Smoking Cessation Among Populations With Lower Socioeconomic Status:

A comprehensive knowledge review

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Executive Summary

In recent decades, Colorado has continued to see declining smoking rates as youth and adults respond to higher tobacco prices, stronger smoke-free policies, more accessible cessation services, and changing attitudes and norms. However, the decline in smoking has not been experienced equally among all groups; largely left out are groups with lower socioeconomic economic status (SES), including people with low incomes, low education attainment, experiencing unemployment, and blue-collar and service industry workers.[1] Lower SES status (LSES) is now the single strongest predictor of tobacco use in Colorado.[2]

At STEPP's request, the Community Epidemiology & Program Evaluation Group (CEPEG) conducted a knowledge review of established and innovative strategies for reducing tobacco burdens among LSES populations. The knowledge review included a systematic search and analysis of scientific literature, and key informant interviews with national experts. The objectives of the review are to:

- Summarize what is known about smoking prevention and cessation intervention strategies among lower SES populations;
- Identify effective strategies that a state health department can feasibly implement to reach, engage, motivate, and support lower SES smokers in quitting, and prevent lower-SES young people from initiating tobacco use;
- Provide guidance for targeting limited resources to reduce SES tobacco disparities and make a substantial impact on tobacco use;
- Identify potential innovations in smoking prevention, tobacco control policies, and cessation interventions.

The current report provides a summary of evidence, lessons learned, and recommendations from a variety of sources that may be utilized by CDPHE in developing Colorado-specific strategies to reduce the tobacco burden among lower-SES populations.

Systematic Review

A systematic review resulted in the synthesis of 262 published articles spanning six categories: cessation intervention, policy, media, prevalence, qualitative research, and systematic review.

Articles on smoking prevalence and patterns confirm the increased levels of smoking, higher rates of relapse and increased burden of tobacco among particular groups. This includes lower income groups, those with lower educational attainment, homelessness and food insecurity, as well as those living in disadvantaged neighborhoods, lacking social supports, having public health insurance, American Indian/Alaskan Native, and blue-collar and service workers.

Unique barriers to quitting among Low SES groups have been clearly identified and include high levels of chronic life stress, high levels of nicotine dependence, pro-smoking community norms, and financial, tangible and cultural barriers. A few specific barriers include the cost of NRT and pharmacological products, and a general mistrust of the medical system.

Eighty-three studies evaluating smoking cessation treatment engagement and cessation interventions for low-SES populations were chosen for this review. Interventions are broadly categorized as those delivered in community, clinical, and worksite settings. Community based tobacco cessation interventions show great promise to improve community engagement and recruitment among low-SES smokers. A considerable number of studies demonstrate significant treatment outcomes. Multi-modal tobacco cessation interventions applied in clinical settings

demonstrate efficacy for short term tobacco abstinence. More research is needed to determine the type, frequency and intensity of clinic based interventions to support long term abstinence and relapse prevention for pregnant and general low-SES populations. Results of a limited number of workplace based studies indicate that union apprenticeship programs represent a promising venue for smoking cessation interventions. Additionally, the integration of smoking cessation with occupational health concerns is a viable approach for blue collar workers.

The review of published articles revealed promising strategies for hard-to-reach populations and using new technologies and media strategies. Several studies demonstrate that emotionally-evocative or graphic advertisements are more effective among low-SES smokers than ads depicting how to quit.

Published articles depicting policy impact focused on three major topics: cigarette pricing, smoke-free polices in subsidized housing, and expansion of Medicaid to cover smoking-cessation aids. The literature consistently states that increasing cigarette prices increases smoking cessation rates among low-SES populations; however there is concern about the negative impact on them. Smoke-free policies, particularly in multi-unit housing are a current strategy and demonstrate a positive effect. Expanded coverage of cessation treatment through Medicaid has improved quit rates among Medicaid recipients with additional efforts required to ensure use and access to increased benefits.

Key Informant Interviews

Key informant interviews were conducted with 16 experts in the field of tobacco control service and research, particularly among low-SES communities. The key informant interviews were conducted to help identify the most promising or proven strategies for reaching, engaging and providing smoking cessation services to low SES smokers. The Social Ecological Model is used as a framework for the various levels of influence on the smoking cessation continuum.[3]

There are two main themes that evolved from the expert interviews to impact smoking cessation from a societal approach, policy change and media campaigns, both of which lend to creating an environment that is conducive to being smoke free.

Community-level factors are very influential in our ability to decrease the smoking rate among low-SES smokers. The experts commented on the role of community norms on smokers via the lack of support for non-smokers within low-SES communities; need to tailor interventions for the community of focus; obtaining buy-in of community leaders; integrating tobacco into community mobilization efforts; and developing community-based support systems for smokers during the cessation process.

At the interpersonal level, there are many opportunities to influence the motivational level, access, and knowledge of the low-SES smoker. This interpersonal influence can extend from the medical setting with whom the smoker interacts, the patient navigator, family and friends to new and innovative technological channels. Engagement with the low-SES smoker can occur in a community setting, clinical site, and through technology.

As mentioned as part of the literature review, although low SES smokers are interested in quitting smoking and attempt to quit at rates similar to those of other smokers, they are less likely to succeed, despite the existence of effective evidence-based treatment (EBT). EBT includes nicotine-replacement therapy (NRT), behavioral counseling, and medication. Barriers to EBT for low-SES individuals mentioned by the experts include adherence to treatment, cost of EBT and lack of support for preventing relapse.

Recommendations

The following recommendations were identified based upon successful smoking cessation strategies found in the literature and input provided by the expert panel. Additionally, much consideration was given to which approaches would be financially feasible and most impactful.

- **Identify cross-cutting themes** among subpopulations such as, social stressors or financial stress, rather than targeting specific subpopulations and employ strategies used by the tobacco industry to play on biases and social norms to promote smoking cessation. **Modeling after or tailoring successful, existing media campaigns such as TIPS or Legacy to the Colorado population is one way to feasibly execute this.**
- **Focus the vision** and invest intentionally and heavily toward specific impact goals.
- For specific low-SES communities, **involve community members**, gain community leadership's trust and buy-in, include community mobilization efforts and allow for community ownership whenever possible for more relevant, sustainable and successful efforts within communities.
- **Create community-based systems** of care to support the low-SES smoker within his/her community during and after the cessation process.
- **Increase provider education** on smoking cessation guidelines and treatments and smoke free policies.
- **Shift away from passive referral systems** to proactive calling of QuitLine (e.g. Ask-Advise-Connect) while expanding referral sites in community-based settings and individuals to engage low SES smokers.

Background and Purpose

In recent decades, Colorado has continued to see declining smoking rates as youth and adults respond to higher tobacco prices, stronger smoke-free policies, more accessible cessation services, and changing attitudes and norms. However, the decline in smoking has not been experienced equally among all groups; largely left out are groups with lower socioeconomic economic status (SES), including people with low incomes, low education attainment, unemployment, and blue-collar and service industry workers.[1] Based on Colorado data, the State Tobacco Education & Prevention Partnership (STEPP) defines lower LSES to include people with household income less than 200% of the federal poverty level; less education than a high school diploma; no health insurance, or disability/ inability to work.

Lower SES (LSES) status is now the single strongest predictor of tobacco use in Colorado.[2] Marked differences in smoking prevalence by income, education and race/ethnicity remain. Data from the 2012 Attitudes and Behaviors Survey (TABS) on Health reported that smoking prevalence was nearly three times as high (27.1%) among people with low SES than the rest of the population (9.4%). TABS data shows that 23.7% of African Americans smoke, 21.8% of Latinos, 29.3% of American Indians/Alaska Natives and 16.7% of Whites/Anglos. Further disparities exist among those with mental illness: smoking prevalence was more than twice as common as it was among the rest of the population (32.9% vs. 14.8%). In addition, non-student or straight-to-work youth adults (age 18-24), who tend to have lower SES than students, have a smoking prevalence of 31.9% compared with 12.3% of students in the same age group.

The tobacco disparities affecting LSES youth and adults are priority targets of Colorado's Strategic Tobacco Goals for the year 2020. At STEPP's request, the Community Epidemiology & Program Evaluation Group (CEPEG) conducted a knowledge review of established and innovative strategies for reducing tobacco burdens among LSES populations. The knowledge review included a systematic search and analysis of scientific literature, and key informant interviews with national experts. The objectives of the review are to:

- Summarize what is known about smoking prevention and cessation intervention strategies among LSES populations;
- Identify effective strategies that a state health department can feasibly implement to reach, engage, motivate, and support lower-SES smokers in quitting and prevent lower-SES young people from initiating tobacco use;
- Provide guidance for targeting limited resources to reduce SES tobacco disparities and make a substantial impact on tobacco use;
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The current report provides a summary of evidence, lessons learned and recommendations from a variety of sources that may be utilized by CDPHE in developing Colorado-specific strategies to reduce the tobacco burden among lower-SES populations.

Methods

Literature Review

Scientific article databases (Ovid Medline, Embase, PsychINFO, CINAHL, Web of Science, Cochrane) were searched for English-language articles published between 1994 and January 2016. The search focused on articles that included smoking, cessation strategies and low socioeconomic status. See box at right for specific search terms. The literature review was conducted in two phases with the first review conducted of articles published from 1994 and 2015 and the updated review adding articles through January of 2016. The initial search identified 2,496 articles. The articles were then filtered through three rounds of review. Round one included two reviewers keeping or discarding articles based on information provided by the article title and abstract. Any disagreement between reviewers was reviewed again in round two by three reviewers. The final review cycle included discussion by the project team to identify the articles most relevant to smoking prevalence in lower-SES populations and smoking cessation strategies in lower-SES populations. At the end of these three rounds of review, 710 articles were selected for further review and organized into six categories: cessation intervention, policy, media, prevalence, qualitative research, and systematic review. Articles that did not focus on LSES or which took place outside the U.S. were excluded.

Literature review search strategy:

1) (smoking or "cigarette use" or (Waterpipe adj2 Smoking*) or (Hookah adj2 Smoking*) or (Cigarette adj2 Smoking*) or (Tobacco adj2 Smoking*) or (Cigar adj2 Smoking*) or (Pipe adj2 Smoking*) or smoker*).mp. or Smoking
2) (Tobacco adj2 Cessation*) or (smoking adj2 cessation*) or ((quit* or stop*) adj2 smoking) or Commit or Nicorette or nicotine chewing gum* or nicotine replacement product* or nicotine replacement therap* or Nicotine Lozenge* or Nicotine Nasal Spray* or (Nicotine adj2 Patch*) or Nicotine Transdermal Patch* or Nicotine Polacrilex or Nicotine Polacrilices or Smoking Cessation Product* or Nicotine Inhalant* or QuitLine or Chantix or Zyban or ((smoking or nicotine) adj1 abstinence) or smoking dehabituation or "Tobacco Use Cessation"
3) (Social adj2 Class*) or (Socioeconomic adj2 Status*) or (Socioeconomic adj2 Factor*) or (Standard* adj2 living) or (land adj2 tenure) or (high adj2 income adj2 population) or Inequalit* or Middle Class Population* or Caste or castes or Indigent* or Low Income Population* or Indigency.mp. or exp Socioeconomic Factors
4) Include 1 and 2 and 3
5) Limit to English language articles
6) Remove duplicates

A total of 262 articles were entered into a REDCap database. The database was designed to synthesize the type of study, target population, setting, results and relevance for lower-SES populations. It was determined by the team that focusing on the results and above characteristics was more important to this review than independently rating the quality indicators (such as strength of statistical analysis) of the articles, therefore this information was not included in the data capture.

Articles were compiled into tables for review and synthesis. Intervention articles, including policy and media, were reviewed for common strategies, target populations and consistent findings. Prevalence articles were examined to draw out common trends among lower-SES populations.

Key Informant Interviews

Potential informants were identified through several sources, including a National Cancer Institute list of researchers who are studying smoking cessation interventions among low-SES populations; a senior tobacco control scientist (AHL), and STEPP program staff. CEPEG invited 56 individuals to participate, and 16 agreed to be interviewed (Appendix A).

Pre-interview packets for informants included a cover letter describing the purpose of the knowledge review and logistic information of interviews (Appendix B); key background articles on LSES and tobacco (Appendix C); the interview guide (Appendix D); the Tobacco Education, Prevention and Cessation Grant Program Strategic Plan, 2012-2020 (Appendix E); and a summary of Colorado's current tobacco grant portfolio (Appendix F).

The interview guide was designed to elicit rich discussion and feedback around three main study areas including 1) where and how to intervene in a smoking cessation sequence, 2) current mass-audience strategies, and 3) Colorado's tobacco control approach and portfolio. The guide as a whole provided a loose structure for the interviews as opposed to being a strict list of questions that every expert was asked in the same way. The questions were intended to be interpreted broadly so participants were not guided in their responses. More targeted questions were included, however, in the event that participants needed more probes. An honorarium of $500 was provided to participating experts.

The first study area asked experts their thoughts on where to intervene in a given smoking cessation sequence. The guide provided a visual depicting a smoking cessation behavioral sequence, with the arrows underneath pointing to transition spaces between steps, where interventions to be identified increase the likelihood that a population of smokers initiates the next behavior in the sequence. Participants were asked to reflect on interventions that can increase lower-SES smoking cessation at the population level. The idea behind the model was to spark discussion based on the expert's own experience as well as innovative ideas.

The second topic area asked experts to comment on mass-audience strategies. Questions included ways that media campaigns can increase reach and salience among lower-SES populations; audience segmentation and how to define lower-SES; and how to increase use of QuitLine.

The third study area focused on Colorado's tobacco control approach and portfolio and asked the experts for specific feedback on what they would change or enhance, as well as recommendations specific to the Affordable Care Act.

At least two project team members attended each interview, one leading discussion and the other taking detailed notes and posing clarifying questions. Interviews were conducted by telephone and recorded with participant consent under agreement that the informant would have an opportunity to decide whether their verbatim quotes in the final report would be attributed or anonymous. Each interview lasted approximately 60 to 90 minutes.

Interviews were professionally transcribed, and transcripts were uploaded for analysis using qualitative analytic software (ATLAS.ti GmbH, Berlin). The team developed an *a priori* code list, and each transcript was separately coded by two of the analysts (PV, KT, KG, EM, EB); the master code list was updated with additional codes as needed. After this initial coding, the research team compared codes and themes and any discrepancies were discussed until a consensus was achieved. This triangulation involved meetings of the research team to review the range of data, examine contradictory data, and consider the underlying themes behind apparent discrepancies. Once coding was completed, ATLAS.ti was used to extract data summaries of codes, which were then used to develop the report's overarching themes. Emergent themes were identified based on code frequency. Frequencies of codes were analyzed in two ways: 1) by the number of times codes appeared overall; and 2) by the number of interviews in which codes appeared. Once specific quotes were selected to emphasize the emergent themes, the experts were given the opportunity to review and approve the use of their quotes. In some cases, wording was refined by the expert for conciseness.

Results

Literature review

Prevalence (See Appendix G for table of articles)

In line with the observed trends in Colorado, the literature suggests that overall, smoking prevalence is decreasing; however, among populations with low socio-economic status it remains high. Educational attainment is a strong predictor of smoking and is inversely associated with smoking prevalence.[4-17] Nationwide, the highest prevalence is found in those with only a GED, 42.3%, and lowest in those with graduate degrees, 5.7%. [8] Smoking cessation rates are lower (two thirds) among those with lower educational attainment compared to those with higher educational attainment as found in a recent analysis of two decades of NHIS data.[106] Additionally, those with lower health literacy are more likely to smoke and have a higher level of nicotine dependence. [18] Low health literacy is associated with being younger, male, lower income and lower educational attainment.[107] Those with higher educational attainment are less likely to be daily smokers, are more likely to attempt to quit or reduce number of cigarettes smoked and, less likely to relapse.[4,19] Relapse is higher among those with lower educational attainment. [19] Women are most affected by educational attainment, specifically pregnant women. Cessation is less likely in pregnant women who have less than a high school education.[20, 21] Pregnant women enrolled in Medicaid are also less likely to fill prescriptions for smoking cessation pharmacotherapies except for those experiencing smoking related complications or substance abuse disorders.[108]

Smoking rates are nearly double among those who are HIV positive compared to the national rate. Similar trends are observed among this subgroup as compared to the rest of the population. Those who have low educational attainment are more likely to smoke.[109-111]

Income is another strong predictor of smoking.[4-6,14,22-27, 112] Regardless of geographic location, there is consistently a higher prevalence of smoking and lower smoking cessation rates among those living below the federal poverty line, 31%.4.[28] In neighborhoods with a high proportion of low-income residents, lower cigarette prices are observed as well as decreased access to NRT.[113,114]For those living at or just above the federal poverty line, prevalence is 19.6% nationwide.[28] Additionally, prevalence is higher among those who reported ever being homeless versus those who reported never being homeless.[29] Those who are food insecure, living in resource poor communities and disadvantaged neighborhoods, have a lack of social support, face frequent discrimination, have Medicaid insurance or are uninsured and, endure more social stressors also have a higher smoking prevalence.[27,29-38]

Among racial/ethnic groups, American Indians/Alaska Natives have the highest prevalence of smoking (32.4%), with Asians having the lowest (9.9%). Hispanic smokers have a lower prevalence (15.8%) than non-Hispanic blacks (21.3%) and non-Hispanic whites (22.0%).[28] Additionally, aided quit attempts are lowest among these groups, specifically for African American males, those who are pregnant, younger, American Indians, and Medicaid recipients.[107]

There is a higher prevalence among blue-collar and service workers compared to white-collar workers.[14,23,39-42,115] Not only are these workers more likely to smoke but they are less likely to quit and have workplace smoking policies.[43] However, among workplaces that do have smoking policies there is a lower prevalence of smoking. [23]

Electronic cigarette use is gaining in popularity as a smoking cessation aid. Higher rates are observed in current cigarette smokers, those with lower socio-economic status, those who are younger and those who identify as lesbian, gay, bisexual, or transgender.[116]

Intervention (See Appendix H and I for table of articles)

While low-SES smokers are interested in quitting smoking and attempt to quit at rates similar to those of other smokers, they are less likely to succeed.[44] Unique barriers to quitting among low-SES groups have been clearly identified and include high levels of chronic life stress, high levels of nicotine dependence, and pro-smoking community norms.[44, 45] Financial, tangible and cultural barriers also limit access and engagement to cessation treatment. Specific barriers include the cost of NRT and pharmacological products, and a general mistrust of the medical system.[44] Consequently, the need for targeted efforts to increase cessation among low-SES groups has been identified in the United States as a public health priority.[46]

Eighty-three studies evaluating smoking cessation treatment engagement and cessation interventions for low-SES populations were chosen for this review. Forty-four were randomized trials. For the purpose of this report, interventions are broadly categorized as those delivered in community, clinical, and worksite settings. Fourteen studies targeted low income smokers by ethnicity and/or race, predominantly African American.[47-59] Fourteen studies focused on low income pregnant or post-partum women.[60-66] Six studies targeted blue collar workers with one specific to service workers. [67-72] Finally, two focused on homeless populations[73], five on telephone quit lines, eleven on Medicaid insured or uninsured individuals and one on individuals with mental health conditions and one on individuals in treatment for drug addiction.

Community Based Smoking Cessation Intervention Studies

Although smoking cessation interventions delivered to low-SES populations in community settings have increased over the past decade, evidence of the effectiveness of innovative community approaches is mixed. In a systematic review of community based participatory research and smoking, Andrews and colleagues evaluated 8 studies of community based smoking cessation programs for adult smokers.[48] The authors found only two studies that met high standards for community involvement and research integrity. Both of these studies demonstrated significant treatment outcomes for the six-month cessation time period compared to the control conditions.[49, 77]

One study led by Wu and colleagues involved the Asian Community Health Coalition in New York City.[77] The intervention was multi-level and included tailored motivational interviewing counseling sessions, a packet of self-help materials, and nicotine replacement therapy (NRT). The investigators worked with the coalition and community members to tailor the intervention to meet the cultural and linguistic needs of the Chinese American community. The authors reported a 7-day point prevalence abstinence at six months was 67% in the treatment condition compared to 32% in the control condition.[75, 77]

The second article described a public housing partnership to develop a multi-level cessation intervention for African American women. The intervention included a neighborhood-level component composed of two anti-smoking activities and one policy change; peer groups which offered behavioral counseling; individual coaching sessions delivered by community health workers; and the provision of NRT.[48] The authors demonstrated a significantly higher 7-day point

prevalence abstinence at six months in the treatment group (39%) compared to those in the control condition (11.5%).[49]

In addition to the studies described above, we identified twenty-four community-based tobacco cessation interventions; fourteen were randomized controlled trials; five were non-randomized comparison study and two were quasi-experimental studies.[51, 53, 78-83, 117,118, 148] Interventions were conducted in a variety of settings including low income public housing complexes, homeless shelters, a Salvation Army facility, a public school, a Head Start program, Women, Infant and Children (WIC) sites, and NYC restaurants. Results were found to be generally promising for enhancing community engagement with services and readiness to quit or seek help in quitting with 9 of the 14 RCTs showing positive results. In addition to the Sister to Sister studies, another seventeen studies reported abstinence as a primary outcome[48, 77], five reported changes on intent to quit and two studies measured community-wide reductions in smoking rates.

In another study, Fisher and colleagues evaluated a multi-component community organization approach to promote nonsmoking among residents of low income, African American neighborhoods. Intervention components included volunteer wellness councils to promote smoking cessation classes, billboard, door-to-door campaigns and a "gospel fest." The program was not only successful in engaging audience members in its governance and instigating numerous and diverse activities to promote nonsmoking, it also demonstrated a significant decline in smoking prevalence rates in comparison to similar neighborhoods that did not receive the intervention.[51] The Sheikhatteri et al study of twelve smoking cessation classes with health education, motivational exercises and provision of NRT found an association between the number of sessions attended and smoking abstinence (RR = 2.1 per session, 95% CI, 1-4, $p<0.05$)[149]. The importance of proactive outreach and engagement was demonstrated in a RCT that found higher abstinence rates even at one year.[161]

Similarly, Hahn and colleagues initiated a community wide quit contest which included a community quit date, provider advice, quit line, media campaign and cash prize lottery. "Quit and Win" intervention participants were 3.5 times more likely than controls to self-report quitting and 12.8 times more likely to demonstrate confirmed quitting when compared to an analogous community outside of the media campaign area.[83]

Two studies; one evaluating Mindfulness Practice and another, Motivational Interviewing, showed no significant treatment effects. Interventions focused on reducing smoking among pregnant smokers also show inconsistent results. Training community health workers on identification and support of pregnancy cessation shows positive results[62] and the use of motivational and problem solving treatment in the post-partum period successfully reduced relapse.[38] Three remaining studies on cessation during pregnancy showed the difficulty in reaching LSES pregnant smokers[69], potential need for more intensive treatment[84] and the role of depression in hindering quit attempts.[162]

Several studies sought to understand the process of engagement, cessation and utilization among specific LSES groups in smoking cessation. An increase in NRT use through Medicaid coverage did not differ by race/ethnicity[163] and reduced smoking during the subsequent pregnancy.[64] Among Hispanics, personal debt level was associated with a reduced likelihood of cessation at 3 months follow up.[164] Furthermore, higher subjective social status among homeless smokers predicted greater readiness to quit for men while among women, increased community social status was an indicator of readiness to quit.[165] Similarly, perceived neighborhood disorder was associated with reduced likelihood of smoking cessation.[166] Perceived social support among recently depressed women is a stronger factor in smoking outcomes than among women without depression.[167]

Appropriate message content was the focus of three studies which tested culturally modified messages[58, 168] or financially-based messages[169] to standard content. The culturally-modified messages for African Americans showed no benefit over the standard message[168] and may be dependent on the acculturation level of the individual[58]. The use of financial messaging compared to a health focus requires further research to learn if the greater interest seen in the study results in improved cessation.[169]

In conclusion, community based tobacco cessation interventions show great promise to improve community engagement and recruitment among low-SES smokers with a growing number of studies demonstrating significant treatment outcomes. As noted by Andrews "the complexity of interactions between the structure, processes, and goals of the intervention and those of the community itself, arise from and are strengthened by the knowledge of the community. This unique type of partnership, blend of expertise, and knowledge generation helps to transcend some of these challenges in translating evidence-based interventions into complex community settings." [136] However, challenges to implementing community based studies exist including effectively fully initiating and maintaining community partnerships and sustainability of programs.[48] Many of these cessation studies conducted within community settings successfully engaged non-medical or public health key stakeholders in tobacco control efforts which is necessary for program sustainability, effectiveness and relevancy.[48, 51, 52, 74, 78, 82, 83]

Clinic Based Cessation Intervention Studies

Thirty-five clinically based cessation studies were identified for this review; twenty-one were randomized controlled trials; two were prospective cohorts; three were non-randomized trials; two were quasi experimental, three utilized pre-post study designs and three were feasibility studies. Of the seventeen randomized controlled trials, eleven reported significant intervention outcomes for short term smoking abstinence.[47,48,52,54-56,60,65,66,84-90] Half of these studies demonstrated long abstinence or relapse prevention at 6 months or longer.[60,86] Two studies tested the efficacy of pharmacology alone (Bupropion) among African Americans[47] and pregnant women[148]. At 26 weeks, the quit rates among the African American participants were 21% in the treatment and 13.7% in the placebo groups[47]. The vast majority of studies used multi-modal interventions including some combination of NRT, physician advice, tailored print materials, telephone counseling follow-up sessions and motivational enhancement. Four of the five clinic based studies evaluating Motivational Interviewing interventions alone or in combination with EBT, demonstrated significant intervention outcomes except for one recent trial.[154]

The studies show a variety of effective methods to improve cessation rates among patients in clinical settings including the use of interactive voice response system[155], web-based[156] and computer-assisted supplements [53, 85, 157] to the intervention. Staff providing the cessation intervention in clinical studies range from nurses and primary care providers, mental health counselors, trained telephone counselors to patient navigators. Three studies tested system efforts to improve screening and treatment of smokers in the hospital and primary care settings. The activities increased smoking screening[158, 159], appropriate treatment[158, 159] and provider confidence[160] to deliver the smoking cessation to LSES individuals.

In conclusion, multi-modal tobacco cessation interventions applied in clinical settings demonstrate efficacy for tobacco abstinence. More research is needed to determine the type, frequency and intensity of clinic based interventions to support long term abstinence and relapse prevention for pregnant and general low-SES populations.

Work-Site Based Cessation Intervention Studies

Eight occupational or work based studies were identified for this review; four were randomized controlled trials; two were observational, one was a non-randomized trial and one was quasi-experimental. Three of the studies were implemented through trade union organizations and reported significant findings for smoking abstinence.[49, 67, 69] As with clinic based studies, longer term abstinence was not reported or did not maintain significance over time.[69] Furthermore, a systematic review found that interventions targeting workers at the individual level with a variety of EBT were found to be effective in increasing smoking cessation. Programs targeted to the workplace as a whole however, lacked evidence that comprehensive programs in the workplace reduced smoking prevalence.[91]

In conclusion, results of a limited number of workplace based studies indicate that union apprenticeship programs represent a promising venue for smoking cessation interventions and the integration of smoking cessation with occupational health concerns is a viable approach for blue collar workers.

Innovative Strategies to Reach Non-English Speaking Immigrant Populations

Noteworthy are two studies targeting particularly hard to reach low-SES, non-English speaking, immigrant populations: Chinese immigrant restaurant employed and immigrant Spanish speaking smokers. The first study, utilized a combined field outreach and telephone counseling approach in an exploratory pre-post-test study.[49] To reach the targeted population, two trained male Chinese speaking (Mandarin and Cantonese) study recruiters who went door to door to restaurants in NYC Chinese communities. The intervention was culturally tailored and included Chinese quit smoking tea, ginger candies, NRT and counseling. All sessions were delivered in the participant's native language. This exploratory study yielded a 6-month post-end program cessation rate higher than usual published rate with 32.7% intent-to-treat cessation rate adjusted to 30.8% by saliva cotinine assessments. Attesting to high levels of engagement is 74% participation and completion rates and self-reports of high program satisfaction at 6-month assessment where 100% of those who had completed the program and 84.2% of those who had dropped reported that the counseling program had been helpful to them in working on quitting smoking.

In another study, Wetter and colleagues demonstrated that it is possible to reach, retain, and deliver an adequate dose of treatment to a Hispanic immigrant low-SES population that has traditionally been viewed as extremely hard to reach. The study showed that a proactive, telephone counseling program, adapted to be culturally appropriate for Hispanics is effective.[58] In this study, media was used to increase the reach of the National Cancer Institute's Cancer Information Service (CIS). Calls to the CIS requesting smoking cessation help in Spanish increased from 0.39 to 17 calls per month. At 12-week follow-up, point prevalence abstinence for the intervention group was 27.4% vs. 20.5 for the standard group and reached significance after controlling for demographic and tobacco-related variables (OR=3.8, p=.048).

Innovative Use of Technology in Treatment Engagement

One notable randomized controlled trial was identified that effectively utilized technology to engage low-SES smokers. Carlini and colleagues reported significant re-enrollment rates ($p<.001$) in recycling low income relapsed smokers back into a new cycle of treatment in Indiana and Washington QLs.[92] Results indicated an 11.2 times higher odds for re-enrollment of the intervention group than the control group. These outcomes are generally relevant to the field in light of the poor long-term cessation rates currently reported in the smoking cessation literature and particularly relevant for potential improved engagement of low SES smokers to state QLs.

Various studies enhanced telephone-based support through innovative strategies. Parks et al tested the addition of a small incentive to QuitLine use finding increased cessation seven months after QL engagement.[170] These innovations may help overcome issues experienced by QuitLines including cell phone minute limitations of LSES smokers[171], lack of phone and low knowledge and trust of QuitLines.[171]

In a community-wide study, the inclusion of face-to-face engagement with media, mailings and other strategies was found more effective in reducing personal smoking behaviors.[51] Similarly, one study compared in person treatment support to telephone cessation services.[151] Modality had no effect, yet exposure to treatment content regardless of modality was associated with 6 month abstinence, similar to other studies showing the importance of treatment dose.[71, 149, 150, 151] However, an observational study found QuitLine abstinence rates higher than treatment centers, worksites and website participants.[152] Continued research into various treatment content delivery modalities is needed as well as improved engagement strategies.

Media

Several studies demonstrate that emotionally-evocative or graphic advertisements are more effective among low-SES smokers than ads depicting how to quit.[93-96,119] For example, Durkin and colleagues concluded that, "Our findings indicate that public health agencies may contribute to reducing smoking rates in their communities, especially among socioeconomically deprived populations, by developing and widely airing emotionally evocative antismoking ads and ads that feature personalized stories about the effects of smoking and the experience of quitting." Furthermore, one study demonstrated that messaging based on behavior change theory and "relearning" life without cigarettes resonated with a diverse sample of low-income smokers, showing the potential to reach different groups with one campaign.[97]

Media campaigns are not without their limitations however. Vickerman et al reviewed national data that assessed the impact of the TIPS media campaign on Quitline call completion. They found that lower nicotine dependence was the only factor associated with call completion. The TIPs media campaign was not.[120] Furthermore, Brown et al reviewed media campaigns and found a positive equity impact for QuitLine promotional campaigns but not for campaigns focused on the quitting process. [121]

Policy

The policy articles identified for this review focused on three major topics: cigarette pricing, smoking-free polices in subsidized housing and expansion of Medicaid to cover smoking-cessation aids. Implementation of tobacco regulation policies affecting the three topic areas can be effective in reducing tobacco use disparities.[122] The literature is consistent in that increasing cigarette prices increases smoking cessation rates among low-SES; however there are concerns about the disproportionate impact on these populations.[94, 98-101,123] For example, one study found that low-income smokers in New York spend an average of 24% of their annual income on cigarettes as a results of the high cigarette excise tax, compared with 13% nationally.[94] However, Brown T el al conducted a review of the impact of policies on equity and found that cigarette pricing had the single most positive equity impact of all policy interventions.[122] In other words, the studies examined showed cigarette taxes had greater positive tobacco outcomes among LSES smokers than other SES groups[155].

Smoke-free housing is trending nationally, including among subsidized, multiunit housing developments. Pizacani and colleagues studied the impact of a smoke-free policy across subsidized housing in Portland, OR. Tenants who smoked reported a quit rate of 14.7% over the study period (compared with a historical quit rate in this population of 2.6%), while nonsmokers reported decreased exposure to secondhand smoke. However, implementation of smoke-free policies is not without its challenges. Both acceptability and adherence of the policy in the Portland housing developments varied widely depending on smoking status: only 30% of smokers were happy with the policy, compared with 85% of former and 92% of never smokers; and 62% of smokers reported they did not follow the policy.[101, 124] The Brown et al review also looked at smoke free policies and their impact by SES groups. They found that voluntary smoke free policies had largely negative equity effects on second hand smoke exposure whereas mandatory policies where more equity neutral, showing decreased exposure for all SES groups equally.[121]

Expanded coverage of tobacco dependence treatment has led to higher quit rates among Medicaid recipients especially among states with the most generous coverage, such as counseling without copays.[102-104, 125-127] However, the coverage alone is not sufficient; more work is needed to increase awareness among Medicaid recipients of the coverage available.[103, 104, 125-127]

Systematic Reviews, Meta-Analysis and Literature Reviews

A total of twenty-six systematic reviews were identified that focused on smoking among LSES and vulnerable populations. The systematic reviews utilized a variety of methods including meta-analysis and narrative form to summarize the evidence available as it relates to LSES smokers. The reviews broadly covered the following themes, smoking cessation patterns, smoking cessation interventions, culturally tailored interventions, population level policies and mass media campaigns, and a call for further research on low SES indicators, interventions among LSES smokers.

Four systematic reviews provided overviews of patterns of smoking and smoking cessation practices among low socioeconomic groups. Across studies LSES groups are shown to begin smoking at higher rates and have less successful quit attempts which may be partially due to lower levels of support for quitting and lower self-efficacy, less comprehensive use of medication and behavioral support and targeted marketing by the tobacco companies.[44] Asian groups in the US demonstrate a negative association between acculturation and smoking among men, but a positive trend among women. In addition, Asian smokers were more likely to have fewer years of education, be widowed, divorced or separated, attend less religious activities, lack health insurance and have less knowledge of smoking health risk.[128] Higher smoking rates are present among the unemployed who tend to smoke more heavily than their employed counterparts.[129] Unemployment among adolescents increases risk for smoking uptake and decreases likelihood of smoking cessation within the same group. Pregnant women who continue to smoke tend to be poor and are less likely to participate in positive healthy behaviors during the pregnancy.[130] Weight gain, social pressures are among the factors that influence smoking relapse in the post-partum period.[130]

Fourteen systematic reviews evaluated interventions that provide smoking cessation support to disadvantaged smokers. These reviews focused specifically on work sites/labor unions, behavioral and cessation interventions, and culturally-specific interventions.

Both Malinowski et al and Albertson et al, identify the potential collaboration between worksites, union organizations and public health to reduce smoking among employees.[131] The opportunity to support smoking reduction among employees will be aided by the involvement of labor unions in development and implementation of smoking policies and interventions, and increased research on work site programs. A Cochrane review by Cahill et al found strong evidence of workplace cessation interventions in reducing smoking rates[91]. The most effective strategies were pharmacotherapy, followed by individual counseling, group sessions, multiple interventions and self-help materials the least successful.

Behavioral smoking cessation interventions are promising but findings are inconsistent in a meta-analysis of 32 interventions in disadvantaged groups.[132] Some interventions with positive findings showed improved cessation rates at 6 month follow up particularly among low SES female smokers. Targeted behavioral interventions for smokers with mental illness also demonstrated significant effect at longer term follow up. The authors suggest caution in interpretation since the interventions varied widely across the studies. Given these more recent findings, there are still questions regarding which techniques and how many techniques are appropriate or whether fewer behavior change techniques is most effective as was found in a previous review.[132, 153] Interventions that focus on the addiction aspect of smoking, reduced self-efficacy of low SES populations and are offered in different settings are recommended.[44, 133]

A growing area of investigation is the use of incentives and deposit-refund trials with each showing positive results while experiencing feasibility and uptake issues.[134] This use of contingency rewards in pregnancy smoking cessation programs across six trials has demonstrated positive cessation outcomes and improved fetal growth, mean birth weight, low birth weight deliveries and length of breastfeeding.[135] Incentives have demonstrated promising results among pregnant smokers for pregnancy and early postpartum smoking cessation outcomes.[135]Population level cessation support interventions have the possibility of reducing smoking inequities when low SES groups are more responsive to the intervention than others, but also increase those inequalities.[122]

Five systematic reviews focused on the need to culturally tailor policy and interventions for the communities of interest or specific ethnic groups that bear a disproportionate burden of tobacco. Andrews et al explored the use of community-based participatory research principles in community interventions.[136] They found a wide range of community involvement and those studies with greater involvement of community at all phases of research showed better recruitment and partnerships for sustaining the intervention past the research stage. An early review by Pederson and colleagues illustrates the difficulty in implementing effective targeted smoking cessation interventions for African Americans.[137] Other reviews suggest incorporating ethnic-specific values into the intervention, cultural congruence of interventionist, outreach, media, and relevant settings such as work sites.[138, 139]

Consistently, increasing the price of cigarettes has the potential to reduce smoking disparities.[44, 122,140] A review of 117 studies analyzing 130 interventions and policies demonstrated that the enactment of voluntary smoke free policies may increase SES inequalities of protection from second hand smoke where national and compulsory policies fared slightly better.

Mass media campaigns often focus on increasing quit attempts or the use of quit lines. The equity impact analysis found only campaigns encouraging the use of quit lines found five positive quite impact studies compared to three negatively impacting inequities and three neutral.[122] Highly emotive stories are suggested in appealing to LSES smokers while negative health effects messages impact knowledge and beliefs.[141] Utilization of the media requires

sufficient exposure to reach low SES smokers.[141] Media campaigns also suffer from inadequate evaluation to identify impact on low SES smokers.[142]

Six reviews identify unique challenges of reducing the smoking rates among low SES pregnant women. A very early review of prenatal cessation interventions identified a reliance on self-help materials, a lack in behavioral counseling and maintaining support into the post-partum period.[143] This continued lack of focus on the post-partum cessation support continues when risk of relapse is at its highest.[138] In addition, there may exist a disconnect between what pregnant women thought would be most helpful in quitting during pregnancy and the methods found to be most effective.[130] Incentive programs in prenatal smoking cessation interventions have shown positive results at short [134, 135] and long term outcomes past delivery.[134]

Schaap and colleagues called for the inclusion of SES variables in all smoking monitoring systems.[144] They also suggest that education alone only measure one domain of SES status and including other variables to capture additional dimensions of social and economic status would provide further understanding. Education may be a marker not only for economic standing, but also cognitive understanding that enables reduced threat from tobacco.[44] Therefore, further understanding of the aspects of low SES environment that increase risk for smoking uptake and reduce ability for smoking cessation will aid in reducing smoking disparities.[44]

Other research gaps identified in the twenty-six reviews include studies using biochemically verified cessation in its outcomes, and studies with sufficient samples sizes that allow for adequate power for subgroup analysis.[132, 145] Researchers need to investigate the particular social context of female smokers living in low SES communities and the unique challenges of low income pregnant smokers that impede cessation.[146] Authors call for continued research on the impact of interventions, media messages, and policies on smoking disparities.[44, 141,142, 147]

The reviews provide an overview of the evidence to date on a variety aspects of LSES smoking cessation interventions and research priorities. Clearly, continued research in the engagement, treatment and support of LSES smokers during the cessation process and increase work on relapse prevention, particularly during the post-partum phase. Cigarette pricing, mass media campaigns on QuitLines and NRT and population individual cessation interventions demonstrate the ability to reduce tobacco disparities among LSES populations.[122]

Key Informant Interviews

We interviewed sixteen experts in smoking cessation among low-SES populations (Appendix A). Experts were chosen from a pool of professionals who work with disparately affected populations and a variety of public health programs to help us identify the most promising or proven strategies for reaching, engaging and providing smoking cessation services to low SES smokers. For the purpose of this interview we focused primarily on the topic of cessation and less on prevention. This decision is reflected in our framing model and based on our principle focus on adult low SES smokers.

Social Ecological Model

The social ecological model (SEM), developed by McLeroy et al. 1988 is used as a framework for summarizing the themes emanating from the expert interviews.[2] SEM recognizes that behavior is both influenced by and affects various layers of relationships, environment and social policies around the individual. This appreciation of individual behavior, social norms and policies, provides a broader perspective on the context within which an individual smoker lives. SEM distinguishes at five levels of influence including public policy, community, organizational, interpersonal and individual (or intrapersonal). For this report, organizational factors are imbedded within community and interpersonal sections.

Societal/Public Policy

There are two main themes that evolved from the expert interviews to impact smoking cessation from a societal approach, policy change and media campaigns, both of which lend to creating an environment that is conducive to being smoke free.

Policy

As identified in the literature, the experts generally agree that one policy approach should include raising cigarette taxes. By increasing the taxes and overall cost of cigarettes, youth and low-SES populations eventually become discouraged from buying cigarettes because they simply can no longer afford them. Some experts pointed out that despite the benefits of policy change, there are potential consequences specifically to increasing taxes 1) smokers resort to buying single cigarettes, "loosies" and there is not necessarily consistent enforcement of the laws surrounding the sale of singles, 2) it places a burden on minorities which can lead to smuggling and, 3) policy change can be met with opposition, causing it to take years to implement.

"… I would price the tobacco… high and then I would make sure that the pricing was enforced by checking, going around all the shops, and then [addressing] smuggling … Lower SES groups [are more likely to acquire] their tobacco illicitly." **Rosemary Hiscock**

"One of the arguments raised against higher tobacco taxes is that they're regressive and would place a disproportionate burden on minorities and other low-income communities, groups that have already been victims of predatory marketing. Another familiar argument is that when you raise the price of products like this, you increase the likelihood of smuggling." **Kerry Cork**

"Policy efforts can take a lot of up front work, but once these changes are made, they usually create long-term and self-sustaining change. Although policy efforts can take much longer to achieve than other approaches, the impact can be great." **Douglas Tipperman**

"If you get buy-in from the community and have them work together towards policy changes" **Minal Patel**

While the literature shows that smoke-free multi-unit housing is a current strategy, the experts suggested that focusing on policies which create an overall smoke free environment, not just within multi-unit housing, is likely the most effective approach. Examples of policies that lead to a smoke free environment do include but are not limited to smoke free housing, banning smoking in cars, zoning ordinances increasing controls on points of sales promotion and, smoke free workplaces.

"For low SES populations, the evidence-based strategies of smoke free environments and price increases should be high priorities as well as increased controls on point of sales promotion and media campaigns." **Douglas Tipperman**

"One thing that would be very useful that we could do, it's particular in terms of secondhand smokers, ban smoking in cars that would be very important." **Daniel Rodriguez**

"..Make it less easy to smoke. I think the new frontier, in making it difficult to smoke is the area of multi-unit housing, bans on smoking in multi-unit housing." **Daniel Brooks**

". . . Other ways of restricting tobacco products at the point of sale is to limit tobacco advertising and product displays so they're not right by the cashier. For example, you could require retailers to display Quit Lines messages at the point of sale, along with information on prevention and cessation." **Kerry Cork**

Media

Several of the experts agree that media messaging is another broad reaching approach, but to effectively use media as a means for cessation promotion, the messages must be targeted towards the intended audience. To do this, similar strategies used by the tobacco industry should be employed, including researching and understanding social norms and building campaigns that build on those themes. Additionally, because funds are limited, identifying cross-cutting themes among the low-SES subgroups and creating messaging that targets those themes are one way to really maximize dollars spent. Finally, CDPHE could consider adopting successful campaigns that have been used elsewhere such as the Centers for Disease Control and Prevention TIPS campaign.

"….find commonalities between groups to enhance the impact of media." **Lorraine Reitzel**

"…people struggling financially and otherwise, they share characteristics and experiences regardless of race." **Darla Kendzor**

"... but there are some commonalities, income is the biggest factor, figure out how the message could be tailored in [that] sense." **Minal Patel**

"....to target low-income neighborhoods or lower SES neighborhoods, we have to do a little research, figure out what are the social norms in the community, and use whatever those norms are to target not smoking... exactly what the tobacco companies do to target minority individuals to smoke... they infiltrate the communities." **Daniel Rodriguez**

". . . Target the low-hanging fruit, where the tobacco industry is focusing its advertising and marketing money and where that money has proven to be most effective." **Kerry Cork**

"...the tobacco industry certainly markets to a very segmented-specific subpopulation, and they've had tremendous results [We need to be] countering [this]." **Rosemary Hiscock**

"The CDC Tips from Former Smokers campaign is mindful of making sure their ads resonate with low SES groups. This campaign is making an impact." **Douglas Tipperman**

Message content was also discussed with the experts and it was agreed that the content must be developed with care. Consideration should be given to areas where messaging is currently lacking such as promoting the idea that relapse and multiple quit attempts are normal, and emphasizing/connecting the viewer to existing local cessation resources. Continuing to include educational components, both short and long-term negative effects of smoking and, benefits of quitting smoking are important. As was found in the literature, the experts agreed that using provocative imagery that really evokes emotion is essential for initially engaging the viewer. Finally, for any of the content to truly resonate with the viewer, the messaging must include people who represent the community and are racially and culturally congruent. In short, the viewer must identify with the person delivering the message.

"....if you want people to change behavior, you have to have people who are just like them, who they can use as models doing the change." **Daniel Rodriguez**

"...making it culturally relevant or linguistically relevant is really important." **Minal Patel**

"....TIPS campaign had actual smokers who were successful at quitting, talking about what they did, how they did it, and what products they used." **Erik Augustson**

"I think they need to go for the emotional approach. It tends to work better with that segment rather than [an] information provision approach." **Rosemary Hiscock**

"... The idea of encouraging repeated quit attempts is a good thing, instead of the idea that 'oh, I tried quitting, it didn't work so I can't quit'." **Lisa Sanderson**

"...if we had information to support them and recognizing that it takes several quit attempts for people to eventually quit.... saying "people quit and then relapse, if that happens these are things to know, these are the places you can get more help," and make it more local than the CDC website.." **Cassandra Okechukwu**

The experts also discussed the channels that could be used to disseminate media campaigns. The population is moving away from standard television watching and therefore the media campaigns need to be targeted to the outlets people are using or watching particularly for specific communities. This is key to reaching the largest number of people. Steering away from the standard PSA airing on television, but rather focusing more on social media such as YouTube or Facebook and, placing messaging on Hulu or Netflix are just a few of the things the experts mentioned. Consideration must be given to where the smokers are at, and the messaging

must meet them there using communication channels that are relevant for that group of smokers.

> *"..There are still a lot of people who watch television, but there are a lot of people who go online and watch Hulu or Netflix or online access to these same television shows."* **Erik Augustson**

> *"There are ways to of doing media campaigns that are not just PSA but are more specific to the different groups"* **Cassandra Okechukwu**

> *"The idea of transmedia is to reach people through multiple media platforms… , so you use television…., but you also create a video game,…print media…, Vines – you tell an evolving story that the target audience can really connect with that includes an embedded health promotion message using multiple media ."* **Lorraine Reitzel**

> *"…We should do YouTube. YouTube would work. If you have an adolescent, you know how much time they spend on YouTube. You don't even need TVs anymore."* **Daniel Rodriguez**

Community

Community-level factors are very influential in our ability to decrease the smoking rate among low-SES smokers. The experts commented on the role of community norms on smokers via the lack of support for non-smokers within low-SES communities; need to tailor interventions for the community of focus; obtaining buy-in of community leaders; integrating tobacco into community mobilization efforts; and developing community-based support systems for smokers during the cessation process.

It is clear that community-level factors can impede the ability of individuals to quit smoking successfully. These factors range from the abundance of smokers in low-SES communities, acceptance of smoking, increased number of triggers in communities as well as the potential loss of social acceptance once cessation begins.

> *"Tobacco industry representatives in the neighborhoods giving out cigarettes is another sort of major problem."* **Monica Webb Hooper**

> *"A high number of retailers focus on low-income neighborhoods. Tobacco advertising is much more prevalent in low-income, racially-diverse neighborhoods, and typically by schools, where adolescents are likely to shop. I read a study recently that found that almost 19.5% of retail environments in a low-income neighborhood sold tobacco products compared to only 3.7% of stores in an affluent neighborhood. I mean it's just clear that the tobacco industry is focusing on these low-income areas."* **Kerry Cork**

> *"It's hard for people to live without cigarettes when their environment is so full of smokers. … The patients I see at least in my setting, tend to have the social networks and they tend to be really entrenched smokers. That's really a challenge."* **Karen Lasser**

Most experts emphasized the need to involve communities to ensure that any intervention is relevant and has a greater chance of success. Community involvement can be in the form of obtaining feedback on the design, to involvement and ownership of the tobacco control effort.

> *"Finding the appropriate model, one that resonates with the community."* **Daniel Rodriguez**

> *"Give the money, train these folks within the communities and transfer the funds to them, to run the tailored cessation programs in these communities with high smoking prevalence. This approach provides more buy in from the community and is more hands on or community level intervention."* **Won Choi**

"[There] would be more trust within the community, by trying to meet them where they are…. it's extremely time-consuming to do it this way. You actually have to engage with the community. You can't just stay in your lab and design a program based on what you read in the literature. You have to actually go out in the community and get to know people." **Daniel Rodriguez**

"How do you reach out to these communities and really make an impact? One of the best ways to do that is to work within the communities and see if you can help them address these problems with proven and effective policies. You need to collaborate with them." **Kerry Cork**

Community mobilization and leadership buy-in were emphasized by experts when working within low-SES communities. Both formal and informal community leadership buy-in to tobacco control efforts is important. Community mobilization was viewed as a necessary effort within communities with high smoking rates. Mobilization provides for community input, buy-in, and an impact broader than tobacco control. Many of the experts interviewed saw community mobilization as a worthwhile effort despite the time required and the need to expand the issues addressed beyond tobacco. These mobilization efforts may also provide grass roots advocacy efforts for state-wide policy efforts.

"It's important to really get leaders in the community, and when I say "leaders", it could just be people that are respected within the community. It doesn't have to be someone who's in an actual position of power" **Minal Patel**

"Discuss it with community leaders. How can we implement this strategy in your community? Let's talk to community leaders and say, what can we do in your community that would make this work?... we can use evidence-based... strategies, but we have to tailor them to the community and not be too rigid." **Daniel Rodriguez**

"I see the real benefit of having community mobilization as a big part of the buy-in.,…. and I'm working with some key community leaders who are well-trusted and have some kind of established credibility within the community, it's definitely a lot easier to get things done… And that's one of the things that I think seemed like Promotoras, or lay health providers, or a patient navigators within a healthcare system, can help negotiate the process, and are really a beneficial thing." **Lisa Sanderson**

"… If a tax increase is going to be a high priority, it will be critical to engage groups and organizations at the community level to support state efforts. Grass-roots support will be needed." **anonymous**

Given the 'toxic environment' described by many of the experts, ensuring community-based systems that will support the low-SES smoker when attempting to quit, adhering to quit and preventing relapse is important. These community-based systems should provide on-going social support to the person during the smoking cessation process and may be made up of trained individuals from the community. These trained individuals embedded within communities can provide resources, continued monitoring of the quit process, linkages to evidence-based treatments and assist the person with negotiating the social aspects of smoking cessation within the community.

"You have to provide the social support, because if you don't have the social support, people will feel lonely. They'll feel out of place. And they'll want to gravitate back to the people who support them. You go back to the community in which you did smoke, and there's all the triggers, all the environmental triggers that'll cause the individual to feel withdrawal symptoms, like in conditioned place preference, when people go back in a specific area where they smoke, they'll feel withdrawal symptoms, just naturally." **Daniel Rodriguez**

"Because it really goes back to this notion that people really respond to somebody who cares about them quitting. If their peers don't care and their spouse doesn't care and their family doesn't care and their employer doesn't care, it's hard for them to care. They don't get any real social support. But if they have a

counselor on the side, some person from wherever they are, call them once every month, once every two months and say, "Hey, thinking about you and I was really impressed with you calling in before and talking about quitting and just kind of wondering where you are with that?" **Jean Beckham**

"Directed toward quitting smoking, not just general social support …but somebody who was able to engage and help you firm up your decision to quit, help you think about some vision of a feasible pathway, and to let you know that they're going to be with you" **Daniel Brooks**

"Counselors or individuals, or health practitioners or whatever who are in the community and stay in the community, who have sort of regular contact with these people, and they're the face of the resource. Because almost all the things that have to do with counseling and coaching for smoking cessation are really not rocket science, they're really simple. It's just the complexity is the amount of time it takes, the personal connection and the longitudinal nature of it as a chronic condition." **Jean Beckham**

"We trained women from the targeted community to perform the motivational telephone calls with the smokers who had agreed to accept the calls during the clinic visit. These women were very successful in establishing rapport and provide support to the smokers. In the program pilot testing, we had also tried more professional counselors, but you could hear that the conversation was very formal, and the women would just not open up…." **Clara Manfredi**

The settings for community-based support and reaching out to low-SES smokers include where they work, where they live, where they receive medical care and other public services and where they congregate and where they wait and spend time. The key informants acknowledge that these locations do not typically have the infrastructure for tobacco control services and may require investment and mobilization. However, once the infrastructure is built, a community setting has the possibility of providing sustainable services for community members.

Multi-unit housing was mentioned by many experts as an ideal setting for tobacco control efforts particularly given the current effort to enact smoke free policies. Some experts noted the potential ethical and equity issues with banning smoking among the group of individuals with the highest burden of smoking without sufficient access to treatment and support. Medical settings, particularly safety net institutions and clinics were seen as integral to a system of care for low-SES smokers. Safety net providers provide a large proportion of services to low-SES individuals, and may be under state and federal regulations allowing for some level of influence on tobacco intervention efforts.

".....something that really gets into the neighborhood level makes a big difference, but that would be a big commitment of resources to start that infrastructure. …once you get the infrastructure in place, I think many times the sustainability is much less expensive…" **Lisa Sanderson**

"It would seem to make sense to provide tobacco intervention or cessation services at places frequented by these populations, such as mental health or substance abuse facilities or alternative schools or GED programs or shelters or job services or detention centers. . . ." **Kerry Cork**

"You could connect people with the QuitLine directly through their workplace, particularly through places that employ many people at lower wages… Large work site settings could be a great place to have cessation resources and information available…" **Darla Kendzor**

"If we were to get buy-in from management, they actually really appreciated and pushed for some of these interventions because they knew that ultimately, their workers would have better output, they would have better concentration in the workplace, and they would be healthier, so that would reduce work claims or health insurance rates, etc." **Minal Patel**

"This would need to happen, you know because many people who are low SES obviously do not have a primary care physician, so it would need to happen in you know, public health clinics, in ER's and those kinds of places." **Monica Webb Hooper**

Interpersonal

At the interpersonal level, there are many opportunities to influence the motivational level, access and knowledge of the low-SES smoker. This interpersonal influence can extend from the medical setting with whom the smoker interacts, the patient navigator, family and friends to new and innovative technological channels. Engagement with the low-SES smoker can occur in a community setting, clinical site and through technology. As one key informant states *"we basically have three jobs… immediate engagement, sustained engagement and then re-engagement."* **Erik Augustson**

Provider recommendation is a key element of smoking cessation treatment initiation. Expanding provider engagement in areas such as mental health and substance abuse centers was a finding in the interviews. Ensuring on-going education of clinical and all staff in smoke-free policies and tobacco control is important in medical settings. Primary care provider education was identified as important due the potential contact with the low-SES smoker. In addition, providers and staff at mental health and substance abuse centers were identified as lagging behind in promoting and providing smoking cessation services due to competing client addiction issues. Provider education can be provided using new models including the Project ECHO format (University of New Mexico).

> *"That's what the provider advice does, increase the salience of the message and increase motivation, because the provider is generally seen as believable and can target the message to the specific health issues relevant to individual patients. Then you need additional interventions to further motivate and support those smokers who express interest in quitting".* **Clara Manfredi**

> *"Medications like Varenicline are really effective, but we hear that physicians often feel very uncomfortable prescribing cessation medications… I think they may feel more comfortable about recommending the patch because it is available over the counter. However, they may not want to take on the responsibility of following up with patients using pharmacotherapy, and may prefer to refer elsewhere…"* **Darla Kendzor**

> *"They may be suffering from alcoholism or other substance abuse problems, and the staff often seems to place less of a priority on addressing the tobacco cessation issue, the tobacco addiction. They feel the other addictions are a higher priority."* **Kerry Cork**

> *"And certainly within substance abuse agencies as well as mental health agencies, we have this glorious gold mine of individuals who know how to treat addiction but they're not focusing their attention toward treating tobacco use."* **Lorraine Reitzel**

> *"With ECHO, specialized knowledge dissemination could be parsed into one virtual meeting for the general clinicians and one for prescribers. They typically start with a brief didactic followed by case presentations: difficult cases that clinicians are encountering for which they can seek consult from psychiatrists and specialists in order to help adjust medications, help figure out what counseling procedures to use in order to help individuals who aren't experiencing success in quitting smoking from the tobacco use assessment, the NRT, and those things that we're already providing as part of the comprehensive tobacco-free workplace policy intervention. "***Lorraine Reitzel**

Several of the experts suggested an expansion of the existing assessment and referral (such as Five As) systems to minimize missed opportunities and delays in treatment for the motivated smoker ready to quit. These systems could improve engagement with low-SES smokers to support the smoker when ready to quit.

> *"Because one thing's definitely not working, which is this mostly passive, voluntary calling by the smokers. More active engagement and treatment methods are needed to enhance cessation in these lower SES populations."* **Won Choi**

"I think people in general know that Quit Lines exist, but the engagement piece is the key, is the missing link. You know how to really engage people and over time, you know those faxed referrals to the Quit Line from the doctors, those things seem to not really end up working very well, because of the follow up that needs to happen. And I found, - you only get one chance to talk to someone because when you have to call them back or take a message, or there's a delay, the motivation to quit smoking is so dynamic, that that's where people get lost. If there were a way to better engage people through faster follow up, through – I don't know, using maybe text messaging if possible, providing more intensive support that might help the engagement." **Monica Webb Hooper**

"-if we don't have people in social service agencies helping to connect lower SES individuals with these effective population level interventions, we have a missed opportunity to capitalize on the trust that's already been built between these social service agencies and low SES smokers to get them connected with treatment." **Lorraine Reitzel**

"Many people in the low SES population have contact with some type of health care professional within a given year. Institutionalizing tobacco use screening and intervention by care providers would make a significant difference. In addition, other providers or stakeholders that low SES people interact with on a regular basis, like Medicaid or Public Housing workers, could be trained to provide screening and intervention such as the short process of Ask, Advise, and Refer." **Douglas Tipperman**

Patient navigation was described by some of the experts as a model that could be used to connect people to cessation resources and assist with cessation treatment adherence. Additionally, it can provide on-going social support and motivational enhancement, align with the client during the cessation process and reduce the burden of providers for continued client support.

"We wanted them to not serve as smoking cessation counselors themselves, but to try and really link patients to things like Quit Works, to try and motivate the patient to the point where they were willing to make the call even if it meant them conferencing in as a three-way phone call to the quit line." **Karen Lasser**

"So, they [patient navigators] were very successful in establishing rapport and provide support to the women. When you use more professional, may be even better trained people, you could hear that it was very formal, and the women would just not open up…." **Clara Manfredi**

Without engagement of the low-SES smoker, evidence-based treatments are unutilized. Beyond the initial engagement, low-SES requires sustained engagement for on-going support during the cessation process as well as for relapse prevention, during and after relapses and new quit attempts. Engagement should occur by individuals in clinical settings, community settings and others to maximize potential access to tobacco resources.

"I want to increase access to treatments. But once we actually overcome that hurdle, which is I think a pretty gigantic hurdle, but once we do, if we're not helping people know the importance of adherence, then we're also kind of shooting ourselves in the foot. Because why would we expect great outcomes if once they actually get access to treatment, they don't fully utilize it, right?" **Lisa Sanderson**

"… most people try to make a behavior change on Monday, they try to have a better diet or they want whatever, and so one thing would be messaging Mondays or something where once they're out of the program and they're not using it, they get contacted on a Monday and so that could apply to text messages; it could also apply to proactive calling for QuitLine. So I think the issue of engagement is really, really on everyone's mind." **Jean Beckham**

"The idea that we're engaging the person even though they're not willing at that point to quit smoking….we've still engaged them." **Erik Augustson**

The type of contacts, qualities of the individuals who make the contacts, the frequency and intensity are all factors that many of the experts commented on in order to enhance engagement

of the low-SES smoker in smoking cessation services. The experts encouraged personal touches with the smoker even when conducted via technology. It was noted by one expert that the public may see technological contacts as personal and is one of many new strategies to continue and enhance utilization.

