Final Report:

An Evaluation of the Perinatal Tobacco Cessation Efforts in Massachusetts

Prepared by Tufts Interdisciplinary Evaluation Research (TIER) for the Massachusetts Tobacco Cessation and Prevention Program (MTCP) of the Massachusetts Department of Public Health (MDPH)

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Introduction

The Massachusetts Tobacco Cessation and Prevention Program (MTCP) of the Massachusetts Department of Public Health (MDPH), contracted Tufts Interdisciplinary Evaluation Research (TIER) in 2020 to conduct an evaluation to understand how they can better tailor their tobacco[a] cessation efforts to meet the unique needs of pregnant and parenting[b] people in Massachusetts, with the goal of promoting quit success. Our mixed methods evaluation comprised the following activities:[c]

- Literature review synthesizing findings from studies focused on the current state of tobacco use among pregnant and parenting individuals highlighting population- and individual-level interventions employed to address tobacco use, as well as contextual factors that may influence quit success
- Compendium of tobacco treatment programs in Massachusetts
- Heatmap of percent of mothers reporting smoking during pregnancy by Massachusetts city or town
- Focus groups and one-on-one interviews with 20 community stakeholders[d]
- Survey of 157 substance use treatment providers and 277 family support providers on how they approach tobacco use with their pregnant and parenting clients

We begin this report with background about the prevalence of tobacco use nationally and in Massachusetts within the pregnant and postpartum populations, including a map showing the percent of mothers reporting smoking during pregnancy across the Commonwealth. This section is followed by a description of our evaluation methods, which includes a qualitative and quantitative analytic plan and sample characteristics. The next section comprises a summary of evaluation findings, followed by conclusions and recommendations.

Background

According to data from the Pregnancy Risk Assessment Monitoring System (PRAMS), 17.7% of women nationwide reported cigarette smoking during the three months before pregnancy, 8.1% during the last three months of pregnancy, and 11.7% postpartum.[1] E-cigarette use was less common among this population, with 3.7% of women indicating e-cigarette use during the three months before pregnancy and 1.1% percent reporting use during the last three months of pregnancy.[1] According to 2016 data from the National vital Statistics System, smoking among prenatal individuals was most prevalent among American Indian or Alaska Native mothers (16.7%), followed by White Non-Hispanic (10.5%), Black Non-Hispanic (6.0%), Hispanic (1.8%), and Asian (0.6%).[2]

In comparison to US women overall, women who lived in Massachusetts used tobacco at lower rates. Of the women who lived in Massachusetts and were surveyed by PRAMS in 2018, 13% reported smoking cigarettes during the three months before pregnancy, 4.7% during the last three months of pregnancy, and 8.3% during the postpartum period. E-cigarette use was also less prevalent among women residing in Massachusetts compared to women in the US overall, with only 1.9% of MA women indicating e-cigarette use during the three months before pregnancy and less than 0.5% percent reporting use during the last three months of

[a] Throughout the report, tobacco refers to both tobacco and nicotine products.
[b] The grant that funded this evaluation was focused on the perinatal population (i.e., defined variably as the period spanning from pregnancy to 6 months to a year postpartum,); in agreement with our partners at MTCP, we expanded this to include parents with young children. Thus, when we refer to "parenting" people throughout this report, we are referring to those with children under the age of three.
[c] Data collection activities were conducted between January and July of 2021, and due to COVID-19, all data were collected online or virtually. No data were collected in-person.
[d] Our original evaluation had included 10 focus groups with pregnant or parenting individuals, but due to COVID-19 and appertaining recruitment difficulties, we shifted our focus entirely to collect data from substance use treatment providers and family support providers through focus groups, interviews, and surveys.

pregnancy.[1] In Massachusetts, according to 2017 electronic birth certificate data, White Non-Hispanic mothers were the most likely to report having smoked during pregnancy (6.4%), followed by Hispanic mothers of all races (3.5%) and Black Non-Hispanic mothers (3.1%), with Asian Non-Hispanic mothers reporting the lowest rates (0.9%).[3,e]

Tobacco Use, Pregnancy, and Substance Use Disorder

Pregnant women with a history of mental health challenges, high stress levels, and alcohol and drug use disproportionately continue to smoke when compared to those without such conditions.[4] Smoking among perinatal individuals who also are using other drugs is of particular concern because of the potential additive risks of adverse fetal outcomes. In a recent study of smoking and drug use in a prenatal population, researchers found that women who smoke cigarettes were over four times more likely to have co-occurring substance use; half of current smokers also used cannabis, and almost two thirds used some other type of illicit drug.[5] And in a study of comorbidities where prenatal women with substance use disorder comprise the denominator, researchers found that almost 75% of those women also used tobacco products.[6]

Geographical Differences in Smoking Among Pregnant Women in Massachusetts

Geographically, the highest rates of smoking during pregnancy among women in Massachusetts occurred in North Adams (33.28%), Orange (30.52%), and Adams (26.58%).[7] Table 1 provides a list of Massachusetts cities and towns with smoking during pregnancy rates of 15% or higher, highlighting disproportionate rates in Western and Central Massachusetts. See Figure 1 for a heatmap of the percent of mothers who reported smoking during pregnancy across Massachusetts.

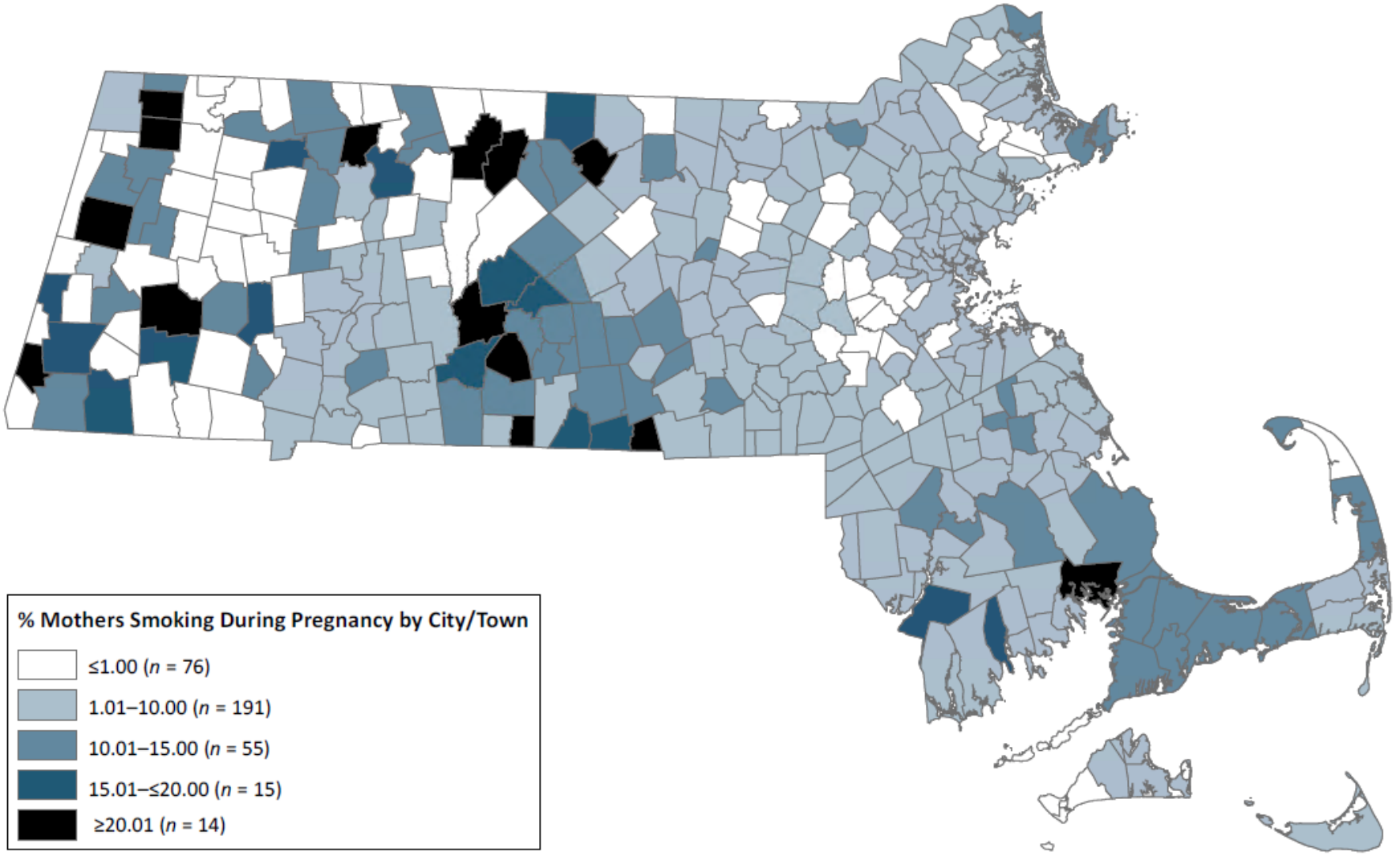
Table 1. The 30 Massachusetts Cities and Towns with Highest Rates of Tobacco Users During Pregnancy[7]

Rank	Municipality	County	Smoking During Pregnancy (%)
1	North Adams	Berkshire	33.28
2	Orange	Franklin	30.52
3	Adams	Berkshire	26.58
4	Ware	Hampshire	24.43
5	Athol	Worcester	23.52
6	Webster	Worcester	22.53
7	Greenfield	Franklin	22.46
8	Becket	Berkshire	22.06
9	Egremont	Berkshire	21.74
10	Pittsfield	Berkshire	21.59
11	Warren	Worcester	20.52
12	Wareham	Plymouth	20.52
13	Holland	Hampden	20.37
14	Gardner	Worcester	20.13
15	Fall River	Bristol	19.78
16	New Marlborough	Berkshire	19.36
17	Winchendon	Worcester	18.80
18	Southbridge	Worcester	18.26
19	Hardwick	Worcester	17.43

[e] Data on Native Americans were not available.

Rank	Municipality	County	Smoking During Pregnancy (%)
20	Otis	Berkshire	17.07
21	Great Barrington	Berkshire	16.75
22	New Braintree	Worcester	16.67
23	Montague	Franklin	16.19
24	New Bedford	Bristol	15.83
25	Dudley	Worcester	15.75
26	Palmer	Hampden	15.74
27	Huntington	Hampshire	15.60
28	Buckland	Franklin	15.52
29	West Stockbridge	Pittsfield	15.39
30	Yarmouth	Barnstable	15.00

Figure 1. Percent of Mothers Reporting Smoking During Pregnancy Out of All Live Births in Massachusetts from 2012–2016 by City or Town[8]



Tobacco Cessation Programs in Massachusetts

Our search for tobacco cessation programs across the Commonwealth resulted in a compendium consisting of 32 service locations that provide a wide range of services (e.g., direct service support, education or resources, training or technical assistance for organizations) to reduce and prevent future tobacco use. For the full compendium findings, see Appendix A and the accompanying Excel file entitled *Compendium Table of Programs*.[8]

Among smoking cessation programs available in Massachusetts, only QuitLine—The Massachusetts Smokers' Helpline—includes a tailored component for pregnant individuals who smoke, and only Clinical Effort Against Secondhand Smoke Exposure (CEASE) has developed a unique framework to address tobacco cessation among parenting families. See text box for program descriptions.

QuitLine, known as the Massachusetts Smokers' Helpline (1-800-QUIT-NOW), is a free evidence-based program administered by MTCP that offers confidential, one-on-one coaching to support tobacco cessation. QuitLine's program enhancement for pregnant women consists of 9 coaching calls with the same coach (5 during pregnancy and 4 postpartum), text messaging and email support, and targeted educational materials (e.g., fact sheets). As an incentive for participation, QuitLine provides women with $5 gift cards per coaching call during pregnancy and $10 gift cards per coaching call postpartum, for a total of up to $65 in rewards. While users generally have positive reactions to the support provided through QuitLine's coaches and partner healthcare providers, statistics on the number of pregnant women contacting the Helpline (as well as rates of quit success and program feedback among this population) are not available through QuitLine website.[f]

QuitWorks, also run by MTCP, is a program aimed at integrating tobacco cessation practices into healthcare settings, and facilitating a more seamless referral process to QuitLine for both healthcare and insurance providers. QuitWorks provides training to healthcare providers in implementing a condensed version of the evidence-based 5 A's model, and has systemized an easy referral process allowing providers to connect patients to the QuitLine for intensive phone-based counseling.[9] QuitWorks also supports healthcare providers to implement more systems-level changes, such as tobacco-free campuses and counseling for both patients and staff members.[10]

Clinical Effort Against Secondhand Smoke Exposure (CEASE) is a framework developed at Massachusetts General Hospital (MGH). CEASE uses a shortened adaptation of the 5 A's model called "2 A's and an R," which involves providers *Asking*, *Advising*, and *Referring* individuals to appropriate care.[11] CEASE is a research-tested intervention program that supports pediatric healthcare providers in delivering tobacco cessation support to parents with the goal of reducing child exposure to secondhand smoke. Child health care offices are trained in implementing CEASE, through which they connect parents to resources (e.g., Helplines, pharmacotherapy) to encourage smoking cessation, and provide tips for a tobacco-free car and home.[12] A study conducted across 20 pediatric practices in 16 states compared the effects of usual care with CEASE, finding that parents who participated in CEASE were significantly more likely to receive at least one form of assistance with tobacco cessation in comparison to those treated with usual care.[13]

Current Evaluation

While MTCP has made great strides in addressing tobacco use through programs such as QuitLine and QuitWorks, engagement of prenatal and parenting populations through these programs has been less robust than expected. For instance, data shared with our team by MTCP showed that only a fraction of the individuals who accessed QuitLine identified as pregnant,[g] suggesting that this program may not be reaching its intended population. In 2020, the MTCP team contracted with TIER to gain a better understanding of how they might be

[f] For information about Quitline, see https://www.mass.gov/info-details/about-1-800-quit-now

[g] Based on unofficial data shared by MTCP with TIER; we do not report actual numbers because these data were preliminary and only used to explore trends.

able to better tailor their tobacco[h] cessation efforts to meet the unique needs of pregnant and parenting people in Massachusetts, with the goal of promoting quit success. MTCP was particularly interested in understanding the intersections among tobacco use, substance use, and other behavioral health issues in this population. Our original design was wholly qualitative: our aim had been to use a community evaluator model (explained in Methods, below) to conduct a series of focus groups with pregnant and parenting individuals, the partners of pregnant and parenting individuals, pregnant and parenting individuals enrolled in substance use treatment programs, family support providers, and substance use treatment providers. However, because of virtual recruitment difficulties related to the COVID-19 pandemic, we were unsuccessful in our attempts to recruit parents to participate; ultimately, we were able to conduct an interview with only one parent.

This necessitated a pivot in our approach; we significantly expanded the component of our evaluation that was focused on substance use treatment and family support providers. While these providers are extremely well-positioned to engage families about their tobacco use, little is known about the extent to which they are addressing tobacco use in their day-to-day work, or how well prepared they feel to do so. We adjusted our evaluation methods to include additional focus groups and interviews with providers, and a survey to be distributed across family support programs and Bureau of Substance Addiction Services (BSAS) substance use treatment centers across the Commonwealth. The aims of this evaluation were to learn about: (1) the prevalence of tobacco use among pregnant and parenting populations in Massachusetts, (2) substance use treatment and family support provider preparedness to support tobacco cessation efforts among pregnant and parenting clients, (3) substance use treatment and family support provider practices related to working with clients who use tobacco products, and (4) factors related to tobacco reduction or cessation among substance use treatment and family support program clients. See Table 2 for a brief overview of evaluation aims, questions, and activities.

[h] Throughout the report, tobacco refers to both tobacco and nicotine products.

Table 2. Overview of Evaluation Aims, Questions, and Activities

Aims and Evaluation Questions	Evaluation Activity			
	Compendium	Heatmap	Focus groups & interviews	Surveys
Aim 1—Understand the prevalence[i] of tobacco use among pregnant and parenting clients of substance use treatment and family support programs in Massachusetts				
1. What is the prevalence of tobacco use among pregnant and parenting clients served by substance use treatment and family support programs?	✓	✓	✓	✓
2. What are the most commonly used tobacco products among these populations?			✓	✓
Aim 2—Understand substance use treatment and family support provider preparedness to support tobacco cessation efforts, and how preparedness differs by provider type				
1. Have providers been trained to address tobacco use, and if so what types of training have they received?			✓	✓
2. Do providers feel that it is important to talk with their clients about their tobacco use?			✓	✓
3. How confident do providers feel in their ability to have conversations with clients about quitting tobacco?			✓	✓
4. What factors impact provider ability to provide support to clients who use tobacco?			✓	✓
Aim 3—Understand substance use treatment and family support provider practices related to working with clients who use tobacco, and how these practices differ by provider type				
1. How do providers address tobacco use with their clients, and to what extent do providers incorporate the 5 A's into their practice?			✓	✓
Aim 4—Understand factors related to tobacco reduction or cessation among substance treatment and family support program clients				
1. What types of cessation services do clients use, and how effective are they perceived to be?			✓	✓
2. What barriers do clients experience when attempting to quit or reduce tobacco use?			✓	✓
3. What is the prevalence[j] of smoking relapse among pregnant and parenting populations?				✓

[i] We assessed "prevalence" of tobacco use among pregnant and parenting populations using provider estimations elicited through focus groups and surveys.
[j] We assessed "prevalence" of smoking relapse using provider estimations elicited through focus groups and surveys.

Evaluation Methods

In this section, we describe the methods used for each evaluation activity listed in the introduction.

Literature Review

The purpose of the literature review was to learn how tobacco cessation interventions have been found to reduce tobacco use among pregnant and parenting people, and variables that influence the likelihood of quit success. We conducted a search of empirical studies, government publications, and publicly available data through Google Scholar and Tufts Tisch Library using keywords and Boolean operators, predominately focusing on our target population of pregnant and postpartum individuals. Based on the focus of this evaluation (tobacco cessation practices and services outside of medical settings), we centered the literature search on evidence-based psychosocial interventions and best practices rather than pharmacotherapy. We aimed to search for literature published within the past 10 years (2010 to 2020) to focus this summary on the most recent information available. Selected findings from the literature review are included throughout this document; for the full literature review, see Appendix C.

Heatmap

We created a heatmap to provide a visual perspective on the distribution of smoking prevalence during pregnancy for each city or town in Massachusettts[7] by quintile classification, where quintiles are equal-sized classes of the population.

Compendium

MTCP does not currently have a comprehensive, updated compendium of existing tobacco cessation programs in Massachusetts that support pregnant and parenting people. To address this gap, we reviewed and summarized the current tobacco cessation programs within the Commonwealth, explicitly searching for supports serving pregnant and parenting people. As there are few services specifically tailored to these sub-groups, we expanded our search to include tobacco cessation programs available to the population more broadly (including those who may be pregnant or parenting).

For each program in the compendium, we include a brief description, categorizing programs by (1) type, including direct service (to individuals or families), curriculum/resource center, training or technical assistance (to organizations), and frameworks or initiatives; (2) setting in which the program functions (i.e., clinic/hospital, behavioral health, family support, phone/virtual); and (3) modality of service (i.e., organizations, groups, or individual). Further, we categorized programs based on if they included a behavioral health component (i.e., addressing SUD or mental health), whether they tailored any of their program components to pregnant and parenting individuals, and whether they used evidence-based practices. To determine extant tobacco cessation programs in Massachusetts, we conducted a Google search using keywords and Boolean operators for community and government agencies, and organizations. Further, we reviewed a list available on *Making Smoking History*, contacting programs to find out which were still operating. The final list of programs represents our best efforts at the time but is not meant to be comprehensive or exhaustive.

Interviews and Focus Groups

Description

We conducted several interviews and focus groups with community stakeholders from multiple regions across Massachusetts. Interview and focus group participants included pregnant or parenting individuals who used tobacco, and substance use treatment and family support providers who either provide direct services in or oversee BSAS-licensed substance use treatment programs. The goal for these interviews and focus groups was to understand perspectives on how best to support tobacco cessation among pregnant and parenting people,

with topics focused on: (1) provider approaches to broaching tobacco use, including existing challenges; (2) barriers individuals experience with quitting; (3) accessing community cessation programs; and (4) the unique needs and challenges related to tobacco cessation among this population.

Procedure

We collaborated with a research associate at Bunker Hill Community College (BHCC) to provide two students with a unique learning experience grounded in Community Based Participatory Research (CBPR).[14] A recruitment call was distributed to students via professors at BHCC; eligible applicants were required to be 18 or older and speak and write English fluently. Though we sought applicants who had experience either having used tobacco products themselves or having been close with someone who had attempted to quit tobacco use, this was not a requirement of successful candidates. Two students were hired and received ten hours of training from TIER researchers. The training focused on: CBPR, qualitative research, focus group dynamics and facilitation techniques, and research ethics. Students also conducted a mock focus group with the TIER research team to receive feedback about their facilitation techniques and received one-on-one coaching from a TIER researcher throughout their project involvement. In addition to the two BHCC students, two people who had been previously trained by TIER in the CBPR model, also joined the research team. They were incorporated into the training process of the students, sharing their experiences and expertise. All four individuals were compensated for their time. It was our intent that community evaluators would lead the focus groups with pregnant and parenting individuals; however, due to virtual recruitment difficulties related to the COVID-19 pandemic, only one parent interview occurred, which was led by one of the BHCC students.

For substance use treatment stakeholder interviews and focus groups, MTCP helped us recruit participants by identifying community-based organizations and healthcare institutions that have created programs for, work with, or encounter pregnant or parenting people who use tobacco. Once these organizations and potential participants were identified, MTCP sent individuals and the TIER research team email introductions, and we followed-up with potential participants explaining the evaluation and inviting them to participate.

For family support stakeholder interviews and focus groups as well as the one parent interview, MTCP helped us recruit participants by identifying community-based organizations and family support programs that serve pregnant or parenting people with whom MTCP has a relationship. Once connected with these organizations and programs, the TIER research team emailed potential participants explaining the evaluation asking whether they were interested in either participating or helping recruit pregnant or parenting individuals to participate. Interested individuals were then invited to participate and for those who offered to help recruit pregnant or parenting individuals, we provided them with recruitment emails and flyers they could share.

Due to the COVID-19 pandemic restrictions, we conducted all interviews and focus groups on Zoom, which is a secure virtual meeting platform. We conducted one-to-one interviews and focus groups, where up to six individuals participated in each focus group. Ahead of or at the beginning of each focus group, we asked participants to complete a brief demographic survey. The survey was anonymous and included open-ended questions about participant age, gender, race, ethnicity, and primary language. On average, interview and focus groups lasted 51 minutes. Participants received an incentive for their participation.

Surveys

Description

TIER collaborated with MTCP and BSAS to create a survey focused on existing tobacco cessation practices and services for pregnant and parenting clients across Massachusetts to understand how providers approach tobacco use and initiate quitting discussions. We used the 5A's[15] to structure survey questions related to provider current practice regarding addressing tobacco use with clients. Aligned with our evaluation aims, each survey included questions around the following topics: (1) prevalence of tobacco use among pregnant and parenting clients served by substance use treatment and family support programs, including common tobacco

products used; (2) substance use treatment and family support provider preparedness in addressing tobacco use with clients, including importance of and confidence with talking to clients about tobacco use, and barriers that impact provider ability to support clients who use tobacco; (3) substance use treatment and family support provider practices for addressing client tobacco use; and (4) effectiveness of the tobacco cessation services clients use, barriers clients experience when attempting to quit or reduce tobacco use, and prevalence of client smoking relapse. See Appendices D and E for the substance use treatment provider and family support provide surveys, respectively.

Procedure

Through an iterative process with our partners at MTCP and BSAS, we created separate versions of the survey for distribution to two respondent samples: (1) substance use treatment providers who work for Massachusetts BSAS-licensed programs ; and (2) family support providers who work for programs across Massachusetts (e.g., Healthy Families Massachusetts [HFM], the Special Supplemental Nutrition Program for Women, Infants, and Children [WIC], Family Centers, Early Head Start [EHS]). We used Qualtrics to administer the survey, inviting providers through email where we provided them an anonymous link. We administered the surveys in two waves: first, to family support providers in late winter of 2021, and then to substance use treatment providers in early spring of 2021. For the substance use treatment provider survey, we used a snowball sampling approach as recommended by BSAS, asking regional directors to forward the survey invites to the BSAS-licensed treatment programs they oversee, who then shared it with providers within their respective agency. For the family support provider survey, we used a hybrid approach where we received permission from family support programs to email their staff directly and asked family support program directors to forward survey invites to their staff. To bolster survey participation, we either sent follow-up emails to non-respondents for whom we invited directly or asked regional directors and program directors to re-forward to their staff our recruitment email. Because we used a snowball approach, the survey response rate is unknown. Each of the survey versions took 10–15 minutes to complete and all respondents were offered a $5 Dunkin' e-gift card upon completion as a "thank you."

Analytic Plan

Interviews and Focus Groups

To document participant responses, we audio-recorded and transcribed interviews and focus groups, with the support of one to two notetakers. Prior to data collection sessions, notetakers attended a training to understand the expected output of focus groups, which included an unfiltered objective transcription of the conversation and subjective observations of participants' expressions or reactions. Immediately after each focus group, researchers who were present at the focus group discussed reactions, observations, key takeaways, recommendations, and implications, which notetakers recorded and provided alongside the final transcription. We then conducted a thematic analysis of the major categories of discussion across interview and focus group transcripts using NVivo 12,[16] looking for themes that informed the goals of the evaluation and contextualized data collected through quantitative methods.

Surveys

First, we conducted descriptive analyses running frequencies, means, and standard deviations in SPSS 26.[17k] Next, we conducted bivariate and multivariate analyses in SPSS 26[17] and Stata 17[18] to examine whether there were associations between predictor variables (e.g., provider characteristics) and outcome variables (e.g., prevalence of client tobacco use) where we interpreted associations as statistically significant at $p < .05$. See Table 4 for a description of the variables we examined, and Table 5 for a guide to the analyses we conducted. We begin with a brief glossary of terms in Table 3.

[k] Due to missing data, we report *n*s indicating the number of people who responded to items throughout the results section.

Table 3. Statistics Sidebar—Glossary of Terms

Statistics Sidebar
Analysis types
Bivariate: examines the association between two variables via correlation, *t*-test, ANOVA, or chi-square.
Multivariate: is a general term used to examine associations between three or more variables.
Variable types
Binary: A specific type of categorical variable that has only two values (e.g., mother received prenatal care: yes or no); also called "dummy" variables.
Categorical: A variable whereby numbers are assigned to the various response options, but these numbers have no numerical meaning (e.g., race/ethnicity, 1 corresponds to Black, 2 corresponds to Hispanic/Latinx).
Continuous: A variable containing equal intervals between points such that numbers have real meaning (e.g., age).

Table 4. Description of the Variables Used in Analyses

Variable	Type	Variable Values for Analysis
Prevalence of Client Tobacco Use		
Estimated prevalence among clients	Categorical	0 = none, 1 = some/around half, 3 = most/all
Common tobacco products used	Binary	0 = not selected, 1 = selected
Provider Characteristics		
Provider type	Binary	0 = substance use treatment provider, 1 = family support provider
Substance use treatment provider role	Binary	0 = non-directors, 1 = directors
Family support provider role	Binary	0 = program directors, 1 = supervisors or frontline staff
Current smoking status	Categorical	0 = never smoked, 1 = current smoker, 2 = former smoker
Provider Preparedness to Support Clients with Tobacco Cessation		
Training receipt	Binary	0 = not received, 1 = received
Type of training	Categorical	1 = individual coaching or counseling, 2 = parent or family support groups, 3 = education thru formal curriculum or resources, 4 = other
Perceptions of importance	Continuous	0 = not at all important to 3 = extremely important
Confidence	Continuous	0 = not at all confident to 3 = extremely confident
Barriers impacting provider ability to support clients	Binary	0 = selected, 1 = not selected
Provider Practices to Addressing Tobacco Use with Clients		
Ask—screening	Binary	0 = no, 1 = yes
Ask—initiate conversations	Binary	0 = no, 1 = yes
Advise clients about the effects of tobacco	Binary	0 = never or sometimes, 1 = most of the time or always
Assess readiness to change	Binary	0 = never or sometimes, 1 = most of the time or always
Assist clients with cessation efforts	Binary	0 = never or sometimes, 1 = most of the time or always
Assist—places clients are referred	Binary	0 = selected, 1 = not selected
Arrange follow-up with clients	Binary	0 = never or sometimes, 1 = most of the time or always

Variable	Type	Variable Values for Analysis
Factors Related to Client Tobacco Reduction or Cessation		
Perceived effectiveness of services	Binary	0 = selected, 1 = not selected
Client barriers	Binary	0 = selected, 1 = not selected
Smoking relapse occurrence	Categorical	0 = none, 1 = some or around half, 2 = most or all, 3 = unsure
Smoking relapse timing	Categorical	1 = during pregnancy, 2 = within the first year postpartum, 3 = more than one year postpartum, 4 = unsure
Difficulty initiating conversation	Categorical	1 = less difficult (much less difficult or somewhat less difficult), 2 = no difference, 3 = more difficult (somewhat more difficult or much more difficult)

Table 5. Analytic Guide

Analysis	Predictor Variable Type	Outcome Variable Type	Statistic Presented
Bivariate Analyses			
Chi-square	Binary	Binary, categorical	χ^2
Paired t-test	Continuous	Continuous	*t*-test
One-way ANOVA	Binary, categorical	Continuous	*F-test*
Multivariate Analyses			
Factorial ANOVA	Binary, categorical	Continuous	*F-test*
Logistic regression	Binary, categorical, continuous	Binary	Odds ratio (*OR*)

Sample Characteristics

Interviews and Focus Group Samples

Twenty stakeholders from multiple regions[l] of Massachusetts participated in one-to-one interviews or focus groups, including one parent, 12 family support providers, and seven individuals who either provide direct services in or oversee BSAS-licensed substance use treatment programs.

Half of the family support providers volunteered information about their background characteristics, including race and ethnicity, primary language, and current tobacco use or history of use. All six family support providers were non-Hispanic White and spoke English as their primary language. Two family support providers reported to never use tobacco, one reported to have quit tobacco in the past, one reported that they are trying to quit, and two others reported they do not currently use tobacco but did not report whether they did in the past.

