
Creating a Tobacco Control “Prescription” for Nashville

Report from Tobacco Control Expert Panel Meeting
April 8, 2016

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Executive Summary

Rationale: Across the United States, communities have collective impact initiatives to address health challenges and improve the health of their citizens. Using published evidence from other communities, national efforts, and previous local efforts, collective impact organizations have created and implemented programs to address these health challenges via healthcare settings, community-based organizations, and systemic approaches. However, no community has convened national experts to advise on a specific health challenge.

Vanderbilt University's Department of Health Policy worked to design a tobacco control expert panel to advise NashvilleHealth on interventions in four domains: policy, media, community settings, and healthcare. The goal of this panel was to create a "prescription" specifically for Nashville that took into consideration 1) lessons learned in other communities, 2) existing programs and policies in Nashville, 3) the political landscape of Nashville and Tennessee, and 4) scientifically-supported evidence on best practices and programs.

Expert Panel: Seven (7) national experts in research and implementation of tobacco control policies and programs were identified using literature searches and expert interviews.

- Panelists were chosen to achieve balance along several dimensions, including: domain of expertise, gender, and geographic location.
- The panel was conducted using a modified Delphi technique, in which panel members were asked to provide input before, during, and after the meeting.
- Pre-meeting work included feedback on literature searches and pre-ranking options in each of the four identified domains.
- During the panel meeting, experts were asked to discuss their pre-meeting rankings and then re-rank options within each domain by coming to consensus.
- Then, panel members were asked to rank these options across domains, given hypothetical time and resource constraints.
- Using the constraints, the panel prioritized 4 short-term and 3 long-term strategies from the 11 strategies that were highly ranked within each domain.

Recommendations: The final sets of recommendations for implementation are below.

Short term (<1 year):

1. Systematically engage all healthcare providers in "Ask, Advise, Connect/Refer" (AAR/C) approach to cessation resources
 - The advice of a healthcare professional can more than double smoking cessation success rates. However, a large study of primary care visits found that providers do not consistently advise smokers to stop, assist with counseling, or prescribe pharmacotherapy.
 - General consensus was that AAR/C should be the model used by healthcare providers. Panelists also agreed that this strategy should extend beyond physicians and include dentists, nurses, physical therapists, and pharmacists. Panelists incorporated the CEASE model, which engages pediatricians in AAR/C with parents, into this recommendation. Panelists also suggested that AAR/C should be used during every healthcare encounter, not just at an initial visit or annual checkup.
2. Expand multi-unit housing initiative by increasing cessation resources and developing educational resources, signage.
 - HUD has proposed a rule to make public housing smoke-free; a final rule is expected. MPHHD has implemented the "Breathe Easy" campaign to encourage all Nashville multi-family properties to go smoke-free.

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- This could reach a concentrated, higher-risk population, including youth who would benefit from smoke-free living environments. In addition, the panel saw this intervention as timely.
3. Air additional television and/or radio ads for Tennessee's Quitline
 - Mass media campaigns for tobacco prevention and cessation are considered essential parts of comprehensive tobacco control policies. Evidence suggests that mass media campaigns can prevent initiation and increase cessation attempts but may require multiple exposures.
 - Panelists recommended contacting the CDC, FDA, and Truth Campaign to see if archived materials could be used for free or reduced cost. NashvilleHealth could then negotiate with local media to air/print Tips, Truth, and FDA material for free or reduced cost. Panelists also suggested including a youth-focused social media campaign, which is likely more affordable than traditional media outlets.
 4. Extend Master Settlement Agreement (MSA) appropriation for tobacco control
 - In 2014, for the first time in TN, \$15 million of MSA monies were appropriated for tobacco control. This appropriation was for 3 years (SFY 2015-2017). The CDC recommends that Tennessee appropriate \$75.6 million for tobacco control each year.
 - There was general consensus that extending, and ideally increasing, MSA appropriation for tobacco control was a viable short-term policy option. Other policy goals would require longer-term coalition building and may require preemption removal.

Long term (1-5 years):

1. Expand access to Nicotine Replacement Therapy (NRT) for the uninsured
 - In Nashville, 16.4% of residents between 18 and 64 years of age are uninsured and, thus, have limited access to healthcare. Pharmacotherapy is likely cost-prohibitive for this population, as is regular contact with the medical system in a primary care context.
 - There should be a concerted effort to refer uninsured to the Quitline because it provides two weeks of free nicotine patch quit assistance: the Tennessee Department of Health is currently working on an extension of NRT to eight weeks.
2. Expand outreach to vulnerable groups
 - While Davidson County has a smoking rate of approximately 21%, higher rates are likely to be concentrated within certain demographic groups. Examples of communities with higher rates of tobacco use include LGBT individuals, those who are incarcerated, and those living with mental illness and/or substance use disorders.
 - The panel noted that we could see the biggest returns by focusing on disproportionately affected populations, including those who identify as LGBT, are experiencing homelessness, have substance use disorders, are incarcerated, and are low-income individuals.
3. Increase the per pack cigarette tax
 - Increasing the tobacco tax is one of the most effective means of reducing smoking rates. Estimates suggest a 10% increase in the cigarette price would lead to a 4 – 8% reduction in smoking prevalence and substantial healthcare cost savings.
 - All panelists were supportive of an increase in the tobacco excise tax or \$1/pack. Panelists suggested that the city propose to do this in a creative manner, such as having Metro Parks or other agency levy the tax to cover the costs of cleaning up cigarette waste.

Introduction

Across the United States, communities have collective impact initiatives to address health challenges and improve the health of their citizens. Using published evidence from other communities, national efforts, and previous local efforts, collective impact organizations have created and implemented programs to address these health challenges via healthcare settings, community-based organizations, and systemic approaches. However, no community has convened national experts to advise on a specific health challenge.

Vanderbilt University's Department of Health Policy worked to design a tobacco control expert panel to advise NashvilleHealth on interventions in four domains: policy, media, community settings, and healthcare. The goal of this panel was to create a "prescription" specifically for Nashville that took into consideration 1) lessons learned in other communities, 2) existing programs and policies in Nashville, 3) the political landscape of Nashville and Tennessee, and 4) scientifically-supported evidence on best practices and programs.

NashvilleHealth

Using national data sources and input from local stakeholders, NashvilleHealth is focusing on three initial priorities in its first year: tobacco control, hypertension, and infant mortality. NashvilleHealth has worked diligently over the past several months to gather local stakeholder input on the current tobacco control landscape in Nashville and insight from national sources of data and best practices.

Vanderbilt University Departments of Health Policy and Medicine

Partnering with NashvilleHealth in its efforts is Vanderbilt University's Department of Health Policy, whose initial role is to provide data and evidence to NashvilleHealth's decision-making process. The Department of Health Policy enlisted Dr. Hilary Tindle to provide content expertise and chair the tobacco control panel. One of Vanderbilt's pre-implementation tasks is to conduct a national expert panel for each of NashvilleHealth's initial priorities. These expert panels are designed to consider existing resources in Nashville, the political landscape of Nashville, and research-based programs and policies and create a tailored implementation plan to advise NashvilleHealth. Additionally, the expert panel will provide ongoing technical assistance during community vetting and implementation of their "prescription".

Tobacco Control

NashvilleHealth chose tobacco control as the first priority because of the existing programs in Nashville and building momentum to address tobacco prevention and cessation. Despite this momentum, however, Nashville's smoking rate of 21% is higher than many of its peer cities, including Denver, Austin, and Charlotte. Recent data on youth smoking shows an increase from 12% to 15% over the past three years, and the burden of tobacco on the health and wellbeing of Nashville's citizens continues to grow. While many cities and states across the U.S. are seeing a decline in tobacco use, Nashville is experiencing an increase, as seen in these trends. Additionally, Nashville and Tennessee, historically, have had few effective policies programs to combat the growing tobacco problem. However, several programs have been recently initiated in Nashville.