> *"If you just give people the patch they don't wear it. And so trying to figure out a way to just get them to wear the patch is really helpful…I mean having a real person there is expensive wherever it is but and that just seems like a very reasonable thing."* **Jean Beckham**

> *"This is where I think they [tobacco companies] are going. They are going to use the Geo tagging in the Smart Phone to identify the ten places that I buy cigarettes and I'm going to be driving along in my car and as I approach one of these places they are going to push me a coupon. My phone is going to go off going to say you have 15 minutes to use this coupon. They're going to use this push feature and they're going to use the pressure of not wanting to lose this coupon to get me to pull over and buy cigarettes."* **Erin Augustson**

> *"I would assign a person a well-trained tobacco cessation specialist/case worker who would then follow this individual back into their actual environment, and would work with them on modifying the environment, providing, you know education about how to be supportive and how to eliminate smoking and cues and things in their actual environment. That case worker would spend you know – maybe the first post discharge, they would spend every day, they'd go and spend some time with that individual. Verify that they're using their medication. Continue to work on the coping skills that they learn in in-patient, but translating them to their actual real world context. Then gradually sort of taper those sessions. When – sort of at the discretion of when the tobacco treatment specialist case worker felt that the person was ready to function without them. Then this program would also include a mechanism whereby, kind of like a sponsor in a sense."* Interviewee #16

> *"I guess I just want to stress that we need continued support for this population; it can't just be a one-time thing and I feel like this is an issue in public health in general, not particularly to this area."* **Minal Patel**

> *"There can be a person on the other end of the Facebook who is putting out suggestions, putting out ideas, but people can also post back. It can be a conversation that goes on. This could be either done on a one to one basis, or you could form a group, a Facebook group. There's an immediacy there. They can be out somewhere and having a craving and they can put something up there and get immediate feedback."* **Daniel Brooks**

Finally, it was commented by a several experts of the key role that family plays during the cessation process. Family can hinder successful cessation as well as support and maintain smoking cessation. The ability of interventions to provide smoking cessation services to the whole household and setting rather than focusing on one smoker would be supportive of changing smoking norms and behaviors around the individual smoker.

> *"It's just nearly impossible for our patients to quit when their spouse is smoking, or if they're in a home where everybody's smoking and quitting in a homeless shelter is tough. Although some of the homeless shelters are good because they have very regulated periods in which they are allowed to smoke. So maybe starting an EBT with a significant other is one thing that we really haven't tried very much."* **Jean Beckham**

> *"We found out the people were taking those [self-help kits] home to their family members, both smokers and non-smokers to help smoking cessation. And so even now, there's not as much work on the idea of family members working together in smoking cessation."* **Cassandra Okechukwu**

Individual

As mentioned as part of the literature review, although low-SES smokers are interested in quitting smoking and attempt to quit at rates similar to those of other smokers, they are less likely to succeed, despite the existence of effective evidence-based treatment (EBT). EBT includes nicotine-replacement therapy (NRT), behavioral counseling and medication. Barriers

to EBT for low SES individuals mentioned by the experts include adherence to treatment, cost of EBT and lack of support for preventing relapse.

> *"...people who want to quit, especially low income individuals don't really think that taking medication is important. ...So it's not just making the medications really available, it's also working within the framework of their beliefs."* **Jean Beckham**

> *"...removing barriers to people getting the support that they need in terms of pharmacotherapies and counseling is important...."* **Darla Kendzor**

Suggestions for improving utilization of EBTs include removing barriers to free NRT; increasing social support, especially to adhere to medication; offering multiple strategies; and providing more intense counseling services, since low-SES individuals are often dealing with multiple behavioral health issues and "enhanced addiction."

> *"If we can do more than we are doing now in the hospitals, that will help things but it will be even better if we could then hook it into a more community-centered support system of some sort."* **Daniel Brooks**

> *"... I just like the idea that there's not just one approach, there's multiple approaches. And it's kind of up to us to help educate people about the multiple approaches."* **Lisa Sanderson**

> *"Individuals with low socioeconomic status experienced enhanced addiction. Individuals with enhanced addiction need specialized services to quit and when I say specialized, what I really mean by that is psychopharmacology. I am afraid that psychopharmacology is not being implemented in an ideally effective way right now for many people who are even being treated by clinicians, let alone individuals that look on the box to figure out how to use NRT."* **Lorraine Reitzel**

The experts also recognized the importance of having buy-in among smokers for EBT; that is, that they had an active role in choosing their quit strategy, as well as ensuring the messaging around that strategy resonated with the smoker.

> *"Another thing in terms of choosing a strategy, another thing that we find is that people who want to quit, especially low income individuals don't really think that taking medication is important. And trying to figure out what the barriers are and what messages we can give them that would make that more amenable to them or make it more important to them..."* **Jean Beckham**

QuitLine were another EBT topic that was discussed, as most of those who try to quit never use a QuitLine. One expert commented, "Because one thing's definitely not working, which is this passive, voluntary calling is not working." Most of the experts saw the value in QuitLines and didn't feel that they should be eliminated, but saw opportunities to increase its use among low-SES populations. Ideas included making QuitLines completely free to those with limited cell phone minutes, perhaps by providing free minutes or other financial incentives; reaching out proactively to smokers; and incentives such as providing NRT for a longer period of time. Two experts mentioned that a two-week supply of free NRT provided isn't enough.

> *"I think that if there's some way to increase the level of support that Quit Lines can provide, both with regard to pharmacotherapy, which many people are looking for, since they can't afford the medications in other ways, they feel like being able to get it free through the Quit Line is a major advantage. Then when they call and they may get a starter pack, we know the evidence suggests that you know, a two week starter pack, that's not the recommended of nicotine patches, so even if the Quit Line is funded to provide you know a two week starter pack to participants, if these are lower SES Participants, even though they could save money from not smoking and going to buy the patches, that seems to not be the logic. I think that that's where the Quit Lines kind of fall apart, is that people may attempt to do that, but then that just is not enough..."* **Monica Webb Hooper**

"Well, I think if there's a way to provide the counseling for whatever the intervention is on the phone and make it free to them, or let's say try and make it reinforcing to them if they called the NCI Quitline they get a gift card for their phone or there's a way to add minutes, so let's say, Medicare gives people 200 minutes a month. If they're engaged in smoking cessation counseling that they get 300 minutes a month or 500 minutes a month. Something to from a public health perspective that says we are going to utilize this thing that they already use and reinforce them for using it." **Jean Beckham**

Experts also highlighted the importance of QuitLine counselors building rapport with callers.

"We don't know the people who are doing the counseling so that's part of the challenge. There's something, very impersonal about them I think." **Karen Lasser**

"The first time one engages with somebody on a QuitLine, it's really important to try to develop that trust. I may not even approach the tobacco topic itself, unless the person wants to talk about it. I would spend more time building trust, and once the trust is built, then we can actually talk about quitting. Almost like creating a friendship with the person. Just like a counseling situation does, but see the problem is, if the QuitLine isn't set up to allow people to call back and speak to the same person again, I think that might be difficult. So there has to be some sort of continuity." **Daniel Rodriguez**

Another idea suggested to improve QuitLine utilization is to combine it with technology, such as text messaging.

"QuitLine play a role that's part of an integrated treatment system. And there's lots of different ways that this integration might work for example…everybody who calls the quit line also has to enroll in the text message program, and we reduce the number of calls that they get. So, you interact with the QuitLine counselor, they do a, strong intervention, you text goals, and then they start receiving the text messages. The text messages have been – modified to be specific to the goals which were identified with the counselor." **Erik Augustson**

Engagement

Engagement has been defined in relation to patients as "actions individuals must take to obtain the greatest benefit from the health care services available to them."[105] Thus, engagement emphasizes patient responsibilities as actors rather than mere recipients of care.

In some smoking cessation treatment studies engagement has been defined as a metric of treatment completion. An implicit assumption here is that those who completed more treatment must have been more engaged, i.e., they took action more often to use available treatment.). In a study of smoking cessation telephone counseling, "engagement in treatment was categorized according to the number of counseling calls … "during six-month intervals across two years. So one can think about intervention or treatment "stickiness:" stickier ones are associated with more treatment completion per engaged individual and/or greater numbers of engaged individuals.

Engagement can begin and be maintained proactively, i.e., via outreach from the treatment to the quitter, or reactively, i.e., via quitter initiation ("we're here if you need us, call us"). Proactive outreach in quit lines is associated with higher engagement.

Engagement: Cessation Maintenance and Relapse Prevention

As evidenced in the literature review although a number of interventions across clinical, community and worksite settings are successful in significantly impacting short term smoking cessation rates, smokers tend to relapse. To address this challenge many of the experts

commented on and made suggestions for better engagement. These suggestions include a wide variety of engagement strategies, i.e., increasing frequency of contact, providing more consistent social support, framing and treating smoking as a chronic condition requiring frequent follow-up, using motivational enhancement and using technology and social media to maintain contact.

> *"…We really – I think one of the things that we've done when we've done focus groups with veterans who have a lot of problems quitting is they say I need someone who really cares if I quit, and that makes it really hard in terms of public health approach. They have no continuity of someone who wants them to quit and who sees them over and over. Like having someone that they can see over and over or have access to over and over would be helpful."* **Jean Beckham**

> *"These types of motivational interventions have a role in reach and engagement. By engagement I mean two things; one is starting to do the treatment and the other you have to adhere to the treatment or. Another way to talk about that is to sustain engagement; reach, immediate engagement, sustained engagement and, re-engagement."* **Erik Augustson**

> *"Motivation is a big kind of a big deal. We get 40% of smokers trying a year, so most are not even trying, a lot of them don't feel motivated to quit."* **Daniel Brooks**

Engagement and Social Support

Social support is an important factor in quitting smoking. As evidenced in our review of behavioral cessation counseling, social support is an essential component across a variety of multi-modal interventions. Many of the experts agreed and made recommendations to increase social support across the quit phases to strengthen both initial engagement and on-going maintenance of smoking cessation.

> *"Creating trust in an individual through the discussion process is very important, and when people trust you, they're willing to tell you a lot. They're willing to come back to you and see you again. I think probably the first time one engages with somebody on a QuitLine, it's really important to try to develop that trust….I may not even approach the tobacco topic itself, unless the person wants to talk about it. I would spend more time building trust, and once the trust is built, then we can actually talk about quitting….the problem is, if the QuitLine isn't set up to allow people to call back and speak to the same person again, I think that might be difficult. So there has to be some sort of continuity."* **Daniel Brooks**

> *"I think actually making a commitment to go and see somebody [involves] more effort and then you're maybe more likely to quit – than if you're just on the other end of phone"* **Rosemary Hiscock**

Engagement and Financial Incentives

Some of the experts favored monetary and other individual incentives to increase initial participant engagement and on-going participation in smoking cessation programs. These included minutes provided by the state QL's, employer incentives, and small culturally tailored gifts.

> *"And in addition, is there a way and is it effective to incentivize quit attempts among the working poor? So we know that it is in the best interest of businesses to have their workers not be tobacco users to decrease outages as well as to reduce the economic and insurance-related burden of tobacco-related chronic health conditions. So how can we get employers on board to incentive quit attempts?"* **Lorraine Reitzel**

> *"Also, if there's any way to provide an incentive for people to adhere to attending sessions. Then if so, making it as easy as possible for people to attend. Covering costs that you wouldn't typically cover. Things like, you know, providing child care, providing reimbursement for transportation. Things that will make it more feasible for people to actually come to the clinics for the visit."* **Monica Webb Hooper**

> *"…more than just money… If you go to a powwow, they sell t-shirts with a specific powwow design on it. So for our program we engaged our community to create both the logo and name for the program and*

developed the All Nations Breath of Life. Our study participants received a t-shirt with our ANBL logo, pedometers, gift cards, bags, pens, water bottles, tooth picks, a CD of flute music created by a local American Indian artist, a DVD of Native aerobics, and other items with our logo on it." **Won Choi**

Portfolio

Overall, the experts spoke positively about the current Colorado strategic plan and grant portfolio. Specifically, they spoke highly of the priority of the straight to work population and using community mobilization as a strategy to reach sustainable impact.

"I love the fact that in your priority populations of your strategic plan, you have a section talking about low SES. And then right after that you have a section talking about young adult straight-to-work population, because the young adult straight-to-work population is more likely to grow up to be low SES." **Lisa Sanderson**

"As far as your approach, I really loved the focus on straight-to-work populations. I think that's an extremely important group that may not get much attention." **Lorraine Reitzel**

However, they also encouraged clearly defining the populations the state is trying to reach and only fund project that has the highest likelihood of impact.

"I like that. At least, that is something that I don't see in literature. In terms of the priority population, you mentioned the young adults 16 to 24 straight to work population, I just couldn't tell if you have a good idea of who they are and where they are." **Cassandra Okechukwu**

"Let's not just fund white noise. Let's actually fund something that has real potential to make an impact." **Daniel Rodriguez**

The experts noticed a few gaps that would be worth considering in the future. To begin, there was a strong recommendation to delegate a higher percentage of monies to the populations experiencing the highest prevalence of smoking burden including youth, Native populations and those with mental illness.

"That is you have twenty million dollars spent instead of spending 20% of it on low income smokers, spending at least 50%, maybe, even more, 75% is really where we're going to have to put our energy to." **Jean Beckham**

"In Colorado, it seems like the Hispanic population has a high smoking rate, and in adolescents…then Native American…those would be groups that I'd want to spend a lot of money on." **Daniel Rodriguez**

"My feedback would be see more things targeted around the mental health substance abuse issues." **Karen Lasser**

When considering population level interventions, the experts highlighted the importance of a focused vision and adequate technical support for communities attempting to influence systems level change.

"Coming from a policy background, I'm very focused on looking at strategies that will create population level change. Sometimes groups try to address many problems at once by doing numerous efforts but there are not targeted or focused efforts that will create long term change. It may be useful to step back and look at the allocation of efforts… to look at letting go of low-impact or low-feasible strategies in order to have a more targeted intensified approach." **Douglas Tipperman**

"I think it's very helpful to have a resource providing legal technical assistance in states – a resource that's not just focused on one aspect of the problem, but that can provide comprehensive, objective assistance from a legal perspective. . . Because sometimes we see that communities will borrow a policy they like from another community and they might tweak it a bit and then run with it, and they might not understand that they're preempted from enacting certain things or that the exact same policy is going to be challenged and they're going to end up losing a lot of time and money defending it, and may even run the risk of having a weaker policy prevail, with other unintended legal consequences." **Kerry Cork**

Another portfolio recommendation was to include E-cigarettes and hookah, specifically with youth and young adults as the priority population.

"I would have liked to see a little bit more…especially for the adolescents and young adults 18 - 24, the issue of e-cigarettes and hookah use." **Won Choi**

"It was pretty impressive. The only things that come to mind… I would think of a way to closely monitor this natural experiment that's going on with e-cigarettes." **Daniel Brooks**

"I think one of the most important things is to look at the medication and at the moment… e-cigarettes" **Rosemary Hiscock**

Finally, the experts recognize the root of confronting behavior change with populations experiencing chronic stressors associated with living in lower SES conditions- addressing social determinates of health. These stressors are the common thread in the population of focus regardless of racial, ethnic, age, gender, or health status identity.

"Many of the lower SES women we worked with said that they would be more willing to attend classes or group sessions if these were not limited to addressing smoking cessation but also included information and support for other things more relevant to them…child rearing, job searches, healthy diets…..things that might help them improve their life The lower SES community would be more accepting of outsiders intervention if these were programs aimed at improving their overall condition of poverty . … I would invest in something that included more comprehensive improvement for the poor, and then quit smoking would be part of that." **Clara Manfredi**

"I do think Colorado's doing a really good job and from what I've read so far in terms of executing your plan, I think that there's a lot of good evidence-based practice that's going to happen and I also think there's a lot of good diversity in the different ways in which you are combating tobacco use, but I do think that – I noticed a lack of policy, and the social determinants of health are mentioned." **Minal Patel**

Recommendations

The following recommendations were identified based upon successful smoking cessation strategies found in the literature and input provided by the expert panel. Additionally, much consideration was given to which approaches would be financially feasible and most impactful.

- ✓ **Identify cross-cutting themes** among subpopulations such as, social stressors or financial stress, rather than targeting specific subpopulations and employ strategies used by the tobacco industry to play on biases and social norms to promote smoking cessation. **Modeling after or tailoring successful, existing media campaigns such as TIPS or Legacy to the Colorado population is one way to feasibly execute this.**
- ✓ **Focus the vision** and invest intentionally and heavily toward specific impact goals.
- ✓ For specific low-SES communities, **involve community members**, gain community leadership's trust and buy-in, include community mobilization efforts and allow for community ownership whenever possible for more relevant, sustainable and successful efforts within communities.
- ✓ Create **community-based systems** of care to support the low-SES smoker within his/her community during and after the cessation process.
- ✓ Increase **provider education** on smoking cessation guidelines and treatments and smoke free policies.
- ✓ Shift away from passive referral systems to **proactive calling** of QuitLine (e.g. Ask-Advise-Connect) while expanding referral sites in **community-based** settings and individuals to **engage low-SES smokers**.

References

1. Garrett BE, Dube SR, Babb S, McAfee T. Addressing the Social Determinants of Health to Reduce Tobacco-Related Disparities. Nicotine Tob Res. 2014 Dec 16. pii: ntu266.
2. James K, Li Y, Thomas K, Levinson A. Adult Tobacco Use and Exposure, Colorado 2012. University of Colorado Cancer Center, 2014.
3. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. Health Educ Q. 1988 Winter;15(4):351-77.
4. (2001). "Reducing socioeconomic inequalities may be the key to smoking cessation among blacks." AHRQ Research Activities(249): 20-20.
5. Ackerson LK, Viswanath K. Communication inequalities, social determinants, and intermittent smoking in the 2003 Health Information National Trends Survey. Prev Chronic Dis 2009;6(2).
6. Agrawal, A., et al. (2008). "Correlates of smoking cessation in a nationally representative sample of U.S. adults." Addictive Behaviors 33(9): 1223-1226.
7. Barbeau, E. M., et al. (2004). "Working class matters: socioeconomic disadvantage, race/ethnicity, gender, and smoking in NHIS 2000 [corrected] [published erratum appears in AM J PUBLIC HEALTH 2004 Aug;94(8):1295]." American Journal of Public Health 94(2): 269-278.
8. Centers for Disease, C. and Prevention (2002). "Cigarette smoking among adults--United States, 2000." MMWR - Morbidity & Mortality Weekly Report 51(29): 642-645.
9. Chaloupka, F. J. (2009). "[Commentary] Financial stress and smoking cessation--a silver lining to the dark clouds of the global economy?" Addiction 104(8): 1391-1392.
10. Chapman, B., et al. (2009). "Education and smoking: confounding or effect modification by phenotypic personality traits?" Annals of Behavioral Medicine 38(3): 237-248.
11. Gandhi, K. K., et al. (2009). "Lower quit rates among African American and Latino menthol cigarette smokers at a tobacco treatment clinic." International Journal of Clinical Practice 63(3): 360-367.
12. Margerison-Zilko, C. and C. Cubbin (2013). "Socioeconomic disparities in tobacco-related health outcomes across racial/ethnic groups in the united states: National health interview survey 2010." Nicotine and Tobacco Research 15(6): 1161-1165.
13. Solberg, L. I., Asche, S. E., Boyle, R., McCarty, M. C., Thoele, M. J. (2007). "Smoking and cessation behaviors among young adults of various educational backgrounds." American Journal of Public Health 97(8): 1421-1426.
14. Tehranifar, P., Liao, Y., Ferris, J. S., Terry, M. B. (2009). "Life course socioeconomic conditions, passive tobacco exposures and cigarette smoking in a multiethnic birth cohort of U.S. women." Cancer Causes & Control 20(6): 867-876.
15. Tseng, M., Yeatts, K., Milikan, R., Newman, B. (2001). "Area level characteristics and smoking in women." American Journal of Public Health 91(11): 1847-1850.
16. Wetter, D. W., Cofta-Gunn, L., Irvin, J. E., Fouladi, R. T., Wright, K., Daza, P. Mazas, C., Cinciripini, P. M., Gritz, E. R. (2005). "What accounts for the association of education and smoking cessation?" Preventive Medicine 40(4): 452-460.
17. Winkleby, M. A., Schooler, C., Kraemer, H. C., Lin, J., Fortmann, S. P. (1995). "Hispanic versus white smoking patterns by sex and level of education." American Journal of Epidemiology 142(4): 410-418.
18. Stewart, D. W., Adams, C. E., Cano, M. A. Correa-Fernandez, V., Li, Y., Waters, A. J., Wetter, D. W. Vidrine J. I. (2013). "Associations between health literacy and established predictors of smoking cessation." American Journal of Public Health 103(7): e43-49.
19. Caraballo, R. S., et al. (2014). "Relapse among Cigarette Smokers: The CARDIA longitudinal study - 1985-2011." Addictive Behaviors 39(1): 101-106.
20. Kandel, D. B., et al. (2009). "Educational attainment and smoking among women: risk factors and consequences for offspring." Drug & Alcohol Dependence 104 Suppl 1: S24-33.
21. Ockene, J., et al. (2002). "Spontaneous cessation of smoking and alcohol use among low-income pregnant women." American Journal of Preventive Medicine 23(3): 150-159.
22. Christiansen, B., et al. (2012). "Barriers to effective tobacco-dependence treatment for the very poor." Journal of Studies on Alcohol & Drugs 73(6): 874-884.
23. Fagan, P., et al. (2007). "Cigarette smoking and quitting behaviors among unemployed adults in the United States." Nicotine & Tobacco Research 9(2): 241-248.
24. Flint, A. J. and T. E. Novotny (1997). "Poverty status and cigarette smoking prevalence and cessation in the United States, 1983-1993: the independent risk of being poor." Tobacco Control 6(1): 14-18.
25. Foulds, J., et al. (2006). "Factors associated with quitting smoking at a tobacco dependence treatment clinic." American Journal of Health Behavior 30(4): 400-412.
26. Johnson, E. O. and S. P. Novak (2009). "Onset and persistence of daily smoking: the interplay of socioeconomic status, gender, and psychiatric disorders." Drug & Alcohol Dependence 104 Suppl 1: S50-57.
27. Kendzor, D. E., et al. (2009). "Pathways between socioeconomic status and modifiable risk factors among African American smokers." Journal of Behavioral Medicine 32(6): 545-557.
28. Centers for Disease, C. and Prevention (2010). "Vital signs: current cigarette smoking among adults aged >or=18 years --- United States, 2009." MMWR - Morbidity & Mortality Weekly Report 59(35): 1135-1140.

29. Baggett, T. P., et al. (2013). "Homelessness, cigarette smoking, and desire to quit: A national study." Journal of General Internal Medicine 28: S89.
30. Adams, K. E., et al. (2008). "Sociodemographic, insurance, and risk profiles of maternal smokers post the 1990s: How can we reach them?" Nicotine and Tobacco Research 10(7): 1121-1129.
31. Armour, B. S., et al. (2008). "Cigarette smoking and food insecurity among low-income families in the United States, 2001." American Journal of Health Promotion 22(6): 386-392.
32. Bandi, P., et al. (2012). "The receipt and utilization of effective clinical smoking cessation services in subgroups of the insured and uninsured populations in the USA." Journal of Behavioral Health Services & Research 39(2): 202-213
33. Browning, K. K., et al. (2008). "Socioeconomic disparity in provider-delivered assistance to quit smoking." Nicotine & Tobacco Research 10(1): 55-61.
34. Businelle, M. S., et al. (2010). "Mechanisms linking socioeconomic status to smoking cessation: a structural equation modeling approach." Health Psychology 29(3): 262-273.
35. Cohen, S. S., et al. (2011). "Individual and neighborhood-level socioeconomic characteristics in relation to smoking prevalence among black and white adults in the Southeastern United States: a cross-sectional study." BMC Public Health 11: 12.
36. Jun, H. J. and D. Acevedo-Garcia (2007). "The effect of single motherhood on smoking by socioeconomic status and race/ethnicity." Social Science & Medicine 65(4): 653-666.
37. Karasek, D., et al. (2012). "Social norms, collective efficacy, and smoking cessation in urban neighborhoods." American Journal of Public Health 102(2): 343-351.
38. Reitzel, L. R., Vidrine, J. I., Businelle, M. S., Kendxor, D. E., Cao, Y., Mazas, C. A., Li, Y., Ahluwalia, J. S., Cinciripini, P. M., Cofta-Woerpel, L., Wetter, D. W. (2012). "Neighborhood perceptions are associated with tobacco dependence among African American smokers." Nicotine & Tobacco Research 14(7): 786-793.
39. Reitzel, L. R., Vidrine, J. I., Businelle, M. S., Kendxor, D. E., Cao, Y., Mazas, C. A., Li, Y., Ahluwalia, J. S., Cinciripini, P. M., Cofta-Woerpel, L., Wetter, D. W. (2012). "Neighborhood perceptions are associated with tobacco dependence among African American smokers." Nicotine & Tobacco Research 14(7): 786-793.
40. Fujishiro, K., et al. (2012). "Occupational gradients in smoking behavior and exposure to workplace environmental tobacco smoke: The multi-ethnic study of atherosclerosis." Journal of Occupational and Environmental Medicine 54(2): 136-145.
41. Lee, D. (2008). "The urban poor's economic profile of tobacco use." American Journal of Drug & Alcohol Abuse 34(5): 626-633.
42. Nelson, D. E., et al. (1994). "Cigarette smoking prevalence by occupation in the United States. A comparison between 1978 to 1980 and 1987 to 1990." Journal of Occupational Medicine 36(5): 516-525.
43. Alexander, L. A., et al. (2010). "Occupational status, work-site cessation programs and policies and menthol smoking on quitting behaviors of US smokers." Addiction 105 Suppl 1: 95-104.
44. Hiscock, R., et al. (2012). "Socioeconomic status and smoking: a review." Annuals of the New York Academy of Sciences 1248: 107-123.
45. Twyman L, Bonevski B, Paul C, et al. Perceived barriers to smoking cessation in selected vulnerable groups: a systematic review of the qualitative and quantitative literature. BMJ Open 2014;4: e006414. doi:10.1136/ bmjopen-2014-00641
46. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. (2014). *The Health Consequences of Smoking—50 Years of Progress. A Report of the Surgeon General.* Retrieved from http://www.surgeongeneral.gov/library/reports/50-years-of-progress/full-report.pdf
47. Ahluwalia JS, Harris KJ, Catley D, Okuyemi KS, Mayo MS (2002). "Sustained-release bupropion for smoking cessation in African Americans: a randomized controlled trial." JAMA: Journal of the American Medical Association 288(4) 468-474.
48. Andrews JO, Newman SD, Heath J, Williams LB, Tingen MS. Community-based participatory research and smoking cessation interventions: a review of the evidence. Nurs Clin North Am. 2012 Mar;47(1):81-96. doi: 10.1016/j.cnur.2011.10.013.
49. Andrews, J. O., et al. (2007). "The effect of a multi-component smoking cessation intervention in African American women residing in public housing." Research in Nursing & Health 30(1): 45-60.
50. Burton, D., et al. (2010). "A phone-counseling smoking-cessation intervention for male Chinese restaurant workers." Journal of Community Health 35(6): 579-585.
51. Darity, W.A., et al. (1997). "A multi-city community based smoking research intervention project in the African-American population." International Quarterly of Community Health Education 17(2): 117-130.
52. Fisher, E.B., et al. (1998) "Neighbors for a smoke free north side: evaluation of a community organization approach to promoting smoking cessation among African Americans." American Journal of Public Health 88, 1658-1663
53. Hoffman, A.M., et al. (2006). "Computer expert systems for African-American smokers in physicians offices: a feasibility study." Preventive Medicine 43(3): 204-211.
54. Jones, R., et al. (1994). "The Head Start parent involvement program as a vehicle for smoking reduction intervention." Family & Community Health 17(1): 1-12.
55. Lipkus, I.M., et al. (1999) "Using tailored interventions to enhance smoking cessation among African-Americans at a community health center." Nicotine & Tobacco Research 1, 77-85

56. Manfredi, C., et al. (1999). "Evaluation of a motivational smoking cessation intervention for women in public health clinics." Preventive Medicine 28(1): 51-60.
57. McBride, C.M., et al. (2002). "Incorporating genetic susceptibility feedback into a smoking cessation program for African-American smokers with low income." Cancer Epidemiology Biomarkers and Prevention 11(6): 521-528.
58. Webb, M.S. (2008). "Does one size fit all African American smokers? The moderating role of acculturation in culturally specific interventions." Psychology of Addictive Behaviors 22(4): 592-596.
59. Wetter, D.W., et al. (2007). "Reaching and treating Spanish-speaking smokers through the National Cancer Institute's Cancer Information Service: A randomized controlled trial." Cancer 109(2 SUPPL.): 406-413.
60. Wewers M.E. et al. (2009). "Effectiveness of a nurse-managed, lay-led tobacco cessation intervention among Ohio appalachian women." Cancer Epidemiol Biomarkers Prev. 2009 Dec;18(12):3451-8.
61. Brandon, T. H., et al. (2012). "Self-help booklets for preventing postpartum smoking relapse: a randomized trial." American Journal of Public Health 102(11): 2109-2115.
62. English, K.C., et al. (2010). "Translating public health knowledge into practice: development of a lay health advisor perinatal tobacco cessation program." Journal of public health management and practice : JPHMP 16(3): E9-E19.
63. Higgins, S.T., et al. (2012). "Financial incentives for smoking cessation among pregnant and newly postpartum women." Preventive Medicine 55 Suppl: S33-40.
64. Howell, E.M., et al. (2004). "The impact of Medicaid managed care on pregnant women in Ohio: a cohort analysis." Health Services Research 39(4 Pt 1): 825-846.
65. Jehn, L., et al. "First Breath prenatal smoking cessation pilot study: preliminary findings." WMJ. 2003;102(3):29-34.
66. Parker, D.R., et al. (2007). "Feasibility, cost, and cost-effectiveness of a telephone-based motivational intervention for underserved pregnant smokers." Nicotine and Tobacco Research 9(10): 1043-1051.
67. Reitzel, L.R., et al. (2010). "Preventing postpartum smoking relapse among diverse low-income women: a randomized clinical trial." Nicotine & Tobacco Research 12(4): 326-335.
68. Barbeau, E.M., et al. (2006). "Results of a union-based smoking cessation intervention for apprentice iron workers (United States)." Cancer Causes & Control 17(1): 53-61.
69. Harley, A.E., et al. (2010). "Multiple health behavior changes in a cancer prevention intervention for construction workers, 2001-2003." Preventing Chronic Disease 7(3): A55.
70. Okechukwu, C.A., et al. (2009). "MassBuilt: effectiveness of an apprenticeship site-based smoking cessation intervention for unionized building trades workers." Cancer Causes & Control 20(6): 887-894.
71. Ringen, K., et al. (2002). "Smoking cessation in a blue-collar population: results from an evidence-based pilot program." American Journal of Industrial Medicine 42(5): 367-377.
72. Sorensen, G., et al. (2007). "Tools for health: the efficacy of a tailored intervention targeted for construction laborers." Cancer Causes & Control 18(1): 51-59.
73. Burton, D., et al. (2010). "A phone-counseling smoking-cessation intervention for male Chinese restaurant workers." Journal of Community Health 35(6): 579-585.
74. Goldade, K. et al. "Designing a smoking cessation intervention for the unique needs of homeless persons: a community-based randomized clinical trial." Clin Trials. 2011 Dec;8(6):744-54.
75. Viswanathan M, Ammerman A, Eng E, et al. Evidence Report/Technology Assessment No. 99. Rockville, MD: Agency for Healthcare Research and Quality; 2004. Jul, Community-based participatory research: assessing the evidence. (Prepared by RTI–University of North Carolina Evidence-based Practice Center under Contract No. 290-02-0016). AHRQ Publication 04-E022-2.
76. Chen PG, Diaz N, Lucas G, et al. Dissemination of results in community based participatory research. Am J of Prev Med. 2010;39:372–378
77. Wu D, Ma GX, Zhou K, ZhouD, Liu A, Poon An (2009) The effect of a culturally tailored smoking cessation for Chinese American Smokers. *Nicotine Tob Res* Dec: 11(12): 1448-57.
78. Berman, B.A., et al. (1995) "Targeting adult smokers through a multi-ethnic public school system." Journal of Cancer Education 10, 91-101.
79. Christiansen, B. A., et al. (2010). "Closing tobacco-related disparities: Using community organizations to increase consumer demand." American Journal of Preventive Medicine 38(3 Suppl): S397-402.
80. Davis, J.M., et al. (2014). "Randomized trial on mindfulness training for smokers targeted to a disadvantaged population." Substance Use & Misuse 49(5): 571-585.
81. Okuyemi, K.S., et al. (2007). "Pathways to health: a cluster randomized trial of nicotine gum and motivational interviewing for smoking cessation in low-income housing." Health Education & Behavior 34(1): 43-54.
82. Secker-Walker, R.H., et al. (2000). "Helping women quit smoking: results of a community intervention program." American Journal of Public Health 90(6): 940-946.
83. Hahn, E.J., et al. (2004). "Effectiveness of a quit and win contest with a low-income population." Preventive Medicine 39(3): 543-550.
84. Bullock, L., et al. (2009) "Baby BEEP: A randomized controlled trial of nurses' individualized social support for poor rural pregnant smokers." Maternal and child health journal 13, 395-406
85. Cupertino, A. P., et al. (2010). "Feasibility of a Spanish/English computerized decision aid to facilitate smoking cessation efforts in underserved communities." Journal of Health Care for the Poor & Underserved 21(2): 504-517.

86. Curry, S. J., et al. (2003). "Pediatric-based smoking cessation intervention for low-income women - A randomized trial." Arch Pediatr Adolescent Med. (3):295-302
87. Dornelas, E.A., et al. (2006). "Efficacy and cost-effectiveness of a clinic-based counseling intervention tested in an ethnically diverse sample of pregnant smokers." Patient Education and Counseling 64(1-3): 342-349.
88. Eakin E., et al (1998). "Reaching those most in need: Participation in a Planned Parenthood smoking cessation program." Annals of Behavioral Medicine 20(3): 216-220.
89. Glasgow, R.E., et al. (2000). "A brief smoking cessation intervention for women in low-income planned parenthood clinics." American Journal of Public Health 90, 786-789.
90. Lasser, K.E., et al. (2013). "Patient navigation to promote smoking cessation among low-income primary care patients: A pilot randomized controlled trial." Journal of Ethnicity in Substance Abuse 12(4): 374-390.
91. Cahill, K., et al. (2008). "Workplace interventions for smoking cessation." Cochrane Database of Systematic Reviews(4): CD003440.
92. Carlini, B. H., et al. (2012). "Reaching out, inviting back: using Interactive voice response (IVR) technology to recycle relapsed smokers back to Quitline treatment--a randomized controlled trial." BMC Public Health 12: 507.
93. Durkin, S. J., et al. (2009). "Effects of different types of antismoking ads on reducing disparities in smoking cessation among socioeconomic subgroups." American Journal of Public Health 99(12): 2217-2223.
94. Farrelly, M. C., et al. (2012). "Promotion of smoking cessation with emotional and/or graphic antismoking advertising." American Journal of Preventive Medicine 43(5): 475-482
95. Jason, L. A., et al. (1988). "Effects of a televised smoking cessation intervention among low-income and minority smokers." American Journal of Community Psychology 16(6): 863-876.
96. Niederdeppe, J., et al. (2011). "Socioeconomic variation in recall and perceived effectiveness of campaign advertisements to promote smoking cessation." Social Science & Medicine 72(5): 773-780.
97. Vallone, D. M., et al. (2009). "Is socioeconomic status associated with awareness of and receptivity to the truth campaign?" Drug & Alcohol Dependence 104 Suppl 1: S115-120.
98. Biener, L., et al. (1998). "Reactions of adult and teenaged smokers to the Massachusetts tobacco tax." American Journal of Public Health 88(9): 1389-1391.
99. Centers for Disease Control and Prevention (1998). "Response to increases in cigarette prices by race/ethnicity, income, and age groups--United States, 1976-1993." MMWR - Morbidity & Mortality Weekly Report 47(29): 605-609.
100. Vijayaraghavan, M., et al. (2013). "The effectiveness of cigarette price and smoke-free homes on low-income smokers in the United States." American Journal of Public Health 103(12): 2276-2283.
101. Drach, L.L., et al. (2010). "The acceptability of comprehensive smoke-free policies to low-income tenants in subsidized housing." Preventing Chronic Disease 7(3): A66.
102. Greene, J., et al. (2014). "The impact of tobacco dependence treatment coverage and copayments in Medicaid." American Journal of Preventive Medicine 46(4): 331-336.
103. Liu, F. (2009). "Effect of Medicaid coverage of tobacco-dependence treatments on smoking cessation." International Journal of Environmental Research & Public Health [Electronic Resource] 6(12): 3143-3155.
104. Murphy, J. M., et al. (2003). "Impact of economic policies on reducing tobacco use among Medicaid clients in New York." Preventive Medicine 37(1): 68-70
105. Center for Advancing Health. A New Definition of Patient Engagement: What Is Engagement and Why Is It Important? Washington, DC: Center for Advancing Health; 2010; http://www.cfah.org/file/CFAH_Engagement_Behavior_Framework_current.pdf
106. Zhuang, YL, Gamst, AC, Cummins, SE, Wolfson, T, Zhu, SH. "Comparison of smoking cessation between education groups: findings from 2 US National Surveys over 2 decades." Am J Public Health. 2015 Feb;105(2):373-9. doi: 10.2105/AJPH.2014.302222.
107. Hoover, D. S., J. I. Vidrine, et al. (2015). Health Literacy, Smoking, and Health Indicators in African American Adults. Journal of Health Communication 20 Suppl 2: 24-33.
108. Jarlenski, M. P., M. S. Chisolm, et al. (2015). Use of pharmacotherapies for smoking cessation: Analysis of pregnant and postpartum medicaid enrollees. American Journal of Preventive Medicine 48(5): 528-534.
109. Malinowski, B., M. Minkler, et al. (2015). Labor unions: a public health institution. *American Journal of Public Health* 105(2): 261-71.
110. Akhtar-Khaleel, W. Z., R. L. Cook, et al. (2016). Long-Term Cigarette Smoking Trajectories Among HIV-Seropositive and Seronegative MSM in the Multicenter AIDS Cohort Study. AIDS Behav.
111. Mdodo, R., E. L. Frazier, et al. (2015). Cigarette smoking prevalence among adults with HIV compared with the general adult population in the United States: cross-sectional surveys. *Annals of Internal Medicine* 162(5): 335-44.
112. Akhtar-Khaleel, W. Z., R. L. Cook, et al. (2016). Trends and Predictors of Cigarette Smoking Among HIV Seropositive and Seronegative Men: The Multicenter Aids Cohort Study. AIDS Behav 20(3): 622-32.
113. McCarthy, M., M. Siahpush, et al. (2016). Social disparities in unaided quit attempts among daily current and former smokers: Results from the 2010-2011 Tobacco Use Supplement to the Current Population Survey. Nicotine Tob Res.
114. Barnoya, J., L. Jin, et al. (2015). Nicotine replacement therapy, tobacco products, and electronic cigarettes in pharmacies in St. Louis, Missouri. Journal of the American Pharmacists Association 55(4): 405-412.
115. Roberts, M. E., M. L. Berman, et al. (2015). Point-of-sale tobacco marketing in rural and urban Ohio: Could the new landscape of Tobacco products widen inequalities? Preventive Medicine 81: 232-235.

116. Syamlal, G., A. Jamal, et al. (2015). Current Cigarette Smoking Among Workers in Accommodation and Food Services--United States, 2011-2013. *MMWR - Morbidity & Mortality Weekly Report* 64(29): 797-801. Access No: 26225478
117. Huang, J., Y. Kim, et al. (2016). Electronic Cigarettes Among Priority Populations: Role of Smoking Cessation and Tobacco Control Policies. *American Journal of Preventive Medicine* 50(2): 199-209. Access No: 26410185
118. Christiansen, B. A., K. M. Reeder, et al. (2015). Motivating Low Socioeconomic Status Smokers to Accept Evidence-Based Smoking Cessation Treatment: A Brief Intervention for the Community Agency Setting. *Nicotine & Tobacco Research* 17(8): 1002-11. Access No: 26180226
119. Record, N. B., D. K. Onion, et al. (2015). Community-wide cardiovascular disease prevention programs and health outcomes in a rural county, 1970-2010.[Erratum appears in JAMA. 2015 Jun 2;313(21):2185; PMID: 26034967]. *JAMA* 313(2): 147-55.
120. Strickland, J., N. Smock, et al. (2015). Development of targeted messages to promote smoking cessation among construction trade workers. Health Education Research 30(1): 107-120. Access No: 2015-02345-011
121. Vickerman, K. A., L. Zhang, et al. (2015). Cessation Outcomes Among Quitline Callers in Three States During a National Tobacco Education Campaign. *Preventing Chronic Disease* 12: E110. Access No: 26182145
122. Brown, T., et al. (2014). "Equity impact of population-level interventions and policies to reduce smoking in adults: A systematic review." Drug and Alcohol Dependence 138(1): 7-16.
123. Garrett, B. E., S. R. Dube, et al. (2015). Addressing the Social Determinants of Health to Reduce Tobacco-Related Disparities. *Nicotine & Tobacco Research* 17(8): 892-7
124. Roberts, M. E., M. L. Berman, et al. (2015). Point-of-sale tobacco marketing in rural and urban Ohio: Could the new landscape of Tobacco products widen inequalities? Preventive Medicine 81: 232-235.
125. Berg, C. J., R. Haardorfer, et al. (2015). Smoke-Free Policies in Multiunit Housing: Smoking Behavior and Reactions to Messaging Strategies in Support or in Opposition. Preventing Chronic Disease 12: E98. Access No: 26111158
126. Ku, L., B. K. Bruen, et al. (2016). Medicaid tobacco cessation: Big gaps remain in efforts to get smokers to quit. Health Affairs 35(1): 62-70.
127. Greene, J., R. M. Sacks, et al. (2014). The impact of tobacco dependence treatment coverage and copayments in Medicaid. American journal of preventive medicine 46(4): 331-6. Access No: 24650835
128. Knudsen, H. K. and P. M. Roman (2015). Medicaid, Private Insurance, and the Availability of Smoking Cessation Interventions in Substance Use Disorder Treatment. Psychiatric Services 66(11): 1213-20.
129. Zhang, J. and Z. Wang (2008). "Factors associated with smoking in Asian American adults: a systematic review." Nicotine & Tobacco Research 10(5): 791-801.
130. Henkel, D. (2011). "Unemployment and substance use: a review of the literature (1990-2010)." Current Drug Abuse Reviews 4(1): 4-27.
131. Ebert, L. M. and K. Fahy (2007). "Why do women continue to smoke in pregnancy?" Women and Birth 20(4): 161-168.
132. Bryant, J., et al. (2011). "A systematic review and meta-analysis of the effectiveness of behavioral smoking cessation interventions in selected disadvantaged groups." Addiction 106(9): 1568-1585.
133. Murray, R. L., et al. (2009). "Improving access to smoking cessation services for disadvantaged groups: a systematic review." Journal of Public Health 31(2): 258-277.
134. Cahill, K., J. Hartmann-Boyce, et al. (2015). Incentives for smoking cessation. Cochrane Database of Systematic Reviews 5: CD004307. Access No: 25983287
135. Higgins, S.T., et al. (2012). "Financial incentives for smoking cessation among pregnant and newly postpartum women." Preventive Medicine 55 Suppl: S33-40.
136. Andrews, JO, et al. (2012). “Community-Based Participatory Research and Smoking Cessation Interventions: A review of the evidence
137. Pederson, L. L., et al. (2000). "Smoking cessation among African Americans: what we know and do not know about interventions and self-quitting." Preventive Medicine 31(1): 23-38.
138. Fitzgerald, E. M. (2012). "Evidence-based tobacco cessation strategies with pregnant Latina women." Nursing Clinics of North America 47(1): 45-54.
139. Liu, J. J., et al. (2010). "P49 Modifying health promotion interventions for ethnic minority groups: systematic review of empirical evidence." Journal of Epidemiology & Community Health 64: A52-53.
140. Main, C., et al. (2008). "Population tobacco control interventions and their effects on social inequalities in smoking: placing an equity lens on existing systematic reviews." BMC Public Health 8: 178.
141. Durkin, S., et al. (2012). "Mass media campaigns to promote smoking cessation among adults: an integrative review." Tobacco Control 21(2): 127-138.
142. Guillaumier, A., et al. (2012). "Anti-tobacco mass media and socially disadvantaged groups: a systematic and methodological review." Drug & Alcohol Review 31(5): 698-708.
143. Albrecht, S. A., et al. (1994). "Smoking among low-income, pregnant women: prevalence rates, cessation interventions, and clinical implications." Birth 21(3): 155-162.
144. Schaap, M. M. and A. E. Kunst (2009). "Monitoring of socio-economic inequalities in smoking: Learning from the experiences of recent scientific studies." Public Health 123(2): 103-109.
145. Courtney, R. J., S. Naicker, et al. (2015). Smoking Cessation among Low-Socioeconomic Status and Disadvantaged Population Groups: A Systematic Review of Research Output. *International Journal of Environmental Research & Public Health [Electronic Resource]* 12(6): 6403-22.

146. Greaves, L. and N. Hemsing (2009). "Women and tobacco control policies: Social-structural and psychosocial contributions to vulnerability to tobacco use and exposure." Drug and Alcohol Dependence 104: S121-S130.
147. McRobbie, H., et al. (2013). "Research priorities for article 14-demand reduction measures concerning tobacco dependence and cessation." Nicotine and Tobacco Research 15(4): 805-816.
148. Stotts, A. L., T. F. Northrup, et al. (2015). "Randomized, Controlled Pilot Trial of Bupropion for Pregnant Smokers: Challenges and Future Directions." American Journal of Perinatology 32(4): 351-356. Access No:
149. Sheikhattari, P. and F. A. Wagner (2015). "Cease quit smoking; A successful CBPR trial." Drug and Alcohol Dependence 146: e97.
150. Sheffer, C.E., et al. (2012). "Socioeconomic disparities in community-based treatment of tobacco dependence." American Journal of Public Health 102(3): e8-16
151. Sheffer, C, et al. (2013). "In-person and telephone treatment of tobacco dependence: a comparison of treatment outcomes and participant characteristics." American Journal of Public Health 103(8): e74-82.
152. An, L. C., et al. (2010). "The comparative effectiveness of clinic, work-site, phone, and Web-based tobacco treatment programs." Nicotine & Tobacco Research 12(10): 989-996.
153. Michie, S., et al. (2009). "Low-income groups and behaviour change interventions: a review of intervention content, effectiveness and theoretical frameworks." Journal of Epidemiology & Community Health **63**(8): 610-622.
154. Bock, B.C., et al. (2014). "Tobacco cessation among low-income smokers: motivational enhancement and nicotine patch treatment." Nicotine & Tobacco Research 16(4): 413-422.
155. Haas, J. S., J. A. Linder, et al. (2015). "Proactive tobacco cessation outreach to smokers of low socioeconomic status: a randomized clinical rial." [Erratum appears in JAMA Intern Med. 2015 May;175(5):869; PMID: 25938323]. JAMA Internal Medicine 175(2): 218-26. Access No: 25506771
156. Brunette, M. F., W. Gunn, et al. (2015). "A pre-post pilot study of a brief, web-based intervention to engage disadvantaged smokers into cessation treatment." Addiction Science & Clinical Practice 10: 3
157. Hickman, N. J., 3rd, K. L. Delucchi, et al. (2015). "Treating Tobacco Dependence at the Intersection of Diversity, Poverty, and Mental Illness: A Randomized Feasibility and Replication Trial." Nicotine Tob Res. 2015 Aug;17(8):1012-21.
158. Grossman, E., J. Chen, et al. (2015). Quality of tobacco treatment in hospitals-system-level and patient-level predictors of gaps in care. Journal of General Internal Medicine 30: S240.
159. Moody-Thomas, S., L. Nasuti, et al. (2015). "Effect of systems change and use of electronic health records on quit rates among tobacco users in a public hospital system." American Journal of Public Health 105 Suppl 2: e1-7.
160. Leone, F. T., S. Evers-Casey, et al. (2015). "Academic Detailing Interventions Improve Tobacco Use Treatment among Physicians Working in Underserved Communities." Annals of the American Thoracic Society 12(6): 854-8.
161. Fu, S. S., M. van Ryn, et al. (2016). "Proactive tobacco treatment offering free nicotine replacement therapy and telephone counselling for socioeconomically disadvantaged smokers: a randomised clinical trial." Thorax. May;71(5):446-53.
162. Wedeles, J. (2015). "Predictors of program participation and behavior change among pregnant women in the west Virginia-smoking cessation and reduction in pregnancy treatment (script) dissemination program." Dissertation Abstracts International Section A: Humanities and Social Sciences 76(2-A(E)).
163. Fu, S.S., et al. (2008). "Race and nicotine replacement treatment outcomes among low-income smokers." American Journal of Preventive Medicine 35(6 Suppl): S442-448.
164. Chiang, K. and B. Borrelli (2014). "Income predictors of smoking cessation among Hispanics." Journal of Health Psychology 19(7): 869-76. Access No: 23584511
165. Garey, L., L. R. Reitzel, et al. (2015). "Subjective social status and readiness to quit among homeless smokers." American Journal of Health Behavior 39(2): 157-66. Access No: 25564827
166. Ma, P., M. S. Businelle, et al. (2015). "The influence of perceived neighborhood disorder on smoking cessation among urban safety net hospital patients." Drug & Alcohol Dependence 156: 157-61. Access No: 26386824
167. Turner, L.R., et al. (2008). "Social support as a moderator of the relationship between recent history of depression and smoking cessation among lower-educated women." Nicotine & Tobacco Research 10(1): 201-212.
168. Webb, M.S., et al. (2010). "Effects of culturally specific cessation messages on theoretical antecedents of behavior among low-income African American smokers." Psychology of Addictive Behaviors 24(2): 333-341.
169. Sindelar, J.L., et al. (2014). "Financial versus health motivation to quit smoking: A randomized field study." Preventive Medicine 59(1): 1-4.
170. Sindelar, J.L., et al. (2014). "Financial versus health motivation to quit smoking: A randomized field study." Preventive Medicine 59(1): 1-4.
171. Bernstein, S. L., J. M. Rosner, et al. (2016)."Cell Phone Ownership and Service Plans Among Low-Income Smokers: The Hidden Cost of Quitlines." Nicotine Tob Res. Feb 26. 18 (8): 1791-1793.
172. Sheffer, C., S. Brackman, et al. (2015). "When free is not for me: Confronting the barriers to use of free quitline telephone counseling for tobacco dependence." International Journal of Environmental Research and Public Health 13(1).

Appendix A: Key Informant List

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Appendix B: Knowledge Review Background and Purpose

Knowledge Review of Tobacco Interventions for Lower-SES Populations: Background and Purpose

Defining lower socioeconomic status (SES)

SES comprises economic, social, and work statuses that are commonly measured by income, education, and occupation, respectively.[1, 2, 3] Colorado's tobacco control programs have defined lower-SES as any of the following: income below 200% of the federal poverty level (FPL); Medicaid or no health insurance; partial high-school completion (no diploma), or disability/inability to work. The groups that meet these criteria have smoking prevalence rates that are two to three times higher than the counterpart groups. In contrast to the common ground of severely elevated smoking prevalence, the lower-SES population is highly diverse in cultures, ethnicities, and social and economic statuses.

Why focus on smokers who have lower SES

- Lower-SES is the single greatest predictor of tobacco use in the United States.
- Smokers in lower-SES communities are less likely to use first-line cessation treatments when quitting, and less likely to have a successful quit outcome.
- Lower-SES smokers may be more nicotine-dependent than other SES smokers, increasing the difficulty of quitting.
- Compared to other socioeconomic statuses, lower-SES may expose individuals to more frequent and more intense episodes of negative affect and chronic stress, and lower-SES smokers may smoke partly for momentary relief of these episodes despite known health effects.
- Tobacco advertising and promotion target lower-SES communities.
- Children growing up in lower-SES homes are more likely than other children to live with smokers.
- Current knowledge is sparse and fragmented when it comes to:
    - defining lower-SES;
    - balancing sociocultural specificity with population-wide reach in directing limited public health resources among the many sociodemographic groups that comprise the lower-SES U.S. population;
    - choosing and delivering effective ways to prevent tobacco use and increase cessation success among lower-SES populations.

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[1] Adler NE, Boyce T, Chesney MA, Cohen S, Folkman S, Kahn RL, Syme SL. Socioeconomic Status and Health: The challenge of the gradient. Amer Psychol 1994; 49(1):15-24.

[2] Winkleby MA, Jatulis DE, Frank E, Fortmann SP. Socioeconomic Status and Health: How Education, Income, and Occupation Contribute to Risk Factors for Cardiovascular Disease. Am J Public Health 1992; 82(6):816-20.

[3] Cowan CD, Hauser RM, Kominski RA, Levin HM, Lucas SR, Morgan SL, Spencer MB, Chapman C. Improving the Measurement of Socioeconomic Status for the National Assessment of Educational Progress: A Theoretical Foundation. Washington, D.C.: National Center for Educational Statistics, 2012.

What the funder wants from the Knowledge Review

- The Colorado tobacco control strategic plan recognizes the centrality of lower-SES populations in remaining public health initiatives to end the tobacco epidemic.
- The Knowledge Review should:
    - summarize what is known about smoking prevention and cessation intervention strategies among lower-SES populations;
    - identify effective strategies that a state health department can feasibly implement to reach, engage, motivate and support lower-SES smokers in quitting and prevent lower-SES young people from initiating tobacco use;
    - help the Colorado Department of Public Health and Environment target limited resources to reduce the SES tobacco prevalence and cessation disparities and make a substantial impact on tobacco use.

How your interview will contribute to the Knowledge Review

- You can help summarize, synthesize and prioritize existing evidence and knowledge about public health tobacco interventions among lower-SES populations.
- You can identify and describe unpublished strategies and promising directions.
- You can comment on Colorado's current tobacco control portfolio and endorse or challenge its content, emphases and directions.

Appendix C: Background Articles

Garrett, BE, Dube, SR, Babb, S, McAfee, T. "Addressing the Social Determinants of Health to Reduce Tobacco-Related Disparities." Nicotine Tob Res. 2014 Dec 16. pii: ntu266. [Epub ahead of print]

Henningfield, JE. "The tobacco endgame: it's all about behavior." Prev Med. 2014 Nov;68:11-6. doi: 10.1016/j.ypmed.2014.09.003. Epub 2014 Sep 16.

Hiscock, R, Bauld, L, Amos, A, Fidler, JA, Munafò, M. "Socioeconomic status and smoking: a review." Ann N Y Acad Sci. 2012 Feb;1248:107-23. doi: 10.1111/j.1749-6632.2011.06202.x. Epub 2011 Nov 17.

Smith, PH, Rose, JS, Mazure, CM, Giovino, GA, McKee, SA. "What is the evidence for hardening in the cigarette smoking population? Trends in nicotine dependence in the U.S., 2002-2012." Drug Alcohol Depend. 2014 Sep 1;142:333-40. doi: 10.1016/j.drugalcdep.2014.07.003. Epub 2014 Jul 14.

Twyman, L, Bonevski, B, Paul, C, Bryant, J. Perceived barriers to smoking cessation in selected vulnerable groups: a systematic review of the qualitative and quantitative literature. BMJ Open 2014;4:e006414 doi:10.1136/bmjopen-2014-006414.

Zhuang, YL, Gamst, AC, Cummins, SE, Wolfson, T, Zhu, SH. "Comparison of smoking cessation between education groups: findings from 2 US National Surveys over 2 decades." Am J Public Health. 2015 Feb;105(2):373-9. doi: 10.2105/AJPH.2014.302222.

Appendix D: Interview Guide

Study-team introductions

Confidentiality preference, permission to record interview

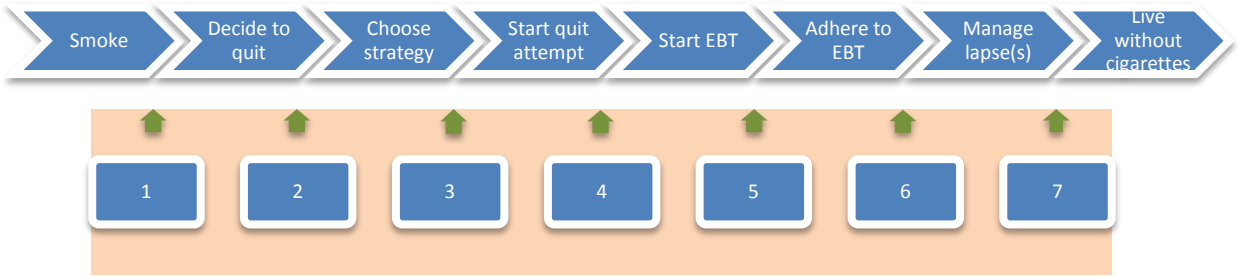
- Would you prefer that quotes we use from you be attributed or unattributed, or would you rather make the decision when you review the draft report?
- We would like to record and transcribe this interview for qualitative analysis. Is that ok?

Confirm spelling of name, title(s), brief summary of experience with lower-SES populations

- About how long have you done tobacco intervention **research** with lower-SES populations?
- About how long have you done tobacco intervention **practice** with lower-SES populations?
- What lower-SES population(s) have you worked with in tobacco control?
- What tobacco interventions have you worked on with lower-SES populations?

First study area: Where and how to intervene in the smoking cessation sequence

The smoking cessation behavioral sequence can include (1) planning to quit, (2) choosing a quit strategy, (3) attempting to quit, (4) initiating an evidence-based treatment (EBT), (5) adhering to EBT, (6) getting past lapse(s), and (7) adjusting to life without cigarettes. The diagram depicts these steps in chevrons; the arrows underneath point to transition spaces between steps, where interventions to be identified increase the likelihood that a population of smokers initiates the next behavior in the sequence.



Question 1. What public health intervention strategies in the numbered boxes can increase lower-SES smoking cessation at the population level? (Lines are to jot down thoughts before interview.)

1 _____

2 _____

3 _____

4 _____

5 _____

6 _____

7 _____

1a. What are the pros, cons, feasibility, and effectiveness of each strategy you identified?

1b. How well do you think the diagram captures the smoking cessation behavioral sequence? How would you change it, and if so, how do the changes affect your previous answers?

Question 2. Among the potential intervention strategies you identified, where do you think public health can have the greatest impact on smoking cessation among lower-SES populations?

Second study area – current mass-audience strategies

Public health employs just a few broad strategies to promote and support smoking cessation: Media campaigns promote use of quitlines; support for quitlines, mobile apps, and insurance coverage policies makes evidence-based treatments more accessible; and price and smoke-free policies make smoking harder to continue. We wonder whether public health is making the most of these broad strategies, and where truly new frontiers might lie.

Question 3. Smoking cessation media campaigns tend to focus on prevention among youth and promotion of quitline cessation support. Where else in the smoking cessation behavioral sequence might they increase successful cessation among lower-income populations?

3a. How can smoking cessation media campaigns increase reach, engagement, and salience among lower-SES populations?

3b. Audience segmentation is a fundamental tenet of social marketing that requires campaign themes, messages and images to reflect the intended audience's values and self-identity. The *lower SES* construct encompasses considerable social, cultural, ethnic and economic diversity, and public health campaigns lack sufficient resources to create and conduct a targeted campaign for each lower-SES audience segment. How should public health media campaigns be designed to overcome this difficulty and maximize impact?

3b.1 Should we simply reject *lower SES* as an unworkable audience definition for media campaigns, despite the fact that the large majority of U.S. smokers have lower SES?

3b.2 Public health interventions commonly target specific nonwhite populations. Can they also target lower-SES *white* smokers? If so, how?

3b.3 Public health is keenly aware that people in poverty suffer disproportionate health risks, including elevated smoking prevalence. The "near-poor" have somewhat greater income but suffer equally elevated smoking prevalence. Furthermore, many or even most poor and near-poor smokers primarily earn their income in jobs. Our tobacco control programs don't seem to target the "working poor" or the near-poor, although these constructed categories encompass at least as many smokers as the number in poverty. Can tobacco control have greater impact by dedicating more targeted programming and resources to reach near-poor and working poor populations?