Survey Samples[m]

Four hundred thirty-four individuals across Massachusetts completed the survey; 157 providers from BSAS-licensed treatment centers and 277 providers from family support programs. Each respondent group is described below, with differences between the two groups noted when significant.

[l] For a map of the regions of Massachusetts, see Appendix B.

[m] We removed survey respondents from the analytic sample that did not complete more than 20% of the survey; nine respondents were removed from the substance use treatment provider sample and seven were removed from the family support provider sample.

Substance Use Treatment Providers: Roles and Program Type

Nearly two-thirds of substance use treatment providers (63.1%) were frontline staff, 28.7% were clinical or program directors, and 8.3% had "other" roles, including childcare assistant, employment specialist, nurse, outreach coordinator, program manager/coordinator/supervisor, or administrative positions. Most substance use treatment providers (91.7%) worked directly with clients. Slightly more than a fifth (21.6%) served as Tobacco Education Coordinators in their programs.

Tobacco Education Coordinators (TECs): TECs are a requirement of all BSAS-licensed treatment programs and serve as a resource to staff and clients regarding tobacco or nicotine education and treatment. They are trained by the Institute of Health and Recovery's (IHR's) Tobacco, Addictions, Policy and Education (TAPE) Project. The TAPE Project offers consultation and training to programs funded by MDPH's BSAS on nicotine addiction and its impact on overall health and recovery from substance use, as well as cessation programs.

As shown in Figure 2, substance use treatment providers represented a mix of centers, with providers from residential, outpatient, and opioid treatment programs representing the largest proportion of treatment center types. For details on the different program types, see Table 6.

Figure 2. Distribution of Providers Across Substance Use Treatment Programs (n = 157)

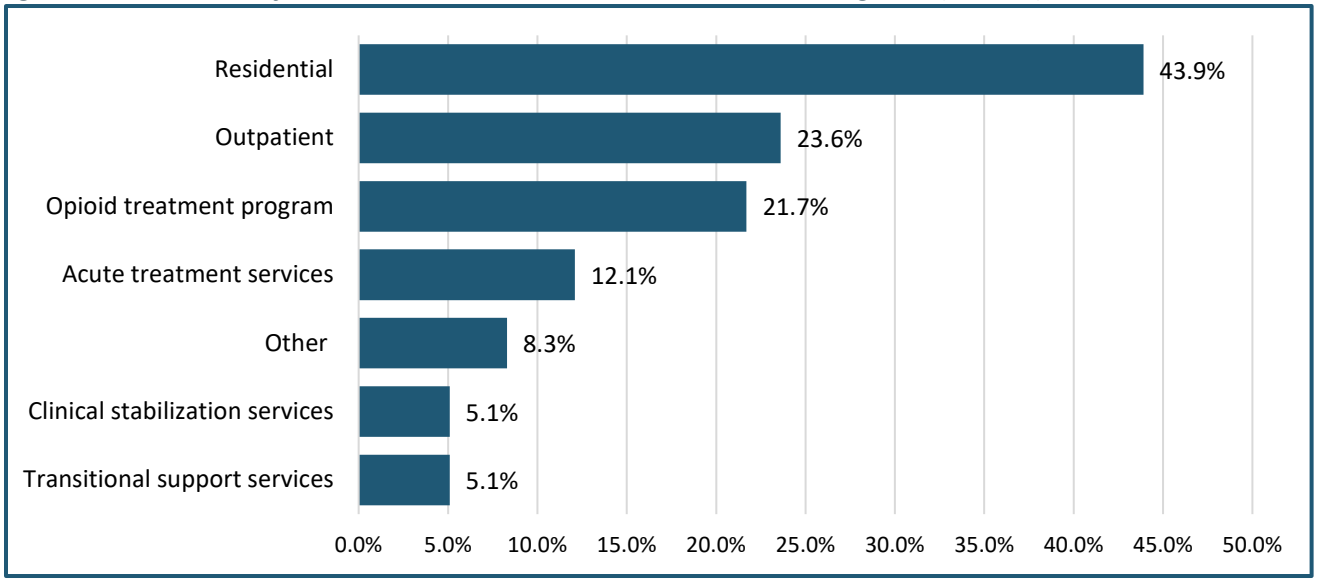


Table 6. Substance Use Treatment Program Types

⊕	**Acute Treatment Services (ATS)** are medically monitored inpatient withdrawal management services. Programs provide 24-hour nursing care, under the consultation of a medical doctor, to monitor an individual's severe withdrawal from alcohol and other drugs and to alleviate symptoms.
↻	**Clinical Stabilization Services (CSS)** provides the needed service interventions and program support that enable clients to engage in a structured process and to plan and implement any services needed for a successful transition to the next level of substance use disorder treatment or other care, based on an assessment process tailored to each client. CSS services enable clients to focus on recovery, increase treatment acceptance and readiness to change, while identifying skills and strategies to prevent continued use and/or to reduce risk of harm due to continued use. Designed to stabilize clients and increase their retention in treatment.

	Opioid Treatment Programs (OTP) are outpatient programs that provide daily Medication for Opioid Use Disorder by dispensing the FDA-approved medication Methadone and now also Buprenorphine in combination with counseling and behavioral therapies, to provide a "whole-patient" approach to the treatment of substance use disorders.
	Outpatient treatment services include OTPs, office-based OTPs, mental health and substance use outpatient services, and outpatient withdrawal management.
	Residential services provide a structured and comprehensive rehabilitative environment that supports each resident's independence and resilience and recovery from alcohol, opiates and/or other drugs. Scheduled, goal-oriented rehabilitative services are provided in conjunction with ongoing support and assistance for developing and maintaining skills necessary to lead an alcohol and/or drug-free lifestyle.
	Transitional Support Services (TSS) are short-term, residential support services for adult clients who need a safe and structured environment to support their recovery process after completing withdrawal management. These programs are designed to help those who need services between acute treatment and residential rehabilitation, outpatient or other aftercare.

Note. This language has been provided by BSAS.

Family Support Providers: Roles and Program

Nearly three-quarters of family support providers (72.5%) worked directly with clients, slightly more than one-fifth (22.0%) were directors or supervisors who did not work directly with clients, and 5.8% had "other" roles, such as being an administrative assistant. As shown in Figure 3, family support providers represented a mix of models, with providers from WIC, HFM, and EHS representing the largest proportion of programs. For details on the different program models, see Table 7.

Figure 3. Distribution of Family Support Providers Across Program Models (n = 277)

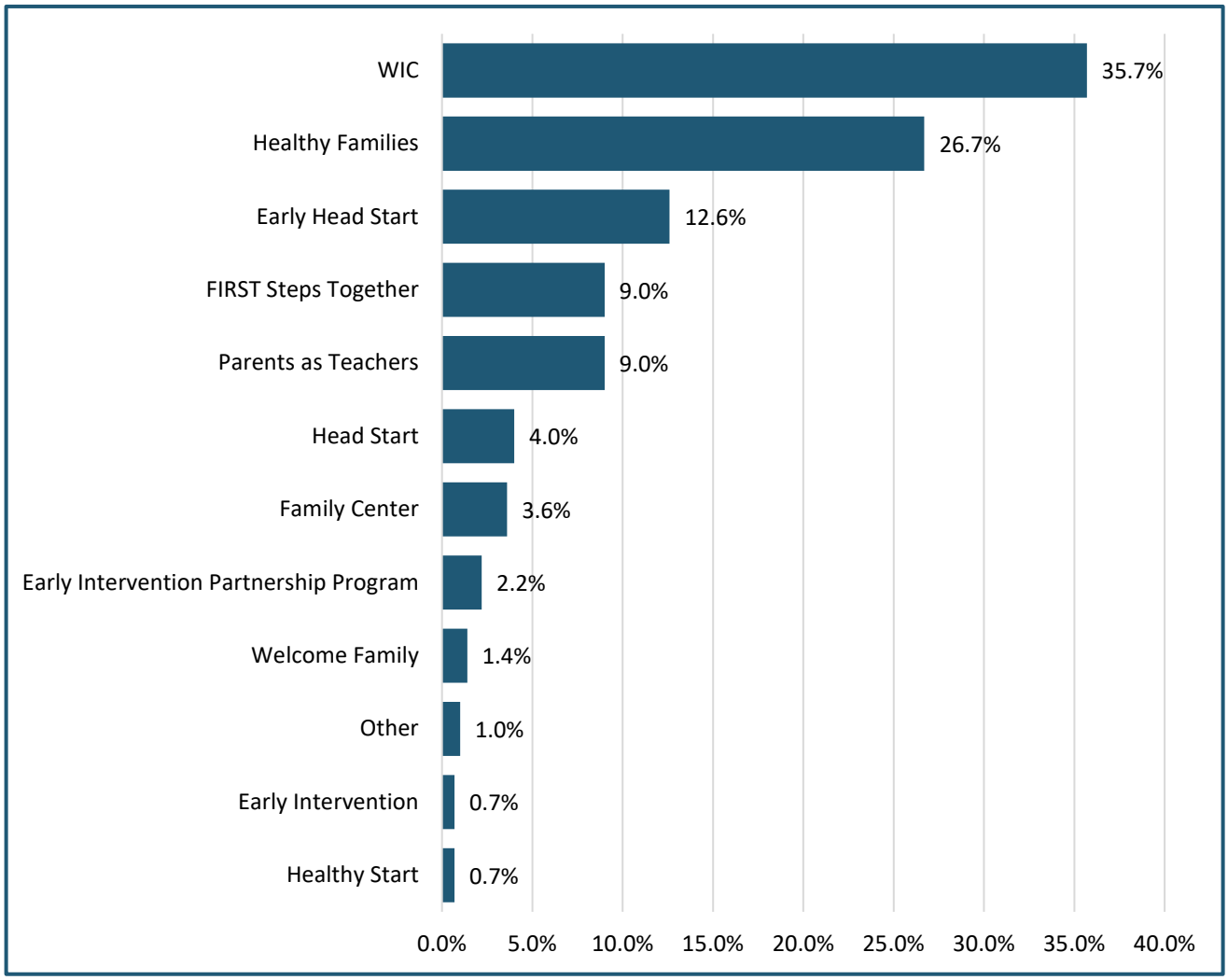


Table 7. Types of Family Support Programs

	Family Centers are community hubs where parents can access individualized supports, group activities or programs, and additional resources to support with caregiving.
	Early Head Start (EHS) supports expectant individuals and families with children three or younger to enhance development, health outcomes, and overall family functioning.
	Early Intervention (EI) provides home visiting services to families with children three or younger who are experiencing or at risk for developmental delays.
	Early Intervention Parenting Partnership (EIPP), embedded within EI, utilizes a multi-disciplinary team comprised of a nurse, clinician, and community health worker. The team provides home visiting services to families in the prenatal period to those with children under the age of one.
	FIRST (Families In Recovery SupporT) Steps Together is a program where home visitors, who are parents in recovery, support families with their own parenting and recovery journeys.

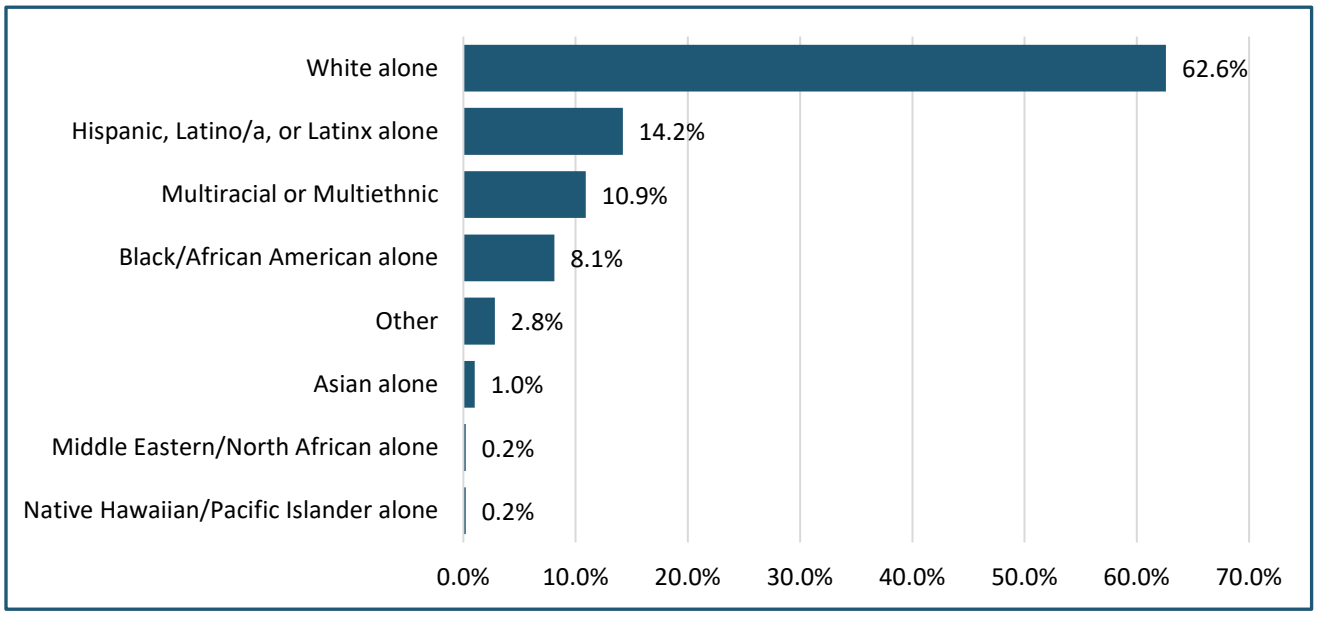
	Head Start (HS) serves families with children up to the age of five, offering a variety of early education programs to foster school readiness.
	Healthy Families Massachusetts (HFM), an affiliate of Healthy Families of America, is a home visiting program for pregnant or first-time parents who are under the age of 23, with a child three or under.
	Healthy Start supports communities with high infant mortality rates through a range of services to increase the access, use, and quality of health care systems.
	Parents as Teachers (PAT) is a home visiting program focusing on parent-child interaction, development-centered parenting, and the overall well-being of families with children before kindergarten.
	Welcome Family offers one-time home visits to mothers' post-birth to assess health and provide resource connections to appropriate services.
	Women, Infant and Children (WIC) is a national program that provides families with food, education, and referrals to meet their nutritional health needs.

Note. Program definitions came from: Department of Public Health | Mass.gov

Race and Ethnicity

As shown in Figure 4, nearly two-thirds of all providers[n] self-identified as White; with fewer than one-fifth identifying as Hispanic, Latino/a, or Latinx; and around 10% identifying as either multiracial/ethnic[o] or Black/African American

Figure 4. Provider Race and Ethnicity (n = 430)



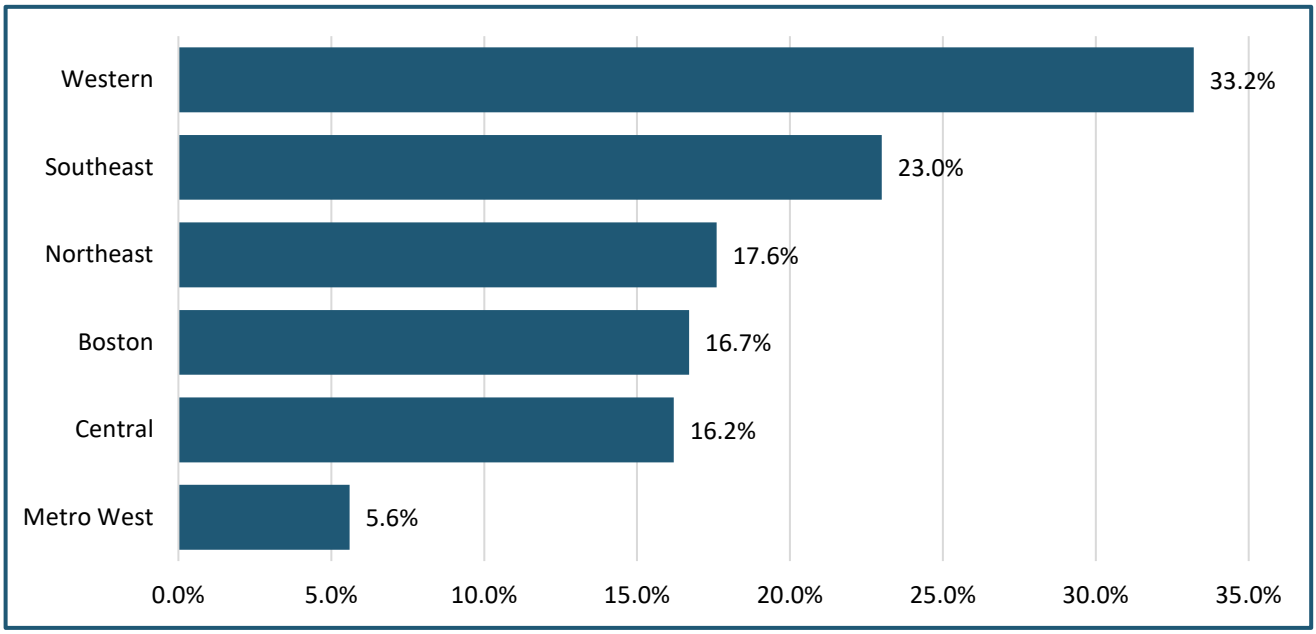
[n]When we use the term "providers" without specificizing provider type we mean all providers across both types.

[o] Multiracial or multiethnic comprises more than one race (e.g., Black or African American & White) or at least one race and one ethnicity (e.g., Black or African American & Hispanic or Latino).

Regions Providers Served

Providers reported on which regions most of their clients lived. As seen in Figure 5, a third of providers worked with clients who lived in the state's Western region, nearly a quarter with clients who live in the Southeast, and almost one fifth worked with clients who lived in the Northeast, Boston, or Central regions. The Metro West region was the least well-represented in the respondent sample.

Figure 5. Distribution of Regions Providers Served (n = 431)



Regional Differences by Provider Type[p]

As shown in Table 8, compared to substance use treatment providers, a lower proportion of family support providers worked with clients who lived in the Western (χ^2 (1) = 21.69, $p < .001$) or Boston (χ^2 (1) = 13.66, $p < .001$) regions, whereas a greater proportion worked with clients who lived in the Northeast (χ^2 (1) = 5.20, $p < .05$) and Southeast (χ^2 (1) = 14.61, $p < .001$) regions.

Table 8. Regional Differences by Provider Type[q]

	Provider Type	
Massachusetts region	Substance Use Treatment (*n* = 191)	Family Support (*n* = 293)
Western	47.1%*	25.2%*
Central	15.9%	16.4%
Metro West	8.3%	4.0%
Northeast	12.1%*	20.8%*
Boston	25.5%*	11.7%*
Southeast	12.7%*	28.8%*

Note. Asterisks indicate a significant difference between provider types.

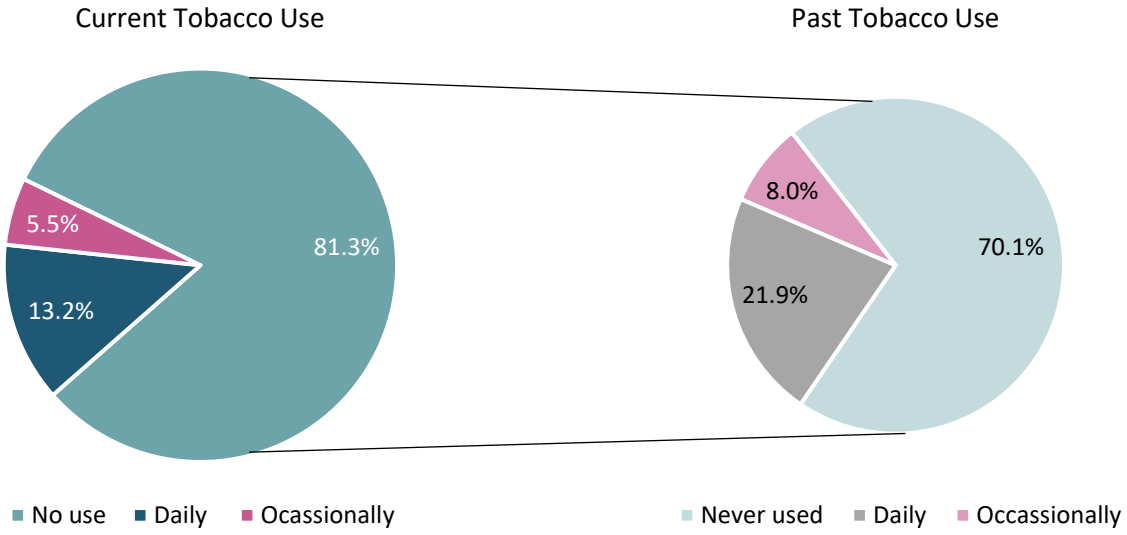
[p] For these analyses, we excluded 33 respondents who indicate that they worked in more than one region.

[q] It should be noted that these differences are likely artifacts of the use of a convenience sample for the survey. That is, sampling occurred via email (either directly or indirectly through regional managers or program directors) with respondents opting in or out of survey completion at their discretion. The sample is not representative of providers in each region.

Tobacco Use among Providers

We asked providers about their personal tobacco use. Of those who answered (*n* = 433), most *did not currently use* tobacco (81.3%). Of the providers who reported *no current use* (*n* = 352), 70.1% reported *never using* tobacco in the past. Of past users, about three-quarters reported having *used it daily*. See Figure 6.

Figure 6. Tobacco Use Status Among Providers



Differences in Tobacco Use by Provider Type

As shown in Table 9, substance use treatment providers were more likely than family support providers to report that they *currently used* tobacco (χ^2 (2) = 22.96, $p < .001$), and that they had used *daily* in the past (χ^2 (2) = 24.42, $p < .001$).

Table 9. Differences in Tobacco Use by Provider Type

	Provider Type	
	Substance Use Treatment	Family Support
Current tobacco use	**(*n* = 157)**	**(*n* = 276)**
No use	69.4%*	88.0%*
Daily	21.0%*	8.7%*
Occasionally	9.6%*	3.3%*
Past tobacco use	**(*n* = 109)**	**(*n* = 242)**
Never used	53.2%*	77.7%*
Daily	37.6%*	14.9%*
Occasionally	9.2%	7.4%

Note. Asterisks indicate a significant difference between provider types.

Results

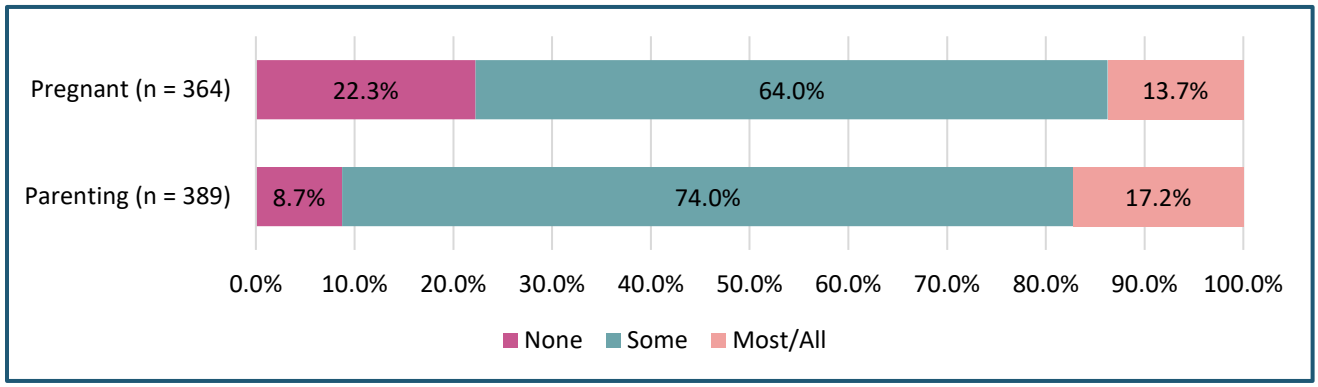
This section is organized by evaluation aim and questions. Each aim section begins with survey results and ends with findings from the qualitative data.

Aim 1—Understand the prevalence[r] of tobacco use among pregnant and parenting clients of substance use treatment and family support programs in Massachusetts

1.1. What is the prevalence of tobacco use among pregnant and parenting populations served by substance use treatment and family support programs?

We asked providers to think about the pregnant and parenting clients they worked with in the past year and estimate the proportions of each population that used tobacco products. Overall, as shown in Figure 7, most providers reported that at least *some* of their clients (both pregnant and parenting) used tobacco.

Figure 7. Prevalence of Tobacco Use among Pregnant and Parenting Clients



Differences in Prevalence by Provider Type

Compared to family support providers, substance use treatment providers were more likely to report that *most or all* of their pregnant (χ^2 (2) = 47.66, $p < .001$) and parenting (χ^2 (2) = 60.42, $p < .001$) clients used tobacco. See Table 10.

Table 10. Differences in Prevalence of Tobacco Use among Pregnant and Parenting Clients by Provider Type

Clients	Provider Type: Substance Use Treatment	Provider Type: Family Support
Pregnant	**(*n* = 111)**	**(*n* = 253)**
None	19.8%	23.3%
Some	47.7%*	71.1%*
Most/All	32.4%*	5.5%*
Parenting	**(*n* = 127)**	**(*n* = 262)**
None	7.1%	9.5%
Some	54.3%*	83.6%*
Most/All	38.6%*	6.9%*

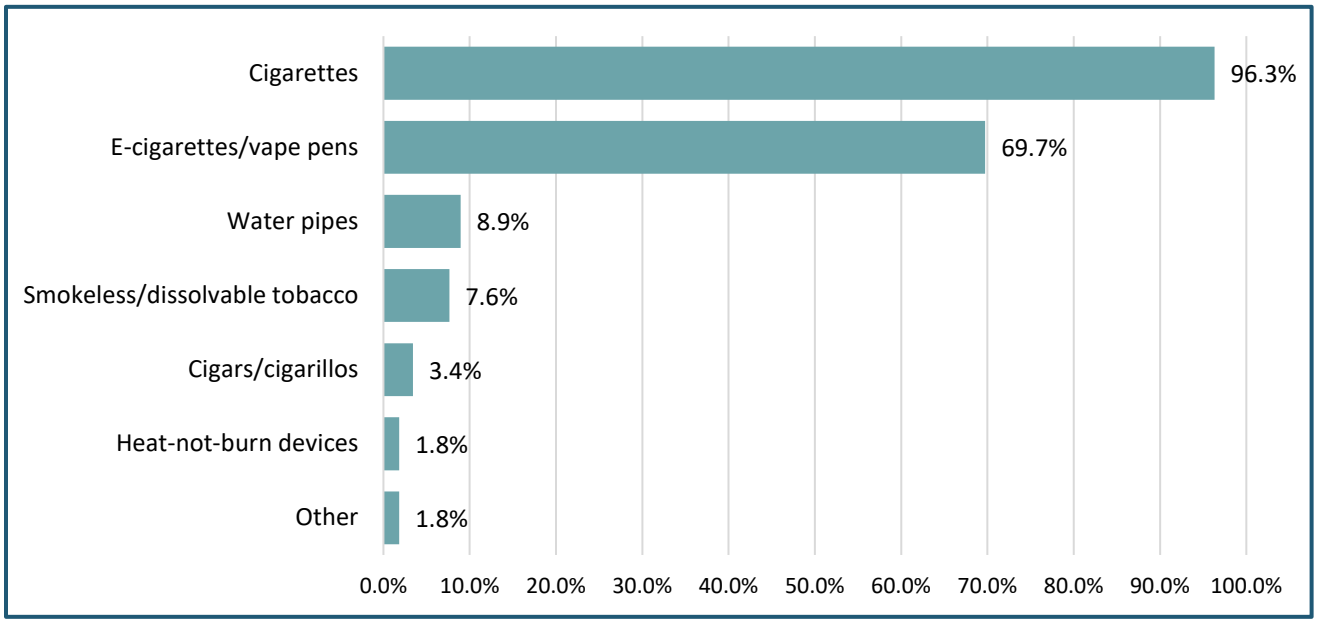
Note. Asterisks indicate a significant difference between provider types.

[r]As footnoted in the introduction, we assessed "prevalence" using administrative data from MTCP as well as provider estimations gathered through surveys and focus groups.

1.2. What are the most common tobacco products used among these pregnant and parenting populations?

We asked providers to report the most common tobacco products used among their pregnant and parenting clients. As shown in Figure 8, most staff selected cigarettes and e-cigarettes as the most common types.

Figure 8. Most Common Tobacco Products Used Among Pregnant and Parenting Clients (n = 380)



Differences in Most Common Tobacco Products Used Among Clients by Provider Type

As shown in Table 11, substance use treatment providers were more likely than family support providers to select most of the tobacco products as being commonly used among their pregnant and parenting clients.

Table 11. Most Common Tobacco Products Used Among Clients by Provider Type (n = 380)

	Provider Type		
Most common tobacco products	Substance Use Treatment (*n* = 127)	Family Support (*n* = 253)	Chi-squares
Cigarettes	100.0%*	94.5%*	χ^2 (1) = 7.30, p < .01
E-cigarettes/vape pens	78.7%*	65.2%*	χ^2 (1) = 7.33, p < .01
Waterpipes	1.6%*	12.6%*	χ^2 (1) = 12.73, p < .001
Smokeless/dissolvable tobacco	12.6%*	5.1%*	χ^2 (1) = 6.68, p < .01
Cigars/cigarillos	0.8%	4.7%	χ^2 (1) = 4.00, p = .05
Heat-not-burn devices	3.9%*	0.8%*	χ^2 (1) = 4.63, p < .05
Other	0.0%	2.8%	χ^2 (1) = 3.58, p = .06

Note. Asterisks indicate a significant difference between provider types.

