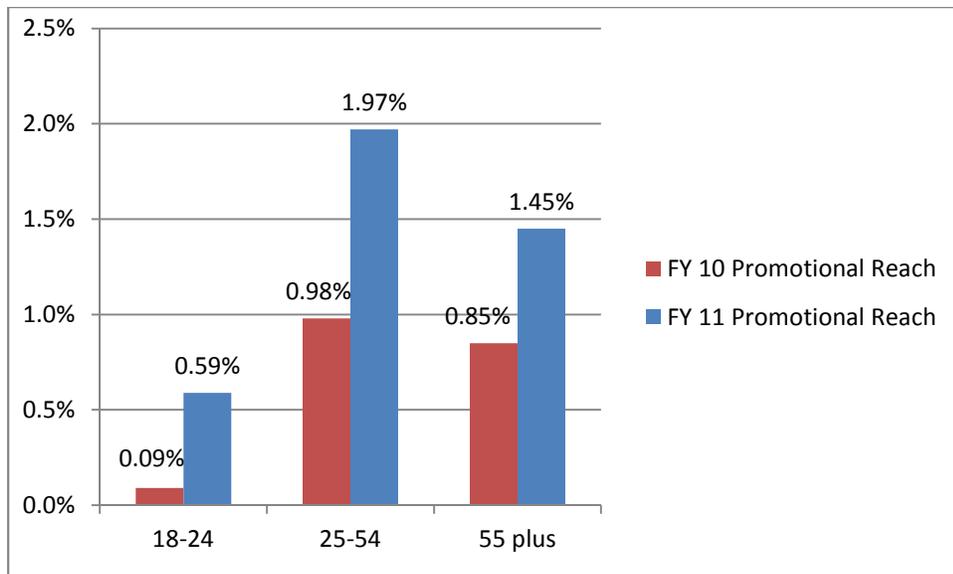
These countries experienced increases as large as 2 to 3.5 times the call volume once labels were introduced. It is expected that states which have had no media promotion or modest media promotion of their quitline (such as Connecticut), may experience larger surges following the new labeling as compared to states which have had extensive media promotions already in place. Potential strategies to accommodate greater volume include altering the design of media promotion of the Quitline during the launch period of the warning labels, or seeking alternative funding sources such as federal dollars and cost-sharing with health plans or Medicaid. Re-direction of Quitline callers to the free resources such as www.BecomeAnEx.org is also an option.

Promotional Reach by Target Group

The media campaign as implemented by the vendor Cronin & Co. identified adults ages 25 and older as the primary target of the 2011 adult cessation media campaign. However, PDA repeated the comparison of the three different age groups which had been performed in last year's report to examine closely how promotional reach has changed over time. We calculated promotional reach for three different age groups: 18-24 years old, 25-54 years, and 55 years and older.

As described above, the numerator and denominator were the number of cigarette smokers, instead of the number of tobacco users. Reach to adult smokers age 25-54 had the highest reach, which makes sense given that most media that potentially drives people to quitlines specifically targeted this group (see Figure 1). Importantly, reach for each group rose substantially from last year, moving 0.98% to 1.97% among 25-54 year olds, and 0.85% to 1.45% among those 55 and over. Reach to the youngest group was relatively low, although this should be interpreted with caution since it is based on a small BRFSS sample; thus the actual smoking prevalence may differ from the estimate reported here. Further, there were 259 persons in the Quitline intake dataset with no age reported, which excludes them from this analysis and may slightly underestimate the actual promotional reach by age group.

Figure 1. Promotional reach of the CT Quitline by target age group for each fiscal year



Overall Treatment Reach

We calculated treatment reach for the Connecticut Quitline to determine the proportion of smokers in Connecticut who receive at least minimal evidence-based treatment. Treatment reach indicates the potential impact of the Quitline, as those who receive at least minimal treatment are expected to have a greater chance of quitting and potentially impacting state prevalence.

The Connecticut Quitline reached approximately **1.34%** of cigarette smokers in the state, with a 95% confidence interval of **1.21%** to **1.50%**. In other words, approximately 13 out of every 1,000 cigarette smokers in the state received counseling via the Quitline in FY 2011.

The treatment reach rate was calculated as follows: There were **6,040** cigarette users who called the Connecticut Quitline to ask for help with personally quitting or staying quit in FY 2011. Of those callers, there were **5,674** who requested counseling and **4,877** received at least one live counseling call (see Table 2). The total number of smokers in the state of Connecticut as estimated by BRFSS 2010 and 2010 U.S. Census was **363,935**.

Like promotional reach, treatment reach also improved significantly from FY 10 to FY 11. In FY 10, the promotional reach was **0.74%**. This is another positive finding for the campaign, and suggests that changes made from FY 10 to FY 11 greatly improved both promotional and treatment reach levels.

However, approximately 13%¹⁵ of callers who register with the Quitline do not receive a minimal level of treatment; the extent to which the Quitline vendor could provide counseling to these individuals would be likely to increase the number of quitters in Connecticut even more and potentially impact state prevalence.

Table 2. Treatment Reach of the Connecticut Quitline by fiscal year

¹⁵ See Final Quitline Evaluation Report, submitted by PDA to the Connecticut Department of Health, October 2011.

	FY 2010	FY 2011
State population estimate, age 18 and over	2,740,650 ¹⁶	2,757,082 ¹⁷
Tobacco use prevalence (95% confidence interval)	15.4% ¹⁸ (13.9% - 17.0%)	13.2% ¹⁹ (11.8% - 14.6%)
Estimated number of cigarette smokers	422,060	361,178
Number of Quitline callers receiving evidence-based treatment ²⁰	3,085	4,877
Reach percentage (95% confidence interval)	0.73% (0.66% - 0.81%)	1.34% (1.21% - 1.50%)

Conclusions

In FY 2011, the Connecticut Quitline achieved a promotional reach of 1.67%. Given that in one year the Connecticut Quitline nearly doubled its reach, and that the current reach rate is higher than the average reach of other state quitlines, this is a very positive finding. As we will present in the next section, this is even more impressive given that the media budget did not increase, and in fact decreased by \$5,000 from FY 10 to FY 11. This suggests that the campaign did a much better job strategically in using resources to efficiently and effectively reach its target audience. Furthermore, it should be noted that smoking prevalence in Connecticut (13.2%²¹) is lower than the national average (20.8%), meaning that the population of smokers in the state is relatively small. Since cessation media must be targeted to a smaller population, it may require more precise targeting of media to reach this group, making it more challenging to affect reach in this lower-prevalence state. This is further evidence of the success of the campaign in terms of promotional reach.

Promotional reach among adults ages 25-54 was higher than reach among either younger or older smokers. At 1.97%, reach among this group is about twice the average reach rate attained by quitlines nationwide, and represents a doubling of the reach rate attained for this group in the previous year. We find this to be a major success of the media campaign.

Any planning to increase Quitline reach should take into account a potential surge in call volume anticipated to occur after the introduction of cigarette package warning labels in September 2012. The DPH, along with the media and Quitline vendors, will need to plan for the potential volume increase so that the capacity and the budget of the Quitline are not exceeded. Potential strategies include altering the design of media promotion of the Quitline, and seeking alternative funding sources such as federal dollars or cost-sharing with health plans or Medicaid. Redirecting callers to free resources such as www.BecomeAnEx.org is also a potential solution.

Connecticut's rate of treatment reach is 1.34%. This is also much higher than the 0.74% treatment reach of FY 2010. This should be taken as another positive finding for the campaign.

¹⁶ Source: 2009 U.S. Census population estimates

¹⁷ Source: 2010 U.S. Census

¹⁸ Source: 2009 Connecticut BRFSS

¹⁹ Source: 2010 Connecticut BRFSS

²⁰ Source: Alere Wellbeing, Inc., Quitline caller data

²¹ Report of the Tobacco and Smoking Cessation Task Force to the Sustainment Board.

http://www.ct.gov/sustinet/lib/sustinet/taskforces/tobaccotaskforce/07012010report/tobacco_task_force_july_2010.pdf. July 1, 2010.

However, approximately 13% of callers who register with the Quitline do not receive a minimal level of treatment; the extent to which the Quitline vendor could provide counseling to these individuals would be likely to increase the number of quitters in Connecticut even more and potentially impact state prevalence.

Finally, it should be noted that reach is constrained by Quitline funding and funding policies. Quitline reach may only increase to the extent that funding is available. Additional resources may be obtained by increasing the Quitline budget and/or reducing NRT benefits and reallocating the funds to Quitline counseling services. Second, it is important to note that Cronin's media promotions likely motivated many more tobacco users to quit who did not call the Quitline, but did attempt to quit on their own or through other supports, such as the BecomeAnEx.org website. These effects of the media campaign are not accounted for in reach calculations.

Media Implementation

In this section, we first present the overall DPH media budget. Next we describe the DPH-funded adult cessation media campaign, since that is the main focus of our analyses. We describe the types of media purchased and the specific spots that were placed. We then provide similar information for other anti-tobacco campaigns that had a presence in Connecticut during the study period, and thus may have influenced Quitline call volume levels. These include the DPH-funded prevention campaign, and cessation campaigns sponsored by American Legacy Foundation and the Ad Council.

Media Budget

The majority of the Connecticut DPH overall media budget was devoted to prevention among youth and young adults, with a smaller portion allocated to promoting cessation among adults. The media budgets for FY 2010 and 2011 are provided in Table 3.

The cessation campaign included broadcast and cable television buys, online banner ads, and sponsored internet search engine results. According to the estimated budget provided by Cronin to CT DPH, the cessation budget for FY 2010 and FY 2011 had a very similar media mix, with the largest portion of cessation media resources dedicated to online banners (42%), followed by the broadcast television (32%). In FY 2011, \$5,000 less was spent on online ads compared to FY 2010, which accounted for the drop in cessation budget. Importantly, although the budget remained essentially unchanged, reach increased significantly from FY 2010 to FY 2011 (see Table 2 in the previous section of this report), suggesting that FY 2011 resources were allocated in a more effective manner to reach the target audience.

The prevention campaign included a Call for Entries component which publicized an ad contest, and placement of winning contest entries using broadcast and cable television buys, online ads, sponsored internet search engine results, print, and mobile advertisements. Here the largest portion of the budget was for broadcast, which received 54% of the budget, followed by online ads with 22%. The prevention budget decreased by \$47,000 from FY 2010 to FY 2011, due to discontinuing print and mobile advertisements. In addition, dollars were shifted from online ads to broadcast for FY 2011.