Pre-Meeting

Identification of Experts

Seven (7) national experts were identified iteratively using literature searches and interviews with other national experts. Experts were chosen to provide a balance on several dimensions including gender, race/ethnicity, place of employment, and expertise in one of four intervention domains (policy, healthcare, community settings, and media). Experts were interviewed prior to being chosen for the panel to gauge interest and availability and identify intervention domain expertise. The identification and vetting of national experts lasted for approximately a month and resulted in the following panel members:

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- Hilary Tindle, MD, MPH - Panel Chair; Associate Professor and William Anderson Spickard, Jr., MD Chair in the Department of Medicine and Founding Director of the Vanderbilt Center for Tobacco Addiction and Lifestyle (ViTAL) at Vanderbilt University School of Medicine
 - Linda Aragon, MPH – Director of Programs and Policy in the Division of Chronic Disease and Injury Prevention at the Los Angeles County Department of Public Health
 - Kimberly Bankston-Lee – Senior Program Director at Breathe California of Sacramento-Emigrant Trails
 - Dennis Henigan, JD – Director of Legal and Policy Analysis, Campaign for Tobacco Free Kids
 - Morgan McDonald, MD – Deputy Medical Director of the Division of Family Health and Wellness at the Tennessee Department of Health
 - Nancy Rigotti, MD – Professor of Medicine at Harvard Medical School; Director of the Tobacco Research and Treatment Center and Associate Chief in the General Medicine Division at Massachusetts General Hospital
 - Steven Schroeder, MD – Professor of Medicine and Director of the Smoking Cessation Leadership Center at University of California San Francisco
 - Jonathan Winickoff, MD – Professor in the Department of Pediatrics at Harvard Medical School

Detailed biographies of each of these panel members and the domains they were assigned to can be found in the **Appendix A**.

Literature Review

Prior to the panel meeting, the national tobacco control experts were asked to provide feedback on literature searches conducted by staff at Vanderbilt. Search terms and criteria for the literature review can be found in **Appendix B**. Each panel member was assigned to at least one domain and asked to respond to four questions for each domain in which they were assigned.

1. What literature, either gray or published, is missing?
2. Should we be aware of any ongoing, unpublished work?
3. Which of these articles is most definitive?
4. Which 4-5 articles should be most heavily emphasized in a one-page summary of the literature.

Using panel member feedback on the literature in each domain, we compiled a one-page literature summary for each domain. These summaries can be found in **Appendix C**.

Environmental Scan and Pre-Rankings

Since July 2015, NashvilleHealth has been conducting informal interviews with local stakeholders to uncover existing programs and resources in Nashville and Tennessee related to tobacco control. Using notes from these interviews and information found on the Internet, NashvilleHealth created a comprehensive environmental scan of Nashville's tobacco control in each of the four domains (policy, healthcare, media, and community).

Using evidence from these literature reviews and the environmental scan conducted by NashvilleHealth, we developed several potential interventions in each domain and asked expert panel members to pre-rank interventions in each domain using these resources.

In-Person Meeting

On February 29, 2016, members of Vanderbilt's Department of Health Policy, NashvilleHealth, and the expert panel met in Chicago, IL for a six-hour meeting to devise a set of short and long-term recommendations for tobacco control in Nashville.

The first hour of the panel was introductory in nature: NashvilleHealth provided a brief overview of its mission and how it planned on strategically carrying out its mission. Vanderbilt's Department of Health Policy provided background information on Nashville, including demographic information, information regarding rates of poverty, insurance status, and educational attainment, and the prevalence of tobacco use among adults and children. See **Appendix D** for this information.

Each of the next four hours was dedicated to one of the four domains: healthcare, community, media, and policy. The first of each half hour was used to discuss the pre-meeting rankings and the remaining portion of the hour was dedicated to re-ranking the recommendations by coming to consensus. Using the pre-meeting rankings, only the four (4) most highly ranked options were included for discussion and consideration. However, the chair of the panel did ask the panel before each domain began if there was an option or recommendation that was not ranked in the top four that should be included for discussion.

The chair's role was to clarify points of confusion, facilitate meaningful discussion, answer panel members' questions, and move the discussion along if it seemed to be caught on a specific issue. The facilitator's role was to make real-time updates to the electronic version of the pre-meeting recommendations, facilitate re-ranking, and answer panel members' questions. The results of the within-domain ranking process can be found in **Appendix E**. While some of the presented options were selected in the within-domain consensus process, the panel members created a majority of the final options for implementation by consolidating the pre-meeting options or creating new ones based on their prior experience. This creative consolidation was guided by interactive discussion among panel members.

After within-domain rankings were complete, the panel recessed for a short time and then reconvened to rank across the domains. Panel members were given time (12 months) and budgetary constraints (\$1 million) in the first across-domain ranking exercise and were asked to rank the recommendations based on what was most feasible and had the highest impact, given the political, economic, and programmatic landscape of Nashville and Tennessee. Each panel member was asked to select his/her top three (3) recommendations silently: voting was done by a show of hands. Votes were tallied for each recommendation. Of the 11 options voted on, four (4) were recommended for initial implementation.

Next, panel members were asked to consider the remaining seven (7) options, given a 12-60 month timeline and no budgetary constraints. Again, panel members were asked to silently choose their top three recommendations, and then voting was conducted by a show of hands. During this exercise, the panel selected three (3) additional options for longer-term implementation. The results of the across-domain ranking process are below.

Recommended Strategies

SHORT TERM STRATEGIES (1 YEAR, \$1 MILLION CONSTRAINT)

1. Systematically engage all types of healthcare providers in "Ask, Advise, Connect/Refer" (AAR/AAC) approach to cessation resources

Background: The advice of a healthcare professional can more than double smoking cessation success rates. However, a large study of primary care visits found that providers do not engage patients about their smoking behavior consistently or comprehensively by advising smokers to stop (77%), assisting with counseling (41%) and prescribing pharmacotherapy (33%). In this study, smokers who used proven quit aids were more likely to quit compared to those who did not. The AAR/C model engages clinicians to *Ask* patients about tobacco use at every visit, *Advise* quitting, and *Refer or Connect* patients to the Quitline and other resources. Davidson County hospital systems, dental clinics, and pharmacies could be engaged to encourage their providers to implement

AAR/C, although this is not currently being done systematically. The AAR/C model is currently implemented through the CEASE (Clinicians Efforts Against Secondhand Smoke Exposure, developed by Dr. Winickoff) program on a small scale in six pediatric practices in Nashville. CEASE directs pediatricians to discuss smoking cessation with parents/caregivers, prescribe pharmacotherapy, and refer to the TN Quitline. At Vanderbilt, one of several large hospitals in Nashville, there is a Tobacco Treatment Service aiming to provide bedside quit assistance to every identified inpatient smoker; outpatient efforts will begin more systematically later in 2016.

Panel Feedback: General consensus was that the “Ask, Advise, Refer/Connect” (AAR/C) model was a highly effective strategy. There was agreement that the goal should be for everyone in the healthcare system to touch smokers and engage AAR/C. Panel members also agreed this strategy should extend beyond physicians; sometimes the appropriate person to have this conversation is the dental hygienist, the nurse or physician’s assistant, or pharmacist. Often a patient’s tobacco habit is only discussed at initial intake visit or only during annual checkup, but it should be asked about in every healthcare encounter (Kaiser in California has done this with great success, its insured population has a 7% smoking rate; similarly, Group Health in Washington state accomplished a 10% drop in smoking prevalence over 10 years with this approach). Panel members recommended that electronic medical records be altered to incorporate the AAR/C questions. The CEASE program is a form of AAR/C that has been implemented in Nashville thanks to a partnership between MPHD and the Cumberland Pediatric Foundation. Additionally, it was suggested that AAR/C is more successful if clinicians feel they have good outlets to direct patients to, including (but not limited to) the state Quitline. Nashville could explore novel referral options, including SmokefreeTXT (NCI’s free texting program for kids, adults, and pregnant women, and the related smartphone quitSTART program) and the CDC’s Text4Baby. Lastly, a panel member suggested initially targeting clinics in the low-socioeconomic status, high minorities areas in the first year for the biggest return on resources invested.