In Their Own Words…Prevalence of Tobacco Use

As suggested by the survey data, there did seem to be a pronounced difference between substance use treatment providers and family support providers in their estimations of what proportion of their clients used tobacco. When we asked focus group and interview participants to think about the percentages of their clients who used tobacco, family support providers estimated ranges from between 25%–75%, while substance use treatment providers guessed more in the 90%–99% range. One substance use treatment

provider said "Everyone but one usually is a smoker. We just had 2 non-smokers and that was a lot to have 2 non-smokers. But almost everyone smokes; most or all of our women who are pregnant smoke." As a caveat to this finding, however, it is also the case that substance use treatment providers seemed to be more aware of their clients' tobacco use status than family support providers. As one family support provider observed, "I think it's difficult to tell [who is smoking], especially with playgroup families because we don't see them in person, and even when we do see them, we're not doing home visits so we don't see them [in their] environment. I don't think I can even estimate."

As for the type of products used, findings from the interviews and focus groups largely corroborated survey results. Participants confirmed that while cigarettes were the most-often used tobacco products among their clients, there has been an increase lately in the number of pregnant and parenting clients that vape. Staff in one focus group discussed how vaping is less stigmatized than smoking cigarettes and perceived by the community as the lesser of two evils. A provider from a different focus group mentioned that while some individuals quit cigarettes, they replace them with e-cigarettes or vape pens; in fact, some providers we spoke with had substituted their own cigarette smoking with vaping.

Some providers commented that marijuana use—either smoked alone or in combination with tobacco—was more common than cigarettes among some of their clients. Recently legalized for recreational use in Massachusetts, providers have observed an uptick in the number of participants who are using cannabis—this finding was true across both substance use treatment providers and family support providers. Focus group participants observed that marijuana is much easier to access, and people see it as less harmful than cigarettes. As one family support provider commented after we asked the group to estimate the proportion of pregnant and parenting clients who smoked, "the percentage would be a lot higher [if weed-smoking was included in the estimation]". This was raised as an area across provider groups where additional supports could be useful: as observed by one of the family support coordinators we spoke with, "We haven't done a lot of programming since marijuana has been legalized. We might need to have discussions moving forward about how to deal with it."

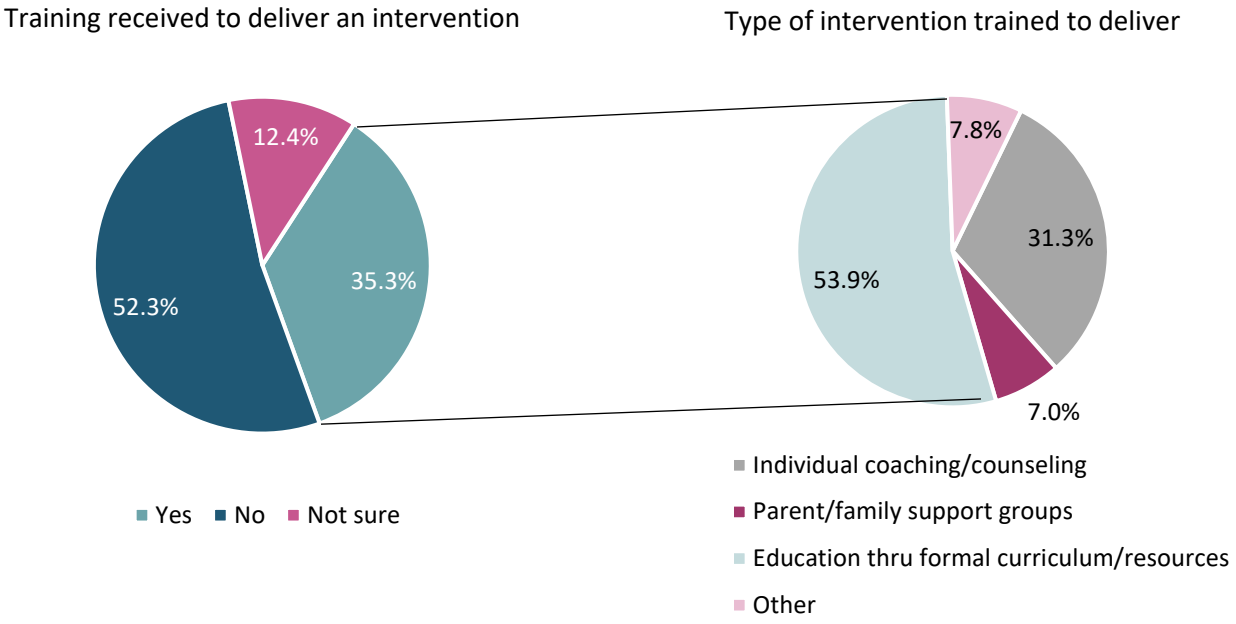
Aim 2—Understand substance use treatment and family support provider preparedness to support tobacco cessation efforts, and how preparedness differs between the two provider types

2.1. Have providers been trained to address tobacco use, and if so, what types of training have they received?

We asked providers whether they had received training to deliver tobacco cessation interventions. Of respondents (*n* = 371), only slightly more than a third reported they had. Of the staff that received training (*n* = 128), slightly more than half were trained to provide *education through formal curriculum or resources*, with about a third being trained to provide *individual coaching/counseling*. See Figure 9.

We also asked providers if their program had created a unique approach or curriculum for addressing tobacco use with clients and 39.4% of respondents indicated their program did.

Figure 9. Provider Training Status, and Type of Intervention in Which They had Been Trained (n = 371)



Note. "Other" interventions included making referrals to a community cessation program, identifying and discussing vaping, Institute of Health and Recovery trainings, motivational interviewing techniques, and tobacco education coordinator sessions.

Differences in Training by Provider Type

Substance use treatment providers and family support providers had different training experiences. As shown in Table 13, compared to family support providers, substance use treatment providers were:

- More likely to report that they had *received training* (χ^2 (2) = 59.98, $p < .001$)
- Less likely to report that they received training to *conduct parent/family support groups* (χ^2 (3) = 11.75, $p < .01$)
- More likely to report that their program created a unique approach or curriculum for addressing tobacco use with clients (59.1% vs. 29.0%, respectively; χ^2 (1) = 31.37, $p < .001$)

Table 12. Provider Training Status and Type of Intervention in Which They Had Been Trained by Provider Type (n = 371)

	Provider Type	
Training received	**Substance Use Treatment (*n* = 128)**	**Family Support (*n* = 243)**
Did not receive training	29.7%*	64.2%*
Received training	61.7%*	21.4%*
Unsure	8.6%	14.4%
Type of intervention trained to deliver	**(*n* = 79)**	**(*n* = 49)**
Individual coaching/counseling	34.2%	26.5%
Parent/family support groups	1.3%*	16.3%*
Education thru formal curriculum/resources	54.4%	53.1%
Other	10.1%	4.1%

Note. Asterisks indicate a significant difference between provider types.

2.2. Do providers feel that it is important to talk with their clients about tobacco use?

We asked providers how important they felt it was (from their own and their programs' perspectives) to have conversations with pregnant and parenting clients about quitting tobacco. On average, providers indicated that it was *extremely important* to have these conversations, from both their personal (M = 2.81, SD = 0.49) and their programs' (M = 2.68, SD = 0.63) perspectives.

Staff Characteristics Associated with Perceived Importance

We were interested in whether there were associations between perceived personal and program importance and staff characteristics, including: 1) program role,[s] 2) provider type, 3) training, and 4) current smoking status. As described below, several associations emerged.

Personal and Program Importance & Provider Role

No significant differences emerged in importance by substance use treatment provider program role. Among family support provider respondents, program directors or supervisors placed more importance, from both their own (F (1, 169.42) = 8.57, p < .01) and their programs' perspectives (F (1, 127.25) = 8.65, p < .01), on talking with clients about quitting than did frontline staff (see Table 14).

Table 13. Differences in Perceived Importance by Family Support Provider Role

Perceived Importance	Role: Director or Supervisor—does not provide direct services			Role: Frontline Staff—provides direct services			Overall		
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
Personal	52	2.94*	0.24	166	2.80*	0.46	218	2.83	0.42
Program	50	2.92	0.34	165	2.73	0.53	215	2.78	0.50

Note. Asterisks indicate means between director or supervisor and frontline staff are significantly different from one another.

Personal and Program Importance & Provider Type, Training, and Smoking Status

As shown in Table 15, provider characteristics were associated with higher ratings of *program* and *personal* importance. Having received training to deliver an intervention (F (1, 314) = 4.30, p < .05), and either having never smoked or formerly smoked (F (2, 314) = 4.24, p < .05) were associated with higher ratings of *personal* importance. And being a family support provider (F (1, 315) = 15.65, p < .001) and having received training (F (1, 315) = 16.87, p < .001) were associated with higher ratings of *program* importance. There were no significant associations between *program* importance ratings and current smoking status.

Table 14. Perceived Importance Means and 95% Confidence Intervals by Provider Type, Training, and Smoking Status

Perceived Importance	Provider Type: Substance Use Treatment	Provider Type: Family support	Provider Training: Did Not Receive Training	Provider Training: Received Training	Provider Smoking Status: Never	Provider Smoking Status: Former	Provider Smoking Status: Current
Personal (*n* = 319)	2.77[a] [2.68, 2.85]	2.82[a] [2.74, 2.90]	2.73[a] [2.65, 2.81]	2.85[b] [2.77, 2.94]	2.86[a] [2.78, 2.93]	2.86[a] [2.76, 2.96]	2.65[b] [2.53, 2.78]
Program (*n* = 320)	2.48[a] [2.36, 2.60]	2.80[b] [2.70, 2.91]	2.48[a] [2.38, 2.58]	2.80[b] [2.69, 2.91]	2.66[a] [2.56, 2.76]	2.70[a] [2.57, 2.83]	2.56[a] [2.40, 2.73]

Note. Means of provider types, training status, and smoking status that do not share superscripts are significantly different from one another.

[s] Because we did not sample for provider role, these findings should be interpreted with caution.

2.3. How confident do providers feel in their ability to have conversations with clients about their tobacco use?

While staff ratings of the importance of discussing quitting with clients were quite high, their confidence in their ability to have these conversations was more moderate. On average, providers (*n* = 371) reported they were only *somewhat confident* in their ability (*M* = 2.01, *SD* = 0.83).

Staff Characteristics Associated with Confidence

We tested for associations between confidence and the same provider characteristics described above. As described below, several associations emerged.

Confidence & Provider Role

There were no significant differences in confidence by substance use treatment provider program role. Among family support providers only, program directors or supervisors were more confident in their ability to talk to clients about quitting than were frontline staff (F (1, 217) = 10.09, p < .01). See Table 16.

Table 15. Differences in Confidence by Family Support Provider Role

	Role								
	Director or Supervisor—does not provide direct services			Frontline Staff—provides direct services			Overall		
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
Confidence	52	0.72	2.19*	167	0.82	1.79*	219	0.81	1.89

Note. Asterisks indicate means between director or supervisor and frontline staff are significantly different from one another.

Confidence & Provider Type, Training, and Smoking Status

Several provider characteristics, including being a substance use treatment provider (F (1, 317) = 5.53, p < .05), having received training to deliver an intervention (F (1, 317) = 12.83, p < .001), and having been a smoker formerly (vs. having never smoked; F (1, 317) = 3.34, p < .05) were associated with higher ratings of confidence. There were no significant associations between confidence and providers who currently smoked. See Table 17.

Table 16. Confidence Estimated Marginal Means and 95% Confidence Intervals by Provider Type, Training, and Smoking Status (n = 322)

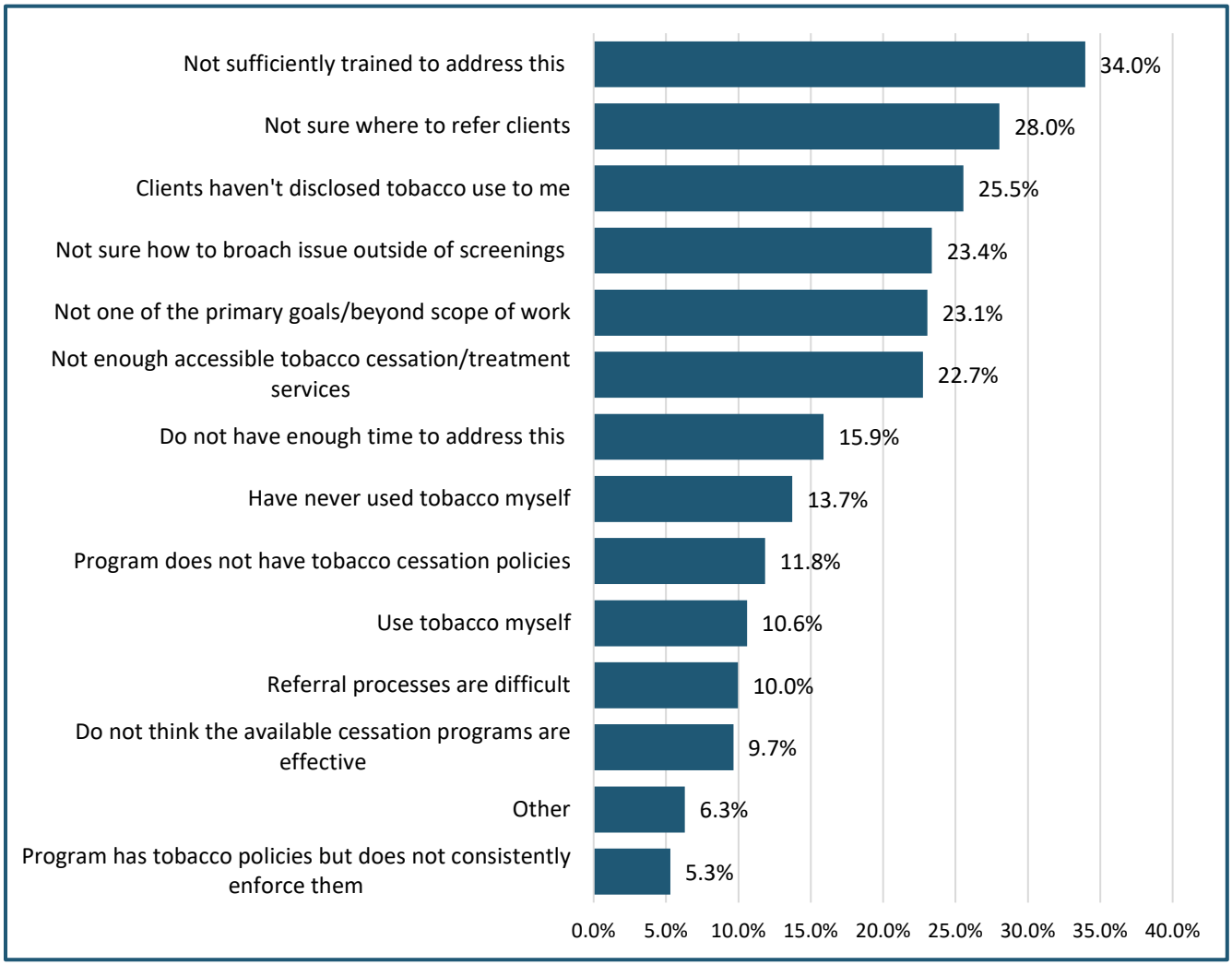
	Provider Type		Provider Training		Provider Smoking Status		
	Substance Use Treatment	Family support	Did Not Receive Training	Received Training	Never	Former	Current
Confidence	2.23[a] [2.08, 2.38]	1.99[b] [1.85, 2.12]	1.89[a] [1.76, 2.02]	2.33[b] [2.19, 2.48]	2.02[a] [1.90, 2.15]	2.28[b] [2.11, 2.45]	2.03[ab] [1.82, 2.23]

Note. Means of provider types, training status, and smoking status that do not share superscripts are significantly different from one another.

2.4. What factors impact provider ability to support clients who use tobacco?

We asked staff what things may impact their ability to provide support to clients who use tobacco. As shown in Figure 10, the most common selected barriers among staff were: (1) insufficient training to address tobacco cessation with clients, (2) being unsure of where to refer clients, (3) not knowing whether clients used tobacco, (4) unsure of how to broach this issue with clients beyond formal screenings, (5) providing support to clients who use tobacco not being one of the primary goals or beyond the scope of their work, and (6) not having enough accessible tobacco cessation or treatment services.

Figure 10. % Selected Staff Barriers to Providing Clients with Support to Quitting Tobacco (n = 321)



Staff Characteristics Associated with Identified Barriers

Several staff characteristics were associated with barriers, including provider type, training receipt, and smoking status.

Provider Type

Compared to substance use treatment providers, family support providers were more likely to select the following barriers:

- Insufficient training (*OR* = 2.59, 95% CI [1.26, 5.33], $p < .01$)
- Unsure of where to refer clients (*OR* = 3.19, 95% CI [1.53, 6.69], $p < .01$)
- Not knowing whether clients use tobacco (*OR* = 3.26, 95% CI [1.55, 6.86], $p < .01$)

Family support providers were less likely than substance use treatment providers to select *my program has policies but doesn't enforce them* as a barrier (*OR* = 0.05, 95% CI [0.01, 0.21], $p < .001$).

Training Receipt

Compared to providers who had not received training to deliver an intervention, providers who had received training, were less likely to select the following as barriers:

- Insufficient training (*OR* = 0.16, 95% CI [0.08, 0.33], $p < .001$)
- Unsure of where to refer clients (*OR* = 0.49, 95% CI [0.26, 0.93], $p < .05$)

- Unsure of how to broach the topic outside of formal screenings (*OR* = 0.43, 95% CI [0.21, 0.88], $p < .05$)
- Program does not have tobacco cessation policies (*OR* = 0.29, 95% CI [0.10, 0.82], $p < .05$)

Smoking Status

Staff who formerly smoked were less likely than staff who had never smoked to select the following barriers:

- Unsure of how to broach the topic outside of formal screenings (*OR* = 0.38, 95% CI [0.17, 0.84], $p < .05$)
- Never used tobacco themselves (*OR* = 0.09, 95% CI [0.01, 0.72], $p < .05$)

Staff who currently smoked were less likely than staff who had never smoked to select *my program has policies but doesn't enforce them* as a barrier (*OR* = 0.09, 95% CI [0.01, 0.78], $p < .05$).

In Their Own Words…Preparedness

Several themes emerged from our conversations with providers about how prepared they felt to address tobacco with their clients.

Training Matters

Direct-service staff described having participated in a variety of training types, such as workshops with IHR and MDPH, in addition to the core trainings offered as part of their onboarding processes. BSAS providers who had received a TAPE Project tobacco training mentioned the critical role this training can play in educating staff about the harmful effects of tobacco. A substance use treatment director observed, for example, "I feel like when we do the trainings people are surprised by the interaction with mental health and medication…Even doctors or psychiatrists, there's just a level of knowledge that isn't as pervasive as we think." Providers also spoke positively about the resources they learned about through trainings, and how important it was for them to feel like they knew where to refer clients who expressed interest in tobacco cessation. One provider commented, "I think for staff a big part of this is giving the staff concrete tools. We can talk about it in an abstract way, or say this is a worksheet you can use, and this is a question you can add to your intake."

There also were focus group participants, both substance use treatment providers and family support providers, who felt that they had been insufficiently trained at best. Several family support providers mentioned that they could not recall having been trained at all, and others across both groups noted that their training did not go deeper than just providing them with resources. As one provider noted, "we're…very surface-level trained." Several called for opportunities that included role-playing activities, where they can practice having these conversations with clients. One provider said, "[we need] practicing, because…people feel really like they don't want to say the wrong thing or come off as too judgmental. 'How do you do it and what do you do if they say this?' Skill building."

Providers also noted the importance of addressing the work environment to make it a space where staff feel comfortable raising the topic of tobacco cessation. One substance use treatment provider explained, "I believe this is really important but if I'm going to be the only one doing it within my program, I'm going to be viewed as the pain in the ass in the office who wants everyone to stop smoking."

Ambivalence About Importance

Interestingly, in contrast to what we learned from the survey, both the substance use treatment providers and family support providers we spoke with were quite ambivalent about the importance of addressing tobacco use with their clients. To be more precise, providers agreed *in theory* that addressing smoking was important, but acknowledged how difficult it is to operationalize this theory in their day-to-day practice.

> *We panicked filling out the survey. This is something we don't do. My question is what can we be doing? How can we support families who don't come to us saying I*

> *want to quit smoking? We have to meet these families where they are. How do we present information on this? This is so far from anything we've ever done.*

Across the provider groups, there was a consistent sense from providers that addressing tobacco with their clients was not a high priority. There were subtle differences, however, in how each provider group explained this conviction. For family support providers, their reluctance to address tobacco use with clients seemed primarily to revolve around issues of trust and rapport-building. As one provider explained:

> *I'm working with families in high crisis, in deep crisis. If I know the person well as time goes on, but it's way down the road. I'm meeting them as they are. It takes time to establish trust. It takes quite a long time. Many people we work with have been through so much trauma.*

Providers expressed concern that bringing up tobacco use with their clients may threaten the relationship they have built. One direct service provider recounted a time when they[t] asked a client whether they'd like some support around quitting and the "defensive client said, 'when I'm ready I'll let you know!' so I got the message not to offer it again." Another provider explained that addressing smoking with clients felt a bit like they were violating the "judgment-free zone" that is at the core of family services. They told us about a time when:

> *a [school] principal judged a father for smoking and I responded that that pack of cigarettes helps that dad get through the day. I have supported families in those situations. If that dad wanted to quit I would look into how I could support that father, but I'm not a huge advocate for 'you need to quit smoking'.*

For substance use treatment providers, tobacco simply did not rise to the top of the hierarchy of needs these providers have to consider in their work. A provider explained, "You're going to die from smoking or vaping. But that can be later… The risk of overdose of opioids is real and now." Another concurred: "In my own head I tend to see things in terms of lethality…What's going to kill you faster? Let's attend to *that*." Another provider explained it like this: "There is a hierarchy in the substance use community…where…opioid use, because it leads to acute death, is kind of the worst. And tobacco use is at the bottom."

A couple of the substance use treatment center program directors we spoke with worried that they would be overburdening their staff. One provider observed, "the first thing that comes to mind [is] the programs I work with. Many of them are constantly under siege from lack of staff especially with covid. My immediate reaction is protective. Like we can't ask them to do this too." As another director of a substance use treatment program explained, their services revolve around crisis, and her providers are driven by urgency. They explain:

> *…fear is the word that comes to my mind. Fear that people are very unstable in their treatment and recovery at that early stage and that anything that you take away puts that stability in jeopardy. With all the focus that has been given to opioids and deadliness of fentanyl that there is this sort of calculation that we need to save people's lives right now. [Tobacco] may be unhealthy but at least they're alive. The urgency and deadliness of overdose risk pushes that to something we'll work on later.*

Confidence Among Providers Varied Substantially

Interview and focus group participants ranged quite a bit in how confident they felt around bringing up tobacco use with clients. Some of the participants we spoke with felt that their ability to build one-on-one strong, nonjudgmental relationships with clients prepared them quite well for these conversations. As one provider explained, … "you're helping them, you're showing them loving and helping them gain self-

[t] To protect focus group participant anonymity, we use gender neutral pronouns.

confidence back and already have that connection, so they know that anything I tell them will be best for them and their family's well-being. We have that connection so [that's] another reason I'm so confident..."

But many providers we spoke with felt ill-equipped to address this subject with clients. "I don't know what we would do [around tobacco]", a provider said, "I don't know that we know enough about why people are smoking. It is different for everyone. I don't know where we would start. I think people don't seek us out for that, so we haven't had to think a lot about it." Family support providers in particular expressed concerns that they were unsure how to bring it up in a way that did not further stigmatize or cause shame in the clients they serve. When asked how confident they felt, a family support provider said, "not at all, very wary of judgement. Even if [I'm] very careful it can still feel like an attack so that's what makes [my] confidence level low." Another provider from the same group followed up with, "[I'm} confident enough to see where they're at and to give resources, but beyond that, no."

Substance use treatment and family support providers both articulated difficulties finding the right balance between offering support for tobacco-using clients and pushing them away. As one substance use treatment provider observed:

> *The women can be extremely sensitive here because of self-esteem issues. They have been really mistreated for most of their lives. Even the recommendation to do something or to change their behavior can be taken as a slight, and then can cause a fissure between the resident and the practitioner.*

A program director summarized the challenge of finding this balance in a story they relayed about a time they had been reviewing a plan of safe care with one of her staff members:

> *…and we were going through the different things on it and they said, 'the client has chosen to continue smoking during her pregnancy'. So, on the one hand I thought 'Wow [the staff member is] doing a great job being non-judgmental about it' and then on the other hand I was horrified... As I'm talking to you now, I realize that that was an opportunity to say, 'Have you talked to her about cutting down?' It was this internal battle of 'Oh my god I'm being so judgmental and that's bad and the worker's being non-judgmental and that's good.' I didn't even stop to think that there's a middle ground of protecting a women's choice and giving her other options like cutting down.*

For providers who were current or former smokers themselves, this issue of confidence was particularly complex. As suggested by the survey data, providers who had been former smokers did seem to be a bit more confident. They mentioned that their experiences made them more empathetic and hoped that their own quit success could serve as an inspiration to their clients who were currently struggling with the addiction. One provider rated their confidence fairly high "because [I] was a smoker and quit but then switched to vaping…[I] found ways to cut down and [have] tips and tricks, and the peer connection is really important." Another provider relayed, "I tell them all the time 'I used to be a smoker myself, you know, and I stopped.' I stopped because I had an uncle who passed away from cancer from smoking, so you know that kind of scared the bejeebus out of me."

For current smokers, the issue seemed to be a bit more complicated. This exchange between two family support providers, one of whom was a smoker and the other of whom was not, is illustrative:

> *P1 (smoker): I struggle with feeling like a hypocrite because I'm a smoker. I smoke cigarettes.*
> *P2 (non-smoker): But it's almost an advantage because you know how hard it is. Like [you can say] 'I'm not ready yet either and that's ok!' But if they need support you're still there. And you have all the resources they may need. In that position you're more relatable and that's powerful.*

> *P1: [Yeah I] would never turn away from someone who wants help. I'd get them all the info. [But it's] a little bit of a relief when a client says they don't want to quit because it's as hard for them as it is for me.*

Another provider said that they can "internally…stuff [their] own feelings and do what [they] need to do to help somebody but still feels like a hypocrite." One of the substance use treatment providers we spoke with mentioned that the tobacco education coordinator in her program was actually a smoker themself. The director relayed a time when one of the residents said to the coordinator, "don't you smoke?" And the coordinator came to the director and said, "See—I got no credibility." The director went on,

> *Initially when we talked to [the tobacco coordinator they] said, 'I'm a smoker, like I don't think I should do this.' [But they] then came back and said, 'I feel confident doing it. No, don't take it away from me. I have a quit date.' So, then we're caught in this 'that's great, and what if you don't quit?' That was my thought. I didn't articulate that to them.*

Program Scope

A common theme across focus groups, especially pronounced within the substance use treatment provider groups, was that a focus on tobacco cessation was outside of their program's scope. Several providers stated this outright: "I wouldn't be the one to hold hands and walk [my] client through it. [This] is out of [our] scope of practice." A provider in a different substance use treatment group explained, "because we're strictly focusing on the substance use and the DCF[u] involvement the families have—so getting them engaged in other meetings and working with other people—you know, the recovery capital and gaining that for long term recovery. Tobacco doesn't even come up." A family support provider mentioned, "so we usually don't even talk about this, my supervisor and I, we co facilitate a support group for parents in recovery, but that's not even part of our curriculum per se."

Part of the reason this came up so frequently, it seemed, is because providers from both types of programs saw their scope of work as defined by what their clients wanted and needed. For many providers, addressing tobacco with clients who did not bring it up themselves would feel in opposition to the strengths-based, family-centered approach their programs practiced. Providers were all quick to say that if a client demonstrated any interest in cessation or reduction, they would pull together all supports necessary to help them. But across every focus group, the consensus was that this was rare. As one provider said, "It depends on the situation. For some people it may be a priority, but for others it might not be. We prioritize what the family comes to us with, so if smoking is at the bottom of their list... The person has to want to quit."

Among substance use treatment providers, there also was a strong sense that focusing on tobacco cessation may actually impinge on the recovery process, rather than support it. This harm reduction framing was raised frequently among providers, as illustrated by the following examples: "You know—if you were using 10 substances and you minimize it to 5—that's recovery right there." Another provider put it much more bluntly: "I would rather see somebody either smoking weed or a cigarette versus prostituting themselves to get a bag of heroin." As another example, this provider expressed their willingness to facilitate a client's smoking if it would keep them engaged in treatment:

> *Say I have a client who's in treatment, in detox, and if them smoking a cigarette is the difference between them wanting to leave at that time, I may take them out for a cigarette. I have worked in treatment centers as well, and have done this multiple times. Someone going through--they're detoxing from a substance or from alcohol and…you know, they're getting emotions back they ain't dealt with in a long time and if someone's going to be staying for…a cigarette, I'll take you out for a cigarette.*

[u] DCF = Department of Children and Families of Massachusetts

Organizational Barriers

Several providers noted that their program or organization did not have cohesive policies around tobacco cessation. Interview and focus group participants explained that on an organizational level, there is not a central entity pushing smoking cessation and there is frequent turnover, which results in staff approaching tobacco cessation differently across clients. They observed that, without systemic approaches and supports, even successful initiatives and practices around tobacco use among clients can feel like "one-offs" and/or and short-lived. A program director noted:

> *…our family therapist in particular talks to the women in her sessions about that. Mostly because she used to be a smoker, and she quit. So, it's just more her interest, and you know, letting people know that all, kind of like the public health measures of how it's a serious issue and public health concern. And then we have a nurse who…runs a group here, a health education group... So, I think that it's not enough of an impact to have someone, like one family therapist who just out of her own volition, wants to talk to people about this, and our tobacco education coordinator bringing this up at staff meetings. I don't think it's enough.*

A handful of providers brought up the TEC position, a requirement of all BSAS-licensed programs. IHR's TAPE Project trains and supports TECs, and generally supports integration of tobacco education and treatment within BSAS treatment programs. Some providers mentioned being appreciative of having such a person on staff to facilitate meetings and provide information and supports to program staff. But others felt that the position was not yet living up to its potential. One program director observed:

> *So on paper, the tobacco education coordinator support[s] the efforts that we have for tobacco cessation. Although in practice I really feel, maybe failing is a strong word, and this is of course part of my responsibility as the program director, but we have been doing the minimal amount to endorse tobacco cessation. And from my understanding, even before I was here, the tobacco education coordinator has been kind of a check box, and only now are we starting to think more about utilizing that person.*

Finally, several substance use treatment providers described the challenges associated with working in a facility that allows smoking on premises. One provider observed, "[we're] encouraging smoking by having so many smoke breaks. Actually, there's one woman who came here--was not a smoker--became a smoker… She…smoked beforehand, stopped smoking for six years, came here, and [started] because women get to go outside and have that time. Even though we told her 'you don't have to smoke. You can just go for a walk or just do something.' [But] there's comradery, so...." Another provider from a different program told almost the same exact story:

> *We had one woman, she said that she had quit four years ago before she got here and she just started smoking again and I was like "why?" and she was like "well, because when everyone goes out for fresh air, that's what they do," and I said, "well you didn't have to smoke," you know I say, "you could have went down like after they came back up from smoking." She was like "yeah, but you know I know them, I want to talk to them, while I'm outside," and I said "hey I get it, but you know you could have said no"*

Providers talked about the benefits of having a smoke-free facility and consistently enforced policies, but noted that this likely would only work if these policies were implemented across centers. One participant recounted how when a residential center in Massachusetts made the decision to go tobacco-free but other centers in the area did not follow suit, clients seeking treatment would opt to go to the nearby facilities that permitted smoking, and ultimately the residential center had to reverse the policy. "That was sad," the participant concluded.