Table 3. FY 2010 and 2011 Connecticut DPH media budgets²²

Service	FY 2010 Budget	FY 2011 Budget	Total Budget	% of Budget Allocated by Item
Broadcast television	\$25,000	\$25,000	\$50,000	32%
Cable television	\$10,000	\$10,000	\$20,000	13%
Online ads	\$35,000	\$30,000	\$65,000	42%
Sponsored search results	\$10,000	\$10,000	\$20,000	13%
Total Cessation Media	\$80,000	\$75,000	\$155,000	100%
Broadcast television	\$151,000	\$184,000	\$335,000	54%
Cable television	\$40,000	\$40,000	\$80,000	13%
Online ads	\$85,000	\$55,000	\$140,000	22%
Sponsored search results	\$10,000	\$10,000	\$20,000	3%
Print	\$40,000	\$0	\$40,000	6%
Mobile	\$10,000	\$0	\$10,000	2%
Total Prevention Media	\$336,000	\$289,000	\$625,000	100%

Description of Connecticut Media Implementation

Introduction

There were two overarching media efforts funded by CT DPH that may have helped connect tobacco users to cessation resources. The first was the adult cessation media campaign, which included broadcast and cable television, online ads, and paid internet search results. The television, online and paid search ads were primarily English language ads, but each included some Spanish language placements. This campaign is the primary focus of this report. The second media effort funded by the CT DPH was a prevention campaign, which consisted of the prevention contest and the placement of winning spots. Although the prevention campaign delivered anti-tobacco messages, the messages were directed toward youth and did not provide information about the Quitline or the Quitline telephone number. Therefore, although the prevention campaign has the potential to encourage cessation among current tobacco users, we expect it is less likely to influence Quitline call volume.

In addition, there were two externally funded anti-tobacco media campaigns that overlapped with the CT DPH placements – American Legacy Foundation (“Legacy”) and the Ad Council each conducted a campaign within the state in the 113 weeks included in this analysis. PDA was able to obtain broadcast data from Legacy in time for this report, but no data from the Ad Council. The information obtained for these campaigns is included here, as these were major media efforts that have the potential to influence CT Quitline call volume.

²² Source: Media Buy planning documents provided by Cronin & Co.

This section is organized by evaluation question. First the campaign advertisements are described. This is followed by information about the campaign timing and intensity. Finally, the strength of buys is compared to benchmarks set by the Centers for Disease Control (CDC).

EQ2. What was the nature of the Campaigns and Ads?

As an overview, a summary description of the FY 2010 and FY 2011 television and radio broadcast campaigns is provided in Table 4, along with the advertisements associated with each campaign. The campaigns and associated media are further described in the sections following the table.

Table 4. Overview of FY 10 and FY11 campaigns, including sponsor, advertisements, and tagging

Sponsor	Campaign	Tagging²³	Media name and type
Connecticut DPH	Adult Cessation Campaign – English and Spanish	Connecticut Quitline 1-800-QUIT-NOW www.BecomeAnEx.org www.QueDesperdicio.org	“Start Your Day” (TV) “Driving” (TV) “Leap” (TV) “Driving” (TV, Spanish) “Driving” (online) “Drinking” (online) “Boss” (online) “Re-Learn” (online) Paid internet search results
	Youth Prevention Campaign - Contest – English and Spanish	www.itsawaste.org	Call for entries (TV) Call for entries (TV, Spanish) Online ads Paid internet search results
	Youth Prevention Campaign - Winners Spot– English and Spanish	www.itsawaste.org www.QueDesperdicio.org	“On Top of Old Smokey” (TV) “Knowing More” (TV) “Is It Really Worth It” (TV) “La Verdad” (TV, Spanish) Radio (sponsor reads, interviews, guest spots) Paid internet search results
American Legacy Foundation	Adult cessation	www.BecomeAnEx.org	“Driving” (TV) “Drinking” (TV) Radio Cinema ads Out-of-home
Ad Council	Adult cessation	www.BecomeAnEx.org	“Workday” (TV) “Friends” (TV) Radio Online ads Billboards Out-of-home

²³ Within each campaign, tagging may vary by individual ad placement.

Adult Cessation Campaign (English & Spanish)

The objective of the cessation media placed by Cronin and Company was to promote cessation and provide information on how to quit and where to get help with quitting. Since the cessation media budget was relatively small, the media plan was designed to get the most mileage possible from these limited dollars. Cronin obtained existing creative developed by Legacy as part of the *Become an EX* campaign. Results of a recent evaluation of the national EX campaign indicated tobacco users who were aware of the EX campaign were over 1.5 times more likely to be more amenable to quitting tobacco²⁴. The DPH-funded ads were placed to supplement existing media buys, thus extending the presence of cessation media over a longer timespan. The DPH-funded cessation campaign was run between April 26, 2010 and August, 29 2011, though due to timing constraints this report only includes data through June 20, 2011²⁵. All broadcast and online ads and paid search results tagged or linked to www.BecomeAnEx.org. In addition, some of these ads posted the Quitline logo and telephone number. Spanish language online and broadcast ads tagged the Quitline number and www.QueDesperdicio.org (the DPH Spanish-language youth prevention site). For a full description of the television ads, online ads, and paid search results, please see the Appendix. These ads were also described in detail in last year's media call volume report.

Prevention Campaign (English and Spanish)

Prevention contest - The first component of the youth prevention campaign was a call for entries for the "It's a Waste" contest, in which youth were asked to create an anti-tobacco video message. Winning ads would be selected by public vote using a format similar to the popular television show, *American Idol*. The winning entries would be featured in a television and internet ad campaign. Ads promoting the contest were run from April 15 through May 4, 2010. The target audience for this campaign was all youth and young adults 13-24 years old. The prevention campaign did not directly tag the Quitline or promote the telephone number; all ads tagged www.itsawaste.org.

Prevention - Winners Spot – The second youth prevention component featured the winners of the "It's a Waste" contest, and winning ads were run May 31 through August 29, 2011 (due to timing constraints this report only incorporates data through June 20, 2011). The target audiences were youth 13-24 years old. Three English-language ads were selected as winners. All winning ads used the "It's a Waste" message. For a full description of these ads, please see the Appendix. A full description of the ads is also available in last year's report. All ads tagged www.itsawaste.org and Spanish language ads tagged www.QueDesperdicio.org.

Prevention online and print ads and paid search results – The prevention campaign target audience was 13-24 years olds. Online and print ads, including paid search engine ads, were also developed by Cronin. All prevention-oriented online ads and paid searches directed viewers to the www.itsawaste.org website. The prevention campaign did not directly tag the Quitline or promote the telephone number.

²⁴ Donna M. Vallone, Jennifer C. Duke, Jennifer Cullen, Kristen L. McCausland, & Jane A Allen. Evaluation of EX: A National Mass Media Smoking Cessation Campaign. Dec 2010, Am. Journal of Pub. Health.

²⁵ A third report will be produced in September, 2012, and will include data from the entire campaign as well as additional media to be run in 2012.

Prevention outreach activities - Finally, Cronin supplemented these media efforts by implementing outreach activities, including a publicity campaign aimed at secondary schools and colleges in Connecticut, as well English- and Spanish-speaking community organizations.

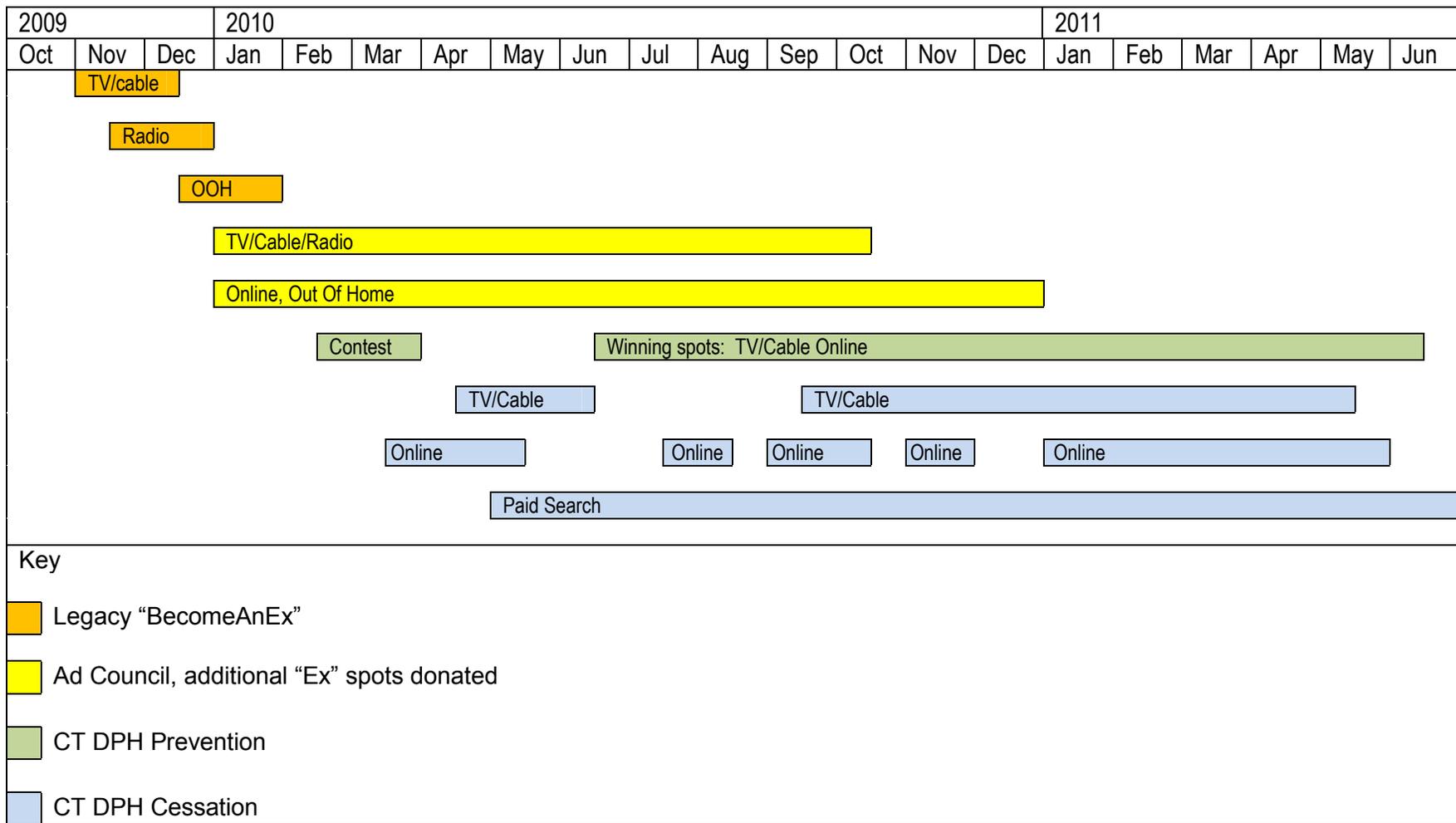
External Broadcast Campaigns in Connecticut

American Legacy Foundation - Adult Cessation Campaign – Legacy funds a national ad campaign to promote cessation. This campaign had a presence in Connecticut starting in 2008 and continuing into 2010. No Legacy ads were run after February 15, 2010. This evaluation does not seek to evaluate the effectiveness of the Legacy campaign, but to control for its presence in CT in our analysis of the effectiveness of media sponsored by DPH. Legacy’s media strategy includes timing ads to capitalize on the seasonal nature of cessation. Ad placements are loaded with increasing frequency leading up to January 1, when many tobacco users make new quit attempts. For a full description of the Legacy ads, please see the Appendix. A full description is also available in last year’s media call volume report.