2. Expand existing multi-unit housing initiative: Increase quit resources including nicotine replacement therapy (NRT) for those living in public housing and develop resources, education, signage to promote smoke-free multi-unit housing

Background: HUD has issued a proposed rule to make public housing smoke-free nationwide. Prior to the proposed rule, MPHD conducted a survey of 775 residents of multi-unit housing and found that the majority of smokers reported wanting to quit. MPHD has since implemented the “Breathe Easy” campaign using Master Settlement Agreement funds to encourage property owners in Nashville to make their rental housing units smoke-free. To assist residents with the transition, MPHD is offering the American Lung Association “Freedom from Smoking” class in two of the apartment complexes that have gone smoke free. Currently there are over 12,000 residents that live in MDHA properties across Davidson County. Strategies to reach smokers in these facilities will need to be developed.

Panel Feedback: Panel members initially were hesitant to prioritize this strategy because there was concern it wouldn’t have broad reach. But after further discussion, panelists found out that over 12,000 people live in public housing, and this would be an opportunity to reach a concentrated, higher-risk population, including youth who would benefit from smoke-free living environments. In addition, the panel uniformly saw this intervention as timely. One panel member shared her experience in Massachusetts, noting that they had low attendance at cessation classes offered when housing went smoke-free. Another panel member had the same experience with LA County, and instead of the traditional multi-class intervention, recommended offering a single educational course where a one-time attendance would inform residents of resources, the Quitline, and available NRT options. Another panel member recommended signage to increase adherence and increase engagement. Signage could be worded so as to avoid clashes with pre-emption, e.g., “Thank you for not smoking.” An organization such as NashvilleHealth could fund the effort to put up signage, since landlords would likely not want to cover this cost. This panel member also emphasized that residents should be “given” something in return for taking away their ability to smoke at home, e.g., additional NRT resources reserved for

those who are in a situation where smoking was once allowed but no longer is. Panel members also recommended looking at the policy options mentioned in the comments responding to HUD's proposed rule, which might contain some innovative ideas.

3. Air television and/or radio ads for Tennessee's Quitline

Background: Mass media campaigns for tobacco prevention and cessation are considered essential parts of comprehensive tobacco control policies. While significant evidence suggests that mass media campaigns can prevent smoking initiation, especially in youths, and increase cessation, these campaigns may require multiple exposures and, thus, extended campaign duration. Nashville/Davidson County has not invested much in tobacco cessation and control-related media. Every year the "Tips from Former Smokers" TV ad campaign is sponsored across the state at least twice per year for several weeks at a time. This is funded by CDC dollars coordinated with the Tennessee Department of Health (TDH) promotion. TDH is limited in its ability to conduct independent media promotions with its CDC funding. Calls to the Quitline with corresponding quit attempts increase during each media campaign. In February 2016, calls to the Tennessee Quitline tripled with Tips and the "Quittin' Time in Tennessee" promotion with no disruption of services.

Panel Feedback: Panel members agreed that media could be highly effective if done well, with one panel member explaining that the Tips campaign typically doubled and tripled calls to the Quitline. Another panel member agreed, and in response to concern about waning TV audiences, said in her experience TV ads still reached the smoking population. Panel members recommended contacting the CDC, FDA, and Truth Campaign to see if their archived media materials could be used for free or at a reduced cost for PSAs. (Dr. Tindle talked to Mitch Zeller, Director of CTP at FDA, at SRNT immediately following the panel, and he agreed that FDA ads that have already run can be used for our purposes and he offered to facilitate if needed. There will be some cost associated). NashvilleHealth could negotiate with local media (TV, radio, press) to air/print Tips, Truth, and FDA material for free or reduced cost. Additionally, two panel members recommended more creative thinking in placement of ads – such as having ads pop up on health clinic kiosks, run on a loop in a hospital/clinic waiting room, or be printed on the forms that patients fill out or on after-visit summary documents (paperwork that patients take home from clinical encounters). Lastly, social media was discussed as a strategy. One panel member has had success with social media efforts as an advocacy/grassroots strategy. While there isn't literature that supports its effectiveness, panel members agreed it should also be a part of the media strategy because of the low cost associated. Like radio and TV ads, social media ads can take advantage of pre-existing Tips, Truth, and FDA material at low cost, which can serve to "boost" those traditional TV/radio ads. One model to look at is the "Unsmokeable" social media campaign in East Tennessee led by youths.

4. Extend MSA funding for tobacco-control

Background: In 1998, the four largest cigarette manufacturers reached a settlement with 46 states over state claims against the tobacco industry. The Centers for Disease Control and Prevention (CDC) recommends that Tennessee appropriate \$75.6 million for tobacco control each year. According to the MSA, cigarette manufacturers agreed to pay participating states \$206 billion over the next 25 years. Tennessee was projected to receive \$4.8 billion over 25 years. These funds are annually allocated to the general fund to be appropriated at the Legislature's discretion. In 2014, \$15 million of these funds were directed towards tobacco control and cessation efforts at the county level over three years. TDH has appropriated \$5 million each year from SFY 2015 – SFY 2017 to the local health departments for tobacco control in three areas: 1) promoting cessation for pregnant women, 2) prevention of tobacco use by youth, and 3) reduction of secondhand smoke exposure. In Nashville, MPH has used these funds for Breathe Easy smoke-free housing campaign, the Teens Against Tobacco Use peer-education program, the CEASE program, and the "Baby & Me Tobacco Free" program. It is unclear whether this appropriation will be made again. While CDC funds are used to support the salary of the MPH Tobacco Coordinator (and many others across the state), the availability of MSA funds has significantly impacted the programming capability of tobacco coordinators.

Panel Feedback: While an increase the tobacco excise tax was acknowledged as the most impactful policy change, Tennessee’s tobacco production and political climate could make this policy option difficult. Panel members agreed that the focus should be on what is most attainable. There was general consensus that extending, and ideally increasing, MSA funding for tobacco control was the most viable short-term policy option. Continuation of MSA funded-programs would require appropriation from the Tennessee General Assembly. Panelists suggested that the next policy option should be Tobacco21 if increasing MSA funding seemed untenable after discussion with policymakers.

LONG TERM STRATEGIES (1-5 YEAR CONSTRAINT)

1. Expand access to NRT for the uninsured

Background: Because Tennessee has not expanded Medicaid eligibility under the Affordable Care Act, the state still has a relatively large uninsured population. In Nashville, 16.4% of residents between 18 and 64 years of age are uninsured and, thus, have limited access to healthcare. Pharmacotherapy is likely cost-prohibitive for this population, as is regular contact with the medical system in a primary care context.

Panel Feedback: There should be a concerted effort to refer uninsured to the Quitline because it provides two weeks of free nicotine patch quit assistance: the Tennessee Department of Health is currently working on an extension of NRT to eight weeks. One panel member emphasized targeting uninsured parents of insured children for several reasons: 1) children have a decreased likelihood of smoking initiation if their parents quit; 2) smoking/tobacco use contributes to a cycle of poverty – it’s \$2000 a year for a pack a day habit; 3) targeting parents potentially prevents the next smoking pregnancy.

2. Expand outreach to targeted groups and vulnerable populations

Background: While Davidson County has a smoking rate of approximately 21%, higher rates are likely to be concentrated within certain demographic groups. Examples of communities with higher rates of tobacco use include LGBT individuals, those who are incarcerated, and those living with mental illness and/or substance use disorders. Although there is limited evidence about the efficacy of targeted vs. non-targeted clinical intervention for these sub-populations, expanding and tailoring outreach to these communities for prevention and cessation interventions may be needed.