Aim 3—Understand substance use treatment and family support provider practices related to working with clients who use tobacco, and how these practices differ between the two provider types

3.1. How do providers address tobacco use with their clients, and to what extent do providers incorporate the 5 A's into their practice?[v]

3.1.a. How do providers Ask their clients about tobacco use?

Screening Requirements

We asked staff how they find out about their clients' tobacco use, beginning with a question about whether their program required screening of all clients. Most staff (82.8%) reported that their program required universal screening.

Differences in Screening Requirements by Provider Type

As shown in Table 18, substance use treatment providers were more likely than family support providers to report that their program required universal screening (χ^2 (1) = 7.04, $p < .01$)

Table 17. Screening Requirements by Provider Type

	Provider Type	
Screening	Substance Use Treatment (*n* = 150)	Family Support (*n* = 263)
Not required	10.7%*	20.9%*
Required	89.3%*	79.1%*

Note. Asterisks indicate a significant difference between provider types.

Do providers initiate conversations with clients about tobacco use regardless of program screening requirement?

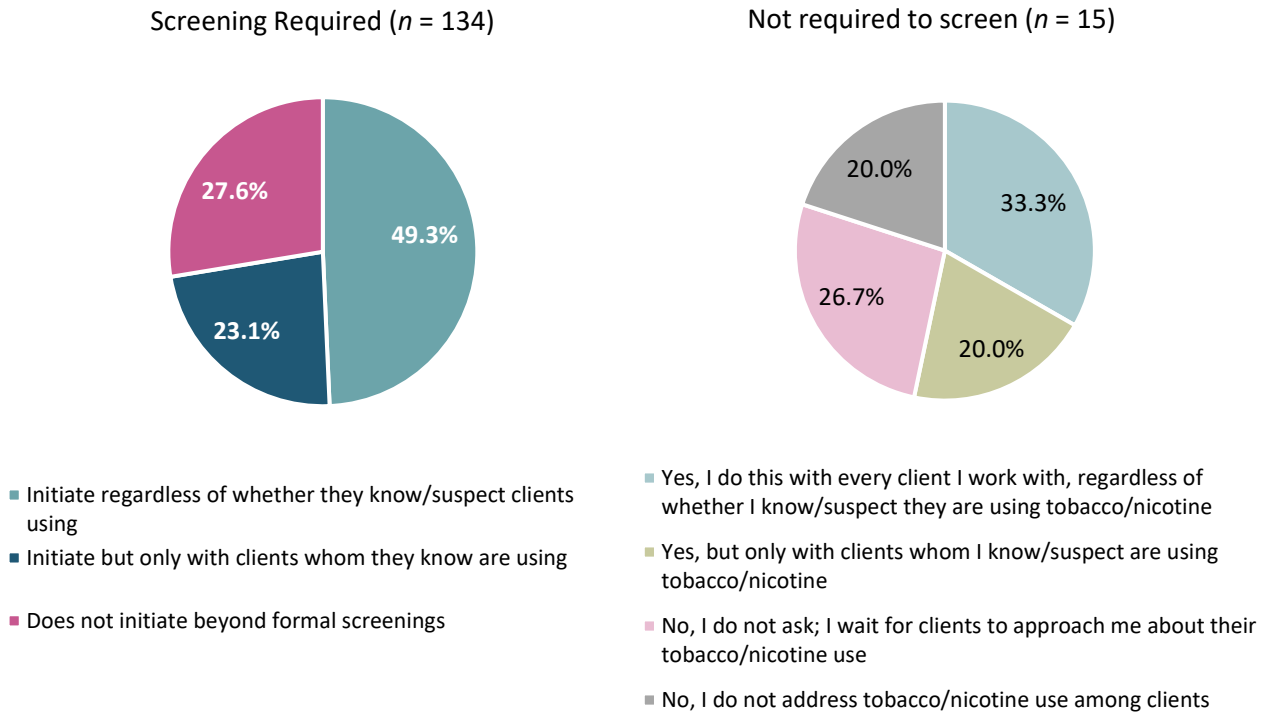
We asked staff whether they initiate conversations with clients beyond the screenings required by their programs. Because we asked the question slightly different on the two versions of the survey, we present findings for substance use treatment and family support providers separately.

Conversation Initiation Among Substance Use Treatment Providers

As seen in Figure 11, among staff whose program *required screening*, nearly three-fourths (72.4%) reported initiating any conversations with clients about tobacco—either with all clients or those they know/suspect are using. Among the 11.7% of staff who reported that their program *did not require* screening (*n* = 15), slightly more than half reported that they initiated conversations anyway. Taken together, only 4.7% (*n* = 7) of all substance use treatment providers reported neither screening nor initiating conversations with clients.

[v] We used the 5 A's model as a framework to ask about provider practices. This evidence-based assessment framework consists of the following steps: (1) **Ask** all patients if they smoke, (2) **Advise** all tobacco users to quit, (3) **Assess** smokers' willingness to attempt to quit, (4) **Assist** smokers' efforts with treatment and referrals, and (5) **Arrange** follow-up contacts to support cessation efforts.

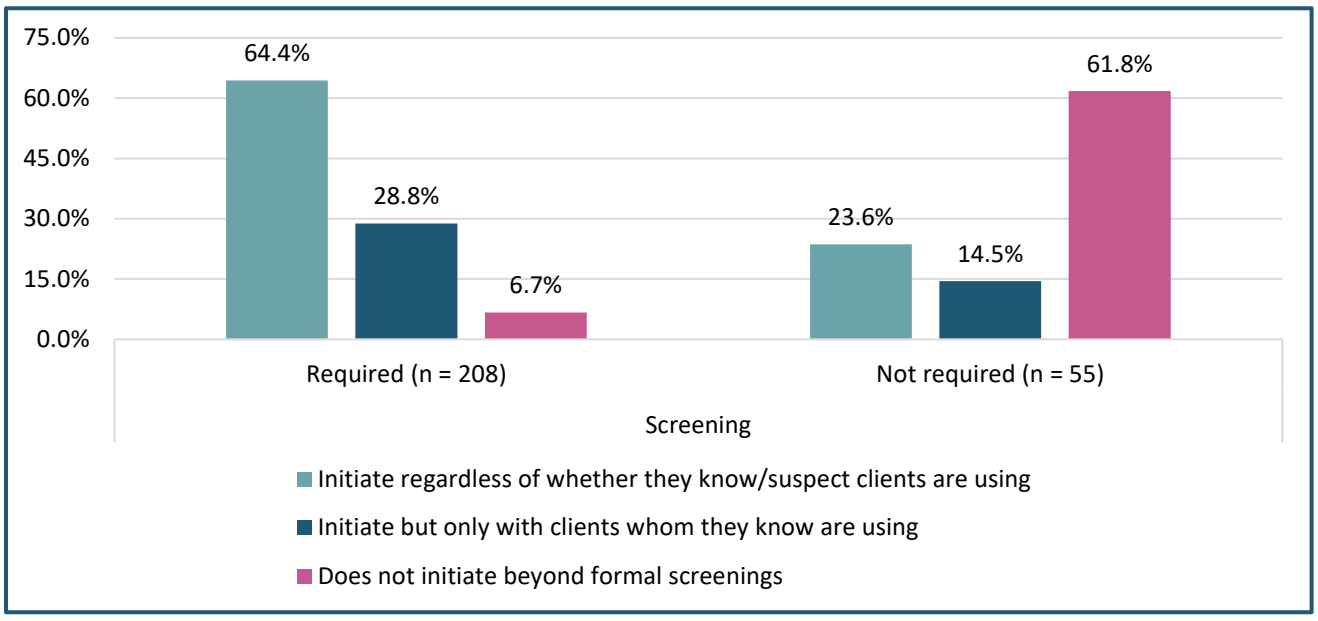
Figure 11. Screening and Conversation Initiation Among Substance Use Treatment Providers



Family Support Providers

As shown in Figure 12, among staff whose program *required screening*, almost all (93.2%) reported initiating any conversations with clients about tobacco—either with all clients or those they know/suspect are using. Among the one-fifth of staff who reported that their program *did not require* screening (*n* = 55), only 38.1% reported initiating conversations with clients about tobacco. Taken together, only 12.9% (*n* = 34) of all family support providers who reported on initiating conversations reported neither screening nor initiating conversations with clients.

Figure 12. Screening and Conversation Initiation Among Family Support Providers



Associations between Staff Characteristics and Initiating Conversations

We examined whether staff initiated conversations regardless of screening requirements. Of the staff with data (n = 412), slightly more than three quarters reported initiating conversations (77.7%). We examined whether staff characteristics, including provider type, training receipt, and smoking status were associated with whether staff initiated conversations related to tobacco use among their clients.

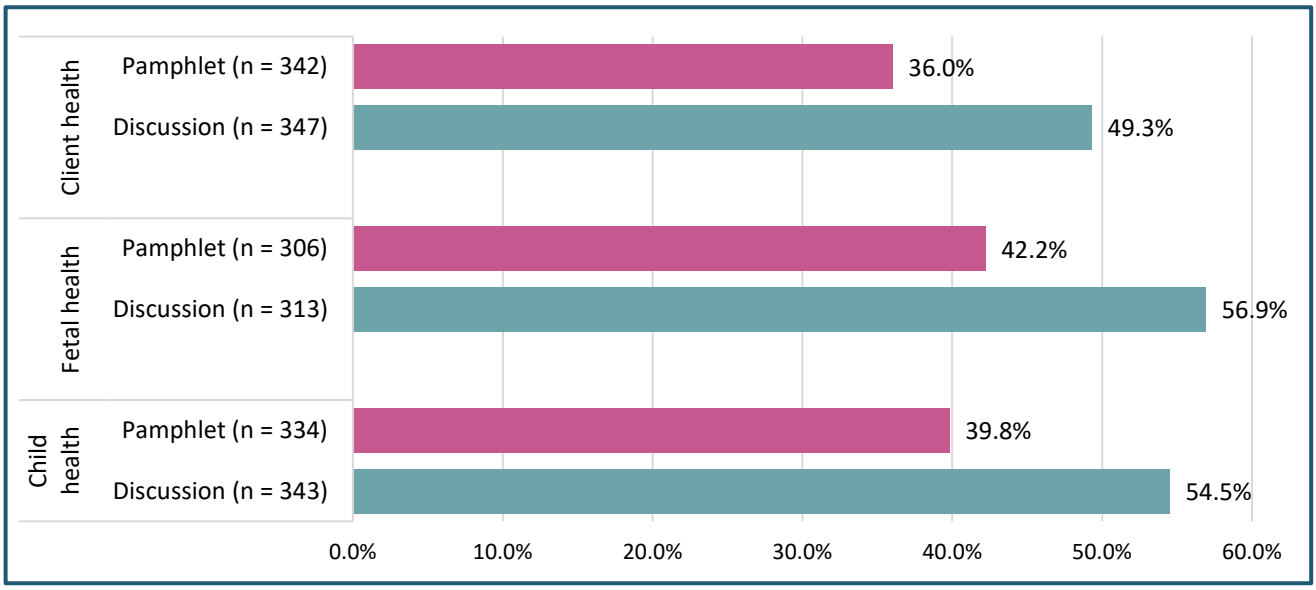
Several associations emerged between staff characteristics and whether they initiated conversations. There was a greater likelihood of conversation initiation among staff who:

- Were family support providers (*OR* = 4.88, 95% CI [2.20, 10.84], $p < .001$)
- Received training to deliver an intervention (*OR* = 5.15, 95% CI [2.31, 11.47], $p < .001$)
- Perceived that their program placed more importance on discussing tobacco use with clients (*OR* = 1.75, 95% CI [1.04, 2.94], $p < .05$)
- Formerly smoked (vs. never smoked; *OR* = 2.17, 95% CI [1.00, 4.71], $p = .05$)

3.1.b. How do providers advise clients about the effects of tobacco?

We asked staff how they typically deliver information ***advising*** clients about the effects of tobacco on individuals, and whether this modality differed depending on topic. Figure 13 shows the proportion of staff that reported using each of these modalities. Across all three topic areas, more staff (regardless of provider type) endorsed having discussions than providing pamphlets, suggesting a preference for this modality among respondents (client health: $t = 5.49$; $p < .001$; fetal health: $t = 5.60$; $p < .001$, child health: $t = 6.32$, $p < .001$). More staff endorsed discussing fetal and child health over client health (fetal vs. client health: $t = 4.48$, $p < .001$; child health vs. client: $t = 2.75$, $p < .001$). See Figure 13.

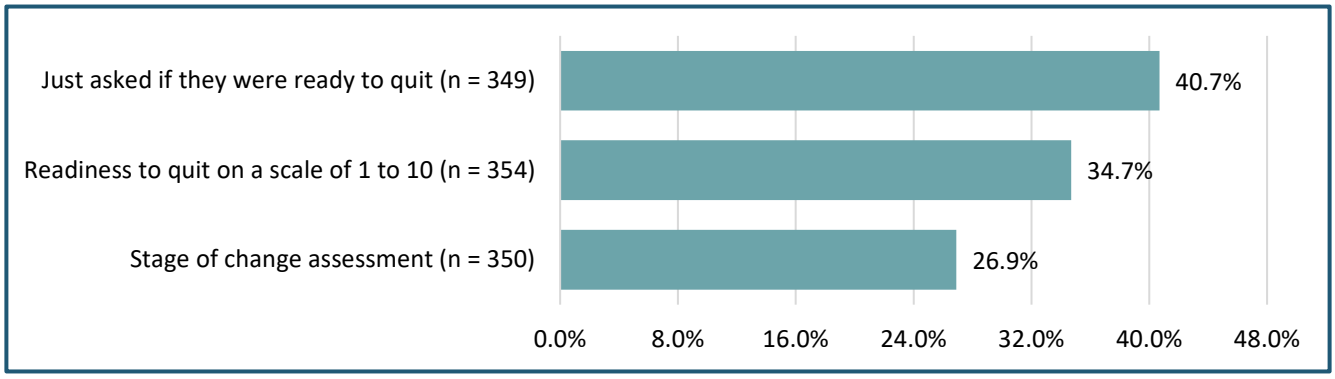
Figure 13. % of Providers that Advised Clients About Effects of Tobacco Most of the Time or Always



3.1.c. How do providers assess client readiness to quit using tobacco?

We asked staff about some ways they may ***assess*** client readiness to quit using tobacco. As seen in Figure 14, staff most frequently assessed clients by *just asking if clients were ready to quit*. Very few staff (n = 4) reported using *other* strategies such as *motivational interviewing techniques* and *using a tobacco assessment form*.

Figure 14. % of Staff Assessing Client Readiness to Quit Using Tobacco Most of the Time or Always



Differences in Assessing by Provider Type

Compared to family support providers, substance use treatment providers were more likely to select using the three assessment methods. See Table 19.

Table 18. Assessing Client Readiness to Quit Using Tobacco by Provider Type

Mode	Provider Type: *n*	Substance Use Treatment	*n*	Family Support	Chi-square
Readiness to quit on a scale of 1 to 10	**105**	64.8%*	249	22.1%*	χ^2 (1) = 59.32, p < .001
Stage of change assessment	**105**	61.9%*	245	11.8%*	χ^2 (1) = 93.79, p < .001
Just asked if they were ready to quit	**102**	55.9%*	247	34.4%*	χ^2 (1) = 13.79, p < .001

Note. Asterisks indicate a significant difference between provider types.

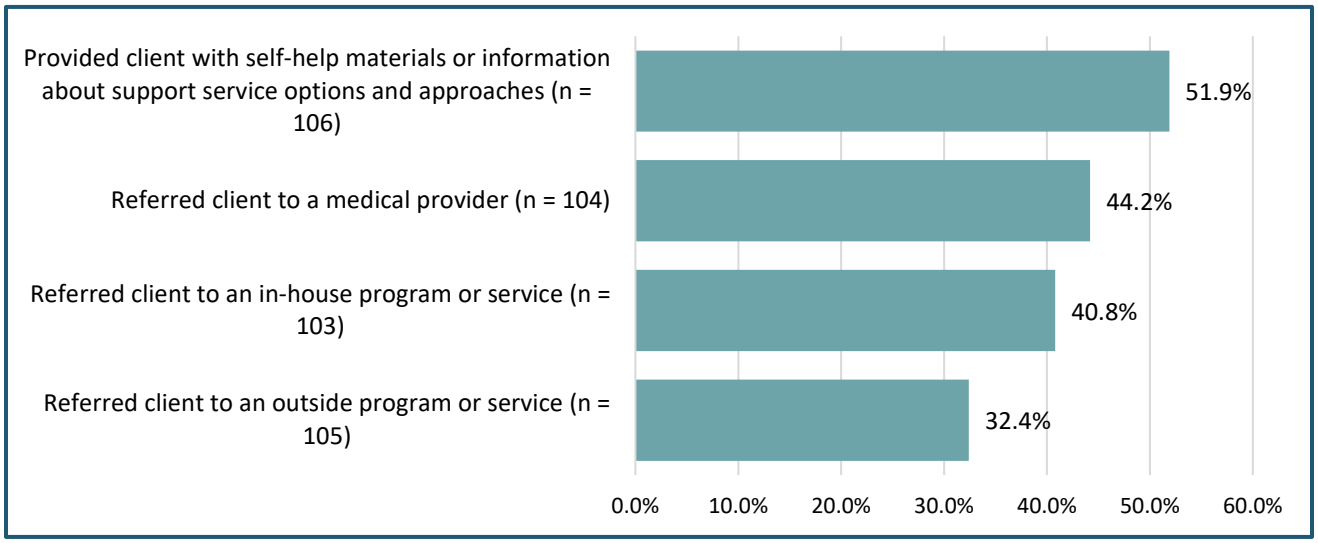
3.1.d. How do providers assist clients with their tobacco cessation efforts?

We asked staff about some ways they ***assist*** clients with their tobacco cessation efforts. Below, we present findings for substance use treatment and family support providers separately since the survey items varied slightly.

Substance Use Treatment Providers

As seen in Figure 15, substance use treatment providers most frequently indicated that they assist clients by *providing self-help materials (e.g., pamphlet or video) or information (e.g., brochures, contact information) about support service options and approaches*. Only one staff member reported that they used *some other program or service*, including a *smoking cessation coach*.

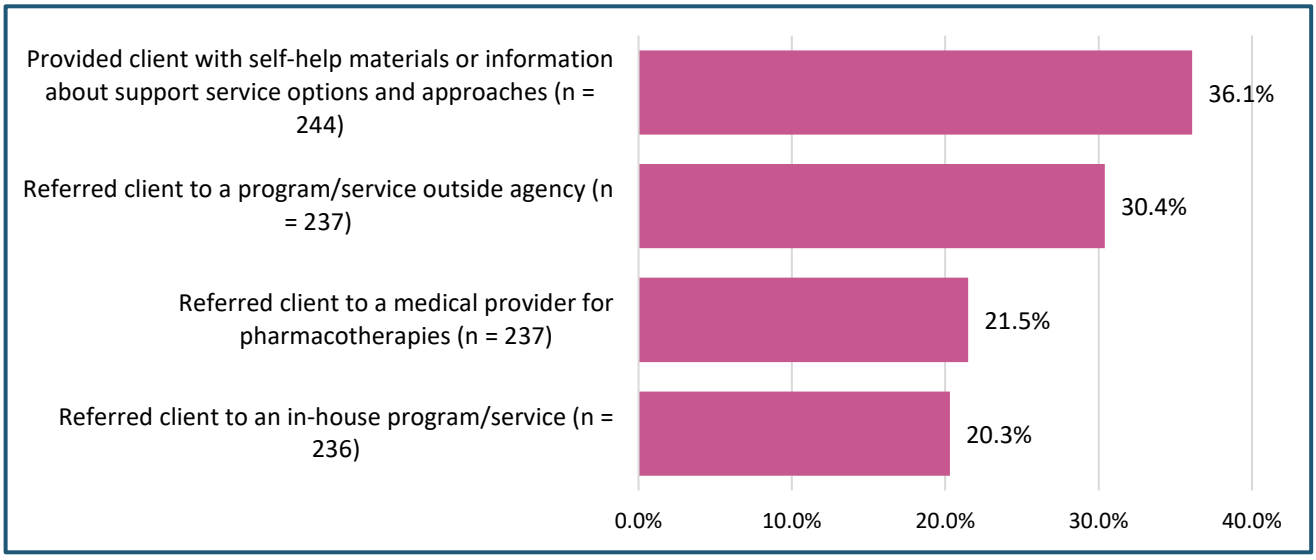
Figure 15. % of Substance Use Treatment Providers Assisting Clients with Tobacco Cessation Efforts Most of the Time or Always



Family Support Providers

As seen in Figure 16, family support providers most frequently indicated that they assist clients by *providing self-help materials (e.g., pamphlet or video) or information (e.g., brochures, contact information) about support service options and approaches* to clients. A small number of staff reported that they used *some other program or service*, including the American Heart Association, Bay State cessation program, MassHealth, and other community programs

Figure 16. % of Family Support Providers Assisting Clients with Tobacco Cessation Efforts Most of the Time or Always



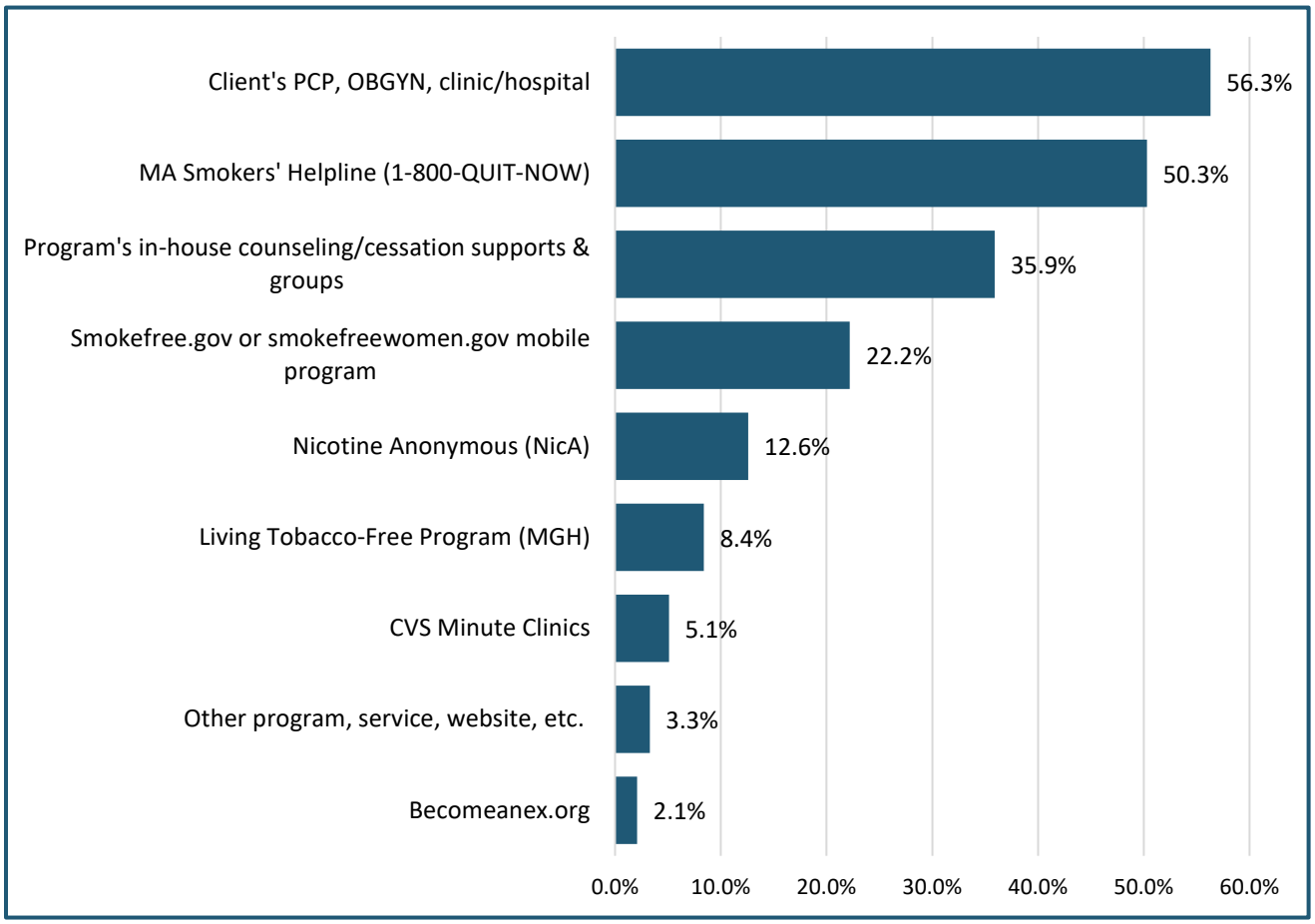
Differences in Assisting by Provider Type[w]

Although both substance use treatment and family support providers selected *providing self-help materials or information about support service options and approaches* as the most common way of assisting clients, it appears that substance use treatment providers more heavily relied on this way of aiding. It also appears that substance use treatment providers relied more heavily on assisting clients through medical providers and in-house programs and services than family support providers. Overall, staff seemed to rely on referring clients to outside programs or services at about the same rate. See Figure 16 above.

Where do providers most often refer clients?

We asked staff where they most often referred clients to help them quit tobacco. As shown in Figure 17, the most often places referred among providers were:[x] (1) client's PCP, OBGYN, clinic, or hospital; (2) the Massachusetts Smoker's Helpline—1-800-QUIT-NOW; (3) their program's in-house counseling/cessation supports and groups; and (4) smokefree.gov.

Figure 17. % Selected Most Often Referred Places Among Providers (n = 334)



Note. Other programs, services, websites, etc., included the American Heart Association, MassHealth, SMART Recovery "smoking", and other community programs (e.g., Bay State cessation program, The Brien Center, Berkshire Health Systems).

[w] Because survey response options were different among substance use treatment and family support providers, we did not test whether these differences were statistically significant. Instead, we highlight any notable differences.

[x] Twenty substance use treatment providers reported that they did not refer participants.

Differences in Referrals by Provider Type

Compared to family support providers, substance use treatment providers were more likely to refer clients to their in-house counseling or cessation supports and group, smokefree.gov or smokefreewomen.gov mobile program, NIcA, and MGH's Living Tobacco-Free Program. See Table 20.

Table 19. Most Often Referred Places Among Providers by Provider Type

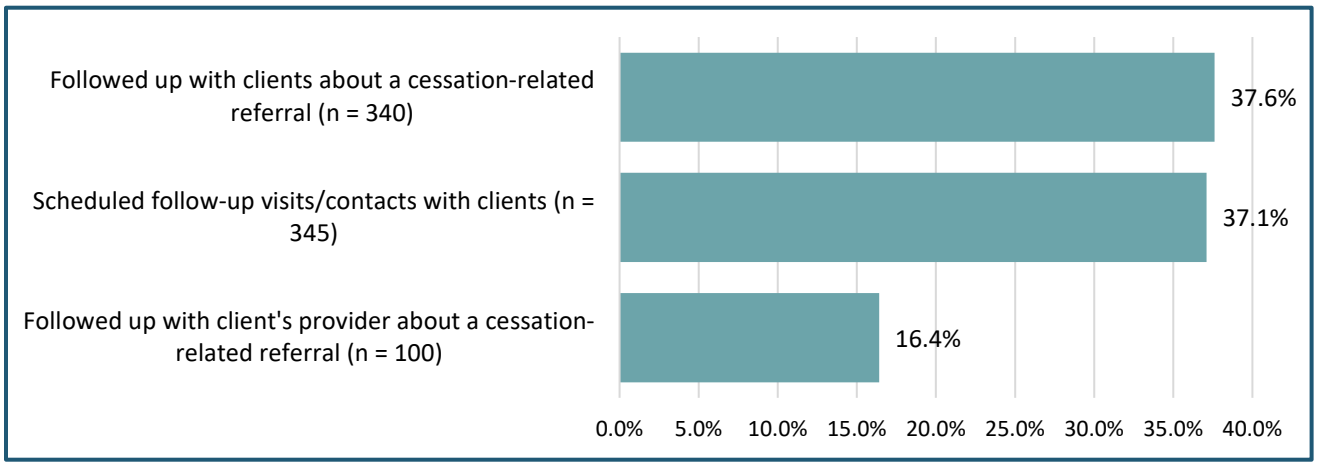
Referral places	Provider Type: Substance Use Treatment (*n* = 107)	Provider Type: Family Support (*n* = 227)	Chi-squares
Program's counseling/cessation supports & groups	66.4%*	21.6%*	χ^2 (1) = 63.32, p < .001
MA Smokers' Helpline (1-800-QUIT-NOW)	55.1%	48.0%	—
Client's PCP, OBGYN, clinic/hospital	53.3%	57.7%	—
Smokefree.gov or smokefreewomen.gov mobile program	29.0%*	18.9%*	χ^2 (1) = 4.24, p < .05
Nicotine Anonymous (NicA)	19.6%*	9.3%*	χ^2 (1) = 7.12, p < .01
Living Tobacco-Free Program (MGH)	14.0%*	5.7%*	χ^2 (1) = 6.51, p < .05
CVS Minute Clinics	7.5%	4.0%	—
Other program, service, website, etc.	2.9%	3.5%	—
Becomeanex.org	2.8%	1.8%	—

Note. Asterisks indicate a significant difference between provider types. Only results of statistically significant chi-squares are presented.