Legacy ads directed tobacco users to the online service www.BecomeAnEX.org. Legacy provides this free, online self-directed cessation service that offers information, guidance and support with quitting, and provides an online forum to connect with others who have quit or want to quit. Legacy has partnered with tobacco control efforts in several states, including Connecticut DPH. Legacy provides a subpage on BecomeAnEX.org that provides information about the local cessation resources. In this way, the Legacy website provides an indirect route to connect Connecticut tobacco users to the Quitline.

Ad Council - Adult Cessation Campaign - This campaign used funding donated by the Ad Council, and was intended to extend the Become An EX campaign for a longer period of time. In Connecticut, the donated spots ran from February through the end of September 2010, a period which overlaps with the DPH-funded cessation campaign. The Ad Council ran two advertisements created as part of the *Become an EX* campaign, “Workday” and “Friends,” both of which feature the re-learn message and the EX logo. The Ad Council also placed radio, online, billboard and out-of-home advertisements. PDA was unable to obtain media buy data for these donated placements, so we have no information about the intensity of the buys nor the specific buy schedule. We were unable to include these spots in our analyses, which is a limitation of the study design. However, we expect that the donated spots may have contributed to the Quitline call volume during this period. A campaign timeline is provided in Figure 2.

Figure 2. Campaign timeline



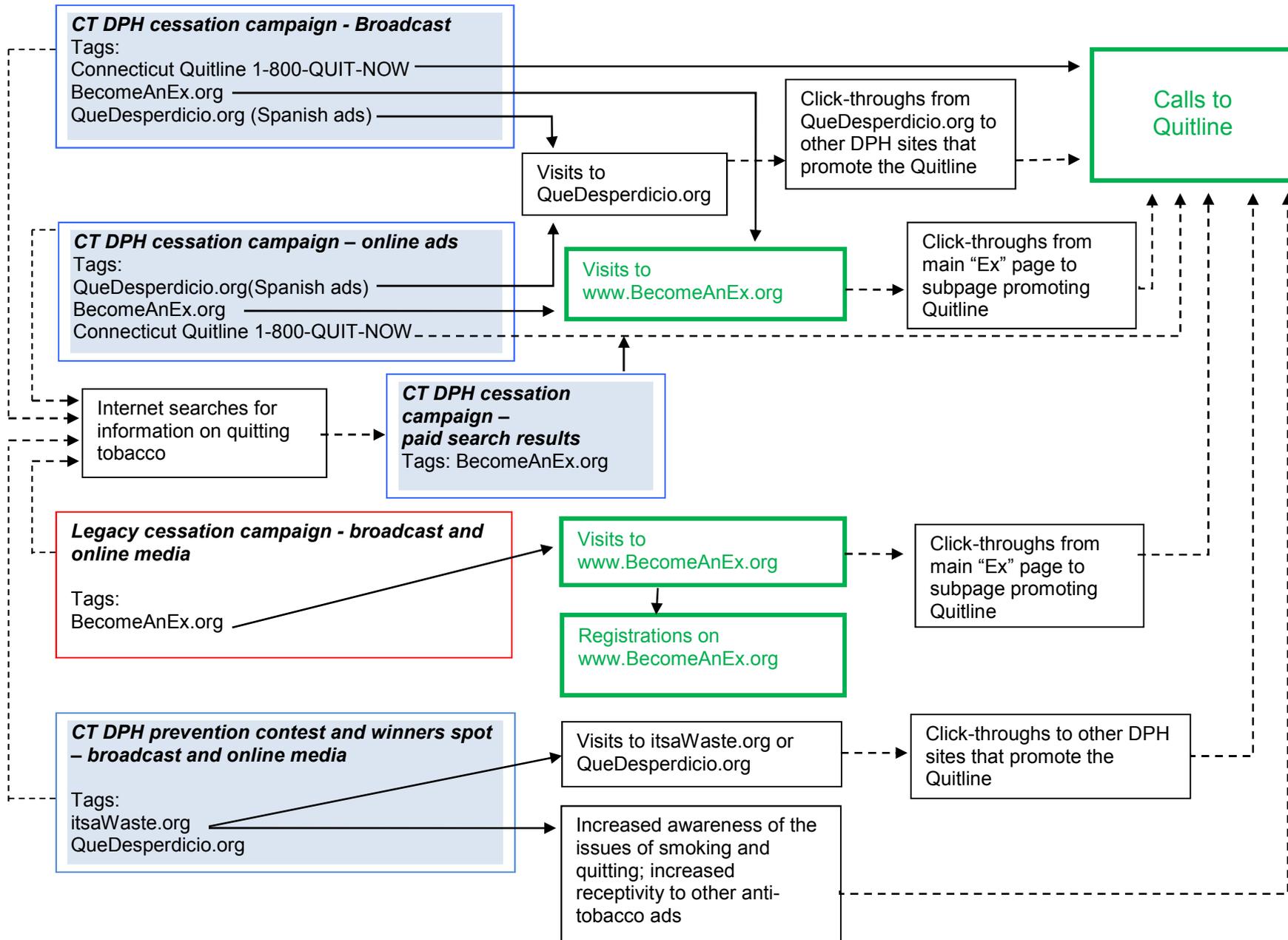
Potential connections between media campaigns and the Quitline or other cessation resources

Some of the media campaigns described above directly promoted the Quitline by tagging the ads with the Quitline logo and telephone number. These ads are intended to promote and encourage quitting behavior, and provide information about how to connect with the Quitline. Other ads promote the Quitline indirectly, by tagging the URL to a website (www.BecomeAnEx.org) which was primarily a cessation assistance website. On a website subpage (“Resources”) local resources are listed by state, including the Connecticut Quitline information and telephone number. Finally, the prevention campaign ads provided the least direct route to the Quitline, since the tags on these ads direct viewers to prevention-oriented websites which do not directly promote or connect to the Quitline. However, even ads that do not promote the Quitline may increase viewers’ awareness of the issues of tobacco and the importance of quitting. This heightened awareness may increase viewers’ receptivity to other ads they may see, including ads that do promote the Quitline. In this way, prevention ads could in theory have an impact on Quitline call volume.

The potential pathways connecting ad viewers to the Quitline are depicted in Figure 3.

- In the figure, direct connections from media to an anti-tobacco resource are depicted with solid arrows, and indirect connections with dashed arrows.
- DPH-funded media activities are shaded in blue.
- Connections to a cessation service are outlined in green.

Figure 3. Potential pathways connecting ad viewers to Quitline and online resources



Campaign Intensity

EQ3. What was the intensity of the campaign, and how does this compare to targets set by the CDC?

To evaluate the intensity of the CT DPH broadcast campaigns, we use the media measures of Gross Rating Points (GRP) and the more refined Targeted Rating Points (TRPs). The total intensity of a broadcast media campaign can be measured in Gross Rating Points (GRPs) for ongoing anti-tobacco campaigns. The calculation multiplies the placement (stations ads will run on and the timing of the ads) by the number of spots, which provides an overall measure of the strength of the campaign. TRPs describe the potential viewership of an ad within the ad's specific target audience. TRPs are dependent on many factors, including the program, station, and time of day that an advertisement is placed. PDA received TRPs for each ad, for each designated marked area (DMA) by week.

The state of Connecticut includes two DMAs, the Hartford/New Haven DMA, which covers most of the state, and the Fairfield DMA, which covers the southwest corner. Broadcast media within the Fairfield DMA overlaps with that of New York City. In order to specifically target CT residents within the Fairfield DMA, advertisements were placed on cable television. For this reason, GRPs are only provided for the Hartford/New Haven DMA.

Overall Strength of ad buys

Table 5 indicates the strength of buys for this DMA for FY 2010 and FY 2011 combined. The Prevention Contest and Prevention Winning Spots had the highest total GRPs, which were about equal. However, the Call for Entries GRPs were loaded onto a very brief time period, while the Winning Spots were spread out over more than a year, resulting in very different levels of intensity over time. In comparison, the Legacy television ads had a slightly lower GRP total, spread out over a 20-week period. In contrast, the DPH cessation ads had the lowest intensity level as measured by total GRPs, and the second lowest average weekly GRPs.

Table 5. Strength of buy (GRPs) in the Hartford/New Haven DMA FY 2010 and FY 2011 combined

Campaign	Total GRPs	Weeks with any GRPs	Average GRPs per week
DPH Cessation ads	719.4	32	53.6
DPH Prevention: Contest	1,921.4	7	274.5
DPH Prevention: Winning spots	1,948.8	56	41.5
Legacy TV & radio ads	1,500.0	20	75.0

Strength of buys by FY: Table 6 indicates the strength of buys for this DMA for FY 2010 and FY 2011. For the cessation campaign, there is a very large improvement in the intensity of the campaign (total GRPs) and in the duration of the campaign (weeks with any GRPs) from FY 2010 to FY 2011. The average number of GRPs per week rose slightly. The increase in intensity and the longer timespan of the campaign are likely the primary reasons why promotional reach showed a large improvement from FY 10 to FY 11. Connecticut residents were exposed to cessation ads at a much greater frequency, and for a much larger amount of time in FY 11. CT