Panel Feedback: The panel noted that we could see the biggest returns by focusing on disproportionately affected populations. One panel member recommended focusing on individuals who identify as LGBT, homeless individuals, individuals in recovery, incarcerated individuals, and low-income individuals. Community outreach could occur at mental health and substance abuse treatment centers. Another panel member mentioned that the Corrections Corporation of America was headquartered in Nashville, which might be a natural synergy. A third panel member recommended two tobacco cessation programs geared specifically toward the African-American communities: “Not in Mama’s Kitchen” and “Pathways to Freedom.”

3. Provide support for increase of cigarette excise tax

Background: Increasing the tobacco tax is one of the most effective means of reducing smoking rates for an entire population. Estimates suggest a 10% increase in the cigarette price would lead to a 4 – 8% reduction in smoking prevalence and substantial healthcare cost savings. In addition to lowering tobacco use prevalence and producing net savings, increasing tobacco taxes has effects on individuals other than the smoker. For instance, evidence has shown that increasing the price per pack of cigarettes by \$1 in a state decreases the infant mortality rate by 0.19 per 1000 births. Tennessee has one of the lowest tobacco taxes in the nation at 62 cents per pack (New York has the highest at \$4.35/pack). The tax was last raised in 2007 from 20 cents to 62 cents per pack. Additionally, Gov. Haslam signed a new law in May of 2015 that raises retailers’ minimum mark-up on cigarettes by 35 cents per pack in three stages over a two-year period from July 1, 2015 to July 1, 2017. Average

cost per pack will rise from \$5.00 to \$5.32. It is expected to result in a 2.24% decrease in cigarette sales. This is not considered a tax, as the government will not collect the revenue generated.

Panel Feedback: All panel members were supportive of a tobacco tax increase. One panel member recommended \$1/pack increase, which is a policy priority of the American Lung Association. Another panel member suggested that the city propose this in a creative manner, such as a per pack increase levied by the Metro Parks or other agencies to cover the costs of picking up cigarette butts. Several Republican governors in other states have been supportive and signed legislation increasing the excise tax, despite the policy being a tax increase. Many panel members provided words of caution when approaching this issue and acknowledged that the tobacco lobby will strongly oppose and organize against tax increases. As an example, Kentucky had proposed an increase in the tobacco excise tax and created a strong coalition that seemed to have the necessary legislative support. When the bill came up for a vote in the state legislature, Democrats voted against the measure, causing the bill to fail.

STRATEGIES THAT WERE NOT HIGHLY RECOMMENDED IN ACROSS-DOMAIN RANKINGS

The following four options were highly ranked within each domain, but were not highly ranked across domains either as a short-term (within 1 year) or long-term (1-5y years) intervention.

1. Improving accessibility to cessation resources and expanding incentives for pregnant smokers

Background: Current U.S. Preventive Services Task Force guidelines recommend tailored cessation counseling sessions for pregnant smokers; evidence for pharmacotherapy is insufficient to recommend.¹ Several programs targeting pregnant smokers recently debuted in Davidson County including *Baby & Me*, *Tobacco Free* and the *Clinical Effort Against Secondhand Smoke Exposure (CEASE)* program, both led by the county health department. Both programs leverage doctor's visits to encourage parents to stop using tobacco. *Baby & Me* provides counseling sessions that align with prenatal visits and monthly diaper vouchers after the baby is born if the mother is bio-verified as smoke-free. *CEASE* leverages pediatrician visits to inform smoking parents about the dangers of secondhand smoke and assist them in quitting tobacco by prescribing cessation pharmacotherapy and coaching as needed.

Panel Feedback: The panelists broadened the original recommendation of "improving counseling access to pregnant smokers" during discussion. The new recommendation captures a larger effort to enable and engage pregnant smokers in cessation efforts. While this change to the recommendation was well received in the within-domain ranking, it may have widened concerns about impact during the across-domain rankings at the close of the working group. Impact was a leading topic in the succeeding community domain conversation. This recommendation did not receive any short-term or long-term votes in the inter-domain ranking. Panelists showed a clear preference for engaging providers in a modified 5A's approach and expanding access to a commonly used and proven quit aid, NRT—with each receiving over half of the panelists votes during the across-domain ranking. This recommendation was overshadowed by the other two options and would not provide the same potential for impact.

2. Consider broad range of support for existing model programs targeting minority populations

Background: Nashville characteristic data show stark inequity among communities' economic status and financial burden which tracks with race and proportion of income spent on tobacco. The data indicate impact potential for tobacco control in minority communities. Nashville has a Faith-Based Tobacco Initiative that could be deployed in African American communities to implement the programs recommended below. The goals of the initiative are to increase tobacco prevention among faith-based organizations, provide trainings for selected congregants to become *Tobacco Prevention Health Ambassadors*, and lower the tobacco use prevalence rate among congregants.

Panel Feedback: Half of the panelists contributed successful techniques used previously to engage minority communities in tobacco control, such as providing minority youth a platform to voice their opposition to targeting techniques by the tobacco industry (heavy advertisements in their community, branding menthols at African Americans, etc.) and picture stories. One panelist had extensive experience engaging minority populations in tobacco use prevention and cessation efforts. She recommended several programs that have shown success, including the Pathways to Freedom program and “Not in Mama’s Kitchen. She also highlighted the web presence and advocacy work done by savingblacklives.org. Despite the enthusiasm for these programs, several panelists raised concerns about the effectiveness and true impact of supporting any in-person cessation program; many panelists shared experiences where in-person courses, like the American Lung Association’s Freedom from Smoking, did not draw participants needed to keep a program sustainable. It is likely that the concern around participation had an effect on the panel’s choice not to select this option for the final prescription across domains.

3. Promote policies and provide free signage for voluntary smoke-free areas

Background: Tennessee’s comprehensive preemption laws forced panel members to think about creative ways to engage communities in voluntary policies around vulnerable populations, like children. This recommendation was not an option posed to the working group for pre-panel ranking, but rather bore out of significant conversation by the panel during the community domain discussion. There is precedence for this in Tennessee; for example, Hamilton County mayors have united to push for smoke-free public parks by installing “Thank You for Not Smoking” signs. Additionally, some localities have sought to avoid preemption by passing local ordinances through boards of health.

Panel Feedback: One panelist emphasized the potential for quick turn-around, low effort results in providing implicit “No Smoking” signs (i.e. “Thank you for not smoking.”) to support voluntary smoke-free zones. The panelist emphasized focusing on locations where acceptability is most likely, such as schools. Providing signage to support voluntary restrictions may allow for locations to circumvent restrictions on implementing no-smoking policies and allow action in more contentious locations. The across domain votes were 2 for short-term and 4 for long-term. This recommendation was well received by panelists during the final ranking. Either the envisioned implementation of this intervention varied by panelist (i.e., how this would go into effect) or the implementation strategy straddles the short and long-term time frame.

Post-Meeting

After the in-person meeting concluded, members of NashvilleHealth and Vanderbilt worked together to collate notes taken during the in-person meeting. We compiled an initial report that was sent to panel members to gather their feedback. We asked panel members to ensure the fidelity of the report and assent to the information that was contained within the initial report. The next phase of this process is to present the findings to NashvilleHealth’s tobacco control working group to gather local feedback on the panel’s recommendations. If working group does not feel that the expert panel’s recommendations are feasible or will work in Nashville, then we will ask expert panel members to re-evaluate their recommended strategies based on working group feedback.

Appendix A. Detailed Biographies and Domains of Panel Members

Linda Aragon (Community, Media) is the Chief of Programs and Policy in the Los Angeles County Department of Public Health, Division of Chronic Disease and Injury Prevention. She oversees the work of five programs: Tobacco Control and Prevention, Nutrition and Physical Activity, Injury and Violence Prevention, Policies for Livable and Active Communities and Environments (PLACE), and Choose Health Los Angeles.