3.1.e. How do providers arrange follow-up with clients to support their tobacco cessation efforts?

We asked staff how they ***arrange*** follow-up with clients to support their tobacco cessation efforts. As seen in Figure 18, slightly more than a third of staff arranged follow-up for clients by *following up with them about a cessation-related referral* or scheduling *follow-up visits or contacts with clients*.

Figure 18. % of Staff Arranging Tobacco Cessation-Related Follow-up with Clients Most of the Time or Always



Differences in Arranging Follow-Up by Provider Type

For the most part, substance use treatment providers and family support providers had similar experiences with arranging follow-up for clients with one exception: compared to family support providers, substance use treatment providers were more likely to select that they *scheduled follow-up visits or contacts with clients* (31.3% vs. 51.0%, χ^2 (1) = 11.95, p < .001).

In their own words…the Five A's

When asked to share about how their program addresses tobacco use, a substance use treatment provider responded: "Frankly put, not very well and not very consistently." Here we describe the extent to which providers reported using the 5 A's in their work.

Ask

Qualitative data was largely consistent with the survey findings; while most substance use treatment providers indicated that asking about tobacco use is part of the intake process, the family support providers we spoke with said they mainly find out about client tobacco use through observation (e.g., seeing clients smoke) or via DCF, if it's mentioned in the service plan. One family provider mentioned internal conversations around incorporating smoking status into the intake process but worried it would feel stigmatizing for clients: "A lot of families don't want to be labeled as a parent who smokes with a young child, because there's enough people judging."

Most substance use treatment providers explained that their program's intake process requires follow up questions after tobacco screening, including products used by clients uses and whether they're interested in quitting. In residential centers, they often discover whether a client smokes when telling them which areas they are permitted to use tobacco in the facility. "If I introduce them to the recovery center… of course they're not allowed to smoke in the building, but they have a smoking section where they can go to."

Providers shared mixed feelings of asking about tobacco use. When asked if they thought they would ask clients about tobacco use if they were not required to screen, most agreed that they would not explicitly ask, but would address the issue if it came up naturally or affected the child. Family support providers shared the following reasons for why they wouldn't bring it up:

- "It probably wouldn't come up because of the hierarchy of needs and cigarettes doesn't rank."
- "Wouldn't go out of way to ask because it's not important in what working on for recovery from substance abuse or with parenting education unless smoking in closed room. Only case where it would come up is if talking about child safety and smoking in the home with children or smoking in the car with children."
- "It has to do with only getting an hour a week with clients and they're helping with other things, so unless it came up authentically, wouldn't push it."

Further, family support providers explained that if smoking cessation is a goal for the respective client, then they would bring it up again, stating "This program is based on goals. If smoking cessation is a goal, I will bring it up again. If it's something they're not ready to work on, I won't keep asking."

While providers explained that they "plant the seed" of addressing tobacco use, they are fearful that persistence around tobacco cessation may pigeon-hole or shame clients, damaging the relationship that took time to build. In contrast, one substance use treatment provider shared: "I usually bring it up every session weekly and they get tired of it sometimes and they'll tell me, 'I don't want to talk about this anymore you bring [smoking] up every time we meet.' But I will bring it up again." This provider, however, was an exception. For the majority of focus group participants, "pushing" tobacco cessation felt in direct conflict with what they see as their family-driven and strengths-based approach to serving people in recovery. One provider expressed that there should be ways to continue to prioritize asking while also respecting an individual's decision: "There's a middle ground of protecting a woman's choice and giving her other options like cutting down." But they also acknowledged that this middle ground could be difficult to find.

Advise

Providers appeared much more comfortable with the "advise" step of the 5 A's than the "ask" step; they offered many examples of how they spoke with clients who expressed a willingness to engage around tobacco cessation. Providers' advice to clients included explaining facts around tobacco-related cravings and

side effects; providing concrete resources and informing them of medications that can support with quitting; and sharing up-to-date information on Massachusetts' laws on smoking and tobacco as a public health issue. Below are some illustrative quotes for each of these categories:

Explaining facts around tobacco-related cravings and side effects

- "You won't have the cravings if you get on some type of medication. Your health would benefit from that… Your lungs would really appreciate it if you stopped."
- "I do tell them that the craving itself lasts about two minutes, so if you can, if you can overcome that, you get further along with not smoking for a day."
- "I've tried to explain to people in the past that the cigarette is not going to calm you down. It's really going to make you more hyper. It's really going make you more anxious."

Providing resources and informing clients of medications that can help with quitting

- "I give them the resources and I let them know that there's medications out there to be able to help with that process as well."
- "I give them that literature and have them read it, leave it on the coffee table, and hopefully they'll have the motivation to change at some point."
- "If I see a pregnant woman smoking then you know. I would encourage for her to do something different, but I can't push in that direction either, you know I can only suggest and advise."

Sharing information on the laws in Massachusetts and public health

- "I inform them about the laws that have changed here in Massachusetts, that you can't get the menthol cigarettes here… It's something to really think about, the health benefits that come along with that, because people have really pushed for this law to be changed..."

We asked focus group and interview participants whether these types of conversations and information-sharing were easier to have with pregnant clients. We were surprised to hear from participants that there was little difference in difficulty broaching the subject based on pregnancy or parenting status. Various providers, however, shared suggestions they give to parents on mitigating second-hand smoke exposure for children (e.g., smoking outdoors, tooth-brushing and handwashing post-smoking) which they found were effective in modifying parents' behaviors. Here is an example from a substance use treatment provider:

> *The only thing that I suggest is if they're smoking in the home to bring it outside because the children will get the secondhand smoke… Continuing this vicious cycle of not using heroin or other substances but smoking in the home it's really for me, a big no-no, because you're damaging the little people's health… A family was smoking—both of them, the two parents—and they said, 'Oh yeah, I hadn't thought about that!'… Following up, they had a bucket outside with their butts in it and they were going outside to smoke. I also worked at a dental office for a long time and one of the things that I tell people is that when you have that nicotine on your lips, and you go kissing your children that might cause some damage to their oral health as well. So, you really want to think about…brushing your teeth when you come inside and washing your hands, so that exposure doesn't go into your little people's health.*

In one interview, a participant explicitly cited the "Toolkit to Stop, or Decrease, Tobacco Use" (recently distributed by the Massachusetts Home Visiting Initiative by MDPH for programs to use) as a valuable resource for supporting clients. However, substance use treatment and family support providers explained that while they shared research-based information around the health implications of tobacco use with clients, they still struggled to get clients to a point where they are ready to quit.

Assess

Interview and focus group participants explained that they generally just asked individuals if they were ready to quit, to which clients tended to respond that they are not ready, making it very difficult to move on to the next steps of the 5 A's model. They described assessing readiness to quit in the following ways:

- "Is that something you might consider getting rid of as well? Because you got rid of other stuff in your life and you know it's not just moderation in substances, but you know abstinence completely from all substances."
- "When they come in, we ask them if they smoke. If they do, would they like to stop smoking? The majority of them say 'No.'"
- "Like stages of change to find out where the client is as precontemplation… and then get resources that are more targeted to whatever stage they're in."

Assessments, however, generally led to the realization that clients were not ready to quit. Providers shared those responses typically included: "No"; "Not now"; "I don't want to talk about this anymore." In these circumstances, it may appear that providers are not implementing an intervention, when the reality is that they are administering the 5 A's model to fidelity but are unable move to the 'Assist' step until the client is ready to do so. One provider explained: "If they showed interest, yes. Absolutely. I would get all the resources to give to them. But that just has not happened."

Interview and focus group participants raised the idea that reductions in cigarette use are often glazed over, with the sole focus being on quitting tobacco. Providers compared this to recovery work, where clients are encouraged to set short, attainable goals rather than larger, long-term ones—particularly when they are in the pre-contemplation stage. Similarly, participants found that framing the conversation around minimizing the number of cigarettes may reap more buy-in among clients and celebrating small achievements in reduction may make the idea of abstinence from tobacco use more conceivable.

Assist

Because so few of their clients expressed readiness to quit, providers had very few opportunities to actively refer them to services. They were all fairly knowledgeable, however, about where to send clients. Substance use treatment and family support providers listed off a variety of medical supports (e.g., local providers, health plans, individual and group counseling services), the Helpline and QuitWorks, and even specific community programs tailored to pregnant women who smoke that they would make referrals to, if their clients expressed interest. One substance use treatment provider also referred to the tobacco education coordinator at their program as a resource to lean on if a client expressed interest in a referral and explained that they would feel comfortable reaching out to IHR for support, as needed.

Arrange

Similar to 'Assist,' no interview or focus group participants arranged follow-up for clients. There was very little discussion about this fifth step during our qualitative data collection.

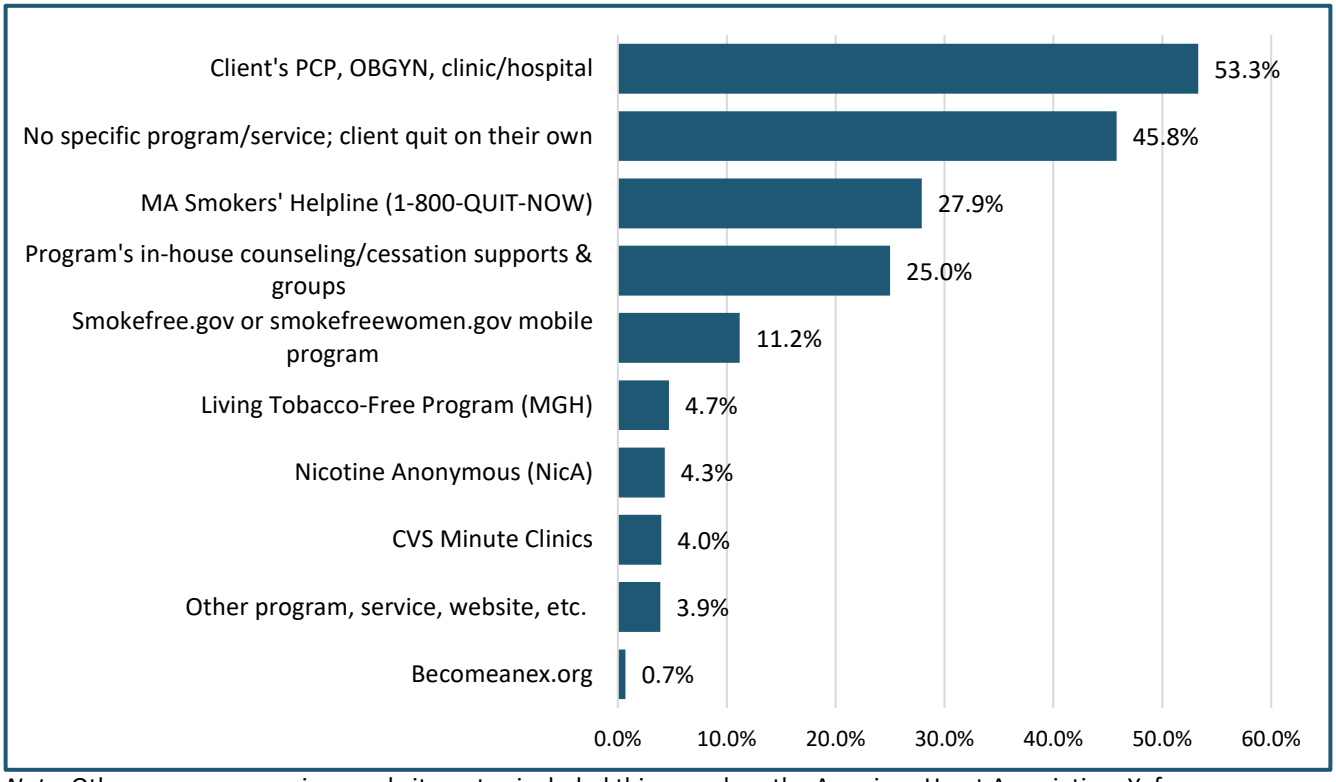
Aim 4—Understand factors related to tobacco reduction or cessation among substance use treatment and family support program clients

4.1. What types of cessation services do clients use, and how effective are they perceived to be?

We asked providers to report on which programs or services have worked best for clients who have successfully quit using tobacco products. Not surprisingly, as shown in Figure 19, perceived effectiveness

aligned with the most common referral sources (as reported in Section 3).[y]

Figure 19. % Selected Most Effective Places Among Providers (n = 276)



Note. Other programs, services, websites, etc., included things such as the American Heart Association, Yefum Shubentsov, SMART Recovery, YouTube, exercise, and having kids or being pregnant.

Differences in Perceived Program Effectiveness by Provider Type

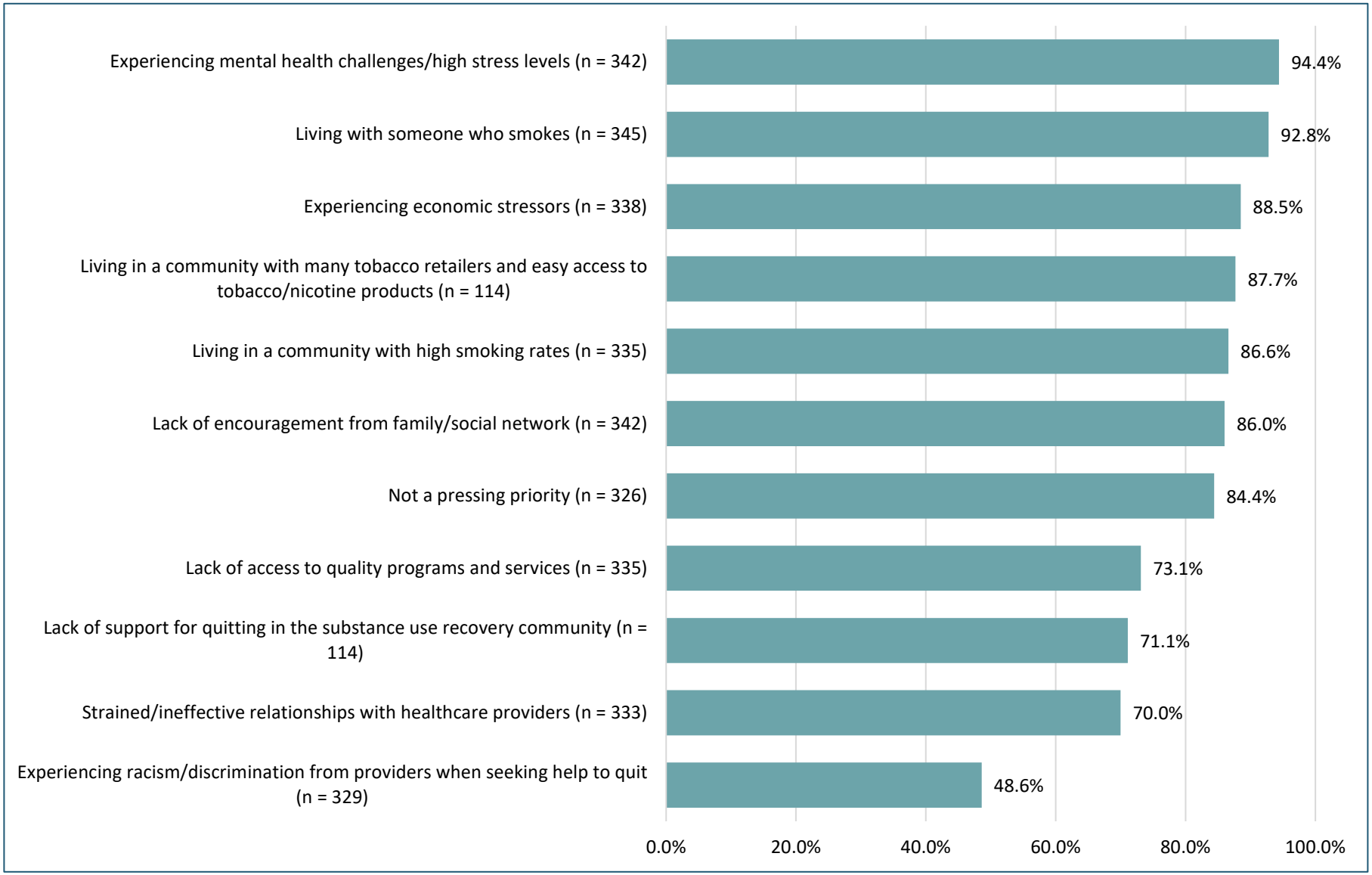
For the most part, substance use treatment providers and family support providers chose similar programs as the most effective, with one exception: compared to family support providers, substance use treatment providers were more likely to select *my program's counseling or cessation supports and groups* (37.0% vs. 20.0%, χ^2 (1) = 8.86, p < .01).

4.2. What barriers do providers think their clients experience when attempting to quit or reduce tobacco use?

We asked providers about the barriers that clients encounter when attempting quitting tobacco. As shown in Figure 20, the top three client barriers selected by providers were: (1) mental health challenges or high stress levels; (2) living with someone who smokes; and (3) experiencing economic stressors, including food insecurity, job insecurity, or housing insecurity.

[y] 52 providers reported they were "unsure" of which program worked best.

Figure 20. % Selected Client Barriers to Quitting Tobacco



Note. Two barriers were only asked of substance use treatment providers: *living in a community with many tobacco retailers and easy access to tobacco/nicotine products* and *lack of support for quitting in the substance use recovery community*.

Associations between Provider Characteristics and Perceived Client Barriers to Quitting

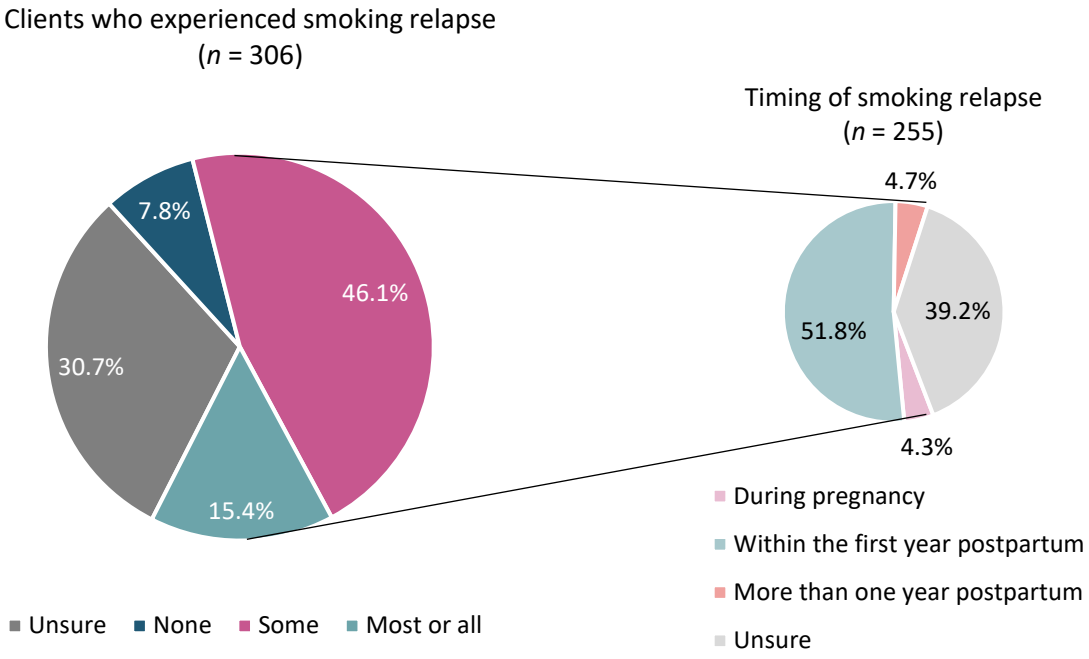
We examined whether provider type and smoking status were associated with provider-reported client barriers and two associations emerged:

- Family support providers were more likely than substance use treatment providers to select *lack of access to quality programs and services* as a barrier (*OR* = 2.23, 95% CI [1.32, 3.78], $p < .01$).
- Compared to staff who never smoked, staff who smoked formerly were more likely to select *living in a household with someone that smokes* as a barrier (*OR* = 9.90, 95% CI [1.29, 76.10], $p < .05$).

4.3. What is the prevalence of smoking relapse among pregnant and parenting clients?

We asked staff whether their clients had ever experienced a smoking relapse, and if so, when in their parenting journey had this relapse occurred. Nearly half of staff (46.1%) estimated that *some* of their clients experienced a relapse, with 15.4% of staff estimating that *most or all* of their clients had and 30.7% were unsure. Of the 61.5% of staff who reported their clients had experienced a smoking relapse, slightly more than half (51.8%) indicated the relapse occurred *within the first year of their client's child's life*, with very few staff reporting that smoking relapses most often occurred *during pregnancy* or *after the first year postpartum*. Nearly 40% of staff were unsure of the timing. See Figure 21.

Figure 21. Client Relapse and Timing



About half of staff (50.8%) reported there was no difference in the difficulty of initiating the quitting conversation with participants who had relapsed vs. those who had not yet quit, whereas 29.6% reported that it was more difficult. Nearly a fifth of staff (19.6%) reported these conversations to be less difficult. There were no differences in perceptions of relapse by provider type.

In Their Own Words…Factors Related to Cessation and Reduction Success

Interview and focus group participants described a range of approaches that, in their experience, have proven to be effective. It should be noted, however, that these discussions were largely in the realm of the hypothetical. Across providers, when we asked what proportion of their clients had been successful in

quitting, the answers ranged from none to "maybe 1 or 2". That being said, providers noted that when they had seen clients successfully quit it was generally through the use of pharmacotherapy (Chantix, nicotine gum, the patch) and support groups to aid with quitting tobacco. They also shared that they had seen some clients have success with programs that offered incentives for not smoking, provided tips and tricks to cut down on the number of cigarettes smoked, and presented alternate techniques for stress alleviation (e.g., deep breathing exercises, walks). In contrast, participants shared their sense that programs promoting quitting "cold turkey" did not seem to work.

We asked focus group participants to talk with us about what they saw as barriers to and facilitators of quit success among their clients. Themes that emerged from these discussions are described below, beginning with identified barriers.

Barriers to Quitting

Focus group participants identified several factors that they have seen stymie clients' efforts to reduce or quit tobacco, including the important role tobacco can play in clients' lives, the power of a "smoking culture" in multiple environments, access to cessation treatments, and racial inequities.

Cigarettes play an important role in clients' lives

An IHR staff member explained the following sentiment shared often by clients: "Of all the battles, this is not the battle I choose today." Clients in recovery often feel that tobacco is the last substance they have left and does not pose the same immediate danger as the substance they were addicted to. The comparison across substances leads to the mindset of: "'I'm not using heroine', or 'I used to use crack cocaine and drink a pint of alcohol every day and I'm not doing that anymore' which can be a major obstacle in feeling ready to address tobacco use." Another substance use treatment provider agreed:

> *People really don't see this as the worst of their decisions. And I think, in large part, it's because they don't see right in front of them the deterioration of their internal organs… if smoking cuts off 7–10 years of your life, it's almost like that's an idea that feels so far away for some of these women… But I also think that these women are living day-to-day, so it's much more about the moment, like what feels good right now, which is what treatment is really trying to challenge.*

The theme of tobacco being low on the list of client priorities was not just limited to substance use treatment provider focus groups. Family support providers also noted this as being a barrier; as one summarized:

> *…They have other priorities they need to meet…They have parenting classes they need to attend, some parents have anger management that they have to complete in their service plan through DCF…So, you know, those are priorities for the family, because they really want to reunify with their children, so [tobacco is] something that I mention, but it's definitely not a priority.*

Another family support provider told us about a different client who had DCF involvement: "…Now she's in a place where she's kind of ready to take on different goals in her life, [and] 'stop smoking' is not one of them. You know, building and establishing a relationship with the older children that she hasn't had custody of; [that's] her priority." A provider in the same group agreed: "that's, you know, somewhere back in the burner. That's not a priority for a lot of families."

A theme that emerged consistently across provider types was the extent to which clients perceive themselves as experiencing benefits from their tobacco use. Providers described how, for most of their tobacco-using clients, smoking is tied to routines, stress relief, and decreased anxiety. One interviewee explained: "Sometimes there's sexual abuse, domestic violence, homelessness—and this is the only way they know how to cope." Smoking as a coping mechanism was a common thread through interview and focus groups, particularly when discussing clients who are also in recovery. A family support provider described a

client in early recovery who is trying to address her addiction and change her lifestyle, explaining, "For some it might be the right time to quit when they don't have many stressors in their life but unfortunately for a lot of people it's just not that way, and for her, even though she wants to, it's not the right time." Substance use treatment providers explained that, for this reason, they face a lot of reluctance when trying to implement policies to restrict smoking: "What do you mean you're taking that away from me?" I already stopped using drugs… This is the only outlet I have. I don't have anything else in life. I need this cigarette."

For many clients, smoking also is tied to their personal and social identities. One family support provider shared: "I think it's about identity and connection when we're talking about women—the power and need for connection. So many of the women we work with have experienced traumatic relationships and are not able to get close to people as much as they want to, and there is something controlled and manageable about the smoke break together that they don't want to risk losing." Substance use treatment and family support providers both said they have heard from female clients that they have not been able to form close relationships with other women (for reasons such as competition/"out to get each other"), and that bonding during a smoke break separates all that, providing a meaningful space to bond. Providers expressed how challenging it can be to try to interrupt or even engage with those perceptions. A substance use treatment provider shared:

> *Multiple women have said a variation on the theme 'Smoking makes me feel like I'm home.' Like, how the hell from a psychology perspective do we even try and address that? When that's such a deep thing for people who are traumatized and don't feel like there's a home, for people who have been literally in domestic violence situations that have almost taken their life. They've overdosed multiple times and tobacco is bringing them something that seemingly nothing else can… I think that's the huge barrier. That's the main barrier.*

"Smoking culture"

A related theme that emerged across all focus groups and interviews was how hard it can be for clients to quit when they are surrounded by a kind of "smoking culture." A parent we spoke to, who began smoking, because their partner smoked, told us that the high rates of smoking within their community has interfered with their cessation efforts, as the constant odor of cigarettes triggers their cravings. And several substance use treatment providers observed that many clients' family members (e.g., parents, siblings, spouses) whom they see when they visit also smoke (e.g., in the car prior to coming in). This exacerbates the issue as it's not only breaking a habit, but "breaking cycles…It's trying to intervene on something that's at least been happening for two generations."

This culture pertains to the substance use treatment centers as well. As has been articulated in other sections of this report, many of the staff themselves smoke, and social breaks often revolve around that activity. As shared earlier, one substance use treatment provider shared the story of a woman entering the facility who began smoking to participate in the social aspect of services. Witnessing that situation opened this provider's eyes to the fact that programs should attempt to cut back on smoke break opportunities; they explained:

> *Unless you have some innate resiliency... If you don't have a cheerleader or someone saying to you, you know, "You don't need cigarettes, remember? You said you were going to quit, and you did it. And it's been three days, and it's hard, and you need to get through it. If you don't have someone who you trust and love saying that to you, or at least showing up for you, you know, emotionally or physically, I can imagine that's a huge hurdle. And it's so hard if you're embedded in a community that's constantly actually telling you the opposite.*

Access to NRTs

Focus group and interview participants observed that, even if a person decides they do want to address smoking behaviors, there are then layers of more structural obstacles. Providers explained that a person needs to have a medical provider, schedule an appointment with them, get a prescription, and then go

through the hassle of refills. While such products are available at pharmacies, their over-the-counter price is much higher than if one has a prescription. On accessing medication, one provider remarked: "I wish it would be as easy as buying cigarettes."

Racial Inequities

While racial equity did not emerge as a universal theme across most focus group participants, as other barriers presented in this section did, the issue was raised by several providers as important. Some substance use treatment providers mentioned being frustrated by the lack of culturally-appropriate and linguistically accessible materials, observing that serving multilingual clients is not solely about having translated materials, but also about understanding cultural differences in how tobacco is perceived. One provider said "It's interesting. It's hard enough to get substance use disorder treatment manuals in Spanish… [so] we end up writing it…[But] I think in terms of Latina identities… [they] are all different, you know? The Venezuelan is different than the Garifuna of Honduras. Like we should be thinking how do we approach this topic knowing that smoking is seen differently in different places?" Another provider agreed about how important it was to understand the smoking cultures of clients in order to be able to help them. They observed, "…Like in Mexico and Spain, which is where I've lived, you know, even higher socio-economic class and higher functioning education-wise individuals and families smoke…I think that having conversations with Latina women, some of whom come from these niches of endorsing smoking but in a different type of way, in like a socially accepted way, I think that's a knottier conversation."

Providers also discussed the fact that there are so few medical and mental health providers who represent the communities from which many of their clients reside. "We don't have enough Latino and Black mental health providers…That has been an ongoing conversation for a long time… A lot of people like myself would walk into an establishment and…see a whole bunch of White people and you feel out of place already." A substance use provider also discussed how hard it can be for Black, Indigenous, and People of Color (BIPOC) clients to share vulnerabilities with White providers:

> *With the stigma and stereotypes, people are less likely to share information with a person of a different color than they are. This discrimination exists regardless of people wanting to admit it—it's a huge shame. Different information is given to people of different race and ethnicities and it's completely unfair; [our clients] see it, they talk about how [DCF] action plans are different based on color of the skin even though they have the same addiction.*

And finally, two providers made the point that the recent ban of menthol cigarettes disproportionately affected BIPOC communities. One of them pointed out, "Menthol cigarettes are targeted towards the Black and Brown communities, [so this was] definitely a targeted step because [there's] no real difference between menthol and regular cigarettes. If you stop selling a flavored cigarette you should stop selling all cigarettes. Not a good outcome because now people are doing more for the cigarettes, [like] black market, and having to drive to New Hampshire."