Question 4. Quitlines are the number one U.S. smoking cessation intervention, but 90% to 95% of smokers who try to quit will never use a quitline. What can public health do to reach, engage, and support quitline never-users, most of whom, like all remaining smokers, have lower SES?

Third study area – Colorado's tobacco control approach and portfolio

Question 5. The binder includes a description of Colorado's current tobacco control portfolio. How well does the portfolio meet the need to focus on lower SES populations? What would you change?

Question 6. Imagine an ideal world in which effectiveness and available budget were the only criteria for shaping public health programs. If you had roughly $20 million dollars per year to design a tobacco control program in a state with 600,000 smokers, of whom 75% are lower SES, what would you do?

Question 7. How should states modify their tobacco control programs in response to the Affordable Care Act (ACA) and increased Medicaid availability?

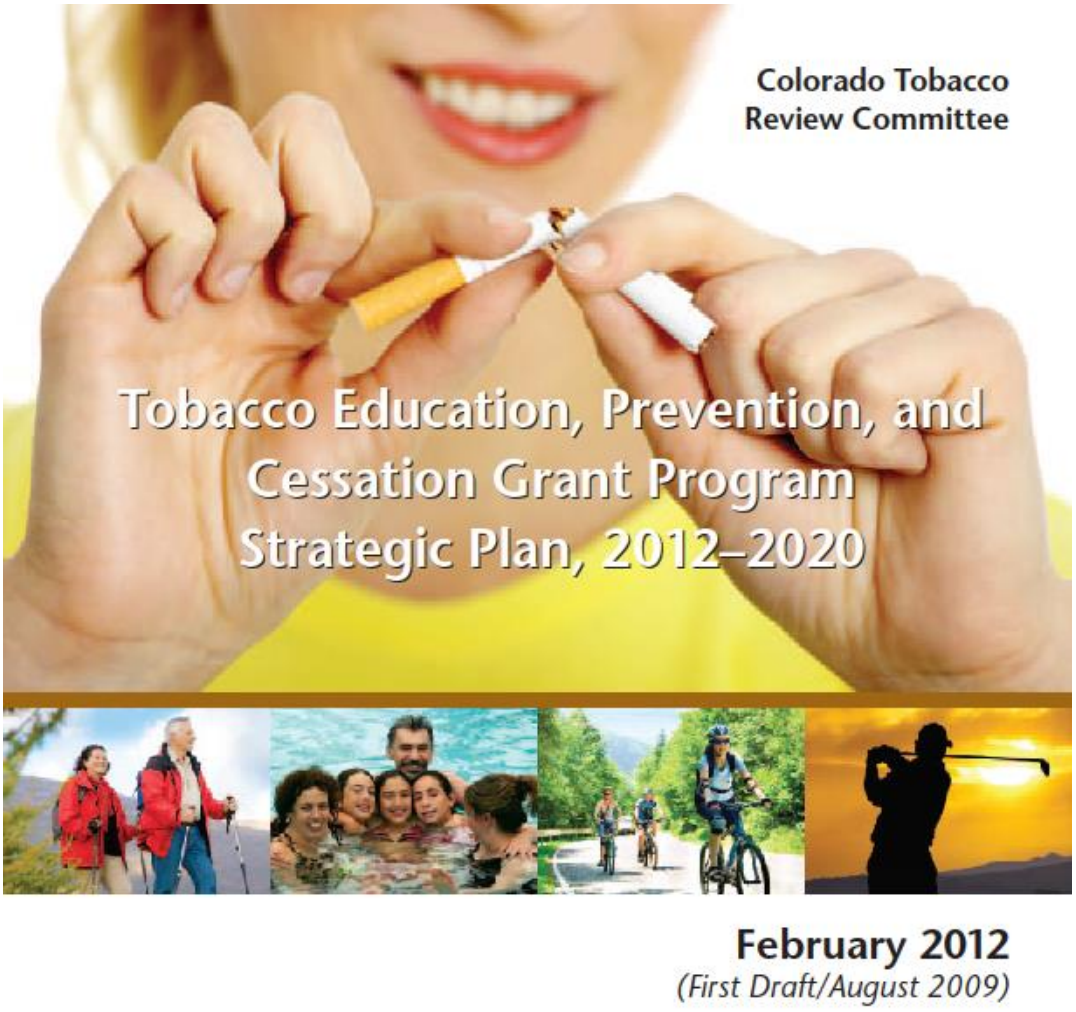
7a. Should states reduce or eliminate financial support of nicotine replacement therapy or telephone quitlines because ACA requires insurance plans to cover these and other smoking cessation treatments?

Last study area – expert-initiated topics

Question 8. What else should the state consider or do to ensure that tobacco control programming has the greatest possible impact on tobacco prevention and cessation among lower-SES populations?

Appendix E: Colorado Grant Program Strategic Plan, 2012-2020

Click here to view plan.



Appendix F: Summary of Colorado's Tobacco Control Grant Portfolio

(Omitted from Updated Version)

Appendix G: Prevalence Articles

Denotes an article added for original literature review update

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
1. (2001). "Reducing socioeconomic inequalities may be the key to smoking cessation among blacks." AHRQ Research Activities(249): 20-20.	**Commentary** This is a commentary on reducing socioeconomic inequalities on education and access to care.	National 1980s-1990s	Young adults 18-30, both black and white, smokers N= 5000	• Beneficial changes in smoking behavior were strongly and positively associated with higher educational attainment among men and women, • Higher income was more strongly associated with beneficial smoking changes among black than among white men. • More blacks than whites began smoking and fewer quit smoking during this same period. • Thirteen percent of black men and 7 percent of black women began smoking over the 10-year period compared with 5 percent of white men and 3.5 percent of white women, with corresponding cessation rates of 19 percent, 25 percent, 31 percent and 35 percent.	Adjustment for socioeconomic factors explained most of these racial disparities. Educational attainment and higher income are positively associated with beneficial changes in smoking and should be addressed to increase quit rates among the low SES population.
2. Ackerson LK, Viswanath K. Communication inequalities, social determinants, and intermittent smoking in the 2003 Health Information National Trends Survey. Prev Chronic Dis 2009;6(2).	**Cross-sectional (Survey)** Nationally representative cross-sectional survey looking at smoking prevalence. **SES variables Measured**: Income Education	National 2003	Participants, aged 18-75, who had smoked at least 100 cigarettes, termed ever smokers. N= 2,641 Response rate 63% Female: 44.4% Male: 55.6%	• People with high education and high income, Spanish-speaking Hispanics, and women were the most likely to be intermittent rather than daily smokers, compared with those who did not graduate from high school and those from the poorest households. • Those who paid a lot of attention to television and magazines may be more likely to be intermittent rather than daily smokers	Education and income both have independent associations with intermittent smoking. This finding indicates that these constructs may influence smoking through different pathways. Those with higher education may be more aware of the health risks inherent in daily smoking, and people with higher incomes may have resources to help them

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			Black or African American: 8.3% White: 75.6% Other: 6.8% Hispanic: 9.4%	• Our sample contained 280 intermittent smokers; this number represented 24.4% of current smokers. Almost half of the sample reported seeking cancer information.	overcome or avoid nicotine addiction
3. Adams, K. E., et al. (2008). "Sociodemographic, insurance, and risk profiles of maternal smokers post the 1990s: How can we reach them?" Nicotine and Tobacco Research 10(7): 1121-1129.	**Cross-Sectional (survey)** PRAMS data was used from 21 states, including AK, AR, CO, FL, H, IL, LA, MD, ME, MI, NC, NE, NM, NY< OH, OK, SC, UT, VT, WA and WV. Questions were used to construct measures of 1. Pre-pregnancy smokers, 2. smokers through the third trimester, 3. quitters and 4. relapsers. **SES variables Measured**: Income Insurance Status	National 2002	Randomly sampled mothers who completed the PRAMS questionnaire. N= 357410 Female: 100%	• Smoking rates are higher among low-income women; among those with family incomes less than $16,000, over 35% reported smoking pre-pregnancy with 54% reporting to be light smokers, 36% moderate smokers and 10% heavy smokers or more than 1 packs a day. • Smokers are in counties with fewer health resources and more likely to be uninsured pre-pregnancy • Maternal smokers have a higher likelihood of being Medicaid insured, they are much less likely to be privately insured leaving the larger percentage uninsured. Smokers are also more likely than nonsmokers to be uninsured during the prenatal period even though again, they are more likely Medicaid insured.	Low-income maternal smokers can be characterized as the working poor living predominantly in urban areas, both large and small, and in areas with fewer health care resources especially NICU beds, than low-income nonsmoking mothers. Over one-third reported a clinic as their usual source of care and the key barrier to prenatal care was lack of transportation. These smokers are also characterized by a milieu of individual and family problems including greater rates of abuse, stress from drugs and alcohol abuse than nonsmokers.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
4. Agrawal, A., et al. (2008). "Correlates of smoking cessation in a nationally representative sample of U.S. adults." Addictive Behaviors 33(9): 1223-1226.	**Cross-Sectional (Survey)** Data was used from the National Epidemiological Study of Alcohol and Related Conditions on 17,919 individuals with a lifetime history of smoking 100 or more cigarettes to examine the risk and protective factors that correlate with smoking cessation. **SES variables Measured**: Poverty Level	National 2001-2001	Individuals who completed the NESARC during the years of 2001-2002 and who reported smoking 100 or more cigarettes during their lifetime and could recollect the last time they smoked a cigarette. N= 17919 Mean Age: 40 18-99	• In addition to a history of DSM-IV nicotine dependence, which is negatively associated with smoking cessation, living below the poverty line is also associated with persistent smoking across all age cohorts. • Major depressive disorder is associated with persistent smoking, but interestingly, only in middle aged and older adults. Alcoholism and a family history of substance use problems are both correlated with persistent smoking but only in older adults.	Risk factors including major depressive disorder, alcoholism, substance abuse, and living below the poverty-line are associated with smoking cessation vary across development phases of adulthood and should be considered when developing interventions.
5. *Akhtar-Khaleel, W. Z., R. L. Cook, et al. (2016). Long-Term Cigarette Smoking Trajectories Among HIV-Seropositive and Seronegative MSM in the Multicenter AIDS Cohort Study. AIDS Behav.	**Cross-sectional** The study examined the association between demographic characteristics and long-term smoking trajectory group membership among HIV-seropositive and HIV-seronegative men who have sex with men (MSM). A cohort of 6552 MSM from the Multicenter AIDS Cohort Study were asked detailed information about their smoking history since their last follow-up.	MD, Washington D.C., IL, CA, PA Clinical	HIV infected men who have sex with men (MSM) HIV-seronegative Persistent heavy smoker N= 699 <H.S. diploma: 43.4% HIV-seropositive Persistent heavy smoker N=905 <H.S. diploma: 43.2%	• At the baseline visit, black, non-Hispanic men were more likely to be persistent heavy smokers among both HIV-seronegative and HIV-seropositive men compared with white, non-Hispanic men. • After adjusting for time-constant and time-varying covariates, we modeled long-term smoking trajectories for all participants. All 4 smoking trajectory groups, cigarette smoking at a given time varied with not only time but also with marijuana use and binge drinking. • Time of enrollment and having a high school diploma or less were	The overall decrease of smoking as shown by our trajectory groups is consistent with the national trend. Characteristics associated with smoking group trajectory membership should be considered in the development of targeted smoking cessation interventions among MSM and people living with HIV.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				significant predictors of cigarette smoking across all trajectory groups (p\0.0001).	
6. *Akhtar-Khaleel, W. Z., R. L. Cook, et al. (2016). Trends and Predictors of Cigarette Smoking Among HIV Seropositive and Seronegative Men: The Multicenter Aids Cohort Study. AIDS Behav 20(3): 622-32.	**Prospective** We measured the trend of cigarette smoking among HIV-seropositive and seronegative men over time from 1984-2012. Additionally, we examined the demographic correlates of smoking and smoking consumption.	National	N=6577 MSM from Multicenter AIDs Cohort Study	• In 2012, 11.8% and 36.9% of men who were enrolled in the MACS before 2001 or during or after 2001 smoked cigarettes, respectively. • In the multivariate analysis, black, non-Hispanic, lower education, enrollment wave, alcohol use, and marijuana use were positively associated with current smoking in MSM. • HIV serostatus was not significant in the multivariate analysis. However, HIV variables, such as detectable viral load, were positively associated.	Though cigarette smoking has declined over time, the prevalence still remains high among subgroups. There is still a need for tailored smoking cessation programs to decrease the risk of smoking in HIV-seropositive men who have sex with men.
7. Alexander, L. A., et al. (2010). "Occupational status, work-site cessation programs and policies and menthol smoking on quitting behaviors of US smokers." Addiction 105 Suppl 1: 95-104.	**Cross- Sectional (Survey)** The aim of the current study is to examine the relationships among occupational status, menthol smoking preference and employer-sponsored smoking cessation programs and policies on quitting behaviors. The data was obtained from the 2006 Tobacco Use Supplement to the Current Population Survey.	National 2006-2007	Respondents to the TUSCPS that were current smokers aged 18 and older, civilian and noninstitutionalized 30176 Demographics not broken down for the full sample	• When controlling for occupational status and work-place policies, there were no differences for menthol versus non-menthol smokers on quitting behaviors [odds ratio (OR) = 0.98; 95% confidence interval (CI) = 0.83, 1.15]. • Service workers were less likely to quit compared with white-collar workers (OR = 0.80; 95% CI = 0.69, 0.94), • Those with no employer-sponsored cessation program were less likely to quit (OR = 0.70; 95% CI = 0.60, 0.83).	Overall blue-collar and service workers are less likely to quit and have workplace smoking policies than white-collar works. This emphasizes the need to intervene on these industries. Menthol smokers and non-menthol smokers had similar smoking rates.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
	SES variables Measured: Income Industry/Occupation			• White-collar workers, compared with blue-collar and service workers, were more likely to have a smoking policy in the work area (93% versus 86% versus 88%, respectively).	
8. Andoh, J., et al. (2008). "Sex- and race-related differences among smokers using a national helpline are not explained by socioeconomic status." Journal of the National Medical Association 100(2): 200-207.	**Cross-Sectional** The current study evaluates whether sex and race related differences in smoking behavior were explained by SES. **SES variables Measured**: Income Education Industry/Occupation	National 2003-2005	Participants called into a national reactive telephone quit line run by the ALA. Active tobacco smokers, non-pregnant, older than 18 years of age, free of physician diagnosed psychiatric conditions other than anxiety or depression, and were English speakers. Had to be new callers to the quit line and not mandated to call. N= 990	• Women and black smokers had lower SES than men and white smokers, respectively. • Compared to men, women smokers were less educated, less likely to be employed and had a lower household income ($p<.01$ for all analyses). • Women were significantly more likely to use other methods to quit smoking than men even after adjusting for SES. • After adjusting for SES, black callers to the helpline smoked fewer cigarettes and spent less money on cigarettes.	The study demonstrates significant differences in smoking behavior between men and women and between black and white smokers who called the national telephone line. SES doesn't appear to be an adequate explanation. Association between low SES and greater nicotine dependence behavioral predictors of cessation may not apply uniformly to blacks and whites and men smokers calling a helpline.
9. Armour, B. S., et al. (2008). "Cigarette smoking and food insecurity among low-income families in the United States, 2001." American Journal of Health	**Longitudinal Cohort** The current study aims to quantify the association between food insecurity and smoking among low-income families. **SES variables Measured**: Interview	National 2001	men and women participants who participated in the PSID N= 2099 Mean Age: 44.2	• Smoking prevalence was higher among low-income families were food insecure compared with low-income families who were food secure (43.6% vs. 31.9% $p<.01$). • Smoking was associated with an increase in food insecurity of approximately 6 percentage points.	The findings indicated that families near the federal poverty level spend a large share of their income on cigarettes, perhaps it would be prudent for the **food assistance and tobacco control programs to work together to help**

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Promotion 22(6): 386-392.	Record Review		African American: 48.4% White: 37.5% Other: 14.1%		**low-income people quit smoking.**
10. Baggett, T. P., et al. (2013). "Homelessness, cigarette smoking, and desire to quit: A national study." Journal of General Internal Medicine 28: S89.	**Cross-Sectional** We determined whether or not homelessness is associated with cigarette smoking independent of other socioeconomic measures and behavioral health factors, and whether homeless smokers differ from non-homeless smokers in their desire to quit. **SES variables Measured**: Homelessness	National 2009	Respondents to the 2009 Health Center Patient Survey and included patients served through the Health Care for the Homeless Program and the Community Health Center Program. Patients were excluded who were under age 18 N= 2678 Female: 62.2% Male: 37.8% Black: 21.6% White: 42.4% Other: 8.5% Ages were grouped: 18-34 39.2% 35-49 33.9% 50+ 27%	• Adults with any history of homelessness were more likely than never homeless respondents to be current smokers (57 versus 27%, P < 0.001). • A history of homelessness was associated independently with current smoking [adjusted odds ratio (AOR) 2.09; 95% confidence interval (CI) = 1.49-2.93], even after adjusting for age, sex, race, veteran status, insurance, education, employment, income, mental illness and alcohol and drug abuse. • Housing status was not associated significantly with past-year desire to stop smoking in unadjusted (P = 0.26) or adjusted (P = 0.60) analyses; 84% of currently homeless, 89% of formerly homeless and 82% of never homeless smokers reported wanting to quit.	Among patients of US health centers, a history of home- lessness doubles the odds of being a current smoker independent of other socio-economic factors and behavioral health conditions. However, homeless smokers do not differ from non-homeless smokers in their desire to quit and should be offered effective interventions.
11. Bandi, P., et al. (2012). "The receipt and utilization of effective clinical smoking cessation services in subgroups of the	**Cross-Sectional (Survey)** The current study examines the association between increased risk for not receiving and utilizing effective clinical smoking	National 2005	Participants ages 18-64 who responded to the NHIS in 2005. They also reported having at least one encounter with a healthcare provider	• Long-term uninsured (greater than or equal to one year) smokers were less likely to receive physician advice to quit than those continuously-insured in the past year.	this study found that long-term uninsured smokers were significantly **less likely to receive physician advice to quit and use recommended**

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
insured and uninsured populations in the USA." Journal of Behavioral Health Services & Research 39(2): 202-213.	cessation services and insurance status. **SES variables Measured**: Insurance Status Poverty Level Education		in the last year. Current smokers were defined as having smoked at least 100 cigarettes in their lifetime and currently smoke everyday or some days. N= 5459 Group 1: Long-termed Uninsured Group Equally Female and male and equally black and white Group 2: Short-term uninsured Equally Female and male and equally black and white with a higher number of latinos Group 3: Intermittenly Uninsured Equally Female and male and equally black and white and Latino	• Being long-term and short-term uninsured (less than one year) was negatively associated with dependence treatments' use in quit attempts compared to the continuously-insured, even though the prevalence of quit attempts were similar between these groups. • Even though Medicaid-insured smokers were more likely to be advised to quit than those privately-insured, they were less likely to use dependence treatments, especially if they had a spell of un-insurance in the past year.	**dependence treatments during quit attempts** compared to individuals who were continuously insured in the past year.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
12. Barbeau, E. M., et al. (2004). "Working class matters: socioeconomic disadvantage, race/ethnicity, gender, and smoking in NHIS 2000 [corrected] [published erratum appears in AM J PUBLIC HEALTH 2004 Aug;94(8):1295]." American Journal of Public Health 94(2): 269-278.	**Cross-Sectional (Survey)** The current study sought to describe the burden of smoking on the US population, using diverse socioeconomic measures, through analyzing data from the 2000 National Health Interview Study. **SES variables Measured**: Income Education Industry/occupation	National 2000	Participants of the NHIS survey, age 18-64, identifiable racial, must be ages 18-64, identifiable racial/ethnic categories. Must have reported educational attainment and smoking status. N= 24276 American Indian: 0.6% Asian: 3.6% Black: 11.9% White: 72.3% Hispanic: 11.6% 76% of the population had less than a 4-year college degree, 21% were poor or near poor among the 75% employed, 34% were NS-SEC classes 4 and 5, 38% were classified as blue collar	• Overall, the prevalence of current smoking was greatest among persons in and independently associated with--working class jobs, low educational level, and low income. • Attempts to quit showed no socioeconomic gradient, while success in quitting was greatest among those with the most socioeconomic resources. • These patterns held in most but not all race/ethnicity-gender groups.	Reducing social disparities in smoking requires attention to the complexities of class along with race/ethnicity and gender.
13. Bourdeau, B. L., et al. (2006). "A New Frontier in the	**Cross-Sectional (Survey)**	National	Men and women who fit "socio-economic" criteria	• Race and age are significant predictors of risky smoking behavior for low-income adults.	The implications of the findings for de-marketing campaigns and public

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Battle Against Smoking: An Exploratory Investigation of Low-Income Adult Smokers." Journal of Nonprofit & Public Sector Marketing 16(1-2): 123-149.	The current study examines the drivers of risky behaviors such as smoking among the economically disadvantaged **SES variables Measured**: Income Poverty Level		were interviewed from unemployment offices and welfare offices. N= 729 Group 1: Regular Smokers Slightly more males than females The majority were Hispanic followed by black and then white	This relationship was tested using logistic regression, and race ($p < .001$), and age ($p = .018$) were found to be significant predictors of smoking behavior • On the whole, as the age of low-income individuals increases, they are more likely to smoke. • Also, the results suggest that Caucasians are significantly more likely to be smokers than either African- Americans or Hispanics.	policy programs are discussed and future research directions are identified.
14. Browning, K. K., et al. (2008). "Socioeconomic disparity in provider-delivered assistance to quit smoking." Nicotine & Tobacco Research 10(1): 55-61.	**Cross-sectional** The present study tested for an association between selected sociodemographic and tobacco-related factors and assistance to quit smoking. **SES variables Measured**: Income Insurance Status Education	National 2001	U.S. civilian, noninstitutionalized. Participants were self-reported current smokers who visited a health care provider in the past 12 months and were at least 25 years old. N= 3046 Female: 60% Male: 40% Black: 15.4% White: 74.1% Hispanic: 8.%	• Assistance with smoking cessation was more likely to be reported by people with greater socioeconomic advantage, those who were married, those who had attempted to quit in the past 12 months, and those who reported smoking 11 or more cigarettes/day • Smokers with less than a high school education, those who were younger, and Blacks were less likely to report assistance with smoking cessation. • Smokers with a high or mid-level of disadvantage were less likely to receive assistance than were those with a low level of disadvantage	The mechanisms responsible for the disparities in delivery of tobacco dependence treatment must be investigated further.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			age was broken down into ranges 25-37 25.5% 38-46 24.6% 47-57 26.6% 58+ 23.3% disadvantaged measures (considered income, education and insurance status) Low 52.0% middle 42.0% high 6.0%		
15. Burgess, D. J., et al. (2009). "Employment, gender, and smoking cessation outcomes in low-income smokers using nicotine replacement therapy." Nicotine & Tobacco Research 11(12): 1439-1447.	**Longitudinal Cohort** This study examines the presence and correlates of gender disparities in smoking cessation among lower income smokers prescribed nicotine replacement medication. **SES variables Measured**: Income Education Industry/Occupation	Minnesota 2005-2006	MN residents who filled an NRT between 7/2005-9/2006. Aged 18 or older. 1782 were randomly selected from 13,259 unique individuals. 1782 Group 1: Mean age: 42.1 Female: 100% Group2: Mean age: 44.4 Male: 100%	• Abstinence rates were 11.4% among women and 19.2% among men (p = .02) and remained marginally significant after controlling for demographics, mental and physical health, period of cigarette abstinence, social environment, 5.69, p = .02. religious attendance, perceived stress, and NRT prescription type (p = .08). • There was a significant Gender × Employment interaction (p = .02). Among men, quit rates were higher among the employed (26%) compared with the unemployed (16%); among women, quit rates were lower among those who were employed (8%) compared with those who were unemployed (14%). • Seventy-six percent of those who were abstinent at 7 days were abstinent at 30 days. Not too	Results suggest the need for research on factors specific to women's work roles or workplaces that inhibit cessation as well as cessation program tailored to low-income, employed female smokers. On-site workplace interventions and flexible counseling programs may be especially beneficial.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				surprisingly, repeating the main analyses using the 30-day abstinence measure (the secondary outcome) yielded similar results. Specifically, in the adjusted complete case main effects analysis, females had lower odds of quitting than males (odds ratio = .49 [95% CI = .24 to .99]). As with the 7-day abstinence measure, the Gender × Employment interaction was significant using the 30-day abstinence measure, Wald c2 (1) = 6.50, p = .01.	
16. Businelle, M. S., et al. (2010). "Mechanisms linking socioeconomic status to smoking cessation: a structural equation modeling approach." Health Psychology 29(3): 262-273.	**Longitudinal Cohort** The aim of the current study was to develop and test a conceptual model of the mechanisms linking socioeconomic status (SES) to smoking cessation. **SES variables Measured**: Income Insurance Status Education Industry/Occupation	Texas	Participants were required to be at least 21 years of age, have smoked at least five cigarettes per day for the past year, have a home address and functioning telephone number, demonstrate proficiency in English at a 6th grade level or higher, and be motivated to quit smoking in the next 30 days. Potential participants were excluded if the nicotine patch was contraindicated, if they reported use of tobacco products	• As was hypothesized, SES had significant direct and indirect effects on cessation. Specifically, neighborhood disadvantage, social support, negative affect/stress, and agency mediated the relation between SES and smoking cessation. A multiple group analysis indicated that the model was a good fit across racial/ethnic groups.	The present study yielded one of the more comprehensive models illuminating the specific mechanisms that link SES and smoking cessation. Policy, community, and individual-level interventions that target low SES smokers and address the specific pathways identified in the current model could potentially attenuate the impact of SES on cessation.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			other than cigarettes, or if they reported participation in a smoking cessation program within the past 90 days. N= 424 Mean age: 41.2 Female: 5.3% Male: 65.2% Black: 34% White: 33% Hispanic: 33%		
17. Caraballo, R. S., et al. (2014). "Relapse among Cigarette Smokers: The CARDIA longitudinal study - 1985-2011." Addictive Behaviors 39(1): 101-106.	**Longitudinal Cohort** To describe long-term prevalence of relapse and related smoking patterns by sex, race, age, and education level among a community-based cohort of young adults followed for 25 years. **SES variables Measured**: 5115	National 1985-1985	The 5115 individuals were randomly selected from the cohort that was apart of The Coronary Artery Risk Development in Young Adults Study. N= 5115	• Among the remaining 1682 ever smokers, 52.8% of those who reported current smoking at baseline were still smoking by the end of the study, compared to 10.7% of those who initiated smoking by year 5. • Among those classified as former smokers at baseline, 39% relapsed at least once; of these, 69.5% had quit again by the end of the study. • Maximum education level attained, age at study baseline, and race were associated with failure to quit smoking by the end of the study and relapse among those who did quit. Maximum education level attained and age at study baseline were also associated with ability to successfully quit after a relapse.	Smoking relapse after quitting is common, especially in those with lower education level. Education was the strongest predictor of all three outcomes.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
18. Centers for Disease, C. and Prevention (2002). "Cigarette smoking among adults--United States, 2000." MMWR - Morbidity & Mortality Weekly Report 51(29): 642-645.	**Cross-Sectional Survey** The objective was to assess the progress towards reducing the prevalence of cigarette smoking among adults to less than 12% **SES variables Measured**: Income Education	National 2000	The 2000 National Health Interview Survey Adult Core questionnaire was administered by personal interview to a nationally representative sample (n=32,374) of the U.S. noninstitutionalized civilian population aged >18 years; the survey response rate was 72.1% N= 32374	• In 2000, approximately 23.3% of adults were current smokers compared with 25.0% in 1993, reflecting a modest but statistically significant decrease in prevalence among U.S. adults. • In 2000, an estimated 46.5 million adults (23.3%) (95% confidence interval [CI]=+0.5) were current smokers. Overall, 19.1% (95% CI=+0.5) of adults were everyday smokers, and 4.1% (95% CI=+0.3) were some day smokers. • The prevalence of smoking was higher among men (25.7% [95% CI=+0.8]) than women (21.0% [95% CI=+0.7] • In 2000, an estimated 70% of smokers said they wanted to quit, and 41% had tried to quit during the preceding year; however, marked differences in successful quitting were observed among demographic groups. • By level of education, the percentage of ever smokers who had quit ranged from 33.6% (95% CI=+4.7) to 74.4% (95% CI=+3.4), with the highest level of success among those with graduate degrees. • By race/ethnicity, the percentage of ever smokers who had quit was highest for whites (51.0% [95% CI=+1.1]) and lowest for non-Hispanic blacks (37.3% [95% CI=+2.7]). Interest in quitting and	A comprehensive approach to cessation that comprises economic, clinical, regulatory, and educational strategies is required to further reduce the prevalence of smoking in the United States.

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Prevalence					
				attempts to quit decreased with age.	
19. Centers for Disease, C. and Prevention (2004). "Cigarette smoking among adults--United States, 2002." MMWR - Morbidity & Mortality Weekly Report 53(20): 427-431.	**Cross-sectional survey** The study aims to assess the progress of reducing smoking prevalence to 12% or less. **SES variables Measured**: Income Poverty Level Education	National 2002	Randomly sampled US adult population civilian, noninstitutionalized N= 30706 Female: 56% Male: 44% American Indian: 40.8% Asian: 13.3% Black: 22.4% White: 23.6% Hispanic 16.7%	• In 2002, an estimated 45.8 million adults (22.5%; 95% CI = ±0.6) were current smokers; of these, an estimated 37.5 million (81.8%) smoked every day, and 8.3 million (18.2%) smoked some days. • Among those who smoked every day, an estimated 15.4 million (41.2%; 95% CI = ±1.5) reported that they had stopped smoking for >1 day during the preceding 12 months because they were trying to quit. In 2002, an estimated 46.0 million adults were former smokers, representing 50.1% (95% CI = ±1.1) of adults who had ever smoked; 2002 was the first year that more than half of ever smokers were former smokers. • Cigarette smoking prevalence rates varied substantially across population subgroups (Table). The prevalence of smoking was higher among men (25.2%) than women (20.0%) and inversely related to age, from 28.5% for those aged 18--24 years to 9.3% for those aged >65 years. Among racial/ethnic groups, Asians (13.3%) and Hispanics (16.7%) had the lowest prevalence, and American Indians/Alaska Natives had the highest (40.8%). Current smoking prevalence also was higher among adults living below the poverty level* (32.9%)	A comprehensive approach to cessation that comprises economic, clinical, regulatory, and educational strategies is required to further reduce the prevalence of smoking in the United States.

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Prevalence					
				than those at or above the poverty level (22.2%). • Educational attainment has been associated consistently with adult smoking prevalence since 1983 (Figure 2). By education level, smoking prevalence was highest among adults who had earned a General Educational Development diploma (42.3%) and lowest among those with graduate degrees (7.2%). Women with undergraduate (10.5%) or graduate degrees (6.4%) and men with graduate degrees (7.8%)	
20. Centers for Disease, C. and Prevention (2009). "Cigarette smoking among adults and trends in smoking cessation - United States, 2008." MMWR - Morbidity & Mortality Weekly Report 58(44): 1227-1232.	**Cross-Sectional Survey** The current study aims to assess the progress of meeting the Healthy People 2010 objective of reducing smoking in adults to less than 12%. **SES variables Measured**: Poverty Level Education	National 2007-2008	Randomly selected adults >18 years from among the noninstitutionalized, U.S. civilian population. N= 21525 Female: 56% Male: 44% American Indian: 32.4% Asian: 9.9% Black: 21.3 White: 22% Hispanic: 15.8%	• Overall smoking prevalence did not change significantly from 2007 to 2008 (Table). In 2008, an estimated 20.6% (46.0 million) of U.S. adults were current cigarette smokers; of these, 79.8% (36.7 million) smoked every day, and 20.2% (9.3 million) smoked some days. Among current cigarette smokers, an estimated 45.3% (20.8 million) had stopped smoking for 1 day or more during the preceding 12 months because they were trying to quit. • Of the estimated 94 million persons had smoked at least 100 cigarettes during their lifetime (ever smokers), 51.1% (48.1 million) were no longer smoking at the time of interview (former smoker).	First, both the wording of NHIS cigarette smoking questions and NHIS data-collection procedures have changed since 1993. Because of these changes, trend analyses or comparisons of data from before 1993 with data collected since 1993 should be interpreted with caution.

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Prevalence					
				• In 2008, smoking prevalence was higher among men (23.1%) than women (18.3%) (Table). Among racial/ethnic groups, Asians had the lowest prevalence (9.9%), and Hispanics had a lower prevalence of smoking (15.8%) than non-Hispanic blacks (21.3%) and non-Hispanic whites (22.0%). • American Indians/Alaska Natives had higher prevalence of current smoking compared with the other racial/ethnic groups (32.4%). • Variations in smoking prevalence in 2008 also were observed by education level (Table). Smoking prevalence was highest among adults who had earned a General Education Development certificate (GED). Smoking prevalence was lowest among adults with a graduate degree (5.7%). The prevalence of current smoking was higher among adults living below the federal poverty level (31.5%) than those at or above this level (19.6%)	
21. Centers for Disease, C. and Prevention (2010). "Vital signs: current cigarette smoking among adults aged >or=18 years --- United States, 2009." MMWR - Morbidity &	**Cross-Sectional Survey** The 2009 National Health Interview Survey and the 2009 Behavioral Risk Factor Surveillance System were used to estimate national and state adult smoking prevalence, Surveillance System were used to estimate national	National 2009	Randomly selected US noninstitutionalized civilian adults aged >18 years. N= 2760. Female: 55% Male: 45%	• In 2009, 20.6% of U.S. adults aged >18 years were current cigarette smokers. • Men (23.5%) were more likely than women (17.9%) to be current smokers. • The prevalence of smoking was 31.1% among persons below the federal poverty level.	Previous declines in smoking prevalence in the United States have stalled Previous declines in smoking prevalence in the United States have stalled during the past 5 years; the burden of cigarette smoking continues to be high, especially during the past 5

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Prevalence					
Mortality Weekly Report 59(35): 1135-1140.	and state adult smoking prevalence, respectively. **SES variables Measured**: Poverty Level Education		American Indian 23.2% Asian 12% Black 21.3% White 22.1% Hispanic 14.5%	• For adults aged >25 years, the prevalence of smoking was 28.5% among persons with less than a high school diploma, compared with 5.6% among those with a graduate degree. • Regional differences were observed, with the West having the lowest prevalence (16.4%) and higher prevalence being observed in the South (21.8%) and Midwest (23.1%). • From 2005 to 2009, the proportion of U.S. adults who were current cigarette smokers did not change (20.9% in 2005 and 20.6% in 2009).	years; the burden of cigarette smoking continues to be high, especially persons living below the federal poverty level and with low educational attainment. persons living below the federal poverty level and with low educational attainment. Sustained, adequately funded, comprehensive tobacco control programs Sustained, adequately funded, comprehensive tobacco control programs adult smoking.
22. Chaloupka, F. J. (2008). "Smoking, food insecurity, and tobacco control." Archives of Pediatrics and Adolescent Medicine 162(11): 1096-1098.	**Commentary** In this issue of the Archives, Cutler-Triggs and colleagues add to the evidence on the harmful effects of smoking on children and adults, showing that those in smoking households are more likely to be food insecure.	National 2009		• The bottom line is that cigarette smoking and other tobacco use impose a significant health and economic burden on low-income households. • One facet of this burden is the increased food insecurity of children and adults in smoking households.	Comprehensive tobacco control policies and programs are effective in reducing this burden, with higher taxes on cigarettes and other tobacco products being particularly effective in promoting cessation and reducing tobacco use in low-income populations.
23. Chaloupka, F. J. (2009). "[Commentary] Financial stress and smoking cessation--a silver lining to the dark clouds of the global economy?"	**Commentary** This is a commentary about financial stress and its impact on quitting tobacco			• Financial stress increases interest in quitting smoking. • New revenues could be used to support programs that help low-income smokers to quit successfully. Given the disconnection that Siahpush and colleagues have identified between interest and quitting and actual	The evidence generally shows that tobacco use among those on low incomes will fall more response to higher tobacco product taxes and prices [5-7], many low-income tobacco users will continue to use, increasing their

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Prevalence					
Addiction 104(8): 1391-1392.				quit behavior and success for those facing financial stress, such programs would require reaching out more effectively to low-income smokers.	financial stress and worsening the cycle of poverty and illness caused by tobacco. Efforts to avoid this and to take advantage of the greater interest in quitting among smokers facing financial stress are critical. In large part, success from so doing will depend upon how the new revenues from tax increases are used.
24. Chapman, B., et al. (2009). "Education and smoking: confounding or effect modification by phenotypic personality traits?" Annals of Behavioral Medicine 38(3): 237-248.	**Cross-Sectional Survey** To assess whether the relationship of education to (1) never smoking and (2) having quit smoking would be confounded by financial measures of SES or by personality; whether lower Neuroticism and higher Conscientiousness would be associated with having abstained from or quit smoking; and whether education effects were modified by personality. **SES variables Measured**: Income Education	National	English-speaking adults aged 25-74 years using random-digit dialing. N= 2,429 Mean age: 46 Female: 45.9 Male: 54.1 Black: 5% Other: 4%	• Greater education was strongly associated with both never and former smoking, with no confounding by financial status and personality. • Never smoking was associated with lower Openness and higher Conscientiousness, while have quit was associated with higher Neuroticism. • Education interacted additively with Conscientiousness to increase and with Openness to decrease the probability of never smoking.	Education and personality should be considered un-confounded smoking risks in epidemiologic and clinical studies. Educational associations with smoking may vary by personality dispositions, and prevention and intervention programs should consider both sets of factors.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
25. Chassin, L., et al. (1996). "The natural history of cigarette smoking from adolescence to adulthood: demographic predictors of continuity and change." Health Psychology 15(6): 478-484.	**Longitudinal Cohort** The current study examined the natural history of smoking from adolescence to adulthood in a community sample. **SES variables Measured**: Education	National 1980-1993	N= 4035 Mean Age: 29 Female: 51.7%	• Group-level analyses showed a significant increase in smoking from adolescence to young adulthood and a non-significant decline after the mid-20s. • Individual-level analyses showed that there was appreciable cessation and relapse but little new initiation in adulthood. Both adolescent and young adult smoking status were powerful predictors of adult smoking. • Moreover, there was less cessation among less educated individuals and those with smoking parents, and more cessation among those who assumed adult social roles.	The findings support the importance of prevention campaigns aimed at adolescent smoking and also suggest that those with lower educational attainment or with a family history of smoking are at heightened risk.
26. Chilcoat, H. D. (2009). "An overview of the emergence of disparities in smoking prevalence, cessation, and adverse consequences among women." Drug and Alcohol Dependence 104(SUPPL. 1): S17-S23.	**Systematic Review** This report reviews epidemiologic findings demonstrating the emergence of disparities in smoking prevalence against the backdrop of general declines in smoking over time among women in the United States. In addition to socioeconomic differences in overall smoking prevalence, this report examines evidence of emerging disparities for specific stages of smoking, including progression to heavy smoking, smoking	National 1964-2006		• Findings from population-based studies indicate that social disadvantage signals higher likelihood of involvement with each stage of smoking and the gap by level of disadvantage is increasing over time. • Disparities in smoking outcomes have been observed for both men and women but in many cases appear to be greater for women.	This pattern of results in which disparities emerge in a dynamic system of change in smoking are consistent with Link and Phelan's theory of social conditions as a fundamental cause of disease, and has important implications for approaches to reduce the public health burden of smoking.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
	cessation, and lung cancer mortality. **SES variables Measured**: Education				
27. Chin, D. L., et al. (2012). "Cigarette smoking in building trades workers: the impact of work environment." American Journal of Industrial Medicine 55(5): 429-439.	**Cross-sectional record review** The current study examines the following: Blue-collar workers smoke at higher rates than white-collar workers and the general population. Occupational factors may contribute to smoking behavior in this group. However, little is known about the role of occupational factors in explaining cigarette-smoking patterns.	Massachusetts 2004-2007	18 and older apprentice union members in Massachusetts in programs to become boilmakers, bricklayers, electricians, hoisting and portable engineers, ironworkers, painters, plumbers, pipefitters, sprinkler fitters or refrigeration workers. N= 1817 Age mean:28.5 Female: 4.8 Male 92.4 Black 6.9 White 76.4 Other 6.9 Hispanic 3.6	• Current cigarette smoking was significantly associated with the following occupational factors: union commitment (OR ¼ 1.06; 95% CI: 1.00-1.12); exposure to dust (OR ¼ 1.50; 95% CI: 1.15-1.95), exposure to chemicals (OR ¼ 1.41; 95% CI: 1.11-1.79); and concern about exposure to occupational hazards (OR ¼ 0.93; 95% CI: 0.91-0.95).	The findings highlight the need to explicate the pathways by which occupational factors may contribute to current smoking behavior among building trades workers. Smoking cessation programs for this population should consider work-related occupational factors along with individual approaches.

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Prevalence					
28. *Choi, N. G. and D. M. DiNitto (2015). Role of New Diagnosis, Social Isolation, and Depression in Older Adults' Smoking Cessation. Gerontologist 55(5): 793-801.	**Cross-sectional** This paper examined the influence of a diagnosis of chronic illness, social isolation, and depression on smoking cessation among the most recent cohort of older smokers who were representative of U.S. Medicare beneficiaries.	National	Participants in the National Health and Aging Trends Study	• At T1, 8.8%, 44.7%, and 46.5% of the sample, respectively, were current, former, and never smokers. • Current smokers had lower socioeconomic status, were more socially isolated, and had higher depressive symptoms than never smokers. • At T2, 88.9% of T1 smokers continued smoking and 11.1% no longer smoked. The odds of smoking cessation increased with a new diagnosis of chronic illness since T1 and decreased with a higher number of cigarettes smoked at T1. • Social isolation at T1 increased the odds of smoking cessation, but depressive symptoms at T1 were not a significant factor.	Heavy-smoking older adults may require extended pharmachotherapy and counseling. As newly diagnosed health problems can be a trigger for smoking cessation, health care providers can motivate and help older adults quit (or reduce) smoking as an integral part of their practices.
29. Christiansen, B., et al. (2012). "Barriers to effective tobacco-dependence treatment for the very poor." Journal of Studies on Alcohol & Drugs 73(6): 874-884.	**Cross-Sectional Survey** This study sought to assess beliefs about smoking and quitting by the very poor in relation to past quitting behavior and intention to quit in the future. **SES variables Measured**: Income Insurance Status Education	WI 2008-2009	individuals 18 years or older and a current smoker (smoking on a daily basis or at least four cigarettes per week) living in an impoverished Milwaukee, WI, central city ZIP code n=654 mean age: 41.3%	• Sixty-eight percent reported annual household incomes of less than $15,000 compared with 30.8% in the community as a whole and 13.0% of households nationally. • Self-reported smoking prevalence was 42.1%. Specific beliefs about smoking and quitting were related to past quit attempts and intentions to quit in the future. • Both race and income predicted beliefs and quitting-related	Continued tobacco-control progress requires addressing specific populations with known high tobacco use. One of these populations is those with low income. Efforts to engage them in treatment will have to address specific beliefs about smoking and quitting.

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Prevalence					
			Female: 50.5% Male: 49.5 Black: 79.4% White: 16% Hispanic 5.9%	variables independently and jointly.	
30. Cohen, S. S., et al. (2011). "Individual and neighborhood-level socioeconomic characteristics in relation to smoking prevalence among black and white adults in the Southeastern United States: a cross-sectional study." BMC Public Health 11: 12.	**Cross-Sectional Survey** The current study examines the comparison of neighborhood-level effects on smoking by race and gender **SES variables Measured**: Income Education	Southeastern States 2002-2009	Participants were a part of a larger study, The Southern Community Cohort Study, and had to be between 40-79, English speaking and not under treatment for cancer in the past 12 months. N= 64960 Female: 61% Male: 39% Black: 72.2% White: 27.7 Other: 4.1%	• Several neighborhood-level SES characteristics were modestly associated with increased smoking after adjustment for individual-level factors including lower percentage of adults with a college education and lower percentage of owner-occupied households among blacks but not whites; lower percentage of households with interest, dividends, or net rental income among white males; and lower percentage of employed adults among black females.	Lower neighborhood-level SES is associated with increased smoking suggesting that cessation programs may benefit from targeting higher-risk neighborhoods as well as individuals.
31. *Cohn, A., C. O. Cobb, et al. (2015). The Other Combustible Products: Prevalence and Correlates of Little Cigar/Cigarillo Use Among Cigarette Smokers. Nicotine & Tobacco Research 17(12): 1473-1481.	**Cross-sectional** This study explored differences between cigarette smokers with and without a history of little cigars and cigarillo (LCC) use on harm perceptions, use of other tobacco products (chewing tobacco, snus, e-cigarettes, and dissolvables),	National Survey	N= 1270 Male: 44% Female: 56% White non-Hispanic: 79% Black: 10% Hispanic: 4% Other: 7% <H.S. 13%	• Bivariate analyses showed that LCC users were more likely to be male, younger, have lower income, have tried other tobacco products, perceive LCCs as less harmful than cigarettes, and endorse lifetime substance disorder symptoms. • Menthol and other tobacco product use were the only	third of the sample had tried LCCs, and LCC users were more likely to have experimented with other tobacco products and used menthol. The high degree of co-use of cigarette smoking and LCCs with other tobacco products and the association of LCC use to substance use suggests that these users have unique risk

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Prevalence					
	cigarettesmoking/cessation-related behaviors/ cognitions, and mental health and substance use disorder symptoms.		H.S./GED 41% Some college: 35% College degree: 13% Employed: 66% Unemployed: 34% <$35,000: 40% ≥$35,000: 60%	significant correlates of LCC use in logistic regression models. • Post-hoc analyses showed that other tobacco product use partially mediated an association between substance use disorder symptoms and LCC use.	factors and deserve specific targeting in public health campaigns.
32. . Cokkinides, V. E., et al. (2008). "Racial and Ethnic Disparities in Smoking-Cessation Interventions. Analysis of the 2005 National Health Interview Survey." American Journal of Preventive Medicine 34(5): 404-412.	**Cross-Sectional Survey** The current study evaluates the association between smokers' race and ethnicity and three separate measures of healthcare-encounter-based tobacco interventions: screening, smoking cessation advice and use of smoking cessation aids through analysis of data from the 2005 NHIS. **SES variables Measured**: Insurance Status Poverty Level Education	National 2005	The sample was pulled from the 2005 NHIS which included randomly selected adults, 18 and over. Both African-American and Hispanic households were over sampled. N= 4756 Female: 51.3% Male: 48.7% Black: 14.5% White: 73.2% Hispanic 12.2%	• Results show that compared to white smokers, black and Hispanic smokers had significantly lower odds of (1) being asked about tobacco use (AOR0.70 and AOR0.69, respectively); (2) being advised to quit (AOR0.72 and AOR0.64, respectively); or (3) having used tobacco-cessation aids during the past year in a quit attempt (AOR0.60 and AOR0.59, respectively). • Compared to 2000 NHIS published data, the prevalence of receipt of advice to quit from a healthcare provider increased from 52.9% in 2000 to 61.2% in 2005, with increases across racial and ethnic groups.	Black and Hispanic smokers continue to be less likely than whites to receive and use tobacco-cessation interventions, even after control for socioeconomic and healthcare factors. Further actions are needed to understand and eliminate this disparity.
33. Cunradi, C. B., et al. (2007). "Occupational correlates of smoking among urban transit operators: a prospective study." Substance Abuse	**Longitudinal Cohort** The purpose of this study is to investigate the contribution of occupational factors to smoking behavior over a ten year period among a multiethnic cohort of urban transit operators, while	California 1983-1995	The sample included San Francisco MUNI Transit Operators who previously completed surveys about occupational health N= 654	• Approximately 35% of the workers increased, initiated, or maintained their smoking over the ten-year period. • Frequency of job problems was significantly associated with likelihood of smoking increase, initiation, or maintenance (OR = 1.30; 95% CI 1.09, 1.55).	Understanding the role of work-related stress vis-à-vis smoking behavior is of critical importance for crafting workplace smoking prevention and cessation interventions that are applicable to blue-collar work settings, and for

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Treatment, Prevention, & Policy 2: 36.	accounting for demographic factors and alcohol. **SES variables Measured**: Industry		Age mean: 49 Female: 11% Male: 88% Asian: 13% Black: 57% White: 17% Other: 2.2% Hispanic 9.6%	• Black operators were significantly more likely to have smoked over the ten-year period compared to operators in other racial/ethnic groups.	developing policies that mitigate occupational stress.
34. Dell, J. L., et al. (2005). "Smoking in 6 diverse Chicago communities - A population study." American Journal of Public Health 95(6): 1036-1042.	**Cross-Sectional Survey** The current study analyzed smoking survey data across communities in Chicago, Ill, to explore community-level variations in smoking behavior. **SES variables Measured**: Income Poverty Level Education Industry/Occupation	IL 2002-2003	Persons were eligible for the survey if they were between 18 and 75 years of age, spoke either English or Spanish, resided in 1 of the 6 community areas, and were physically and mentally able to participate. N= 3230750	• Smoking prevalence varied from 18% in the wealthiest (predominately White) community to 39% in the poorest (predominately Black) community. • In a contiguous pair of communities, one Mexican and the other Black, smoking prevalence varied by a factor of 2. • Men, residents in poorer households and households without telephones, and residents with less education were most likely to smoke.	Understanding community-level smoking rates could improve the allocation of resources and assist the shaping of culturally meaningful prevention efforts.
35. Dornelas, E., et al. (2005). "Ethnic variation in socioenvironmental factors that influence adolescent smoking." Journal of Adolescent Health 36(3): 170-177.	**Cross-sectional Survey** The purpose of the study is to compare black, Hispanic and white adolescent smokers on socio-environmental factors associated with smoking through a cross-sectional design. **SES variables Measured**: Not listed	National 1999	The subjects were recruited through a variety of methods N=1022	• Almost all (96%) of the black adolescents lived with another smoker compared to 68% of Hispanic and 60% of whites (p .004). • Black teens were more likely to smoke with family members (50%) than Hispanics (5%) or whites (25%) (p .003). In addition, 50% of black teens compared to 5% of Hispanics and 12% of white teens, reported smoking to fit in (p .0001).	These preliminary results indicate that familial and household norms play a critical role in influencing cigarette smoking among black teens.

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Prevalence					
				• Black teens in this study emphasized the familial and social pressures of smoking. Higher rates of acceptance of smoking by family members, role modeling by household members, more prevalent beliefs that smoking is a way to achieve belonging, and lack of perceived support for quitting by friends appear to influence cigarette smoking more for black than white or Hispanic youth.	
36. Dube, S. R., et al. (2009). "The relationship between smoking status and serious psychological distress: findings from the 2007 Behavioral Risk Factor Surveillance System." International Journal of Public Health 54 Suppl 1: 68-74.	**Cross-sectional Survey** The current study examines the associations between smoking and quit attempts with psychological distress and also by socioeconomic groups by using data from the BRFSS survey. **SES variables Measured**: Income Education Industry/Occupation	National 2007	Adults who participated in the BRFSS in 2007 were included in this study. N= 172938	• Everyday smokers and attempting quitters had higher mean levels of 30-day psychological distress than never smokers. • Compared with never smokers, the odds of having serious psychological distress (SPD) were: former smokers, 1.3 (95% CI: 1.1-1.6); some-day smokers, 2.5 (95% CI: 2.0-3.1); and everyday smokers, 3.3 (95% CI: 2.8-3.8). • As for unsuccessful quit attempts, the odds were highest for current smokers (3.3 [95% CI: 2.8-3.8]) versus never smokers. • Among current smokers, persons with less than high school education, income less than $50,000, or who were unemployed or unable to work had the highest odds of reporting SPD.	Given the association between current smoking behaviors and psychological distress, future tobacco prevention and control efforts may benefit by including components of mental health, especially for low-SES populations.
37. Fagan, P., et al. (2007). "Cigarette smoking and quitting behaviors	**Cross-sectional survey** This study estimated the prevalence of smoking and examined	National 1998-2002	This sample includes participants of the Tobacco Use supplements to the	• Among the unemployed, 35% were current smokers and 13% were former smokers.	Smoking rates are high among the unemployed, and the risk of smoking and quitting behavior vary by

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Prevalence					
among unemployed adults in the United States." Nicotine & Tobacco Research 9(2): 241-248.	sociodemographic factors associated with current, former, and successful quitting among unemployed adults aged 18-64. **SES variables Measured**: Income Education Industry/Occupation		Current Population Surveys who are 18-64 and currently unemployed N= 13840 Female: 46% Male: 53% American Indian: 1.69% Asian: 3.63% Black: 21.35% White: 57.98% Hispanic 15.5%	• Of the former smokers, 81% quit successfully for at least 12 months. • Participants with family incomes of less than US$25,000 were more likely than those with incomes of $50,000 or more to currently smoke (OR52.13, 95% CI51.85-2.46). • Service workers and blue-collar workers were less likely than white-collar workers to report former smoking. • Participants unemployed for 6 months or more were twice as likely as those unemployed for less than 6 months to quit successfully (OR52.05, 95% CI51.07-3.95). • Unemployed blue-collar workers had a greater odds ratio of successfully quitting than white-collar workers (OR51.83, 95% CI51.17- 2.87). • Smoking rates were high among the unemployed, and quitting behaviors varied by sociodemographic factors and length of unemployment.	sociodemographic factors and length of unemployment. Longitudinal studies are needed to examine directionality and to determine how exposure to smoking and unemployment operate independently or synergistically. Economic, stress, social, and health models are needed to examine the relationship between unemployment and smoking
38. Fagan, P., et al. (2007). "Employment characteristics and socioeconomic factors associated with disparities in smoking abstinence and former smoking among U.S.	**Cross-sectional survey** This study examines the associations among employment and socioeconomic factors and the outcomes, current smoking, cigarette abstinence and former smoking among adult U.S.	National 1998-2002	Participants from the TUS-CPS survey were included in this sample. N= 288813 Female: 46.8% Male: 53.2%	• Lower odds of current smoking was observed among part-time workers compared to those working variable hours and multiple job holders compared to persons holding one job. • The self-employed, part-time workers and multiple job holders had higher odds of former smoking than comparison groups.	These data suggest that while employment factors are associated with current and former smoking, socioeconomic factors are associated with long-term quitting.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
workers." Journal of Health Care for the Poor & Underserved 18(4 Suppl): 52-72.	workers ages 18-64 (n5288, 813). **SES variables Measured**: Income Education Industry/Occupation		American Indian: .7% Black: 3.9% White: 73.6% Hispanic 10.7%	• Employment factors were not associated with short-term abstinence or 12-month abstinence from smoking, but income, education, marital status, and duration of smoking were associated with 12-month abstinence.	
39. Falba, T., et al. (2005). "The effect of involuntary job loss on smoking intensity and relapse." Addiction 100(9): 1330-1339.	**Longitudinal Cohort** To assess the impact of involuntary job loss due to plant closure or layoff on relapse to smoking and smoking intensity among older workers **SES variables Measured**: Income Job Loss	National 1991-1994	The eligible sample comprised HRS respondents who reported working, The HRS is a nationally representative longitudinal survey of individuals born between 1931 and 1941 and their spouses. N= 3052 Mean Age: 55 Female: 39% Male: 61% White: 82.2% Married: 77.5% Involuntary Job Loss: 6.8%	• Older workers have over two times greater odds of relapse subsequent to involuntary job loss than those who did not. • Those who were current smokers prior to displacement that did not obtain new employment were found to be smoking more cigarettes, on average, post-job loss.	Somewhat contrary to earlier longitudinal studies of job loss, these results demonstrate that involuntary job loss among older workers is an important risk factor for both current and former smokers. The stress of job loss, along with other significant changes associated with leaving one's job, which would tend to increase cigarette consumption, must outweigh the financial hardship which would tend to reduce consumption. This highlights job loss as an important health risk factor for older smokers.
40. Farkas, A. J., et al. (1999). "Does parental smoking cessation discourage adolescent smoking?"	**Cross-sectional survey** We examined the relationship of smoking cessation in parents to smoking uptake and cessation by their adolescent children.	National 1992-1993	Adolescent self-respondents who were 15-17 years of age and living in two-parent households	• Multivariate analyses, adjusted for demographic characteristics of adolescents, as well as father's age, education, and family income, found that adolescents whose parents had quit smoking were almost one-third less likely to be	Our results suggest that an effective public health campaign to motivate and assist parents and prospective parents to quit smoking, particularly when their children are young,