Prior to her current position, Ms. Aragon served 10 years as the Director of Tobacco Control and Prevention Program. Under her leadership, more than 140 local (city and county) tobacco control policies aimed at decreasing youth access to tobacco products, reducing tobacco use, and increasing protection from secondhand smoke exposure have been adopted. Ms. Aragon is or has been Principal Investigator/Co-Principal Investigator in a number of CDC-funded grants. From 2010 to the present, she oversaw a number of key programs for several large CDC-funded initiatives, including the local Communities Putting Prevention to Work program on tobacco control, the Community Transformation Grant, and two supplemental grants: Peer Mentoring and a Multi-Unit Housing study. Prior to her work in the Division of Chronic Disease and Injury Prevention, Ms. Aragon served as a Special Assistant in the office of the Director of Public Health and was responsible for overseeing the development and implementation of the Los Angeles County Public Health Strategic Plan.

Linda graduated in 1991 from UCLA with a master's degree in Public Health and has worked in the Los Angeles County Department of Health Services and Public Health for 24 years. In 2013, Ms. Aragon received the Department of Public Health's most prestigious honor, the Public Health Excellence Award, for her willingness to take risks and her leadership in public health.

Kimberly Bankston-Lee (Policy, Community) is the Senior Program Director for Breathe California of Sacramento-Emigrant Trails' Sacramento Taking Action against Nicotine Dependence (STAND Project). Ms. Bankston-Lee received her Bachelor of Science in Health and Safety Studies with an emphasis in Community Health Planning from CSU Sacramento and has 17 years of experience planning, developing and implementing tobacco control programs. She works with restaurateurs, the rental housing industry, community colleges and trade schools, and government agencies to adopt smoke-free policies and ordinances. She has developed numerous educational materials and campaigns such as policy tool kits, guides for adopting smoke-free policies, pamphlets, brochures and post cards on various tobacco issues and products Ms. Bankston-Lee is also trained as a cessation facilitator and motivational interviewer and has helped countless tobacco users with quitting. She is currently the Co-Principal Investigator for a pilot research project, testing efficacy of smoking cessation for college students, through a partnership with UC Davis Medical Center. Her personal mission is to help end tobacco addiction through individual behavior and policy and systems change by collaborating with diverse individuals, communities and organizations.

Dennis Henigan (Policy, Media) is the Director of Legal and Policy Analysis at the Campaign for Tobacco-Free Kids. He focuses on issues involving FDA regulation of the tobacco industry, as well as providing legal guidance on federal, state and local tobacco control legislation. Prior to joining the Campaign in September, 2012, he worked for over two decades at the Brady Center to Prevent Gun Violence, first as Director of the Center's Legal Action Project, and then as the Center's Vice President. Before his tenure at the Brady Center, Denny was a partner in the law firm Foley & Lardner. He is the author of the book *Lethal Logic: Exploding the Myths that Paralyze American Gun Policy* (Potomac Books 2009). Denny is a graduate of Oberlin College and the University of Virginia Law School.

Dr. Morgan McDonald (Community) is the Deputy Medical Director for the Division of Family Health and Wellness in the Tennessee Department of Health. Trained in Internal Medicine and Pediatrics, Dr. McDonald's background is as a primary care physician in vulnerable communities, spending the last several years with the homeless community of Nashville. In addition to clinical care, she has focused on educational and program

facilitation, patient and community engagement, and quality improvement. Dr. McDonald currently oversees the Injury Prevention and Chronic Disease sections at TDH, coordinating prevention efforts across the state. The Chronic Disease and Health Promotion section of Family Health and Wellness includes programming for Tobacco Use Prevention and Control, Diabetes, Heart Disease, Hypertension, and Obesity Prevention. The Injury Detection and Prevention section includes the state's programs in Child and Infant Mortality, Traumatic Brain Injury, and Rape and Sexual Violence prevention among others. Dr. McDonald also provides guidance for the Primary Prevention Initiative, a state plan to involve all health department employees in the state in primary prevention in their communities.

Dr. Nancy Rigotti (Healthcare) is an internationally known expert in tobacco use, tobacco cessation, and tobacco control public policy. Trained as a general internist, she is Associate Chief of the Division of General Internal Medicine at Massachusetts General Hospital, a Professor of Medicine at Harvard Medical School, and Past President of both the Society of General Internal Medicine and the Society for Research in Nicotine and Tobacco. Dr. Rigotti founded and directs the Tobacco Research and Treatment Center at Massachusetts General Hospital. This program combines a clinical service (MGH Tobacco Treatment Smoking Service) with a multidisciplinary research group whose mission is to develop innovative and effective smoking cessation treatment and tobacco control policy approaches. Her research includes formal evaluations of the effects of tobacco control public policy and clinical and outcomes research studies testing behavioral and pharmacologic smoking cessation treatments. Her current research focuses on developing and testing systems that embed tobacco dependence treatment into the evolving U.S. health care delivery system, with a special interest in using hospitalization as an opportunity to promote tobacco cessation. With colleagues from the Tobacco Research and Treatment Center and DFHCC, Dr. Rigotti is also testing smoking cessation interventions targeting patients with cancer, peripheral vascular disease, parents of children attending pediatric practices, and patients in primary care practices.

Dr. Steven Schroeder (Healthcare, Media) is Distinguished Professor of Health and Health Care, Division of General Internal Medicine, Department of Medicine, UCSF, where he also heads the Smoking Cessation Leadership Center. The Center, funded by the Robert Wood Johnson Foundation and the American Legacy Foundation, works with leaders of more than 50 American health professional organizations and health care institutions to increase the cessation rate for smokers. It has expanded the types of clinician groups that support cessation, developed an alternative cessation message (Ask, Advise, Refer), created new ways to market toll-free telephone quit lines, and engaged the mental health treatment community for the first time. Between 1990 and 2002 he was President and CEO, the Robert Wood Johnson Foundation. During that time the Foundation made grant expenditures of almost \$4 billion in pursuit of its mission of improving the health and health care of all Americans. It developed new programs in substance abuse prevention and treatment, care at the end of life, and health insurance expansion for children, among others.

Dr. Schroeder graduated with honors from Stanford University and Harvard Medical School, and trained in internal medicine at the Harvard Medical Service of Boston City Hospital and in epidemiology as an EIS Officer of the CDC. He held faculty appointments at Harvard, George Washington, and UCSF. At both George Washington and UCSF he was founding medical director of a university-sponsored HMO, and at UCSF he founded its division of general internal medicine.

He has published extensively in the fields of clinical medicine, health care financing and organization, prevention, public health, the work force, and tobacco control, with over 200 publications in peer reviewed journals. He currently serves as a member of the editorial board of the New England Journal of Medicine, a director of the James Irvine Foundation, the Robina Foundation, the Lucille Packard Foundation for Children's Health, the Marin General Hospital, Scientific Review Committees at the Universities of Pennsylvania and Wisconsin, and the Dean's Advisory Committee of the UC Berkeley School of Public Health. He formerly chaired the American Legacy Foundation, was a Council member and Chair of the Health Care Services Committee of the Institute of Medicine, an Overseer of Harvard, and President, the Harvard Medical Alumni Association. He has six

honorary doctoral degrees and numerous awards. Schroeder lives in Tiburon, California with his wife Sally, a retired schoolteacher. Their two sons are physicians, one a cardiologist and one a pediatrician. Steve and Sally have four grandchildren.

Dr. Hilary Tindle (Panel Chair, Healthcare) is a physician investigator with experience in designing and implementing systematic tobacco control programs in healthcare settings that leverage the electronic health record (EHR) to optimize care. She also works closely with the network of state quitlines and the North American Quitline Consortium (NAQC) in developing a bi-directional electronic referral (“eReferral”) to connect quitlines and healthcare settings on a massive scale. Dr. Tindle led the first demonstration project of the NAQC eReferral model in Pennsylvania, in which over 1000 patients were referred to the quitline during 6 months in 2015. Through her work as PI on 2 NIH grants and a co-investigator on several others, she designs smoking cessation programs for low-income smokers and other vulnerable populations. While her research and clinical efforts have traditionally focused on adult tobacco cessation, she has recently initiated collaborations with the Play2Prevent lab at Yale to develop media-based video game for prevention of tobacco use and electronic nicotine delivery systems (ENDS, also called e-cigs) use in youth. These collective efforts are united under **VITAL**, the **V**anderbilt **C**enter for **T**obacco, **A**ddiction, and **L**ifestyle, which Dr. Tindle founded in 2014. The current project with NashvilleHealth, Vanderbilt Health Policy, and the Robert Wood Johnson Foundation is a welcome opportunity to focus efforts toward the common goal of population health.