Facilitators for Quitting

We asked providers which factors appeared to facilitate quit success, or at least contribute to tobacco reduction. Potential facilitators identified by providers included having a health scare related to tobacco use, emphasizing reduction and understanding relapse, having trusted medical providers, having strong support systems, removing structural barriers, and monetary incentives.

Physical health related to tobacco use

Several participants observed that one's life experiences—dealing with a tobacco-related health problem or seeing a loved one become sick from tobacco use—can often be the strongest incentives for addressing smoking behaviors. The parent we spoke with, for instance, explained that in their case the impetus to quit

was their diagnosed health problems: they were obese, had fluid around their heart, and bad asthma. They noted that their child has asthma as well. They said that this health scare—theirs and their child's—was extremely motivating. And then they commented that once they cut down (from 2–3 packs a day to 5 cigarettes a day), they were able to breathe easier and did not need to use their inhaler as frequently, which was encouraging.

We asked whether the pregnancy phase was similarly motivating for clients, but most providers said "not really." A substance use treatment provider explained, "I think I hear [it] more after people have their kids: 'I need to cut down or I need to stop smoking.' And I want to say 9 times out of 10 it's a lot of just talking. Because [they] have this brand-new baby. But [we don't see] follow through."

Emphasizing reduction and understanding relapse

Providers also talked about how important it was to emphasize that cutting down was also extremely effective—that you did not have to 100% quit in order to be healthier. And they also talked about how important it was to remember that it could take a very long time for quit success to occur, and that the pathway could include as many steps backwards as forwards. One provider described a client they had that had said she was ready to quit:

> *The reason she wanted to quit was because she got a diagnosis from her doctor of a medical condition that was directly related to smoking and it scared her and made her like 'ok this is real' like 'I'm young and I'm having repercussions from this and this is scary'. But there was also a lot of other components and overwhelming stress so she's not there yet, but the seed has been planted and it's a work in progress and won't happen overnight. It might be years to cut down and quit, so just keeping that in mind.*

A substance use treatment provider shared how one of their clients decided on her own to reduce smoking: "Sure enough, she was going to 10 smokes for the eight months she was here. Then she cut back to seven. Then she cut back to four, and she was pretty much at like four or five until she left." This also may be an easier conversation to broach with participants (particularly those who grew up in a household or community with a lot of smoking) and aligns with the idea of setting of small goals versus big ones, which providers often encourage. One substance use treatment provider explained that once a client successfully cuts back, they start to see the possibilities: "Well, we know you can do it because you just did!"

Nonjudgmental medical providers

Providers emphasized how important it was to have trustworthy medical providers to whom they can refer their clients, while acknowledging how complicated this issue can be. As one substance use treatment provider said, after observing that their field tends to underutilize medical practitioners, "I mean, I'll preface this by saying many of our women have had negative experiences, even with people who are trained to be serving this population in a specific way. So, I know that there are many issues with the medical system and it's not that I universally trust practitioners." But they went on to say what a critical component of cessation success it could be for clients to have nonjudgmental and supportive relationships with their doctors. Several substance use treatment providers observed that Boston Health Care for the Homeless has a behavioral health team that is particularly skilled in this area: "[They are] endorsing harm reduction, are meeting people where they're at, are trustworthy for this community and others, you know, for a number of reasons. I do think that we could utilize them better."

Having a support system

A recurring theme across focus groups and interviews was how important it was for clients to have social supports for cessation or reduction to be successful. One substance use treatment provider described how the same principles that apply for substance use treatment apply when it comes to nicotine:

> *It's…about talking to women about how they can fill their cups in other ways, knowing*

> *that it's not going to be quite the same. One of the catch phrases is 'the antidote to isolation of substance use is network and community.' So, one of the big things that we push for in treatment, even if someone is not consistently going to groups or able [to] meet their therapy appointments, especially initially, it's to really try and build community.*

Providers mentioned that, especially for clients who have few informal supports (e.g., family or friends), formalized social supports such as group counseling may by crucial to their quit success. As a parent commented, having these kinds of supports make you "feel like you're not alone in this." Substance use treatment providers noted that holding support groups for tobacco users on a regular basis is particularly important in a setting like a treatment center, where clients frequently cycle in and out of services. They observed that having a consistent safe space for clients to come back to may encourage them to keep thinking about the possibility of reducing or quitting tobacco. A substance use treatment provider recounted an instance where a client in precontemplation had come back to a group after an absence and said "Hey, you know, I'm thinking about that now." Some providers also speculated that programs like NicA [Nicotine Anonymous] could be useful: "I know there's not a lot of evidence on sponsors and sponsorship, but anecdotally, that seems to make a big difference for women transitioning out and staying off of any type of drug."

Remove structural barriers

Most of the providers we spoke with agreed that clients should have free and readily available access to NRTs such as nicotine gum and patches. Several substance use treatment providers mentioned a program they have through their collaboration with Boston Health Care for the Homeless where women are provided with NRTs regardless of their readiness to quit: "So that's also something that most women now have in their medicine boxes, even if they're smokers [with no current intention of quitting]. That way they know it's there in case that they choose to use it." Family support providers and the parent we spoke with also mentioned how important it was that tobacco cessation support groups not only provide free NRTs, but also free transportation and child care, so there are no monetary disincentives for parents to participate.

As has been mentioned in other sections, the issue of smoking policies at treatment centers was a consistent theme across substance use treatment provider focus groups and interviews. Providers—even current smokers—agreed that the smoking cultures at these centers made it extremely difficult for clients to break the habit and acknowledged that limiting access can play a critical role in someone's quit success. One provider shared: "I hate to say this, but this one woman, she was just so super depressed she just stayed in her room. She couldn't smoke in her room, so she stopped." Providers thought it would be a good idea to decrease or remove the smoke breaks, although they also expressed concern that such a policy change could potentially discourage individuals from seeking help at the center.

Money talks

Finally, focus group participants talked about the ways in which money can both disincentivize tobacco use and support tobacco cessation. As an example of the former, the parent we spoke with told us that, because of how expensive cigarettes are, they switched to buying cheap tobacco in bulk and rolling their own. Resorting to this lower-budget option, they said, contributed to their ability to cut down due to the health scare, because they disliked the taste so much. Relatedly, a substance use treatment provider told us about two clients in their center in the past who "took the gum and stopped smoking mainly because they just didn't have the money to buy cigarettes. And one of them has stopped smoking all together."

Providers also talked about the benefits of paying people to not use tobacco. One provider recollected that at the place they used to work "there was a program where they gave them this machine to blow in, I think, once a week or something like that, and if they stayed smoke free for a certain amount of time they got, I don't know, $25 every month or something like that. [People were] like, 'Oh, I can't smoke!'" There were also providers who cautioned against putting too much faith in the power of incentives. One provider noted that

tobacco was an addiction, and, as with any addiction, the motivation has to be intrinsic: "You know", one provider commented, "you could offer them a million bucks and maybe they'll say 'No, I'll stay here.' We, on the other side, see the potential benefits that [quitting] can bring to the family, but…ultimately we have to not only meet people where they're at, but support them in the process, because it is their life and they are the directors of their life."

Conclusions and Recommendations

In this section we summarize and contextualize key findings and then move to recommendations.

Conclusions

Aim 1—Prevalence

Findings from surveys, focus groups, and interviews suggested that substance use treatment providers and family support providers regularly work with pregnant and parenting clients who use tobacco, reinforcing that this group of providers is well-positioned to address this issue in Massachusetts. Nearly 75% of survey respondents estimated that at least some of their pregnant clients used tobacco and nearly 90% estimated that some of their parenting clients did. Survey and focus group findings corroborated research suggesting strong associations between smoking prevalence and substance use disorder,[19] with substance use treatment providers in our samples being more likely than family support providers in our samples to estimate higher levels of tobacco use among their clients. It should be noted, however, that many of the family support providers we spoke with also mentioned that they were not sure whether their clients used tobacco, because they did not always ask and did not observe clients using tobacco (particularly since the COVID-19 pandemic). Research has shown that pregnant woman are less likely to disclose smoking to providers,[20] a reluctance that stems in large part from the social stigma associated with smoking while pregnant.[21]

Also consistent with national- and state-level data,[1] cigarettes and e-cigarettes were the most common types of tobacco products used, with focus group participants perceiving a recent increase in the use of e-cigarettes, as vaping is seen among clients as less stigmatized and a healthier option. Providers also talked about the role of marijuana in tobacco use, mentioning that, since its recent legalization, it has become almost as common as cigarettes among some of their families.

Aim 2—Preparedness

According to survey findings, only around a third of providers reported that they had received training to deliver an intervention around supporting clients with tobacco cessation, with half being trained to provide *education through formal curriculum or resources* and one third being trained to provide *individual coaching or counseling.* Indeed, the top four barriers selected by survey respondents were all either directly or indirectly related to training: *insufficient training*, *unsure where to refer clients*, *not knowing whether clients used tobacco*, and *not sure how to bring it up with clients outside of screenings*. Family support providers reported receiving less training than substance use treatment providers. Among focus group and interview participants, on the other hand, most providers recalled being trained at least once in tobacco cessation approaches. Similar to survey findings, however, substance use treatment providers were more likely than family support providers to say they had been trained. Particularly among those who had received one of IHR's trainings, there was a general sense that they had been helpful in educating them about the harmful effects of tobacco and providing them with valuable resources. But there also was a pervasive perception across focus groups and interviews that the training they received had been insufficient; while they valued the resources and education, they expressed a need for more training on *how* to approach clients about smoking.

When responding to the survey, providers indicated it was *extremely important* to have quitting tobacco conversations with their clients, both from their own and their programs' perspectives. Findings from the focus groups and interviews, in contrast, suggest that providers are quite ambivalent about the importance of

addressing tobacco with their clients. That is, while they acknowledged its importance *in theory*, they were ambivalent about operationalizing this in practice. Substance use providers tended to focus on the harm reduction model, ranking tobacco low on participants' hierarchy of needs and, therefore, low on their own lists of priorities. Thus, it is possible that survey respondents rated the importance of addressing tobacco from more of a theoretical orientation (e.g., smoking is bad for you so of course it is important to address the subject with clients) rather than considering the question in terms of their own beliefs, attitudes, and day-to-day practice. Relatedly, while less than a quarter of survey respondents selected *beyond the scope of my work* as a barrier, this was one of the most salient themes that emerged during our focus groups and interviews; that addressing tobacco use with clients not only fell outside of their program's scope but in some cases may actually hinder their ability to effectively serve families.

Average scores on provider confidence indicated that respondents were *somewhat confident* in their ability to have conversations about quitting with clients. This finding is more aligned with what emerged from the focus groups and interviews; for the most part, providers felt moderately confident about some aspects of addressing tobacco, noting, for instance, that their ability to build rapport with clients and their knowledge about concrete resources had equipped them to talk with clients about this issue. But focus group participants—particularly family support providers—expressed quite a bit of trepidation about how to broach the topic without stigmatizing or shaming clients. And substance use treatment providers, as forementioned, were not confident that they even *should* be bringing this up with clients—in fact, some felt adamantly that they should not.

Providers who smoked formerly or had never smoked (versus those who smoked currently) were more likely to perceive addressing tobacco with clients as important, but only former smokers (versus never smokers) had higher levels of confidence. Focus group data provided little support for the former finding, but quite a bit for the latter. Former smokers expressed greater comfort with talking to clients about quitting, while current smokers expressed feeling very uneasy, and hypocritical, when addressing client tobacco use.

These findings are remarkably consistent with a large body of research examining barriers to implementing tobacco cessation services, particularly in addiction treatment contexts. Studies have identified several barriers to implementing cessation services and policies within treatment centers, including a "smoking culture" as described by clients and staff,[22] insufficient training,[23] smoking among staff,[22,24] client resistance,[22,25] and an assumption on the part of providers that focusing on clients' nicotine will compromise their ability to abstain from other substances.[26] Studies also have suggested that tobacco use among substance use treatment providers is associated with increased use of tobacco among clients, and less available cessation services for clients.[27]

Perhaps it is not surprising, then, that despite research demonstrating that addressing smoking and illicit substance use together can facilitate quitting both substances simultaneously,[26,28] addiction treatment centers have historically lagged behind other health care settings with regard to tobacco cessation practices. For example, nearly a decade ago, a study of community treatment programs found that only 43% of programs in the US offer nicotine treatment services,[29] with a more recent review finding this proportion to be closer to 40%,[30] indicating no progress in this area.

Aim 3—5 A's

Research has long underscored the importance of healthcare providers discussing tobacco cessation during routine medical visits with clients given the low-cost benefits of these short and effective interactions.[31,32] The "5 A's" model, a brief evidence-based assessment and intervention framework, has been widely recommended for use in prenatal populations by the US Preventative Services Taskforce[15] and the American College of Obstetricians and Gynecologists (ACOG).[33]

Ask. Most providers reported that their program required universal screening, with substance use treatment providers being more likely to report this than family support providers. Slightly more than three quarters of

providers said they initiate conversations regardless of program screening requirement, yet nearly a fifth of all providers surveyed reported never bringing up tobacco use at all. Family support providers were more likely to initiate conversations about tobacco than substance treatment providers, as were providers who had been trained, perceived the topic as important, or were former smokers themselves. Interestingly, confidence was not related to the likelihood of initiating conversations. Focus group and interview data told a starkly different story, with most providers indicating that they did not ask clients about their tobacco use outside of the required screenings. In fact, when we asked providers to consider what they would do in the hypothetical situation in which there were no program requirements or expectations regarding screening, most responded that they would not bring it up at all. Providers felt strongly that if clients wanted support with quitting, they would ask for this support themselves, as many of them worked in programs where participants determine the goals they would like to work towards and staff support them along the way.

Advise. Around half of survey respondents reported that they advised clients about the effects of tobacco on health through pamphlets and discussions. More staff endorsed discussing fetal and child health over client health. Focus group participants mentioned many strategies they have used to advise clients, underscoring that they typically would only offer advice to clients who approached them for support.

Assess. Very few of the survey respondents indicated that they used the "stage of change" assessment with clients. Almost half reported that they just ask clients if they are ready to quit, and around a third assessed client readiness using a scale from 1–10. Substance use treatment providers were more likely than family support providers to indicate that they use all three assessment methods. Focus group and interview data corroborated these findings. Most family support providers indicated that they "just ask", and substance use treatment providers were more likely to mention a specific assessment strategy. Interview and focus group participants stated that while clients were generally not ready to quit, some were more receptive to conversations around reducing the amount that they smoked.

Assist. Survey respondents indicated that their most common approach to assisting clients with cessation was to provide self-help materials or information about support service options and approaches, with substance use treatment providers being more likely to endorse this option. The top three services providers referred clients to were: clients' PCP, OBGYN, or clinic/hospital, Massachusetts QuitLine, and their program's in-house counseling/cessation supports and groups; substance use treatment providers were more likely than family support providers to refer clients to medical providers and their programs' in-house cessation services. Focus group participants did not have much experience actively referring clients to services, given how few of their clients indicated readiness to quit. They were, however, very knowledgeable about the services and resources available to clients.

Arrange. Slightly more than a third of staff followed-up with clients about a cessation-related referral or scheduling follow-up visits/contacts with clients, with substance use treatment providers being more likely to schedule follow-up visits/contacts with clients.

Again, results regarding the frequency and consistency with which Massachusetts providers employ the 5 A's in their work with clients are in line with findings from the research. While the 5 A's is a widely endorsed model, the frequency of use and implementation fidelity continue to vary across providers and healthcare settings. A 2010 analysis of engagement across healthcare providers found that while more than 50% of providers asked women about their smoking status at visits and advised quitting, less than half took the subsequent steps to assess the situation, assist in cessation efforts, and arrange next steps as recommended.[34] Additional studies examining which of the 5 A's is implemented more faithfully have found that providers tend to *ask* and *advise* much more often than *assess*, *assist*, and *arrange*.[35,36] Research on the associations between staff characteristics and the likelihood of using the 5 A's in their work have yielded similar findings to ours: providers are more likely to employ the 5 A's when they: feel competent and confident,[35,36] have a positive attitude about the model,[36-38] have been trained, [36] are non-smokers,[36,38] have strong organizational support,[38]

and have a preconceived idea that the patient is ready to quit.[37] In one study, researchers found that the associations between provider characteristics and implementation of each "A" grew more robust the higher the "A" in the model.[37]

Aim 4—Factors Related to Cessation and Reduction

Survey respondents reported on which tobacco cessation programs or services were most effective for their clients. Unsurprisingly, these aligned with where providers most often referred clients. Slightly more than half of providers selected client's PCP, OBGYN, or a clinic/hospital, with around a quarter of providers selecting Massachusetts' QuitLine, and their program's in-house counseling cessation supports and groups. While this question was not included on the survey, we asked focus group and interview participants to estimate the proportion of their clients who had successfully quit their tobacco use. Across both types of providers, answers ranged from none to "maybe 1 or 2."

Most providers selected several barriers they perceived to impact client ability with quitting tobacco, with at least three quarters of providers selecting seven barriers. The top three barriers perceived to hinder client quit success included: experiencing mental health challenges or high stress levels, living with someone who smokes, and experiencing economic stressors.

Focus group and interview participants identified a host of barriers they believe clients encounter when attempting to quit, as well as a number of factors that they believe can facilitate client quit success. They highlighted the important role tobacco products seem to play in their clients' lives, including their perceived function as a stress reliever, anxiety reducer, and—for those who are in recovery especially—a substitute for substances they believe to be even worse for them. Providers also noted the ways in which smoking can comprise a core part of clients' social identities—a way to connect with others and ground themselves. Providers also commented on how hard it can be for clients to quit when smoking is embedded into the culture among their family, friends, and communities. Indeed, research has demonstrated the ways in which family and community norms influence people's quit success.[39-42] Finally, focus group and interview participants identified several factors related to racial inequity as barriers for clients who attempt to quit or reduce tobacco use, all of which have been supported empirically, including provider bias,[43] lack of access to culturally appropriate materials and services in their own languages,[44] and policies that disproportionately to affect the BIPOC community.[45-47]

Focus group and interview participants also identified factors which they have observed to facilitate client quit success and reduction, all of which have been supported by previous research. For example, concern about one's physical health or of the child/fetus;[48] having nonjudgmental providers who understand relapse and who embrace a harm reduction approach; monetary incentives;[22] having a strong support system;[49] and removing structural barriers, including providing free access to NRTs and other therapies;[22] and adopting smoke-free policies at treatment centers so as to eliminate that temptation for clients attempting to reduce or quit tobacco.[22]

Finally, more than half of the providers indicated they had had clients who experienced a relapse after quitting; of those, slightly more than half indicated the relapse occurred *within the first year postpartum*. Again, these findings are in line with the research, which suggests that the majority of women who quit smoking during pregnancy relapse within the first year postpartum,[50] even among those women who had participated in prenatal smoking cessation intervention.[51]

Recommendations

Findings from this evaluation suggest that Massachusetts providers who work outside the medical setting with pregnant and parenting families are not consistently engaging their clients about tobacco use *and* that they are well-positioned to do so through the personalized relationships they have with families. We focus here on two sets of recommendations we believe will help support MTCP and BSAS in their efforts to more effectively address tobacco use among pregnant and parenting populations: (1) systematically integrate smoking

cessation practices into family support programs and (2) build capacity for substance use treatment providers to address tobacco use.

Systematically Integrating Smoking Cessation Practices into Family Support Programs

There is a wealth of family support programs in Massachusetts, including two evidence-based home visiting models (PAT and HFM) that are funded through MIECHV, one of the most comprehensive EI programs in the country, EHS, and many other family support programs (e.g., WIC) serving some of the most marginalized and disenfranchised pregnant and parenting populations in the Commonwealth. And while most of these programs require screening for tobacco at intake and include some education around tobacco cessation in their core program trainings, the majority, as suggested by findings from our mixed methods evaluation, do not. There is a real opportunity here for MTCP to work with other organizations to strengthen the capacity of family support programs to support tobacco-using pregnant and postpartum women. We offer four recommendations related to this aim.

Train providers in both the 5 A's and 5 R's

Very few of the surveyed family support providers reported using the 5 A's. Ensuring that providers have a range of tools embedded within the 5 A's and 5 R's framework is essential to their preparedness with supporting families who use tobacco. You Quit Two Quit,[52] is a program that provides resources and trainings to healthcare providers to help them deliver effective tobacco interventions to pregnant women, particularly first-time mothers experiencing low-income or who have previously been incarcerated. While this training has been developed for healthcare clinicians, the materials can be adapted for use by family support providers as they serve similar populations.

You Quit Two Quit draws on research indicating that a 5–15-minute intervention by a clinical professional can double—or even triple—smoking cessation rates among pregnant and postpartum populations. You Quit Two Quit's curriculum features an adaptation of the 5 A's to support practitioners in providing care to this specific population of patients.[52] In parallel, the program uses the "5 R's" for providers to speak with patients unwilling to quit tobacco. The 5 R's is considered an add-on of the 5 A's intervention, which consists of identifying **R**elevant reasons for quitting for the specific user, **R**isks of continuing tobacco use, **R**ewards associated with tobacco cessation, and **R**oadblocks that interfere with quitting efforts (and how to move past them). The framework concludes with **R**epetition to ensure that providers engage patients in these conversations at each visit.[52]

Since its inception in 2008, You Quit Two Quit has publicly disseminated: (1) its tobacco screening and cessation resources including three bilingual versions of the 5 A's and 5 R's intervention for prenatal, postpartum, and non-pregnant patients; (2) recommendations on how clinicians can support patients who are not yet ready to quit; and (3) educational materials and resources for healthcare settings to share with patients as needed, with a special focus on the adverse effects of e-cigarettes. All these materials can be found on their website: https://youquittwoquit.org. Given that this program appears to be time efficient (i.e., interventions occur within 15-minutes) and is shown to be effective with tobacco cessation among families, including those who are pregnant or postpartum, MTCP could consider using You Quit Two Quit with providers who work with families across the Commonwealth.

Ensure tobacco cessation approaches are women-centered

The majority of providers we surveyed indicated that they were more likely to advise clients to quit by focusing on fetal health and child's health, rather than their client's health. While the strategy of focusing on fetal health has been shown to be motivational for parents—as well as linked to decreases in tobacco use throughout pregnancy—it has also been found to be less effective postpartum and for longer-term abstinence.[53,54] Quitting is undeniably beneficial to protect fetal and newborn health; however, the emphasis on the fetus does not address the child's future exposure to secondhand and thirdhand smoke and, equally importantly, the mother's long-term health.

Researcher Lorraine Greaves has recommended that programs should consider using a "women-centered" approach when employing tobacco cessation interventions with clients by: (1) always putting women's health *first*, prior to pregnancy, prenatally, and postpartum; (2) empowering women to help build confidence in themselves; and (3) supporting women's overall health along with their social priorities.[55] Greaves also notes that providers must simultaneously employ a trauma-informed approach by: (1) recognizing associations between a woman's history with trauma and violence and their current tobacco use; (2) identify and respect a woman's needs for safety (i.e., physical and emotional) and choosing and controlling their decisions; and (3) providing services to women through supporting their safety needs by building on their strengths and empowering them, while avoiding retraumatization.[55]

A woman-centered approach in a family support program setting could include, for instance, using motivational interviewing techniques guided by questions around *why* women want to reduce or quit using tobacco for themselves versus for the health of the fetus/child while focusing on the choices that women have with *how* to reduce or quit using tobacco.[55] Using a women-centered framing when developing policies, trainings, and implementation supports could be particularly important for family support providers, who expressed serious concerns about worsening the sense of stigma and shame their tobacco-using clients already feel. This framing may also help to address providers' perceptions that addressing tobacco use in their clients is somehow undermining the strengths-based, family-driven approach that undergirds their work.

Connect pregnant women with evidence-based programs

National clinical practice guidelines in the US recommend that, to reduce postpartum relapse, pregnant women who smoke should be offered psychosocial interventions beyond minimal advice early in pregnancy.[56] We know that family support providers are referring clients to outside tobacco cessations, with the QuitLine being the second-most common referral after medical provider and more than half of family support providers reported referring clients who are interested in quitting to the QuitLine. Perhaps family support programs could explore an adaptation of MTCP's QuitWorks for use in these home visiting and family support settings in order to make these referrals more systematic and seamless.

Family support focus group participants seemed fairly knowledgeable about places they could refer, but also noted a need for more resources and information. One resource that could be helpful in addressing this need across family support programs is the "Toolkit to Stop, or Decrease, Tobacco Use", an informational pamphlet developed by the Massachusetts MIECHV program for use by home visitors. This document, which includes a comprehensive list of tobacco cessation interventions available for pregnant and parenting women, could easily be adapted for use in other family support programs.

In addition, programs could consider integrating existing evidence-based interventions into their service offerings. WIC, for example is a recognized family support service that works closely with pregnant and parenting individuals in local communities. Studies of smoking cessation among women who enrolled into WIC programs during their first or second trimesters where tobacco screening and a smoking intervention were incorporated into their services, have shown decreases and successful quitting among prenatal women by the third semester.[57,58] One program which has been found to be particularly effective with tobacco cessation among pregnant women within the WIC setting is the Baby & Me Tobacco Free Program.[59]

Baby & Me Tobacco Free Program (BMTFP)

Supporting pregnant and postpartum women, BMTFP is an evidence-based tobacco intervention launched in 2001.[60] Since inception, the program has trained implementers in local agencies across the nation to effectively deliver the intervention within their respective communities. Available nationally, BMTFP provides single day trainings to locations interested in the program to ensure they implement the model to fidelity. As of 2019, the program's small team of five expanded operations to 22 states, providing support to approximately 1,000 BMTFP facilitators across more than 330 implementation sites.[60]

BMTFP uniquely targets women through their pregnancy and for one year postpartum with the goal of preventing tobacco relapse. Through pregnancy, women attend a total of four counseling sessions through which they receive education, support, and carbon monoxide tests to monitor cessation. If at the third or fourth sessions' tests indicate no tobacco use, women are provided with diaper vouchers (one voucher per session), which can be used at Walmart or other participating stores.[60] Once the baby is born, carbon monoxide testing continues monthly until the baby's first birthday; participants receive a diaper voucher for every month the test indicates they are tobacco free. The program is available to any tobacco user living with a pregnant participant; they too can receive the same diaper vouchers upon successful quitting.[60]

Various research studies have focused on BMTFP across different service locations to evaluate program effectiveness.[59,61,62] BMTFP incorporates many research-based practices related to supporting pregnant and parenting women including psychosocial interventions such as counseling and financial incentives, the use of breath tests (versus self-reported data), continuity postpartum, and concurrently supporting other members of the household with smoking cessation. To date, BMTFP has received a "model practice award" by the National Association of City and County Health Officials and was labeled a "best practice" by the Association of Maternal and Child Health Program (AMCHP) indicating that it has been reviewed by public health experts and proven effective.[61]

Home visiting programs are also well-positioned to influence smoking behaviors among pregnant and parenting individuals. The evidence-based home visiting program, Nurse Family Partnership (NFP), for instance, has been found to be effective in reducing smoking and increasing smoking cessation among high risk pregnant women,[63,64] with one study showing that this program effect was stronger over time, a finding unique from studies of other interventions where program effects seemingly decrease with time.[41]

Recently, there has been much more attention paid to tobacco use and tobacco cessation in the context of home visiting. This has been motivated in part by the Maternal, Infant, and Early Childhood Home Visiting Program (MIECHV), the federal home visiting program that was authorized as part of the Affordable Care Act.[65] MIECHV now provides federal funding for home visiting in all 50 states, in the District of Columbia, in five territories, and by at least 25 organizations serving Native American tribes.[66] One of the 19 performance measures that MIECHV grantees are responsible for reporting on annually is the percent of primary caregivers enrolled in home visiting who reported using tobacco products at enrollment and were then referred to tobacco cessation counseling within three months of enrollment.[67]

Since MIECHV began, there have been some efforts in the home visiting field to find ways to more effectively integrate tobacco screening and brief interventions into programming. Alabama MIECHV, for example, has focused a continuous quality improvement (CQI) initiative on increasing quit attempts among families participating in two of the state's PAT home visiting programs; their efforts to integrate the 5 A's into home visitor's screening practices resulted in 60% of their tobacco-using families making at least one quit attempt in a six-month period.[68] And Florida MIECHV, in partnership with other agencies and organizations, is implementing the Smoking Cessation and Reduction in Pregnancy Treatment (SCRIPT) program,[z] an evidence-based approach aimed at reducing smoking among prenatal women through comprehensive education and counseling.[69]

Smoking Cessation and Reduction in Pregnancy Treatment (SCRIPT)

Funded by the National Institute of Health and administered by the Society for Public Health Education (SOPHE), SCRIPT is delivered by prenatal care providers to address tobacco use among pregnant women. SCRIPT resources include a detailed self-evaluation guide called A Pregnant Woman's Guide to Quit Smoking to encourage cessation within a seven day period, a motivational DVD called Commit to Quit, comprehensive counseling using the 5 A's delivery mechanism, and follow

[z] See http://www.flmiechv.com/new-home-visiting-resources-available-for-families-using-tobacco/

up support to promote a smoke-free home postpartum.[70] Along with these resources, health care professionals enroll in a half- to full-day workshop, the goals of which are to encourage, integrate and assess the SCRIPT program within their respective organizations. SCRIPT's programs are covered by the Affordable Care Act and its counseling services to pregnant women are eligible for Medicaid reimbursement.

Thus far, studies of SCRIPT have demonstrated that women exposed to the Commit to Quit video, A Pregnant Woman's Guide to Quit Smoking, and counseling experience significant smoking reduction rates (based on cotinine samples) when compared to control groups.[69] However, given the range of organizations and staff implementing SCRIPT, effectiveness varies based on factors including each program's infrastructure and fidelity to assessment and intervention protocols.[69] A study conducted in 2013 looked specifically at SCRIPT implementation by licensed nurses and social workers providing home-based services to Medicaid-eligible pregnant women through Right from the Start across West Virginia. Study findings indicated that women—even those further along in their pregnancy—can be assisted by home visitors to alter smoking behavior using SCRIPT.[71]

To date, SCRIPT has been cited by the agency for Healthcare Research & Quality's Smoking Cessation Clinical Practice Guidelines and has been shown to be effective in helping thousands of pregnant women quit smoking.[70] The program has been executed in sites across the US by healthcare and family support providers.