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Preventive Medicine 28(3): 213-218.	**SES variables Measured**: Income Education		N= 4502 Female: 49.9% Male: 50.1% White: 84% Other: 16%	ever smokers than those with a parent who still smoked. • Adolescent ever smokers whose parents quit smoking were twice as likely to quit as those who had a parent who still smoked. • Parental quitting is most effective in reducing initiation if it occurs before the child reaches 9 years of age. •	could lead to sizable reductions in smoking uptake among adolescents.
41. Ferron, J. C., et al. (2011). "Course of smoking and quit attempts among clients with co-occurring severe mental illness and substance use disorders." Psychiatric Services 62(4): 353-359.	**Longitudinal Cohort** This longitudinal study explored patterns of cigarette use and cessation attempts among mental health clients with co-occurring disorders. **SES variables Measured**: Education	NH 1989-2000	Recruitment inclusion criteria included an axis I diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder; active alcohol or drug abuse or dependence in the past six months; 18 to 60 years old; absence of general medical conditions; and willingness to participate in case management. N= 174 Mean Age: 33.6% Female: 26% Male: 74% White: 97%	• 89% of participants were current smokers at baseline. Only 17% were not smoking at the 11-year follow-up. • 75% of participants tried to quit at least once over the 11 years of the study, although none received nicotine replacement therapy or bupropion. • The presence of a chronic general medical condition predicted a longer duration of not smoking in the past year. • Being male and having a high school education or higher were associated with more attempts to quit smoking, as were higher scores on the activation subscale of the Brief Psychiatric Rating Scale, more social contact with non-substance-using friends, and more daily activities.	Abstinence from alcohol and drugs, fewer cigarettes smoked, and fewer overall symptoms did not predict quitting activity or duration of abstinence. For these variables, severe mental illness may moderate the effects on cessation found in the general population.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
42. Flint, A. J. and T. E. Novotny (1997). "Poverty status and cigarette smoking prevalence and cessation in the United States, 1983-1993: the independent risk of being poor." Tobacco Control 6(1): 14-18.	**Cross-sectional survey** This study is an analysis of eight cross-sectional national surveys to analyze the independent relations between poverty status and cigarette smoking prevalence and cessation in the United States, 1983-1993. **SES variables Measured**: Income Poverty Level	National 1983-1993	civilian, non-institutionalized adult residents of the United States, aged 18 years and older. N= 236311	• The odds ratio for current smoking among persons below the poverty threshold ranged from a low of 1.10 (1.00-1.21) in 1985 to a high of 1.45 (1.33-1.59) in 1990, and remained between 1.26 (1.1-1.43) and 1.30 (1.16-1.47) during 1991-1993. • The odds ratio for smoking cessation (quit ratio) among persons below the poverty threshold ranged from 0.81 (0.72-0.92) in 1985 to 0.64 (0.56-0.72) in 1991, and remained between 0.73 (0.61-0.87) and 0.66 (0.56-0.78) during 1991-1993. • From 19 years on, those below the poverty threshold were consistently found to be more likely to be current smokers than those at or above the poverty threshold, even after adjusting for sex, age, education, race, employment status, marriage status, and geographical region. • Similarly, persons below the poverty threshold were likely to be quitters throughout the study period.	The results suggest that persons below the poverty threshold have been and continue to be at significantly higher risk both to be current smokers and not to have quit smoking.
43. Foulds, J., et al. (2006). "Factors associated with quitting smoking at a tobacco dependence treatment clinic." American Journal of	**Longitudinal cohort** To identify factors associated with successful quitting at a free tobacco treatment clinic. **SES variables Measured**: Income	NJ 2001-2003	Patients who attempted to quit tobacco at a specialist tobacco dependence treatment outpatient clinic based at the Tobacco Dependence	• Three hundred twenty (31.3%) patients reported tobacco abstinence at 6 months. • Several markers of low socioeconomic status and high nicotine dependence were predictive of poorer smoking cessation outcomes.	Efforts should be made to enhance treatment compliance among smokers with indicators of high nicotine dependence and low socioeconomic status.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Health Behavior 30(4): 400-412.	Industry/Occupation		Program at the University of Medicine and Dentistry of New Jersey-School of Public Health. N= 1021 Mean Age: 43 Female: 59.5% Male: 40.5% White: 65.5% Black: 21.4% Other: 5.1% Hispanic: 7.8%	• Compliance with evidence-based treatment was associated with improved treatment outcome, as was older age and having more than 2 children.	
44. Fujishiro, K., et al. (2012). "Occupational gradients in smoking behavior and exposure to workplace environmental tobacco smoke: The multi-ethnic study of atherosclerosis." Journal of Occupational and Environmental Medicine 54(2): 136-145.	**Cross-sectional survey** This is a cross-sectional analysis of data from a community sample. All analyses were stratified by sex and adjusted for socio-demographic variables. Data was used from the Multi-Ethnic Study of Atherosclerosis (MESA), an ongoing multicenter prospective cohort study designed to investigate the prevalence and progression of subclinical cardiovascular disease**.** **SES variables Measured**: Income Education Industry/occupation	National 2000-2002	Men and women ages 45-84 years old who were free of clinical cardiovascular disease (CVD) and lived in California, Illinois, Maryland, Minnesota, New York, and North Carolina. N= 6355	• Male blue-collar workers had higher odds of smoking more than 20 cigarettes per day (vs. 10 cigarettes or less per day), even after income and education were controlled for. • The strength of the association remained unchanged when workplace ETS was included in the model. • Men who reported workplace ETS exposure had twice the odds of smoking more than 20 cigarettes per day (OR=2.07, 95% CI: 1.46, 2.95); for women the association was even stronger (OR=2.63, 95%CI: 1.71, 4.05).	The results indicate that most occupational gradients in current smoking status could be explained by education and income. However, among male smokers, occupational gradients in smoking intensity and lifetime cigarette consumption were still present even after we accounted for education and income.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
45. *Gamarel, K. E., E. H. Mereish, et al. (2016). Minority Stress, Smoking Patterns, and Cessation Attempts: Findings From a Community-Sample of Transgender Women in the San Francisco Bay Area. Nicotine Tob Res 18(3): 306-13.	**Cross-sectional** The purpose of this study was twofold: (1) to examine the associations between transgender-based discrimination and smoking patterns among a sample of transgender women; and (2) to identify barriers to smoking cessation in a sample of transgender women with a history of smoking.	CA	Transgender women N= 241 White: 49% Black: 51% <H.S. 66.8% Less than $1000, 30 days income: 63.9% Alcohol use in 30days: 63.9% Current hormone use: 70.1% Sex work, past 6 months: 51.9%	• Overall, 83% of participants indicated that they had smoked a cigarette in the last month. • Of these women, 62.3% reported daily smoking and 51.7% reported an unsuccessful quit attempt. • Discrimination was positively associated with currently smoking (adjusted odds ratio [AOR] = 1.04, 95% confidence interval [CI]: 1.01, 1.08). Discrimination was positively associated with unsuccessful cessation (AOR = 1.03, 95% CI: 1.01, 1.18) and never attempting (AOR = 1.04, 95% CI: 1.01, 1.11) compared to successful cessation. • Discrimination was also positively associated with never attempting compared to unsuccessful cessation (AOR = 1.01, 95% CI: 1.00, 1.03).	Smoking cessation may be driven by unique transgender-related minority stressors, such as discrimination. Future research is warranted to address unique stigmatizing contexts when understanding and providing tailored intervention addressing smoking among transgender women.
46. Gandhi, K. K., et al. (2009). "Lower quit rates among African American and Latino menthol cigarette smokers at a tobacco treatment clinic." International Journal of Clinical Practice 63(3): 360-367.	**Longitudinal Cohort** This study assessed the relationship between menthol smoking, race/ ethnicity and smoking cessation among a diverse cohort of 1688 patients attending a specialist smoking cessation service. **SES variables Measured**: Insurance Status	NJ 2001-2005	Patients who set a quit date and attempted to quit smoking, between 1 January 2001 and 30 June 2005. They all attended a specialist tobacco dependence treatment outpatient clinic in New Jersey.	• White smokers smoked more CPD than other groups (23.3 vs. 17.2, $p < 0.001$), and menthol cigarette smokers smoked fewer CPD than non-menthol smokers, among AAs (15.7 vs. 20.3, $p < 0.001$) and Latinos (17 vs. 22.1, $p = 0.017$) but not among Whites (22.5 vs. 23.7, $p = 0.094$). • At 4-week follow up, AA menthol smokers showed a lower quit rate as compared with AA non-menthol	Menthol smokers obtain higher levels of nicotine and nicotine metabolites than non-menthol smokers regardless of race. We have previously shown This pattern of results leads us to hypothesize that the effects of menthol on smoking cessation (and possibly smoking-caused illnesses)

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
	Education Industry/Occupation		N= 1688	smokers (30% vs. 54%, p < 0.001). Reduced unadjusted quit rates were also seen among White and Latino menthol smokers (43% vs. 50%, p = 0.031; 23% vs. 50%, p = 0.001 respectively). • This trend was very similar at 6-month follow up, with AA and Latino menthol smokers obtaining lower quit rates (18% vs. 36%, p = 0.001 for AA; 11% vs. 28%, p = 0.009 for Latinos).	may be more apparent in situations where the smoker has to reduce the cigarette consumption (e.g. because of high/rising cigarette prices, as in New Jersey). In such circumstances, unemployed or low income smokers may compensate for the inability to afford to purchase many cigarettes by increasing their nicotine intake per cigarette by changing characteristics of their puffing behavior.
47. Gilman, S. E., et al. (2003). "Socioeconomic status over the life course and stages of cigarette use: initiation, regular use, and cessation." Journal of Epidemiology & Community Health 57(10): 802-808.	**Longitudinal Cohort** This is a prospective birth cohort study to investigate the association between multiple indicators of socioeconomic status (SES) over the life course and three stages of cigarette use: initiation, regular use, and cessation. **SES variables Measured**: Poverty Education Industry/Occupation	RI 1959-1998	Subjects aged 30-39 were offspring of mothers enrolled in the Providence, Rhode Island-Brown University site of the National Collaborative Perinatal Project (NCPP). Obstetrical intake occurred between 1959 and 1966. N= 657 Female: 38.8% Male: 61.2%	• A significantly increased risk of smoking initiation was observed among people from lower socioeconomic backgrounds. • Low SES in childhood also increased the risk for progression to regular smoking, and was associated with a reduced likelihood of smoking cessation. Progression to regular smoking and smoking persistence were also associated with lower adult SES. • In separate models for each indicator of childhood SES, lower SES was associated with increased risk of first cigarette use. When indicators of childhood SES were included in a single model along with sociodemographic covariates, lower parental occupation, and	People of lower SES were more likely to start smoking, more likely to become regular smokers, and less likely to quit. These findings are consistent with prior analyses of prevalent smoking as well as analyses of individual stages of cigarette use (that is, initiation and cessation), and underscore the importance of directing interventions towards multiple stages of use for the purpose of reducing socioeconomic differentials in smoking.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				household poverty remained significantly related to subsequent risk of initiation.	Smokers from lower socioeconomic backgrounds and those with lower attained The combined effects of childhood and adult SES on the odds of daily cigarette use suggest that risk for persistent smoking is increased sharply in the context of life course socioeconomic disadvantage. With respect to smoking cessation, we observed that adult SES partly accounted for the reduced odds of cessation among respondents who experienced poverty during their childhood. This highlights the relevance of SES trajectories over the life course for adult smoking.
48. Gilman, S. E., et al. (2008). "Educational attainment and cigarette smoking: a causal association?" International Journal of Epidemiology 37(3): 615-624.	**Longitudinal Cohort** The objectives of the current study are to investigate the association between education and smoking using analyses adjusting for potential confounders measured prior to school entry, and using sibling fixed effects models that adjust for unmeasured familial vulnerability.	National 1959-1998	Participants in the current study were selected through a multi-stage sampling procedure as part of the Brown-Harvard Transdisciplinary Tobacco Use Research Center, which involved a core assessment interview and three component studies.	• The number of pack-years smoked was higher among individuals with less than high school education [rate ratio (RR)=1.58, confidence interval (CI)=1.31, 1.91]. However, in the sibling fixed effects analysis the RR was 1.23 (CI=0.80, 1.93). • Individuals with less than high school education had fewer short-term (RR=0.40; CI=0.23, 0.69) and long-term (RR=0.59; CI=0.42, 0.83) quit attempts, and were less likely to quit smoking (odds ratio=0.34; CI=0.19, 0.62).	Inequalities in smoking by educational attainment are a major contributor to educational inequalities in mortality. Therefore, tobacco control efforts could have a significant impact on reducing health disparities.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
	SES variables Measured: Education		N= 1311 Mean Age: 39.1% Female: 59% Male: 41% Black: 84% White: 9.1% Other: 6.9%	• The effects of education on quitting smoking were attenuated in the sibling fixed effects models that controlled for familial vulnerability to smoking.	
49. Gilpin, E. A. and J. P. Pierce (2002). "Demographic differences in patterns in the incidence of smoking cessation: United States 1950-1990." Annals of Epidemiology 12(3): 141-150.	**Longitudinal Cohort** We evaluated whether changes in the incidence of successful quitting, a new measure of cessation, can inform policy makers how population subgroups responded. **SES variables Measured**: Education	National 1965-1992	We included smokers 20 to 50 years of age when interviewed. N= 140,199	• Overall, incidence increased over fivefold, from 1% in 1950 to a still low 5% in 1990. • When the health risks of smoking were first disseminated, middle-aged men had the highest quitting incidence. • Gender differences in younger smokers occurred following the beginning of the public health campaign of the mid 1960s, as the dangers of smoking to the fetus were documented. • Younger adult smokers appeared to increase quitting markedly in the 1970s, around the beginning of the nonsmokers' rights movement. • Quitting patterns in middle-aged African Americans were similar to whites, although at much reduced levels. • Younger African Americans had low quitting incidence until 1989. Incidence differed by educational attainment; regardless of age, during the 1970s and 1980s, those with some college increased their quitting incidence markedly.	African Americans consistently showed lower quit rates than whites. These findings strongly suggest the need for continued consultation with leaders from African American and other minority communities to design sensitive and effective mass media strategies to encourage quitting.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
50. Green, M. P., et al. (2007). "A closer look at smoking among young adults: where tobacco control should focus its attention." American Journal of Public Health 97(8): 1427-1433.	**Cross-sectional survey** We used data from the 2003 Tobacco Use Supplement of the Current Population Survey to analyze smoking behaviors among young adults aged 18-24 years and older young adults aged 25-34 years by college status (enrolled, or with a degree, but not enrolled) and other measures of socioeconomic position. **SES variables Measured**: Income Education Industry/Occupation	National 2003	civilians aged 18-34 years or older in the United States n= 47987	• Current smoking prevalence among US young adults aged 18-24 years who are not enrolled in college or who do not have a college degree was 30%. This was more than twice the current smoking prevalence among college educated young adults (14%). • Higher rates of smoking in the non-college educated population were also evident in the slightly older age group.	Non-college-educated young adults smoke at more than twice the rate of their college-educated counterparts. Targeted prevention and cessation efforts are needed for non-college-educated young adults to prevent excess morbidity and mortality in later years.
51. Gritz, E. R., et al. (2004). "Smoking behavior in a low-income multiethnic HIV/AIDS population." Nicotine & Tobacco Research 6(1): 71-77.	**Cross-sectional survey** The aim of this study was to describe smoking prevalence and smoking behavior in a multiethnic low-income HIV/AIDS population. **SES variables Measured**: Education	Texas 2000	Over 18 years old, medically indigent residents of Harris County N=348 Mean Age: 40 Male: 78% Female: 22% Black: 43% White: 25% Hispanic 29% HS education or less: 57.8%	• The lifetime prevalence of smoking, defined as smoking at least 100 cigarettes, was 62.8%. • Prevalence of current smoking in the sample was 46.9%. • Male participants were significantly more likely to be current smokers than were female participants (OR~1.90, 95% CI~1.08-3.33). • Race/ethnicity, education level, age, and heavy drinking were significantly associated with smoking status. • Racial/ethnic affiliation also was significantly associated with smoking status. Hispanic participants were significantly less	The high smoking prevalence in this HIV/AIDS population demonstrates the need for smoking cessation interventions targeted to the special needs of this patient group. Interventions aimed at cessation in the HIV/AIDS population must be designed to target and provide assistance to non-Whites, those with low education level, and heavy drinkers.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				likely to be current smokers compared with Whites (OR~.36, 95% CI~.19-.66). • Participants from the youngest age category, 20-29 years, were significantly less likely to be current smokers compared with the older age categories. With the 20-29-years age group as the referent, participants in the 30-39-years age group were 4.07 times as likely to be current smokers (95% CI~1.43-11.55), participants in the 40-49-years age group were 4.00 times as likely to be current smokers (95% CI~1.42-11.28), and participants from the 50 and over age group were 3.43 times as likely to be current smokers (95% CI~1.07-10.99). • Among participants who had ever smoked (i.e., current and former smokers), those who had received a 4-year college degree were significantly more likely to have quit smoking compared with participants with a high school education or less (OR~3.20, 95% CI~1.05-9.74). • Heavy drinkers were more likely to be current smokers than were those who were not heavy drinkers.	
52. Groff, J. Y. (1998). "Behavioral decision making and the levels of change: An	**Cross-sectional survey** The purpose of this dissertation was to investigate the determinants of continued		Low-income pregnant smokers N= 323	• Logistic regression found only pros were significantly associated with continued smoking. In a discriminant function analysis, stage of change was significantly	The findings imply reversing the trend of decreasing smoking cessation during pregnancy may require supplementing

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
application of the transtheoretical model to prenatal smoking in low-income women." Dissertation Abstracts International: Section B: The Sciences and Engineering 59(4-B): 1834.	smoking and quitting among low-income pregnant women. Using data from cross-sectional surveys of 323 low-income pregnant smokers, the first study developed and tested measures of the pros and cons of smoking during pregnancy. **SES variables Measured**: Income			associated with pros and cons of smoking. • Structural equation modeling found the following: more stressors and family criticism were significantly more predictive of negative affect than social support; a bi-directional relationship was found between negative affect and current nicotine addiction; and negative affect, addiction, stressors, and family criticism were significant predictors of pros of smoking.	current interventions for this population of pregnant smokers with programs addressing nicotine addiction, negative affect, and other psychosocial factors such as family functioning and stressors.
53. Ham, D. C., et al. (2011). "Occupation and workplace policies predict smoking behaviors: analysis of national data from the current population survey." Journal of Occupational & Environmental Medicine 53(11): 1337-1345.	**Longitudinal Cohort** Describe differences in smoking behaviors associated with occupation, workplace rules against smoking, and workplace smoking cessation programs. Analyzed data from the Current Population Survey- Tobacco Use Supplement surveys from 1992 through 2007. **SES variables Measured**: Industry/Occupation	National 1992-2007	We included adults aged 18-64 who reported having been employed at any time in the last year. Year. N=106604 Female: 46.4% Male: 53.6% American Indian: .5% Asian: 4.6% Black: 11.2% Native Hawaiian: .2% White: 68.6% Other: 1.2% Hispanic: 13.8% Educational Level: < 4 years HS: 9.8% HS Diploma: 28.3%	• After adjusting for demographic factors, blue-collar workers were at higher risk than white-collar workers for ever smoking, current smoking, and persistent smoking (current smoking among ever smokers). • Construction workers were more likely to be current daily smokers than other blue-collar workers. • Among ever smokers, current daily smoking was more common in the absence of both workplace rules against smoking and workplace smoking cessation programs.	Social or cultural effects related to occupation are important determinants of smoking. More aggressive promotion of smoking cessation programs and workplace rules prohibiting smoking could have a significant public health impact.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			Some College: 20.0% College Degree: 41.2%		
54. Holtrop, J. S., et al. (2010). "Smoking among pregnant women with Medicaid insurance: are mental health factors related?" Maternal & Child Health Journal 14(6): 971-977.	**Cross-sectional survey** This study examined factors associated with continued smoking and quitting among pregnant women. A total of 2,203 Medicaid-eligible pregnant women were screened at their first enhanced prenatal services visit for risk factors including demographics, health behaviors (smoking, alcohol and drug use), mental health (history of mental health disorders, current depressive symptoms), and stress. Smoking status was divided into non-smokers, quitters (quit smoking since learning of pregnancy), and continuing smokers **SES variables Measured**: Insurance status Education	MI 2005-2007	The sample includes pregnant women who were eligible for Medicaid insurance, and referred for risk screening to a community based program certified to deliver EPS. N= 2159 Female: 100% Black: 24% unmarried: 72.51% employed: 36.31% <12th grade education and >18 years of age 30.9%	• Overall, 57% were non-smokers, 17% quitters, and 26% continuing smokers • Approximately 18% had severe depressive symptoms, 53% had a high stress score, and 33% had a history of mental health problems. • Younger women had lower odds of continued smoking as compared to both non-smokers (OR = 0.48, p<0.01) and quitters (OR = 0.56, p<0.05). • Older women with less than a 12th grade education had higher odds of continued smoking (OR = 2.17, p<0.01) and quitting (OR = 1.62, p<0.05) as compared to non-smokers. • Alcohol use (OR = 2.81, p<0.05) and drug use before pregnancy (OR = 5.32, p<0.01) predicted continued smoking compared to non-smoking. • Women with a mental health history (OR = 1.81, p<0.01) and high stress scores (OR = 1.39, p<0.05) had higher odds of continued smoking compared to non-smokers.	Maternal health programs, such as EPS, that serve this population should incorporate successful smoking cessation interventions for the health of the mothers and baby to improve pregnancy and birth outcomes. Programs should be developed and provided to low-income women to address both mental health issues and/or substance use (alcohol, other drugs) along with smoking cessation as a means to improve cessation outcomes.
55. Hood, N. E., et al. (2013). "Smoking behaviors and cessation interests among multiunit	**Cross-sectional survey** This study examined smoking behaviors and cessation-related interests in a population of	OH 2011	tenants in approximately 1,000 subsidized MUH units in 184 buildings across 5	• Overall, 47.5% (n = 143) of respondents were current smokers, 12.3% (n = 37) were former smokers, and 40.2% were never	This population of subsidized housing tenants had high rates of smoking, including light smoking. Interest in NRT was high

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
subsidized housing tenants, Columbus, Ohio, 2011." Preventing Chronic Disease 10: E108; quiz E108.	subsidized housing tenants. A face-to-face survey was conducted in August to October 2011 with a probability sample of private subsidized housing lease holders in Columbus, Ohio (N = 301, 64% response rate). **SES variables Measured**: Insurance Status Education Other		urban neighborhoods and managed by a private company in Columbus, Ohio n=301 Mean Age: 24.8 Female: 86.4% Black: 83.7% Less than high school graduate: 29.2% Employed full- or part-time: 33.2% Has health insurance: 88.3%	smokers (n = 121); therefore, 52.5% were nonsmokers. • Fifteen current smokers had not smoked 100 cigarettes in their lifetime. • Smokers were less likely than nonsmokers to have at least a high school education, be employed, or have health insurance, and were more likely to have physical limitations or be at risk of food insecurity (Table 1). • After controlling for these differences, smokers were less likely to have health insurance (adjusted odds ratio [AOR], 0.45; 95% confidence interval [CI], 0.21-1.00) and more likely to be at risk of food insecurity (AOR, 1.73; 95% CI, 1.07-2.81).	and access can be improved by increasing awareness of Medicaid coverage among clients and health care providers. However, more research is needed about scalable, evidence-based cessation strategies for low-socioeconomic status and light smokers. Strategies to address environmental factors such as availability of single cigarettes should also be considered in parallel with smoke-free policies.
56.*Hoover, D. S., J. I. Vidrine, et al. (2015). Health Literacy, Smoking, and Health Indicators in African American Adults. Journal of Health Communication 20 Suppl 2: 24-33.	**Cross-sectional** We examined cross-sectional associations of health literacy (HL) with smoking and other established health indicators among 1,467 African American adults.	TX Survey	N= 1467, African American Female: 75% Age: 45.2 ≤$50000: 35% Not continuously covered by health insurance in the past 12 months: 19%	• lower HL was significantly associated with increased odds of being a current smoker such that participants with low HL were 68% more likely than those with high HL to be current smokers (OR=1.68, p=0.02). • Nearly 19% of participants had low HL. • Low HL was significantly associated with current smoking, poorer self-rated general and physical health, and higher perceived stress (ps < .05) even after controlling for demographic	Results indicated that participants with low HL were more likely than those with high HL to be current smokers. This finding is consistent with prior research suggesting an association between poor HL and unhealthy behaviors such as smoking (Bostock & Steptoe, 2012; Sudore, Yaffe, et al., 2006; von Wagner et al., 2007); Factors such as nicotine dependence, smoking health risk knowledge, risk

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				variables (i.e., age, gender, relationship status) and indicators of socioeconomic status (i.e., education, income, insurance status). • Participants with low (vs. high) HL were significantly more likely to be younger, male, and to have lower education and income. They were also less likely to have been covered by health insurance during the past 12 months, and less likely to be married or living with a partner.	perceptions, and smoking outcome expectancies might serve as important mechanisms of the association between HL and smoking. These and other possible mediators (e.g., stress, discrimination) should be explored in future research.
57. *Huang, J., Y. Kim, et al. (2016). Electronic Cigarettes Among Priority Populations: Role of Smoking Cessation and Tobacco Control Policies. American Journal of Preventive Medicine 50(2): 199-209. Access No: 26410185	**Cross-sectional survey** The authors conducted a nationally representative online survey of 17,522 U.S. adults in 2013. Participants were drawn from GfK's KnowledgePanel. Logistic regression models were used to analyze relationships between e-cigarettes (awareness, ever use, current use) and cigarette smoking and cessation behaviors, tobacco control policies, and demographics. Analyses were conducted in 2014	National	US adults N= 17,522 Male: 48% Female: 52% Non-Hispanic White: 68.1% Non-Hispanic Black: 11.5% Hispanic: 13.5% Non-Hispanic Other: 6.9% Less than H.S.: 6.8% H.S. Graduate: 36.1% Some College: 31.1% Bachelor degree: 15.7% Post college: 10.2%	• Approximately 15% of participants reported ever use of e-cigarettes, 5.1% reported current use, and 34.5% of ever users reported current use. • E-cigarette awareness was lower among women, minorities, and those with low education. • Ever and current use of e-cigarettes was higher among current cigarette smokers, young adults, and those with low SES; both ever use and current use were correlated with current cigarette smoking status, particularly when combined with quit intentions or attempts.	Ongoing surveillance of e-cigarette use among subpopulation groups and monitoring their use for combustible cigarette cessation are needed. Important variations in the patterns and correlates of e-cigarette awareness and use exist among priority populations. These findings have implications for future e-cigarette policy

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			<$20,000: 14.1% $20,000-$34,999: 14.9% $35,000-$49,999: 13.3% $50,000-$74,999:19.6% $75,000-$124,999: 27.4% >$125,000: 10.6%	• Lesbian/gay/bisexual/transgender respondents had higher rates of ever use and current use • Ever use was lower in states with comprehensive smoking bans. No significant relationship between cigarette price and e-cigarette use was detected.	
58. *Hunt, M. K., D. Hennrikus, et al. (2015). Characteristics of Employees of Small Manufacturing Businesses by Occupation Informing Evidence-Based Intervention Planning. Journal of Occupational and Environmental Medicine 57(11): 1185-1191.	Cross sectional We examined characteristics of employees in six occupational categories in small manufacturing businesses (20–150 employees). We analyzed survey data from 47 businesses (n¼2577 employees; 86% response rate) and examined relationships between job type and sociodemographic, health, and organizational support characteristics. Analyses were adjusted for age and sex, and company as a random effect.	Worksites in Minnesota	Manufacturing business employees N=2565 Age: 4.5 Male: 73% White: 81% <H.S. 32% Vocational or some college: 43% College: 25%	• Smoking rates were highest for production workers (33%), production managers (27%), and support staff (28%) and lowest for managers (11%) (P<0.001). • Job stress was higher for production workers and support staff than managers (P<0.0001). Managers perceived social capital (P<0.001), safety climate (P<0.0001) and support for smoking cessation (P<0.001) higher than production managers, production workers, and support staff.	Differences in characteristics by occupation call for integrated interventions that target working class employees, leverage the influence of production managers, and enhance organizational support.
59. Hymowitz, N., et al. (2003). "Postpartum relapse to cigarette smoking in inner city women." Journal of	**Cross-sectional survey** two studies were carried out to determine factors that influence smoking cessation during pregnancy and postpartum relapse to	NJ	All mothers with infants, ages one year or less, who (1) either reported that they never smoked cigarettes or that	• Current smokers who did not stop smoking during pregnancy were significantly more likely to smoke 11 or more cigarettes per day than ex-smokers.	the variables that influence smoking cessation and abstinence in low-income African American and Hispanic women appear to be the same as those that

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
the National Medical Association 95(6): 461-474.	smoking in a predominantly low-income African American population. In Study 1, the women were asked to fill out a written survey, and in Study 2, women participated in a structured interview. **SES variables Measured**: Education		they smoked at least until the time of their most recent pregnancy, (2) were willing to provide informed consent to participate in the study, and (3) were willing to complete the Postpartum Smoking Survey (available in English and Spanish) were enrolled in the study. N= 150 Mean Age: 24.2 Female: 100% Asian: 2% Black: 72.7% White: .7% Other: .6% Hispanic: 23.3% multiracial: 0.7%. less than 12 years education 28.8% H.S. Diploma 57.5% Associates degree 4.8% Bachelors degree 5.5%	• Almost 60% of the current smokers (80% for the subgroup of current smokers • Those who did not quit smoking during pregnancy) reported that they smoked their first cigarette of the day within one-half hour of waking, and they also were significantly more likely than women in the other categories to report that they have a spouse/mate who smokes. • Current smokers also reported a greater number of other household members who smoke than did women in the other categories. • The most frequent reasons given by current smokers for trying to quit smoking were became pregnant and worried about the health of the baby. • For ex-smokers, the most frequently endorsed reasons were became pregnant and concerned about my own health. Significantly more current smokers than • ex-smokers endorsed advice from physician and nausea/morning sickness as reasons for quitting, while significantly more ex-smokers than current smokers endorsed concern about my health.	influence smoking and smoking cessation in the population as a whole. The stresses and strains of everyday life, key obstacles to cessation and abstinence, may be experienced more intensely among urban poor than among higher income groups. While future studies may yet reveal other reasons why African American women are more likely than Caucasian women to relapse during the postpartum period, by addressing the factors described in studies 1 and 2, health care providers, public health advocates, and community leaders may narrow the putative disparity between African American and Caucasian women and increase the likelihood that all women can achieve a smoke-free lifestyle for themselves as well as their families.
60. *Jarlenski, M. P., M. S. Chisolm, et al. (2015). Use of pharmacotherapies for smoking	**Cross-sectional** This study describes the prevalence of prescription fills for smoking-cessation	MD	Pregnant Medicaid enrollees White: 54% Black: 37.2%	• Few women filled any prescription for a smoking-cessation pharmacotherapy during pregnancy or postpartum (2.6% and 2.0%, respectively).	Smoking-related pregnancy complications and substance use are predictive of filling a prescription for pharmacotherapies for

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
cessation: Analysis of pregnant and postpartum medicaid enrollees. American Journal of Preventive Medicine 48(5): 528-534.	pharmacotherapies during pregnancy and postpartum among Medicaid-enrolled women and to examine whether certain pregnancy complications or copayments are associated with prescription fills.		Other: 8.8% <FPL: 10.7% <H.S.: 23.5%	• Having any smoking-related pregnancy complication was positively associated with filling a smoking-cessation pharmacotherapy prescription during pregnancy (OR=1.69, 95% CI=1.08, 2.65) but not postpartum. • Copayments were associated with significantly decreased odds of filling any prescription for smoking-cessation pharmacotherapies in the postpartum period (OR=0.38, 95% CI=0.22, 0.66).	smoking cessation during pregnancy. Low use of pharmacotherapies during pregnancy is consistent with clinical guidelines; however, low use postpartum suggests an unmet need for cessation aids in Medicaid populations.
61. Johnson, E. O. and S. P. Novak (2009). "Onset and persistence of daily smoking: the interplay of socioeconomic status, gender, and psychiatric disorders." Drug & Alcohol Dependence 104 Suppl 1: S50-57.	**Longitudinal Cohort** In this study we examine (1) to what degree SES and gender predict new onset of daily smoking and persistence during the current period when rates of smoking have been stable overall; and (2) given the association of psychiatric disorders with gender, SES, and cigarette smoking, to what degree psychiatric disorders explain or alter the associations between gender, SES, and cigarette smoking. **SES variables Measured**: Income	National 2001-2004	non-institutionalized population aged 18 or older residing in the contiguous United States, the District of Columbia, Alaska, and Hawaii. N= 34653 Female: 52.1% Male: 47.9% American Indian 2.2% Asian 4.3% Black: 11% White: 70.9% Hispanic 11.6%	• Gender, education, occupation, anxiety disorders, and substance use disorders (SUDs) independently predicted the onset of daily smoking at W2, with greater gender differences observed at lower levels of education. • No interactions were found between active psychiatric disorders and either gender or SES in predicting the onset of daily smoking. • Only being Native American/Alaskan, having an active SUD, and number of cigarettes smoked per day predicted persistence of daily smoking at W2.	In this longitudinal study of a nationally representative sample of noninstitutionalized adults in the United States, gender, indicators of SES, and psychiatric disorders continue to influence new onset of daily smoking during the 2000s when the overall rate of current smoking appears to be stalled. Thus the results of this study support an increased emphasis on smoking prevention among those in lower SES groups but a more universal approach to interventions

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
	Education Industry/Occupation				and treatment among all groups of daily smokers.
62. Jun, H. J. and D. Acevedo-Garcia (2007). "The effect of single motherhood on smoking by socioeconomic status and race/ethnicity." Social Science & Medicine 65(4): 653-666.	**Cross-sectional survey** We examined the association between parenting young children and smoking among US single women compared with married women, and whether this effect is moderated by socioeconomic status and race/ethnicity. **SES variables Measured**: Income Education	National 1995-96	Because our main interest was in mothers with children <18, we included in the analysis only one woman per household (i.e., the reference person or spouse of male referent), and restricted the sample to those 18-54 years old n= 70019 Female: 100% American Indian: 1.1% Asian: 3.2% Black: 9.8% White: 77.8% Hispanic: 8.1%	• Single women faced a higher risk of smoking than married women. • Parenting was protective against smoking among married women but not among single women. • Among single women, the associations between parenting and smoking varied by income and race/ethnicity. • Parenting increased the risk of smoking among single women in the lowest income quartile. • Single black and Hispanic women with children had a risk of smoking similar to that of their childless counterparts. • Single white women with children were more likely to smoke than their childless counterparts.	Smoking cessation interventions and programs to reduce environmental tobacco smoke should recognize that the co-occurrence of single motherhood, parenting responsibility and low-income may increase the risk of smoking. This is particularly significant given the rapid growth of the single women population, and their concentration in poverty in the USA. The finding that parenting is protective against smoking among single minority women, who presumably experience significant stressors, calls for a more thorough investigation of smoking behavior among minority women, and suggests the importance of stress buffers such as social support.
63. Kandel, D. B., et al. (2009). "Educational attainment and smoking among women: risk factors and consequences for offspring." Drug	**Cross-sectional survey** We examine the association between education and smoking by women in the population, including smoking during pregnancy, and identify risk factors for	National 1979-2004, 2005-2006	Females 18 years old and over who participated in the National Survey of Drug Use and Health (2006), the National Longitudinal Survey of Youth (1979-	• The lower the level of education, the greater the risk of being a current smoker, smoking daily, smoking heavily, being nicotine dependent, starting to smoke at an early age, having higher levels of circulating cotinine per cigarettes	Women with low education should be the target of public health efforts toward reducing tobacco use. These efforts need to focus as much on social conditions that affect women's lives as on individual level

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
& Alcohol Dependence 104 Suppl 1: S24-33.	smoking and the consequences of smoking in pregnancy for children's smoking and behavioral problems. Secondary analyses of four national data sets were implemented: The National Survey of Drug Use and Health (2006), the National Longitudinal Survey of Youth (1979-2004); the National Longitudinal Survey of Adolescent Health (Wave III); National Health and Nutrition Examination Survey (2005-2006). **SES variables Measured**: Education		2004); the National Longitudinal Survey of Adolescent Health (Wave III); National Health and Nutrition Examination Survey (2005-2006). **Demographics and sample size not reported.**	smoked, and continuing to smoke in pregnancy. • The educational gradient is especially strong in pregnancy. Educational level and smoking in pregnancy independently increase the risk of offspring smoking and antisocial and anxious/depressed behavior problems. • These effects persist with control for other covariates, except maternal age at child's birth, which accounts for the impact of education on offspring smoking and anxious/depressed behavior problems.	interventions. These interventions would have beneficial effects not only for the women themselves but also for their offspring.
64. Karasek, D., et al. (2012). "Social norms, collective efficacy, and smoking cessation in urban neighborhoods." American Journal of Public Health 102(2): 343-351.	**Cross-sectional survey** We examined the separate and combined relations of neighborhood-level social norms and collective efficacy with individuals' cigarette smoking cessation.	NY 2005	The sample included 1 adult aged 18 years or older whose birthday was closest to the date of the survey from each household. They were interviewed by telephone. N= 863 Female: 43.5% Male: 56.5% Asian: 2.8% Black: 27.9% White: 43.7% Other: 2.7% Hispanic: 22.9%	• Neighborhood smoking norms were significantly associated with higher rates of smoking cessation (second quartile hazard ratio [HR]=1.17; 95% confidence interval [CI]= 0.59, 2.32; third quartile HR=2.37; 95% CI=1.17, 4.78; fourth quartile HR=1.80; 95% CI=0.85, 3.81). • We did not find a significant association between neighborhood collective efficacy and cessation or significant evidence of a joint relation of collective efficacy and smoking norms with cessation.	Neighborhood social norms may be more relevant than is collective efficacy to smoking cessation. The normative environment may shape health behavior and should be considered as part of public health intervention efforts.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			current smokers 84.5% Quit smoking 15.5% greater than 80k 19.1% 40k-80k 31.3% less than 40k 41.6% missing 8%		
65. Kendzor, D. E., et al. (2010). "Financial strain and smoking cessation among racially/ethnically diverse smokers." American Journal of Public Health 100(4): 702-706.	**Longitudinal Cohort** We evaluated the influence of financial strain on smoking cessation among Latino, African American, and Caucasian smokers of predominantly low socioeconomic status. **SES variables Measured**: Income Education	Texas 2005-2007	The cohort included those aged 21 years or older, had smoked 5 or more cigarettes per day during the previous year, were motivated to quit within 30 days. N=424	• Greater financial strain at baseline was significantly associated with reduced odds of abstinence at 26 weeks post quit among those who completed the study (odds ratio [OR]=0.77; 95% confidence interval [CI]=0.62, 0.94; P=.01). • There was a significant association as well in analyses that included those who completed the study in addition to those lost to follow-up who were categorized as smokers (OR=0.78; 95% CI=0.64, 0.96; P=.02).	Greater financial strain predicted lower cessation rates among racially/ethnically diverse smokers. Our findings highlight the impact of economic concerns on smoking cessation and the need to address financial strain in smoking cessation interventions.
66. Kendzor, D. E., et al. (2009). "Pathways between socioeconomic status and modifiable risk factors among African American smokers." Journal of Behavioral Medicine 32(6): 545-557.	**Cross-sectional survey** The purpose of the present study was to evaluate a prior conceptual model of the pathways between socioeconomic status and modifiable health risk factors in a sample of 399 African Americans seeking smoking cessation treatment. **SES variables Measured**: Income Education	Texas	Individuals were eligible to participate if they were AA, smoked five or more cigarettes per day for at least 12 months, produced expired carbon monoxide levels of ≥ eight parts per million, were willing to quit smoking within the next two weeks. N= 399 Mean Age: 42	• Findings indicated that neighborhood disadvantage, social support, and negative affect/perceived stress function as pathways linking socioeconomic status and modifiable risk factors among African American smokers, and negative affect/perceived stress appears to play a key mediating role. • Participants had an average BMI of 29.40 (±7.32), and 69.2% were within the overweight/obese range of BMI.	Policy, community, and individual-level interventions may attenuate the impact of socioeconomic status on health by targeting intermediate psychosocial, environmental, and behavioral pathways.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			Female: 50.9% Male: 49.1% Black: 100%	• A total of 31.6% of participants reported insufficient physical activity during the previous week as measured by the IPAQ. • Participants consumed an average of 9.75 (±20.01) alcoholic beverages per week during the previous month, and 26.4% were considered heavy drinkers (i.e.,[14 drinks per week for males; [7 drinks per week for females). Participants engaged in an average of 2.38 (±5.69) binge drinking • episodes during the previous 3 months • 44.7% of participants reporting one episode of binge drinking. A total of 26.8% of participants met criteria for probable Alcohol Abuse/Dependence as assessed by the PHQ, and 51.8% met the study criteria for at-risk drinking.	
67.*Kerkvliet, J. L. and N. L. Fahrenwald (2015). Tobacco quitline outcomes for priority populations. South Dakota medicine : the journal of the South Dakota State Medical Association: 63-68.	**Cross-sectional** The purpose of this study was to describe South Dakota QuitLine use among priority population subgroups and to measure associated cessation rates and service satisfaction	South Dakota Quitline	Quitline users between 2008-2013 that fall into one of five priority populations: American Indians, Medicaid, youth, pregnant women, spit tobacco users N= 3094	• Seven-month tobacco quit rate for the non-priority population group (46.9 percent) was higher than the quit rate for pregnant women (42.3 percent), youth (37.5 percent), American Indians (38.1 percent), • Medicaid participants (35.7 percent) and participants with more than one priority subgroup designation (35.1 percent • The quit rate for spit tobacco users was highest overall (57.3 percent).	Tobacco users in high risk and underserved population subgroups of the South Dakota QuitLine seek cessation services. Quit rates were overall favorable and varied between population subgroups (35.1-57.3 percent). Health care providers play a vital role in early identification of tobacco use and referral to cessation services for priority populations. Providers should assess

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				All subgroups were satisfied with South Dakota Quitline services (≥ 3.5/4.0 scale; 4 = very satisfied).	tobacco use, advise users to quit, and refer to the South Dakota QuitLine.
68. King, G., et al. (2007). "Disparities in smoking cessation among U.S. adults with a history of asthma." Annals of Behavioral Medicine 33(3): 312-317.	**Cross-sectional survey** This study examined socio-demographic characteristics associated with smoking cessation in national samples of adults with a self-reported history of asthma. **SES variables Measured**: Income Education	National 2000-2001	respondents 20 years of age and older n=2992 Female: 56.1% Male: 43.9% Black: 10.1% White: 83.5% Hispanic: 6.4	• Quit ratios were 53% in Hispanics, 52% in non-Hispanic Whites, and 42% in African American ever smokers. • The quit ratio reached 70% in college graduates versus 45%in those with less than 12 years of education. • Education and marital status but not racially classified social groups/ethnicity were independently associated with former versus current smoking.	Expanded smoking cessation efforts are needed among persons with a history of asthma, especially those of lower SES.
69. Krueger, P. M. and V. W. Chang (2008). "Being poor and coping with stress: Health behaviors and the risk of death." American Journal of Public Health 98(5): 889-896.	**Cross-sectional survey** We examined whether smoking, alcohol use, and physical inactivity moderate the relationship between perceived stress and the risk of death in the US population as a whole and across socioeconomic strata. **SES variables Measured**: Income Education	National 1990-1998	noninstitutionalized US population 18 years or older n= 36894 Mean Age: 41.9 Male: 47% Female: 53% Black: 11% White: 78% Other: 3% Hispanic: 8%	• High baseline levels of former smoking and physical inactivity increased the impact of stress on mortality in the general population as well as among those of low SES, but not middle or high SES.	60. Krueger, P. M. and V. W. Chang (2008). "Being poor and coping with stress: Health behaviors and the risk of death." American Journal of Public Health 98(5): 889-896.
70. *Kuiper, N., L. Zhang, et al. (2015). A National Asian-Language Smokers' Quitline--United States, 2012-2014.	**Cross-sectional survey** The objective of this study was to examine characteristics of ASQ callers, how they heard about the quitline, and their	National Quitline	Callers to the National Asian-Language Smoker's Quitline	• In 2 years, 5,771 callers from 48 states completed intake; 31% were Chinese (Cantonese or Mandarin), 38% were Korean, and 31% were Vietnamese.	ASQ reached Chinese, Korean, and Vietnamese speakers nationwide. Callers were referred by the promotional avenues employed by ASQ, and most received services

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Preventing Chronic Disease 12: E99.	use of the service. Characteristics of callers from August 2012 through July 2014 were examined by using descriptive statistics.			• More than 95% of all callers who used tobacco were current daily cigarette smokers at intake. About 87% of ASQ callers were male, 57% were aged 45 to 64 years, 48% were uninsured, and educational attainment varied. • Most callers (54%) were referred by newspapers or magazines. Nearly all eligible callers (99%) received nicotine patches. • About 85% of smokers enrolled in counseling; counseled smokers completed an average of 4 sessions.	(medication, counseling, or both). State quitlines and local organizations should consider transferring callers and promoting ASQ to increase access to cessation services.
71. *Lam, C. N., P. Wada, et al. (2015). Awareness and use of electroniccigarettes among ed patients at an urban public hospital. Academic Emergency Medicine 22(5): S279.	**Cross-Sectional** The purpose of this study is to assess the awareness and prevalence of e-cigarette use in a sample of underserved, low-income ED patients seen at an urban public hospital.	CA Emergency Room	Low-income ED patients seen in LAC and USC hospital EDs	• Of the 1899 respondents, 80% had heard of e-cigarettes and 12% reported ever-used. Among the e-cigarette users (n=220), 60% were current tobacco smokers. • E-cigarette users were generally young, male and white or African Americans (not Latino). E-cigarette users who used tobacco products reported higher rates of lung problems (12%, 7%, 6%), mental health problems (17%, 12%, 10%), depression (36% vs. 29% vs. 26%) and alcohol abuse (36% vs. 34% vs. 10%) comparing to subjects who used e-cigarettes but not tobacco and those who used neither ($p<0.05$).	E-cigarette awareness was high among the study population and the proportion that had ever-used (12%) was higher than a 2010-2011 national report (2%-6%). E-cigarette users who also used tobacco products most commonly stated they used e-cigarettes to reduce smoking while non-smokers most commonly used e-cigarettes to try something new. Data from this study will provide insights to design targeted interventions to control e-cigarette use among the underserved, lower-income population.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				• For all groups, sources of e-cigarette information were similar: commercial advertisements (72%, 54%, 71%) and family and friends (61%, 69%, 42%). • In terms of their reasons for use, e-cigarette users who used tobacco products had a stronger emphasis on reducing or quitting tobacco smoke (52%); while those who used e-cigarettes but not tobacco explained used for recreational purposes (22%) or to try something new (67%).	
72. *Lebrun-Harris, L. A., M. C. Fiore, et al. (2015). Cigarette Smoking, Desire to Quit, and Tobacco-Related Counseling Among Patients at Adult Health Centers. American Journal of Public Health 105(1): 180-188 9p. Access No: 103926665. Language: English. Entry Date: 20141219. Revision Date: 20150710.	**Cross-sectional** We determined cigarette smoking prevalence, desire to quit, and tobacco-related counseling among a national sample of patients at health centers.	National Health Centers	US Adults seeking care at health centers N= 3949 Female: 62.1% Male: 37.9% Race: Hispanic: 29.5% Non-Hispanic Black: 21.1% Non-Hispanic Other: 8.6% Non-Hispanic White: 40.8% >H.S. diploma: 28.4% H.S. diploma: 29.9% <H.S. diploma: 41.7%	• Thirty-one percent of health center patients were current smokers, compared with 21% of US adults in general. • Among currently smoking health center patients, 83% desired to quit and 68% received tobacco counseling. In multivariable models, patients had higher adjusted odds of wanting to quit if they had indications of severe mental illness (adjusted odds ratio [AOR] = 3.26; 95% confidence interval [CI] = 1.19, 8.97) and lower odds if they had health insurance (AOR = 0.43; 95% CI = 0.22, 0.86). • Patients had higher odds of receiving	Cigarette smoking prevalence is substantially higher among patients at health centers than US adults in general. However, most smokers at health centers desire to quit.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			Unemployed: 63.6% Employed: 36.4% FPL Unknown: 16.4% ≥ 200% FPL: 14% 100-199% FPL: 26.4% < 100% FPL: 43.2%	• counseling if they had 2 or more chronic conditions (AOR = 2.05; 95% CI = 1.11, • 3.78) and lower odds if they were Hispanic (AOR = 0.57; 95% CI = 0.34, 0.96).	
73. Lee, D. J., et al. (2007). "Smoking rate trends in U.S. occupational groups: the 1987 to 2004 National Health Interview Survey." Journal of Occupational & Environmental Medicine 49(1): 75-81.	**Cross-sectional survey** The aim of the study was to identify smoking trends among different occupational groups through the use of self-reported National Health Interview Survey. Overall, there was a large difference in smoking rates between white-collar occupations and blue-collar occupations. **SES variables Measured**: Industry/Occupation	National 1987-2004	Respondents to the NHIS household survey. N= 298042	• Pooled smoking rates were lower for 1997-2004 compared to 1987-1994, 24.5%. Construction workers had the highest rates of smoking, 38.8%, employees in the health profession reported the lowest rates, 5.0%. All 13 occupations with smoking rates above 30% were blue collar. Significant annual reductions in smoking rates for all workers over the survey period. Several blue collar groups had larger annual smoking rate reductions in recent survey periods. There remains a large difference in smoking rates between white-collar and blue-collar occupations.	There remains a large difference in smoking rates between white-collar and blue-collar occupations.
74. Lee, D. (2008). "The urban poor's economic profile of tobacco use." American Journal of Drug & Alcohol	**Cross-sectional survey** The study investigates economic profile of tobacco use among urban low-income African Americans. In this baseline study (n = 338), tobacco users and	Not listed	low-income African Americans living in the Housing Authority Complex in the South aged 18 and older were surveyed.	• The study results demonstrate that tobacco use status appeared to be associated with employment barriers among low income populations. Controlling for other independent variables in the multivariate logistic regression	

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Abuse 34(5): 626-633.	nonusers were compared, and their economic conditions of tobacco use including (current and past) employment barriers were examined. **SES variables Measured**: Education Industry/Occupation		N= 388 Mean Age: 35.69 Female: 80.5% Male: 19.5%	model, previous criminal activity, planning to move out, and female gender were found to be linked to labor force status.	
75. *Li, X., C. K. Holahan, et al. (2015). Sociodemographic and Psychological Characteristics of Very Light Smoking Among Women in Emerging Adulthood, National Survey of Drug Use and Health, 2011. Preventing Chronic Disease 12: E111. Access No: 26182146	**Cross-sectional survey** This study examines the differences between the sociodemographic and psychosocial factors associated with women in emerging adulthood who are very light smokers and similar women who are at other smoking levels. Variables were sociodemographic factors, psychological adjustment, substance misuse, smoking attitudes, daily smoking, age at smoking initiation, and nicotine dependence. Analyses used were chi(2) and multinomial logistic regression.	US National 2011	18-25 year old female who participated in National Survey on Drug Use and Health in the United States N= 9789	• Almost a fifth of participants and about three-fifths of smokers were very light smokers (no more than 5 cigarettes per day). • Very light smokers were relatively more likely than other smokers to be young (aged 18 to 20), to be from a minority group, and to have some college education. • The characteristics of very light smokers (poor psychological adjustment and tendency to misuse other substances) were similar to the characteristics of other smokers. However, very light smokers were more likely than other smokers to recognize high risks in smoking, less likely to report nicotine dependence, and more likely to be nondaily smokers. • Compared with very light smokers, never smokers were more likely to be black and light or	Sociodemographics of very light smokers mirror that of other smokers. Interventions need to recognize the prevalence of very light smoking in these groups. Although comorbid psychological disorders and substance use present challenges, very light smokers' perception of higher smoking risks and lower nicotine dependence compared with that of other smokers provide intervention opportunities.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				heavier smokers were less likely to be black; compared with very light smokers, never smokers and former smokers were more likely to be Hispanic and light or heavier smokers were less likely to be Hispanic. • Compared with very light smokers, never and former smokers were more likely to have at least some college education and never smokers were more likely to be enrolled in school; compared with very light smokers, light or heavier smokers were less likely to have at least some college education and less likely to be currently enrolled in school.	
76. Ludman, E. J., et al. (2002). "Depressive symptoms, stress, and weight concerns among African American and European American low-income female smokers." Psychology of Addictive Behaviors 16(1): 68-71.	**Randomized Control Trial** The relationships between perceived stress, depressive symptoms, concern about weight gain and smoking dependence were examined among 83 European American and 175 African American female smokers bringing children to pediatric clinics serving a low-income population. **SES variables Measured**: Income Education Industry/Occupation	WA	Consenting, eligible women completed a self-administered baseline survey and were randomized to receive the smoking cessation intervention or usual care. N= 303	• Among African American women, but not European American women, greater stress and more depressive symptoms predicted greater smoking dependence, and less concern about weight gain predicted greater smoking dependence. • Multivariate analyses confirmed the bivariate relationships among stress, depressive symptoms, and smoking dependence among African American women but reduced the relationship between weight concern and smoking dependence.	The stronger relationships among stress, depressive symptoms, and smoking dependence among African American women may be indicative of smoking patterns more associated with affect regulation than are the smoking patterns of European American women.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
77. Ma, Y., et al. (2005). "Predictors of smoking cessation in pregnancy and maintenance postpartum in low-income women." Maternal & Child Health Journal 9(4): 393-402.	**Randomized Control Trial** To describe factors associated with smoking status of low-income women during pregnancy and postpartum. Data from a randomized clinical trial were used to conduct separate analyses on 327 women who smoked at baseline (time at enrollment) and for whom smoking status was available at delivery, and on 109 women who reported not smoking at delivery (quit spontaneously or after study enrollment) and for whom smoking status was available at 6-months postpartum. **SES variables Measured**: Insurance Status Income	MA 1997-2000	African American and European American women with children. Women who did not speak English, were severely cognitively impaired, or had children who were acutely ill were not invited to participate. Excluded are the women who identified themselves as being of other single ethnicities or of mixed ethnicity. N= 303	• 18% of the 327 baseline smokers stopped smoking before delivery. • Cessation was less likely in older women, those reporting Medicaid coverage (vs. commercial or no insurance), who were at a later week of pregnancy at baseline, were more addicted, had a husband/partner who smoked, and did not receive the study intervention. • 37% of the 109 women who reported not smoking at delivery maintained abstinence at 6-months postpartum. • Factors associated with abstinence were later week of pregnancy at baseline and quitting spontaneously with pregnancy, while women who lived with a smoker were less likely to report abstinence. • Spontaneous quitters were less likely to relapse by 6 months postpartum than women who quit smoking later in pregnancy.	Partner participation in smoking cessation programs for pregnant and postpartum women merits exploration. Lower relapse rates among spontaneous quitters indicate a need to foster an environment that encourages quitting at pregnancy.
78. Manning, B. K., et al. (2005). "Stress and quitting among African American smokers." Journal of Behavioral Medicine 28(4): 325-333.	**Longitudinal Cohort** This study examined the relationship between stress and the likelihood of quitting among 300 urban African American smokers enrolled in the placebo arm of a controlled randomized trial assessing the efficacy of bupropion for smoking cessation.	National	Eligible participants were at least 18 years old, considered themselves "black" or "African American," smoked at least 10 cigarettes per day, and were interested in quitting within the next 30 days.	• Results indicated that although baseline stress did not predict quitting at later visits, higher concurrent stress levels were associated with not being abstinent. • Changes (reductions) in perceived stress from baseline also predicted abstinence at the end of treatment.	Results suggest that methods to help African Americans cope with stress as they attempt to quit smoking may prevent relapse to smoking.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
	SES variables Measured: Income Education Industry/Occupation		N= 300 Mean Age: 44.4 Female: 69.3% Black: 100%		
79. Mansyur, C. L., et al. (2013). "Self-efficacy and barriers to multiple behavior change in low-income African Americans with hypertension." Journal of Behavioral Medicine 36(1): 75-85.	**Longitudinal Cohort** The purpose of the present study was to explore the relationships between self-efficacy, barriers, and multiple behavior change over time.	Texas 2002-2006	African American smokers with diagnosed hypertension. Participants for this substudy included 65 men and 120 women between the ages of 45 and 65 from the MLAT study who were randomized to the two active interventions and received counseling at least once. N= 185 Mean Age: 53.9 Female: 64.9% Male: 35.1%	• Higher self-efficacy seemed to be partially helpful for smoking reduction and increasing physical activity, but not for following a low-sodium diet. • Addiction was indirectly associated with less reduction in smoking through lower self-efficacy. • Different barriers were associated with behavior change than were associated with self-efficacy: being "too busy" directly interfered with physical activity and "traditions" with low-sodium diet; however, they were neither the most frequently reported barriers, nor associated with lower self-efficacy.	This suggests that an emphasis on self-efficacy alone may be insufficient for overcoming the most salient barriers encountered by older African Americans. Additionally, the most common perceived barriers may not necessarily be relevant to long-term behavioral outcomes.
80. Maralani, V. (2013). "Educational inequalities in smoking: the role of initiation versus quitting." Social Science & Medicine 84: 129-137.	**Longitudinal Cohort** The current study examines the contribution of educational differences in never smoking regularly to educational gradients in adult smoking. **SES variables Measured**: Education	National 1966-2010	non-institutionalized civilian population of U.S., individuals age 25-59 n= 587,174	• The results show that educational gaps in never smoking explain the bulk of the educational inequality in adult smoking. • Differences in former smoking play a small and decreasing role in producing these gaps. This is true across the life course, whether measured at age 25 or age 50, and for both men and women. While the prevalence and age patterns of former smoking by education converge across birth cohorts,	These findings have important implications for both understanding and addressing disparities in this important health behavior.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				differences in never smoking by education increase dramatically. • At the population level, educational gaps in adult smoking are produced by the combination of inequalities in initiation and quitting, with differences in initiation playing a larger role in producing the observed gaps. • The portion of the gap explained by differences in quitting is itself a function of educational differences in initiation. Thus, educational gradients in adult smoking are tethered to experiences in adolescence.	
81. Margerison-Zilko, C. and C. Cubbin (2013). "Socioeconomic disparities in tobacco-related health outcomes across racial/ethnic groups in the united states: National health interview survey 2010." Nicotine and Tobacco Research 15(6): 1161-1165.	**Cross-sectional survey** We sought to examine a broader range of outcomes across the tobacco use continuum, examining socioeconomic gradients separately among the 3 largest racial/ethnic groups in the United States. **SES variables Measured**: Income Education	National 2010	Civilian non-institutionalized population of the United States. Our study sample included adults aged 25-64 who self-identified as one of the three largest race/ethnic groups in the United States: Black (non-Hispanic/Latino), Hispanic/Latino, or White (non-Hispanic/Latino). N= 17284 Black: 17% White: 59% Hispanic: 22%	• Findings demonstrate that current smoking, age at initiation, cigarettes per day, years quit, and secondhand smoke all exhibit strong inverse educational gradients and moderately strong inverse income gradients, especially among Whites and Blacks. • Hispanics/Latinos generally have more favorable outcomes along the tobacco use continuum and less evident socioeconomic gradients.	Educational attainment is strongly associated with indicators across the tobacco use continuum among non- Hispanic Whites and Blacks. More research is needed to determine whether policies and programs to increase educational attainment may also reduce tobacco-related health disparities.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
82. *McCarthy, M., M. Siahpush, et al. (2016). Social disparities in unaided quit attempts among daily current and former smokers: Results from the 2010-2011 Tobacco Use Supplement to the Current Population Survey. Nicotine Tob Res.	**Cross-sectional** This study used nationally representative data to examine unaided quit attempts and their socio-demographic determinants among daily current and former smokers who made a quit attempt in the last 12 months.	National Survey Data from Tobacco Use Supplement to the Current Population Survey	N= 8201 Male: 49.33% Female: 50.67% Non-Hispanic White: 77.4% Non-Hispanic Black: 10.9% Hispanic: 6.64% Other: 4.9% <H.S. 15% H.S. 39.6% Some College: 34% Bachelor: 11.1% Family Income <$12,000: 16.69% $12K-$34K 35.11% $35K-$59K 23.5% $60k-$99k 16% $100k + 7.86%	• NEARLY SIXTY-TWO PERCENT: (n=5,078) of the sample made an unaided quit attempt. • Adjusted results indicated unaided quit attempts were more likely among males compared to females (p<.001), younger age groups compared to older age groups (p<.001), non-Hispanic blacks compared to non-Hispanic whites (p<.001), among people with lower income compared to people with higher income (p<.001), and among people with lower nicotine dependence compared to those with higher nicotine dependence (p<.001).	Most quit attempts were unaided and there were significant socio-demographic disparities in unaided quit attempts. Considering that cessation aids enhance the likelihood of quitting, policies and programs should target populations which are more likely to attempt quitting without an aid and encourage them to use or provide subsidized cessation aids. Healthcare providers should advise their patients about approaches to quitting.
83.*Mdodo, R., E. L. Frazier, et al. (2015). **Cigarette smoking prevalence among adults with HIV compared with the general adult population in the United States: cross-sectional surveys**. Annals of	**Cross-Sectional** To compare the prevalence of current cigarette smoking and smoking cessation between adults with HIV receiving medical care and adults in the general population.	US National Survey	N= 419945 from the MMP Survey Male: 71.2% Female: 27.2% Transgender: 1.6% White: 34.6% Black: 41.4% Hispanic: 19.2% Other: 4.9% <H.S. 22.5% H.S. 226.9%	• Of the estimated 419 945 adults with HIV receiving medical care, 42.4% (95% CI, 39.7% to 45.1%) were current cigarette smokers, 20.3% (CI, 18.6% to 22.1%) were former smokers, and 37.3% (CI, 34.9% to 39.6%) had never smoked. • Compared with the U.S. adult population, in which an estimated 20.6% of adults smoked cigarettes in 2009, adults with HIV were nearly twice as likely to smoke	Adults with HIV were more likely to smoke and less likely to quit smoking than the general adult population. Tobacco screening and cessation strategies are important considerations as part of routine HIV care.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Internal Medicine 162(5): 335-44.			>H.S. 50% ≥ FPL: 54% < FPL: 42.2% Unknown: 3.5%	(adjusted prevalence difference, 17.0 percentage points [CI, 14.0 to 20.1 percentage points]) but were less likely to quit smoking (quit ratio, 32.4% vs. 51.7%). • Among adults with HIV, factors independently associated with greater smoking prevalence were older age, non-Hispanic white or non-Hispanic black race, lower educational level, poverty, homelessness, incarceration, substance use, binge alcohol use, depression, and not achieving a suppressed HIV viral load.	
84. Merzel, C. R., C. R. Isasi, et al. (2015). Smoking cessation among U.S. Hispanic/Latino adults: Findings from the Hispanic Community Health Study/Study of Latinos (HCHS/SOL). Preventive Medicine 81: 412-419.	**Cross-sectional** This paper examines patterns of smoking cessation among Hispanics/Latinos with particular attention to gender, acculturation, and national background.	National Survey	Non-Institutionalized Hispanics N= 6398 who have smoked at least 100 cigarettes in their lifetime Current Smoker Household income <$10,000: 30.4% $10,001-$20K: 24% $20k-$30k: 24.1% $30k-$40k: 21.6% >$40K: 16%	• Findings indicate that approximately equal proportions of men and women were former smokers. There was little difference by gender in socioeconomic characteristics associated with smoking cessation. • Both men and women who lived in households with smokers were less likely to be abstinent. • Multivariable analysis indicated that the likelihood of quitting varied by national background primarily among men, however, Puerto Rican and Cuban smokers of both genders were the least likely to successfully quit smoking.	The results suggest that many Hispanics/Latinos are self-motivated to quit and are able to do so without clinical assistance. Heterogeneity in smoking behaviors among Hispanics/Latinos should be taken into account when developing and delivering smoking cessation interventions and public health campaigns.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				• Among women, but not men, younger and more socially acculturated individuals had lower odds of sustaining cessation. Over 90% of female and male former smokers reported quitting on their own without cessation aids or therapy.	
85. Navarro, A. M. (1996). "Cigarette smoking among adult latinos: The California Tobacco Baseline Survey." Annals of Behavioral Medicine 18(4): 238-245.	**Cross-sectional survey** Presents probability estimates of smoking prevalence for the Latino adult population based on the California Baseline Tobacco Survey (CTS). CTS is a random digital dial survey. **SES variables Measured**: Education	California 1990-1991	>18 years; CTS survey results analyzed only for non-Latino Whites and Latinos N= 98997 Hispanic: 28% Not Hispanic: 71%	• Higher smoking prevalence for non-high school graduates, for men than women, for non-Latino Whites [23.3% 95% CI (22.8; 23.7)] compared to Latinos [19.4% 95% CI(18.7; 20.1)]. • Among Latinos smoking prevalence is lower in women OR 0.39 [95%CI (0.33; 0.47)] and 0.41 [95%CI (0.31; 0.55), as well as in those with lower levels of acculturation OR 0.73 [95%CI (0.66; 0.82)] and 0.53 [95%CI (0.39; 0.71)] in the Screener and Extended CTS surveys respectively. • Nicotine dependence showed the same statistically significant patterns as for prevalence. • Higher percentage of Latinos never picked up smoking. Differences between non-Latino Whites and Latinos are more pronounced in women than in men.	SES factors impact smoking prevalence among different ethnic groups, thus SES should be adjusted for when comparing ethnic groups smoking habits. Smoking cessation interventions for Latinos are most needed for males with less than 12 years of formal education.
86. Nelson, D. E., et al. (1994). "Cigarette smoking prevalence by occupation in the	**Cross-sectional Survey** Analyzed data from 1987 to 1990 National Health Interview Survey (NHIS) compared to the NHIS from	National 1978-1980, 1987-1990	1978-1980 NHIS: 17 years and older 1987-1990 NHIS: 18 years and older,	• Smoking prevalence declined from 31.7% to 24.2% among white-collar workers, from 43.7% to 39.2% among blue-collar workers, and	Differences in smoking prevalence by occupation have widened. Smoking has moved from a relatively common behavior practiced