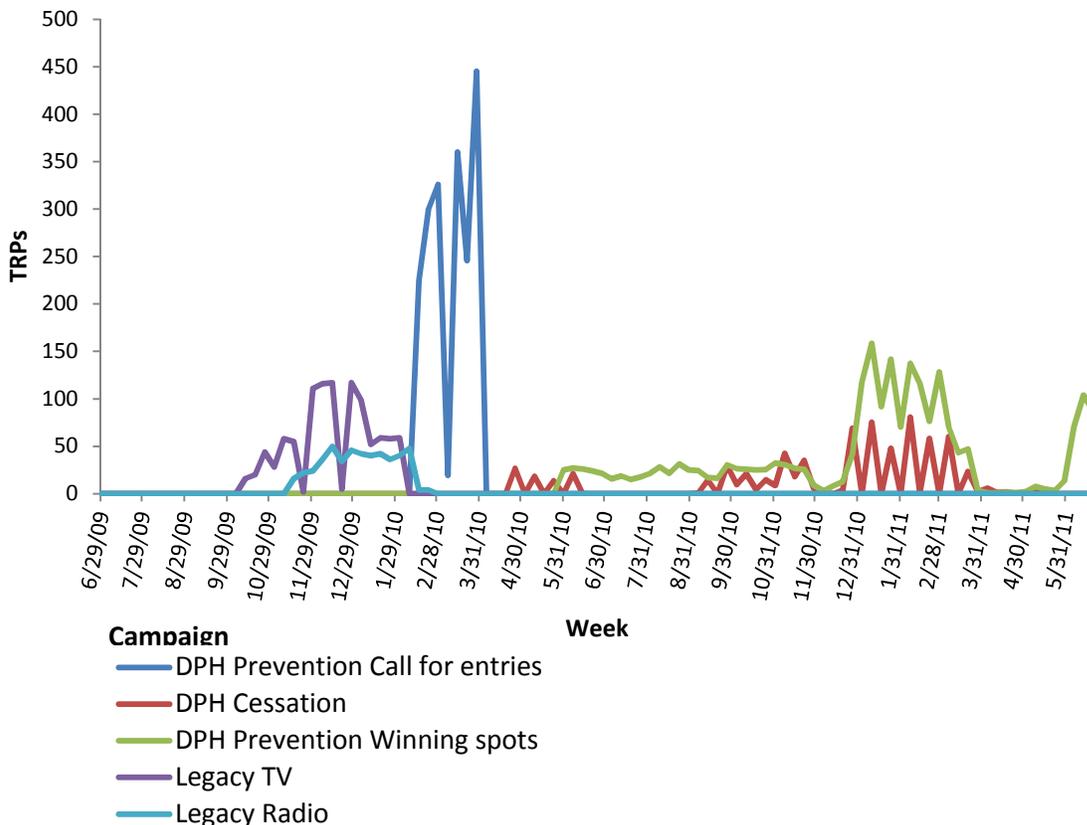
DPH and Cronin & Co. should be commended for improving the strength of the media buy while maintaining the same budget across the two years.

Table 6. Strength of buy (GRPs) in the Hartford/New Haven DMA FY 2010

Campaign	Total GRPs		Weeks with any GRPs		Average GRPs per week	
	FY 10	FY 11	FY 10	FY 11	FY 10	FY 11
DPH Cessation ads	79.9	639.5	4	28	20.0	22.8
DPH Prevention: Contest	1,921.4	0	7	0	274.5	0
DPH Prevention: Winning spots	375.7	1,573.1	5	51	22.1	52.4
Legacy TV & radio ads	1,500.0	0	20	0	75.0	0

Strength of ad buys within the target audience -The weekly broadcast spots are presented by campaign, and the intensity levels with the target audiences are provided in Figure 4.

Figure 4. Weekly target rating points for combined TV, cable, and radio spots broadcast over time, by campaign



Comparison of ad buys to recommend intensity levels

The CDC Best Practices for Comprehensive Tobacco Control Programs provides recommendations on the reach of ads (measured in TRPs) for ongoing anti-tobacco campaigns. The recommendation is that campaigns should achieve 1,200 TRPs per quarter during the introduction of a campaign and 800 TRPs per quarter thereafter. A second benchmark by which to assess campaign levels is presented in the Global Dialogue for Effective Stop Smoking Campaigns' Campaign Development Tool Kit (2007)²⁶, which reports that positive results have been found in campaigns that maintained a presence of 400-600 TRPs/GRPs per four weeks during periods when their campaigns are on air.

As described in the previous year's call volume report, the intensity of the Prevention Call for Entries campaigns meets both the benchmark for quarterly TRP levels and the benchmark for four-week TRP levels that have been shown to be effective in other campaigns. Likewise, the strength of the Legacy campaign was sufficient for the most part; the campaign had sufficient levels of quarterly TRPs, but three of the five 4-week periods during the campaign had lower than recommended TRP levels. The intensity levels of the CT DPH cessation and the prevention winning spots campaigns fell short of the intensity levels that have been shown to be effective elsewhere, both in terms of quarterly and 4-week TRP levels.

Finally, The Global Dialogue for Effective Stop-Smoking Campaign Tool Kit states that during the first six to twelve months of a media campaign messages should be aired as continuously as possible, especially if a brand is trying to be established. This recommendation supports the chosen strategy of the DPH cessation campaign, which was to build upon and extend the presence of the existing Legacy campaign, with the addition of the CT Quitline taglines. During FY10, the combination of Legacy, Ad Council and DPH buys provide for a consistent presence of cessation messages across most of the calendar year, although only the DPH-funded ads specifically tag the CT Quitline. Beginning in September, 2010, the DPH cessation campaign maintained a more consistent presence, with ads ongoing for a period of several months.

Conclusions

Strength of the campaign

The strength of the cessation buy was greatly increased from 2010 to 2011, using essentially the same budget amount, which is a major success of the media effort. The increase in intensity and the longer timespan of the campaign are likely the primary reasons why promotional reach showed a large improvement from FY 10 to FY 11. Connecticut residents were exposed to cessation ads at a similar frequency, but for a much longer period of time in FY 11. CT DPH and Cronin & Co. should be commended for improving the strength of the media buy while maintaining the same budget across the two years.

Considering the relative strength of all media campaigns that were present in Connecticut during the two-year study period, the campaigns with the strongest presence among target audiences are the two prevention campaigns. These are followed by the Legacy TV and radio campaigns. The presence of the DPH cessation effort was weaker. However, the placement of

²⁶ Global Dialogue for Effective Stop Smoking Campaigns. (2007) Tool Kit. Available from:
http://www.stopsmokingcampaigns.org/campaign_tool_kit

the DPH cessation campaign did successfully extend the presence of the Become An Ex campaign in Connecticut, and ensured that there was at least a modest cessation campaign occurring in each calendar quarter.

Despite the improvement in the intensity levels over time, the CT DPH cessation and prevention winning spots campaigns still fell short of the intensity levels that have been shown to be effective elsewhere, both in terms of quarterly and 4-week TRP levels. Additional media funds would be required to extend the presence of cessation media year-round, and to raise the intensity level of the campaign closer to recommended levels.

Tagging

One way to improve the effectiveness of the CT DPH cessation media without much change in cost is to more directly promote the Quitline with the existing ad buys. Compared to the online BecomeAnEx program, the CT Quitline is a more intensive intervention. While both the online and Quitline programs are free for CT residents, the Quitline provides free NRT along with a multi-session counseling program, which has been demonstrated to be an intensive, effective cessation aid. The effectiveness of online cessation assistance without NRT is still under investigation. Therefore, in order to have the greatest possible impact on tobacco use prevalence, we recommend that DPH-funded media directly tag and promote the most intensive intervention available – the Quitline -- rather than directing callers solely to BecomeAnEx.org. We recommend this strategy be used to the extent that the Quitline budget has sufficient funds to provide services to a greater number of callers.

DPH-funded online ads and paid searches did not directly tag the Quitline telephone number. Viewers were directed instead to the BecomeAnEx.org website. As a Legacy Alliance partner, the CT DPH was provided with a Connecticut-specific subpage which displays the Quitline number as a local resource. However, the resource subpage is “buried” somewhat deeply within the web page site map, and we suspect that the easy availability of the BecomeAnEx online cessation program likely resulted in viewers remaining on the “Ex” site, and possibly enrolling in and using the “Ex” website program rather than calling the Quitline for cessation assistance.

The majority of media dollars are allocated to prevention, and as a result the prevention campaign has the potential to reach a greater number of both youth and adults than does the cessation campaign. Some proportion of those exposed to prevention ads will be tobacco users, yet, if tobacco users seek out the prevention website they will find clear anti-tobacco messages, but they will not find any information about getting help with quitting. We recommend taking advantage of the greater reach of the prevention ads to promote the Quitline. This can be done by adding a link to the Quitline online registration on the prevention website www.itsawaste.org. This is a low-cost way to get more mileage out of the prevention campaign.

In addition, the Spanish language cessation ads could utilize different tags that are more likely to connect Spanish-speaking tobacco users with cessation resources. While some ads tagged the Quitline telephone number (the Quitline provides services in Spanish), other ads tagged the DPH prevention website, www.quedesperdicio.org. While this is a Spanish-language website, it focuses on youth and prevention, and does not provide information about how to get help with quitting tobacco. The Quitline’s online registration site, <https://www.quitnow.net/connecticut/>, was not tagged, since the site is English-only. We recommend two low-cost strategies to ensure that Spanish speakers are connected to resources that offer both Spanish language and cessation help. First, post the Quitline phone number and a direct link to the Quitline online

registration on both www.itsawaste.org and www.quedesperdicio.org. This way tobacco users who come to the prevention website can be directed to cessation help. Second, there is a Spanish language version of the BecomeAnEx website, <http://es.becomeanex.org>. The DPH should consider tagging this site along with the Quitline phone number on Spanish cessation ads.

Media Impact on Call Volume and Web Visits

Introduction

The evaluation team implemented multivariate models to examine the impact of a variety of media. This analysis examined the theory that well-produced, well-placed broadcast, Internet and other media would be expected to positively impact Quitline call volume and web visits. More specifically, the more media generated, the higher call volume and web visits become. This hypothesis is tested using multivariate models, and results provide a thorough assessment of the quality of CT DPH media efforts.

Previous sections of this report have described all anti-tobacco media efforts present in Connecticut during a two-year period, July 2009 – June 2011. This next chapter on Media Impact on Call Volume and Web Visits will have a narrower focus, both in the range of media efforts examined and in the timeframe. We will provide a critical description of the range of media activities funded by DPH and produced by Cronin and Company, LLC between March 1, 2010 and June 26, 2011. We assess data for this time period because March 1 is the first date that we received data for web visits to BecomeAnEx.org. In last year's report, we were only able to report on media impact on call volume, and not on web visits, because we did not receive web data in time for the report. In the present report, we are able to provide a full analysis of media's impact on both call volume and web visits, thus describing the success of media efforts in connecting tobacco users to each type of cessation assistance.

EQ4. To what extent are media campaign buys associated with increased enrollments in the Quitline?

EQ5. To what extent are media campaign buys associated with increased visits to BecomeAnEx.org?

Methodology

This study is observational in nature. Data on call volume, caller characteristics, and indicators of the strength of media efforts were collected retrospectively and analyzed in a regression model to understand the relationship of call volume to a full range of CT DPH-sponsored media: cessation television and online advertisements and paid internet search results; and prevention television and online advertisements and paid online search results. Next, the data sources, analyses, and limitations of this methodology are described.

Data Sources

Data on media was obtained through Cronin and DPH, as described in previous sections of this report.