Both BMTFP and SCRIPT are options for MTCP to consider exploring to better support pregnant and postpartum women with tobacco cessation.

Work in collaboration with family support program administrators

Finally, MTCP should engage in deliberate collaborations with some of the agencies that administer many of the family support programs named above, including the Bureau of Family Health & Nutrition, also at MDPH, which administers MA MIECHV, EI, WIC, EIPP, FIRST Steps Together, and Welcome Family; the Children's Trust, which administers HFM and the Family Centers; and the Massachusetts Head Start State Collaboration Office, which administers EHS. Through this type of interagency collaboration, MTCP could learn more about where the gaps in training and referrals are among these family support programs and co-create more system-level strategies to address these gaps, including joint funding applications, cross agency policies, some shared agreement around best practice standards, standard trainings across programs, and a shared vision for what tobacco cessation in family support programs should look like in the long-term. Developing a more comprehensive, seamless, and systematic approach to addressing tobacco across family support programs may provide MTCP with additional tools to better access and engage pregnant and parenting populations in Massachusetts.

Build Capacity for Substance Use Treatment Providers to Address Tobacco Use

The preponderance of evidence suggests that substance use treatment centers are a logical place to focus cessation efforts. First, research is unequivocal about the negative impacts of tobacco on recovery success; tobacco has been found to be associated with increased depression, anxiety, and suicidal ideation;[72-74] shown to reduce the likelihood of recovery success and increase the likelihood that an individual in recovery will experience a relapse;[75,76] and it has been shown to be a leading cause of death in patients with addictive disorders.[77,78] Second, there is strong evidence that addressing tobacco use within the addiction treatment setting leads to greater cessation success,[79] and some evidence to suggest that addressing smoking during substance use treatment contributes to positive recovery-related outcomes as well.[80]

And yet, as suggested by findings from this evaluation and corroborated by a substantial body of research, substance use treatment providers appear apprehensive to adopt evidence-based tobacco cessation practices in their work. Even among the substance use treatment program directors we spoke with, there was a disconnect between what they *knew* to be true about addiction and cigarettes, and what they *felt* they were

able to implement in their daily practice. There was a general perception that the formal integration of tobacco into residential treatment protocols and services had the potential to disrupt client-staff relationships, dissuade clients from remaining in treatment, and derail client recovery efforts. This perception pertained to the general population as well as pregnant individuals and those parenting young children.

There are many factors that have been associated with effective implementation of tobacco cessation practices in addiction treatment settings, including provider knowledge and self-efficacy,[81,82] attitudes and beliefs about the importance of tobacco cessation treatment,[23,82] and organizational and structural supports.[83] Here we make recommendations related to each of these three areas.

Provider Knowledge and Self-Efficacy

The importance of training cannot be overstated. More than half of the substance use treatment providers who responded to the survey indicated that they had been trained, and most focus group participants recalled being trained as well. But at the same time, the majority of providers we spoke with expressed a need for more training—specifically, for training related to *how* to engage clients in conversations related to tobacco reduction and cessation. We suggest post-training follow-up with providers employing components that may help them become more comfortable with the *how* piece of addressing tobacco use with families and avoid feeling stuck at the 'assess' phase of the 5 A's when clients indicate they are not yet ready to quit. In addition to more traditional training methods such as being educated on the negative effects that tobacco has on one's health or given pamphlets and resources to handout to clients, providers would benefit from knowing how to converse with clients around using tobacco and assessing their reduction and quit goals. For example, following conversations with clients around readiness to quit—and learning why clients are not yet ready to quit—providers can bring these reasons to post-training follow-ups and together role play the 5 R's accordingly. With the support of a trainer or the program's tobacco education coordinator, they can receive assistance with navigating the difficult parts of these conversations and be more confident when implementing the intervention with clients. In addition to providing real-time support to providers, this will also help MTCP understand where providers are getting stuck when addressing tobacco use and how to tailor trainings moving forward.

Moreover, MTCP and BSAS should consider guiding programs to implement practice groups that focus on follow-up training related to implementing the 5A's and 5'Rs, both in substance use treatment centers and home visiting programs. For example, BSAS-licensed treatment programs are required to have a TEC whose role focuses on providing fellow staff members with training techniques around tobacco awareness. Perhaps a quarterly meeting within and across organizations would be helpful to get ideas from fellow providers on the tobacco cessation techniques and trainings that work and do not work with clients. Quarterly meetings and community practice groups may be a good opportunity to enact these, and other interactive methods mentioned above.

Provider Attitudes and Beliefs

There were serious concerns among staff on how to integrate tobacco supports into their current service model. Substance use treatment providers explained that their clients determine the addiction treatment goals they would like to focus on, and then they co-develop a service plan based on those goals. In many ways, the 5 A's model appeared to conflict with this client-driven model, whereby providers are expected to repeat the intervention even when clients initially indicate that they are not ready to quit. Focus group participants also felt that the 5 A's model's emphasis on quitting rather than on reduction was similarly at odds with their clinical approach to treatment.

In fact, substance use treatment providers we spoke with were fairly united in their use of a harm reduction framing when considering whether and how to address client tobacco use in the context of substance use recovery. Findings from surveys and focus groups suggest that substance use treatment providers regularly screen clients for tobacco use as part of the intake process but do not revisit the subject unless their client

comes to them for support. They also enable tobacco use amongst their clients when they believe it to be therapeutically necessary. This belief appears to persist despite assertions from the field that a failure to prioritize smoking cessation among clients enrolled in substance use treatment increases rather than decreases the likelihood of potential harm to clients' health and recovery processes, for the many reasons listed above.[78,84]

According to providers, many of the materials and trainings they have been exposed to approach this issue too bluntly. Consider, for instance, this "myth about smoking and pregnancy" described in the "Toolkit to Stop, or Decrease, Tobacco Use" distributed to providers:

> ***Myth: Smoking fewer cigarettes or switching to e-cigarettes during pregnancy is OK.***
>
> ***Fact****: There is no safe amount of smoking. Every puff of a cigarette releases harmful chemicals that will reach your baby and affect your health too. E-cigarettes are also not harmless (more information). The nicotine in e-cigarettes is harmful for developing babies and impacts the development of their brains and lungs.*

This kind of messaging does not seem to resonate with substance use treatment providers. Rather the lack of nuance seems to instill a sense of wariness in providers, confirming their suspicions that those who are setting their program's tobacco cessation policies and administering trainings do not fully appreciate the nature of their work as rooted in a harm-reduction framework.

This is a challenging issue to overcome, and we do not pretend to have the answers. But one avenue to explore may be to appeal to providers' convictions about the importance of fairness and equity. Research suggests that clients with substance use disorder are more interested in quitting tobacco than is often estimated,[85,86] are more interested in cessation services in general,[87] and are supportive of receiving cessation services in conjunction with their other addiction treatments.[88] Seen from this perspective, treatment providers' reluctance to revisit the cessation option with clients who they believe to be too deep in crisis to engage could actually result in clients who may otherwise have accepted cessation services slipping through the cracks. In other words, while the impulse may be well-meaning and client-driven, providers may be inadvertently discouraging clients from seeking treatment for tobacco use due to their *a priori* assumptions about who is in a good position to quit and who is not. Many of the providers raised the issue of racial equity when talking about facilitators and barriers to quitting. Framing this issue in those terms may be a more effective education and training strategy than attempting to disabuse them of the idea that harm reduction is the right approach.

Organizational Support

In interviews and focus groups, participants shared how difficult it is, for instance, to be the only one who is promoting tobacco cessation in a program where so many staff smoke; how challenging it can be to address tobacco use when the subject never comes up during supervision; and how ingrained the "smoking culture" can be in these centers, where social breaks are often structured around smoking and vaping. Research has shown the importance of organizational support in ensuring that tobacco cessation services are implemented consistently and successfully.[83] For tobacco cessation integration efforts to be successful, some of these environmental barriers need to be addressed.

One avenue for reducing structural barriers to cessation would be for Massachusetts to enact a more ambitious tobacco-free policy for state-licensed substance use treatment centers than currently exists. BSAS has instituted guidelines restricting tobacco use in buildings, and within 20 feet of building perimeters[aa], but has stopped short of a comprehensive prohibition of tobacco use on facility grounds. This kind of policy has yielded positive effects in several other states, including New York, Texas, and New Jersey.[89-92] Researchers have found that employing tobacco-free policies was significantly associated with a lower prevalence of

[aa] See https://www.mass.gov/doc/dph-bureau-of-substance-abuse-services-standards-of-care/download

smoking among clients.[89,90] Further, researchers have found that enrollment is not negatively impacted by such policies, as often expected.[91] In fact, researchers recently found that a tobacco-free policy, administered in both inpatient and residential treatment programs, increased the number of clients in the program—and their intention to stay abstinent post-discharge—and had no effect on how many clients left the program.[91,92]A qualitative research study yielded similar findings; providers at the Taking Texas Tobacco Free (TTTF) residential centers reportedly valued the adoption of a tobacco-free environment, with clients crediting TTTF for helping them quit smoking.[38]

Even without this kind of sweeping policy change, there are structural changes that can support substance use treatment providers' efforts to address tobacco use in these settings. Through interview and focus groups, participants shared how smoking is a form of stress relief and a way to socialize with others in the community. Studies that highlight the perspectives of clients and providers at residential treatment centers have provided further context on how to tailor services to this subpopulation, including providing structural "replacements" for the perceived benefits of smoking through adapting the center's external environment to be more conducive to stress relief (e.g., spaces for physical exercise), and facilitating peer supports for both clients and staff (e.g., smoking cessation groups).[28,29]

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Appendices

Appendix A—Tobacco Cessation Compendium

Compendium of Tobacco Cessation Services Within Massachusetts

Prepared by Tufts Interdisciplinary Evaluation Research (TIER) for the Massachusetts Department of Public Health (MDPH)—Massachusetts Tobacco Cessation and Prevention Program (MTCP)

Nikita Singhal & Naomi Dulit-Greenberg

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The Massachusetts Department of Public Health (MDPH) does not currently have a comprehensive, updated compendium of existing tobacco cessation programs in Massachusetts. We planned to examine initiatives and services tailored to pregnant and parenting individuals but widened our search to all tobacco cessation programs within the Commonwealth, given the few services within Massachusetts specifically tailored to these sub-groups.

To determine extant tobacco cessation programs in Massachusetts, we conducted a Google search using keywords and Boolean operators for community and government agencies, and organizations. Next, we reviewed a list available on *Making Smoking History* of programs that provide in-person support. We contacted programs to find out which were still open and included only those that were still in operation in the compendium.[a]

For each program in the compendium, we include a brief description and the following categorization: (1) primary service type, (2) implementation setting, and (3) program modality. Further, we categorized programs based on if they stated including a behavioral health and explicitly described using evidence-based practices. See Table 1.

Table 1. Tobacco Cessation Services Codes and Definitions[b]

	Definition
Primary Service Type	
Direct Service	One-on-one or group support to individuals and/or families.
Curriculum/ Resource Center	A program that provides in-house resources and tools or access to select tobacco cessation programs that may not be free to the general public. We exclude programs that only provide links to extant programs.
Training/ Technical Assistance	A 'train the trainer' service where programs support organizations in their tobacco cessation supports.
Framework or Initiatives	A local collaboration or campaign to reduce tobacco use *or* an original framework (e.g., 5 A model) that can be utilized by other organizations.
Implementation Setting[c]	
Clinic/ Hospital	Any healthcare setting.
Behavioral Health	Any agency focusing on substance use and/or mental health disorder.
Family Support	Any program whose target population is children and families (e.g., Early Intervention).
Phone/Virtual	Services taking place virtually (e.g., online support groups) or through phone.
Modality	
Organization	Support provided to organizations.
Group	Support provided through groups.
Individual	Support provided through one-on-one interactions.
Behavioral Health Component	Programs stating that tobacco cessation services include behavioral health supports.
Use of Evidence-Based Practices	Programs stating that they utilize evidence-based practices.

[a] The compendium was compiled in December of 2020, amidst the COVID-19 pandemic. Please note that the status of tobacco cessation programs may have changed since that time.

[b] Assigned categorizations are for specific programs versus the program's parent agency or organization. Categorizations are not mutually exclusive.

[c] Every program may not have an implementation setting (e.g., a campaign).

Our search for tobacco cessation support services across the Commonwealth resulted in a compendium consisting of 32 programs. Programs represent a wide range of service approaches, from providing one-on-one support to local and statewide initiatives aimed at reducing and preventing future tobacco use.

Among smoking cessation programs available in Massachusetts, only one—QuitLine (see text box)—includes a tailored component for pregnant individuals who smoke and only Clinical Effort Against Secondhand Smoke Exposure (CEASE) (see text box) has developed a unique framework to address tobacco cessation among parenting families.

QuitLine: The Massachusetts Smokers' Helpline (1-800-QUIT-NOW, referred to in Massachusetts as Quitline) is administered by the Massachusetts Tobacco Cessation and Prevention Program (MTCPP) at MDPH**,** is a free evidence-based program offering confidential, one-on-one coaching to support tobacco cessation. QuitLine's program enhancement for pregnant women consists of 9 coaching calls with the same coach (5 during pregnancy and 4 postpartum), text messaging and email support, and targeted educational materials (e.g., fact sheets). As an incentive for participation, QuitLine provides women with $5 gift cards per coaching call during pregnancy and $10 gift cards per coaching call postpartum, for a total of up to $65 in rewards. While users generally have positive reactions to the support provided through QuitLine's coaches and partner healthcare providers, statistics on the number of pregnant women contacting the Helpline (as well as rates of quit success and program feedback among this population) are not available through QuitLine website.[d]

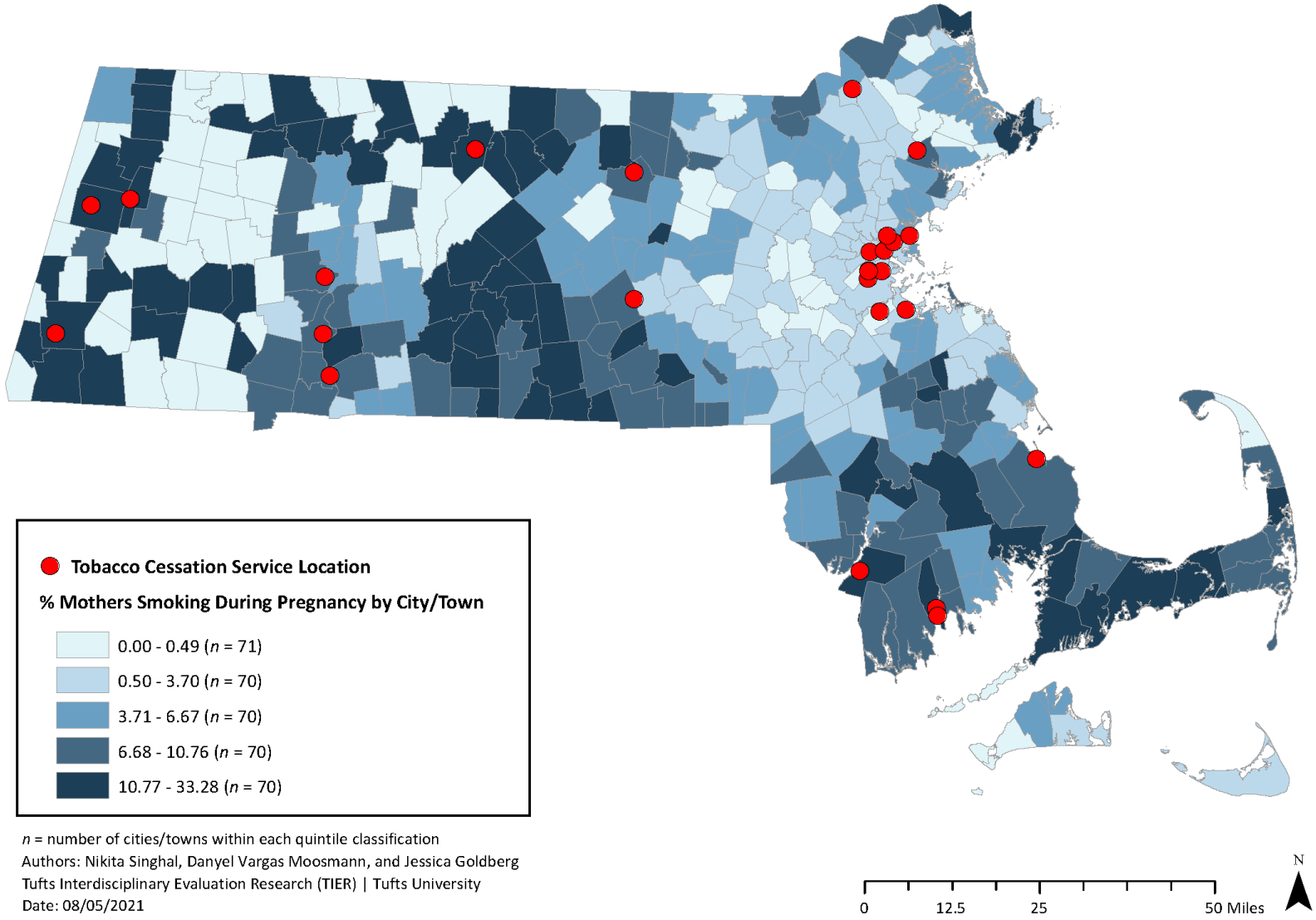
QuitWorks, also run by MTCPP, is a program aimed at integrating tobacco cessation practices into healthcare settings, and facilitating a more seamless referral process to QuitLine for both healthcare and insurance providers. QuitWorks provides training to healthcare providers in implementing a condensed version of the evidence-based 5 A's model, and has systemized an easy referral process allowing providers to connect patients to the QuitLine for intensive phone-based counseling.[1] QuitWorks also supports healthcare providers to implement more systems-level changes, such as tobacco-free campuses and counseling for both patients and staff members.[2]

Clinical Effort Against Secondhand Smoke Exposure (CEASE) is a framework developed at Massachusetts General Hospital (MGH). CEASE uses a shortened adaptation of the 5 A's model called "2 A's and an R," which involves providers *Asking*, *Advising*, and *Referring* individuals to appropriate care.[3] CEASE is a research-tested intervention program that supports pediatric healthcare providers in delivering tobacco cessation support to parents with the goal of reducing child exposure to secondhand smoke. Child health care offices are trained in implementing CEASE, through which they connect parents to resources (e.g., Helplines, pharmacotherapy) to encourage smoking cessation, and provide tips for a tobacco-free car and home. A study conducted across 20 pediatric practices in 16 states compared the effects of usual care with CEASE, finding that parents who participated in CEASE were significantly more likely to receive at least one form of assistance with tobacco cessation in comparison to those treated with usual care.[4]

The full list of programs can be found in the companion Excel document entitled *Compendium of Tobacco Cessation Services Within Massachusetts.* See Figure 1 for a heat map of the percent of mothers reporting smoking during pregnancy across the state, overlaid by tobacco cessation service locations represented in the compendium.

[d] For information about Quitline, see https://www.mass.gov/info-details/about-1-800-quit-now

Figure 1. Smoking During Pregnancy Rates and Tobacco Cessation Service Locations[5]



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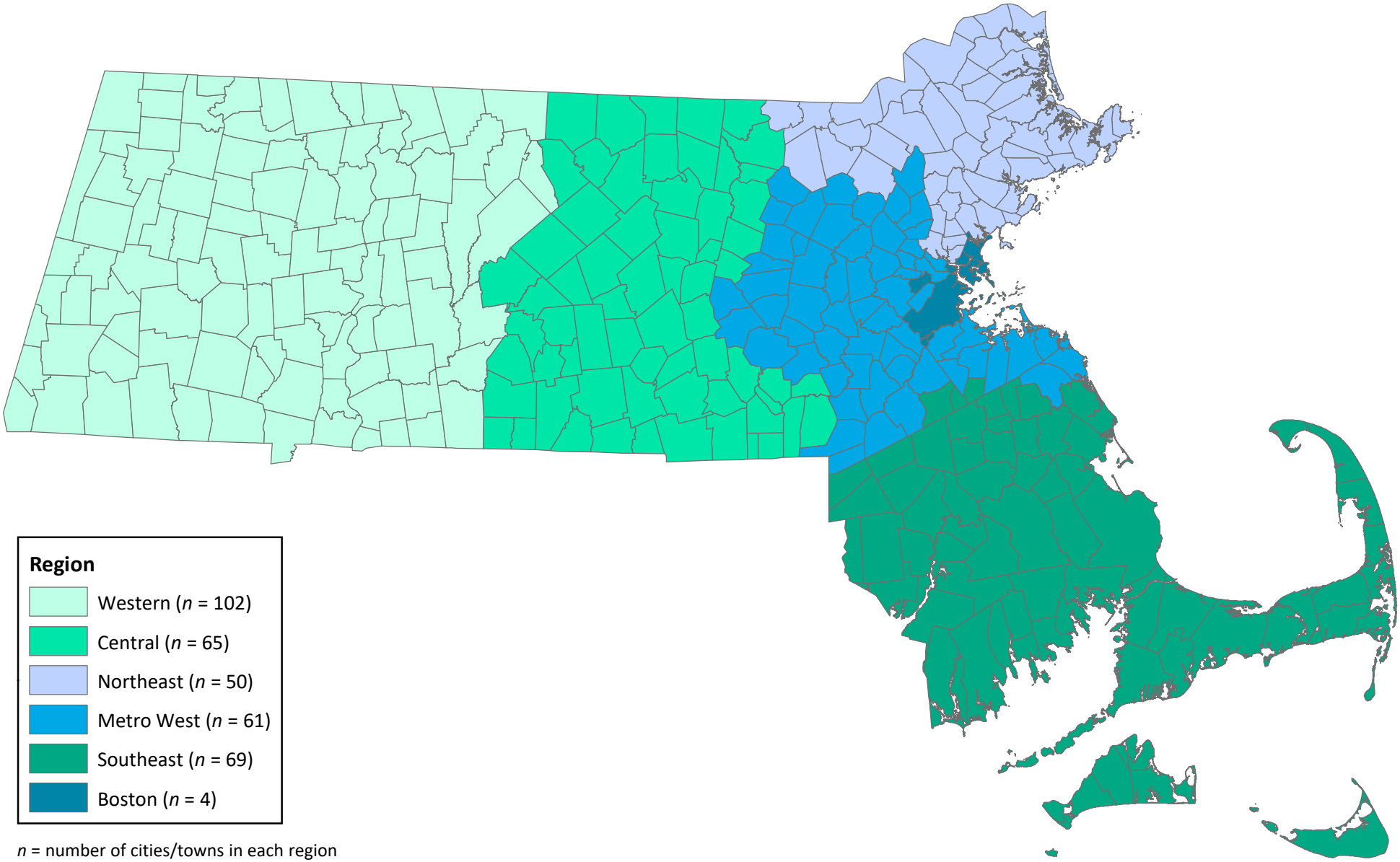
Appendix B—Massachusetts EOHHS Geographic Regions

Map—Massachusetts Executive Office of Health and Human Services Geographic Regions, with Number of Towns per Region

Massachusetts Executive Office of Health & Human Services Regions



n = number of cities/towns in each region

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Date: 9/28/2020

Review of Literature for the Perinatal Tobacco Cessation Evaluation

Prepared by Tufts Interdisciplinary Evaluation Research (TIER) for the Massachusetts Department of Public Health (MDPH)—Massachusetts Tobacco Cessation and Prevention Program (MTCP)

January 2021

Nikita Singhal, Jessica Goldberg, Jessica Greenstone, & Danyel Moosmann

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Contents

Introduction

Our team at Tufts Interdisciplinary Evaluation Research (TIER) designed a mixed methods evaluation aimed at helping the Massachusetts Department of Public Health (MDPH) better tailor its tobacco cessation efforts to meet the unique needs of the pregnant and parenting populations across the Commonwealth. The aims of this evaluation were to learn about: (1) the prevalence of tobacco use[a] among pregnant and parenting populations in Massachusetts, (2) substance use treatment and family support providers' preparedness to support tobacco cessation efforts among pregnant and parenting families, (3) substance use treatment and family support providers' current practices related to working with families who use tobacco products, and (4) factors related to tobacco or reduction or cessation among substance use treatment and family support program clientele.

This literature review, a stand-alone component of this evaluation, highlights best practices and evidence-based approaches to tobacco cessation for this population. The review synthesizes the following: (1) descriptive information about tobacco use prevalence nationally and in Massachusetts; (2) population-level approaches encouraging smoking cessation; (3) individual-level interventions, including encounters with providers where pregnant or parenting individuals might have access to tobacco cessation supports, frameworks that providers might use to assess an individual's tobacco cessation needs, and intervention types with demonstrated success among the population; and (4) additional factors influencing smoking behaviors and quit success.

Methods

We conducted a search of empirical studies, government publications, and publicly available data through Google Scholar and Tufts Tisch Library using keywords and Boolean operators, predominately focusing on our target population of pregnant and postpartum[b] individuals. Based on the focus of this evaluation (on tobacco cessation practices and services outside of medical settings), we centered the literature search on evidence-based psychosocial interventions and best practices rather than pharmacotherapy. We aimed to search for literature published within the past 10 years (2010 to 2020) to focus this summary on the most recent information available.

We begin the review by synthesizing descriptive information about tobacco use prevalence nationally and in Massachusetts. Figure 1 reflects the structure of this review, highlighting (1) population-level interventions, (2) individual-level interventions, and (3) contextual factors that together influence quit success. We organized this review based on the Surgeon General's categorization of population-based strategies and clinical and health system-based strategies for smoking cessation.

Population-level strategies approach tobacco cessation at a macro-level and encourage quitting by developing a supportive environment.[1] These include tobacco control policies, available programs to address smoking, and the role of media. We refer to clinical or health-based strategies as individual-level interventions as these encompass direct services received by an individual smoker. Individual-level interventions are often delivered by health care providers or family support providers. Individuals may receive informal support from providers

[a] Throughout the review we use the terms "tobacco use" and "smoking" interchangeably as is common in the literature and note when referring to one type of tobacco use (e.g., e-cigarettes).

[b] When postpartum or parenting individuals are mentioned, this refers specifically to those parenting a child 0–3 years old.

("usual care") or a more structured assessment ("5 A's") to determine individual cessation needs. Tobacco cessation interventions include psychosocial (behavioral), pharmacological, and alternative or combination approaches (e.g., hypnosis). Lastly, we examined the role of contextual factors such as race and equity in affecting an individual's ability to successfully quit. We expand on these in the final section of the report.

Figure 1. Literature Review Organization Framework: Interventions and Contextual Factors Associated with Quit Success

Current State of Tobacco Use

In this section we provide an overview of overall tobacco use prevalence, followed by tobacco use rates among two subgroups: 1) pregnant and parenting individuals and 2) individuals who experience challenges related to substance use. For each of these populations, we present statistics, when available, at both the national- and Massachusetts-levels.

Overall Prevalence of Tobacco Use

While tobacco use across the United States (US) has declined over the past fifty years, approximately 19.7% or 49.1 million adults still use tobacco products.[2] Specifically, 13.7% of the overall population smoke cigarettes, followed by cigars (3.9%), e-cigarettes (3.2%), smokeless tobacco (2.4%) and pipes (1.0%).[2]

In comparison to the US, the prevalence of tobacco use in Massachusetts is slightly lower. Among Massachusetts residents who participated in the 2018 Behavioral Risk Factor Surveillance System (BRFSS), 13.4% reported that they smoked currently[c] and 25.1% identified as former smokers.[3d] Tobacco use was most prevalent among Massachusetts adults who were: 25–34 years old (19.0%), self-identified as having a disability

[c]A current smoker is defined as "someone who has smoked at least 100 cigarettes in his/ her lifetime and who currently smokes either some days or every day."
[d]A former smoker is defined as "someone who smoked at least 100 cigarettes in his/her lifetime but no longer smokes."