Prior to joining Vanderbilt, Dr. Tindle served on faculty at the University of Pittsburgh for 9 years. There she founded her first Tobacco Treatment Service (TTS), which is based on the effective Canadian “Ottawa” model and the Massachusetts General Hospital model. This TTS not only served a valuable clinic role but also allowed Pittsburgh to serve as a site in a multi-site randomized controlled trial (RCT) of standard vs. enhanced post-discharge care (PI: Rigotti) that will be presented at SRNT this week. In 2014, Dr. Tindle was a contributing author to the 2014 50th Anniversary Surgeon General’s Report and in 2015, served as a panelist for the new National Comprehensive Cancer Network tobacco cessation guidelines. Additionally, Dr. Tindle mentors pre and post-doctoral students and junior faculty to investigate and treat tobacco use. She is a member of the American Heart Association, the Society for Research on Nicotine and Tobacco, and the American Society of Addiction Medicine.

Dr. Jonathan Winickoff (Healthcare, Policy) is a practicing pediatrician and Assistant Professor of Pediatrics at Harvard Medical School. He has training and experience in health services research, medical ethics, neurobiology, statistics, and behavioral theory. He has received numerous awards including the Secretary’s Award for Distinguished Service for “protecting the health of the United States public.” He currently chairs the American Academy of Pediatrics Tobacco Consortium and has over 30 peer-reviewed publications, 15 specifically about tobacco control in child healthcare settings. Two of these studies were the first to evaluate the delivery of smoking cessation pharmacotherapies to parents in the pediatric setting. He is the Harvard site PI for the Julius Richmond Center of Excellence, Addressing the Secondhand Smoke Exposure of Children. He has drafted key tobacco control policy for the AMA, AAP, and the APA. He serves as a scientific advisor to the Massachusetts Tobacco Control Program. The program he developed out of his research known as CEASE, the Clinical Effort Against Secondhand Smoke Exposure, is being used in North Carolina, being evaluated in a Legacy funded project in New York and Massachusetts, and is available nationally at ceasetobacco.org.

Appendix B. Literature Review Search Terms and Criteria

Community Settings

- Timeframe: Last ten years
- Search fields: Search of all fields, English-language only, human subjects only
- Search terms: Smoking cessation & community interventions; Smoking cessation interventions; Tobacco cessation & community interventions; Tobacco cessation & interventions

Community: Youth

- Timeframe: Last ten years
- Search fields: Search of all fields, English-language only, human subjects only
- Search terms: Smoking cessation & Youths/Children/Adolescents & Community interventions; Smoking cessation & school-based programs; Tobacco cessation & community interventions; Community intervention & smoking cessation & systematic review

Community: Faith-Based Institutions

- Timeframe: No restriction
- Search fields: Search of all fields, English-language only, human subjects only
- Search terms: Smoking cessation & church; Smoking cessation & faith-based; Tobacco cessation & church; Tobacco cessation & faith-based; Smoking cessation & church-based

Policy Interventions

- Timeframe: Last five years
- Search fields: Search of all fields, English-language only, human subjects only
- Search terms: Smoking cessation & policy; Smoking cessation & policy & tax; Smoking cessation & policy & ban; Smoking cessation & policy & systematic review; Smoking cessation & interventions; Tobacco cessation & systematic review; Tobacco taxes & cessation; Anti-tobacco & policy; Cigarette taxes & smoking cessation; Cigarette taxes & policy; Smoke-free & policy (Extended years: 2000-2016)

Mass Media Interventions

- Timeframe: Last ten years
- Search fields: Search of all fields, English-language only, human subjects only
- Search terms: Smoking cessation & media interventions; Smoking cessation & media & systematic reviews; Smoking cessation & media & apps; Smoking cessation & mass media; Smoking cessation & mass media campaigns; Smoking cessation & mobile-health; Tobacco cessation & media; Tobacco cessation & media & systematic reviews; Tobacco cessation & media interventions

Healthcare Settings

- Timeframe: 2007-present
- Search fields: Search of all fields, English-language only, human subjects only
- Search terms: Smoking cessation & ambulatory or clinic; smoking cessation & hospital

Appendix C. Literature Summaries

Healthcare

Annually, most US smokers see a healthcare provider (70%), want to quit (68.8%) and make a quit attempt (52.4%).^{1,2} A major challenge is to engage smokers and their providers to use proven quit aids. Behavioral therapies such as counseling, including problem solving and skills training, address psychological aspects of nicotine dependence and offer actionable strategies to cope with craving, avoid triggers, and increase odds of abstinence (odds ratio [OR] for counseling vs. no contact 1.5 95% Confidence interval, [1.3-1.8]³; physician advice vs. no advice 1.76 [1.58-1.96].⁴ Pharmacotherapies reduce withdrawal symptoms, block rewarding effects of nicotine, and increase long term abstinence compared to placebo or no drug (risk ratio [RR], nicotine replacement therapy (NRT) 1.60 [1.53-1.68]; RR, bupropion 1.62 [1.49-1.76]; RR, varenicline 2.27 [2.02-2.55]).⁵ Most literature finds that varenicline and combination NRT produce higher quit rates than bupropion or NRT monotherapy,⁵ but see Baker et al. which found statistically equal 52 week quit rates for varenicline, combination NRT, and NRT monotherapy (19.1%, 20.2%, 20.8%, respectively).⁶ Behavioral therapy and pharmacotherapy are each effective when used alone, and combining them maximizes long-term abstinence relative to behavior therapy alone (RR 1.82 [95% 1.66 to 2.00])⁴. Recommendations are similar for non-combustible tobacco use.⁷ For pregnant women, tailored counseling but not pharmacotherapy is recommended.⁸ To reduce second hand smoke (SHS) exposure among children, the CEASE program is efficacious. Electronic nicotine delivery systems (ENDS) are not proven quit aids⁴ yet use is rising. *Of note, 16.4% of Nashville residents (primarily 18-64 yo) are uninsured and have limited access to healthcare.*⁹ Below are options in three main contexts:

1. Outpatient settings
2. Inpatient settings
3. Pregnancy and child health.

1. Outpatient settings

Healthcare providers are recommended to follow a version of the 5A's model (Ask, Advise, Assess, Assist, & Arrange) for patients willing to quit, and to use additional strategies including motivational interviewing for those unwilling to quit.³ A large study of primary care visits found that providers do not advise smokers to stop (77%), do not assist with counseling (41%) and do not prescribe pharmacotherapy (33%); smokers who used proven quit aids in that study were more likely to quit compared to those who did not (OR 1.82 [1.16-2.86] and 2.23 [1.56-3.20], respectively).¹⁰ A more actionable model, "Ask, Advise, Connect" has been applied successfully in primary care clinics when compared to "Ask, Advise, Refer" control (7.8% vs. 0.6% identified smokers enrolled in treatment through quitline; n=2,052 and n=1,611, respectively).¹¹ Proven quit aids can also be offered in pharmacies, dental offices, or other settings. Pharmacists are highly accessible, can recommend NRT, and refer to state quitlines.¹² A pharmacist-led education program in 6,500 pharmacies associated with approximately 40,000 patients found that among surveyed smokers who used NRT (n=2,001, 76% response rate), those who received pharmacist counseling and joined a comprehensive cessation program, like SmokEnders, (13.5%) reported higher quit rates at the end of the 5-week program (62%) and at 10 months post-treatment (45%) compared to those who did not join a comprehensive cessation program but did receive pharmacist counseling (37% and 33%, respectively).¹³ In a telephone survey of 548 dental patients (72% response rate), clinics with a discussion-prompt tool incorporated into the EHR compared to those without the EHR-based tool documented higher rates of assessment of interest in quitting (87% vs. 70%, respectively), discussing strategies to quit (47% vs. 26%, respectively), and quitline referral (37% vs. 17%, respectively).¹⁴