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
United States. A comparison between 1978 to 1980 and 1987 to 1990." Journal of Occupational Medicine 36(5): 516-525.	1978 to 1980 to determine changes in smoking prevalence by occupation. **SES variables Measured**: Industry/Occupation		known smoking status non-institutionalized civilians of the US n= 178,610	from 37.2% to 34.5% among service workers. • Largest decline was among white collar workers with decline of 8.0 and 7.0 percentage points for men and women respectively. • Male blue collar workers have highest smoking prevalence among all occupational categories. • Largest declines in smoking prevalence occurred for male sales workers (10.5%), female managers and administrators (9.9% and 8.7%), female professional and technical workers (8.0%), male transportation equipment operatives (7.5%). • In 1987 to 1990 roofers (57.8%) and crane tower operators (57.6%) had highest prevalence of smoking and physicians (5.4%) and clergy (6.5%) had the lowest. • 1987-1990 NHIS smoking prevalence by employment status: employed (29.1%), not in labor force (22.9%), unemployed (40.9%).	by most segments of society to one that has become more concentrated among subpopulations. Declines may be associated with birth cohort effect.
87. Nguyen, K. H., et al. (2012). "Influence of experiences of racial discrimination and ethnic identity on prenatal smoking among urban black and Hispanic women." Journal of	**Cross-sectional survey** Examined associations between self- reported experiences of racial discrimination on prenatal smoking among urban black and Hispanic women aged 18-44 years. **SES variables Measured**:	MA 2003-2007	Subjects were 18-44 years in age and from the Asthma Coalition on Community, Environment, and Social Stress (ACCESS) project English or Spanish speaking pregnant	• The prevalence of smoking was 18.1% versus 10% for black and Hispanic women, respectively (p=0.002). • There were no significant differences in the level of Experiences of Discrimination Scale (EOD) based on race. • In multivariate regressions, compared to those reporting	There is an association between discrimination and increased risk of smoking particularly among black women. Ethnic identity and nativity status were also associated with smoking risk. Smoking cessation programs should consider such factors among

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Epidemiology & Community Health 66(4): 315-321.	Education		women receiving prenatal care were recruited from Brigham and Women's Hospital (BWH), Boston Medical Center, three urban community health centers and their affiliated Women, Infants and Children programs in the Boston metropolitan area. N= 677 Age Mean: 26 Female: 100% Black: 39% Hispanic: 60% 73.4% unmarried 69.9% multiparous 66.6% foreign-born	moderate EOD, women reporting high discrimination (OR 2.64, 95% CI 1.25 to 5.60) had higher odds of smoking. In stratified analyses, this relationship remained significant only in black women. • Results suggest that foreign-born Hispanic women with higher ethnic identity (EI) were less likely to smoke compared to their low-EI counterparts (3.5 vs 10.1%; p=0.08). • US-born minority women were more likely to smoke compared to those born elsewhere regardless of EI level.	childbearing minority women. Intervention strategies could include raising awareness about the influence of race-related stress and integrating social support and stress-relieving activities in smoking cessation interventions for minority women.
88. Ockene, J., et al. (2002). "Spontaneous cessation of smoking and alcohol use among low-income pregnant women." American Journal of Preventive Medicine 23(3): 150-159.	**Cross-sectional survey** To describe the prevalence of spontaneous cessation of cigarette and alcohol use alone and in combination and associated factors among low-income pregnant women. **SES variables Measured**: Insurance Status Education	MA 1997-1999	WIC participants in greater Boston, MA area. Eligible participants were smokers (i.e., had a cigarette in the last 7 days) or spontaneous quitters (i.e., were smokers when they learned they were pregnant but had not smoked in the last 7 days), who had at least 2	• Spontaneous cessation of smoking and alcohol use was reported by 28% and 80% of the women, respectively; 25% spontaneously quit both, and 15% stopped neither. • Smoking cessation was less likely in women who had previous births, had a husband or partner who smoked, were born in the United States, were black (non-Hispanic, non-Portuguese), had less than a high school education, were highly addicted, reported lower perceived risk to the fetus, and reported "too	Findings that older women, women with previous births, and women with less support are less likely to spontaneously abstain at pregnancy makes it important that women with first pregnancies and less social support are strongly encouraged to quit early in their childbearing and provided with needed support.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			months before delivery, understood English or Spanish, expected to live in the area for at least 6 months after delivery, and planned to receive pediatric care at the CHC. N= 601	many other problems in life to stop." • Greater reported rate of spontaneous alcohol abstinence (80%) compared to smoking (27.6%).	
89. Okechukwu, C., Bacic, J., Cheng, K.W., Catalano, R. (2012). "Smoking among construction workers: the nonlinear influence of the economy, cigarette prices, and antismoking sentiment." Social Science & Medicine 75(8): 1379-1386.	**Cross-sectional survey** Examined the association of labor market shock, cigarette prices, and state antismoking sentiments with smoking status and average number of cigarettes smoked daily. **SES variables Measured**: Income Education Industry/Occupation	National 1992-2007	Restricted study population to working age adults (aged 18e65 years) whose primary jobs were in construction occupations and who work in one of the 50 states. N= 52418	• Unemployed, American Indian, lower-educated and lower-income workers had higher smoking rates. • Labor market shock had a quadratic association, which was non-significant for smoking status and significant for number of cigarettes. • State-level antismoking sentiment had significant quadratic association with smoking status among employed workers and significant quadratic association with number of cigarettes for all smokers. • The association of cigarette prices with smoking status became non-significant after adjusting for state-level antismoking sentiment. Unemployment was consistently associated with higher odds of smoking.	Highlights how both workplace-based smoking cessation interventions and antismoking sentiments could further contribute to disparities in smoking by employment status. Even within the same occupational group, state-level factors could have disparate influences on employed versus unemployed workers.
90. Okechukwu, C. A., et al. (2013). "Home matters:	**Longitudinal cohort** This study examined the joint influence of work- and	National 2002-2003	Adults 18 years or older with live-in spouses or partners,	• Partner smoking (OR=4.97, 95%CI=3.02-8.18) and complete and partial home smoking policy	Current efforts to decrease smoking among blue-collar workers have been focused

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
work and household predictors of smoking and cessation among blue-collar workers." Preventive Medicine 56(2): 130-134.	household-related variables on smoking behavior among a population representative sample of blue-collar workers with live-in partners. **SES variables Measured**: Income Education Industry/Occupation		from the 2002 and 2003 Tobacco Use Supplement to the Current Population Survey (TUS-CPS) who also completed the TUS-CPS special cessation supplement in February 2003, which, overlapped with the February 2002 sample. N=1389 Mean Age: 43 Female: 14.8% Male: 85.2% Black: 9.7% White: 64.9% Other: 2.9% Hispanic: 22.6% <High school degree: 23.3% Income <$25K: 13.8%	(OR=0.16, 95%CI=0.09-0.29 and OR=0.39, 95%CI=0.23-0.68, respectively) were significant predictors of smoking status, but worksite smoking policies and presence of a young child under 5 in the household were not (p > 0.05). • Baseline complete home smoking ban was a significant predictor of subsequent cessation (OR=3.49, 95%CI=1.19-10.23), • Partner smoking status, workplace smoking policy, and the presence of a young child in the home did not predict cessation (p>0.05). • Home smoking policy had the highest explainable variance for both smoking status and smoking cessation (63.4% and 30.8% respectively); this was followed by partner smoking status (62.5% and 20.9% respectively).	on understanding and ameliorating work-related risk factors. However, household risk factors are important drivers of smoking behaviors among blue-collar workers.
91. Okechukwu, C.A., Nguyen K., Hickman N.J. (2010). "Partner smoking characteristics: Associations with smoking and quitting among blue-collar apprentices." American Journal of	**Longitudinal Cohort** Studies suggest that the social context of blue-collar workers contribute to their low smoking cessation rates. However, little is known on the effect of partner smoking and requests to quit on workers' cessation attempts. **SES variables Measured**:	MA	Implemented in collaboration with the Massachusetts Building Trades Council and included ten building trade apprenticeship training programs. Ten apprenticeship sites that met the eligibility criteria for the study and agreed	• Smokers were more likely to have partners who smoke (OR 13.06; 95% C I8.52- 20.01). • Partner's request to quit was associated with higher odds of smoking cessation at 1 month (OR 3.74; 95% CI 2.49-5.63) and 6 months (OR 1.90; 95% CI 1.06-3.41) post-intervention. • Having a partner who smoked was associated with lower odds of smoking cessation at 1 month (OR	Smoking cessation interventions that include partner support might improve cessation among blue-collar smokers. Our study implies that partner smoking characteristics has a strong relationship with both smoking and smoking cessation among blue-collar workers.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Industrial Medicine 53(11): 1102-1108.	Income Education Industry/Occupation		to participate were matched according to size and randomly assigned to four intervention and six control sites. All apprentices in the study sites were eligible for the study. N= 1817 Mean Age: 28 Female: 4.8% Male: 92.4% Black: 6.9% White: 76% Other: 6.3% Hispanic: 3.6% <High school degree: 1.2% Income <$25k: 5.7%	0.41; 95% CI 0.27-0.62), but not 6 months post-intervention. • Partner request to quit smoking had a stronger and longer lasting effect than intervention group. • In addition to a high prevalence of smoking among the blue-collar apprentices, there was a high prevalence of smoking among those in their work and home social context. • Blue-collar apprentices who smoke had 13 times higher odds of having partners who smoke.	
92.Pelster, A. D., C. M. Fisher, et al. (2015). Tobacco Use and Its Relationship to Social Determinants of Health in LGBT Populations of a Midwestern State. LGBT Health 2(1): 71-6.	**Cross-sectional** This study examined the relationships between tobacco use and social determinants of health in a sample of self-identifying LGBT people who spend time in Nebraska.	Nebraska Community		• Of the 770 people who completed the survey, 763 respondents completed questions about smoking status. The prevalence of current smoking among these 763 respondents was 26.47%. • %. Some LGBT-specific social determinants of health had significant relationships to smoking status. However, after controlling for known risk factors of smoking in logistic regression models, these variables were not related to smoking status.	This study shows that there is a significant relationship between smoking and several general social determinants of health, including employment status, education, and income as well as binge drinking.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
93. Pollak, K. I., Yarnall K. S. H., Rimer B. K., Lipkus I., Lyna P. R. (2002). "Factors associated with patient-recalled smoking cessation advice in a low-income clinic." Journal of the National Medical Association 94(5): 354-363.	**Cross-sectional survey** It is recommended that providers advise cessation to their patients who smoke. However, patients' reports of cessation advice indicate disparities based on patients' race, gender, age, and smoking level. Providers' reports do not corroborate these disparities. We investigated whether smokers who receive their care in a community health center recalled their providers advising them to quit smoking when their providers documented such advice. **SES variables Measured**: Insurance Status Poverty Level	NC 1993-1995	Patient-Provider Dyad. Patients who were seen within 18 months prior to November 1993 in adult medicine clinics at the Lincoln Community Health Center (LCHC), a primary healthcare facility in Durham, North Carolina. N=219 Mean Age: 52 Female: 58% Male: 42% Black: 73% White: 27% Employed for pay: 37% Has insurance: 27% Years of education (mean, SD): 10.7 (2.9) Most of the providers (n = 16) were African-American, one half were female, and two were nurses.	• Sixty-eight percent of the dyads agreed in their documentation/recall. • Patient race was the only factor associated with lack of agreement; white patients were 2.56 times more likely (CI = 1.10-5.94) to be concordant with their providers' documentation than African-American patients. • Sixty-eight percent of the dyads agreed in their documentation/recall. Patient race was the only factor associated with lack of agreement; white patients were 2.56 times more likely (CI = 1.10-5.94) to be concordant with their providers' documentation than African- • American patients. • Providers completed the smoking portions of the form for only 55% of their visits with smoking patients.	Results suggest that recall of smoking cessation advice may be another area in which health disparities occur. Ultimately, the benefits could include more effective provider counseling, higher rates of smoking cessation among African-American patients, and a reduction in health disparities.
94. Rafful, C., Garcia-Rodriguez O., Wang, S., Secades-Villa, R.,	**Longitudinal Cohort** Most quit attempts fail suggesting that predictors of quitting attempts may	National 2001-02, 2004-05	The NESARC target population at Wave 1 was the civilian non-institutionalized	• Only significant predictors of successful quitting at Wave 2 was having an educational level below high school (ORs= 6.59; CI 95%=	Despite relatively high rates of quit attempts, rates of success are extremely low, indicating a gap between

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Martinez-Ortega, J. M., Blanco, C. (2013). "Predictors of quit attempts and successful quit attempts in a nationally representative sample of smokers." Addictive Behaviors 38(4): 1920-1923.	differ from those of successful attempts. We examined sociodemographic and clinical predictors of quit attempts and successful quit attempts in a nationally representative sample of US adults. **SES variables Measured**: Income Education		population 18 years and older residing in households and group quarters. Participants included in the present study were those with Wave 2 data and who were current tobacco users with no attempts to quit prior to Wave 1. N= 1868	1.25-34.69) and older age at first nicotine use (t= 2.40; p<0.05). • Respondents with incomes higher than $70,000 were less likely to attempt to quit than those with incomes less than $20,000, whereas individuals with college education had decreased odds of trying to quit smoking than those who had lower educational attainment. • Almost 40% of individuals who had not previously attempted to quit, tried to quit over the next three years; only 4.6% of those who tried had succeeded at the time of the evaluation. • Hispanics and Asians were less likely to attempt to quit, whereas those with daily nicotine use, younger age at first use and most symptoms of dependence were more likely to do so. • Males were less likely than females to attempt to quit. Total number of symptoms of dependence also increased the odds of attempting to quit. • No medical conditions or psychiatric disorders predicted attempts to quit or successful quitting among those who attempted (data not reported).	the public health need of decreasing tobacco use, and existing means to achieve it. Although there is a need to encourage people to quit tobacco, there may be an equally large need to develop more effective interventions that increase the rate of successful quit attempts.
95. Reitzel, L. R., et al. (2013). "The Relation between Social Cohesion and	**Randomized Control Trial** Social cohesion may affect health behaviors	Texas 2005-2007	Eligible to participate if they self-identified as Black, were between	• Participants who were older, employed, earning more than $10,000 in annual household income, and less dependent on	Results suggest that social cohesion may facilitate smoking cessation among Black smokers through

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Smoking Cessation among Black Smokers, and the Potential Role of Psychosocial Mediators." Annals of Behavioral Medicine 45(2): 249-257.	via psychosocial mechanisms. Relations between individual perceptions of social cohesion and smoking cessation were examined among 397 Black treatment-seeking smokers. **SES variables Measured**: Income Education		the ages of 21 and 65, smoked five or more cigarettes per day for ≥12 months, produced expired carbon monoxide levels of ≥8 parts per million, were willing to quit smoking within the next 2 weeks, possessed a functioning home telephone number, had a permanent home address, and were able to understand English at a 6th grade literacy level. N=397 Mean Age: 42 Female: 50.9% Male: 49.1% Black: 100% Income <$10K: 48.3% <High school degree: 17.9% Unemployed: 60.7% Also measured smoking heaviness and social cohesion variables	tobacco were more likely to maintain continuous smoking abstinence through Post-Quit Month 6 relative to those who were younger, unemployed, earning less than $10,000 a year, and more dependent on tobacco. • Total effect of social cohesion on continuous abstinence was non-significant (β00.05, p00.10). However, social cohesion was associated with social support, positive affect, negative affect, and stress, which, in turn, were each associated with abstinence in adjusted models (ps<0.05). • The psychosocial mediators examined in this study singularly accounted for between 47 and 75 % of the mediated effect of social cohesion on smoking abstinence.	desirable effects on psychosocial mechanisms that can result from living in a community with strong interpersonal connections. Similar results linking unemployment and low income to smoking relapse during a specific quit attempt have been reported previously
96. Reitzel, L. R., Vidrine, J. I., Businelle, M. S., Kendxor, D. E., Cao,	**Cross-sectional survey** The purpose of this study was to examine	Texas 2005-2006	Individuals were eligible to participate if they were AA, smoked ≥ 5	• More self-reported neighborhood problems and greater neighborhood vigilance were significantly associated with	Neighborhood context is associated with dependence on tobacco among African American smokers but

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Y., Mazas, C. A., Li, Y., Ahluwalia, J. S., Cinciripini, P. M., Cofta-Woerpel, L., Wetter, D. W. (2012). "Neighborhood perceptions are associated with tobacco dependence among African American smokers." Nicotine & Tobacco Research 14(7): 786-793.	the associations between neighborhood perceptions (neighborhood problems and neighborhood vigilance) and tobacco dependence among smokers. **SES variables Measured**: Income		cigarettes/ day for ≥ 12 months, produced expired carbon monoxide levels of ≥ 8 parts per million, were willing to quit smoking within the next 2 weeks, possessed a functioning home telephone number, had a permanent home address, and were able to understand English at a sixth- grade literacy level. N= 384 Mean Age: 42 Female: 51.3% Male: 48.7% Black: 100% Unemployed: 61.1% household income <$10K: 47.9% <High school degree: 18.0%	tobacco dependence as measured by the WISDM total score in analyses adjusted for age, gender, income, education, employment status, and partner status (p ≤ .002). • Neighborhood perceptions were related to both primary and secondary dependence motives (p ≤ .005).	longitudinal studies are needed to assess causation.
97.*Reitzel, L. R., K. J. Langdon, et al. (2015). Financial strain and smoking cessation among men and women within a self-guided quit attempt. Addictive Behaviors	**Cross-sectional** Secondary analysis of clinical intervention data This study reports on a secondary data analysis that assessed the association of financial strain and biochemically-verified	US Clinical	Participants (N=58; 65.5% men) were enrolled in a study about anxiety sensitivity and smoking cessation whereby they were instructed to initiate a self-guided quit attempt	• Associations between financial strain and abstinence in the whole sample were marginal (aOR=.94, 95% CI=.87-1.01, observations=293; p=.07). • sex was a significant moderator: greater financial strain was associated with lower odds of abstinence for men (aOR=.90,	Results indicated that financial strain was associated with lower odds of cessation among men undergoing a self-guided quit attempt in the context of a structured clinical study. These data suggest that financial strain may be an important

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
47: 66-9. Access No: 25879712	smoking abstinence within a structured clinical study of smokers making a self-guided cessation attempt.			95% CI=.80-1.00, observations=201; p=.05), but not women (aOR=1.05, 95% CI=.91-1.21, observations=92; p=.48).	socioeconomic determinant of smoking cessation and support its relevance for better understanding socioeconomic-based smoking-related health disparities. Future work may benefit by exploring sex-specific models of financial strain in the context of smoking cessation
98. Rosenthal, L., Carroll-Scott, A., Earnshaw, V. A., Sackey, N., O'Malley S. S., Santilli, A., Ickovics, J. R. (2013). "Targeting cessation: understanding barriers and motivations to quitting among urban adult daily tobacco smokers." Addictive Behaviors 38(3): 1639-1642.	**Cross-sectional survey** The objectives were to examine barriers and motivations to quitting smoking among daily tobacco smokers and socio-demographic differences in endorsement of barriers and motivations.	Connecticut 2009	N= 1205 Female: 61% Male: 39% American Indian: 1% Asian: 1% Black: 61% White: 12% Other: 4% Hispanic: 20% H.S. diploma/GED or less: 56%	• The two most common barriers to quitting were perceiving it to be too difficult and not wanting to quit. Financial costs, social support, and social influence were themes endorsed highly across both barriers and motivations to quitting. • Sociodemographic differences were found, such as women and Black participants being more likely to be interested in a free quitline or quit website; women and Latinos being more likely to be afraid of gaining weight; and women, participants with less education, and older participants being more likely to be concerned about the cost of cessation products. • Lower educational attainment predicted greater likelihood of daily smoking among the larger sample. Smoking rates in the sample were double the national average, demonstrating that	Cessation interventions addressing intrapersonal and financial concerns, social support, or using a quitline or website may be more useful for targeting women smokers. Interventions addressing intrapersonal concerns may be more useful for targeting Latino smokers, and interventions using a quitline or website may be more useful for targeting Black smokers. Interventions addressing financial and social influence concerns may be more useful for targeting individuals with less education. Interventions addressing intrapersonal and financial concerns may be more useful for targeting older smokers, and

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				current interventions have been less successful in reaching socioeconomically disadvantaged communities.	interventions addressing social norms may be more useful for targeting younger smokers.
99. Rugulies, R., Scherzer, T., Krause, N. (2008). "Associations between psychological demands, decision latitude, and job strain with smoking in female hotel room cleaners in Las Vegas." International Journal of Behavioral Medicine 15(1): 34-43.	**Cross-sectional survey** Little is known of the impact of the work environment on smoking among women holding low-paid jobs in the service sector. Studied the associations between the components of the demand-control model with smoking in hotel room cleaners. Associations between psychosocial work characteristics and smoking were analyzed. **SES variables Measured**: Education Industry/Occupation	NV 2002	Female day-time room cleaners at selected unionized hotels in Las Vegas. N= 776 Mean Age: 41 Female: 100% Asian: 9.3% Black: 5.8% White: 6.1% Other: 2.7% Hispanic: 76.2% Education: 6 years or less- 29.5%, 7-11 years- 35.3%, 12+ years- 35.2%	• Psychosocial work characteristics were associated with smoking after adjustment for covariates. Effect estimates remained significant for high psychological demands and smoking prevalence (OR = 1.97, p = 0.02), high job strain and smoking prevalence (OR = 1.87, p = 0.04), and high job strain and smoking intensity (coefficient = 3.52, p = 0.03). • Analyses restricted to Hispanic workers and further adjusted for place of birth, low decision latitude (coefficient = 3.94, p = 0.04) and high job strain (coefficient = 4.57, p = 003) were associated with smoking intensity but not with smoking status.	Workplace smoking cessation programs may benefit from a primary prevention component reducing job strain among service workers. More research is needed on perceived and objective differences in psychosocial work characteristics across ethnic, immigrant, and other social groups within the same occupation.
100. *Schoenberg, N. E., B. Huang, et al. (2015). Trends in cigarette smoking and obesity in Appalachian Kentucky. Southern Medical Journal 108(3): 170-7. Access No: 25772051	**Cross-sectional** Using the most recent survey data from the Behavioral Risk Factor Surveillance System, we examined 10-year trends in rates of cigarette smoking and obesity in Appalachian Kentucky, comparing these trends with national and non-Appalachian Kentucky rates.	Kentucky	Adults in Appalachian Kentucky	• Women and men from Appalachian Kentucky smoke cigarettes at rates 1.8 times and 1.6 times higher, respectively, than their national counterparts. • Although rates of smoking in Appalachian Kentucky, non-Appalachian Kentucky, and the United States have decreased, such decreases among Appalachian Kentucky women have been minimal. Adding to these concerning trends, obesity	A continuum of approaches to address smoking and obesity is warranted. Such approaches range from ensuring access to smoking cessation programs to implementing community- and state-level policies to curb smoking and unhealthy energy balance (eg, smoke-free policies and increases in tobacco and "junk food" taxes) and culturally appropriate

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				rates in Appalachian adults are much higher than in non-Appalachian Kentucky or the United States overall, although Appalachian Kentucky smokers are less likely to be obese than nonsmokers. • Low socioeconomic status and impeded access to health care characterize the Appalachian communities in which these risk behaviors occur and likely account for the prevalence of these most risky behaviors.	individual-level interventions (evidence-based smoking cessation and weight-loss programming).
101. Shavers, V. L., Fagan, F., Jouridine Alexander, L. A., Clayton, R., Doucet, J., Baezconde-Garbanati, L. (2006). "Workplace and home smoking restrictions and racial/ethnic variation in the prevalence and intensity of current cigarette smoking among women by poverty status, TUS-CPS 1998-1999 and 2001-2002." Journal of Epidemiology &	**Cross-sectional survey** Examines the association of workplace smoking policies and home smoking restrictions with current smoking among women. **SES variables Measured**: Income Poverty level Education Industry/Occupation	National 1998-99; 2001-02	Women aged 18-64 who completed the tobacco use supplement to the current population survey supplements. N=82966 Female: 100% American Indian: 1% Asian: 3.1% Black: 10.2% White: 78.5% Hispanic: 7% Income <$25K: African American- 37.0%, American Indian/Alaska Native- 37.8%, Asian/Pacific Islander- 18.4%,	• The prevalence of either having an official workplace or home smoking policy that completely banned smoking increased with increased distance from the poverty level threshold. • In general, policies that permitted smoking in the work area or at home were associated with a higher prevalence of current smoking but this varied by poverty level and race/ethnicity. • Home smoking policies that permitted smoking were associated with lower adjusted odds of having at least one quit attempt for nearly all poverty level categories. • A complete ban on home smoking was more frequently reported by African American and Hispanic women.	Home smoking policies were more consistently associated with a lower prevalence of current smoking irrespective of poverty status or race/ethnicity than workplace policies. These findings underscore the importance of examining tobacco control policies in multiple domains (work and home) as well as by race/ethnicity and socioeconomic position.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Community Health 60 Suppl 2: 34-43.			Hispanic- 35.2%, White- 16.9% Below Poverty Level: Overall- 7.1%, African American- 16.8%, American Indian/Alaska Native- 19.6%, Asian/Pacific Islander- 6.8%, Hispanic- 16.9%, White- 4.8% <12 Years Education: African American- 10.3%, American Indian/Alaska Native- 11.2%, Asian/Pacific Islander- 6.6%, Hispanic- 25.7%, White- 4.8% Occupational categories: professional, sales and administrative, labourers, and service.		
102. *Silfen, S. L., J. Cha, et al. (2015). Patient Characteristics Associated With Smoking Cessation Interventions and	**Cross-sectional** We used electronic health record (EHR) data to determine rates and patient characteristics in offering cessation interventions	EHR Data from 10 community health centers in New York City	Patients from Community Health Centers N= 302,940	• Of 302 940 patients, 40% had smoking status recorded and only 34% of documented current smokers received an intervention. • Women and younger patients were less likely to have their	Data from EHRs demonstrated under documentation of smoking status and missed opportunities for cessation interventions. Use of data from EHRs can

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Quit Attempt Rates Across 10 Community Health Centers With Electronic Health Records. American Journal of Public Health 105(10): 2143-9. Access No: 25880939	(counseling, medications, or referral) and initiating quit attempts.		American Indian: .4% Asian: 3.7% Black: 39.2% Hispanic: 34.6% Other: 6.2% White: 16% Commercial: 41.3% Medicaid: 41.5% Medicare: 2.8% Self-pay: 26.8%	smoking status documented or to receive an intervention. • Patients with comorbidities that are exacerbated by smoking were more likely to have status documented (82.2%) and to receive an intervention (52.1%), especially medication (10.8%). Medication, either alone (odds ratio [OR] = 1.9; 95% confidence interval [CI] = 1.5, 2.3) or combined with counseling (OR = 1.8; 95% CI = 1.5, 2.3), was associated with higher quit attempts compared with no intervention.	facilitate quality improvement efforts to increase screening and intervention delivery, with the potential to improve smoking cessation rates.
103. Jesse, D. E., et al. (2006). "Psychosocial and spiritual factors associated with smoking and substance use during pregnancy in African American and White low-income women." JOGNN - Journal of Obstetric, Gynecologic, & Neonatal Nursing 35(1): 68-77.	**Cross-sectional survey** To determine the associations between sociodemographic, psychosocial, and spiritual factors to health risk behaviors during pregnancy in African American and White low-income women. **SES variables Measured**: Insurance status Education	Midwest states	African American and White low-income women was recruited from an urban prenatal clinic in the Midwest. Women were included if they were English speaking, between 14 to 44 years of age, at a gestational age of 16 to 28 weeks, and with a singleton pregnancy. N= 130 Mean Age: 24 Female: 100% Black: 62%	• Thirty-nine percent of the women reported smoking and 28% reported substance use in pregnancy. • Marijuana was the substance of choice (17%), followed by alcohol (7%) and hard drugs (6%) (cocaine and heroin). • Significantly fewer African Americans reported smoking (28%) than Whites (55%) (p < .05). No significant differences were found in self-report of substance use. • The mean stress score for the sample as a whole was 18 (SD 5.67, range 11-54), and the mean score for depressive symptoms was 14 (SD 9.93, range 2-59). Twenty-two percent of the women reported	Integrating social support and stress-relieving activities in smoking cessation interventions, particularly for African American women, may reduce health risk behaviors, eliminate health disparities, and improve maternal and infant quality of life.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			partnered: 58% HS education: 65% receiving Medicaid: 75%	abuse within the last year, and 10% reported abuse in pregnancy. • The African American women reported significantly higher mean scores on total support, self-esteem, spiritual perspective, and religiosity than the White women ($p < .05$). • The African American women who smoked were significantly more likely to report lower levels of education, a higher level of stress, less social support from others, and less total social support, and more frequent substance use (57%) than African American women who did not smoke (12%). • No significant differences were found with African American women and any of the other variables. • The White women who smoked were significantly more likely to report substance use (59%) than White women who did not (0%), and White women who reported use of substances were significantly more likely to report a history of preterm birth (35.3%) than women who did not use (6.3%) and more physical abuse (47%) than women who did not use (19%).	
104. Siqueira, L. M., Rolnitzky, L. M., Rickert, V. I. (2001). "Smoking cessation in adolescents: the	**Cross-sectional survey** To compare perceived reasons for continued smoking and withdrawal symptoms between current	NY 1998	English speaking clinic patients between the ages of 12 and 21 years who	• The overall prevalence of smoking in this population was 26%. • Smokers were significantly more likely to report smoking more cigarettes per day as well as higher	Interventions for inner-city adolescents who smoke should be designed to target those with the highest levels of nicotine dependence,

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
role of nicotine dependence, stress, and coping methods." Archives of Pediatrics & Adolescent Medicine 155(4): 489-495.	smokers and quitters in an inner-city adolescent population. To examine the relationship of nicotine dependence, stress, and coping methods between smokers and quitters and, using the Transtheoretical Model of Change, among adjacent smoking cessation stages. **SES variables Measured**: Industry/Occupation		reported past or present smoking N=354	levels of physical addiction (P<.01), greater levels of perceived stress (P<.02), and less use of cognitive coping methods (P<.02) than quitters (P<.005). • Comparison of consecutive stages revealed a significant difference only between precontemplation and contemplation in cognitive coping methods (P<.01). • Three of 20 withdrawal symptoms (cravings, difficulty dealing with stress, and anger) were reported more frequently among current smokers who had attempted to quit in the last 6 months than among former smokers (P<.01). • Most of the adolescents want to quit on their own without assistance of medication. Only 1/3 of smokers had been asked by a physician to quit.	stress, and decreased use of cognitive coping methods because they are the least likely to quit on their own, rather than developing stage-specific models.
105. Solberg, L. I., Asche, S. E., Boyle, R., McCarty, M. C., Thoele, M. J. (2007). "Smoking and cessation behaviors among young adults of various educational backgrounds." American Journal of Public Health 97(8): 1421-1426.	**Longitudinal cohort** We sought to determine whether the educational backgrounds of young adult smokers (aged 18 to 24 years) affect their cessation attitudes or behaviors in ways that could be used to improve smoking interventions. **SES variables Measured**: Insurance status Education	MN 2004-2005	HealthPartners enrollees who were aged 18 to 24 years were eligible for the baseline survey. N=5580	• Higher levels of education were associated with lower smoking rates (16% among students in 4-year colleges, 31% among those in technical or 2-year colleges, and 48% among those with a high school education or less) as well as less frequent or heavy smoking. • However, number of quit attempts in the past year, level of interest in quitting, and smoking relapse rates did not vary according to educational level. Seventy-three percent of those who had	Rates of smoking among young adults, especially those at low educational levels, are relatively high. However, most members of this age group are interested in quitting, regardless of educational background. The only individual factor of much predictive value in terms of cessation is smoking frequency. More attention should be focused on health

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				attempted to quit had not used some form of assistance. • 71% of respondents in the 4-year college group reported being advised to quit, as compared with 61% of those in the 2-year college group and 56% of those with a high school education or less (P<.05). • Only 13% of respondents reported being offered cessation medications. • Factors that helped or hindered them in their attempts to quit, 71% and 46%, respectively, cited concerns about future health and concerns about current health as very important to their decision. • The main differentiating motivator was the cost associated with smoking, with 59% of respondents with a high school education or less, 42% in the 2-year college group, and 36% in the 4-year college group citing cost as a very important factor.	care-related interventions and settings.
106. Solberg, L. I., Parker, E. D., Foldes, S. S., Walker P. F. (2010). "Disparities in tobacco cessation medication orders and fills among special populations." Nicotine & Tobacco	**Cross-sectional record review** There is considerable interest in measuring and eliminating health care disparities among various special populations, but there is limited understanding of their extent, causes, or potential remedies. To improve this for tobacco cessation, we	MN 2006-2007	Individuals aged 18 years and older as of 1 January 2006 with at least one clinician (i.e., a prescription-writing health professional) visit from 1 March 2006 through 28 February 2007. N=18047 Mean Age: 42	• There were 32,733 current users of tobacco, 18,047 of whom had both health insurance and pharmacy claims data available. After adjustment, 15.4% overall had received an order for cessation medications during this year, but only 78% had filled it. • Groups receiving fewer orders than their comparison groups were aged 18-34 years or older than 65 years, men, pregnant women, Asians and	There are disparities in both the receipt of cessation medication orders and the likelihood of filling them for some special populations. The causes are likely to be complex, but this information provides a starting point for learning to improve this problem.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Research 12(2): 144-151.	measured differences in the frequency of receiving and filling cessation medication prescriptions by race, ethnicity, age, language preference, health insurance, and pregnancy. **SES variables Measured**: Insurance Status		Female: 45.6% Male: 54.4% American Indian: 1.1% Asian: 2% Black: 9.2% White: 63.3% Other: .8% Hispanic: 1.8% multiethnic 21.7%	Hispanics, and those with non-English-language preference, on Medicaid, or with fewer visits. • The same groups were less likely to fill that prescription, except patients with non-English preference or Medicaid. The largest disparities in orders and fills are found with young adults.	
107. Sorensen, G., Allen, J. D., Adamkiewicz, G. Yang, M., Tamers, S. L., Stoddard, A. M . (2013). "Intention to quit smoking and concerns about household environmental risks: findings from the Health in Common Study in low-income housing." Cancer Causes & Control 24(4): 805-811.	**Cross-sectional survey** To assess the association between intention to quit smoking and perceptions of household environmental risks among racially/ethnically diverse residents of low income housing. **SES variables Measured**: Education Income	MA 2007-2009	Housing developments were eligible for inclusion if they were considered low-income housing based on the Department of Housing and Urban Development (HUD) guidelines, and had mostly family units, with a minimum of 40 households within the development. Eligible residents were over 18 years of age and spoke English, Haitian Creole, or Spanish. N=828 Female: 74% Male: 26% Black: 25.1% White: 27.4% Other: 10.9%	• Intention to quit smoking was associated with a greater degree of concern about exposures in the home, yet not with the actual presence of household hazards, as identified by home inspections and survey findings.	An ecological approach targeting multiple levels of influence may help to highlight the importance of both quitting tobacco and reducing potential household environmental exposures as part of comprehensive efforts to promote individual and household health.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			Hispanic: 36.6% >High School: 38.1%		
108. Sorensen, G., Emmons, K., Stoddard, A. M., Linnan, L., Avrunin, J. (2002). "Do social influences contribute to occupational differences in quitting smoking and attitudes toward quitting?" American Journal of Health Promotion 16(3): 135-141.	**Cross-sectional survey** The purpose of the study is to examine occupational differences in social influences supporting quitting smoking and their relationships to interventions and self-efficacy to quit smoking and to quitting. The data was collected as a part of a large work site cancer prevention intervention trial. It included 44 work sites, 2626 smokers from a baseline survey sample of 11456 employees. Measures included social support for quitting, pressure to quite smoking, rewards for quitting, non-acceptability of smoking were measured using mixed model analysis. **SES variables Measured**: Education Industry/Occupation	MA & RI 1990-1993	Work sites were recruited using a Dun and Bradstreet listing based on the following eligibility criteria: number of workers (250 to 2500 at DFCI and 250 to 1000 at BROWN); turnover rate (<20%); non-English speaking (<20%). The DFCI site employed the additional criterion of the probable use of a known or suspected occupational carcinogen. Types of business included manufacturers of industrial and other products, firefighting, and newspapers. Eligible employees were permanent employees working at least 50% time and smokers at baseline survey. N=2626	• Compared with other workers, blue collar workers reported less pressure to quit (p= .0001), social support for quitting (p= .0001), and non-acceptability of smoking among their coworkers (p< 0.001). Intention to quit was associated with higher levels of social pressure to quit smoking (p= .0001) and social support for quitting (p= .002). • Self-efficacy was associated with social pressure to quit (p= .0001), social support for quitting (p= .004), and perceiving greater rewards for quitting (p= .0001).	Blue-collar workers appear to reside in occupational environments less supportive of quitting smoking.
109. Stewart, D. W., Adams, C. E., Cano,	**Cross-sectional survey**	Texas 2009-2010	Eligible participants were current	• Health literacy was negatively associated with nicotine	These results provide the first evidence that low

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
M. A. Correa-Fernandez, V., Li, Y., Waters, A. J., Wetter, D. W. Vidrine J. I. (2013). "Associations between health literacy and established predictors of smoking cessation." American Journal of Public Health 103(7): e43-49.	We examined associations between health literacy and predictors of smoking cessation among 402 low-socioeconomic status (SES), racially/ethnically diverse smokers. **SES variables Measured**: Income Education		smokers, between 18-70, and able to speak, read, and write English. Exclusion criteria included current use of nicotine replacement therapy or bupropion, enrollment in a cessation program, or self-reported intention to quit smoking in the next 30 days, expired carbon monoxide of less than 10 parts per million. N= 402 Mean Age: 43 Female: 34% Male: 66% Black: 70% White: 23% Other: 6.2% annual household income <$10K: 70.2% <high school degree: 26.6%	dependence (lower health literacy had a higher level of dependence). Health literacy was associated with smoking outcome expectancies (lower health literacy was perceived fewer negative consequences with smoking). • Lower health literacy was associated with lower scores on the health risk subscale and higher scores on the state enhancement and social facilitation subscales. • Health literacy was significantly associated with smoking risk knowledge and risk perceptions. Lower health literacy was associated with higher nicotine dependence, more positive and less negative outcome expectancies, less knowledge about health risks related to smoking, and lower risk perceptions. Associations remained significant (P < .05) after controlling for demographics and SES-related factors. • Health literacy was not associated with self-efficacy or intention to quit. Those with lower health literacy were significantly more likely to report smoking for stimulation or state enhancement and to improve social facilitation.	health literacy may serve as a critical and independent risk factor for poor cessation outcomes among low-socioeconomic status, racially/ethnically diverse smokers. Research is needed to investigate potential mechanisms underlying this relationship. Current methods of teaching individuals about the health risks of smoking may fail to reach individuals with poor health literacy.
110. *Syamlal, G., A. Jamal, et al. (2015). Current Cigarette Smoking Among Workers in	**Cross-sectional** Despite progress in reducing smoking prevalence over the past	National	US adult smokers	• Accommodation and food services sector workers had higher cigarette smoking prevalence (25.9%) than all other workers (17.3%).	These results indicate a need to better understand the reasons for higher smoking prevalence observed among

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
Accommodation and Food Services--United States, 2011-2013. MMWR - Morbidity & Mortality Weekly Report 64(29): 797-801. Access No: 26225478	several decades, nearly one in five U.S. adults, including millions of workers, still smoke cigarettes. During 2004-2010, nearly one fifth (19.6%) of U.S. working adults aged >18 years smoked cigarettes, and of all the industry sectors, current smoking prevalence among the accommodation and food services sector workers (30%) was the highest. CDC analyzed National Health Interview Survey (NHIS) data for 2011-2013 to estimate current cigarette smoking prevalence among adults working in the accommodation and food services sector			• Among workers in accommodation and food services sector, the highest smoking prevalences were observed among males, non-Hispanic whites, those aged 25-44 years, those with a high school diploma or a General Educational Development (GED) certificate and no college education, those with an annual family income <$35,000, those with no health insurance, and those working in the food services and drinking places industry.	accommodation and food services workers (e.g., workplace culture), so that appropriate intervention strategies can be developed and implemented. Evidence suggests that smoke-free worksites and workplace cessation programs, including comprehensive worksite smoke-free policies, health promotion, access to smoking cessation programs, and increasing the cost of tobacco products, can substantially reduce smoking among workers
111. Tehranifar, P., Liao, Y., Ferris, J. S., Terry, M. B. (2009). "Life course socioeconomic conditions, passive tobacco exposures and cigarette smoking in a multiethnic birth cohort of U.S. women." Cancer Causes & Control 20(6): 867-876.	**Longitudinal cohort** We investigated the relationship of SES and passive tobacco exposure over the lifecourse with adult smoking status in a multiethnic cohort of U.S. women (n = 262, average age = 41.8), using prospective data on maternal smoking during pregnancy and childhood SES, and follow-up data on current smoking, adult SES	National 2001-2006	The study sample included female participants of the National Collaborative Perinatal Project (NCPP), who were born in New York City, prospectively followed until age 7, and traced and enrolled in an adult follow-up study between 2001 and 2006.	• Low adolescent and adult SES consistently increased the risk of current smoking, but most associations were not statistically significant in multivariable models. • Blue collar parental occupation at birth increased the risk of smoking, particularly for current smoking relative to former smoking (odds ratio [OR] = 2.7, 95% confidence interval [CI] = 1.2-5.9). • After adjusting for SES, current and former smokers were more likely than never smokers to have exposures to prenatal tobacco (OR	Our results show that early life conditions have enduring influences on women's smoking behavior in middle adulthood, even after considering similar types of conditions in later life periods. The overall results showed that socioeconomic influences on adult women's smoking status are not confined to any particular life period.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
	and household tobacco exposure. **SES variables Measured**: Income Education Industry/Occupation		N=262 Mean Age: 41 Female: 100% Black: 36% White: 26% Hispanic: 38%	= 4.4, 95% CI = 2.1-9.4 and OR = 2.0, 95% CI = 1.0-4.2, respectively) and adult household tobacco (OR = 2.7, 95% CI = 1.3-5.8 and OR = 2.4, 95% CI = 1.2-4.8, respectively). • Current smokers had more adverse socioeconomic circumstances and greater exposure to passive tobacco smoke across the life course than women who never smoked or quit smoking. • We observed notable racial/ethnic differences in smoking habits. As compared with white women, African Americans, and to a lesser extent, Hispanics had a lower likelihood of lifetime smoking but also a lower likelihood of smoking cessation.	
112. Tessaro, I., Lyna, P. R., Rimer, B. K., Heisler, J., Woods-Powell, C. T., Yarnall, K. S. H., Barber, T. (1997). "Readiness to change smoking behavior in a community health center population." Journal of Community Health 22(1): 15-32.	**Cross-sectional survey** This study examines predictors of readiness to change smoking behavior in a sample of smokers who receive care at a community health center that serves a predominantly low income African American population. **SES variables Measured**: Insurance Status Education Industry/Occupation	NC	A random sample of 3490 adult users of the Lincoln Community Health Center in Durham, NC, was drawn from a list of all clients over the age of 18 who had visited the center within the past 18 months. N=1318 Female: 23.9% Black: 25.3% White: 42.7%	• Multiple logistic regression analysis showed nine factors significantly associated with readiness to change smoking behavior: male gender; a previous quit attempt; a perception of risk of lung cancer from smoking; greater desire to quit smoking; a perception that smoking bothers others; doctor advice to stop smoking at last health visit; records kept for scheduling doctor appointments; thinking that losing a pleasure would not be a problem if quit smoking; and poorer self-reported health status. Males were twice as likely to be seriously	These findings provide direction for developing interventions for similar low income, high risk populations. The results indicate that it may be useful to heighten awareness of the risks of smoking and to assure that smokers receive clear quit smoking messages from their providers. Women need special attention since they are less ready to quit than men.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				thinking about quitting than females (OR = 2.16, CI = 1.19,3.9).	
113. Tseng, M., Yeatts, K., Milikan, R., Newman, B. (2001). "Area level characteristics and smoking in women." American Journal of Public Health 91(11): 1847-1850.	**Cross-sectional survey** This study examined whether area-level characteristics are associated with individual smoking behavior among women. **SES variables Measured**: Poverty level Education Industry/Other	NC 1993-1996	Identified from North Carolina Division of Motor Vehicles and US health Care Financing Administration records and were randomly recruited to match cast patients in a Breast Cancer study by age and race. N=648 Mean Age: 52 Black: 42%	• In muitivariate logistic regression models, no area characteristics were clearly associated with a history of smoking. • Among those who had ever smoked, continued smoking was associated with living in low-education areas (odds ratio [OR] = 1.7,95% confidence interval [CI] = 1,0,2.9), high unemployment areas (OR=1.7,95% Ci = 1.0,2.8), and high-crime areas (OR=1.6,95% CI = 0.8,3.2).	The present findings are consistent with a growing literature suggesting that area-level social and economic disadvantage influences individual smoking behavior.
114. Webb, M. S. and M. P. Carey (2008). "Tobacco smoking among low-income Black women: demographic and psychosocial correlates in a community sample." Nicotine & Tobacco Research 10(1): 219-229.	**Cross-sectional survey** This study sought to identify demographic and psychosocial correlates of cigarette smoking among low-income U.S. Black females. **SES variables Measured**: Income Education	NY	Women self-identified as African American, were aged 16-45 years, were not pregnant, and had no births during the previous 6 months. Women aged 18 or older provided written informed consent; 14 participants who were less than 18 years of age provided oral assent and written parental consent. N=263	• Results indicated that 30% of the sample were nonsmokers, 44% reported light smoking, 6% were moderate smokers, and 20% were heavy smokers. • Both regression models explained a significant proportion of the variance in smoking, accounting for 57% and 31%, respectively. • Across smoking categories, the odds of smoking were greater for older women who had less education, lower income, greater perceived stress, and more frequent heavy alcohol use. • Number of cigarettes smoked daily was associated with similar factors,	A more complete understanding of the demographic and psychosocial factors associated with smoking among Black women can inform prevention and cessation strategies aimed at this population.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				including less education and income, and older age. • Heavy smoking was predicted by having fewer children. Current drinking was associated with light and heavy smoking, and with the extent of daily smoking. Anger was not a predictor of smoking in either model. • The prevalence of smoking even 1 cigarette/day in this urban sample of U.S. Black women (70%) was notably higher than the national average of 21%	
115. Weden, M. M., Astone, N. M., Bishai, D. (2006). "Racial, ethnic, and gender differences in smoking cessation associated with employment and joblessness through young adulthood in the US." Social Science & Medicine 62(2): 303-316.	**Longitudinal Cohort** The dynamics of labor force participation and joblessness during young adulthood influence access to social and material resources and shape exposure to different sources of psychosocial strain. Differences in these dynamics by race, ethnicity, and gender are related to changes in a behavioral determinant of poor health (tobacco use) for young adults. **SES variables Measured**: Income Insurance status Education Industry/Occupation	National 2005	The data are from the US Bureau of Labor Statistics (BLS), National Longitudinal Survey of Labor Market Experience, Youth Survey 1979-1998 (NLSY79). N=4050	• There are three main findings: (1) joblessness is more strongly associated with persistent daily smoking among women than among men; (2) fewer social and economic resources for women out of the labor force compared to employed women explains their lower cessation rates; and (3) lower cessation among unemployed women compared to employed women can only partially be explained by these resources. • Contextual factors such as social norms and psychosocial strains at work and at home may play a unique role among European American men and women in explaining gender differences in smoking. • Regardless of race, ethnicity, or gender, greater education has a consistently significant and	These findings illustrate how differential access to work-related social and economic resources is an important mediator of poor health trajectories. The findings on gender differences highlight the need for further research on the conditions of the workplace which drive the disparate experience of employment between men and women. Our research suggests that progress in reducing inequalities in smoking cessation may resume when societal underprivileges among young women and minorities are reduced.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				positive association with cessation, stronger for European Americans.	
116. Wen, K.-Y., Miller, S. M., Lazev, A., Fang, Z., Hernandez, E.. (2012). "Predictors of smoking cessation counseling adherence in a socioeconomically disadvantaged sample of pregnant women." Journal of Health Care for the Poor and Underserved 23(3): 1222-1238.	**Longitudinal Cohort** To understand better the barriers to cessation participation, we studied low income inner-city pregnant women who were enrolled in either a standard or highly intensive quit smoking counseling program.	PA	To understand better the barriers to cessation participation, we studied low income inner-city pregnant women who were enrolled in either a standard or highly intensive quit smoking counseling program. N= 277 Mean Age: 26 Female: 100 Black: 56% White: 31% Hispanic: 12%	• The results showed that 1) in the prenatal phase, non-attendance was predicted by a greater number of cigarettes smoked per day; • 2) in the postpartum follow-up phase, non-attendance was predicted by lower educational level and higher self-efficacy for quitting smoking; and • 3) participants with more children living at home were at increased risk of rescheduling the postpartum follow-up session.	These findings suggest that innovative delivery strategies are needed more effectively to assess and address risk factors for non-adherence to smoking cessation trials among underserved minority pregnant/postpartum smokers. By delineating the patient factors that are modifiable, interventions can be developed that improve the efficacy of existing programs.
117. Wetter, D. W., Cofta-Gunn, L., Irvin, J. E., Fouladi, R. T., Wright, K., Daza, P. Mazas, C., Cinciripini, P. M., Gritz, E. R. (2005). "What accounts for the association of education and smoking cessation?" Preventive Medicine 40(4): 452-460.	**Longitudinal Cohort** The current study prospectively examined the association of education with smoking cessation as well variables that might account for that association among employed adults residing in the southeastern United States.	Texas 1990-1994	The current study utilized the cohort of baseline smokers who also provided data at follow-up. Baseline current smokers were defined as individuals who had smoked at least 100 cigarettes in their lifetime, had smoked in the past 7 days, reported that they were a current smoker, and	• A strong educational gradient in cessation was evident. There was an almost five-fold increase in abstinence between the highest and lowest educational levels. Only 6% of smokers with less than a high school (HS) degree quit smoking during the 4-year study period, whereas 17% of smokers with a HS degree but no college degree and 28% of smokers with at least a college degree quit smoking. Our hypotheses that accounting for tobacco and job-related variables would reduce the educational	Education appeared to uniquely contribute to the prediction of smoking abstinence over and above the effects of demographic, environmental, tobacco dependence, transtheoretical model, and job-related variables. Obtaining a better understanding of how or why education influences smoking cessation could contribute to reducing the educational gradient in

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			reported that they did not use smokeless tobacco. N=743	gradient in smoking cessation were not supported. • Although job-related characteristics were related to educational level, they were largely unrelated to abstinence. Conversely, tobacco variables from both the addiction and transtheoretical models were significant predictors of abstinence (cigarettes/day, minutes to first cigarette, confidence in quitting, contemplation ladder, stage of change, and the pros and cons of smoking), but were generally unrelated to educational level. Only two variables were significantly related to both education and abstinence (cigarettes/day, pros of smoking) and neither of these variables meaningfully reduced the association of education with abstinence even when examined together in a single model.	abstinence and warrants further research attention.
118. Winkleby, M. A., Schooler, C., Kraemer, H. C., Lin, J., Fortmann, S. P. (1995). "Hispanic versus white smoking patterns by sex and level of education." American Journal of Epidemiology 142(4): 410-418.	**Cross-Sectional Survey** The current study examines differences within sex and educational subgroups between Hispanics and Whites. The study uses cross-sectional data from surveys in California from 1979-1990 and includes 1088 Hispanic women and men and pairwise matched white women and men aged 25-74. The pairs were	CA 1979-1990	Data are from the Stanford Five-City Project, a large population-based cardiovascular disease prevention trial. The Five-City Project includes data from five cross-sectional surveys, conducted approximately biennially from 1979	• There were large differences in smoking prevalence rates between Hispanic and white pairs with low educational attainment. White women and men with less than a high school education were approximately twice as likely to be current daily cigarette smokers as were similarly educated Hispanic women and men (46.1 vs. 20.6% for women and 52.7 vs. 30.I% for men). As the level of education increased, these ethnic differences	These data confirm ethnic differences in smoking behavior and identify the high smoking rates of white men and women with low educational attainment, thus delineating an often unrecognized group toward whom tobacco prevention and cessation activities should be directed. Intervention activities should include training

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
	matched on age, sex, educational level, city of residence, and survey time period.		to 1990. This analysis uses data from four of the five surveys because language spoken was not collected at the fourth survey. Households were randomly selected from two treatment cities (Monterey and Salinas) and two control cities (Modesto and San Luis Obispo) in California that ranged in size from 35,000 to 145,000 residents. A fifth city was monitored for morbidity and mortality events only. All persons aged 12--74 years who planned to live in the study areas for 6 or more months were eligible to participate. Adults aged 25--74 years are included in this analysis. 234 Hispanics did not have white matches and were excluded. 197 of the 234 excluded had fewer	in smoking decreased and became negligible among those who completed college. Virtually all low-educated white men (92.5%) and most low-educated white women (73.1%) were either current or former daily smokers. There were large ethnic differences in rates of smoking cessation advice from a physician; only 8.3% of low-educated Hispanic men who were current daily smokers had ever been advised by a physician to stop smoking, compared with 59.6% of low-educated white men. • Low educated white men (former and current smokers) reported the earliest age of smoking onset. Low educated white men and women reported highest cigarette consumption per day, over twice their Hispanic counterparts. Quitting on one's own was the most frequently cited method of smoking cessation by all ex-smokers. Ethnic difference between smoking became negligible among those with higher educational attainment. Whites with low educational attainment have negative social influences that strongly support their smoking behavior.	skills to resist social pressures. Hispanic men would profit from efforts to increase their exposure to smoking education and cessation advice.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
			than 12 years of school. N=1088		
119. Yu, S. M., Park, C. H., Schwalberg, R. H.. (2002). "Factors associated with smoking cessation among U.S. pregnant women." Maternal & Child Health Journal 6(2): 89-97.	**Cross-sectional survey** This study examines smoking and smoking cessation behaviors among U.S. pregnant women and seeks to identify the sociodemographic correlates of smoking cessation in pregnancy.	National 1998	Any woman between the ages of 18 and 49 had a live birth within the past 5 years who completed the National Health Interview Survey (NHIS) supplement on Pregnancy and Smoking. N= 5288 Female: 100% Black: 13.2% White: 65.9% Other: 4.6% Hispanic: 16.3%	• The women most likely to attempt to quit smoking in pregnancy were Hispanic women (OR = 3.09) and women who have smoked for less than 10 years (OR = 2.75 for women aged 18-24.) In general, for the groups at highest risk of smoking at the start of pregnancy, the odds of being a persistent smoker were higher than the odds of being an unsuccessful quitter, which in turn were higher than the odds of quitting successfully. • The factors associated with attempts to quit included Hispanic ethnicity, higher education, above-poverty income, and shorter duration of smoking, while the combined effect of age and smoking duration was the only one significantly associated with successful quitting. In every age group, longer smoking duration was associated with lower likelihood of attempting to quit as well as successful quitting. The factors associated with attempts to quit included Hispanic ethnicity, higher education, above-poverty income, and shorter duration of smoking, while the combined effect of age and smoking duration was the only one significantly associated with successful quitting.	The factors most strongly associated with attempts to quit smoking were Hispanic ethnicity and the combined effect of age and smoking duration. Future smoking cessation and relapse prevention programs should be developed, taking into consideration the critical factors of age, ethnicity, income, geography, and addiction. Exploring the protective effects of the Hispanic culture might shed light on the motivational factors needed in smoking cessation for other ethnic groups. In addition, the role of nicotine dependence in smoking cessation directs us to focus on the physiological and psychological effects of smoking that transcend sociodemographic stratification.The role of geographical difference in predicting attempted cessation also leads to questions on the role of

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
				In every age group, longer smoking duration was associated with lower likelihood of attempting to quit as well as successful quitting.	such environmental factors as tobacco availability and lifestyle issues.
120. *Zhang, M., Q. An, et al. (2015). Smoking-attributable mortality in American Indians: findings from the Strong Heart Study. European Journal of Epidemiology 30(7): 553-61. Access No: 25968176	**Prospective** Here we estimated the association of cigarette smoking with cardiovascular disease (CVD), cancer and all-cause mortality in American Indians participating in the Strong Heart Study, a large community-based prospective cohort study comprising of 4549 American Indians (aged 45–74 years) followed for about 20 years (1989–2008).	AZ, OK, SD, ND	Participants in the Strong Heart Study N= 4549 Education ≤H.S. Diploma Men Former: 73.1% Current: 78.5% Education ≤H.S. Diploma Women Former: 70.9% Current: 71.6%	• We found that current smoking was significantly associated with cancer mortality (HR 5.0, [1.9–13.4]) in men, (HR 3.9 [1.6–9.7] in women) and all-cause mortality (HR 1.8, [1.2–2.6] in men, HR 1.6, [1.1–2.4] in women). • PAR for cancer and all-cause mortality in men were 41.0 and 18.4 %, respectively, whereas the corresponding numbers in women were 24.9 and 10.9 %, respectively. • Current smoking also significantly increases the risk of CVD deaths in women (HR 2.2 [1.1, 4.4]), but not men (HR 1.2 [0.6–2.4]). PAR for CVD mortality in women was 14.9 %. • In summary, current smoking significantly increases the risk of CVD (in women), cancer and all-cause mortality in American Indians, independent of known risk factors.	Culturally specific smoking cessation programs are urgently needed to reduce smoking related premature deaths.
121. Zhu, B. P., Giovino, G. A., Mowery, P. D., Eriksen, M. P.	**Cross-sectional survey** This study sought to reassess the relationship	National 1983-1991	US civilian, non-institutionalized adult population. Aged 25 and older.	• The "less than high school graduate" category consisted of two groups with distinct smoking patterns: persons with 0 to 8 years	The relationship between smoking and education is not monotonic. Thus, when evaluating smoking in

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
(1996). "The relationship between cigarette smoking and education revisited: Implications for categorizing persons' educational status." American Journal of Public Health 86(11): 1582-1589.	between cigarette smoking and education.		Participants in the National Health Interview Survey. N= 200377	and persons with 9 to 11 years of education. The latter were the most likely to be current, ever, and heavy smokers and the least likely to have quit smoking, whereas the former were similar to persons having 12 years of education. After 11 years of education, the likelihood of smoking decreased and that of smoking cessation increased with each successive year of education. These results persisted after the statistical adjustment for age, sex, ethnicity, poverty status, employment status, marital status, geographic region, and year of survey.	relation to education, researchers should categorize years of education as follows: 0 to 8, 9 to 11, 12, 13 to 15, and 16 or more years.
122. *Zhuang, Y. L., A. C. Gamst, et al. (2015). "Comparison of smoking cessation between education groups: findings from 2 US National Surveys over 2 decades." American Journal of Public Health 105(2): 373-9. Access No: 25521868	**Cross-sectional** The study examined smoking cessation rate by education and determined how much of the difference can be attributed to the rate of quit attempts and how much to the success of these attempts. Data was analyzed from the National Health Interview Survey (NHIS, 1991-2010) and the Tobacco Use Supplement to the Current Population Survey (TUS-CPS, 1992-2011). Smokers (> 25 years) were divided into lower- and higher-education groups (< 12 years and >12 years).	National	US adult smokers	• A significant difference in cessation rate between the lower- and the higher-education groups persisted over the last 2 decades. On average, the annual cessation rate for the former was about two thirds that of the latter (3.5% vs 5.2%; P<.001, for both NHIS and TUS-CPS). • About half the difference in cessation rate can be attributed to the difference in quit attempt rate and half to the difference in success rate.	Smokers in the lower-education group have consistently lagged behind their higher-education counterparts in quitting. In addition to the usual concern about improving their success in quitting, tobacco control programs need to find ways to increase quit attempts in this group.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Prevalence					
123. Zinser, M. C., Pampel, F. C., Flores, E. (2011). "Distinct beliefs, attitudes, and experiences of Latino smokers: relevance for cessation interventions." American Journal of Health Promotion 25(5 Suppl): eS1-15.	**Cross-sectional survey** Determine the extent to which Latino smokers are using effective interventions for smoking cessation, with particular focus on nicotine replacement therapy (NRT). Related aims were to explore cultural, attitudinal, knowledge, and socioeconomic variables associated with treatment use.	CO 2006	Non-Latino white smokers and Latino smokers living in one of the five Colorado regions constituting the Latino Statewide Tobacco Prevention and Education Network N=1529	• Colorado Latinos report using NRT substantially less often than do non-Latino whites residing in the state. This and other differences in the study were more pronounced in Latinos characterized as low acculturation on the basis of a language preference variable. • Latinos smoke somewhat less than non-Latino whites and report lower levels of dependence. They appear to be motivated to quit but endorse attitudes and beliefs antithetical to NRT use. Health care access was lower among Latinos, and this was related to lower reports of lifetime NRT use. Receipt of recommended practitioner intervention (the "five As") did not differ by ethnicity. Latinos were more likely to report having acted upon practitioner advice to quit.	Results suggested that use of effective cessation interventions among Latinos may be enhanced by education about nicotine addiction and NRT. Policy change to increase health care access also showed promise. Education of Latino smokers about smoking, addiction, and NRT is critically needed, especially among those low in language acculturation. Latinos in general appear to be motivated to quit and receptive to practitioner intervention.