Data on call volume and caller characteristics was obtained from Alere Wellbeing, Inc., the Quitline vendor. This analysis reports on all tobacco users who were calling to quit themselves. This subset of callers (N = 6,457) was selected for analysis because tobacco users are the desired audience of the cessation media campaigns. The analysis is conducted on weekly call volume within each DMA. Weighting was conducted with 75% weighted for the Hartford/New Haven DMA and 25% for the Fairfield DMA, analogous to the relative CT smoking population distributions. The initial and final partial weeks were excluded from the analysis, and the remaining 68 weeks from March 1, 2010 through June 26, 2011 were included in the analysis.

Data on web visits and registrations made from Connecticut IP addresses was obtained from American Legacy Foundation, who operates the cessation website BecomeAnEx.org. Data are available for the period March 1, 2010 through June 27, 2011.

Limitations

Because this study is observational and not a controlled, randomized experiment, it is impossible to conclude from these results that media “caused” call volume and web visits to rise or fall. Instead, this report describes the relationship of call volume to media campaign strength, a relationship which may be influenced by many other factors.

Further, PDA did not conduct a survey or other analysis to evaluate the extent that Connecticutians were receptive to and recalled specific media campaigns. Therefore, a limitation to the current results is the lack of information about Connecticutians’ recall of anti-tobacco media campaigns, which is essential to more fully understanding the role of media in tobacco users’ choice to call the CT Quitline.

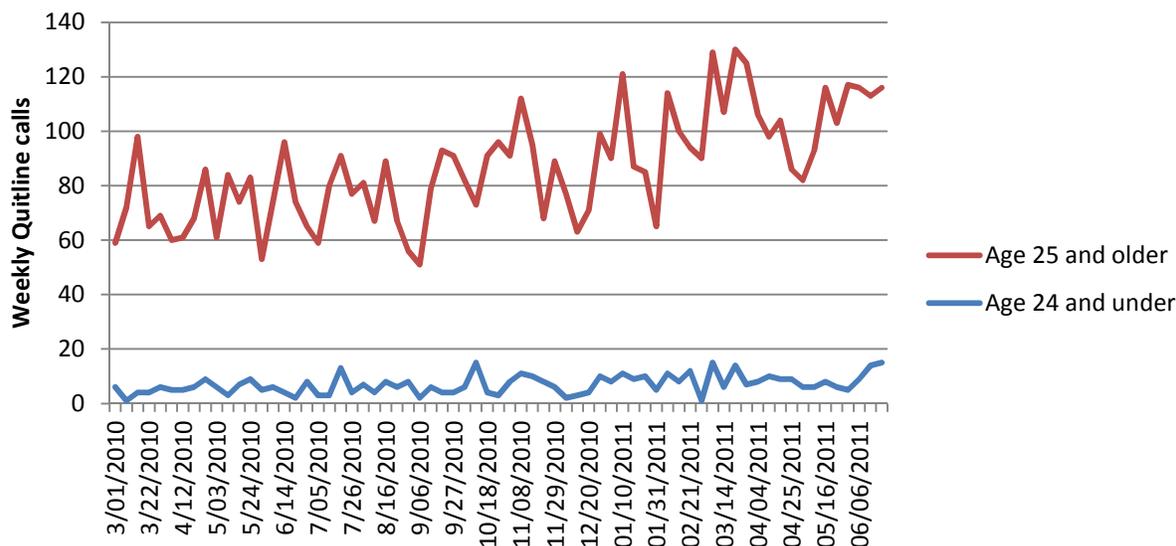
Analyses

Quitline call volume data obtained from Alere, and website visit data obtained from Legacy were combined with data regarding broadcast, internet, and other media obtained through the Cronin, DPH. Quitline call volume data was analyzed in Linear Regression Model for those 25 years and older, the target audience for cessation broadcast media. Regression was conducted using the statistical software package SPSS, Release 18.0.3.

Dependent variables

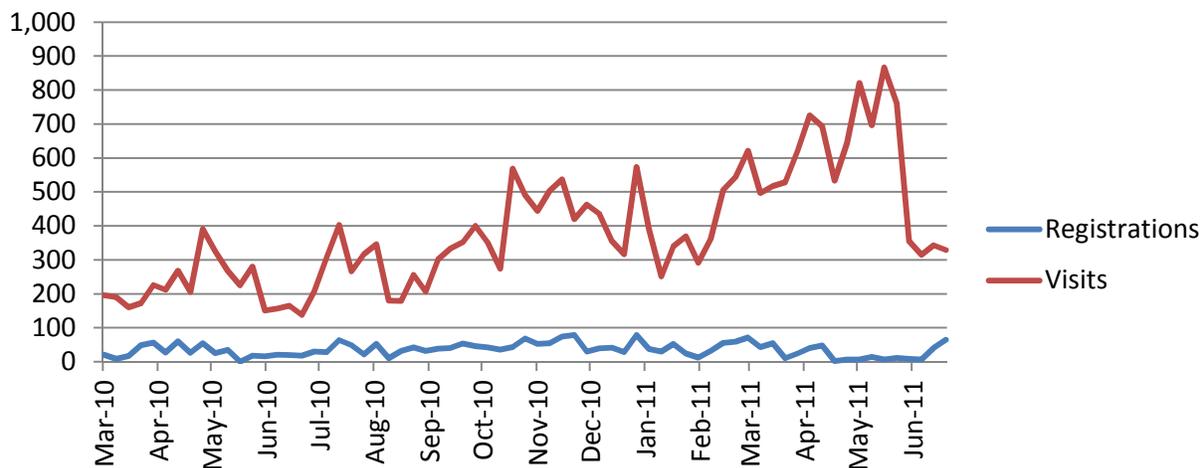
The multivariate analyses were first run producing one model for the dependent variable ***call volume for ages 25 and over***. See Figure 5 for the distribution of Quitline calls over time.

Figure 5. Number of new callers registering with the Quitline by week



Next, to assess the level of website use, we considered two dependent variables: the total count of Connecticut-originated **visits to the website** and the total number of Connecticut **registrations on the website**. The total count and the variation over time are very different for visits vs. registrations (see Figure 6.) Visits to the website fluctuate from week to week and trend upward over time. Registrations, on the other hand, remain relatively flat. We theorize that this is an artifact of the structure of the BecomeAnEx site. Most of the information about quitting and how to quit can be accessed without registering on the site. Registration is required for users to enter and save information (track their tobacco use, create a quitting plan, etc.) While the media may drive more tobacco users to the website, media will not necessarily influence people to register. Many visitors to the site are likely accessing helpful information about how to quit without registering and creating an account. For these reasons, and because visits tracked more closely with media than registrations did in the regression model, PDA elected to use **visits** as the dependent variable in this analysis.

Figure 6. Number of visits and registrations on www.BecomeAnEx.org, by week



Independent variables

A full range of independent variables was considered and was reduced for parsimony and to maximize the explanatory power of the model. The following independent variables were considered but not included in the model.

- Spanish language online ads and paid search results: We were not provided with any indication of number of impressions or clicks, only the dates on which online media were placed. This information is not specific enough to contribute to the analyses.
- Data from the CT “call for entries” portion of the prevention campaign: Nearly all of the call for entries campaign predates the study period. In addition, call volume and web visits were very low at the beginning of the study window (which was expected since cessation media had not yet begun). This resulted in the call for entries campaign entering the model with a negative coefficient. For these reasons we excluded call for entry data from the analyses.

The independent variables were entered individually into the two models, as described in Table 7 below.

Table 7. Independent Variables

Variables	Description
Covariate: Proportion of Connecticut tobacco users in DMA (based on 2010 BRFSS data)	More Quitline callers would be expected to call from DMAs with a larger number of tobacco user.
Covariate: Previous week web visits	The number of people who visited becomeanex.org for the week prior to analysis. Transformed into a natural log to normalize the distribution.
CT Cessation Broadcast <ul style="list-style-type: none"> ○ Broadcast (English) ○ Broadcast (Spanish, tagged with Quitline) ○ Broadcast (Spanish, not tagged with Quitline) 	Targeted Rating Points (TRPs) for English TV campaign and cable spots combined. Transformed into a natural log to normalize the distribution. TRPs not available for Spanish campaigns; number of spots aired is used instead.
CT Cessation Online <ul style="list-style-type: none"> ○ Online banner ad clicks ○ Paid search result clicks 	Number of ad clicks. Transformed into a natural log to normalize the distribution
CT Prevention Broadcast <ul style="list-style-type: none"> ○ Winners Spot Broadcast (English) ○ Winners Spot Broadcast (Spanish) 	Targeted Rating Points (TRPs) for the English broadcast and cable spots combined. Transformed into a natural log to normalize the distribution. TRPs not available for Spanish broadcast; number of spots aired is used instead.
CT Prevention online <ul style="list-style-type: none"> ○ Online banner ad clicks ○ Paid search result clicks 	Number of ad clicks. Transformed into a natural log to normalize the distribution

For each of the two models, predicting call volume and predicting web visits, we entered the variables in the following way.

First, in block 1 of the regression model, we forced entry of the covariates.

- DMA is forced into the model to control for the amount of variance that would be explained by the difference in the tobacco using population size of the two DMAs.
- For the web visit model, the previous week's volume of web visits was forced into the model. This variable is entered as a covariate because web visits in any given week are correlated with visits in the previous week. (No similar correlation was found for weekly call volume.)

In block 2, we forced entry of the predictors that have the greatest impact on the dependent variable.

- For the web visit model, all online ad and paid search result variables (cessation and prevention) were forced into the model.
- For the call volume model, all broadcast variables (English and Spanish cessation, and English and Spanish Prevention) were forced into the model.

In block 3, the remaining predictor variables were entered stepwise into the model, and those that reached significance remained in the model.

- For the web visit model, all broadcast variables (English and Spanish cessation, and English and Spanish prevention) were entered stepwise.
- For the call volume visit model, all online ad and paid search result variables (cessation and prevention) were entered stepwise.

Results

Results are organized into three sections. First, the success of the model in predicting call volume is discussed. Second, the impact of media on call volume and web visits is examined by interpreting the amount of variance that each independent variable has on call volume. Finally, each model's findings are interpreted in a narrative form, with results highlighted where factors predict call volume unusually strongly or weakly for the target audience.

Model Success

One indicator of success is the statistic R^2 , or the proportion of variation in call volume or web visits that is explained by the independent variables. In other words, when we observe increases or decreases in call volume, how much of that variation can be explained by the media efforts?