2. Inpatient Settings

Major health events such as surgery or hospitalization can motivate smokers to quit. High intensity (> 5 minutes) counseling that begins during a hospital stay and includes supportive contact over at least one month after discharge results in higher quit rates long term (RR 1.37[1.27-1.48]; 25 trials); adding NRT increases abstinence over counseling alone: (RR 1.54[1.34-1.79], 6 trials).¹⁵ A single-site trial of sustained care after discharge with

free pharmacotherapy and interactive voice response (IVR) calls produced higher cessation outcomes at 6-months relative to usual care (biochemically-validated 7-day tobacco abstinence 26% vs. 15%, respectively, RR 1.71 [1.14-2.56])¹⁶; although scaling this type of intervention by partnering with state quitlines has not resulted in long term efficacy in RCTs (see Rigotti et al 2016 as one example).¹⁷ Nevertheless, engaging the network of state quitlines and/or existing programs for texting and smartphone apps (e.g., NCI smokefree.gov, quitSTART) reduces burden on the healthcare system to extend care and broaden reach to diverse populations.³

3. Pregnant women and children

For pregnant smokers, 2015 USPSTF recommends tailored counseling approaches. Evidence for pharmacotherapy is insufficient to recommend.⁴ In Tennessee, 1,595 pregnant smokers randomized to an expanded 5A's approach delivered by health educators achieved a 28% quit rate by the end of the second trimester and remained smoke-free to delivery, compared to 9.8% among controls ($\chi^2 = 59.2$, $p < .001$), and 75% of intervention women significantly reduced smoking by the time of delivery (average cigarettes per day at conception compared to delivery 17.7 vs. 8.6 [$t = 47.3$, $p < .001$]).¹⁸ To combat SHS exposure among children of smoking parents or caregivers, programs such as the Clinical Effort Against Secondhand Smoke Exposure (CEASE) train pediatricians and office staff to systematically provide cessation counseling and interventions using a streamlined, 3-step version of the 5A's approach. In a 10-site cluster RCT of CEASE, intervention sites showed 10% vs. 0% enrollment in the quitline, 12% vs. 0% provision of pharmacotherapy, and 24% vs. 2% counseling for smoking cessation ($p < .0001$ for each).¹⁹ Twelve-months after CEASE implementation, intervention practices had higher rates of delivering tobacco control assistance than usual care practices over a 1-year follow-up period (55% vs. 19%, respectively; $p < 0.0001$); however, parents' likelihood of quitting smoking was not statistically different between the intervention and control groups (adj. OR 1.07; 95%CI 0.64-1.78).²⁰

¹ Centers for Disease Control and Prevention. Quitting smoking among adults -Tobacco Use Screening and Counseling During Physician Office Visits Among Adults — National Ambulatory Medical Care Survey and National Health Interview Survey, United States, 2001-2010. *MMWR Morb Mortal Wkly Rep.* 2011;60(44):1513-1519. *Morbidity and mortality weekly report 2012*;61:38-45.

² Centers for Disease Control and Prevention. Quitting smoking among adults - United States, 2001-2010. *MMWR Morb Mortal Wkly Rep.* 2011;60(44):1513-1519.

³ Fiore MC, Jaén CR, Baker TB, et al. Treating Tobacco Use and Dependence: 2008 Update. Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services, Public Health Service; May 2008.

⁴ Patnode CD, et al. Behavioral Counseling and Pharmacotherapy Interventions for Tobacco Cessation in Adults, Including Pregnant Women: A Review of Reviews for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2015; 163(8):608-21.

⁵ Cahill K, Stevens S, Perera R, Lancaster T. Pharmacological interventions for smoking cessation: an overview and network meta-analysis. *The Cochrane database of systematic reviews.* 2013;5:CD009329.

⁶ Baker et al. Effects of Nicotine Patch vs. Varenicline vs. Combination Nicotine Replacement Therapy on Smoking Cessation at 26 Weeks: a RCT. *JAMA.* Jan 11 15:33. 2016.

⁷ Ebbert J, et al. Interventions for smokeless tobacco use cessation (Review). *The Cochrane Library.* 2015.

⁸ Final Recommendation Statement: Tobacco Smoking Cessation in Adults, Including Pregnant Women: Behavioral and Pharmacotherapy Interventions. U.S. Preventive Services Task Force. October 2015.

⁹ U.S. Census Bureau; American Community Survey, 2010-2014 American Community Survey 5-Year Estimates, Health Insurance.

¹⁰ Quinn VP, et al. Effectiveness of the 5-As Tobacco Cessation Treatments in 9 HMOs. *J Gen Intern Med* 2008;24(2):149-154.

¹¹ Vidrine J, Shete S, Cao Y, et al. Ask-Advise-Connect: A New Approach to Smoking Treatment Delivery in Health Care Settings. *JAMA Intern Med.* 2013;173(6):458-464.

¹² Dent LA, et al. Tobacco Interventions Delivered by Pharmacists: A Summary and Systematic Review. *Pharmacotherapy.* 2007;27(7):1040-1051.

¹³ Smith MD, et al. Pharmacist counseling and outcomes of smoking cessation. *Am Pharm.* 1995 Aug;NS35(8):20-9; 32

¹⁴ Rindal DB, et al. Computer-assisted guidance for dental office tobacco-cessation counseling: a randomized controlled trial. *Am J Prev Med.* 2013 Mar;44(3):260-4.

¹⁵ Rigotti et al, Interventions for smoking cessation in hospitalised patients. *Cochrane Database Systematic Reviews.* 2012 May 16;5:CD001837.

¹⁶ Helping HAND 1 Study: Rigotti et al, Sustained care intervention and postdischarge smoking cessation among hospitalized adults: a randomized clinical trial. *JAMA.* 2014 Aug 20;312(7):719-28.

¹⁷ Rigotti, Tindle et al, Adapting a Post-discharge Intervention for Hospitalized Smokers to Enhance Scalability: the Helping HAND 2 RCT (submitted 1-2016).

- ¹⁸ Bailey BA. Effectiveness of a Pregnancy Smoking Intervention: The Tennessee Intervention for Pregnant Smokers Program. *Health Educ Behav.* 2015;42(6):824-31.
- ¹⁹ Winickoff JP, et al. Implementation of a parental tobacco control intervention in pediatric practice. *Pediatrics.* 2013 Jul;132(1):109-17.
- ²⁰ Winickoff J, et al. Sustainability of a parental tobacco control intervention in pediatric practice. *Pediatrics.* 2014;134(5):933-41.

Community

As the number one cause of preventable death and disease in the United States, smoking and tobacco cessation has been a focus of community-based interventions.¹ Community-based interventions include a broad array of strategies, with the goal of targeting a geographic community to change individual behaviors in order to reduce the population's risk of disease.² The community-based intervention research emphasizes two aspects of successful models:

1. Free or incentive-based programs
2. Targeted interventions to high-risk subpopulations

1. Free or incentive-based programs

Free or incentive-based programs are designed to change unhealthy behaviors and are common models for smoking cessation and prevention interventions. Program incentives are often modeled as “reward” incentives (i.e., lottery tickets, cash payments, product vouchers) or “deposits-refund” incentives (i.e., the return of money invested into program). For both models, the odds of quitting smoking when incentives were provided was 1.42 times the odds of quitting without incentives at the longest follow-up period of six-months or more. Individuals participating in deposit-refund incentive programs may actually experience higher quit rates than reward-only participants, however, these programs often face low levels of enrollment.^{3,4} Both types of interventions may lose efficacy at longer follow-up times, especially if incentives end. In order to maintain quit rates at longer follow-up times, some programs had to continue to reward abstinence with substantial cash payments, which may be cost-prohibitive.⁴

Similarly, several states have found that providing free nicotine replacement therapy (NRT) to those agreeing to counseling via the state's quitline experience increased quit rates.^{5,6,7,8} Oregon experienced a doubling of registered calls to its quitline and a fourfold increase in 30-day quit rates. These incentives were also found cost-effective compared to paid advertisements (\$2688 per individual who quit in Oregon).⁵ Despite these successes, interventions such as this may not reach vulnerable populations: compared to the pre-period, individuals who used the quitline during the initiative were older and more likely and insured.