Appendix H: Cessation Intervention Articles

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
1. Ahluwalia, J. S., et al. (2002). "Sustained-release bupropion for smoking cessation in African Americans: a randomized controlled trial." JAMA: Journal of the American Medical Association 288(4): 468-474.	**Randomized, Double-Blind, Placebo-Controlled Trial** Compared a sustained-release form of bupropion hydrochloride (bupropion SR) with placebo for smoking cessation among African Americans.	Community health center, Kansas City	African Americans 18 years of age or older who smoked at least 10 cigarettes per day and were interested in quitting smoking. N=600 Mean age: 44 Female: 70% Male: 30%	• The primary outcome variable was 7-day point prevalence smoking cessation at week 26; defined as having smoked no cigarettes for the previous 7 days. • At 26 weeks, the quit rates were 21% in the treatment and 13.7% in the placebo groups.	Bupropion SR was effective for smoking cessation among an African American inner city population and may be useful in reducing the health disparities associated with smoking. A medication that can help quit smoking and is also associated with less weight gain could play an important role for the health of African Americans.
2. An, L. C., et al. (2010). "The comparative effectiveness of clinic, work-site, phone, and Web-based tobacco treatment programs." Nicotine & Tobacco Research 12(10): 989-996.	**Observational Study** In 2004, participants in Minnesota's QuitPlan programs were provided cessation assistance in person at 9 treatment centers, using group counseling at 68 work-sites, via a telephone helpline, or via the Internet.	State-wide, Minnesota	Current smokers who enrolled in the Minnesota QuitPlan Helpline between July 15 and September 6, 2004. Helpline callers: N=232 Mean age: 41.9 Female: 59.4% Male: 40.6% White: 86% Non-white: 14%	• Helpline callers were much less likely to have any education beyond high school, to be employed, or to have health insurance. • Levels of education, rates of employment, and health insurance were also lower for helpline callers than for the state's population of smokers. • When compared with participants in all programs combined, helpline and website participants were more likely to report having made two or more quit attempts within the 6 months following program enrollment. • Abstinence rates were highest for the helpline, followed by the treatment centers, work-site, and website programs.	The helpline had a greater impact in reach and effectiveness relative to low SES smokers.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
3. Andrews, J. O., et al. (2007). "The effect of a multi-component smoking cessation intervention in African American women residing in public housing." Research in Nursing & Health 30(1): 45-60.	**Randomized Trial** A multicomponent smoking cessation intervention for African American women residing in public housing.	Public housing complexes, Augusta-Richmond County, Georgia	Non-pregnant, non-breastfeeding African American women 18 and older, daily smokers and planning to quit smoking within 6 months. Resident of subsidized housing. N=103 Mean age: 40.2	• Changes in social support and smoking self-efficacy over time predicted smoking abstinence, and self-efficacy mediated 6-month smoking abstinence outcomes. • Six-month continuous abstinence proportions were 27.5% and 5.7% in the intervention and comparison groups, respectively. • The logistic regression modeling showed that group assignment (i.e., intervention or comparison) was a predictor of abstinence, with the intervention group participants six times more likely to quit smoking than the comparison participants (OR=6.18, 95% CI=1.65-23.01).	Findings support the use of a nurse/community health worker model to deliver culturally tailored behavioral interventions with marginalized communities.

4. Barbeau, E.M., et al. (2006). "Results of a union-based smoking cessation intervention for apprentice iron workers (United States)." Cancer Causes & Control 17(1): 53-61.	**Feasibility Study**
	
	Evaluation of the feasibility and effect size of a smoking cessation intervention among unionized apprentice iron workers.
		Apprentice hall for iron workers, Boston, MA	Adults 18 or older and enrolled in the iron workers apprenticeship program.
			
			N=337
			>51years: 51.7%
			
			Female: 3%
			Male: 97%
			
			African American: 15.7%
			White: 71%
			Hispanic: 5%
			Other: 8.3%
				• Of the 139 apprentices who were categorized as current smokers at baseline, 27 reported that they had not smoked in the past 7 days at the time of the final survey, for an abstinence rate of 19.4%.
				• There were statistically significant positive changes in:
				  ○ Intention to quit among current smokers within 6 months (p= 0.04) and 30 days (p=0.03)
				  ○ Self-efficacy to quit within 6 months (p=0.02) and 30 days (p=0.0002)
				  ○ Reductions in number of days smoked in the last 30 days (p=0.5)
					Blue-collar workers are more likely to smoke compared to white-collar workers. Labor union apprenticeship programs represent a promising venue for smoking cessation interventions.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
5. Berman, B.A., et al. (1995) "Targeting adult smokers through a multi-ethnic public school system." Journal of Cancer Education 10, 91-101.	**Randomized Trial** Assessed a tailored preventive health program designed to impact smoking-related knowledge, attitudes and practices.	Public school district, Los Angeles, CA	Parents of K-12 students N=446 Mean age: 36.7 Female: 50.9% Male: 49.1% African American: 14.4% White: 2.2% Hispanic: 83.4% Most participants had been born in Mexico (60.9%) or Central America (17.8%)	• Point-prevalence abstinence rates across groups was 13.2%, 12.9%, and 10.3% at 3, 6, and 12 months. • Overall, 91.8% of those contacted (n=200) at the 12-month follow up reported ever having quit for at least 24 hours during the study. • Nearly half (45.4%) of those enrolled in the study reported themselves in the contemplation/ready-for-action phase at baseline; at 3 and 6 months, those in this stage and the action stage increase to 52.1% and 57.8%, respectively. • At the 12-month follow up, more than 85% of the participants reported having read any of the program materials.	This study suggests that local school systems can play a role in bringing smoking cessation programs to multi-ethnic, low-SES populations. However parents were more difficult to reach and engage than anticipated.
6.*Bernstein, S. L., J. M. Rosner, et al. (2016)."Cell Phone Ownership and Service Plans Among Low-Income Smokers: The Hidden Cost of Quitlines." Nicotine Tob Res. Feb 26. 18 (8): 1791-1793.	**Cross-sectional survey** The study aimed to quantify the use of cell-only telephony among self-pay or Medicaid smokers, assess their calling plans, and estimate the impact of a typical course of QL counseling.	Northeastern United States Urban hospital emergency department	Emergency room visitors N= 773 Medicaid or no insurance: 563 Age: 41.1 Daily cigarette consumption: 8 Male: 48.3% Female: 51.7% Hispanic: 18.3% African American: 35.7% White: 63.1 Landline only: 8.5%	• Seven-hundred seventy-three smokers were surveyed, of whom 563 (72.8%) were low-income, defined as having Medicaid or no insurance. • All low-income smokers had at least one phone: 48 (8.5%) reported land-lines only, 159 (28.2%) land-lines and cells, and 356 (63.2%) cells only. Of the cell phone owners, monthly calling plans provided unlimited minutes for 339/515 (65.8%), at most 250 minutes for 124 (24.1%), and more than 250 minutes for 52 (10.0%). • Another recent trial found that QL users make a median of 1 call lasting	Among low-income smokers, cell phones are often the sole means of telephone access, with many individuals having calling plans that limit the number of available minutes. Therefore, robust use of QLs may impose a substantial financial and logistical burden on low income smokers, and may deter QL use. A policy change exempting calls to QLs from counting against smokers' cell phone calling plans may help to promote

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
			Landline + Cell: 28.2% Cell only: 63.2% Unlimited min: 65.8% <250 min: 24.1% >250 min: 10%	28 minutes, with the 75th and 90th percentiles of calls and minutes at 3 and 4 calls, and 48 and 73.6 minutes, respectively. Thus, robust use of QL services could consume 11%–29% of a low-income smoker's typical 250 monthly cell minutes.	
7.*Bernstein, S. L., G. D'Onofrio, et al. (2015). "Successful Tobacco Dependence Treatment in Low-Income Emergency Department Patients: A Randomized Trial. Annals of Emergency Medicine 66(2): 140-7. Access No: 25920384	**Randomized Controlled Trial** Our objective is to study the efficacy of an intervention incorporating motivational interviewing, nicotine replacement, and quitline referral for adult smokers in an ED. This was a 2-arm randomized clinical trial conducted from October 2010 to December 2012 in a northeastern urban US ED with 90,000 visits per year.	Emergency Department patients in an urban teaching ED in a medically underserved community.	English speaking patients 18 years and older, have Medicaid or no insurance, smoked at least 100 cigarettes in their lifetime, currently daily smoker or sometime smokers, averaging at least 5 cigarettes per day. UC N= 390 Age: 40.2 Male: 51.5% White: 40.3% Black: 39.2% Hispanic: 19.8% Asian/other: .8% Self-pay: 18.2% Medicaid: 81.8% Intervention: N=388 Age: 40.8 Male: 43.8% White: 38.1% Black: 39.9% Hispanic: 20.9% Asian: 1.1%	• Of 778 enrolled subjects, 774 (99.5%) were alive at 3 months. • The prevalence of biochemically confirmed abstinence was 12.2% (47/386) in the intervention arm versus 4.9% (19/388) in the control arm, for a difference in quit rates of 7.3% (95% confidence interval 3.2% to 11.5%). • In multivariable logistic modeling controlling for age, sex, and race or ethnicity, study subjects remained more likely to be abstinent than controls (odds ratio 2.72; 95% confidence interval 1.55 to 4.75).	An intensive intervention improved tobacco abstinence rates in low-income ED smokers. Because approximately 20 million smokers, many of whom have low income, visit US EDs annually, these results suggest that ED-initiated treatment may be an effective technique to treat this group of smokers

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
			Self-pay: 13.1% Medicaid: 86.9%		
8. Bock, B.C., et al. (2014). "Tobacco cessation among low-income smokers: motivational enhancement and nicotine patch treatment." Nicotine & Tobacco Research 16(4): 413-422.	**Randomized Trial** The study tested the relative efficacy of two interventions among low-SES smokers. The first intervention consisted of a prescription for a nicotine patch, brief physician advice, education in patch use, and a brief follow-up telephone call with a health educator (standard treatment). The second intervention included standard treatment plus motivational interviewing.	Hospital-based primary care clinics, New England	English or Spanish-speaking clinic patients 18 or older, current smokers (at least 10 cigarettes/day); uninsured or on Medicaid N= 846 Mean age: 39.6 Female: 68.7% Male: 31.3% African American: 13.1% White: 52.8% Hispanic: 23.4% Other: 11.4% Unemployed: 75.9%	• Direct intervention effects on abstinence rates were not significant. • Study findings indicated no effects of the intervention on psychological predictors of abstinence, other than transient effects on smoking self-efficacy at the one-month follow-up that dissipated over time.	Accounting for its transient effects on smoking self-efficacy, the addition of an MI component to the standard care for smoking cessation did not substantially improve other potential psychological predictors of abstinence at follow-up. It may be that brief motivational interventions need additional telephone or in-person contacts to be effective.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
9. Brandon, T. H., et al. (2012). "Self-help booklets for preventing postpartum smoking relapse: a randomized trial." American Journal of Public Health 102(11): 2109-2115.	**Randomized Trial** Aimed at preventing smoking relapse among pregnant and postpartum women, pregnant women who quit smoking were randomly assigned to either receive the series of "Forever Free for Baby and Me" booklets or usual care.	Via mail, national sample of pregnant smokers	English-speaking women 18 years or older in months 4 through 8 of pregnancy, previous smokers for at least one year, and quit smoking either in anticipation of or during pregnancy. <u>Intervention:</u> N=343 Mean age: 26.2 African American: 3.7% White: 93.9% Hispanic: 5.8% Other: 2.4% <u>Control:</u> N=357 Mean age: 25.4 African American: 5% White: 90.7% Hispanic: 5.7% Other: 4.2%	• The study found a main effect for treatment at 8 months, with the Forever Free booklets yielding higher abstinence rates (69.6%) than usual care (58.5%). • Treatment effect was moderated by annual household income and age. • Among lower income women (<$30,000 yearly income), treatment effects were found at 8 and 12 months postpartum, with respective abstinence rates of 72.2% and 72.1% for the booklets and 53.6% and 50.5% for usual care. • No effects were found for higher income women.	Self-help booklets appeared to be efficacious and offered a low cost modality for providing relapse-prevention assistance to low-income pregnant and postpartum women.
10.*Brunette, M. F., W. Gunn, et al. (2015). "A pre-post pilot study of a brief, web-based intervention to engage disadvantaged smokers into	**Pre-post pilot study** We developed a novel, web-based, motivational, decision-support system that was designed to engage disadvantaged smokers into tobacco	Primary care safety net clinic	18-70 y/o, smoking four cigarettes per day or more, fluent in English, and gave consent. N= 38 Age: 41.7%	• Thirty-nine percent of smokers initiated cessation treatment after using the decision-support system, compared to 3 percent of the comparison group (Fisher's exact = 21.2; p = 0.000). • Over 10 percent achieved continuous abstinence over the 2-month follow-	The data indicate that this web-based, motivational, decision-support system is feasible, satisfactory, and promising in its ability to engage smokers into cessation treatment in a primary care safety net clinic. Further evaluation

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
cessation treatment." Addiction Science & Clinical Practice 10: 3	cessation treatment. We piloted the system among smokers in a primary care safety net clinic.		Male: 14% White: 37% Black or Native American: 0 Non-Hispanic: 38% Years of education: 11.7 Employed: 16 Monthly income: $1527 Cigarettes per day: 17.8	up. Users were satisfied with the program – 100 percent stated they would recommend it to a friend.	research is warranted.
11. Bullock, L., et al. (2009) "Baby BEEP: A randomized controlled trial of nurses' individualized social support for poor rural pregnant smokers." Maternal and child health journal 13, 395-406	**Randomized Trial** Tested the effect of a nurse-delivered telephone social support and eight mailed booklets on smoking cessation in low-income rural pregnant women. In the 2X2 factorial design, women received social support plus booklets, social support alone, booklets alone or usual care.	Rural Women, Infant, Children (WIC) clinics in the Midwest	Rural, pregnant women English-speaking WIC clients 18 years or older, who smoked at least 1 cigarette per day and less than 24 weeks pregnant. N=695 Mean age: 22 American Indian: 1.4% Asian: 0.3% African American: 3.5% White: 91% Hispanic: 1.7% Other: 2.5%	• Intent-to-treat analyses showed no difference across intervention groups and no difference from the controls at delivery and 6 weeks post-partum. • Ad hoc analysis suggests a small treatment advantage (on average four to five percentage points above the control group) for all intervention groups when the authors focused on early-mid pregnancy. • Most of this advantage (4 percentage points) held at the post-partum measurement point. • Partner smoking had no effect on late pregnancy abstinence but post-delivery, the effect was pronounced.	Truly successful interventions with rural low-income women may require more than the brief 3-5 min interventions that are currently proposed. Future studies can extend an intervention to the woman's partner and others in her smoke-saturated environment including provision of pharmacotherapy.
12. Burton, D., et al. (2010). "A phone-counseling smoking-cessation intervention for male Chinese restaurant workers." Journal of	**Quasi-Experimental Study** The intervention consisted of a minimum of 9 proactive phone	Restaurants in New York City	Chinese men employed by a Chinese restaurant, who smoked at least 10 cigarettes per week and were willing to work on quitting smoking.	• Of 137 male employees recruited at their restaurants, 101 participated in the phone-counseling intervention, with 75 completing the program with at least 9 counseling calls. • Found a linear increase in smoking cessation from 0% at Call 1 to 50.7%	The results indicate that combining field outreach with phone counseling over an extended period of time can facilitate smoking cessation for population groups whose environments do not

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
Community Health 35(6): 579-585.	counseling sessions within a 6-month period for each participant recruited at his worksite. All activities were conducted in Chinese languages.		N=101 Median age: 40.5 Primary language: Mandarin: 45.5% Cantonese: 54.5%	at Call 9 for the 75 men who completed the program • At 6 months post program completion, for all 101 participants, found a 32.7% intent-to-treat cessation rate, adjusted to 30.8% by saliva cotinine assessments.	support efforts to quit smoking.
13. Carlini, B. H., et al. (2012). "Reaching out, inviting back: using Interactive voice response (IVR) technology to recycle relapsed smokers back to Quitline treatment--a randomized controlled trial." BMC Public Health 12: 507.	**Randomized Trial** Tested the efficacy of interactive voice response (IVR) in recycling low income smokers who had previously used quitline (QL) support back to QL support for a new quit attempt.	Via telephone, Indiana and Washington State	Participants who enrolled in Indiana or Washington QLs from June to September of 2009 and who had Medicaid or were uninsured; age 18 or older and received services in English. N=521 Female: 60% Male: 40% Asian: 0.95% African American: 5.75% Hawaiian/Pacific Islander: 3.3% White: 81.6% Hispanic: 3.8% Other: 4.6%	• The re-enrollment rate was 3.3% for the control group and 28.2% for the intervention group (p<.001). • Logistic regression results indicated an 11.2 times higher odds for re-enrollment of the intervention group than the control group (p<.001). • Results did not vary by gender, race, ethnicity, or level of education • Recycled smokers were older (mean=45.2) than smokers who declined a new treatment cycle (mean=41.8) (p=0.013). • The main barriers reported for not engaging in a new treatment cycle were low self-efficacy and lack of interest in quitting. • After delivering IVR messages targeting these reported barriers, 32% of the smokers reporting low self-efficacy and 4.8% of those reporting lack of interest in quitting re-engaged in a new QL treatment cycle.	Proactive IVR outreach is a promising tool to engage low income, relapsed smokers back into a new cycle of treatment.
14.*Chiang, K. and B. Borrelli (2014). “Income predictors of smoking cessation	**Randomized Controlled Trial**	US	N= 151 Hispanics Age: 36.9% Female: 72.9%	• Hispanics without debt had 18.5 times higher odds of 30-day cessation (odds ratio = 18.47, 95% confidence interval = 3.26-104.66, p < .01) and	Debt level may better measure socioeconomic inequities by capturing objective and subjective

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
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among Hispanics." Journal of Health Psychology 19(7): 869-76. Access No: 23584511	Higher socioeconomic status smokers are more successful at smoking cessation. Few studies have investigated the prospective association between multiple measures of socioeconomic status and Hispanic smoking cessation. We assessed four measures to examine which predicted smoking cessation within a RCT		Country of Origin Puerto Rico: 51.9% Dominican Republic: 22.6% Central America: 10.5% South America: 6.0% Mexico: 2.3% United States: 1.5% Cuba: .8% Other: 3.8% Education < or = H.S.: 76.7% >H.S.: 22.6% <US $12,000: 57.1% >or = US$ 12,000: 37.6% Unemployed: 64% Employed: 34.5%	11-fold increased odds of 7-day point prevalence abstinence (odds ratio = 11.32, 95% confidence interval = 2.45-52.24, p < .01) at 3-month follow-up • Yearly income, education, work status, money to see a doctor, and money for medications were not predictive of smoking cessation.	social status associated with Hispanic smoking cessation.
15. Christiansen, B. A., et al. (2010). "Closing tobacco-related disparities: Using community organizations to increase consumer demand." American Journal of Preventive Medicine 38(3 Suppl): S397-402.	**Randomized Trial** Smokers seeking emergency assistance from the Salvation Army were randomly assigned to either a very brief (30 second) smoking intervention condition or to a control condition.	Salvation Army offices, Wisconsin	Salvation Army clients age 18 or older and current smokers. <u>Intervention:</u> N= 147 Mean age: 40.1 Female: 53% Male: 47% <u>Control:</u> N=148 Mean age: 39	• The brief intervention increased the likelihood that smokers would seek help when they decided to quit (61 vs 44%; p<0.05). • The intervention did not affect intention to quit in the next six months or perceived difficulty of quitting.	This study demonstrates that a community agency can provide a very brief tobacco intervention without impairing clients' perceptions of the agency or interfering with the staff's ability to serve the agency's core mission. The vast majority of smokers thought it appropriate to be asked about their smoking, as did staff.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
			Female: 45% Male: 55%		
16.*Christiansen, B. A., K. M. Reeder, et al. (2015). "Motivating Low Socioeconomic Status Smokers to Accept Evidence-Based Smoking Cessation Treatment: A Brief Intervention for the Community Agency Setting." Nicotine & Tobacco Research 17(8): 1002-11. Access No: 26180226	**Randomized Controlled Trial** The purpose of this study was to test the impact of a brief intervention addressing these beliefs on making calls to a telephone quit line.	WI 2012-2014 Salvation Army sites.	Low income adult smokers seeking assistance such as temporary housing, meals, food, and/or temporary payment for utilities/rent from Salvation Army sties. N= 522 Control: 102 Randomized: 420	• Compared to individuals in the two control groups, individuals receiving the experimental intervention were significantly more likely to call the WTQL to initiate a quit attempt immediately following the intervention (12.2% [n = 17] vs. 2.2% [n = 3] for attentional-control and 1.4% [n = 2] for low contact group). Moreover, this rate approached the rate of calling amongst initially motivated participants (15.7%) • At the 3-month follow-up, 29.2% of the motivated participants reported not smoking in the previous 7 days, as did 12.3% of the intervention participants and 7.3% of the participants in the control groups (the two control groups did not differ from each other).	A brief, targeted motivational intervention focusing on cessation goals and beliefs increased the initiation of an evidence-based tobacco cessation treatment by low-SES smokers
17. Cupertino, A. P., et al. (2010). "Feasibility of a Spanish/English computerized decision aid to facilitate smoking cessation efforts in underserved communities." Journal of Health Care for the Poor &	**Quasi-Experimental Study** Evaluation of preliminary outcomes of a computer-based, bilingual smoking cessation decision-aid to facilitate utilization of resources in an	Computer kiosk at safety net clinics and health fairs, Kansas	Smokers age 18 and older. N=128 Mean age: 45.1 Female: 70% Male: 30% American Indian: 2.2% African American: 16.3%	• During completion of the decision-aid, 95.3% requested pharmacotherapy, and 70.3% opted for counseling. • Among those reached for two-month follow-up (69.5%), 20.2% reported they had quit smoking. • Using an intent-to-treat analysis, assuming that all participants who did not complete the follow-up are smokers, we found that 11.8% of	Few participants had previously used cessation resources. Computerized decision aids offer great promise for promoting increased education and access to tobacco use treatment for underserved smokers. Decision aids can provide decision support that staff at safety net

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
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Underserved 21(2): 504-517.	underserved population.		White: 42.4% Other: 38% Identified Latino: 46.7%	participants reported seven-day smoking abstinence.	clinics may not have time to give.
18. Curry, S. J., et al. (2003). "Pediatric-based smoking cessation intervention for low-income women - A randomized trial." Arch Pediatr Adolescent Med. (3):295-302	**Randomized Trial** A two arm (usual care vs intervention) targeting low-income women. During the intervention clinic visit, women received a motivational message from the child's clinician, a guide to quitting smoking, a brief motivational interview with a study interventionist or nurse, and up to 3 follow-up calls.	Pediatric clinics serving low-income families in the Seattle, WA, area	Women age 18 or older; whose children received care at participating clinics, no plans to move from the Seattle area in the next 4 months and able to provide a telephone contact number. N=303 African American: 63% White: 33% Hispanic: 2.5%	• Follow up response rates at 3 and 12 months were 80% and 81%. • At both follow-ups, abstinence rates were twice as great in the intervention group as in the control group (7.7% vs 3.4% and 13.5% vs 6.9%, respectively). The 12-month difference was statistically significant. • The percentage of women reporting a serious quit was significantly higher in the intervention group.	This study shows evidence for long-term abstinence in this population after a brief cessation intervention. Use of telephone counseling minimizes time required by clinicians.
19. Darity, W.A., et al. (1997). "A multi-city community based smoking research intervention project in the African-American population." International Quarterly of Community Health	**Non-Randomized Comparison Study** A community-based study to determine the most effective educational interventions to reduce smoking among African-American smokers. One middle-income and one lower-income	Predominately African American neighborhoods in Springfield, MA; Hartford, CT; Durham, NC; and Columbia, SC	Adult African-American smokers. Follow-up data was collected on a random sample of smokers. N=2,544	• Based upon a survey eighteen months after baseline data was collected, all four measures of cigarette smoking behavior (non-smoking point prevalence, quit attempts, smoke free days and decrease in number of cigarettes smoked) showed a strong statistically significant reduction of personal smoking behavior among those in neighborhoods receiving active interventions versus the passive group.	An analysis of process variables suggests that, within this African-American community, face-to-face approaches along with mass media, mailings, and other less personal approaches were more effective in reducing personal smoking behavior than media, mailings, and

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
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Education 17(2): 117-130.	area in each city were designated as passive intervention sites while the remaining middle- and low-income areas were the active intervention sites. Interventions included a media blitz, neighborhood health advocates and smoking cessation workshops.				other impersonal approaches alone.
20. Davis, J.M., et al. (2014). "Randomized trial on mindfulness training for smokers targeted to a disadvantaged population." Substance Use & Misuse 49(5): 571-585.	**Randomized Trial** Compared smoking cessation rates in a Mindfulness Training for Smokers (MTS) intervention to a usual care therapy (telephone quitline) in a moderately low SES population.	Community setting, Madison Dane County, Wisconsin	Adult smokers living in the study area. N=196 Mean age: 41.65 Female: 50% Male: 50% American Indian: 2.04% African American: 11.73% White: 77% Hispanic: 1.53% Other: 7.65% High school education or less: ~50%	• Primary outcome measures of the study (7-day point prevalence abstinence at 4 and 24 weeks post quit) did not reach statistical significance in an intent-to-treat analysis, but did reach statistical significance when comparing treatment initiators at 4 weeks. • Continuous abstinence rates were also significant between groups for treatment initiators. • The MTS group compared with the control group showed significant improvement on self-report measures of emotion regulation, attentional control, and mindfulness over the treatment period.	This study suggests that mindfulness therapy showed success and treatment acceptance in a disadvantaged population. The study also suggests that MTS participation may lead to changes in emotion regulation, attentional control, and mindfulness, and that these changes may increase a smoker's chances of obtaining abstinence.
21. Dornelas, E.A., et al. (2006). "Efficacy and cost-	**Randomized Trial**	Clinics in Hartford, CT	Pregnant women 18 years or older, 30	• At follow-up, 28.3% and 9.4% of participants in the experimental intervention and 9.6% and 3.8% of	Traditional models for smoking cessation intervention may be

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
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effectiveness of a clinic-based counseling intervention tested in an ethnically diverse sample of pregnant smokers." Patient Education and Counseling 64(1-3): 342-349.	Compared usual care from the health care provider to an experimental counseling intervention for smoking cessation delivered by mental health counselors, with planned telephone follow-up, in addition to usual care from the health care provider.		weeks gestation or less, and current smokers. N=105 Mean age: 26.1 Age range: 18-42 African American: 6% White: 17% Hispanic: 66% Other: 6%	patients in usual care were abstinent at end of pregnancy (p=0.015) and 6 months post-partum, respectively (p=0.251). • Cost of the intervention was $56 per patient and cost to produce a non-smoker at end of pregnancy was $299.	insufficiently intense to address the complex array of psychological and environmental stressors facing many low-income pregnant smokers. This model for intervention was cost-effective and was associated with significantly lower smoking rates at end of pregnancy.
22. Eakin E., et al (1998). "Reaching those most in need: Participation in a Planned Parenthood smoking cessation program." Annals of Behavioral Medicine 20(3): 216-220.	**Effectiveness Study** Evaluation of the representativeness of women approached and enrolled in a brief smoking cessation intervention conducted in Planned Parenthood clinics. Chart audits were conducted to determine the percent of clients who had smoking status identified.	Clinics in Portland, OR.	Female Planned Parenthood clients between 15 and 35 years of age. N=623 Mean age: 24.1 White: 88% Asian: 4% Hispanic: 3% African American: 1% American Indian: 1% Other: 3%	• Seventy percent of eligible smokers were approached about study participation and 74% of those approached participated. • There were no significant differences between those approached and those not approached or between those who participated versus those who did not on a host of sociodemographic variables.	Results indicate that it is possible to recruit young, lower income female smokers into a smoking cessation intervention. The main reason for non-participation was lack of time. This underscores the importance of planning convenient, brief interventions that are accessible for women who smoke.
23. English, K.C., et al. (2010). "Translating public health knowledge into practice:	**Process Evaluation** Examined the experiences of a community-academic	Homes of participants in Downstate New York Healthy Start (DNYHS)	African American and Hispanic women in targeted zip codes who were pregnant or	• The successful implementation of this intervention appears to be attributable to the following factors:	This project highlights the value of the LHA approach in addressing a critical health disparity experienced by low-

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
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development of a lay health advisor perinatal tobacco cessation program." Journal of public health management and practice : JPHMP 16(3): E9-E19.	partnership in designing, developing, and implementing an evidence-based, lay-health advisor (LHA) driven perinatal tobacco cessation program. This study included 5A's protocol design, lay health advisor training, and process evaluation.		parenting a child younger than 2 years 2007 DNYHS participants: • African American: 64% • Hispanic: 24% • White: 10% • Other: 2%	○ (1) the utilization of a scientifically validated tobacco cessation intervention model and ○ (2) the emphasis on continuous LHA training and capacity development. • Observational data indicate that five of the 46 clients (11%) who reported tobacco use at intake quit smoking during their enrollment in the program. Each of these clients has also remained smoke-free since her initial quit date. • One-quarter of the clients who smoked reported a positive change in smoking behavior during enrollment in the program (reduction in cigarettes, etc).	income and minority populations and the importance of rigorous attention to LHA capacity development.
24. Fisher, E.B., et al. (1998) "Neighbors for a smoke free north side: evaluation of a community organization approach to promoting smoking cessation among African Americans." American Journal of Public Health 88, 1658-1663	**Effectiveness Study** Evaluated a community organization approach promoting nonsmoking among residents of low-income, African American neighborhoods. Components included volunteer wellness councils to promote smoking cessation classes, billboards, door-to-door	Neighborhoods in St. Louis, MO	Neighborhood residents, mostly low-income and African American.	• The program was successful in engaging audience members in its governance and in instigating numerous and diverse neighborhood activities to promote nonsmoking. • The prevalence of smoking declined from 34% to 27% in program neighborhoods but only from 34% to 33% in comparison neighborhoods (similar community in Kansas City, MO).	A community organization approach emphasizing local authority for program decisions and involvement of informal networks may have an appreciable impact on smoking among residents of low-income African American neighborhoods.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
	campaigns and a "gospelfest."				
25. Fu, S.S., et al. (2008). "Race and nicotine replacement treatment outcomes among low-income smokers." American Journal of Preventive Medicine 35(6 Suppl): S442-448.	**Prospective Cohort Study** Minority smokers may respond differently to treatment interventions than white smokers. This study compared long-term cessation outcomes among four racial/ethnic groups after an aided quit attempt using nicotine replacement therapy (NRT).	Minnesota	Minority smokers 18 years or older who filled a NRT prescription from Minnesota Health Care Programs (Medicaid). Subjects were randomly selected using a stratified random sampling plan. N=1,019 White: 33% African American: 30% American Indian: 29% Asian: 8%	• Overall, abstinence outcomes did not significantly vary by race. • Unadjusted comparisons show that among survey respondents, at 8 months, 7-day point prevalence abstinence was 13.8% among whites, 13.6% among blacks, 14.1% among American Indians/Alaska Natives, and 20.7% among Asians (p=0.42). • Similarly, the 30-day duration abstinence was 10.0% among whites, 11.5% among blacks, 8.9% among American Indians/Alaska Natives, and 18.3% among Asians (p=0.14).	These findings indicate that racial/ethnic minorities are as likely to quit smoking at a level similar to whites when using cessation treatment that includes NRT. Given documented disparities in the use of evidence-based cessation treatments such as NRT, interventions are sorely needed to improve access and utilization of these treatments in racial/ethnic minority groups.
26.*Fu, S. S., M. van Ryn, et al. (2016). "Proactive tobacco treatment offering free nicotine replacement therapy and telephone counselling for socioeconomically disadvantaged smokers: a randomised clinical trial." Thorax. May;71(5):446-53.	**Randomized clinical trial** Evidenced-based tobacco cessation treatments are underused, especially by socioeconomically disadvantaged smokers. The Offering Proactive Treatment Intervention trial tested the effects of a proactive outreach tobacco treatment	MN	Smokers enrolled in Minnesota Health Care Programs (state's publicly funded healthcare program for low-income populations) N= 2406 Medicaid: 72.2% MinnesotaCare: 27.3% Female: 70.6% Non-Hispanic White: 78.4%	• The proactive intervention group had a higher prolonged abstinence rate at 1 year than usual care (16.5% vs 12.1%, OR 1.47, 95% CI 1.12 to 1.93). • The effect of the proactive intervention on prolonged abstinence persisted in selection models accounting for non-response • In analysis of secondary outcomes, use of evidence-based tobacco cessation treatments were significantly greater among proactive outreach participants compared with	Population-based proactive tobacco treatment increases engagement in evidence-based treatment and is effective in long-term smoking cessation among socioeconomically disadvantaged smokers. Findings suggest that dissemination of population-based proactive treatment approaches is an

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
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	intervention on population-level smoking abstinence and tobacco treatment use among a population-based sample of socioeconomically disadvantaged smokers.		Black: 10.6% American Indian: 6.9% Hispanic: 1.8% Asian: 2.3% Cigarettes per day: 13.6	usual care, particularly combination counselling and medications (17.4% vs 3.6%, OR 5.69, 95% CI 3.85 to 8.40).	effective strategy to reduce the prevalence of smoking and socioeconomic disparities in tobacco use.
27.*Garey, L., L. R. Reitzel, et al. (2015). "Subjective social status and readiness to quit among homeless smokers." American Journal of Health Behavior 39(2): 157-66. Access No: 25564827	**Randomized Trial** To explore the predictive value of subjective social status (SSS-US and SSS-Community) on readiness to quit among 245 homeless smokers.	Dallas, TX	Homeless smokers N=245	• Higher SSS-US (p = .02) and SSS-Community (p < .001) predicted greater readiness to quit in the total sample. These relationships upheld for men (p's <. 01), but only SSS-Community predicted readiness to quit for women (p = .02).	Higher SSS is associated with greater readiness to quit among homeless smokers. SSS-Community may be a more relevant index of SSS for women relative to SSS-US. Results suggest SSS may be a factor that contributes to smoking, disease, and health disparities.
28. Glasgow, R.E., et al. (2000). "A brief smoking cessation intervention for women in low-income planned parenthood clinics." American Journal of Public Health 90, 786-789. **Also see Eakin et al for a related study.**	**Randomized Trial** Female smokers were randomly assigned either to advice only or to a brief intervention that involved a 9-minute video, behavioral counseling, clinician advice to quit, and follow-up telephone calls.	Planned Parenthood clinics, Portland, OR	Female smokers 15 to 35 years old and attending Planned Parenthood. Mean age: 24 <u>Intervention</u> • N=578 • White: 90% • Other: 10% <u>Control</u> • N=576 • White: 88%	• Results revealed a clear, short-term intervention effect at the 6-week follow-up (7-day self-reported abstinence: 10.2% vs 6.9% for advice only, P<0.05) and a more ambiguous effect at 6 months (30-day bio-chemically validated abstinence: 6.4% vs 3.8%, NS). • Almost all women assigned to intervention received provider advice, more than 90% received counseling, and 85% saw the targeted video. • In contrast, implementation of the follow-up counseling calls was poor; only 43% of participants received a call. Some women (26%) did not want	This brief, clinic-based intervention appears to be effective in reaching and enhancing cessation among low-income female smokers, a traditionally underserved population. Limitations include difficulties in completing follow-up telephone counseling among this population.

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Cessation Intervention					
			• Other: 12%	to be called; others were very difficult to reach.	
29. Gordon, J.S., et al. (2005). "The impact of a brief tobacco-use cessation intervention in public health dental clinics." Journal of the American Dental Association 136(2): 179-186; quiz 230-171.	**Quasi-Experimental Study** Explored a brief intervention implemented by dental clinicians including the 5A's, NRT and self-help materials.	Public health dental clinics, Portland and Eugene, OR	Dental patients who were current smokers <u>Intervention:</u> N=190 <u>Control:</u> N=178	• Differences in self-reported quitting by condition between participants in the two groups were significant across all endpoints. • Patients in the intervention group were more likely to quit than those receiving usual care (15.5 versus 4.3%) and after 12 months (18.8 versus 4.6%).	The results of this study suggest the viability and effectiveness of delivering a tobacco intervention to low-income smokers via public dental practitioners.
30.*Griffin, J. L., K. S. Segal, et al. (2015). Barriers to telephone quitline use among methadone-maintained smokers. Nicotine & Tobacco Research 17(8): 931-936.	**Randomized Controlled Clinical Trial** Drug users have high rates of tobacco use and tobacco-related disease. Telephone quitlines promote smoking cessation, but their reach among drug users is unknown. We thus aimed to assess utilization of and barriers to telephone quitlines among methadone-maintained smokers.	NY Methadone Treatment Program Clinical Trial of Varenicilne	Opioid-dependent smokers Quitline Users N= 25 Age: 47.3 Male: 36% Hispanic: 60% Black: 20% Non-Hispanic White: 16% ≤ H.S. ed: 76% Employed: 24% Quitline Nonutilizer: N=87% Age: 48.7 Male: 51% Hispanic: 52% Black: 30% Non-Hispanic White: 30%	• Of the 112 subjects enrolled, 47% were male, 54% were Hispanic, and 28% were Black. • All subjects were offered referral, and 25 (22% of study participants) utilized the quitline. • Quitline utilizers (vs. nonutilizers) were significantly more likely to have landline phone service (72 vs. 42%, p = .01), interest in quitline participation (92 vs. 62%, p < .01), and willingness to receive calls (96 vs. 76%, p = .02). • Nonutilizers were significantly more likely to report cell phone service lapse (38 vs. 14%, p = .04), and difficulty charging cell phones (19 vs. 0%, p = .02). Reasons for quitline refusal included: (a) skepticism of	Despite several limitations to quitline access among methadone-maintained smokers, routine quitline referral was associated with 22% utilization. To expand provision of smoking cessation treatment to opioid-dependent smokers, interventions to promote routine quitline referral in substance abuse treatment programs warrant investigation.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
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			≤H.S. ed: 78% Employed: 30%	quitline efficacy; (b) aversion to telephone communication; (c) competing life demands (e.g., drug treatment, shelter); and (d) problems with cell phone service or minutes.	
31.*Grossman, E., J. Chen, et al. (2015). Quality of tobacco treatment in hospitals-system-level and patient-level predictors of gaps in care. Journal of General Internal Medicine 30: S240.	**Randomized Controlled Trial** We aimed to describe care for smokers at two urban safety-net hospitals and determine patient and system characteristics associated with higher-quality care.	NY Two large hospitals in NY	Adult smokers who smoked at least one cigarette in the last 30 days, spoke English, Spanish or Mandarin, were not incarcerated or pregnant or breastfeeding. N= 1618	• We enrolled 1618 participants. Mean age was 48 years (SD 13.4); 35% were Hispanic, and 69 % were non-white race. Twenty-nine percent had Medicaid, and 17 % were uninsured. Fifty-two percent had a high-school diploma, GED, or less • Study participants smoked an average of 12.4 cigarettes per day, and had smoked for an average of 26.6 years. • 88% received some type of counseling to support smoking cessation in the hospital (as documented in the EMR), 44 % were prescribed NRT during hospitalization, and 79 % of participants accepted the NRT more than half of the days it was prescribed. • 18% of participants were prescribed smoking cessation medication on discharge. Patients on inpatient psychiatric units were more likely to receive bedside counseling (odds ratio (OR) 1.53, 95% confidence interval (CI) 1.004-2.33).	Although rates of bedside counseling (as documented in the EMR) are high, there is significant room for improvement in rates of prescribing NRT in hospital and on discharge-with quality differences between hospitals, between units within hospitals, and between patients. Further study is needed to understand how hospital systems and clinician behavior can be improved to boost quality of care for all patients.

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				Patients who smoked more cigarettes per day prior to admission (OR 1.05, 95 % CI 1.04-1.06 for each additional cigarette per day), were born in the United States (OR 1.39, 95% CI 1.02-1.89), were on an inpatient psychiatric unit (OR 2.80, 95% CI 2.12-3.69), and were at the VA site (OR 1.44, 95% CI 1.10-1.90) were more likely to be prescribed NRT in hospital. However, patients who had less education, were non- Hispanic white, were on non-psychiatric units, and were at the non-VA site were more likely to accept most of the NRT prescribed. Patients who smoked more cigarettes per day (OR 1.03, 95% CI 1.02-1.04 for each additional cigarette per day) and were at the VA site (OR 2.76, 95 % CI 1.71-4.45) were more likely to be prescribed NRT on discharge.	
32.*Haas, J. S., J. A. Linder, et al. (2015). "Proactive tobacco cessation outreach to smokers of low socioeconomic status: a randomized clinical rial." [Erratum appears in JAMA Intern Med. 2015 May;175(5):869; PMID: 25938323]. JAMA Internal Medicine 175(2):	**Prospective randomized clinical trial** To evaluate a proactive tobacco cessation strategy that addresses sociocontextual mediators of tobacco use for low-SES smokers. We analyzed EHRs to identify potentially eligible participants and then used interactive voice	Boston MA Primary Care Electronic Health Records	N= 707 Intervention: 399 Age: 49 Women: 67.9% Hispanic: 85% White: 61.4% Black: 26.8% Other: 13.8% H.S. or less: 35.8% Medicare: 26.2% Medicaid: 36.1%	• The intervention group had a higher quit rate than the usual care group at 9 mos (17.8% vs 8.1%; odds ratio, 2.5; 95% CI, 1.5-4.0; number needed to treat, 10). • We examined whether use of intervention components was associated with quitting among individuals in the intervention group: individuals who participated in the telephone counseling were more likely to quit than those who did not (21.2% vs 10.4%; P<.001).	Proactive, IVR-facilitated outreach enables engagement with low-SES smokers. Providing counseling, NRT, and access to community-based resources to address sociocontextual mediators among smokers reached in this setting is effective.

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218-26. Access No: 25506771	response (IVR) techniques to reach out to them.		Private: 35.1% Self-pay: 2.6% Census tract median household income Low: 49.4% Moderate: 50.6% Control: 308 Age: 51 Women: 68.5% Hispanic: 18.8% White: 62% Black: 28.9% Other: 11.7% H.S. or less: 35.3% Medicare: 26.6% Medicaid: 33.5% Private: 39.5% Self-pay: .3% Census tract median household income Low: 45.1% Moderate: 54.9%	• There was no difference in quitting by use of NRT • Quitting did not differ by a request for a community referral, but individuals who used their referral were more likely to quit than those who did not (43.6% vs 15.3%; P<.001).	
33. Hahn, E.J., et al. (2004). "Effectiveness of a quit and win contest with a low-income population." Preventive Medicine 39(3): 543-550.	**Quasi-Experimental Study** Explored the effect of a community-wide quit contest with multiple components, including: a community quit date,	Community setting in Kentucky	Low-income smokers living in study area (control group randomly selected from outside of media campaign area by random digit dialing). <u>Intervention:</u> N=248	• On average, "Quit and Win" study participants were 3.5 times more likely than controls to self-report quitting and 12.8 times more likely to demonstrate confirmed quitting after controlling for baseline differences in stage of change, age, education, and marital status. • The use of specific contest elements was not related to successful quitting.	There is a need to develop and test community-based interventions to promote quitting among many low SES tobacco users, given that low quit rates among low-income populations may be due to lack of programs designed for these populations.

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	provider advice, quit line, media campaign and cash prize lottery.		Mean age: 35.9 Female: 76.6% Male: 23.4% White: 89.8% Other: 10.2% <u>Control:</u> N=290 Mean age: 42.3 Female: 68.1% Male: 31.9% White: 90.3% Other: 9.7%	Use of quitline and NRT was low among participants.	
34. Harley, A.E., et al. (2010). "Multiple health behavior changes in a cancer prevention intervention for construction workers, 2001-2003." Preventing Chronic Disease 7(3): A55.	**Quasi-Experimental Study** Examined whether addressing smoking and fruit and vegetable consumption among construction workers was successful in achieving positive change for both diet and smoking behaviors.	National sample of Laborers' International Union of North America (LIUNA) workers	Members of LIUNA, predominately male and non-Hispanic white.	• The relationship between smoking status and change in fruit and vegetable consumption controlling for baseline intake was significant (P = .02). • Nonsmokers and quitters showed an average increase in fruit and vegetable consumption of 1.92 servings, compared with smokers, who increased their mean fruit and vegetable consumption by 0.58 servings.	This study provides evidence that pairing smoking cessation with increasing fruit and vegetable consumption can be successful in a multiple behavior change intervention designed for high-risk blue-collar workers.
35.*Hickman, N. J., 3rd, K. L. Delucchi, et al. (2015). "Treating Tobacco	**Randomized feasibility and Replication Trial**	Smoke-free psychiatric units from San Francisco	Adult smokers from smoke-free psychiatric units.	• 49 participants were randomized to intervention, 51 to enhanced usual care.	Findings indicate uninsured smokers with serious mental illness can engage in

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
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Dependence at the Intersection of Diversity, Poverty, and Mental Illness: A Randomized Feasibility and Replication Trial." Nicotine Tob Res. 2015 Aug;17(8):1012-21.	This translational randomized clinical trial had the primary aim of testing the TTM-tailored, computer-assisted intervention with stage-matched manual, brief on-unit counseling, and post-hospitalization NRT with a racially/ethnically diverse sample of uninsured smokers with serious mental illness recruited from a large, urban, public hospital.	General Hospital	N= 100 Age: 39.5 Male: 65% Female: 32% Transgender: 3% Caucasian: 44% Black: 27% Hispanic: 9% Asian American: 11% Multiracial: 9% Income: <$10000: 67% ≥$10000: 33% Cigarettes per day: 19.3	• The sample (N = 100, 69% recruitment rate, age M = 40) was 56% racial/ethnic minority, 65% male, 79% unemployed, and 48% unstably housed, diagnosed with unipolar (54%) and bipolar (14%) depression and psychotic disorders (46%); 77% reported past-month illicit drug use. • Prior to hospitalization, participants averaged 19 (SD = 11) cigarettes/day for 23 (SD = 13) years; 80% smoked within 30 minutes of awakening; 25% were preparing to quit. • Encouraging and comparable to effects in the general population, 7-day point prevalence abstinence for intervention versus control was 12.5% versus 7.3% at 3 months, 17.5% versus 8.5% at 6 months, and 26.2% versus 16.7% at 12 months. Retention exceeded 80% over 12 months.	tobacco treatment research with quit rates comparable to the general population. A larger investigation is warranted. Inclusion of diverse smokers with mental illness in clinical trials is supported and encouraged.
36. Hoffman, A.M., et al. (2006). "Computer expert systems for African-American smokers in physicians offices: a feasibility study." Preventive Medicine 43(3): 204-211.	**Feasibility Study** Tested the effects of computer expert systems and stress reduction audiotapes on smoking cessation among African Americans attending medical clinics, for a randomized trial.	Clinics in Chicago, IL	Low income African American smokers who were clients of participating clinics N=98 Mean age: 51.7 Female: 59% Male: 41%	• The interactive computer feedback and the audiotapes were rated as highly interesting, relevant, and new, and most participants tried them. • The predictable relationship between stage and decisional balance was reproduced in this low income African–American population. • Significant stage progression occurred from baseline to 3 months (P=0.011), from 3 to 6 months (P=0.0001), and from baseline to 6 months (P=0.0001).	These data support the feasibility, acceptability and potential efficacy of stage-tailored computer interactive feedback plus stress reduction intervention delivered at the point of service to low-income African Americans.

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Cessation Intervention					
37. Howell, E.M., et al. (2004). "The impact of Medicaid managed care on pregnant women in Ohio: a cohort analysis." Health Services Research 39(4 Pt 1): 825-846.	**Effectiveness Study** Examined the impact of mandatory HMO enrollment for Medicaid covered pregnant women on prenatal care use, smoking, C-section use and birth weight.	Health care locations in 10 counties, Ohio	Pregnant women who had previously given birth to one child and enrolled in Medicaid N=4,917 African American: 51.4% White: 48.6%	• The effects of HMO enrollment on prenatal care use and smoking were confined to Cuyahoga County, Ohio's largest county. • In Cuyahoga, the implementation of mandatory enrollment was related to a significant deterioration in the timing of initiation of care, but an improvement in the number of prenatal visits. • In that county also, women who smoked in their first pregnancy were less likely to smoke during the second pregnancy, compared to women in voluntary counties. • African American women had a relative risk of continuing smoking of 54% compared to white women.	Outcomes for pregnant women may improve with Medicaid managed care implementation. More research is needed to identify the types of health maintenance organization activities that lead to improved outcomes.
38. Jehn, L., et al. (2003) "First Breath prenatal smoking cessation pilot study: preliminary findings." WMJ.; 102(3):29-34.	**Non-Randomized Comparison Study** A pilot study to examine a counseling-based initiative that targeted low-income pregnant smokers receiving prenatal care. Clinicians at the sites were trained in smoking cessation counseling and addressed smoking at every prenatal visit.	Prenatal clinics, Wisconsin	Women in their first or second trimesters, self-identified as smokers, and WIC and/or Prenatal Care Coordination (PNCC) participants. N=334 Mean age: 23.4 White: 69% African American: 12% American Indian: 13% Asian: 2% Hispanic: 1% Other: 3%	• The quit rate among enrolled First Breath clients is greater than the quit rate among comparison women at every measurement (prenatal and postpartum). • Smoking cessation rose throughout the prenatal period and peaked at 43.8% at 1 month postpartum. • Consistent with the literature, there was considerable relapse after delivery, and only 20% of women were still not smoking 1 year later.	The pilot program demonstrated preliminary success in helping pregnant women quit smoking and in creating a model for integration of cessation services into prenatal health care service provision. The ability of the program to address postpartum relapse was limited due to PNCC regulations; thus other options (such as partnering with the Wisconsin Quit Line) will be explored.

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			Over half of enrollees had previous pregnancies and 53% of those women smoked during their last pregnancy.		
39. Jelley, M.J., et al. (1995). "A smoking cessation intervention in family planning clinics." Journal of Women's Health 4(5): 555-567.	**Non-Randomized Comparison Study** The intervention included a smoking cessation counseling delivered by a trained nurse using stages of change theory, tailored pamphlets to stage of change and a follow up letter 10 days after the visit. The control or reference group was given usual care.	Suburban family planning clinics, Denver, CO, area	Female clients of family planning clinics. Participants were mostly young, white, unmarried and low income; smoked an average of 14 cigarettes per day. <u>Intervention</u> N=80 Average age: 22.1 White: 79% Hispanic: 17% Other: 4% <u>Control</u> N=96 Average age: 22.7 White: 80% Hispanic: 17% Other: 2%	• The average follow up was 135 days (4.5 months) post-intervention. Self-report quit rates were 15% in the intervention group and 2% in the control group. • The majority (64%) of those who received the intervention reported that they were asked to set a quit date, compared with 6% of controls. • The lighter and less addicted smokers were the ones who reported cessation.	A simple, inexpensive smoking cessation intervention was successfully integrated in a routine family planning visit. A larger study using more sites and counselors is needed to confirm cessation results.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
40. Jones, R., et al. (1994). "The Head Start parent involvement program as a vehicle for smoking reduction intervention." Family & Community Health 17(1): 1-12.	**Randomized Trial** Examined an eight-session smoking cessation program for parents of children in Head Start. There were 37 intervention and 28 control schools. The intervention consisted of eight weekly 90-minute group sessions covering various behavioral strategies for quitting.	Head Start locations, Chicago, IL	Parents who were smokers with at least a moderate desire to quit and interest in a smoking cessation program. Majority of participants were African American <u>Control</u> N=265 <u>Intervention</u> N=213	• Abstinence rates were 11% immediately following the intervention and 12% at 6-month follow-up for intervention subjects, compared with 3% and 6% for controls. • Because of the overlap between Head Start participation and number of smoking cessation classes attended, it is not clear whether greater exposure to intervention increase ability or motivation to quit, or whether parents who are more dedicated to the Health Start program are also more likely to quit smoking.	Head Start provides an efficient delivery channel and a context in which social support and encouragement for quitting smoking can be a natural extension of what the program already provides.
41. Keintz, M. K., et al. (1994). "Reaching mothers of preschool-aged children with a targeted quit smoking intervention." Journal of Community Health 19(1): 25-40.	**Feasibility Study** Evaluation of a brief nurse-administered protocol to determine the feasibility of implementing a minimal contact, self-help smoking cessation program.	Public health clinics in Pennsylvania	English-speaking female patients with children 5 years old or younger N=1,230 Mean age: 25.5 African American: 7.4% White: 91.4% Other: 1.1%	At the 12-month follow up: • 12.5 percent reported quitting smoking, • 20.2 percent reported having made a serious quit attempt that lasted at least 7 days.	Even among smokers with low socioeconomic status and wide variation in their readiness to quit, minimal intervention programs requiring modest resources can promote cessation.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
42.*Kendzor, D. E., M. S. Businelle, et al. (2015).' Financial incentives for abstinence among socioeconomically disadvantaged individuals in smoking cessation treatment." American Journal of Public Health 105(6): 1198-205. Access No: 25393172	**Randomized Control – prospective** The study evaluated the effectiveness of offering adjunctive financial incentives for abstinence (contingency management [CM]) within a safety net hospital smoking cessation program	Dallas TX Safety-net hospital cessation program	Participants enrolled in a Dallas TX safety-net hospital cessation program. N= 146 Age: 52.2 Female: 57.5% Black/African American: 62.3% White: 28.1% Latino: 5.5% Multirace/other: 4.1 Education: <H.S. : 12% Income <$12,000: 55.5% Not employed: 85.6% Uninsured: 52.1% Medicaid: 39.7% Private: 8.2%	• Participants were primarily Black (62.3%) or White (28.1%) and female (57.5%). Most participants were uninsured (52.1%) and had an annual household income of less than $12000 (55.5%) • Abstinence rates were significantly higher for those assigned to CM than UC at all visits following the quit date (all Ps<.05). • Point prevalence abstinence rates in the CM and UC groups were 49.3% versus 25.4% at 4 weeks after the quit date and 32.8% versus 14.1% at 12 weeks after the quit date. CM participants earned an average of $63.40 ($150 possible) for abstinence during the first 4 weeks after the scheduled quit date.	Offering small financial incentives for abstinence might be an effective means to improve abstinence rates among socioeconomically disadvantaged individuals participating in smoking cessation treatment.
43. Lasser, K.E., et al. (2013). "Patient navigation to promote smoking cessation among low-income primary care patients: A pilot randomized controlled trial." Journal of Ethnicity	**Pilot Randomized Controlled Trial** Determined feasibility and acceptability of a patient navigation smoking cessation intervention. Smokers were randomized to either a control	Safety-net hospital, Boston, MA	English-speaking primary care patients 18 or older who smoked cigarettes in the past week and had a telephone. <u>Intervention:</u> N=24 Mean age: 42.9	• 47.4% of navigation participants had engaged in smoking cessation treatment by three months versus 42.9% of control participants. • The navigator was able to reach 19 (79.2%) of the 24 intervention participants, either in person or by telephone. • 11 of these patients received a minimum dose of the navigator intervention (consisting of an in-	Patient navigation to promote engagement in smoking cessation treatment was feasible and acceptable to participants. Combining patient navigation with another effective intervention could maximize its impact on promoting engagement

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in Substance Abuse 12(4): 374-390.	condition or to a navigation condition.		Female: 58.3% Male: 41.7% White: 29.2% Non-white: 70.8% Hispanic: 25% <u>Control:</u> N=23 Mean age: 46.8 Female: 43.5% Male: 56.5% White: 36.4% Non-white: 63.6% Hispanic: 13%	person meeting), and these patients reported higher rates of treatment engagement. • The majority of participants were satisfied with the interactions they had with the navigator.	in smoking cessation treatment.
44.*Lee, M., S. M. Miller, et al. (2015). "Cognitive-behavioral intervention to promote smoking cessation for pregnant and postpartum inner city women." Journal of Behavioral Medicine 38(6): 932-943	**Randomized prospective controlled trial** This study evaluated a theory-guided cognitive behavioral counseling (CBC) intervention for smoking cessation during pregnancy and postpartum. It also explored the mediating role of cognitive-affective variables on the impact of CBC.	PA Prenatal Care Clinic at Temple University Hospital 2003-2007	Underserved inner city pregnant women N= 277 Non-Hispanic White: 31.2% Hispanic: 12.41% Black/African American: 56.3% H.S. or less: 67.9% Some college: 30% College graduate: 1.8% Income $0-15,000: 50% $15001-30000: 31% $30001-$45000: 12% $45001-60000: 5%	• Assessments were obtained at baseline, late pregnancy, and 1- and 5-monthspostpartum. An intent-to-treat analysis found no differences between the two groups in 7-day point-prevalence abstinence. • A respondents-only analysis revealed a significantly higher cessation rate in the CBC (37.3 %) versus the BP (19.0 %) condition at 5-months postpartum follow-up. This effect was mediated by higher quitting self-efficacy and lower cons of quitting.	CBC, based on the Cognitive-Social Health Information Processing model, has the potential to increase postpartum smoking abstinence by assessing and addressing cognitive-affective barriers among women who adhere to the intervention.