The variation explained may be unique to an independent variable or shared between variables. This statistic ranges from 0 to 1.0, with 0 indicating a poor model where 0% of variance in call volume is accounted for by the dependent variables, and 1.0, indicating a perfect model where

100% of variance is accounted for. An R^2 statistic of 0.70 or greater is considered to be very good.²⁷

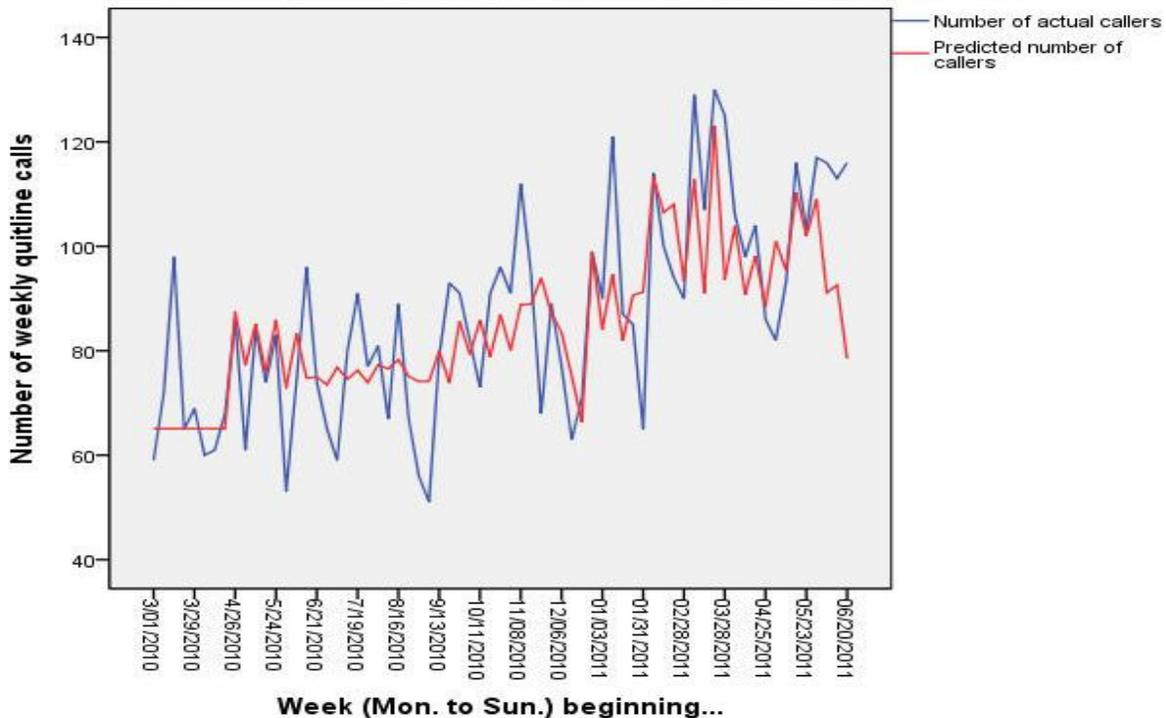
As indicated on Table 8, the model was relatively successful in describing the relationship between media and call volume. The adjusted R^2 statistic for the media call volume model was .279. In other words, 27.9% of variance in call volume was explained by the independent variables. Although this is far from a perfect model, it is considered high enough to allow for an in-depth analysis of the impact of the independent variables on call volume. The adjusted R^2 statistic for web visits was much better, at .565. 56.5% of the variance in web visits was explained by the independent variables.

Table 8. Adjusted R2 by Model

Model:	Adjusted R ²
Call Volume	.279
Web Visits	.565

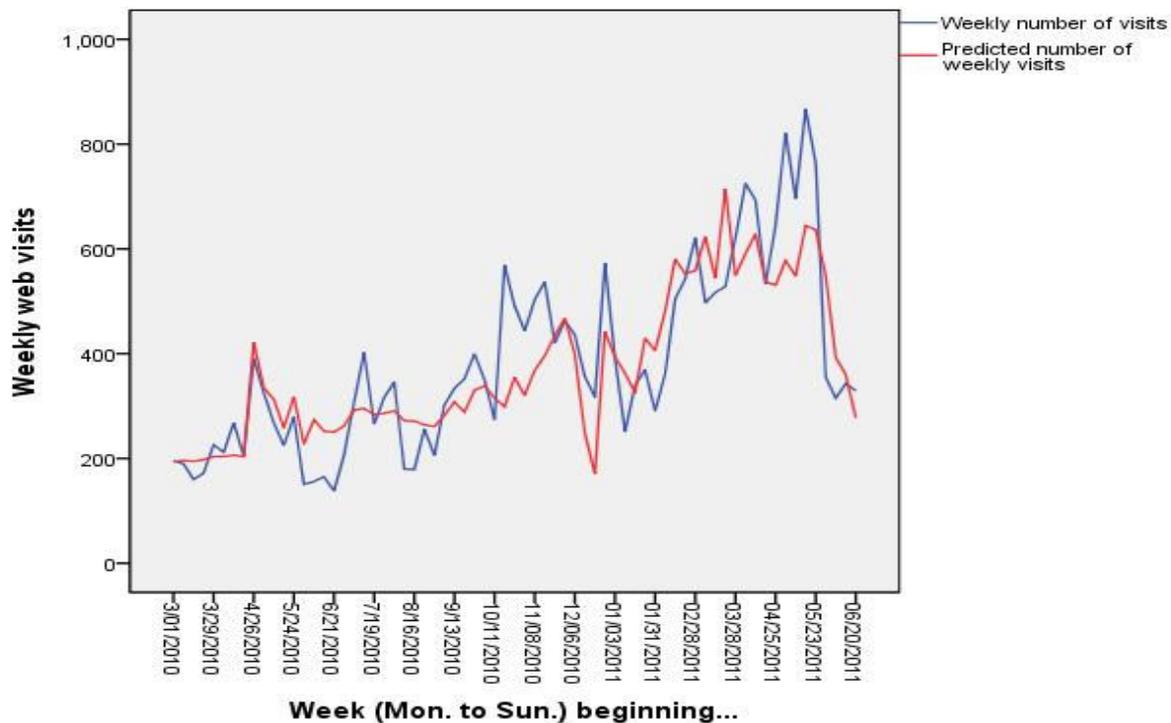
The fit of the models is depicted graphically below. Figure 7 depicts the actual call volume by week, along with the predicted call volume determined by the regression model based on the independent variables, including media activity. Figure 8 presents the actual number of web visits by week, and the predicted number of web visits as determined by the model.

Figure 7. Comparison of actual vs. predicted calls to the Quitline by week



²⁷ Although R^2 is commonly used to assess model success, a more realistic assessment is using adjusted R^2 . Adjusted R^2 lowers the R^2 based on the number of predictors in the regression model.

Figure 8. Comparison of actual vs. predicted web visits by week



Media Impact on Call Volume and Web Visits

While understanding the proportion of the variation in call volume and web visits that the full model explains is helpful, it is also helpful to understand more about the impact of each specific independent variable (media component). The impact of each media component entered into the model is discussed below. The one covariate included in the media call volume model was the size of the DMA. In the web visits model, size of the DMA and previous week's visits were included. The findings below describe how much additional variance in call volume was explained by media-specific activities. A positive impact means that an increase in media is associated with an increase in calls or visits, or that a decrease in media is associated with decreased calls or visits. A negative impact indicates an inverse relationship (i.e., more media is associated with fewer calls or visits).

The significant associations between the media components and call volume for the target audience are presented in Table 9, with a summary version of the same results presented in Table 10. The significant associations between the media components and web visits for the target audience are presented in Tables 11 and 12. For each model, we present the following statistics:

- The p-value indicates if an independent variable is significantly related to the dependent variable (in this case, call volume and web visits)
- The beta weight indicates the direction of that significance (whether the media component is associated with increased or decreased call volume/web visits)
- The standardized coefficient calculates the change in a dependent variable for a change of one standard deviation in a predictor variable. It indicates the unique variance in the

dependent variable accounted for by each media component. In other words, this statistic indicates the size of the effect. The greater the standardized coefficient, the larger the impact of the independent variable in predicting the dependent variable.

Table 9. Beta weights, p-values and standardized coefficients for Call Volume Regression Analysis

Dependent variable:	Natural Log of Call Volume for Callers 25 and older		
	B	P	Standardized Coefficients
<i>Intercept</i>			
<i>Covariate Variable</i>			
DMA size	.686	<.001	.862
<i>CT Cessation Campaigns</i>			
Cessation Broadcast	.031	.05	.068
Spanish Cessation Broadcast (Not QL tagged)	.005	.854	.007
Spanish Cessation Broadcast (QL tagged)	.040	.213	.052
Cessation Search Clicks	.053	.000	.148
<i>CT Prevention Campaigns</i>			
CT Winners Spot Broadcast	.034	.024	.087
Spanish Winners Spot	.003	.894	.006
Prevention Online Ad Clicks	-.026	.025	-.086

Table 10. Summary: impact of media components on call volume

Media Component	Impact on Call Volume
CT Cessation paid search ad clicks	Moderate +
CT Cessation Broadcast	Small +
CT Prevention Broadcast	Small +
CT Prevention online ad clicks	Small -

Table 11. Beta weights, p-values and standardized coefficients for Web Visits Regression Analysis

Dependent variable:	Natural Log of Web Visits		
	B	p	Standardized Coefficients (Beta)
<i>Intercept</i>			
<i>Covariate Variable</i>			
DMA size (ln)	.327	<.001	.432
Previous week's visits to becomeanex.org	.074	.001	.218
<i>CT Cessation Campaigns</i>			
Cessation Broadcast	.032	.046	.075
Cessation Search Clicks	.152	<.001	.449
Cessation Online Ad Clicks	.012	.277	.044
<i>CT Prevention Campaigns</i>			
Prevention Search Clicks	.045	.015	.103
Prevention Online Ad Clicks	-.038	.001	-.132

Table 12. Summary: impact of media components on web visits

Media Component	Impact on Web Visits
CT Cessation paid search clicks	Large +
CT Cessation Broadcast	Small +
CT Prevention paid search clicks	Moderate +
CT Prevention online ad clicks	Moderate -

Interpretation

Media impact on call volume

Cessation media. The adult cessation campaign funded by CT DPH and placed by Cronin in FY10 and FY 11 was the only media component to directly tag both the Quitline telephone number and the BecomeAnEx.org website address. These television ads were run mainly in English with a smaller Spanish language placement. We would expect that the adult cessation campaigns would positively impact call volume. The cessation campaign also included online ads and paid online search ads, but the online ads directed viewers to www.BecomeAnEx.org and did not tag the Quitline, making it likely that the online presence would impact web visits to BecomeAnEx.org, but less likely that the online presence would impact call volume.

Examining the beta weights, p-values and standardized coefficients of the individual cessation media variables allows the hypothesis that cessation media impacts call volume to be tested

directly. A clear finding emerged: the **cessation broadcast campaign significantly impacted call volume** for those ages 25 - 54, and the effect was positive but small. In other words, the cessation broadcast media was associated with an increase in call volume among the target age group, and the amount of variance in call volume accounted for by the cessation media was small (Beta=.068).