2. Targeted interventions to high-risk subpopulations

Targeted community interventions, despite their successes, may actually increase existing disparities among vulnerable populations. For example, the LGBT community has an adult smoking prevalence 68% higher than the heterosexual population in the United States.⁹ Although non-tailored clinical interventions produce results for LGBT individuals similar to those of non-LGBT individuals, targeting community-based cessation interventions may be needed as the LGBT community faces unique stressors.⁹

Implementing smoking cessation programs in existing community settings with established social networks and infrastructure, such as faith-based organizations, may reach vulnerable populations and reduce disparities.¹⁰

¹ Yoon PW et al. Potentially Preventable Deaths from the Five Leading Causes of Death — United States, 2008–2010. *Centers for Disease Control and Preventions MMWR* 2014; 63: 369-374.

² McLeroy KR et al. Community-Based Interventions. *American Journal of Public Health* 2003; 93: 529-533.

³ Cahill K et al. Incentives for smoking cessation. *Cochrane Database Syst Rev*. 2015 May 18;5:CD004307

⁴ Halpern SD, et al. Randomized trial of four financial incentive programs for smoking cessation. *NEJM*. 2015 May 28; 372(22): 2108-17.

⁵ Fellows JL, et al. Cost effectiveness of the Oregon quitline “free patch initiative”. *Tob Control*. 2007 Dec; 16 Suppl 1: 47-52

⁶ Miller N, Frieden TR, Liu SY, et al. Effectiveness of a large-scale distribution programme of free nicotine patches: a prospective evaluation. *Lancet* 2005;365:1849–54.

⁷ Swartz SH, Cowan TM, Klayman JE, et al. Use and effectiveness of tobacco telephone counseling and nicotine therapy in Maine. *Am J Prev Med* 2005;29:288–94.

⁸ An LC, Schillo BA, Kavanaugh AM, et al. Increasing reach and effectiveness of a statewide tobacco quitline. *Tob Control*. 2006 Aug;15(4):286-93.

⁹ Lee JG, et al. Promotion of tobacco use cessation for lesbian, gay, bisexual, and transgender people: a systematic review. *Am J Prev Med*. 2014 Dec; 47(6): 823-31.

¹⁰ Schoenberg, NE et al. A rural Appalachian faith-placed smoking cessation intervention. *J Relig Health*. 2015 Apr; 54(2):598-611.

Although evidence is limited, faith-based settings may increase awareness of cessation programs and increase the likelihood of transitioning to the next stage of quitting.¹⁰ The existing social connections of faith-based cessation programs may improve comfort, motivation, and receptivity to smoking cessation programs.¹⁰

In addition to targeting vulnerable populations, youth populations may also need separate community-based interventions.¹¹ Despite gains in reducing youth prevalence, the youth smoking rate is still similar to that of adults (20%).^{11, 12} Additionally, evidence suggests earlier initiation is associated with a lower likelihood of quitting and increased rate of disease in adulthood.¹² A limitation for youth interventions is differentiating between prevention and cessation interventions. Multi-component, community prevention programs are most effective,¹² including school-based interventions delivered by teachers or other faculty, which incorporate parental involvement.^{12, 13} Additionally, interventions lasting longer than 12 months and incorporating social learning theory are also more likely to prevent the youth initiation. Programs that combine social competence and social influences curricula prevent the onset of smoking compared to information-only interventions (OR 0.49).¹³

¹¹ Stanton A and Grimshaw G. Tobacco cessation interventions for young people. *Cochrane Database Syst Rev.* 2013 Aug 23;8:CD003289

¹² Carson KV et al. Community interventions for preventing smoking in young people. *Cochrane Database Syst Rev.* 2011 Jul 6;(7):CD001291.

¹³ Thomas, RE et al. School based programmes for preventing smoking. *Cochrane Database Sys Rev.* 2013 Apr 30. 4:CD001293.

Media

Media campaigns have been used to promote both prevention of smoking initiation and cessation services. These campaigns may occur at the national, state, or local levels. The evidence available focuses primarily on campaigns that have taken place at the national level. However, it is important to note that these interventions may need to be amended for implementation at the local level.

1. Media promotion of cessation services
2. Anti-smoking media campaigns
3. Use of innovative media outlets

1. Media promotion of cessation services

Despite smokers' reported desire to quit, few use proven and effective methods for quitting. In order to promote the use of proven quit aids, such as quitlines, media campaigns have been undertaken by national and state agencies. Television advertising volume is still the greatest predictor of quitline service awareness.¹⁴ Not only does the media platform matter, but the promoted avenue to the quitline also matters. For example, an additional 100 gross rating points during the CDC's "Tips from Former Smokers" campaign is associated with an increase of 89 calls to the quitline per week, if the advertisement is tagged with a telephone number.¹⁵ If a TIPS campaign advertisement is tagged with a URL, a 100 gross rating point increase is associated with an additional 29 quitline calls per week, nationally.¹⁵ Thus, if all Tips campaign ads were tagged with a quitline phone number, it is estimated that an additional 140,000 calls to the quitline would have been made¹⁵: in Nashville, this is equivalent to an additional 285 calls to the quitline during the Tips campaign, which is more than the total number of calls that the Tennessee quitline received from Nashville in 2015.

2. Anti-smoking media campaigns

Mass media campaigns for tobacco prevention and cessation are considered essential parts of comprehensive tobacco control policies.¹⁶ While significant evidence suggests that mass media campaigns can prevent smoking initiation, especially in youths, and increase cessation, these campaigns may require several exposures and extended campaign duration.¹⁷ For instance, exposure to televised anti-smoking ads four (4) times a week is associated with a 0.3% reduction in smoking prevalence, which is equivalent to a 0.03% increase in tobacco price.¹⁸ Among individuals who were exposed to at least one Tips advertisement, quit attempts increased 12% relative to baseline: 13.4% of those who had attempted to quit were abstinent at follow-up.¹⁹ Additionally, the Tips campaign may increase dialogue between smokers and their non-smoker friends and family members about the dangers of smoking and options for cessation.⁶ Despite the costs of running a national television ad campaign, such as Tips, this approach is highly cost-effective, costing less than \$500 per quitter, life year saved, and QALY gained.²⁰ While television may be the most effective mode of delivery for tobacco cessation and promotion, other media outlets, such as radio, may be more cost-effective for every \$1,000 spent on media campaigns.³

¹⁴ Momin B, et al. Traditional and innovative promotional strategies of tobacco cessation services; A review of the literature. *J Community Health*. 2014 Aug;39(4):800-9.

¹⁵ Davis KC, et al. The dose-response relationship between tobacco education advertising and calls to quitlines in the United States, March-June 2012. *Prev Chronic Disease*. 2015;12:150-7.

¹⁶ Bala MM. Mass media interventions for smoking cessation in adults. *Cochrane Database Syst Rev*. 2013 Jun 5;6:CD004704.

¹⁷ Durkin S, et al. Mass media campaigns to promote smoking cessation among adults: an integrative review. *Tob Control*. 2012 Mar;21(2):127-38.

¹⁸ Wakefield MA, et al. Impact of tobacco control policies and mass media campaigns on monthly adult smoking prevalence. *AJPH*. 2008 Aug;98(8):1443-50.

¹⁹ McAfee T, et al. Effect of the first federally funded US antismoking national media campaign. *The Lancet*. 2013 Sept 9;382(9909):2003-11.

²⁰ Xu X, et al. Cost-effectiveness analysis of the first federally funded antismoking campaign. *Am J Prev Med*. 2015 Mar;48(3):318-25.