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Cessation Intervention					
			$60001-75000: 1%		
45.*Leone, F. T., S. Evers-Casey, et al. (2015). "Academic Detailing Interventions Improve Tobacco Use Treatment among Physicians Working in Underserved Communities." Annals of the American Thoracic Society 12(6): 854-8.	**Prospective** Tobacco use disproportionately affects the poor, who are, in turn, least likely to receive cessation treatment from providers. Providers caring for low-income populations perform simple components of tobacco use treatment (e.g., assessing tobacco use) with reasonable frequency. However, performance of complex treatment behaviors, such as pharmacologic prescription and follow-up arrangement, remains suboptimal.	PA Community provider sites	Low SES populations No Table 1 reported	• Between May 2011 and March 2012, baseline AD visits were made to 217 physicians, 109 (50%) of whom also received follow-up AD. • Mean frequency scores for complex behaviors increased significantly, from 2.63 to 2.92, corresponding to a clinically significant 30% increase in the number of respondents who endorsed "almost always" or "always" (P ,0.001). • Improvement in mean simple behavior frequency scores was also noted (3.98 vs. 4.13; P = 0.035). • Sex and practice type appear to influence reported complex behavior frequency at baseline, whereas only practice type influenced improvement in complex behavior scores at follow up.	This study demonstrates the feasibility and potential effectiveness of a low-cost and highly disseminable intervention to improve clinician behavior in the context of treating nicotine dependence in underserved communities.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
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46.*Levinson, A. H., P. Valverde, et al. (2015). "Community-based navigators for tobacco cessation treatment: a proof-of-concept pilot study among low-income smokers." BMC Public Health 15: 627.	**Feasibility Study** A pilot-test of an innovative, non-clinical community-based intervention – smoking cessation treatment navigators – to determine feasibility (acceptance, adherence, and uncontrolled results).	Community Setting Head Start Site	Adult smokers affiliated with the Head Start Study N= 40 Female: 63% Age: 40.1 Black: 68% Latino: 18% Non-Hispanic White: 10% American Indian: 5% More than H.S.: 50% Medicaid: 38% Other: 29% None: 33%	• Eighty-five percent of study participants (n = 40) completed final data collection. More than half (53 %) enrolled in a telephone quitline and nearly three-fourths (71 %) initiated nicotine replacement therapy. • Participants completed a mean 3.4 navigation sessions (mean 30 min duration) and gave the intervention very high quality and satisfaction ratings. • Self-reported 7-day abstinence was comparable to rates for evidence-based cessation strategies (21 % among study completers, 18 % using intent-to-treat analysis; median 21 days abstinent among relapsers).	The pilot results suggest that smoking cessation treatment navigators are feasible to study in community settings and are well-accepted for increasing use of EBCT among low-income smokers. Randomized controlled trial for efficacy is warranted.
47. Lipkus, I.M., et al. (1999) "Using tailored interventions to enhance smoking cessation among African-Americans at a community health center." Nicotine & Tobacco Research 1, 77-85	**Randomized Study** Examined three tailored intervention approaches to increase quitting rates at a health center serving low-income individuals. Smokers were randomized to one of three groups: (1) health care provider prompting intervention alone, (2) health care provider prompting intervention with tailored print	Community health center, Durham, N.C.	African American health center patients N=160 Age 18-49: 51% 50 or older: 49% Female: 52% Male: 48%	• Among the 160 smokers who completed the study, 35 (21.8%) had quit smoking at the 16-month follow-up. • Smokers who received the provider prompting intervention with tailored print materials were more likely to report having quit than smokers who received the provider intervention alone (32.7% vs. 13.2%, $p<0.05$). • Smokers who received all three intervention components were not significantly more likely to have quit at follow-up than those who only received the provider intervention (19.2% vs. 13.2%).	The results support the use of tailored print communications with this population.

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Cessation Intervention					
	communications, and (3) health care provider prompting intervention with tailored print communications and tailored telephone counseling.				
48.*Ma, P., M. S. Businelle, et al. (2015). "The influence of perceived neighborhood disorder on smoking cessation among urban safety net hospital patients." Drug & Alcohol Dependence 156: 157-61. Access No: 26386824	**Prospective Study** Participants (N=139) enrolled in a Dallas safety-net hospital smoking cessation program were followed from 1 week pre-quit through 4 weeks post-quit. Logistic regression analyses were conducted to evaluate the impact of perceived neighborhood order and disorder on the likelihood of achieving biochemically verified point prevalence and continuous smoking abstinence 4 weeks following a scheduled quit attempt.	Dallas, TX Safety-Net Hospital	Participants enrolled in a Safety-net hospital smoking cessation program. N= 139 Age: 52.5 Female: 56.8% Male: 43.2% White: 27.3% Black: 63.3% Hispanic: 5% Other: 4.3% >High school: 72.6% Not married: 69.1% Income: <$25,000 Uninsured: 51.8%	• Participants were primarily non-White (72.7%) and female (56.8%) with a mean age of 52.5 (SD=3.7) years. Most reported an annual household income of <$25,000 (86.3%). • Logistic regression analyses indicated that greater neighborhood physical (p=.048) and social order (p=.039) were associated with a greater likelihood of achieving point prevalence smoking abstinence at 4 weeks post-quit. • Greater perceived physical (p=.035) and social disorder (p=.039) and total neighborhood disorder (p=.014), were associated with a reduced likelihood of achieving point prevalence abstinence. • Social disorder (p=.040) was associated with a reduced likelihood of achieving continuous abstinence at 4 weeks post-quit, while social order (p=.020) was associated with an	Perceptions of neighborhood order and disorder were associated with the likelihood of smoking cessation among socioeconomically disadvantaged smokers making a quit attempt. Findings highlight the need to address perceptions of the neighborhood environment among disadvantaged smokers seeking treatment

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				increased likelihood of continuous abstinence.	
49.*Mahabee-Gittens, E. M., J. C. Khoury, et al. (2015). "A smoking cessation intervention for low-income smokers in the ED." American Journal of Emergency Medicine 33(8): 1056-61. Access No: 25976268	**Single arm, Prospective study** We sought to examine a PED-based smoking cessation intervention and compare outcomes based on children's TSE-related illness single-arm, prospective trial, with baseline, 3, and 6 month assessments was used in this study. Caregivers whose child had either a TSE-related (n= 100) or non–TSE-related illness (n= 100) were given a brief intervention consisting of counseling, referral to the Quitline, and free nicotine replacement therapy	OH Pediatric Emergency Department	Pediatric caregivers enrolled in Medicaid who are current smokers. N= 200 Female: 91.5% Male: 8.5% White: 43.7% African American: 50.8% Asian, American Indian, unspecified: 5.5% Less than College: 62.3% Some college and above: 37.7% Medicaid: 100%	• Participants were 91.5% female, 50.5% African American, 100% Medicaid recipients, 30.8 years old, child age mean of 5.5 years, 90% highly nicotine dependent, and 60.3% and 75.8% allowed smoking in the home and car, respectively. • At follow-up (65% retention), 80% reported quit attempts at 3 months and 89% between 3 and 6 months. • There were significant decreases in number of cigarettes smoked, time to first cigarette, and smoking in the home and car. Quit rates were 12.2% at 3 months, 14.6% at 6 months, and 7.3% at both time points • There were no significant differences in outcomes based on children's illness	A brief PED-based smoking cessation intervention resulted in quit attempts and successful quits. However, the presence of a TSE-related illness did not result in different cessation outcomes.
50. Manfredi, C., et al. (1999). "Evaluation of a motivational smoking cessation	**Randomized Clinical Trial** Evaluation of a multicomponent	Public health clinics, Chicago	Women who were clinic patients, of child-bearing age, and current smokers.	• Outcomes improved in the intervention but not in the control clinics. • Smokers in the intervention were more likely to have quit (14.5 vs. 7.7%	The intervention was effective with low SES, predominately African American women across different types of clinic

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intervention for women in public health clinics." Preventive Medicine 28(1): 51-60.	motivational smoking cessation intervention implemented by clinic personnel as part of routine medical visits. Components included posters, motivational videos in waiting rooms, brief provider advice to quit and 15-minute motivational phone call.		<u>Control:</u> N=547 Mean age: 28.96 African American: 70.3% <u>Intervention:</u> N=516 Mean age: 28.82 African American: 85.7%	of controls) or taken actions toward quitting. • Intervention clients had higher mean action, stage of readiness and motivation to quit scores.	services (prenatal, family planning, and well child visits).
51. McBride, C.M., et al. (2002). "Incorporating genetic susceptibility feedback into a smoking cessation program for African-American smokers with low income." Cancer Epidemiology Biomarkers and Prevention 11(6): 521-528.	**Randomized Trial** Assessed whether an intervention that included feedback about genetic susceptibility to lung cancer increased risk perceptions and rates of smoking cessation compared with a standard cessation intervention.	Inner city community health clinic in Durham, N.C.	African Americans who smoked at least 1 cigarette a day in the past 7 days, and a patient at participating clinic. N=557 Mean age: 44 Female: 60% Male: 40%	• Smoking cessation was greater for the intervention arm than the usual care arm (19% versus 10%; P < 0.006) at 6 months but not at 12 months. • Feedback of increased susceptibility to lung cancer was not associated with significant increases in smoking cessation, risk perceptions, or levels of depression in the short or long term.	African American smokers at the clinic were receptive to genetic testing and related feedback. However, feedback of genetic susceptibility may not have had a powerful impact because 45% of the smokers did not fully understand the test result. Future trials should evaluate other approaches for communicating results.
52. McDaniel, A.M., et al. (2005). "Design and testing of an interactive smoking cessation intervention for inner-city women." Health Education	**Before/After Study** Designed and tested the usability of a computer-mediated smoking cessation program for inner-city women.	Inner-city community health clinic	Female clinic patients 18 or older and current smokers. Participants reported a long history of smoking (mean = 22.8 years) with a mean age of	• Standardized instruments to measure cognitive processes of change related to smoking were completed at baseline and at 1 week. Participants reported a decrease in favorable attitudes toward smoking (P=0.014) and an increase in cognitive change processes at follow-up (P=0.037).	Low-income women have high rates of smoking and limited access to resources to assist with cessation. An important implication of this study is that a theoretically derived, interactive program can provide a brief smoking

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Research 20(3): 379-384			smoking onset at 16.7 years. N=100 Average age: 41.5 White: 68% Other: 32%	• Participant rating of satisfaction with usability of the program was high. Minority participants were significantly more satisfied with usability of the computer program than Caucasian participants.	cessation intervention in the primary care setting with minimal burden to users.
53.*Moody-Thomas, S., L. Nasuti, et al. (2015). "Effect of systems change and use of electronic health records on quit rates among tobacco users in a public hospital system." American Journal of Public Health 105 Suppl 2: e1-7.	**Randomized Controlled Trial** We examined electronic health records (EHRs) to assess the impact of systems change on tobacco use screening, treatment, and quit rates among low-income primary care patients in Louisiana.	LA Low-income Primary Care Clinic	Low-Income Population EHR data on 79,777 patients with more than 1.2 million adult primary care encounters from January 1, 2009, through January 31, 2012, were reviewed for evidence of systems change.	• Six of 7 sites met the definition of systems change, with routine screening rates for tobacco use higher than 50%. • Within the first year, a 99.7% screening rate was reached. • Sites had a 9.5% relative decrease in prevalence over the study period. • Patients were 1.03 times more likely to sustain quit with each additional intervention (95% confidence interval = 1.02, 1.04).	EHRs can be used to demonstrate that routine clinical interventions with low-income primary care patients result in reductions in tobacco use and sustained quits.
54. Okechukwu, C.A., et al. (2009). "MassBuilt: effectiveness of an apprenticeship site-based smoking cessation intervention for unionized building trades workers." Cancer Causes & Control 20(6): 887-894.	**Randomized Trial** A smoking cessation intervention that integrated occupational health concerns and was delivered in collaboration with unions to apprentices.	Blue collar worksites, Boston, MA	Apprentices at worksites <u>Intervention:</u> N=602 Female: 3.5% Male: 96.5% African American: 5.3% White: 86.9% Hispanic: 2.2% Other: 7.6%	• Thirty days after the intervention, there were significant differences in smoking cessation rates with the intervention group having higher quit rates (26% vs. 16.8%; p=0.014). • These differences diminished over time so that the difference in quit rates was not statistically significant at 6 month post-intervention (9% vs. 7.2%; p=0.48). • Apprentices in the intervention sites had 1.62 times higher odds of quitting smoking 30 days after the	The study demonstrates the feasibility of delivering an intervention through union apprentice programs. Furthermore, the notably better 1-month quit rate results among intervention members and the greater decrease in smoking intensity among intervention members who continued to smoke underscore the need to

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			<u>Control:</u> N=524 Female: 6.4% Male: 93.6% African American: 8.2% White: 82.5% Hispanic: 4.3% Other: 5%	intervention compared to apprentices in the control sites.	develop strategies to help reduce relapse among blue-collar workers who quit smoking.
55. Okuyemi, K.S., et al. (2007). "Pathways to health: a cluster randomized trial of nicotine gum and motivational interviewing for smoking cessation in low-income housing." Health Education & Behavior 34(1): 43-54.	**Cluster Randomized Trial** Examined cessation rates among those living in low-income housing developments. Intervention participants received educational materials, nicotine gum, and 5 motivational interviewing sessions on quitting smoking. Comparison participants received 5 MI sessions and educational materials addressing fruit and vegetable consumption.	Low-income housing developments in Kansas	Housing development residents smoking at least five cigarettes per day, not using any other form of tobacco or pharmacotherapy for smoking cessation, 18 or older, English speaking, and access to a working telephone. N=173 Mean age: 46.3 Male: 30% Female: 70% African American: 83% Other: 17%	• Biochemically-verified 7-day abstinence rates were non-significant between groups: at 8 weeks, rates were 6.1% and 5.6% in the intervention and comparison arms, respectively, and at 26 weeks were 7.6% and 9.3%. • At Day 10, a statistically non-significant higher proportion of participants in the treatment arm (40.9%) than in the comparison arm (25.2%) had made at least one quit attempt lasting 24 hours or longer. • However, the proportions of participants who made quit attempts were no different between both groups at Week 8 and Month 6. • Both arms also did not differ on the self-reported cigarettes per day smoked at various time points.	Results suggest that nicotine gum plus MI were not effective for smoking cessation in low-income housing. Programs are needed to enhance the effectiveness of pharmacotherapy and counseling in underserved populations.
56. Parker, D.R., et al. (2007).	**Randomized Trial**	Urban prenatal care clinics in	Pregnant clients who smoked at least one	• Although this population was very mobile, the MI counselors were able	Telephone counseling calls are acceptable to low-

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
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"Feasibility, cost, and cost-effectiveness of a telephone-based motivational intervention for underserved pregnant smokers." Nicotine and Tobacco Research 9(10): 1043-1051.	A proactively provided telephone-based motivational smoking cessation intervention to an underserved population of pregnant smokers. Participants were randomized to one of three groups: self-help material only; self-help material and quit contest; and self-help materials, quit contest and motivational calls. This study focuses on the MI counseling calls group.	Rhode Island, Connecticut and Massachusetts	puff of a cigarette within the past 30 days, no more than 26 weeks gestation, had phone access and spoke English or Spanish. <u>MI Group:</u> N=358 Mean age: 25.3 White: 67.3% Hispanic: 21.2% African American: 11.5%	to reach 86% of the women with at least one call and 46% received all three calls. • The group receiving three MI calls had a cotinine-confirmed quit rate of 23%, compared to 9.6% of those who did receive any calls. • Cost-effectiveness analyses for those women receiving telephone counseling supported the net benefit in favor of the three phone calls compared with the women who did not receive any telephone calls, with an effectiveness to cost ratio of 1:$84.	income pregnant smokers and can be delivered proactively to reach a large percentage of pregnant smokers. Telephone counseling is a feasible, moderately effective, and potentially cost-effective approach to help a low-income, underserved population of pregnant women quit smoking.
57.*Parks, M. J., J. S. Slater, et al. (2016). "Interpersonal Communication and Smoking Cessation in the Context of an Incentive-Based Program: Survey Evidence From a Telehealth Intervention in a Low-Income Population." Journal of Health Communication 21(1): 125-33. Access No: 26166678	**Retrospective** This study used survey data gathered after a population-level telehealth intervention that offered $20 incentives to low-income smokers for being connected to Minnesota's free quitline by patient navigators.	Minnesota's QuiteLine -	Low income individuals 40 y/o or over, making 250% of poverty or less who participated in Minnesota's Sage program. N= 970 74.74% White 25.26% Non-White 94.02% smokes every day	• Results showed that interpersonal communication (IPC) was strongly associated with initial quitline utilization and continuous smoking abstinence as measured by 30-day point prevalence rates at 7-month follow-up. • Perceived incentive importance had weak associations with both measures of cessation, and all associations were nonsignificant in models adjusting for IPC. • Of those offered quitline, 30 day point prevalence quit rate 19% • Odds of QL utilization increased by 120%for individuals who engaged in IPC compared to those who did not	The program successfully encouraged short- and long-term behavioral steps associated with smoking cessation. Moreover, IPC about the incentive-based program was a robust correlate of QL utilization and continuous cessation. In short, an incentive-based, population-level telehealth intervention aimed at connecting low-income smokers to free smoking cessation services can not only encourage initial steps of behavior change but also catalyze

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				• Odds of continuous cessation increased by 57% for those engaged in IPC.	IPC that is important for prolonged behavior change.
58.*Record, N. B., D. K. Onion, et al. (2015). Community-wide cardiovascular disease prevention programs and health outcomes in a rural county, 1970-2010.[Erratum appears in JAMA. 2015 Jun 2;313(21):2185; PMID: 26034967]. JAMA 313(2): 147-55.	**Observational Study** The purpose of this study is to document health outcomes associated with an integrated, comprehensive cardiovascular risk reduction program in Franklin County, Maine, a low-income rural community.	Franklin County, Maine Low-income rural community 40 year observational study	N= 22,444 White: 95.2% Age 25 with at least a H.S. education: 89.7%% Poverty: 12.8%	• More than 150,000 individual county resident contacts occurred over 40 years. Over time, as cardiovascular risk factor programs were added, relevant health indicators improved. • After initiation of multiple community smoking cessation projects, smoking quit rates improved from 48.5% to 69.5%, better than state averages (observed-expected [O-E], 11.3%; 95% CI, 5.5%-17.7%; P<.001), 1996-2000; these differences later disappeared when Maine's overall quit rate increased.	In a rural Maine county, we observed consistent temporal associations between sustained community-wide preventive interventions and several health outcomes, including health behaviors, risk factor control, hospitalization rates, and mortality. Substantial improvements were observed for hypertension control, cholesterol control, and smoking cessation within Franklin County. Sustained, community-wide programs targeting cardiovascular risk factors and behavior changes to improve a Maine county's population health were associated with reductions in hospitalization and mortality rates over 40 years, compared with the rest of the state. Further studies are needed to assess the generalizability of such programs to other US county populations, especially rural ones, and to other parts of the world.

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59. Reitzel, L.R., et al. (2010). "Preventing postpartum smoking relapse among diverse low-income women: a randomized clinical trial." Nicotine & Tobacco Research 12(4): 326-335.	**Randomized Trial** Tested a Motivation and Problem Solving (MAPS) treatment for reducing postpartum relapse among low-income women. Pregnant women were randomly assigned to MAPS or usual care.	Clinics in Houston, TX	English-speaking pregnant women 18 years or older who stopped smoking either during pregnancy or within two months prior to becoming pregnant. N=251 White: 35.5% African American: 32.3% Hispanic: 30.3% Other: 2%	• MAPS was more efficacious than usual care in the prevention of postpartum relapse (p=0.05). • An interaction between treatment and the number of cigarettes smoked per day before quitting approached significance (p=0.09), suggesting that the MAPS treatment effect was stronger among women who smoked more cigarettes per day.	MAPS, an approach to changing behavior using motivational enhancement and social cognitive approach, is a promising intervention for postpartum smoking relapse prevention among low-income women, and may have particular relevance for women with higher pre-quit smoking rates.
60. Ringen, K., et al. (2002). "Smoking cessation in a blue-collar population: results from an evidence-based pilot program." American Journal of Industrial Medicine 42(5): 367-377.	**Non-Randomized Comparison Study** A smoking cessation pilot program implemented through a group insurance program for union workers. Participants chose a 1-call or 5-call smoking cessation counseling plan provided by the health plan.	Via telephone, Washington State	Employees of Trustees of the Carpenters Health and Security Trust of Western Washington who were current smokers. N=935 Mean age: 41.4 Female: 25% Male: 75%	• 61% percent selected 5-call counseling; 39% 1-call. • Seventy-five percent also used smoking cessation medications: gum, 4%; patch, 32%; Bupropion, 21.5%; patch plus Bupropion, 15.7%. • The point-prevalence quit rates were: overall, 27.5%; 1-call, 25.5%; and 5-call, 28.9%. • Of those who quit with 1-call counseling, 20.8% say they had some kind of relapse within the past 8-30 days. Only 4.1% of the 5-Call quitters reported a relapse.	Smoking cessation programs can be effective even in such hard-to-reach populations as building trades workers, provided that the program is designed to their needs and environment.
61.*Robbins, C. L., T. C. Keyserling, et al. (2015). “Outcomes of cardiovascular	**Prospective** Cardiovascular disease (CVD) screening in	Title X Family Planning Clinic in Pitt County, NC	N= 462 White: 27.3% Black: 63%	• Among women who reported smoking at enrollment, 129 of 148 (87.2%) received cessation counseling	The majority of women in need of referrals for CVD risk factors received them. Few women completed

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disease risk factor screening and referrals in a family planning clinic.	Title X settings can identify low-income women at risk of future chronic disease. This study examines follow-up related to newly identified CVD risk factors in a Title X setting.	Clinical	Hispanic: 8.2% Other: 1.5% Less than HS: 15.9% HS or GED: 46.5% Some College: 37.6% Uninsured: 80% Public: 17.1% Private: 2.6% ≤ 100% FPL: 83.4% 101-199%: 8.5% 200-250%: 6.1% >250%: 2.0%	and 8 of 148 (5.4%) accepted tobacco quitline referrals. • Among smokers, 53 out of 148 (35.8%) were rescreened and 11 of 53 (20.8%) reported nonsmoking at that time.	referrals. Future research should examine barriers and facilitators of referral care among low-income women.
62. Secker-Walker, R.H., et al. (2000). "Helping women quit smoking: results of a community intervention program." American Journal of Public Health 90(6): 940-946.	**Non-Randomized Comparison Study** Used community organization approaches to create coalitions and task forces to develop and implement a multicomponent community intervention, with a special focus on providing support to help low-income women of childbearing age quit smoking.	Two rural counties in Vermont and New Hampshire	Randomly selected women ages 18-64, current smokers and residents of intervention counties. N=6,800 Majority of participants were white	In the intervention counties, compared with the comparison counties: • The odds of a woman being a smoker after 4 years of program activities were 0.88 (P=0.02). • Women smokers' perceptions of community norms about smoking were significantly more negative in the intervention counties (P=0.002). • The quit rate in the past 5 years was significantly greater (25.4% vs 21.4%; P=0.02). • Quit rates were significantly higher in the intervention counties among younger women (aged 18 to 44 years); among women with household annual incomes of	In these rural counties, community participation in planning and implementing interventions was accompanied by favorable changes in women's smoking behavior

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				$25,000 or less; and among heavier smokers.	
63. Sheffer, C, et al. (2013). "In-person and telephone treatment of tobacco dependence: a comparison of treatment outcomes and participant characteristics." American Journal of Public Health 103(8): e74-82.	**Non-Randomized Comparison Study** Examined participant characteristics and abstinence outcomes of smokers who chose in-person or telephone tobacco dependence treatment.	In-person or telephone, Arkansas	English-speaking smokers who received treatment from the Arkansas state-funded tobacco dependence treatment programs. <u>In-Person participants:</u> N=2,731 Mean age: 45.7 Female: 62.4% Male: 37.6% White: 82.3% African American: 13.5% Other: 4.3% <u>Telephone Participants:</u> N=4,535 Mean age: 42.6 Female: 69.4% Male: 30.6% White: 77.7% African American: 17.8% Other: 4.5%	• At end of treatment, in-person participants were more likely to be abstinent than telephone participants. • Smokers of higher socioeconomic status (SES) were more likely to be abstinent with telephone treatment than lower-SES smokers. • At 3 and 6 months, modality had no effect on treatment outcomes. Higher-SES smokers and smokers exposed to more treatment content were more likely to achieve long-term abstinence, regardless of modality. • Men and more recalcitrant smokers were more likely to choose in-person treatment; lower-SES, ethnic minority, and more dependent smokers were more likely to choose telephone treatment.	Treatment modality attracts different groups of smokers, but has no effect on long-term abstinence. Multiple treatment modalities are needed to provide treatment to a heterogeneous population of smokers. More research is needed to understand the influences on treatment choice.
64. Sheffer, C.E., et al. (2012). "Socioeconomic	**Non-Randomized Comparison Study**	Health care settings, Arkansas	English-speaking smokers who attended treatment for tobacco	• The probability of abstinence 3 months after treatment was 55% greater for the highest-SES than for	Targets for enhancing therapeutic approaches for lower SES groups should

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disparities in community-based treatment of tobacco dependence." American Journal of Public Health 102(3): e8-16.	This study examined socioeconomic disparities in a community-based tobacco dependence treatment program. The intervention included cognitive-behavioral treatment and nicotine patches.		dependence at intervention sites. N=2,739 Mean age: 47.4 Female: 62.4% Male: 37.6% African American: 13.5% White: 82.2% Other: 4.2%	the lowest-SES smokers and increased to 2.5 times greater for the highest-SES than for the lowest-SES smokers 6 months after treatment. (adjusted odds ratio [AOR] = 1.55; 95% confidence interval [CI] = 1.03, 2.33) • Lower-SES participants received less treatment content and had fewer resources and environmental supports to manage a greater number of clinical and environmental challenges to abstinence. (AOR = 2.47; 95% CI = 1.62, 3.77).	include efforts to ensure that these groups receive more treatment content, strategies to address specific clinical and environmental challenges (i.e., higher dependence and stress levels and exposure to other smokers), and strategies to provide longer-term support.
65. Sheffer, C.E., et al. (2009). "Treatment for tobacco dependence for rural, lower-income smokers: outcomes, predictors, and measurement considerations." American Journal of Health Promotion 23(5): 328-338.	**Before/After Study** Evaluated a six session, multi-component cognitive behavioral therapy with relapse prevention program for lower-SES rural smokers.	Rural Health clinics, Arkansas	Residents who had initiated treatment for tobacco at the variety of treatment sites and were at least 3 months from their last treatment contact. N=2,350 Average age: 46.1 Female: 68% Male: 32% White: 85.2% African American: 12.8% Other: 2%	• The estimated percent of participants abstinent was 26.47% at 3 months and 21.73% at 12 months post-treatment. • 51.02% of patients completed treatment and demonstrated markedly higher quit rates. • Although numerous factors predicted outcomes at different points, self-efficacy and dependence levels at intake were robust predictors across time and methods of calculating outcomes.	This study demonstrates that intensive, evidence-based treatment for tobacco dependence can be successfully delivered in a statewide program and can yield long-term outcomes that approximate those seen in more controlled settings.
66.*Sheffer, C., S. Brackman, et al. (2015). "When free is not for me:	**Cross-sectional Survey**	Cross and Lee Counties AK	Current/former smokers N= 646	• Respondents (n = 799) were primarily middle-aged, of lower income, and residents of Cross	These findings suggest quitlines are not accessible to all lower socioeconomic groups and that significant

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Confronting the barriers to use of free quitline telephone counseling for tobacco dependence." International Journal of Environmental Research and Public Health 13(1).	We used community-based participatory methods to develop a survey instrument to assess barriers to use of the quitline in the Arkansas Mississippi delta.		Age: 43.3 Male: 48.2% White: 29.4% African American: 68.4% Native American: .5% Multi: 1.6% Income: <$10,000: 27.6% $10-$14,999: 26.8% $15-24,999: 25.6% $25-34,999: 11.3% $35-49,999: 6.2% >$50,000: 2.6% Employment: Full-time: 47.4% Part-time: 18.3% Homemaker: 5.6% Disabled: 11.8% Unemployed: 10.6% Retired: 6.4%	(49.4%), Lee (39.2%), and Arkansas (6.0%) counties. • Over one-third (34.9%) of respondents (n = 799) did not have access to a telephone that they could use for the quitline. • Respondents reported low levels of knowledge about the quitline, quitting, and trust in tobacco treatment programs as well as considerable ambivalence about quitting including significant concerns about getting sick if they quit and strong faith-based beliefs about quitting.	barriers to use include barriers to cessation. These findings suggest targets for providing accessible to baccouse treatment services and addressing concerns about cessation among lower income, ethnic minority, and rural groups.
67.*Sheikhattari, P. and F. A. Wagner (2015). "Cease quit smoking; A successful CBPR trial." Drug and Alcohol Dependence 146: e97.	**Randomized Controlled Trial** Community-Based Participatory Research approach to test an intervention with experimental methodology. Randomized to either of two group- based interventions. Treatment effects were evaluated through	Community Based	N= 352 Male: 58% African American: 65% >40 y/o: 82% Unemployed: 78%	• Intent to treat analyses revealed that 27% of participants in Group "A" and 29% in Group "B" were able to quit smoking (Pr = 0.675). Multivariate analyses showed that session attendance was strongly associated with quitting smoking (RR = 1.2 per session; 95% CI = 1.1.-1.4, p < 0.001), those with less than a high school (RR = 2.1 per session, 95% CI = 1.0.-4.0, p < 0.05); and those with higher health problems (RR = 1.2 per reported problem, 95%CI = 1.0-1.4, p < 0.05).	Community engagement in the design, implementation and evaluation of a smoking cessation program involving Community Peer Motivators can be successful among low income populations.

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	self-report smoking abstinence and verified by expired-air carbon monoxide. Both interventions included 12 tobacco cessation sessions with health education, motivational exercises, and NRT.			• Those who attended 50% or more sessions had better success rate (40.0%) vs. those who attended between 20 and 50% of the sessions (31.9%), and vs. those who have <20% attendance (6.4%).	
68. Sindelar, J.L., et al. (2014). "Financial versus health motivation to quit smoking: A randomized field study." Preventive Medicine 59(1): 1-4.	**Prospective Cohort Study** Compared the effectiveness of financial costs versus health messages to motivate smoking cessation among low-income smokers. Brochure displays were rotated among community settings, such as check-cashing outlets, health clinics, and grocery stores.	Inner-city New Haven, CT	Individuals living in study area. Demographics were not collected, but the study area had high rates of ethnic and racial minorities, primarily African-American and Hispanic.	• Over the eight-week period across all locations, 1,487 brochures were picked up. • Of these, 828 displayed financial messages and 659 displayed health messages. • Financial message brochures were picked up more frequently overall: 56% were financial, which is significantly different from the health selection rate.	Findings suggest that greater emphasis on the financial gains to quitting and use of financial settings to provide cessation messages may be more effective in motivating quitting. Importantly, use of financial settings could open new, non-medical venues for encouraging cessation among low-SES populations.
69. Solomon, L.J. et al. (2005). "Telephone support for pregnant smokers who want to stop smoking." Health Promotion Practice 6(1): 105-108.	**Before/After study** Investigated a statewide, proactive telephone peer-support system to help low-income pregnant women stop smoking. A female ex-smoker	Women, Infants, Children (WIC) clinics, Vermont	Low-income pregnant WIC clients who reported smoking at least one cigarette per day and interested in quitting. N=948 Mean age: 24.2	• For all 948 referrals, counting those never reached as smokers, 25.1% reported they were abstinent at their last contact. • Of those who were reached for at least one contact (N=737), 32.3% reported they were abstinent at their last support call. • For those who were reached for at least two support contacts (N=530),	The self-reported abstinence rate among women enrolled in the proactive telephone peer support was consistent with findings from other intervention studies with pregnant smokers. The greatest limitation of the intervention was the

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	called participants weekly, biweekly, and then monthly to provide guidance, encouragement, and reinforcement for smoking cessation.		Race/ethnicity not reported. On average: • 15.6 weeks pregnant • Reported average of 10.7 cigarettes per day	34.3% reported abstinence at last contact. • Of all referrals, 22% received only one support contact; 41% received between 2 and 10 support calls; and 15% received more than 10 support calls.	difficulty support staff had contacting referred smokers; telephone support was only accepted by one-third of eligible pregnant smokers enrolled in WIC.
70. Solomon, L.J., et al. (2000) "Free nicotine patches plus proactive telephone peer support to help low-income women stop smoking." Preventive Medicine 31, 68-74.	**Randomized Trial** Tested the impact of free nicotine patches plus proactive telephone peer support (compared to free patches only) to help low-income women quit smoking.	Via phone and mail, Chittenden County, Vermont	English-speaking women between the ages of 18 and 50, Medicaid income eligible, who smoked more than 4 cigarettes per day, had a home phone and had intentions of quitting smoking. <u>Intervention:</u> N=106 Mean age: 32.9 White: 90% Other: 10% <u>Control:</u> N=108 Mean age: 33.2 White: 91% Other: 9%	• At the 3-month follow up, significantly more women in patch plus proactive phone support condition were abstinent (42%) compared with the patch-only controls (28%) (p=0.03). • Differences were not found in the 6-month follow-up.	Although the study demonstrates a beneficial effect for proactive telephone support among low-income women, results suggest that this support did not enhance long-term cessation. Future research should explore if longer-term support might mitigate relapse.

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71. Sorensen, G., et al. (2007). "Tools for health: the efficacy of a tailored intervention targeted for construction laborers." Cancer Causes & Control 18(1): 51-59.	**Randomized Trial** Evaluated an intervention to promote smoking cessation and fruit and vegetable consumption among construction workers. Participants were randomly assigned to: (1) a delayed minimal intervention control group, or (2) the intervention, which included telephone counseling, a tailored feedback report, and targeted educational materials.	Via telephone and mail, U.S and Canada	Members of Laborers' International Union of North America (LIUNA) and construction workers. <u>Intervention:</u> N=296 Mean age: 40.3 Female: 6% Male: 94% African American: 11% White: 70% Hispanic: 14% Other: 6% <u>Control:</u> N=276 Mean age: 40.8 Female: 5% Male: 95% African American: 10% White: 63% Hispanic: 18% Other: 9%	• At baseline, 40% of control group participants and 45% of intervention group participants reported using any tobacco in the last seven days. • At final, 8% of baseline cigarette smokers in the control group had quit, compared to 19% in the intervention group (p=0.03). • In both groups, the mean consumption of fruits and vegetables at baseline was over five servings per day. • At final, the intervention group had increased consumption by approximately one and one-half servings, compared to a slight decrease in consumption in the control group (p<0.001).	A tailored intervention can be efficacious in promoting tobacco use cessation and increased fruit and vegetable consumption among construction laborers, a high-risk, mobile workforce. This intervention provides a strategy for reaching workers who are at a high risk but may be unable to participate in traditional worksite health promotion.
72. Sorensen, G., et al. (2009). "Work experiences and tobacco use: findings from the gear up for health study." Journal of	**Quasi-Experimental, Pretest/Post-Test Study** This study was designed to test an	Trucking terminals in Pennsylvania, Maryland, North Carolina and New Jersey	Permanent employees working at least 15 hours per week, International Brotherhood of Teamsters members, and had not been out of	• Overall, 40% of participants used some form of tobacco. • Multivariable analyses of amount smoked and coworker norms encouraging cessation found significant associations with	Work experiences represented in the social contextual model may help explain how the work environment affects tobacco-use behaviors and interest in quitting, and

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Occupational & Environmental Medicine 51(1): 87-94.	intervention to promote tobacco use cessation and weight management among unionized truck drivers and dock workers.		work on workers' compensation for more than 2 weeks at the time of the study. N=542 Male: 100% White: 82.7%	intention to quit and negative social consequences of tobacco use. • Program participation was significantly associated with concern about job exposures, working the day shift, and intention to quit.	maybe guide interventions among blue-collar workers.
73.*Stotts, A. L., T. F. Northrup, et al. (2015). "Randomized, Controlled Pilot Trial of Bupropion for Pregnant Smokers: Challenges and Future Directions." American Journal of Perinatology 32(4): 351-356. Access No:	**Randomized Controlled Pilot Trial** The aim of the study is to conduct an initial pilot trial evaluating the feasibility, safety, and efficacy of bupropion for smoking cessation in pregnancy.	Clinic	Pregnant Smokers who consented to the trial. N=11 Eligibility criteria were restrictive (e.g., 14-26 weeks' gestation; no psychiatric conditions or medications) due to the unknown safety, tolerability, and side effect profile of bupropion in pregnancy. Bayesian analyses were planned to provide probability of benefit.	• Significant challenges were encountered with regard to trial feasibility. Of 820 women screened, 112 were current smokers, but only 11 women were eligible and consented to participate in the study. Excluded women most often had a psychiatric disorder (23%); were outside the gestational range (14%); or declined to participate (11%).	This initial attempt to evaluate bupropion for smoking cessation during pregnancy will inform future trial methodology. Because of the unknown safety profile, conservative eligibility criteria were used and resulted in a large portion of this high-risk, low-income smoker population being excluded from the trial, raising questions regarding broad applicability, and highlighting the need to balance patient safety and trial feasibility.
74. Turner, L.R., et al. (2008). "Social support as a moderator of the relationship between recent history of depression and smoking cessation	**Non-Randomized Comparison Study** Examined the psychosocial mechanisms linking recent history of depression and	Via telephone, Chicago, IL	Women who had no more education than a high school diploma or equivalent (GED), and smoked an average of at least one cigarette a day.	• Abstinence rates did not differ between the two groups. • In both groups, smoking rates and self-efficacy were strong independent predictors of subsequent cessation, but recent history of depression (as measured 6 months earlier) was not a significant predictor.	Women who quit on their own appear to be just as likely to have a recent history of depression as do women who seek assistance in quitting. Social support is more relevant to smoking

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among lower-educated women." Nicotine & Tobacco Research 10(1): 201-212.	subsequent short term smoking cessation. The registrant panel included women who registered for a brief cessation intervention, and the population panel included a sample of smokers proactively gathered by random digit dialing.		<u>Intervention:</u> N=1,198 Mean age: 47 American Indian: 1.2% Asian: 0.1% African American: 28.3% White: 66.8% Hispanic: 1.9% Other: 1.7% <u>Control:</u> N=682 Mean age: 43.4 American Indian: 1.6% Asian: 0.3% African American: 18.8% White: 75% Hispanic: 3.3% Other: 1.1%	• Among only the intervention panel, the effects of recent history of depression were significantly moderated by social support. (• Recently depressed women who had higher levels of perceived social support were as likely to quit subsequently as women who did not have a recent history of depression.	outcomes among depressed women than non-depressed women.
75.*Tong, V. T., L. J. England, et al. (2015). "Clinicians' awareness of the Affordable Care Act mandate to provide comprehensive tobacco cessation treatment for pregnant women covered by Medicaid." Preventive Medicine	**Cross-Sectional** We sought to examine the awareness of the Medicaid tobacco-cessation benefit in a national sample of obstetricians–gynecologists and assessed whether reimbursement would	National Mailed survey	Clinicians who volunteered to participate in an ACOG survey. 452 invitees were a part of the Collaborative Ambulatory Research Network 599 invites were non-CARN members	• The majority of respondents were female (55.8%) and non-Hispanic White (84.3%); on average, respondents completed residency 19 years ago. Most respondents practiced in urban/suburban locations (81.0%), and 30.6% provided comprehensive primary care for women • Overall, 83% of obstetricians–gynecologists were unaware of the	Four out of five obstetricians–gynecologists surveyed in 2012 were unaware of the ACA provision that required states to provide tobacco cessation coverage for pregnant traditional Medicaid beneficiaries as of October 2010. Broad promotion of the Medicaid tobacco-cessation benefit could reduce treatment

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Reports 2: 686-688. Access No	influence their tobacco cessation practice.			Medicaid tobacco-cessation benefit for pregnant patients. Lack of awareness increased as the percentage of pregnant Medicaid patients in their practices decreased (range = 71.9%–96.8%; P = 0.02). • Of respondents who saw pregnant Medicaid patients, one-third (36.1%) said reimbursement would increase their cessation services, and nearly 40% of those with >50% Medicaid patients said they would increase their services. • A substantial fraction (30.2%) of respondents reported that cessation services would not change because reimbursement wouldn't address 'existing barriers to delivering service', and 16.2% said they did not know how reimbursement would affect their cessation practices.	barriers.
76. Wadland, W.C., et al. (2001) "Enhancing smoking cessation of low-income smokers in managed care." Journal of family practice 50, 138-144	**Randomized Trial** Compared the effectiveness of a comprehensive program for smoking cessation provided by nurse and telephone counselors with usual care. Smokers were recruited during an	Community health centers, Michigan	Clinic patients older than 21 years with Medicaid. <u>Intervention:</u> N= 110 Mean age: 44 Female: 69% Male: 31% White: 61%	• At 3 months, quit rates (smoke-free status verified by carbon monoxide monitors) were 8.1% in the usual-care group and 21% in the telephone-counseling group (p=0.009) by intent to treat analysis. • There was no long-term follow up at 6 to 12 months for quit rates to ensure continued effectiveness.	Smoking cessation rates are enhanced in a population of very low-income smokers if individualized telephone-counseling is provided. State and Medicaid managed care plans should consider investing in both office-based and centralized telephone-

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	office visit and were offered 21-mg trans dermal nicotine for 8 weeks.		African American: 29% Other: 10% <u>Control:</u> N= 123 Mean age: 38.7 Female: 72% Male: 28% White: 58% African American: 31% Other: 11%		counseling services for low-income smokers.
77. Warnecke, R.B., et al. (2001). "Changes in self-efficacy and readiness for smoking cessation among women with high school or less education." Journal of Health & Social Behavior 42(1): 97-110.	**Effectiveness Study** A smoking cessation intervention that combined televised modeling of smoking cessation behavior with written materials to study the relationships among exposure to the intervention, change in stage, and self-efficacy.	Via TV ads, news segments, mailed booklets and telephone, Chicago, IL	Female smokers with high school or less education living in Chicago area with a telephone. N=986 Mean age: 45.67 White: 74% Other: 25.6%	• Readiness to quit was measured prior to the intervention, immediately following the intervention, and again at six and 12 months after intervention. • As stage or readiness increased, so did self-efficacy, and this association was stronger at each subsequent observation point.	The findings indicate that many current smokers are not ready to quit, even if they sign up for cessation programs. Interventions aimed at this group of smokers may need to provide achievable objectives that focus on preparing to quit as well as promote cessation.
78. Webb, M.S., et al. (2010). "Effects of culturally specific cessation messages on theoretical antecedents of behavior among low-income African	**Randomized Trial** Tested the influence of message content and cultural-specific framing. Participants were randomly	Medium-size northeastern U.S. city	English-speaking African American smokers (smoked at least 5 cigarettes/day), between 18-65 years old. N=243	• The smoking messages produced greater culturally specific risk perceptions, readiness to quit smoking, and smoking-related knowledge. • The culturally specific messages also produced greater personal risk perceptions and intentions to quit.	Findings support the roles of message content and culturally specific framing in the efficacy of brief written interventions for smoking cessation in this population. Future research is needed to

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Cessation Intervention					
American smokers." Psychology of Addictive Behaviors 24(2): 333-341.	assigned to one of four groups that were shown messages including culturally specific smoking messages, standard smoking messages, culturally specific exercise/weight messages, or standard exercise/weight messages.		Mean age: 43 Female: 55% Male: 45%	• There was a significant main effect of message framing (culturally specific or standard), F(1, 234) 4.08, p .04) • Participants in the culturally specific conditions (M =3.99, SD 1.23) reported stronger intentions to quit smoking compared with those in the standard conditions (M 3.69, SD 1.03). • Neither the main effect of message content nor the interaction was significant.	examine the influence of these constructs on behavior change.
79. Webb, M.S. (2008). "Does one size fit all African American smokers? The moderating role of acculturation in culturally specific interventions." Psychology of Addictive Behaviors 22(4): 592-596.	**Randomized Trial** Analyzed the level of acculturation as a moderating variable for the efficacy of culturally-specific smoking cessation materials in a sample of low-income African Americans. Participants were randomly assigned to receive a culturally-specific guide or standard guide.	Via mail (location not reported)	English-speaking African American smokers (smoked at least 5 cigarettes/day), between 18-65 years old, who wanted to quit smoking <u>Culturally Specific:</u> N=88 Mean age: 44 Female: 52% Male: 48% <u>Standard:</u> N=94 Mean age: 43 Female: 64% Male: 36%	• Lower levels of acculturation (i.e., more engagement in traditional African American culture) predicted a preference for culturally-specific materials and greater readiness to quit smoking after receiving the culturally-specific guide. • Level of acculturation predicted evaluations of the intervention content, readiness to quit smoking, and 24-hr point prevalence abstinence at the 3-month follow-up. • Yet, among participants who were less acculturated, 24-hr abstinence was greater after receiving the standard guide.	Overall, these findings emphasize that individual differences in levels of acculturation to the dominant culture affect receptivity to culturally-specific written interventions. Intragroup differences should be considered prior to the provision of culturally-specific interventions.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
			Annual household income less than $10,000: ~50%		
80.*Wedeles, J. (2015). "Predictors of program participation and behavior change among pregnant women in the west Virginia-smoking cessation and reduction in pregnancy treatment (script) dissemination program." Dissertation Abstracts International Section A: Humanities and Social Sciences 76(2-A(E)).	**Cross-sectional** The purpose of this study was to examine predictors of program participation and behavior change among a representative cohort of Medicaid-insured pregnant women from the West Virginia Right From the Start (WV-RFTS) program who enrolled in the West Virginia Smoking Cessation and Reduction in Pregnancy Treatment (WV-SCRIPT) Program (n=857) in 2009 and 2010.	West Virginia Community based program	Pregnant women enrolled in Medicaid and the West Virginia Right From the Start Program who enrolled in the West Virginia Smoking Cessation and Reduction in Pregnancy Treatment Program. N= 857	• No association was found between depression scores and SCRIPT enrollment (p=0.22, OR=1.10), although RFTS clients with high depression scores were significantly more likely to enroll in SCRIPT (p=0.02, OR=1.61). • Perceived self-efficacy in quitting (p<0.01, OR=1.09) and self-reported number of cigarettes smoked per day (p=0.01, OR=0.96) were independent predictors of SCRIPT enrollment. • RFTS clients with high depression scores were 50% less likely to change their smoking behavior, although this association was not significant (OR=0.47). Nicotine dependence as measured by both the HSI and CSRF-I was significantly associated with SCRIPT enrollment, although this relationship was largely mediated by perceived self-efficacy in quitting. After controlling for self-efficacy, the effect of HSI score on cessation and significant reduction was not significant, and was partially mediated by self-efficacy.	Public health providers may wish to provide additional support for clients with higher depression scores and stronger nicotine dependence symptoms. The use of a nicotine dependence index, while time-intensive, may allow them a quantifiable measure for which clients need more attention and cessation assistance. Health promotion program staff may wish to encourage significant reduction as an alternative for highly dependent clients who have difficulty quitting.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
				• The effect of CSRF-I score on cessation was significant, although the effect of CSRF-I score on significant reduction was partially mediated by self-efficacy.	
81. Wetter, D.W., et al. (2007). "Reaching and treating Spanish-speaking smokers through the National Cancer Institute's Cancer Information Service: A randomized controlled trial." Cancer 109(2 SUPPL.): 406-413.	**Randomized Trial** Evaluated a telephone-based smoking cessation designed to increase the reach of the Spanish-language smoking cessation counseling service provided by the National Cancer Institute's Cancer Information Service. Smokers were randomized to receive standard counseling or enhanced counseling through a culturally sensitive, proactive, behavioral treatment program.	Via telephone, Texas	Smokers calling the NCI's South Central CIS office to request smoking cessation help in Spanish, currently living in Texas and at least 18 years old. <u>Intervention:</u> N=148 Mean age: 41.4 Female: 44.3% Male:55.7% Hispanic: 100% <u>Control:</u> N=148 Mean age: 40.8 Female: 45.3% Male: 54.7% Hispanic: 100%	• The sample was of very low socioeconomic status (SES), and more than 90% were immigrants. Media was used to increase the reach of the smoking-cessation service. • Calls to the CIS requesting smoking cessation help in Spanish increased from 0.39 calls to 17.8 calls per month. • At the 12-week follow up, point prevalence abstinence for the enhanced group was 27.4% vs. 20.5% for the standard group. • The unadjusted effect of the enhanced counseling only approached significance (OR =2.4, P=0.077), but became significant after controlling for demographic and tobacco-related variables (OR=3.8, p=0.048).	The study demonstrated that it is possible to reach, retain, and deliver an adequate dose of treatment to a very low SES population that has traditionally been viewed as difficult to reach. Moreover, the findings suggest that a proactive, telephone-counseling program, adapted to be culturally appropriate for Hispanics, is effective.
82. Wewers M.E. et al. (2009). "Effectiveness of a nurse-managed, lay-led tobacco cessation intervention among Ohio Appalachian women." Cancer	**Randomized Trial** Evaluated a nurse-managed lay-led tobacco cessation intervention for women that incorporated nicotine	Ohio Appalachia Clinic	English-speaking female patients 18 years or older and self-reported tobacco users. <u>Intervention:</u> N=147	• Findings from this study indicate that intensive treatment that included free nicotine replacement therapy and a nurse-managed lay-led counseling was effective in promoting point-prevalence abstinence at three and six months post-enrollment, but was not sufficient to maintain longer term	A lay-led approach that is managed by a nurse may serve as an effective cessation strategy among this high-risk population. Additional efforts are needed to sustain long-term abstinence, even

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Cessation Intervention					
Epidemiol Biomarkers Prev. 2009 Dec;18(12):3451-8.	replacement and behavioral counseling. Control participants received a personalized letter from their clinic physician who advised them to quit smoking.		Control: N=155 The majority of participants were between 18-50 years old, white. Half had a high school education or less.	abstinence (i.e. 12 month), as compared to control group participants. • Self-reported and cotinine-validated quit rates were significantly higher among intervention group participants compared to control group participants at 3 and 6 months follow-up ($p<0.02$). • At 12 months, self-reported abstinence was 19.1% (intervention group) and 9.0% (control group), with cotinine-validated rates of 12.2% and 7.1%, respectively ($p=0.13$). • Prolonged abstinence rates were significantly different between groups at 3, 6, and 12 months ($p<0.02$).	after intensive intervention.
83. Zanis, D.A., et al. (2011). "Comparing intervention strategies among rural, low SES, young adult tobacco users." American Journal of Health Behavior 35(2): 240-247.	**Randomized Trial** Evaluated tobacco quit rates of young adult tobacco users randomized to two intervention conditions: information on how to access the statewide telephone quitline or a brief direct treatment intervention provided by a health educator.	Worksites rural Pennsylvania counties	Young adults between 18 and 24 years old, non-college graduates, who smoked at least 1 cigarette in the past month and were not actively trying to quit tobacco. N=192 Mean age: 20.6 Male: 43% Female: 57% White: 94% Other: 6%	• Overall, 15.7% of participants reported quitting smoking and 52% reported quit attempts at the 3-month follow-up. • 19.8% of those in the brief intervention reported no tobacco use in the past 30 days and 10.2% of those in the quitline group reported no tobacco use in the past 30 days ($p=0.09$). • Service use of quitline was low; only one person in the quitline group reported using the quitline. • 13.5% of those in the brief intervention group used the cessation counseling offered by the health educator	The methodology of recruiting non-treatment-seeking tobacco users is an important proactive strategy to intervene with individuals who do not regularly access medical services or have health insurance access. Proactive outreach coupled with brief intervention appears to be an effective strategy to assist young adults to engage use of medication-assisted therapy and counseling services.

Appendix I: Media and Policy Intervention Articles:

*Denotes an article added for original literature review update**

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Media Intervention					
1. Durkin, S. J., et al. (2009). "Effects of different types of antismoking ads on reducing disparities in smoking cessation among socioeconomic subgroups." American Journal of Public Health 99(12): 2217-2223.	**Prospective cohort study** Assessed which types of mass media messages might reduce disparities in smoking prevalence among disadvantaged population subgroups. Quitting status at follow-up was examined in relation to exposure to antismoking ads over 2 years.	Massachusetts	Adults smokers who participated in the UMass tobacco study N=1,491 Mean age: 40.5 Male: 44.8% Female: 55.2% White: 83.9% Other: 16.1%	• On average, smokers were exposed to more than 200 antismoking ads during the 2-year period, as estimated by televised gross ratings points (GRPs). • The odds of having quit at follow-up increased by 11% with each 10 additional potential ad exposures. • Greater exposure to ads that contained highly emotional elements or personal stories drove this effect, which was greater among respondents with low and mid-socioeconomic status than among high-socioeconomic status groups. • Of the 1,491 individuals who were smoking at baseline, 16.1% had quit for 1 month or more at the time of the follow-up interview.	Emotionally evocative ads and ads that contain personalized stories about the effects of smoking and quitting hold promise for efforts to promote smoking cessation and reduce socioeconomic disparities in smoking.
2. Farrelly, M. C., et al. (2012). "Promotion of smoking cessation with emotional and/or graphic antismoking advertising." American Journal of	**Cross sectional survey** Assessed the impact of emotional and/or graphic antismoking TV advertisements on quit attempts in the past 12 months. Data	New York state	Current smokers age 18 to 65 selected randomly to participate in the survey N=8,780	• Current smokers who recalled recently seeing at least one advertisement had increased odds of making a quit attempt in the past year of 31%. • Recall of emotional and/or graphic advertisements was	Similar to findings by Durkin and colleagues, smokers exposed to either highly emotional or graphic advertisements drove the overall findings. The emotional and/or graphic advertisements were effective with low-income

Preventive Medicine 43(5): 475-482	from a random-digit-dial telephone survey was examined regarding tobacco use, smoking cessation, exposure to second smoke, and related attitudes, beliefs and intentions as well as recall about anti-smoking campaigns.			associated with making a quit attempt for smokers with incomes $30,000 or less and those with a high-school degree or less (p=0.05), but not for any other groups.	and low- education smokers, whereas the comparison advertisements were not.
3. Jason, L. A., et al. (1988). "Effects of a televised smoking cessation intervention among low-income and minority smokers." American Journal of Community Psychology 16(6): 863-876.	**Randomized trial** Smokers were randomly assigned to either the intervention or no intervention group. The intervention consisted of a self-help manual, supportive phone calls, weekly support meetings, and a televisions broadcast.	West Garfield Park inner-city neighborhood, Chicago	Garfield Park residents who were smokers and selected through random digit dialing Intervention N=78 Mean age: 41.8 Male: 45% Female: 55% African American: 96% White: 3% Hispanic: 1% Control N=87 Mean age: 43.2 Male: 45% Female: 55% African American: 91% White: 2% Hispanic: 7%	• The major finding was that an intensive outreach effort in combination with large-scale media-based smoking cessation intervention was successful in achieving abstinence prevalence of 8% at the post-intervention interview and 20% at the 4month interview.	The results indicate that intensive supplementary opportunities enhanced participation by low-income smokers in a media smoking cessation program.
4. Niederdeppe, J., et al. (2011). "Socioeconomic variation in recall and perceived effectiveness of campaign	**Cross-sectional survey** Analyzed data from New York Media Tracking Survey Online (MTSO) and	New York state	Adult smokers who participated in the MTSO survey Demographics not reported	• Smokers with low levels of education and income less often recalled ads focused on how to quit, and perceived them as less effective, than ads using	Ads focused on why to quit smoking, using emotive testimonials or graphic imagery, generate more favorable responses among lower SES populations than

advertisements to promote smoking cessation." Social Science & Medicine 72(5): 773-780.	web survey to assess SES variation in response to smoking cessation ads. The ability to show videos of specific anti-smoking ads to study participants via online multimedia tools was a key feature of this survey.			graphic imagery or personal testimonials to convey why to quit. • Differences in readiness to quit between higher and lower educated populations did not explain why thematic differences in recall and response were more pronounced among smokers with the lowest levels of education.	ads that simply tell viewers how to quit smoking.
5. Niederdeppe, J., et al. (2008). "Smoking-cessation media campaigns and their effectiveness among socioeconomically advantaged and disadvantaged populations." American Journal of Public Health 98(5): 916-924.	**Cross-sectional survey** Examined whether the impact of televised smoking cessation ads differed by a population's education and income by analyzing data from the Wisconsin Behavioral Health Survey. The sample of smokers was interviewed and followed up one year later.	Wisconsin	Adult smokers who participated in the Wisconsin Behavioral Health Survey N=452 Male: 40% Female: 60% Mean age: 44.8 White: 87% Other: 13%	• Overall, neither keep-trying-to-quit nor secondhand smoke ad recall was associated with quit attempts or smoking abstinence. • Keep-trying-to-quit ads were significantly more effective in promoting quit attempts among higher- versus lower-educated populations	Some media campaign messages appear less effective in promoting quit attempts among less-educated populations compared with those who have more education. There is a need to develop media campaigns that are more effective with less-educated smokers.
6.*Strickland, J., N. Smock, et al. (2015). Development of targeted messages to promote smoking cessation among construction trade workers. Health Education Research 30(1): 107-120.	**Cross-sectional** This article describes our formative work to develop targeted messages to increase participation in an existing smoking cessation program	MO	Members of the Carpenters' District Council of Greater St. Louis Union. Smokers N= 145 Age: 30.8 Male: 95.9% Caucasian: 94.4%	• Among 144 current smokers, 65% reported wanting to quit smoking in the next 6 months and only 15% had heard of a union-sponsored smoking cessation program, despite widespread advertising. • We tested 12 message concepts and 26 images with	This study is an important step towards integrating the culture of a high-risk group into targeted messages to increase participation in smoking cessation activities. Family was the highest priority for nearly all workers. Most discussions

Access No: 2015-02345-011	among construction workers.		African American: 2.8% Other/missing: 2.8% Never married: 52.4% Married: 36.6% Separated/divorced: 11% H.S. or less: 53.1% Technical School: 4.8% Some college: 35.2% Bachelor's degree: 6.9% Concern for own health: 47.5% Ability to provide for family: 33.3% Family member concern: 33.3% Money/financial incentives: 21.3% Ability to participate in sports/hobbies: 11.3% No. Cigs/day 1-10: 28% 11-20: 53.8% 21 or more: 18.2%	the target audience to evaluate perceived relevance and effectiveness. • Participants responded most favorably to messages and images that emphasized family and work, although responses varied by audience segments based on age and parental status.	about work and health circled back to family; participants worked in order to provide for their family, and were concerned that their health may eventually impact their ability to support their family.
7. Vallone, D. M., et al. (2009). "Is socioeconomic status associated with awareness of and receptivity to the truth campaign?" Drug & Alcohol Dependence 104 Suppl 1: S115-120.	**Cross-sectional survey** This study examines whether youth in lower income and lower education zip codes have equivalent awareness of and receptivity to the truth® campaign as compared with those	Nation-wide using Legacy Media Tracking Survey data LMTS is a nationally representative, cross-sectional telephone survey.	Youth 12-17 years old randomly selected for survey Male: 49.7% Female: 50.3% White: 57.1% Hispanic: 20% African American: 15% Asian: 7.9%	• Females had lower levels of confirmed awareness of the truth® campaign as compared with males. • Youth who lived in lower education zip codes were less likely to have confirmed campaign awareness as compared with those in higher education zip codes. • Zip code level median household income was not	These findings suggest that the effectiveness of the truth® campaign could be enhanced by developing strategies to increase campaign awareness among female youth and youth from lower education zip codes.

	living in higher SES zip codes.		Most of the sample had never smoked (76.3%); however, 16.1% were former smokers and 7.6% were current smokers. Youth watched a mean of 3.3 hours of TV per day, and 80.9% had cable access.	associated with confirmed awareness. • Receptivity to the campaign was not associated with zip code level, median household income or education.	
8. Vallone, D. M., et al. (2011). "A national mass media smoking cessation campaign: effects by race/ ethnicity and education." American Journal of Health Promotion 25(5 Suppl): S38-50.	**Before/after study** Assessed the effectiveness of a large-scale, national smoking cessation media campaign (The EX Campaign) across racial/ethnic and educational subgroups. A longitudinal, random-digit-dial panel study was conducted prior to and 6 months following the national launch of the campaign.	National sample drawn from eight designated media markets: Birmingham, Alabama; (2) Columbus, Ohio; (3) Fort Smith/Fayetteville, Arkansas; (4) Houston, Texas; (5) Kansas City, Missouri; (6) Phoenix/Prescott, Arizona; (7) Pittsburgh, Pennsylvania; and (8) Portland, Oregon.	English or Spanish-speaking current smokers age 18 to 49 from the designated areas N= 4,067 Mean age: 37 Male: 45.2% Female: 54.8% White: 74% African American: 11.5% Hispanic: 7.4% Other: 7%	• Among smokers with less than a high school education, confirmed awareness of the EX campaign more than doubled their odds of having more favorable cognitions about quitting smoking at 6- month follow-up, and doubled their odds of having made a quit attempt during the study period. • Confirmed awareness of campaign advertising increased favorable cessation-related cognitions among Hispanics and quit attempts among non-Hispanic Blacks. •	Results suggest the EX campaign may be effective in promoting cessation-related cognitions and behaviors among minority and disadvantaged smokers.
9.*Vickerman, K. A., L. Zhang, et al. (2015). Cessation Outcomes Among Quitline Callers in Three States During a National Tobacco	**Cross-sectional** Few studies have investigated long-term tobacco use Cessation for callers during antismoking	Nebraska, North Carolina, Texas Quitline Enrollees Tips televised media campaign	Television Gross Rating below median group: N=351 25.6% less than high school graduate 30.9% GED/HS Diploma	• In multivariable models, only lower nicotine dependence and higher call completion were associated with higher odds of 7-day and 30-day abstinence 7 months after enrollment.	our study represents the first to examine the impact of a national tobacco education campaign on long-term cessation outcomes among tobacco users seeking cessation treatment.