Of all the online cessation media, one component significantly impacted call volume. The **paid cessation search clicks were associated with increased call volume** among the target audience, and the impact was moderate (Beta=.168).

In sum, the cessation broadcast media had a small impact on the target group, and the online search media had a somewhat stronger impact on the target group. None of the cessation components (broadcast, online ads, or paid search) had a large impact on call volume for this target audience.

Prevention media. Examining the individual variables, two components of the prevention campaign did significantly impact call volume. The **impact for the prevention broadcast is small** for the 25-54 age group (Beta=.087). Although this was unintentional (the prevention “winning spots” campaign was directed toward youth) it is not surprising that prevention broadcast media had an effect on adults, given the higher intensity of that campaign, as displayed in an earlier section of this report (see Table 6).

The **prevention online ad clicks were associated with a decrease in call volume** among the target age group. The impact of the online ad clicks for the tobacco contest was small (Beta=.086), after covariates were entered into the model. This is not surprising, since the ad clicks directed viewers to www.itsawaste.org, and were not intended to promote the Quitline. In addition, the structure of the media buys was such that prevention and cessation ads often alternated, for example, one week only prevention ads aired, and the next week only cessation ads aired. The negative association between prevention ads and call volume likely represents the *absence* of cessation ads, rather than a decrease resulting from the *presence* of prevention ads. However, if www.itsawaste.org tagged the BecomeAnEx website and the Quitline, prevention online ad clicks could become a positive contributing factor to call volume

In sum, the relationship between prevention broadcast media and call volume was significant for the target audience. The prevention online ad clicks had a small negative association, which was an expected finding.

Media impact on web visits

Cessation media. In examining the beta weights, p-values and standardized coefficients of the individual cessation media variables, we find that **cessation online search clicks significantly impacted web visits for those 25-54, and the effect was large.** In other words, cessation online search clicks was associated with an increase in web visits among the target age group, and the amount of variance in web visits accounted for by the search clicks was large (Beta=.449).

Additionally, **cessation broadcast media was also associated with web visits** among the target audience, although the size of the effect was small (Beta=.075).

In sum, cessation online search clicks had a very large positive impact on web visits, larger even than the covariates entered into the model. Additionally, cessation broadcast media had a positive impact, though much smaller than online search clicks.

Prevention media. Prevention search clicks were positively associated with web visits to BecomeAnEx.org, and the strength of the association is moderate (Beta=.103). Prevention **online ad clicks was moderately associated with decreased visits to the website** (Beta=.132). Again, this is not a surprising finding, given that the ad clicks directed viewers to itsawaste.org, rather than the cessation website.

Spanish broadcast media²⁸. None of the Spanish broadcast media significantly impacted call volume or web visits. In the Spanish campaigns, the prevention and cessation ads alternated by week, whereas the English placements were more consistent across the periods in which ads were placed. Further, due to data limitations, PDA was able to compute TRPs for the English campaigns but not for the Spanish spots; therefore analyses were conducted using number of ad spots placed rather than the more precise TRPs.

Conclusions

Overall, the models were moderately successful in describing the relationship between media and call volume. The proportion of variation in call volume that is explained by the statistical model is 27.9%, and the proportion of variation in web visits that is explained is 56.5%. Seventy percent variation accounted for is considered to be very good.

The one factor that stood out as having a significant and meaningful effect on increasing call volume and web visits is the cessation paid search engine results. Search result clicks had a significant and large impact on web visits, and a significant and moderate impact on calls to the Quitline. There was also significant but small effect on call volume and web visits from the CT Cessation Broadcast campaign.

We conclude that the cessation media campaign successfully connected tobacco users to both the Quitline and the website, and contributed to an increase in the number of people served by these interventions. However, the impact of the media campaigns on volume is modest. Given the relatively low intensity of the campaigns, this is also an expected finding.

Although paid search result had a greater impact as compared to broadcast and online ads, we do not recommend that DPH allocate substantially more resources to this medium. Paid search results reach tobacco users who have already taken some action to obtain cessation help; they are a select group who are demonstrating a certain readiness to quit tobacco. In contrast, broadcast media and online banner ads cast a broader net, and have the potential to reach both tobacco users who are and are not ready to quit tobacco. In addition, viewers of these ads may be prompted to conduct online searches for more information about quitting tobacco. Therefore, although the three types of media have differential effectiveness in connecting tobacco users to cessation resources, we recommend DPH maintain the current mix of media, including broadcast, online ads and paid search results.

²⁸ Spanish language online ads and paid search result were excluded from this analysis due to data limitations.

Summary of Conclusions and Recommendations

EQ6. Overall, what are successes and areas for improvement of the adult cessation media campaign outcomes? What are areas for programmatic changes?

Increase in Quitline reach

The promotional reach of the Connecticut Quitline nearly doubled from FY 2010 to FY 2011, and the FY 2011 reach of 1.67% is in line with the average reach of other state quitlines. The increase in reach should be taken as a very positive finding. This is an even more impressive finding given that the media budget did actually decrease slightly during the same time period. This suggests that the campaign did a much better job strategically in using resources to efficiently and effectively reach its target audience. Furthermore, the low smoking prevalence in Connecticut means that cessation media must be targeted to a smaller population, and may require more precise targeting of media to reach tobacco users, making it more challenging to affect reach. This should be taken as further evidence of the success of the campaign in terms of promotional reach.

Promotional reach among adults ages 25-54 was higher than reach among either younger or older smokers. At nearly 2%, this represents a doubling of the reach rate attained for this group in the previous year. We find this to be a success of the media campaign.

Connecticut's rate of treatment reach is 1.34%. This is also significantly higher than the 0.74% treatment reach of FY 2010. This should be taken as another positive finding for the campaign. However, approximately 13% of callers who register with the Quitline do not receive a minimal level of treatment; the extent to which the Quitline vendor could provide counseling to these individuals would be likely to increase the number of quitters in Connecticut even more and potentially impact state prevalence.

Any planning to increase Quitline reach should take into account a potential surge in call volume anticipated to occur after the introduction of cigarette package warning labels in September 2012. The DPH, along with the media and Quitline vendors, will need to plan for the potential volume increase so that the capacity and the budget of the Quitline are not exceeded. Potential strategies include altering the design of media promotion of the Quitline, and seeking alternative funding sources such as federal dollars or cost-sharing with health plans or Medicaid. Redirecting callers to free resources such as www.BecomeAnEx.org is also a potential solution.

Finally, it should be noted that reach is constrained by Quitline funding and funding policies. Quitline reach may only increase to the extent that funding is available. Additional resources may be obtained by increasing the Quitline budget and/or reducing NRT benefits and reallocating the funds to Quitline counseling services. Second, it is important to note that Cronin's media promotions likely motivated many more tobacco users to quit who did not call the Quitline, but did attempt to quit on their own or through other supports, such as the BecomeAnEx.org website. These effects of the media campaign are not accounted for in reach calculations.

Improvement in media campaign intensity

The intensity of the cessation media campaign increased substantially, without an increase in budget. Both the total number of GRPs and the duration of the campaign were greater in FY 2011 as compared to FY 2010. This may reflect higher startup costs in FY 2010 (e.g., dollars allocated to purchasing ads and to planning and other startup). However, it may also reflect better ad placement in FY 2011, making the same dollars go farther.

Despite the improvement in campaign strength, the intensity of the adult cessation campaign still fell below recommended levels both in terms of weekly and quarterly TRPs and in the duration of the campaign. Additional media funding would be needed to increase the intensity to levels that are likely to substantially increase call volume. Should additional funds become available, careful planning is needed to allocate funding between Quitline services and media promotion to ensure that the Quitline could meet the increased demand.

Strategies to more directly promote the Quitline

One way to improve the effectiveness of the CT DPH cessation media without much change in cost is to more directly promote the Quitline with the existing ad buys. Online ads and paid searches did not directly tag the Quitline telephone number. Viewers were directed instead to the BecomeAnEx.org website. As a Legacy Alliance partner, the CT DPH was provided with a Connecticut-specific subpage which displays the Quitline number as a local resource. However, the resource subpage is not readily accessible, and we suspect that the easy availability of the BecomeAnEx online cessation program likely resulted in viewers remaining on the “Ex” site, and possibly enrolling in and using the “Ex” website program rather than calling the Quitline for cessation assistance.

Compared to the online BecomeAnEx program, the CT Quitline is a more intensive intervention. While both the online and Quitline programs are free for CT residents, the Quitline provides free NRT along with a multi-session counseling program, which has been demonstrated to be an intensive, effective cessation aid. The effectiveness of online cessation assistance without NRT is still under investigation. Therefore, in order to have the greatest possible impact on tobacco use prevalence, we recommend that DPH-funded media directly tag and promote the most intensive intervention available – the Quitline -- rather than directing callers solely to BecomeAnEx.org.

We recommend adding a direct link to the Quitline online registration and/or the BecomeAnEx website on www.itsawaste.org, thereby harnessing the greater reach of the prevention ads to promote the Quitline. Some proportion of those exposed to prevention ads will be tobacco users, yet, if tobacco users seek out the prevention website they will find clear anti-tobacco messages, but they will not find any information about getting help with quitting. Linking to cessation resources is a low-cost way to get more mileage out of the prevention campaign.

In addition, the Spanish language ads could utilize different tags that are more likely to connect Spanish-speaking tobacco users with cessation resources. While some ads tagged the Quitline telephone number (the Quitline provides services in Spanish), other ads tagged the DPH prevention website, <http://www.quedesperdicio.org>. While this is a Spanish-language website, it focuses on youth and prevention, and does not provide information about how to get help with quitting tobacco. The Quitline’s online registration site, <https://www.quitnow.net/connecticut/>, was not tagged, since the site is English-only. We recommend two low-cost strategies to ensure that Spanish speakers are connected to resources that offer both Spanish language and

cessation help. First, post the Quitline phone number and a direct link to the Quitline online registration on both www.itsawaste.org and www.quedesperdicio.org. This way tobacco users who come to the prevention website can be directed to cessation help. Second, there is a Spanish language version of the BecomeAnEx website, <http://es.becomeanex.org>. The DPH should consider tagging this site along with the Quitline phone number on Spanish cessation ads.

Success of the media in connecting tobacco users to cessation resources

After controlling for other factors, both the cessation and prevention media campaigns were found to be associated with increased quitline calls and visits to www.BecomeAnEx.org. The one factor that stood out as having a significant and meaningful effect on increasing call volume and web visits is the cessation paid search engine results. Search result clicks had a significant and large impact on web visits, and a significant and moderate impact on calls to the Quitline. There was also significant but small effect on call volume from the cessation broadcast campaign. And although unintentional, the prevention media also had a significant but small impact on calls and web visits. We conclude that the media campaigns have had a modest success in connecting tobacco users to these cessation resources.

We conclude that the cessation media campaign successfully connected tobacco users to both the Quitline and the website, and contributed to an increase in the number of people served by these interventions. However, the impact of the media campaigns on volume is modest. Given the relatively low intensity of the campaigns, this is an expected finding.

Although the greatest impact on connecting tobacco users to cessation resources was achieved through paid search engine results, we do not recommend that DPH allocate substantially more resources to this medium. Paid search results reach tobacco users who have already taken some action to obtain cessation help; they are a select group who are demonstrating a certain readiness to quit tobacco. In contrast, broadcast media and online banner ads cast a broader net, and have the potential to reach both tobacco users who are and are not ready to quit tobacco and impact their attitudes about tobacco use. In addition, viewers of these ads may be prompted to conduct online searches for more information about quitting tobacco. Therefore, although the three types of media have differential effectiveness in connecting tobacco users to cessation resources, we recommend DPH maintain the current mix of media, including broadcast, online ads and paid search results.

Appendix - Description of Ads

Television ads - The campaign included three television ads: “Leap”, “Start Your Day” and “Driving.” All three were created by the American Legacy Foundation as part of the Become an EX “Re-learn” campaign. All three television ads were tagged with the EX logo and website URL, the CT Quitline phone number, and the CT DPH logo.

Figure 1. Brands that were tagged in the CT adult cessation television ads



The three ads were:

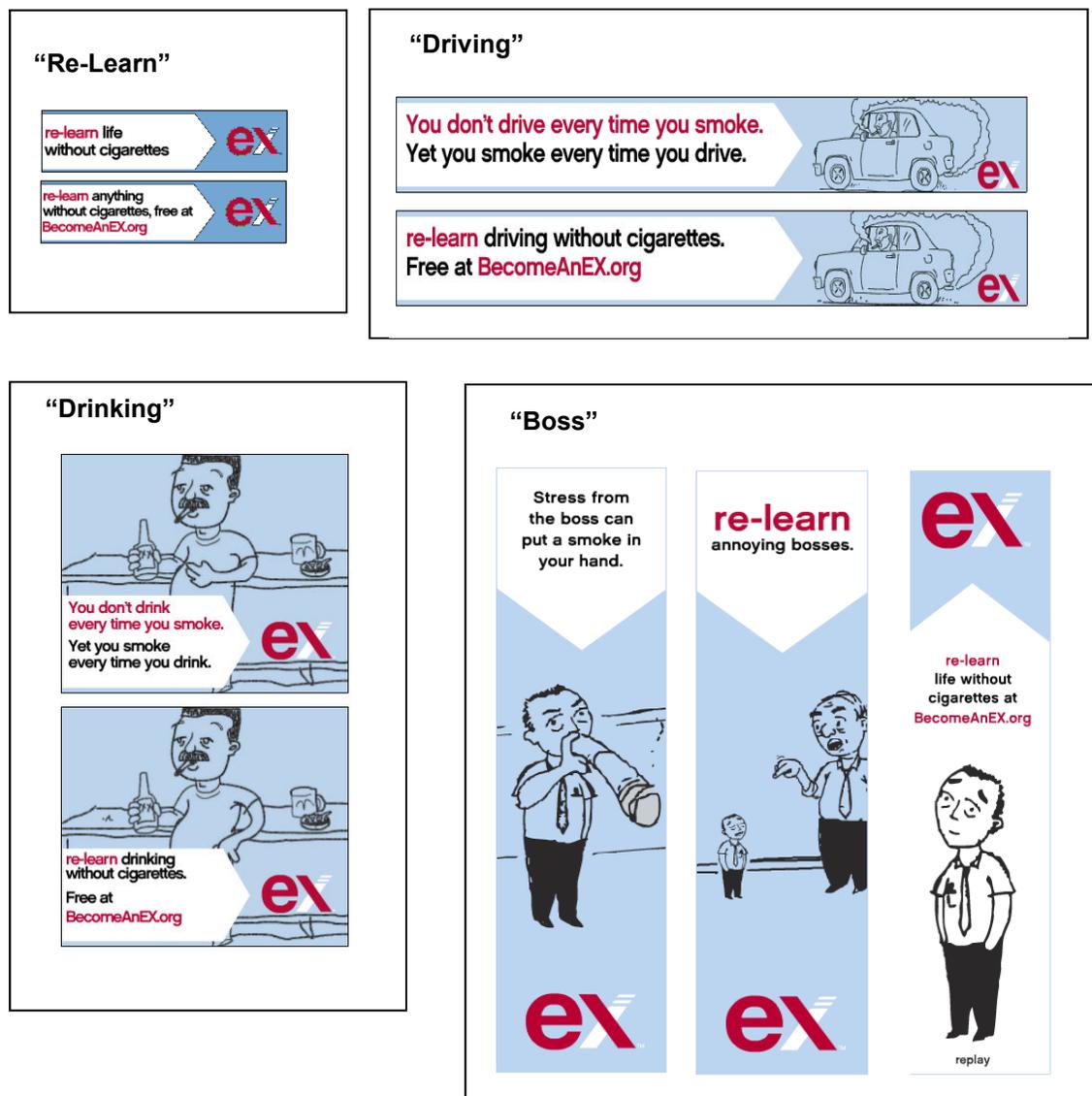
- “Leap,” which features a woman imagining herself jumping out of a window to retrieve a cigarette butt. The voiceover acknowledges that quitting is hard to do, and introduces Become An EX as a way to get help with quitting.
- “Driving” features a woman climbing into the backseat of her car, rolling to the front, and then finally driving in reverse only to run over trash cans. The voiceover then states: “When you’re used to always doing something with a cigarette, it can be hard doing it without one. But if you can re-learn how to start your day without cigarettes, then you can relearn to do anything without a cigarette. Introducing EX – a new way to think about quitting.”
- “Start Your Day” presents a similar theme, and features a man re-learning how to get ready for work in the morning without cigarettes.

In order to effectively place a Spanish-language cessation ad, Cronin subcontracted with another company with expertise in placing Spanish-language media. A Spanish version of the “Driving” ad, analogous to the English version just described, was placed by this company.

Online ads – The purpose of the online advertisements was to promote cessation among tobacco users, and to connect tobacco users to resources to help them quit. Clicking on ads directed users to www.BecomeAnEx.org. As previously mentioned, the Connecticut DPH is a member of the Legacy Alliance, and as such Legacy maintains a CT subpage, www.becomeanex.org/CT.php which describes the CT Quitline service and lists the telephone number. In this way, some viewers of online web ads may become aware of the Quitline and make a call. Since the online ads were not tagged with the Quitline telephone number, we expect that the impact on call volume would be less than that of the television campaign, which directly promoted the Quitline. Cronin obtained online advertisements in banner and other formats from Legacy, and placed them on Connecticut newspaper websites (e.g.,

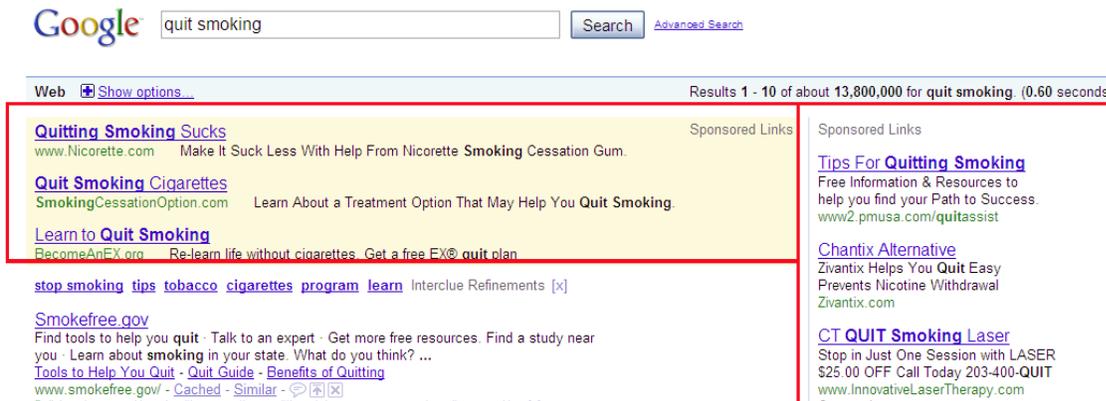
ConnPost.com, NHRegister.com) and other local sites. All of the selected ads featured the Re-learn messaging. The CT Web campaign included the ads “Driving,” “Drinking,” “Boss,” and “Re-learn,” shown in **Error! Reference source not found.**

Figure 2. Examples of online ads placed by Cronin & Co.



Paid search results - The CT Web campaign also included paid internet search results on google.com and yahoo.com. When Connecticut internet users conduct searches using keywords such as “quit smoking,” “help with tobacco,” or “Quit in Connecticut” the search results would return a sponsored ad directing the user to BecomeAnEx.org. Sample search results are presented in **Error! Reference source not found.**

Figure 3. Sample paid Internet search results



Prevention Campaign Winning Spots

The ad “On Top of Old Smokey,” which was also the grand prize winner, featured various kids with a paper chimney on top of their heads, and ended with the message “If we were meant to smoke, we would be born with chimneys.” The ad “Knowing More” featured teenage boys providing facts about how many people die each year from tobacco-related illnesses, in comparison to other causes of death. Finally, the ad “Is It Really Worth It” features a teenage girl discussing things that would be lost because of tobacco use – her boyfriend, money, physical health, respect of her family – as each is mentioned, a representative picture is removed from a clothesline. At the end, when nothing is left on the clothesline, she poses the question, “Is it really worth it?” In addition to the broadcast and cable television placements, Cronin placed paid internet search engine results to promote the ads online.

Legacy Ads

The Legacy television campaign included two advertisements, “Driving,” which was also part of the DPH campaign placed by Cronin, and “Drinking.” The “Drinking” ad featured a woman blending an alcoholic drink while sitting at her desk, surrounded by fellow, bewildered office workers. After making the drink she steps outside to have a cigarette, along with the drink. Then a voiceover indicates you don’t drink every time you smoke, and that you can re-learn drinking without cigarettes. Both ads feature the Become an EX logo. This campaign ran from October 12, 2009 through October 2010. The target for this campaign includes all current smokers ages 25-54, with a particular focus on blue-collar adult workers. Legacy placed Re-learn ads online, and funded radio efforts that included guest interviews and talk show discussions. They also placed a variety of out-of-home media, including cinema ads, gasoline pumptop television ads, video ads in groceries and elevators, and coffee sleeves.