Education Campaign. Preventing Chronic Disease 12: E110. Access No: 26182145	media campaigns. Studies have suggested that callers during campaigns may be less committed to quitting and have lower quit rates. This study examines tobacco user cessation outcomes 7 months after quitline enrollment during the 2012 Tips campaign		43.4% more than H.S. 56.6% Non-Hispanic White 43.4% Hispanic or other 51.4% uninsured 30.7% Medicaid 17.9% private Television Gross Rating Points above median N=364 21.2% less than H.S. 32.0% GED/H.S. Diploma 46.8% more than H.S. 70.4% non-Hispanic white 29.6% Hispanic or other 34.4% uninsured 37.0% Medicaid 28.7% private	• Tips campaign exposure was not associated with abstinence.	Together with previous research, these findings suggest that despite the possibility that tobacco users seeking treatment from quitlines during the Tips campaign might be less committed to quitting, callers achieved similar outcomes regardless of campaign exposure levels once they were enrolled in quitline counseling (14,25). While the campaign did not appear to directly affect odds of tobacco abstinence through quitlines, antismoking mass media campaigns such as Tips are valuable in increasing tobacco users' exposure to quitlines and thus increasing their likelihood of making a quit attempt and eventually achieving tobacco abstinence.

Article	Study Description	Setting	Population	Key Findings	Significance for Lower SES
Policy Intervention					
1. *Athar, H., Z. A. Chen, et al. (2016). Impact of Increasing Coverage for Select Smoking Cessation Therapies With no Out-of-Pocket Cost Among the Medicaid Population in Alabama, Georgia, and Maine. Journal of Public Health Management & Practice 22(1): 40-7. Access No: 26131658	**Cross-Sectional** This study evaluates the public health and economic impact of providing coverage for nicotine replacement therapy with no out-of-pocket cost.	AL, GA, ME	Adult, non-pregnant Medicaid populations in AL, GA, ME N= 142,230 AL N = 238,828 GA N= 98675 ME	• Alabama: Alabama could expect 1873 to 2810 additional quitters, which would result in $526 203 to $789 305 in annual Medicaid savings. This amounts to $3.03 to $4.54 in savings for each adult on Medicaid in 2010. • Georgia: Georgia could expect 2911 to 4367 additional quits, resulting between $1455606 and $2183409 in annual Medicaid savings, or $4.94 to $7.40 saved per adult on Medicaid in 2010. • Maine: Maine would expect 1511 to 2267 additional quits, which would result in $439709 and $647564 in annual Medicaid savings. This equals to $4.04 to $6.06 saved per adult on Medicaid in 2010.	The results of our study indicate that Medicaid programs in Alabama, Georgia, and Maine may avoid significant medical expenditures from expanded coverage for NRTgum and/or patch to all Medicaid beneficiaries.
2.*Barnoya, J., L. Jin, et al. (2015). Nicotine replacement therapy, tobacco products, and electronic cigarettes in pharmacies in St. Louis, Missouri. Journal of the American Pharmacists Association 55(4): 405-412.	**Cross-sectional** To compare availability of nicotine replacement therapy (NRT), tobacco products, and electronic cigarettes (e-cigarettes) in pharmacies in St. Louis, MO. Design: Cross-sectional study, on-site store audits of 322 pharmacies. Setting: St. Louis,	Community/pharmacies	Poor neighborhoods and primarily black neighborhoods	• NRT availability decreased as neighborhood poverty rate increased (P = 0.02). • Availability without pharmacy personnel assistance also decreased with increasing poverty rate (r = −0.19; 95% CI = −0.06, −0.31) and higher percentage of black residents (r = −0.18; 95% CI = −0.06, −0.31). • Prices were lower in neighborhoods with higher	Low access to NRT might perpetuate smoking disparities in disadvantaged and racially diverse neighborhoods. Study data support policies to ensure equal NRT access to reduce disparities.

	MO. Participants: 242 eligible community pharmacies located in the study area			poverty rates (P = 0.02) and a higher percentage of black residents (P = 0.03). • E-cigarettes were available in 43% of pharmacies, and their availability and price did not differ by poverty rate or percentage of black residents.	
3.*Berg, C. J., R. Haardorfer, et al. (2015). Smoke-Free Policies in Multiunit Housing: Smoking Behavior and Reactions to Messaging Strategies in Support or in Opposition. Preventing Chronic Disease 12: E98. Access No: 26111158	**Cross-sectional** Given the high proportion of US adults living in multiunit housing (MUH) and the related risks of secondhand smoke, we examined correlates of having smoke-free MUH policies, level of support for such policies, and reactions to related messaging among a quota-based nonprobability sample of US adults.	National	Adult Multi-Unit housing residents N= 752 Age: 39.4 Male: 51.6% Female: 48.4% White: 57.3% Black: 24.6% Other: 18.1% ≤H.S. diploma: 23.1% Some college: 42% ≥Bachelor's: 34.8% <$25,000: 37% $25-49,999: 32.3% $50-74,999: 23.7% ≥$75,000: 7%	• Overall, 56.3% had no smoke-free MUH policies and 16.2% had complete policies; 62.8% favored living in smoke-free MUH, and 28.9% said they would move if their building became smoke-free • Multivariate regression indicated that correlates of living in MUH with partial or no policies included younger age, less education, lower income, and current smoking (P's < .01); more restrictive smoke-free MUH policies were associated with lower cigarette consumption and recent quit attempts among current smokers (P's < .05); and correlates of support for MUH policies included greater education, nonsmoker status, and having complete MUH policies (P's < .05). • Of 9 messages opposing smoke-free MUH policies, the most	Smoke-free MUH policies may reduce smoking. Messaging in favor of smoke-free MUH policies was more persuasive than messaging opposing such policies, indicating the potential for using these approaches

				persuasive was "People have the right to smoke in their own homes"; the most persuasive message of 11 in support was "You have the right to breathe clean air in your home."	
4. Biener, L., et al. (1998). "Reactions of adult and teenaged smokers to the Massachusetts tobacco tax." American Journal of Public Health 88(9): 1389-1391.	**Cross-sectional survey** Examined quit rates in response in a statewode, 25-cent tax on cigarettes through a random-digit-dial telephone survey.	Massachusetts	Adult smokers, N=1,783, (smoked at least 100 cigarettes in their lifetime and now smoked "every day" or "some days) and teenage smokers, N=216, (smoked more than 1 whole cigarette in their lifetime and at least 1 cigarette in the previous 30 days) Demographics not reported	• Among adult smokers, 3.5% reported that they had stopped smoking, owing in part to the price increase; 35% had considered quitting and 19% had attempted to cut the cost of smoking by switching to cheaper brands or cutting down. • Among teenagers, 21% had considered quitting and 26% had cut costs. • Low-income smokers were more responsive to the price increase than more affluent smokers.	A modest and temporary price increase promoted quitting among adult smokers and reduced cigarette consumption among low-income teenagers.

5. Cantrell, J., et al. (2013) "Impact of tobacco-related health warning labels across socioeconomic, race and ethnic groups: results from a randomized web-based experiment." PLos One 8(1): e52206.	**Cross-sectional survey** Evaluated the potential impact of pictorial warning labels compared with text-only labels among U.S. adult smokers from diverse racial/ethnic and socioeconomic subgroups.	National sample	Adult smokers recruited from two online research panels N=3,371 Male: 38.8% Female: 61.2% Hispanic: 36.5% African American: 33.4% White: 30.2%	• Adjusted regression models demonstrated significantly stronger reactions for the pictorial condition for each outcome: salience, perceived impact, credibility and intention to quit. • No significant results were found for interactions between condition and race/ethnicity, education, or income. • The only exception concerned the intention to quit outcome, where the condition-by-education interaction was nearly significant (p=0.057). •	Findings suggest that the greater impact of the pictorial warning label compared to the text-only warning is consistent across diverse racial/ethnic and socioeconomic populations. Given their great reach, pictorial health warning labels may be one of the few tobacco control policies that have the potential to reduce communication inequalities across groups.
6. Centers for Disease Control and Prevention (1998). "Response to increases in cigarette prices by race/ethnicity, income, and age groups--United States, 1976-1993." MMWR - Morbidity & Mortality Weekly Report 47(29): 605-609.	**Cross-sectional survey** Summarizes data for 14 years from the National Health Interview Survey (NHIS), which indicates that lower-income, minority, and younger populations would be more likely to reduce or quit smoking in response to a price increase in cigarettes.	National sample	Adults 18 or older living in the U.S.	• For all respondents, the models estimated a prevalence price elasticity of −0.15 and a consumption price elasticity of −0.10, yielding a total price elasticity estimate of −0.25. • Therefore, a 50% price increase could cause a 12.5% reduction in the total U.S. cigarette consumption. • In the age-specific model, younger smokers were more likely than older smokers to quit smoking, and after controlling for income, education, and other nonprice variables, Hispanic smokers and non-Hispanic Black smokers were more likely than white smokers to reduce or quit smoking in response to a price increase.	The findings indicate that lower-income and minority smokers would be more likely than other smokers to be encouraged to quit in response to a price increase.

				• This pattern was consistent for all age groups.	
7. Doucet, J. M., et al. (2007). "Demographic differences in support for smoking policy interventions." Addictive Behaviors 32(1): 148-157.	**Cross-sectional survey** Investigated subgroup differences on five demographic variables (gender, age, race, ethnicity, and education) across the five dimensions of the Smoking Policy Inventory (SPI), which measures attitudes towards tobacco control policies.	National sample recruited using random-digit-dial	English-speaking adults 18 and older living in the U.S. N=506 Mean age: 43 Male: 37% Female: 63% White: 82% African American: 10% Hispanic: 4% Other: 4%	• Women had significantly more positive attitudes towards smoking policies in comparison to men. This was the only demographic variable in which each dimension was significantly different between groups. • There was a trend for Black participants showing more favorable attitudes than whites, especially on increasing public education. • Older participants tended to be more supportive of restrictions on advertising and promotion, increasing public education, and increasing environmental restrictions. • More educated people were significantly more supportive of increasing taxes and fees and increasing environmental restrictions.	Subgroup differences could guide the targeting of changes in policies and interventions to the specific concerns of these and other potentially underrepresented groups.

Appendix J: Meta-Analysis/Systematic Review

*Denotes an article added for original literature review update**

8. Drach, L.L., et al. (2010). "The acceptability of comprehensive smoke-free policies to low-income tenants in subsidized housing." Preventing Chronic Disease 7(3): A66.	**Cross-sectional survey** Evaluated the acceptability of a comprehensive smoke-free policy among low-income tenants in a group of subsidized, multiunit buildings.	Subsidized housing in Portland, OR	Current or former tenants of a large property management company 839 tenants received questionnaires Male: 31% Female: 69% White: 87% Other: 13%	• 82% of tenants returned questionnaires. • Overall, 74% of tenants were "very" or "somewhat" happy with the smoke-free policy, but opinions varied by smoking status. • Only 30% of current smokers were happy with the policy, compared with 85% of former smokers and 92% of never smokers (P < .001). • Similar themes were identified in qualitative interviews with former and never smokers. Nonsmokers praised the policy for promoting health, fire safety, and building cleanliness. • Acceptance and adherence appeared to be related. Five months after the policy was implemented, 62% of smokers reported that they did not follow the policy (50% of those happy with the policy vs 68% unhappy with it, P=.04).	Like their counterparts in private housing, most tenants in subsidized housing support smoke-free policies, but acceptance varies by smoking status. Because of low income, advanced age, or disability, and because of a limited supply of subsidized housing, residents have less freedom to move if they dislike the policies and cannot simply be given notice of eviction, as in private housing. Approximately 2 in 3 smokers reported both unhappiness and nonadherence with the policy, a substantial enough proportion to derail successful implementation.
9. Farrelly, M. C., et al. (2012). "The Consequences of High Cigarette Excise Taxes for Low-Income Smokers." PLoS ONE 7(9).	**Cross sectional survey** Analysis focuses on three measures to examine the impact of cigarette taxes: current smoking, cigarettes smoked per day by current smokers, and annual household income, using the New York	New York and national sample	Adult smokers in New York and nationally selected to participate N=7,536 adults and 1,294 smokers from New York and 3,777 adults and 748 smokers nationally.	• The prevalence of smoking in New York (16.1%) is lower than the national rate (22.2%) (P<.001) and is strongly related to income in New York and nationally. • The national data shows smokers in the lowest income group spending 13% of their income on cigarette purchases in 2010-11, compared to about 8% in 2003.	Although high cigarette taxes are an effective method for reducing cigarette smoking, they can impose a significant financial burden on low-income smokers.

	and national Adult Tobacco Surveys.			• This financial burden is much more pronounced in New York, where low-income smokers spend 24% of their annual household income on smoking as result of the high cigarette excise tax. •	
10.*Garrett, B. E., S. R. Dube, et al. (2015). Addressing the Social Determinants of Health to Reduce Tobacco-Related Disparities. *Nicotine & Tobacco Research* 17(8): 892-7	**Cross-sectional** Comprehensive tobacco prevention and control efforts that include implementing smoke-free air laws, increasing tobacco prices, conducting hard-hitting mass media campaigns, and making evidence-based cessation treatments available are effective in reducing tobacco use in the general population. However, if these interventions are not implemented in an equitable manner, certain population groups may be left out causing or exacerbating disparities in tobacco	National	Low SES populations	• Tobacco control policy interventions can be effective in addressing the social determinants of health in tobacco prevention and control to achieve equity and eliminate tobacco-related disparities when they are implemented consistently and equitably across all population groups.	Taking a social determinants of health approach in tobacco prevention and control will be necessary to achieve equity and eliminate tobacco-related disparities.

	use. Disparities in tobacco use have, in part, stemmed from inequities in the way tobacco control policies and programs have been adopted and implemented to reach and impact the most vulnerable segments of the population that have the highest rates of smokings (e.g., those with lower education and incomes).				
11. Greene, J., et al. (2014). "The impact of tobacco dependence treatment coverage and copayments in Medicaid." American Journal of Preventive Medicine 46(4): 331-336.	• **Cross sectional survey** Examined whether more generous Medicaid tobacco dependence treatment (TDT) coverage is associated with greater likelihood of quit attempts and successful quit rates.	National sample of 28 states from the Current Population Survey	Adult Medicaid recipients who reported having ever smoked at least 100 cigarettes; smoking some days or every day 12 months prior to being interviewed and residing in one of the study states N=3,071 Male: 35% Female: 65% White: 67.1% African American: 18.9% American Indian: 5.1% Hispanic: 4.7% Other: 4.3%	• 41% of Medicaid recipients attempted to quit smoking in the prior year and 7% quit successfully. • Medicaid recipients in states with the most generous coverage (counseling without copayment and pharmacotherapy with copayment) had the highest predicted successful quit rates (8.3%). • Those living in states with no TDT or pharmacotherapy-only coverage had lower predicted successful quit rates (range=4.0%–5.6%).	These findings suggest that the Affordable Care Act will increase smoking quit rates among Medicaid recipients. This study confirms that more TDT coverage including counseling is associated with a higher likelihood of quitting smoking than coverage without counseling.

12.*Knudsen, H. K. and P. M. Roman (2015). Medicaid, Private Insurance, and the Availability of Smoking Cessation Interventions in Substance Use Disorder Treatment. Psychiatric Services 66(11): 1213-20.	**Cross-sectional** This study examined whether reliance on Medicaid and private insurance revenues is associated with the availability of a formal counseling-based smoking cessation program and medications (sustained-release bupropion, varenicline, and nicotine replacement) within U.S. specialty treatment organizations.	Substance abuse and psychiatric treatment centers	Patients of substance abuse and psychiatric treatment centers	• Greater reliance on Medicaid revenues was positively associated with the odds of offering counseling-based smoking cessation programs, sustained-release bupropion, varenicline, and nicotine replacement. For example, a 10-percentage point increase in Medicaid revenues was associated with a 12% increase in the odds of offering a smoking cessation program. • • Reliance on private insurance revenues was positively associated with the odds of offering the three medications.	The findings point to future potential increases in the availability of smoking cessation services in the contextof expanding insurance coverage under health care reform. Longitudinal research will be needed to examine whether this impact is realized.
13.*Ku, L., B. K. Bruen, et al. (2016). Medicaid tobacco cessation: Big gaps remain in efforts to get smokers to quit. Health Affairs 35(1): 62-70.	**Cross-sectional** Medicaid enrollees are about twice as likely as the general US population to smoke tobacco: 32 percent of people in the program identify themselves as smokers. This article provides the first data about the effectiveness of state Medicaid programs in promoting smoking cessation.	National Medicaid data	Medicaid Enrollees	• Our analysis of Medicaid enrollees' use of cessation medications found that about 10 percent of current smokers received cessation medications in 2013. • Every state Medicaid program covers cessation benefits, but the use of these medications varies widely, with the rate in Minnesota being thirty times higher than that in Texas. • Most states could increase their efforts to help smokers quit, working with public health agencies, managed care plans, and others.	The promotion of tobacco cessation should be an important Medicaid policy objective. About one third of adult Medicaid enrollees smoke, making them a high-risk population. States that have not expanded Medicaid eligibility in the wake of the Affordable Care Act have higher smoking prevalence and lower utilization rates of cessation medication, compared to expansion states. Given these factors, non-expansion states will have a greater public health burden related to smoking. Medicaid and public health agencies should work together to make smoking

				• In 2013 Medicaid spent $103 million on cessation medications—less than 0.25 percent of the estimated cost to Medicaid of smoking-related diseases.	cessation a priority for Medicaid beneficiaries.
14. Liu, F. (2009). "Effect of Medicaid coverage of tobacco-dependence treatments on smoking cessation." International Journal of Environmental Research & Public Health [Electronic Resource] 6(12): 3143-3155.	**Cross sectional survey** Used nationally representative data from the Current Population Survey to examine how the Medicaid coverage of cessation aids affect smoking behavior.	National sample	Adult smokers and Medicaid recipients N=5,323 Demographics not reported	• This study finds evidence that state Medicaid coverage of tobacco dependence treatment has a positive impact on smoking cessation for women aged 18-44. • On average, among Medicaid recipients who used medication as cessation aids, more than two-thirds lived in states where the medication was covered by Medicaid. • Such a pattern was not seen among counseling users who sought cessation aids; only 18.2% users lived in states where such counseling was covered by Medicaid.	Simply changing the insurance coverage alone is not sufficient to substantially reduce smoking among Medicaid recipients. More work is needed to improve successful quitting among Medicaid smokers besides providing coverage of pharmaceutical therapies and counseling. Medicaid social workers should make efforts to inform the beneficiaries of the smoking-cessation treatment coverage.
15. McAlister, A.L. et al, (2005). "Cigarette taxes and their proposed uses: Support among smokers and non-smokers in different income groups in Texas [2]." Tobacco Control 14(3): 213-214.	**Cross sectional survey** Examined opinions via random-digit telephone survey on a proposed $1 per pack tax on cigarettes.	Texas	Adults with a telephone randomly selected to participate N=6,345 Current smokers made up 17% of the sample, and 35% of smokers reported annual household incomes below $25,000.	• Among all respondents, 65% favored a $1 per pack increase in cigarette taxes. • Support for the $1 per pack increase grows when the taxes are to be used partly for preventing young people from smoking (77%) or to help provide health insurance for children in low income families (75%). • Among smokers, support for the $1 tax was dramatically affected by its proposed use. • When the use was not specified, support was low (17%	Smokers and non-smokers differed notably in their opinions on cigarette taxes, and there were also significant differences between income groups.

				and 23%) among higher and low income groups. • However, when smokers considered proposed uses for smoking prevention and children's health insurance, levels of support among the higher and low income groups, respectively, increased to 48% and 59% with prevention use and to 53% and 67% with child health use.	
16. Murphy, J. M., et al. (2003). "Impact of economic policies on reducing tobacco use among Medicaid clients in New York." Preventive Medicine 37(1): 68-70	**Cross sectional survey** New York State implemented Medicaid coverage for prescription pharmacologic adjuncts for cessation and a 55-cent excise tax on a pack of cigarettes. This study examined awareness and use of stop smoking medications and changes in smoking/purchasing behavior among Medicaid clients.	New York City Medicaid Office	English-speaking Medicaid clients ages 18-64 years who currently smoked cigarettes and volunteered to be interviewed while waiting at the NYC Medicaid Office N=173 Demographics not reported	• Over 80% of Medicaid clients reported some desire to stop smoking and 40% intended to stop smoking in the next 6 months. • Awareness of Medicaid coverage for tobacco cessation pharmacotherapy was 7% for nicotine replacement therapy and 13% for bupropion. • Use of these stop smoking medications varied across products but in general was low (<10%). • Half of the Medicaid clients reported changing their smoking behavior as a result of the cigarette tax increase.	These findings emphasize the importance of allocating a portion of tobacco tax revenue to promote both expanded awareness of this prescription benefit among Medicaid clients and to support programs to further assist low-income smokers in their attempts to stop smoking.
17. Pizacani, B.A., et al. (2012). "Implementation of a smoke-free policy in subsidized multiunit housing: effects on smoking cessation and	**Cross sectional survey** Studied the impact of implementing a comprehensive smoke-free policy in multiunit housing.	Subsidized housing in Portland, OR	Current or former tenants of a large property management company N=440	• A self-reported annualized quit rate of 14.7% was reported over the study period compared with a historical quit rate in this population of 2.6%. • Almost half of ongoing smokers reduced their cigarette consumption.	Findings from this study support the efforts of housing providers and agencies to promote smoke-free environments in multiunit housing. This policy was effective in increasing quit rates and

secondhand smoke exposure." Nicotine & Tobacco Research 14(9): 1027-1034. *Also see related study, Drach et al, above*	The study evaluated cessation-related behaviors, policy knowledge and compliance, and secondhand smoke (SHS) exposure. A questionnaire was mailed to a random sample of 839 current tenants four months after policy implementation and again one year later. Results are based on tenants who completed both surveys.		Mean age: 60.8 Male: 31.3% Female: 68.7% White: 88.5% Nonwhite: 9.4% Multiracial: 2.1%	• More smokers correctly reported policy rules for indoor settings than for outdoor settings; self-reported indoor smoking decreased significantly from 59% to 17%. • Among nonsmokers, frequent indoor SHS exposure (multiple times per week) decreased significantly from 41% prepolicy to 17% postpolicy.	reducing SHS exposure within a population of older, low-income tenants.
18.*Roberts, M. E., M. L. Berman, et al. (2015). Point-of-sale tobacco marketing in rural and urban Ohio: Could the new landscape of Tobacco products widen inequalities? Preventive Medicine 81: 232-235.	**Cross-sectional** Considerable research has examined how cigarette point-of-sale advertising is closely related to smoking-related disparities across communities. Yet few studies have examined marketing of alternative tobacco products (e.g., e-cigarettes). The goal of the present study was to examine external point-of-sale marketing of various tobacco products and determine its	Ohio Stores in urban and rural Regions Point of Sale advertising	Franklin County, which comprises the city of Columbus; and Brown, Guernsey, Lawrence, Muskingum, Scioto, and Washington Counties, which comprise areas of rural Appalachian Ohio. Columbus is a diverse city,with a population of approximately 822,000, of whom 59% are non-Hispanic White (U.S. Census Bureau, 2015). In contrast, the Appalachian region of Ohio is primarily	• Of the retailers sampled, 37% were gas station convenience stores and 23% were stand-alone convenience stores; other retailers included mass merchandisers, grocery stores, drug stores, alcohol stores, tobacco shops, and bars/restaurants. • The most prevalent external ads were for non-menthol cigarettes (60%), followed by menthol cigarettes (38%), e-cigarettes (35%), cigarillos/little cigars (28%), smokeless tobacco (30%), and cigars (4%). • For external promotions (e.g., price reductions), 57% of the retailers had promotions for	Findings provide evidence of differential tobacco marketing at the external point-of-sale, which disproportionately targets urban, economically-disadvantaged, and African American communities. There is a need for tobacco control policies that will help improve equity and reduce health disparities.

	association with community-level demographics (population density, economic-disadvantage, race/ethnicity) in urban and rural regions of Ohio.		rural, non-HispanicWhite, and disadvantaged, with lower income, education, and health statuses than the rest of Ohio and the majority of the U.S. (Pollard and Jacobsen, 2014; Wewers et al., 2006)	cigarettes, 15% had promotions for e-cigarettes, and 40% had promotions for other types of tobacco products • Consistent with previous point-of-sale research (Cantrell et al., 2013; Henriksen et al., 2012; Yerger et al., 2007), advertising for menthol cigarettes, cigars, and cigarillos was more likely in communities with a higher percentage of African Americans (ps b .04). • Higher percentage African American communities were also significantly related to promotions for e-cigarettes (p = .04). Advertising for cigarillos was also more likely in high-disadvantage communities (p = .02). • When examining the number of different types of products sold, a greater number was advertised by retailers in Columbus' high disadvantage, African American communities (M = 2.6, SD = 1.5) and, unexpectedly, in Columbus's low-disadvantage, White communities (M=2.3, SD=1.8).	
19.*Singleterry, J., Z. Jump, et al. (2015). State Medicaid Coverage for Tobacco Cessation	**Cross-Sectional** To monitor the most recent trends in state Medicaid cessation coverage, the	National	Medicaid recipients	• During 2014–2015, increases were observed in the number of states covering individual counseling, group counseling, and all seven FDA-approved cessation medications for all	State Medicaid programs can maximize tobacco cessation among Medicaid enrollees by covering all evidence-based

Treatments and Barriers to Coverage - United States, 2014-2015. MMWR - Morbidity & Mortality Weekly Report 64(42): 1194-9. Access No: 26513425	American Lung Association collected data on coverage of, and barriers to, accessing all evidence-based cessation treatments except telephone counseling in state Medicaid programs (for a total of nine treatments) during January 31, 2014–June 30, 2015. As of June 30, 2015, all 50 states covered certain cessation treatments for at least some Medicaid enrollees.			Medicaid enrollees; however, only nine states covered all nine treatments for all enrollees. • Common barriers to accessing covered treatments included prior authorization requirements, limits on duration, annual limits on quit attempts, and required copayments.	cessation treatments, removing barriers that impede access to these treatments, promoting their coverage to Medicaid tobacco users and health care providers, and monitoring use of covered treatments (*5–7*). State Medicaid programs that take these actions have the potential to substantially reduce tobacco use, tobacco-related disease, and health care costs among Medicaid enrollees.

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
1. Albertsen, K., et al. (2006). "A systematic review of the impact of work environment on smoking cessation, relapse and amount smoked." Preventive Medicine **43**(4): 291-305.	**Working Population (Blue Collar)**	An evaluation of the methodological quality of 22 prospective studies was based on 14 explicit criteria, which included; • features of study design • statistical analysis • Sampling issues and measurement. The level of scientific evidence was evaluated for each study.	• There was strong evidence for an effect of the work environment on the amount smoked, but insufficient or mixed evidence regarding cessation and relapse. • High job demands were associated with higher amount smoked and with increased likelihood of cessation. • Resources at work and social support were positively associated with cessation and negatively associated	Recommendations are made for more intervention studies where changes in work environment are carried out in combination with health promotion interventions

20. Tauras, J. A., et al. (2013). "Differential impact of tobacco control policies on youth sub-populations." International Journal of Environmental Research and Public Health 10(9): 4306-4322.	**Before-after study** Examined the relationship between state-level cigarette prices and smoke-free air laws and youth smoking prevalence and intensity for various youth sub-populations in the United States. The data for this study were extracted from the 1991 through 2010 surveys of eighth, tenth, and twelfth grade students conducted by the Institute for Social Research at the University of Michigan.	Michigan	Students in eighth, tenth, and twelfth grade from 1991 through 2010	• Blacks, females, Hispanics, and low-SES subpopulations are found to have a larger price response with respect to smoking prevalence than the full sample. • Smoke-free air laws are found to have a negative effect on smoking prevalence for the full sample and for the male, white, and high-SES sub-populations. • Youth living with both parents are significantly less likely to smoke than any other living arrangement. This is true for the full sample and all the subpopulations.	This research concludes that higher cigarette prices will reduce smoking prevalence rates of Blacks, Hispanics, females, and low-SES subpopulations faster than the overall youth population and other youth sub-populations. Moreover, this research concludes that smoke-free air laws will reduce smoking prevalence for the overall youth population with the largest reductions in high SES and male subpopulations.
21. Vijayaraghavan, M., et al. (2013). "The effectiveness of cigarette price and smoke-free homes on low-income smokers in the United States." American Journal of Public Health 103(12): 2276-2283.	**Cross sectional survey** Examined the effectiveness of state cigarette price and smoke-free homes on smoking behaviors of low-income and high-income populations in the United States using the used the 2006–2007 Tobacco Use Supplement to the Current Population Survey (TUS-CPS).	National sample	Respondents to the 2006–2007 TUS-CPS who were aged 18 years or older and self-reported both income and smoking N=150,967 Demographics not reported	• High state cigarette price (pack price ≥ $4.50) was associated with lower consumption across all income levels. • Although low-income individuals were least likely to adopt smoke-free homes, those who adopted them had consumption levels and successful quit rates that were similar to those among higher-income individuals. • In multivariable analysis, both policies were independently associated with lower consumption, but only smoke-free homes were associated	High cigarette prices and especially smoke-free homes have the potential to reduce smoking behaviors among low-income individuals. Interventions are needed to increase adoption of smoke-free homes among low-income populations to increase cessation rates and prevent relapse.

				with sustained cessation at 90 days.	

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
			with relapse and the amount smoked.	
2. Albrecht, S. A., et al. (1994). "Smoking among low-income, pregnant women: prevalence rates, cessation interventions, and clinical implications." Birth 21(3): 155-162.	**Low-Income Pregnant and Post-Partum Smokers**	• Assessed the effects of interventions on cessation rates among pregnant women.	• Self-help interventions showed success, but interventions used in conjunction with the self-help materials (i.e., counseling) were brief, with little follow up. • Cessation rates of 3 to 11 percent were better than the spontaneous stopping rate for this population, these rates are low and postpartum relapse is high. • Training, technical support and site-specific adaptations are critical for successful implementation	Prenatal clinics serving low-income women should be set up to encourage smoking cessation with trained clinicians and systems strategies. Interventions should have continued contact to provide reinforcement. Future research should observe women after childbirth to determine long-term effects of interventions and to test postpartum interventions.
3. Andrews, JO, et al. (2012). "Community-Based Participatory Research and Smoking Cessation Interventions: A review of the evidence	**Disadvantaged Populations**	• Reviewed the use of Community-Based Participatory research and smoking cessation interventions. • Quality Scoring used two domains of	• Of 11 studies, 8 were focused on adult smokers. • 2 of the 8 showed high community involvement and research rigor.	CBPR approach can be used effectively to conduct needs assessment surveys, tailor interventions, recruitment, intervention delivery, evaluation, and dissemination of results.

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
		community participation: 1. Nature of community involvement (from research questions to dissemination of findings) 2. Evidence of community-based research elements (i.e. shared decision-making)	• Used CBPR to tailor cessation treatment to community • The 2 studies with high community involvement and research quality showed significant effect in smoking cessation.	
4. Brown, T., et al. (2014). "Equity impact of population-level interventions and policies to reduce smoking in adults: A systematic review." Drug and Alcohol Dependence **138**(1): 7-16.	**Disadvantaged Adult Smokers**	• Systematic review of studies of population-level interventions/policies reporting smoking-related outcomes in adults of lower compared to higher socioeconomic status (SES). • References were screened and independently checked. • Studies were quality assessed. • Results are presented in a narrative synthesis. • Equity impact was assessed as: positive (reduced inequality), neutral (no difference by SES), negative (increased inequality), mixed (equity impact varied) or unclear.	• 117 studies of 130 interventions/policies were included: smoke free (44); price/tax (27); mass media campaigns (30); advertising controls (9); cessation support (9); settings-based interventions (7); multiple policies (4). • The distribution of equity effects was: 33 positive, 36 neutral, 38 negative, 6 mixed, 17 unclear. • Most neutral equity studies benefited all SES groups. • Fourteen price/tax studies were equity positive. Voluntary, regional and partial smoke free policies were more likely to be	Few studies have assessed the equity impact of tobacco control policy/interventions. Price/tax increases had the most consistent positive equity impact. More research is needed to strengthen the evidence-base for reducing smoking inequalities and to develop effective equity-orientated tobacco control strategies.

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
			equity negative than national, comprehensive smoke free policies. • Mass media campaigns had inconsistent equity effects. • Cigarette marketing controls were equity positive or neutral. • Targeted national smoking cessation services can be equity positive by achieving higher reach among low SES, compensating for lower quit rates.	
5. Bryant, J., et al. (2011). "A systematic review and meta-analysis of the effectiveness of behavioral smoking cessation interventions in selected disadvantaged groups." Addiction **106**(9): 1568-1585.	**Disadvantaged Groups: the homeless, prisoners, indigenous populations, at-risk youth, individuals with low socio-economic status and individuals with a mental illness**	• Medline, EMBASE, the Cochrane Library and PsycInfo databases were searched using MeSH and keywords for studies conducted in developed countries prior to October 2010. • Included studies were assessed for methodological quality. • A DerSimonian and Laird random effects meta-analysis was conducted where possible to explore the effectiveness of interventions for the different subgroups.	• Thirty-two relevant studies were identified. The majority (n = 20) were rated low in methodological quality. • Results of the meta-analysis showed a significant increase in cessation for behavioral support interventions targeted at low-income female smokers at short-term follow-up [relative risk (RR) 1.68, confidence interval (CI) 1.21-2.33], and behavioral support interventions targeted at individuals with a	Few well-controlled trials have examined the most effective smoking cessation strategies for highly disadvantaged groups, especially among the homeless, indigenous smokers and prisoners. The use of behavioral smoking cessation interventions for some socially disadvantaged groups appears promising; however, overall findings are inconsistent. Further research is needed to establish the most

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
		• A narrative review was conducted for studies unable to be included in the meta-analysis. • Outcomes examined were abstinence rates at short-term (up to 3 months) and long-term (6 months or the longest) follow-up.	mental illness at long-term follow-up (RR 1.35, CI 1.01-1.81). • Results of the narrative review showed several promising interventions that increased cessation rates at 6-month or longer follow-up.	effective interventions for vulnerable high-risk groups. Special attention should be given to increasing sample size and power, and to sound evaluation methodology to overcome methodological limitations of conducting research with these high-risk groups
6. Cahill, K., et al. (2008). "Workplace interventions for smoking cessation." Cochrane Database of Systematic Reviews (4): CD003440.	**Blue Collar Workers**	• We searched the Cochrane Tobacco Addiction Group Specialized Register in April 2008, MEDLINE (1966 - April 2008), EMBASE (1985 - Feb 2008) and PsycINFO (to March 2008). • We searched abstracts from international conferences on tobacco and the bibliographies of identified studies and reviews for additional references. • We selected interventions conducted in the workplace to promote smoking cessation. • We included only randomized and quasi-randomized controlled trials allocating individuals, workplaces or companies to	• We include 51 studies covering 53 interventions in this updated review. • We found 37 studies of workplace interventions aimed at individual workers, covering group therapy, individual counselling, self-help materials, nicotine replacement therapy and social support. • The results were consistent with those found in other settings. Group programs, individual counselling and nicotine replacement therapy increased cessation rates in comparison to no treatment or minimal intervention controls. Self-help	We found strong evidence that interventions directed towards individual smokers increase the likelihood of quitting smoking. These include individual and group counselling and pharmacological treatment to overcome nicotine addiction. All these interventions show similar effects whether offered in the workplace or elsewhere.

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
		intervention or control conditions.	materials were less effective. • We also found 16 studies testing interventions applied to the workplace as a whole. • There was a lack of evidence that comprehensive programs reduced the prevalence of smoking. Incentive schemes increased attempts to stop smoking, though there was less evidence that they increased the rate of actual quitting.	
7.*Cahill, K., J. Hartmann-Boyce, et al. (2015). Incentives for smoking cessation. Cochrane Database of Systematic Reviews 5: CD004307. Access No: 25983287	Adult smokers	We searched the Cochrane Tobacco Addiction Group Specialised Register, with additional searches of MEDLINE, EMBASE, CINAHL and PsycINFO. The most recent searches were in December 2014, although we also include two trials published in 2015 We considered randomised controlled trials, allocating individuals, workplaces, groups within workplaces, or communities to experimental or control conditions We also considered controlled studies with	• The incentives included lottery tickets or prize draws, cash payments, vouchers for goods and groceries, and in six trials the recovery of money deposited by those taking part. • The odds ratio (OR) for quitting with incentives at longest follow-up (six months or more) compared with controls was 1.42 (95% confidence interval (CI) 1.19 to 1.69; 17 trials, [20 comparisons], 7715 participants). Only three studies demonstrated	Incentives appear to boost cessation rates while they are in place. The two trials recruiting from work sites that achieved sustained success rates beyond the reward schedule concentrated their resources into substantial cash payments for abstinence. Such an approach may only be feasible where independently-funded smoking cessation programmes are already available, and within a relatively affluent and educated population. Deposit-refund trials can

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
		baseline and post-intervention measures. We include studies in a mixed-population setting (e.g. community-, work-, institution-based), and also, for this update, trials in pregnant smokers.	significantly higher quit rates for the incentives group than for the control group at or beyond the six-month assessment: • A direct comparison between the rewards-based and the deposit-based groups found a benefit for the rewards arms, with an OR at 12 months of 1.76 (95% CI 1.22 to 2.53; 2070 participants). Although more people in this trial accepted the rewards programmes than the deposit programmes, the proportion of quitters in each group favoured the deposit-refund programme.	suffer from relatively low rates of uptake, but those who do sign up and contribute their own money may achieve higher quit rates than reward-only participants. Incentive schemes conducted among pregnant smokers improved the cessation rates, both at the end-of-pregnancy and post-partum assessments. Current and future research might continue to explore the scale, loading and longevity of possible cash or voucher reward schedules, within a variety of smoking populations.
8.*Courtney, R. J., S. Naicker, et al. (2015). Smoking Cessation among Low-Socioeconomic Status and Disadvantaged Population Groups: A Systematic Review of Research Output. International Journal of Environmental Research & Public Health [Electronic Resource] 12(6): 6403-22.	Low SES Adult Smokers	A systematic database search was conducted for two time periods: 2000-2004 (TP1) and 2008-2012 (TP2). Publications that examined smoking cessation in a low-SES or disadvantaged population were coded by: population of interest; study type (reviews, non-data based publications, data-based publications (descriptive, measurement and intervention research)); and	• 278 citations were included. Research output (i.e., all study types) had increased from TP1 27% to TP2 73% (chi2=73.13, p<0.001), however, the proportion of data-based research had not significantly increased from TP1 and TP2: descriptive (TP1=23% vs. TP2=33%) or	The current research output is not ideal or optimal to decrease smoking rates. Research institutions, scholars and funding organisations should take heed to review findings when developing future research and policy.

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
		country. Intervention studies were coded in accordance with the Cochrane Effective Practice and Organisation of Care data collection checklist and use of biochemical verification of self-reported abstinence was assessed.	intervention (TP1=77% vs. TP2=67%). • The proportion of intervention studies adopting biochemical verification of self-reported abstinence had significantly decreased from TP1 to TP2 with an increased reliance on self-reported abstinence (TP1=12% vs. TP2=36%).	
9. Durkin, S., et al. (2012). "Mass media campaigns to promote smoking cessation among adults: an integrative review." Tobacco Control **21**(2): 127-138.	**Adult Smokers**	• The present work updates two reviews published in 2008 by searching databases using a standard search string. • Articles in languages other than English were excluded, as well as letters and editorials. • Screening of abstracts yielded 194 potentially relevant articles. • Abstracts were evaluated by 2 authors, excluding articles that focused on populations other than adults and according to other specified criteria, resulting in 26 studies reported in 29 articles. • Studies were categorized as (a) population-based studies of campaign	• Overall, the studies have strengthened the evidence that mass media campaigns conducted in the context of comprehensive tobacco control programs can promote quitting and reduce adult smoking prevalence, but that campaign reach, intensity, duration and message type may influence success. • Achievement of sufficient population exposure is vital, especially for lower socioeconomic status smokers, with television remaining the primary channel to effectively reach and	Mass media campaigns to promote quitting are important investments as part of comprehensive tobacco control programs to educate about the harms of smoking, set the agenda for discussion, change smoking attitudes and beliefs, increase quitting intentions and quit attempts, and reduce adult smoking prevalence. Jurisdictions should aim for high reach and consistent exposure over time with preference towards negative health effects messages.

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
		effects and (b) studies comparing message types, using either population-based or forced exposure methods. • Findings of subgroup differences for each study were noted, as well as study strengths and limitations.	influence adult smokers. • Studies comparing different message types found negative health effects messages most effective at generating increased knowledge, beliefs, positive perceived effectiveness ratings, or quitting behavior, while there was more mixed evidence for other message types. • A few studies further suggest that negative health effects messages may also contribute to reductions in socioeconomic disparities in smoking.	
10. Ebert, L. M. and K. Fahy (2007). "Why do women continue to smoke in pregnancy?" Women and Birth **20**(4): 161-168.	**Pregnant women**		• Women want an individualized approach to smoking cessation advice, with health care workers having knowledge of the woman's social situation and viewpoints. • This paper reveals that the woman's perspective has largely been ignored	Health care professionals have attempted to manipulate women to stop smoking rather than engage in mutually respectful dialogue.
11. Fitzgerald, E. M. (2012). "Evidence-based tobacco cessation	**Pregnant Latina Women**			Social-support treatments should be individualized based on what types of

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
strategies with pregnant Latina women." Nursing Clinics of North America **47**(1): 45-54.				emotional, informational, or instrumental resources the woman desires. Evidence-based strategies delivered in English or Spanish by bilingual lay health educators and tailored to embrace Latina values are cost-effective and successful.
12. Greaves, L. and N. Hemsing (2009). "Women and tobacco control policies: Social-structural and psychosocial contributions to vulnerability to tobacco use and exposure." Drug and Alcohol Dependence **104**: S121-S130.	**Women Smokers**	• Various literatures on smoking among women and girls, and how women and sub-populations of women respond to tobacco control policies are reviewed.	• Specific sub-populations exhibiting more tobacco use and exposure are described, such as • Young pregnant and mothering women and low-income women. • Emerging evidence also reveals links between smoking and experiences such as childhood sexual abuse, interpersonal violence, post-traumatic stress disorder, mental health issues and alcohol and drug dependence. • Varied sub-populations of women respond in different ways to price and taxation, sales restrictions and location restrictions. • However, tobacco control policies have, to date, been fashioned as	When these issues are considered, the implications for tobacco policy development include: widening the policy purview, accounting for uneven and differential responses to policies, committing to an ethical framework, extending sex, gender and diversity based analyses, and improving research methods and approaches.

Title	Population	Methodology	Key Findings	Recommendations
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			broad instruments, not taking into account social context, trauma backgrounds, gendered roles such as mothering, unequal power relations affecting women in relationships and workplaces, and differences in access to resources and social support.	
13. Guillaumier, A., et al. (2012). "Anti-tobacco mass media and socially disadvantaged groups: a systematic and methodological review." Drug & Alcohol Review **31**(5): 698-708.	**Low SES Populations**	• Medline, The Cochrane Library, PsycInfo, Embase and Web of Science were searched using MeSH and keywords for quantitative studies conducted in Western countries prior to March 2012. • A methodological quality assessment and narrative analysis of included studies was undertaken.	• Seventeen relevant studies (reported in 18 papers) were identified; however, weak study designs and selection bias were common characteristics, limiting strong conclusions about effectiveness. • Using predominantly non-cessation related outcome measures reviewed papers indicated mixed results for mass media tobacco control campaign effectiveness among various social groups. • Most studies assessed mass media impact on low socioeconomic status groups rather than highly socially disadvantaged groups.	Methodological rigor of evaluations in this field must be improved to aid understanding regarding the effectiveness of mass media campaigns in driving cessation among disadvantaged groups.

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
14. Hahn, E. J. (2010). "Smokefree legislation: a review of health and economic outcomes research." American Journal of Preventive Medicine **39**(6 Suppl 1): S66-76.	**Adult Smokers**	• This paper reviews the scientific literature on health and economic outcome studies of smoke free legislation from the past decade, 2000 to early 2010, using MEDLINE and key search terms: smoking, smoking cessation, smoking/legislation and jurisprudence, smoking cessation/legislation and jurisprudence, and health policy.	• There is a wealth of research showing the health benefits to entire populations when communities implement comprehensive smoke free laws and/or regulations. • These laws improve the health of hospitality workers and the general population by improving indoor air quality, reducing acute myocardial infarctions and asthma exacerbations, and improving infant and birth outcomes. • Some studies report reduced smoking prevalence and cigarette consumption and improved cessation outcomes after smoke free legislation. In addition to the health benefits, economic studies confirm that smoke free laws do not adversely affect business revenues or operating costs.	While there is an abundance of smoke free policy outcomes research showing both the health and economic impacts of smoke free legislation, these outcomes may have more to do with implementation effectiveness than adoption, especially among subpopulations. An emerging body of literature documents not only that disparities in health protections remain among subpopulations, but that health outcomes of smoke free legislation may vary by gender, race/ethnicity, SES, and age. Further research is needed on implementation effectiveness of smoke free legislation and differential effects on subpopulations.
15. Henkel, D. (2011). "Unemployment and substance use: a review	**Unemployed and employed with**	• The current article summarizes the results of a comprehensive review	The main results are as follows:	We see a decrease in both when the economy declines and the

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
of the literature (1990-2010)." Current Drug Abuse Reviews **4**(1): 4-27.	**substance use/disorders**	of the international research published between 1990 and 2010. • The research was focused on the prevalence of substance use/disorders among the unemployed and employed, the impact of substance abuse on unemployment and vice versa, the effect of unemployment on alcohol/ drug addiction treatment and smoking cessation, and the relationship between business cycle, unemployment rate and substance use. • Over hundred-thirty relevant studies were identified investigating these issues	• Risky alcohol consumption (associated with hazardous, binge, and heavy drinking) is more prevalent among the unemployed. They are also more likely to be smokers, to use illicit and prescription drugs, and to have alcohol and drug disorders (abuse, dependence). • Problematic substance use increases the likelihood of unemployment and decreases the chance of finding and holding down a job. • Unemployment is a significant risk factor for substance use and the subsequent development of substance use disorders. However, the current research provides only limited information about which individuals are more likely to be affected. • Unemployment increases the risk of relapse after alcohol	unemployment rate increases. In contrast, a countercyclical trend was observed amongst adolescent drug users. However, these studies do not provide any convincing or additional information about substance use amongst the unemployed.

Title	Population	Methodology	Key Findings	Recommendations
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			and drug addiction treatment. • The exact nature of the relationship between unemployment and the probability of smoking cessation remains unclear due to the mixed results observed in the literature review. • Drinking and smoking patterns appear to be procyclical.	
16. Higgins, S.T., et al. (2012). "Financial incentives for smoking cessation among pregnant and newly postpartum women." Preventive Medicine 55 Suppl: S33-40.	**Pregnant and Postpartum Smokers**	National review of randomized trials on use of financial incentives for smoking cessation among pregnant women.	• Results from six controlled trials with economically disadvantaged pregnant smokers support the efficacy of financial incentives for increasing smoking abstinence rates antepartum and early postpartum. • Results from three trials provide evidence that the intervention improves estimated fetal growth, mean birth weight, percent of low- birth-weight	The systematic use of financial incentives has promise as an efficacious intervention for promoting smoking cessation among economically disadvantaged pregnant and recently postpartum women and improving birth outcomes.
17. Hiscock, R., et al. (2012). "Socioeconomic status and smoking: a review." Annals of the New York Academy of Sciences **1248**: 107-123.	**Disadvantaged groups and low SES**		• Studies have suggested that this may be the result of reduced social support for quitting, low motivation to quit, stronger addiction to tobacco, increased	

Title	Population	Methodology	Key Findings	Recommendations
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			likelihood of not completing courses of pharmacotherapy or behavioral support sessions, psychological differences such as lack of self-efficacy, and tobacco industry marketing. • Evidence of interventions that work among lower socioeconomic groups is sparse. Raising the price of tobacco products appears to be the tobacco control intervention with the most potential to reduce health inequalities from tobacco. • Targeted cessation programs and mass media interventions can also contribute to reducing inequalities. • To tackle the high prevalence of smoking among disadvantaged groups, a combination of tobacco control measures is required, and these should be delivered in conjunction with wider attempts to address inequalities in health.	

Title	Population	Methodology	Key Findings	Recommendations
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18. Liu, J. J., et al. (2010). "P49 Modifying health promotion interventions for ethnic minority groups: systematic review of empirical evidence." Journal of Epidemiology & Community Health **64**: A52-53.	**Ethnic Minority Groups**	• A systematic review was conducted with two reviewers independently searching, identifying, extracting and critically appraising empirical studies of adapted interventions. • The databases searched include MEDLINE, EMBASE, ASSIA, Psycinfo, CINAHL, BIOSIS, Cochrane, ISI Web of Science, Lilacs, Campbell and SCEH. • Results In total, 48 740 records were identified. 95 empirical studies were identified as relevant and included in the analysis. • The majority of adapted intervention studies took place in the USA, conducted with African-Caribbean origin populations and these predominantly involved women. • All studies conducted with Chinese-origin populations took place in the USA while the majority of studies with South Asian-origin populations were conducted in the UK	• The components of the adaptation process identified include methods such as ethnically matching program facilitators; subsidizing gym memberships and promoting low-cost alternatives to usual exercise options. • Resources include culturally targeting materials (eg, using ethnic actors in videos and including photos of foods commonly consumed by the population in promotional material); utilizing existing community resources (eg, religious leaders) and accommodating for differing linguistic and language competencies. • Settings include holding interventions in familiar locations and utilizing culturally appropriate scenarios to elicit behavior change.	A large body of evidence exists for adapted interventions. Identification of the components involved in the adaptation process for ethnic minority populations is a critical step for building on existing adaptation principles. Furthermore, this study will enable the development of a framework to guide the adaptation of mainstream evidence-based guidelines to be salient for different populations and contexts.
19.*Malinowski, B., M. Minkler, et al. (2015).	Union Workers	Literature review including articles in English published	• Studies suggest, that unions were receptive to	More rigorous research is needed on potential

Title	Population	Methodology	Key Findings	Recommendations
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Labor unions: a public health institution. American Journal of Public Health 105(2): 261-71.		in peer-reviewed public health or medical journals from 1970 to 2013.	the tobacco industry alliance can be explained by their reluctance "to intervene on members' personal health habits, particularly when other workplace health hazards remained uncontrolled" and by the facts that unions represent both smokers and nonsmokers, that the evidence based on secondhand smoke was not yet compelling, and that "tobacco control advocates were not reaching out to labor. • Coalition of Labor Union Women, union opposition to the cigarette excise tax during the decade from 1987 to 1997 may have been further encouraged by the tobacco industry's provision of direct financial support to the union as well as in-kind support for many of its events. • A more recent investigation of public sector unions in New York revealed that many in labor embraced state	pathways from union membership to health outcomes and the facilitators of and barriers to union–public health collaboration. Despite occasional challenges, public health professionals should increase their efforts to engage with unions as critical partners.

Title	Population	Methodology	Key Findings	Recommendations
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			guidelines or regulations on smoking.73 Labor unions in many parts of the country also increasingly worked with public health and other tobacco control forces on issues such as integrated smoking cessation programs and tailored interventions in the workplace, union-based insurance coverage for such programs, and smoke-free workplaces. • Even today, however, difficult dilemmas sometimes occur when unions do not feel sufficiently engaged in the policy change process or when support for tobacco control bumps up against potentially even greater union and membership concerns for individual privacy and worker rights "off the job," 2 issues that go back decades.80	
20. Main, C., et al. (2008). "Population tobacco control interventions and their effects on social inequalities in smoking:	**Low SES populations**	Systematic review methods were used to evaluate existing systematic reviews that assessed a population-level tobacco control intervention and which reported	• Nineteen systematic reviews were included. • Four reviews assessed interventions aimed at the population level alone, whilst fifteen	There is preliminary evidence that increases in the unit price of tobacco may have the potential to reduce smoking related health inequalities. There

Title	Population	Methodology	Key Findings	Recommendations
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placing an equity lens on existing systematic reviews." BMC Public Health **8**: 178.		characteristics of included participants in terms of at least one socio-demographic or socio-economic factor.	included at least one primary study that examined this type of intervention. • Four reviews assessed youth access restrictions, one assessed the effects of increasing the unit price of tobacco, and six assessed smoking bans or restrictions. • Of the eight remaining reviews, six assessed multi-component community based interventions, in which the population-level interventions were part of a wider tobacco control program, and two assessed the impact of smoking bans or restrictions in reducing exposure to environmental tobacco smoke. • We found tentative evidence that the effect of increasing the unit price of tobacco products may vary between ethnic and socio-economic groups, and between males and females. • However, differences in the context and the	is a need for equity effects to be explicitly evaluated in future systematic reviews and in primary research assessing the effects of population tobacco control interventions.

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
			results of different reviews made it difficult to draw any firm conclusions. • Few identified reviews explicitly attempted to examine differences in intervention effects between socio-demographic groups. • Therefore on the basis of these reviews the potential for smoking bans, and youth access restrictions to decrease social inequalities in smoking remains unknown.	
21. McRobbie, H., et al. (2013). "Research priorities for article 14-demand reduction measures concerning tobacco dependence and cessation." Nicotine and Tobacco Research **15**(4): 805-816.	**Smokers using tobacco dependent treatment**	• We used the recommendations within the A14 guidelines to guide a review of current evidence and best practice for promotion of tobacco cessation and TDT, identify gaps, and propose research priorities.	• We identified nine areas for future research (a) understanding current tobacco use and the effect of policy on behavior, (b) promoting cessation of tobacco use, (c) implementation of TDT guidelines, (d) increasing training capacity, (e) enhancing population-based TDT interventions, (f) treatment for different types of tobacco use, (g) supply of low-cost pharmaceutical devices/products, (h)	Research should be prioritized toward examining interventions that (a) promote cessation of tobacco use, (b) assist health care workers provide better help to smokers (e.g., through implementation of guidelines and training), (c) enhance population-based TDT interventions, and (d) assist people to cease the use of other tobacco products.

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
			investigation use of nonpharmaceutical devices/products, and (i) refinement of current TDTs. Specific research topics are suggested within each of these areas and recognize the differences needed between high- and low-/middle-income countries	
22. Michie, S., et al. (2009). "Low-income groups and behaviour change interventions: a review of intervention content, effectiveness and theoretical frameworks." Journal of Epidemiology & Community Health **63**(8): 610-622.	**Adult Smokers**	• This review investigated the effectiveness of interventions targeting low-income groups to reduce smoking or increase physical activity and/or healthy eating. • Of 9766 papers identified by the search strategy, 13 met the inclusion criteria. Intervention content was coded into component technique and theoretical basis, and examined as a potential source of effect heterogeneity.	• Interventions were heterogeneous, comprising 4-19 techniques. • Nine interventions had positive effects, seven resulted in no change and one had an adverse effect. • Effective interventions had a tendency to have fewer techniques than ineffective interventions, with no evidence for any technique being generally effective or ineffective. • Only six studies cited theory relative to intervention development, with little information about how theory was used and no obvious	This review shows that behavior change interventions, particularly those with fewer techniques, can be effective in low-income groups, but highlights the lack of evidence to draw on in informing the design of interventions for disadvantaged groups

Title	Population	Methodology	Key Findings	Recommendations
Meta-Analysis/Systematic Review				
			association with intervention content or effect.	
23. Murray, R. L., et al. (2009). "Improving access to smoking cessation services for disadvantaged groups: a systematic review." Journal of Public Health **31**(2): 258-277.	**Disadvantaged smokers**	• A systematic review was carried out of studies identifying and supporting smokers from disadvantaged groups for smoking cessation, and providing and improving their access to smoking-cessation services. • A wide range of electronic databases were searched and unpublished reports were identified from the national research register and key experts.	• Over 7500 studies were screened and 48 were included. Some papers were of poor quality, most were observational studies and many did not report findings for disadvantaged smokers. • Nevertheless, several methods of recruiting smokers, including proactively targeting patients on General Physician's registers, routine screening or other hospital appointments, were identified. • Barriers to service use for disadvantaged groups were identified and providing cessation services in different settings appeared to improve access. We found preliminary evidence of the effectiveness of some interventions in increasing quitting behavior in disadvantaged groups.	There is limited evidence on effective strategies to increase access to cessation services for disadvantaged smokers. While many studies collected socioeconomic data, very few analyzed its contribution to the results. However, some potentially promising interventions were identified which merit further research.

Title	Population	Methodology	Key Findings	Recommendations
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24. Pederson, L. L., et al. (2000). "Smoking cessation among African Americans: what we know and do not know about interventions and self-quitting." Preventive Medicine **31**(1): 23-38.	**African Americans**	• Articles published from 1988 to 1998 were collected using Medline and other data bases, as well as personal communication. • Studies were divided into two categories: evaluations of specific cessation interventions and examinations of self-quit behaviors and related factors. Studies were tabulated using author/year, study design/sample size, variables/results, and comments.	• In the intervention studies, church-based programs may provide an effective location for cessation interventions, but the studies to date did not demonstrate unequivocal effectiveness. • In clinic programs, there do not appear to be any interventions that are particularly effective. • In community-based interventions, there were no differences for African and Caucasian Americans. • With regard to self-quitting, sociodemographic variables were similarly related to cessation as in the general population, as were smoking history variables. All other categories did not contain enough information for firm conclusions to be drawn.	There are some interventions that appear to be useful, but little information is available on self-quitting. More research is needed on the natural history of quitting, on the social norms for smoking among African American groups, and on the conceptual dimensions of race in the context of this research
25. Schaap, M. M. and A. E. Kunst (2009).	**Disadvantaged groups**	Seventy studies on socio-economic inequalities in	Most studies had a cross-sectional design and	It is recommended that, as well as educational

Title	Population	Methodology	Key Findings	Recommendations
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"Monitoring of socio-economic inequalities in smoking: Learning from the experiences of recent scientific studies." Public Health **123**(2): 103-109.		smoking, published since 1990, were selected and reviewed, with particular focus on study design, indicators of SEP and smoking outcomes.	measured smoking prevalence rates among adults in relation to educational level. In addition to educational level, measures of household wealth and occupational class had strong associations with smoking outcomes. In addition to smoking prevalence, other outcome measures such as initiation rates, cessation rates and consumption level are needed to provide in-depth knowledge of the effect of SEP on smoking, especially from a life-course perspective.	level, other socio-economic indicators should be used to identify socio-economic groups where smoking rates are highest. Estimates of inequalities in initiation and cessation rates are needed to identify the most important age groups and entry points for policies to tackle inequalities in smoking
26. Zhang, J. and Z. Wang (2008). "Factors associated with smoking in Asian American adults: a systematic review." Nicotine & Tobacco Research **10**(5): 791-801.	**Asian American Adults**	• A total of 21 quantitative studies published in peer-reviewed journals from 1997 to 2006 were reviewed and abstracted using the matrix method. • Statistically significant factors reported by the studies were summarized. Methodological quality of the studies also was assessed (maximum possible score = 10). Acculturation and education were the most frequently reported factors (n = 10, 47.6%).	• Acculturation was negatively associated with men's smoking but was positively associated with women's smoking. • Education was uniformly found to be negatively related to smoking. Age was reported to have either a positive or a negative relationship with smoking (n = 9, 42.9%). • Men were more likely to smoke than women (n = 7, 33.3%). The	Health promotion professionals need to consider the summarized factors associated with Asian American adults' smoking behavior when planning smoking prevention programs and when recruiting participants for smoking cessation programs. When addressing acculturation, program planners should design different health education materials and use different strategies for men and women. To identify, understand, and

Title	Population	Methodology	Key Findings	Recommendations
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			mean methodological score of the reviewed studies was 4.14 (on a scale of 1-10 points; SD = 1.62; range = 2-8)	incorporate essential factors into effective interventions, future studies should aim at higher methodological quality by using longitudinal design and increasing the use of theory, the test of data validity and reliability, and the report of effect sizes