(23.6%), had less than a high school diploma (30.7%), or had a household income of less than $25,000 (24.4%).[3] Of respondents who used tobacco and reported their race and ethnicity, 14.1% identified as White, 13.7% as Hispanic, 11.3% as Black, and 5.9% as Asian.[3]

Of current smokers in Massachusetts (*n* = 749), 59.9% attempted to quit in the past year.[3] While current smoking rates were similar among Black, Hispanic, and White respondents, approximately 30% of White respondents identified as former smokers, whereas only 10.7% of Black respondents and 13.6% of Hispanic respondents had, indicating racial inequities in quit success.[3]

Tobacco Use and Substance Use Disorder

In contrast to smoking rates among the general population, which have declined over the past decade, tobacco use among individuals affected by substance use disorder have remained disproportionately high, with epidemiolocal research finding strong associations between illicit drug use and the likelihood of being a current or future smoker.[4,5] A report disseminated by the CDC's National Office on Smoking and Health highlighted that people with behavioral health conditions—either a mental health or substance use disorder—only make up a fourth of the US population yet comprise 40% of all cigarettes smoked in the nation. Looking at substance use alone, slightly more than a quarter (25.3%) of adults who smoked also reported current illicit drug use.[6] Smoking prevalence among individuals who enter substance use treatment facilities is around 70%.[7]

Longitudinal studies have found that continued tobacco use not only has health implications due to nicotine exposure, but also puts clients at higher risk of relapse related to their substance use disorder.[8] This research has led to greater recognition of the importance of substance use treatment programs addressing addiction more broadly and calls to include tobacco cessation in services to prevent relapse and improve longer-term health outcomes.[9]

Tobacco Use among Pregnant and Postpartum Individuals

According to data from the Pregnancy Risk Assessment Monitoring System (PRAMS) data, 17.7% of women nation-wide reported cigarette smoking during the three months before pregnancy, 8.1% during the last three months of pregnancy, and 11.7% postpartum. E-cigarette use was less common among this population, with 3.7% of women indicating e-cigarette use during the three months before pregnancy and 1.1% percent reporting use during the last three months of pregnancy.[10] According to 2016 data from the National vital Statistics System, smoking among prenatal individuals was most prevalent among American Indian or Alaska Native mothers (16.7%), followed by White Non-Hispanic (10.5%), Black Non-Hispanic (6.0%), Hispanic (1.8%), and Asian (0.6%).[11]

In comparison to US women overall, women who lived in Massachusetts used tobacco at lower rates. Of the women who lived in Massachusetts and were surveyed by PRAMS, 13% reported to smoke cigarettes during the three months before pregnancy, 4.7% during the last three months of pregnancy, and 8.3% postpartum. E-cigarette use was also less prevalent among women residing in Massachusetts compared to women in the US overall, with only 1.9% of MA women indicating e-cigarette use during the three months before pregnancy and less than 0.5% percent reporting use during the last three months of pregnancy.[10] In Massachusetts, according to 2017 electronic birth certificate data, White Non-Hispanic mothers were the most likely to report having smoked during pregnancy (6.4%), followed by Hispanic mothers of all races (3.5%) and Black Non-Hispanic mothers (3.1%), with Asian Non-Hispanic mothers reporting the lowest rates (0.9%).[12]

Tobacco Use, Pregnancy, and Substance Use Disorder

Pregnant women with a history of mental health challenges, high stress levels, and alcohol and drug use disproportionately continue to smoke when compared to those without such conditions.[13] Smoking among perinatal individuals who also are using other drugs is of particular concern because of the potential additive risks of adverse fetal outcomes. In a recent study of smoking and drug use in a prenatal population, researchers found that women who smoke cigarettes were over four times more likely to have co-occurring substance use; half of current smokers also used cannabis, and almost two thirds used some other type of illicit drug.[14] And in a study of comorbidities where prenatal women with substance use disorder comprise the denominator, researchers found that almost 75% of those women also used tobacco products.[15]

Geographical Differences in Smoking Among Pregnant Women in Massachusetts

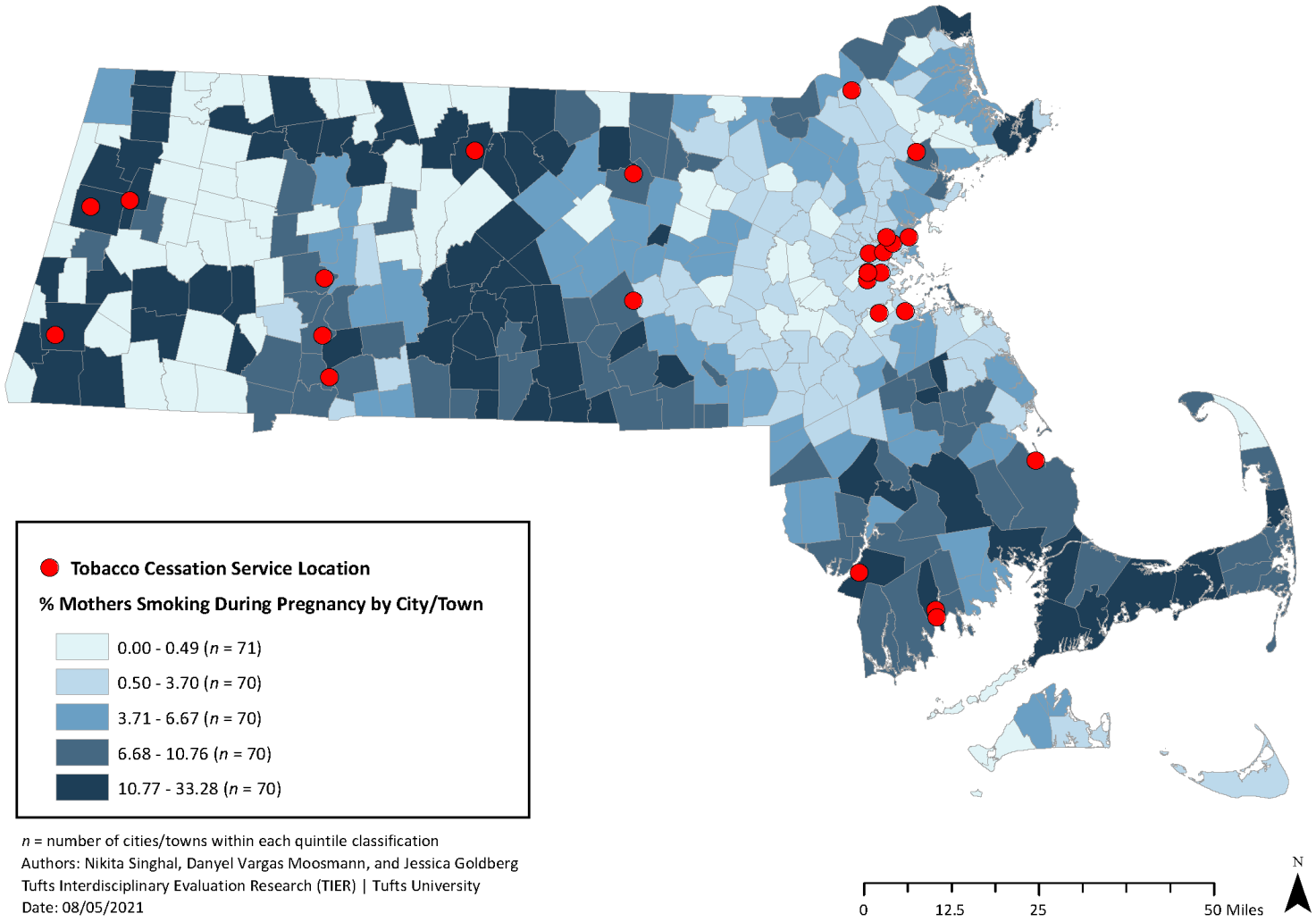
Geographically, the highest rates of smoking during pregnancy among women in Massachusetts occurred in North Adams (33.28%), Orange (30.52%), and Adams (26.58%).[16] Table 1 provides a list of Massachusetts cities and towns with smoking during pregnancy rates of 15% or higher, highlighting disproportionate rates in Western and Central Massachusetts. Figure 2 is a heat map of the percent of mothers reporting smoking during pregnancy across the state, overlaid by tobacco cessation service locations.

Table 1. The 30 Massachusetts Cities and Towns with Highest Rates of Tobacco Users During Pregnancy[16]

Rank	Municipality	County	Smoking During Pregnancy (%)
1	North Adams	Berkshire	33.28
2	Orange	Franklin	30.52
3	Adams	Berkshire	26.58
4	Ware	Hampshire	24.43
5	Athol	Worcester	23.52
6	Webster	Worcester	22.53
7	Greenfield	Franklin	22.46
8	Becket	Berkshire	22.06
9	Egremont	Berkshire	21.74
10	Pittsfield	Berkshire	21.59
11	Warren	Worcester	20.52
12	Wareham	Plymouth	20.52
13	Holland	Hampden	20.37
14	Gardner	Worcester	20.13
15	Fall River	Bristol	19.78
16	New Marlborough	Berkshire	19.36
17	Winchendon	Worcester	18.80
18	Southbridge	Worcester	18.26
19	Hardwick	Worcester	17.43
20	Otis	Berkshire	17.07
21	Great Barrington	Berkshire	16.75
22	New Braintree	Worcester	16.67
23	Montague	Franklin	16.19
24	New Bedford	Bristol	15.83
25	Dudley	Worcester	15.75
26	Palmer	Hampden	15.74
27	Huntington	Hampshire	15.60
28	Buckland	Franklin	15.52

Rank	Municipality	County	Smoking During Pregnancy (%)
29	West Stockbridge	Pittsfield	15.39
30	Yarmouth	Barnstable	15.00

Figure 2. **Smoking During Pregnancy Rates and Tobacco Cessation Service Locations[16]**



Strategies to Address Tobacco Use

We focused our review on describing some of the more common interventions that have been used to address tobacco use at the population- and individual-levels, nationally and in Massachusetts.

Population-Level Interventions

Prior to the discussion of individual-level interventions, which are the primary focus of this review, we briefly describe population-level interventions to address smoking: local tobacco control programs and policies and media campaigns to bolster awareness around the risks of smoking.

Tobacco Control Programs and Policies

Each state is responsible for enacting tobacco control policies aimed at encouraging individual cessation and decreasing exposure to secondhand smoke. While historically, Massachusetts has been successful in reducing smoking among adults and children through implementation of cigarette taxes and investment in tobacco prevention and cessation programming, a hefty funding cut in the early 2000s halted progress.[17] Each year the CDC releases state-specific recommendations on the proportion of funds that should be spent on tobacco prevention programs annually. In 2014, the recommendation for Massachusetts was $66.9 million; the state spent about $4.2 million in 2019, which is merely 6.3% of the CDC's recommendation.[17] In a ranking of states based on adherence to the CDC recommended funding levels, Massachusetts placed at #37. In 2020, funding for the Massachusetts Tobacco Cessation and Prevention Program increased to support local health education and enforcement, cessation campaigns, and youth prevention, putting Massachusetts at a state ranking of #36.[18]

In 2019, Governor Charlie Baker passed a tobacco control law that limited retail stores from selling flavored tobacco (excluding menthol) and sales of non-flavored tobacco in outlets other than licensed, adult-only retail stores and smoking bars.[19] Governor Baker also enacted a 75% excise tax on wholesale nicotine vaping products on top of the state's existing 6.35% sales tax.[19] In the summer of 2020, Governor Baker completely restricted the sale of flavored tobacco, including menthol cigarettes, outside of smoking bars and limited the sale of unflavored e-cigarettes in retail establishments. Although Massachusetts is the first state to ban flavored tobacco products, it has also led to a boost in cigarette sales in neighboring states, indicating that state restrictions may have only changed where tobacco users buy products.[20,21]

Media Campaigns

Media can be a powerful mechanism through which tobacco-related information is disseminated. Recently, the tobacco industry has spent a total of $8.2 billion per year on nationwide marketing and an estimated $105.2 million annually on Massachusetts-specific advertising.[22] At the same time, there have been large-scale efforts to circulate research-based information on the effects of smoking.

In 2012, the CDC released *Tips from Former Smokers*, the first federally funded national anti-smoking campaign in the US to build awareness around the health risks of tobacco use and secondhand smoke. While the campaign did not specifically target pregnant women, an evaluation in three states (Indiana, Kentucky, and Ohio) found that campaign exposure consisting of television and print advertisements of former tobacco users telling their personal stories about quitting, was associated with tobacco cessation

among pregnant women.[23] A little more than one-third (34.7%) of exposed pregnant women who used tobacco, quit by the third trimester, in comparison to 32.9% of unexposed pregnant women ($p < .001$).[23] While a 1.8 percent difference may seem small, it amounted to 104,000 additional quitters across the nation.[23]

Research investigating media and messaging that resonates with women of reproductive age demonstrated the impact of "gain-framed" cessation messages that focus on the positive effects of quitting. A 2020 study found that messages such as "when you quit smoking, you take control of your own health and the health of your baby"; "quitting smoking can prevent harm to you and your baby"; and "there are lifelong benefits to children growing up in a smoke-free environment" were more effective than "loss-framed messages" that highlighted the negative consequences of smoking when rated on a scale of 1 to 10 (7.9 vs. 7.7 out of 10, respectively).[24] Together these findings demonstrate the potential of exposing women of child-bearing age to customized media campaigns as part of a larger smoking cessation strategy.

Individual-Level Interventions

In this section we describe two approaches to addressing tobacco use among individuals: assessment or screening and psychosocial interventions.

Assessment Frameworks: Using the 5 A's in Medical and Non-Medical Settings

Research has long underscored the importance of healthcare providers discussing tobacco cessation during routine medical visits with clients given the low-cost benefits of these short and effective interactions.[25,26] As such, many of these frameworks are widely implemented throughout healthcare and other service settings. For example, the "5 A's" model has been recommended for use in prenatal populations by the US Preventative Services Taskforce[27] and the American College of Obstetricians and Gynecologists (ACOG).[27,28]

The 5 A's model consists of the following steps (1) **Ask** all patients if they smoke, (2) **Advise** all tobacco users to quit, (3) **Assess** smokers' willingness to attempt to quit, (4) **Assist** smokers' efforts with treatment and referrals, and (5) **Arrange** follow-up contacts to support cessation efforts.[25] While developed for clinical settings, it is now used by a wide range of providers in various settings. Below, we describe some examples of this framework in practice.

5 A's Used in Healthcare Settings

"You Quit Two Quit". You Quit Two Quit, at the University of North Carolina's Center for Maternal and Infant Health, is an example of a program that promotes the 5 A's model within a healthcare setting. The program provides resources and trainings to clinicians for them to deliver effective interventions to pregnant women, particularly first-time mothers experiencing low-income or who have previously been incarcerated. Drawing on research indicating that a 5–15 minute intervention by a clinical professional can double—or even triple—smoking cessation rates among the pregnant or postpartum populations, the curriculum features an adaptation of the 5 A's to support practitioners in providing care to this specific population of patients.[29] In parallel, the program uses the "5 R's" for providers to speak with patients unwilling to quit tobacco. The 5 R's is considered an add-on of the 5 A's intervention, which consists of identifying **R**elevant reasons for quitting for the specific user, **R**isks of continuing tobacco use, **R**ewards associated with tobacco cessation, and **R**oadblocks that interfere with quitting efforts (and

how to move past them). The framework concludes with **R**epetition to ensure that providers engage patients in these conversations at each visit.[29]

Since its inception in 2008, You Quit Two Quit has publicly disseminated: (1) its tobacco screening and cessation resources including three bilingual versions of the 5 A's and 5 R's intervention for prenatal, postpartum, and non-pregnant patients; (2) recommendations on how clinicians can support patients who are not yet ready to quit; and (3) educational materials and resources for healthcare settings to share with patients as needed, with a special focus on the adverse effects of e-cigarettes.

"Clinical Effort Against Secondhand Smoke Exposure (CEASE)". Developed at Massachusetts General Hospital (MGH), CEASE uses a shortened adaptation of the 5 A's model called "2 A's and an R," which involves providers **A**sking, **A**dvising and **R**eferring individuals to appropriate care. CEASE is an evidence-based intervention program that helps pediatric healthcare providers in delivering tobacco cessation support to parents with the goal of reducing child exposure to secondhand smoke.[30] Child health care offices are trained in implementing CEASE, through which they connect parents to resources (e.g., Helplines, pharmacotherapy) to encourage smoking cessation, and provide tips for a tobacco-free car and home. Researchers conducted a study across 20 pediatric practices in 16 states comparing the effects of usual care with CEASE, finding that parents who participated in CEASE were significantly more likely to receive at least one form of assistance with tobacco cessation in comparison to those treated with usual care.[31]

5 A's Used in Family Support Settings

Families who are pregnant and parenting engage with many services other than hospitals and clinics, and these non-medical settings also provide opportunities for providers to influence tobacco cessation. Women, Infants, and Children (WIC), for example, is a recognized service that works closely with pregnant and parenting individuals in local communities. Home visiting programs are also well-positioned to influence smoking behaviors among pregnant and parenting individuals.

WIC. For over four decades, WIC has partnered with eligible families across the US to assist with nutrition and health.[32] A review of program data from WIC participants in Rhode Island found that enrollment in WIC prior to the third trimester was associated with decreases in maternal cigarette smoking by the third trimester; participant self-reports indicated that 9.5% quit and 24.6% decreased cigarette smoking.[33] A study of WIC staff who were trained in delivering the "5 A's" model to participants additionally found an increase in self-reported smoking cessation by the final trimester of pregnancy, with 23% of 71,526 women quitting.[34] While both of these studies relied on self-reports rather than biomarkers, they suggest that WIC providers are a promising avenue through which to deliver tobacco cessation interventions. While many WIC sites already provide informal in-house support and referrals to support tobacco cessation, the official integration of the 5 A's intervention into WIC's program operations (e.g., clinic flow, documentation) may be an effective way to reach and support marginalized subpopulations of pregnant women who may be less trusting of traditional healthcare systems.

Nurse-Family Partnership (NFP). NFP is an evidence-based national organization that enlists specially trained nurses to conduct regular home visits with first-time mothers from early pregnancy until the child's second birthday. Within the field of tobacco cessation, NFP distinguishes itself from other home visiting programs through a stated focus on tobacco cessation and having completed randomized

controlled trials indicating a decrease in cigarette smoking among enrolled prenatal women.[35] In 2012, a study of NFP in Pennsylvania found that while participation in the program was associated with increased smoking cessation (with cessation rates of 28.4% among NFP participants vs. 25.8% among the comparison group), this program effect was stronger at a later period of time (with cessation rates of 35.5% among NFP participants vs. 27.5% among the comparison group), a finding unique from studies of other interventions where program effects seemingly decrease with time.[36] While NFP does not explicitly state using the 5 A's model, this finding suggests an opportunity to train home visiting staff in formal assessment frameworks given their documented success working with pregnant and parenting populations.

5 A's Used in Addiction Treatment Settings

As noted previously, people affected by substance use disorder are more likely to use tobacco and more likely to experience smoking-related health disparities, when compared with the general population.[6] Further, research has demonstrated that addressing smoking and illicit substance use together can facilitate quitting both substances simultaneously.[9,37] And yet, addiction treatment centers have historically lagged behind other health care settings with regard to tobacco cessation practices, with a 2012 study of community treatment programs finding that only 43% of programs in the US offer nicotine treatment services[38] and a more recent review putting this proportion closer to 40%.[39]

Studies have identified several barriers to implementing cessation services and policies within treatment centers, including a "smoking culture" as described by clients and staff,[40] insufficient training,[41] smoking among staff,[40,42] client resistance,[40,43] and an assumption on the part of providers that focusing on clients' nicotine will compromise their ability to abstain from other substances.[9] Studies also have suggested that tobacco use among substance use treatment providers is associated with increased use of tobacco among clients, and less available cessation services for clients.[44]

Another major challenge is that many substance use disorder residential treatment centers continue to permit smoking on their premises.[9] Studies have found that within these settings, the act of smoking is a social activity as well as a form of stress relief, particularly when clients are recovering from substance use disorder.[45,46] For these reasons, there is often fear among residential centers that implementing tobacco-free policies will dissuade clients from accessing services.[9,40]

Researchers have conducted studies which contradict this notion, finding that employing tobacco free policies were significantly associated with a lower prevalence of smoking among clients.[47,48] Further, researchers have found that enrollment is not negatively impacted by such policies, as often expected.[49] In fact, researchers recently found that a tobacco-free policy, administered in both inpatient and residential treatment programs, increased the number of clients in the program—and their intention to stay abstinent post-discharge—and had no effect on how many clients left the program.[49] A qualitative research study yielded similar findings; providers at the Taking Texas Tobacco Free (TTTF) residential centers reportedly valued the adoption of a tobacco-free environment, with clients crediting TTTF for helping them quit smoking.[45]

In 2018, Substance Abuse and Mental Health Administration (SAMHSA) released guidelines on how program directors and clinicians can address tobacco cessation within substance use disorder settings. SAMHSA recommends a combined approach of using the 5 A model, counseling and pharmacotherapy.[50]

Studies that highlight the perspectives of clients and providers at residential treatment centers have provided further context on how to tailor services to this subpopulation. Suggestions have included providing individual counseling (e.g., building self-awareness, explaining the connection between tobacco and illicit substance use), adapting the center's external environment to be more conducive to stress relief (e.g., spaces for physical exercise), and facilitating peer support (e.g., smoking cessation groups).[37,38]

Psychosocial Interventions for Pregnant and Postpartum Individuals

Psychosocial (or behavioral) interventions holistically address an individuals' emotional, mental and/or social needs by increasing one's motivation to quit smoking. Psychosocial interventions typically draw on cognitive-behavioral and supportive therapeutic techniques using a variety of methods, including counseling, exercise, feedback (such as about the health of the fetus), financial incentives, and health education.[51] While a single psychosocial intervention may be effective in supporting some pregnant women, researchers have sought to understand the benefits of designing interventions that combine multiple psychosocial supports for more holistic care. The 2008 Update of Clinical Practice Guidelines provide the following examples of effective psychosocial interventions for pregnant women:[52]

- "Physician advice regarding smoking-related risks (2–3 minutes); videotape with information on risks, barriers, and tips for quitting; midwife counseling in one 10-minute session; self-help manual and follow-up letters,"
- "Pregnancy-specific self-help materials (Pregnant Woman's Self-Help Guide to Quit Smoking) and one 10-minute counseling session with a health educator," and
- "Counselor-provided one 90-minute counseling session plus bimonthly telephone follow-up calls during pregnancy and monthly telephone calls after delivery." Self-help materials include resources such as audiotapes or booklets that supplement psychosocial interventions and can be used independently."

Studies comparing usual care with psychosocial interventions have consistently found statistically significantly higher rates of smoking cessation among pregnant women through psychosocial methodologies.[52] Such interventions have been linked to an increase in smoking cessation in late pregnancy by 35% and decreased risks for negative infant outcomes (e.g., low birth weight).[51] Among subpopulations of pregnant and parenting individuals, psychosocial interventions involving contingency management techniques or financial incentives have been particularly promising. A 2019 meta-analysis with an explicit focus on methods involving incentives found that such techniques led to moderate improvements in smoking cessation among women 10 to 24 weeks postpartum when compared to pregnant women assigned to a control condition.[53] While past studies have shown sustained cessation at or around the end of pregnancy, this meta-analysis builds the case for using contingency management techniques demonstrating abstinence six months postpartum.[53]

Below we provide examples of evidence-based tobacco cessation programs that incorporate psychosocial methods to support pregnant and parenting populations.

Baby & Me Tobacco Free

One of the few evidence-based smoking cessation models that supports pregnant and postpartum women is the Baby & Me Tobacco Free Program (BMTFP). BMTFP's stated mission is "to reduce the burden of tobacco on society."[54] Launched in 2001, the program's five staff members train

implementers in local agencies across the nation to effectively deliver the intervention within their respective communities. Available nationally, BMTFP provides single day trainings to locations interested in the program to ensure they implement the model to fidelity. As of 2019, the program's small team expanded operations to 22 states, providing support to approximately 1,000 BMTFP facilitators across more than 330 implementation sites. [54]

BMTFP uniquely targets women through their pregnancy and for one year postpartum with the goal of preventing relapse. Through pregnancy, women attend a total of four counseling sessions through which they receive education, support, and carbon monoxide tests to monitor cessation. If at the third or fourth sessions tests indicate no tobacco use, women are provided with diaper vouchers (one voucher per session), which can be used at Walmart or other participating stores. [54] Once the baby is born, carbon monoxide testing continues monthly until the baby's first birthday; participants receive a diaper voucher for every month the test indicates they are tobacco free. In addition to these services, the program is available to any tobacco user living with a pregnant participant; they too can receive the same diaper vouchers upon successful quitting.[54] In 2017, the program reported serving a total of 15,500 families since inception.

Various research studies have focused on BMTFP across different service locations to evaluate program effectiveness. In 2020, a study sought to determine the impact of the program for women experiencing low-income in Colorado, specifically focusing on birth outcomes and cost-savings.[55] While the program does not have any age or income requirements, most women were 20 or younger, had Medicaid, and/or household incomes of under $25,000.[55] Among a sample of over 2,000 participants, the study found cost savings to the state of between one to four million dollars as well as a reduction in adverse birth outcomes for participants' children.[55] A previous study conducted in Tennessee, focusing on the correlation of session attendance and infant birth weight, found that attending BMTFP's prenatal sessions that utilize counseling and contingency management techniques is associated with a significant reduction in having an infant with a low birth weight.[56] While participants with high session attendance rates had cessation rates of over 68%, only slightly more than a third of all participants completed 3–4 sessions, signaling a challenge with retention during the prenatal period.[56]

BMTFP incorporates many research-based practices related to supporting pregnant and parenting women including psychosocial interventions such as counseling and financial incentives, the use of breath tests (versus self-reported data), continuity postpartum, and concurrently supporting other members of the household with smoking cessation.[54] In addition, various BMTFPs across the US are implemented by WIC agencies.[56,57] To date, BMTFP has received a "model practice award" by the National Association of City and County Health Officials and was labeled a "best practice" by the Association of Maternal and Child Health Program (AMCHP) indicating that it has been reviewed by public health experts and proven effective.[54]

Smoking Cessation and Reduction in Pregnancy Treatment (SCRIPT)

Funded by the National Institute of Health and distributed by the Society for Public Health Education (SOPHE), the Smoking Cessation and Reduction in Pregnancy Treatment (SCRIPT) program designed educational materials to be delivered by prenatal care providers to pregnant woman using tobacco. SCRIPT's resources consist of a detailed self-evaluation guide called *A Pregnant Woman's Guide to Quit Smoking* to encourage cessation within a seven day period, a motivational DVD called *Commit to Quit*, comprehensive counseling using the 5 A's delivery mechanism, and follow up support to promote a

smoke-free home postpartum.[58] Along with these resources, health care professionals enroll in a half- to full-day workshop, the goals of which are to encourage, integrate and assess the SCRIPT program within their respective organizations. SCRIPT's programs are covered by the Affordable Care Act and its counseling services to pregnant women are eligible for Medicaid reimbursement.

Thus far, studies of SCRIPT have demonstrated that women exposed to the *Commit to Quit* video, *A Pregnant Woman's Guide to Quit Smoking*, and counseling experience significant smoking reduction rates (based on cotinine samples) when compared to control groups.[59] However, given the range of organizations and staff implementing SCRIPT, effectiveness varies based on factors including each program's infrastructure and fidelity to assessment and intervention protocols.[59] A study conducted in 2013 looked specifically at SCRIPT implementation by licensed nurses and social workers providing home-based services to Medicaid-eligible pregnant women through Right from the Start across West Virginia. Study findings indicated that women—even those further along in their pregnancy—can be assisted by home visitors to alter smoking behavior using SCRIPT.[60]

Given issues of fidelity associated with SCRIPT, a process evaluation of the same West Virginian population was conducted a few years later focusing in on seven core SCRIPT clinical procedures (i.e., accept SCRIPT, screening CO, video, guide, counseling, follow-up, and follow-up on CO).[61] The purpose of this was to develop an index through which service providers could self-assess implementation and performance. Research indicated that the use of the process evaluation model led to improvements in delivering SCRIPT to fidelity.[61] This specific tool is an important consideration for other home-based programs interested in adopting SCRIPT.

To date, SCRIPT has been cited by the agency for Healthcare Research & Quality's Smoking Cessation Clinical Practice Guidelines and has been shown to be effective in helping thousands of pregnant women quit smoking.[58] The program has been executed in sites across the US by healthcare and family support providers.

QuitLine

In the field of tobacco cessation, state Helplines are a common method for offering individuals counseling or "coaching." Various states across the nation have integrated psychosocial best practices within Helpline services (e.g., free counseling) and developed specific services to meet the needs of pregnant and postpartum callers. The Massachusetts Smokers' Helpline (1-800-QUIT-NOW, known as Quitline)[62] is administered by the Massachusetts Tobacco Cessation and Prevention Program (MTCPP) at MDPH**.** QuitLine is a free evidence-based program offering confidential, one-on-one coaching to support tobacco cessation. QuitLine's program enhancement for pregnant women consists of 9 coaching calls with the same coach (5 during pregnancy and 4 postpartum), text messaging and email support, and targeted educational materials (e.g., fact sheets). As an incentive for participation, QuitLine provides women with $5 gift cards per coaching call during pregnancy and $10 gift cards per coaching call postpartum, for a total of up to $65 in rewards. While users generally have positive reactions to the support provided through QuitLine's coaches and partner healthcare providers, statistics on the number of pregnant women contacting the Helpline (as well as rates of quit success and program feedback among this population) have not yet been made publicly available.[62]

QuitWorks, also run by MTCPP, is a program aimed at integrating tobacco cessation practices into healthcare settings, and facilitating a more seamless referral process to QuitLine for both healthcare and

insurance providers. QuitWorks provides training to healthcare providers in implementing a condensed version of the evidence-based 5 A's model, and has systemized an easy referral process allowing providers to connect patients to the QuitLine for intensive phone-based counseling.[63] QuitWorks also supports healthcare providers to implement more systems-level changes, such as tobacco-free campuses and counseling for both patients and staff members.[64]

Additional Factors Influencing Tobacco Use

Structural Racism and Inequities

When examining health inequities among individuals, it is critical to treat race and ethnicity not as causal determinants, but rather as socially constructed proxies for structural determinants[65] such as systemic racism and its legacy of deliberate, targeted oppressive policies and practices aimed at disenfranchising and disadvantaging BIPOC individuals.[66] The literature provides some evidence of the impacts of these policies, notably discriminatory marketing and advertising strategies and retail concentration of tobacco products that have disproportionately targeted Black people.[67] Decades ago, officials of the Kool Market Development Program stated: "A total of $1.9M will be distributed to targeted smokers in 1983. Sample distribution will be targeted to: housing projects, clubs, community organizations and events where Kool's Black young adult target congregate."[68] Relatedly, Black communities have been found to have a disproportionately high tobacco retail density.[67] For example, one study comparing tobacco outlet availability found that predominantly White neighborhoods had lower availability and access than predominantly Black neighborhoods, even when controlling for socioeconomic status.[67]

Moreover, tobacco companies have promoted the use of menthol cigarettes, which are notoriously difficult to quit, specifically within Black communities.[68-70] A longitudinal study on brand recognition among youth found that Black youth were three times more likely than youth of other races to identify the menthol cigarette brand, Newport, and that those who recognize this specific brand were more likely to initiate smoking.[71] Tobacco products that are more addictive, such as menthol cigarettes and small flavored cigars,[72] the latter of which can be sold as singles and are therefore a cheaper option than cigarettes, are far more readily available in predominantly Black neighborhoods.[73,74] Even more recently, researchers have found that Black communities are still being subjected to greater tobacco-related advertising and marketing than communities with fewer Black residents, including flavored cigars and price promotion with sales being more common in neighborhoods with a greater number of youth.[75] The impacts of these discriminatory marketing and advertising strategies are experienced among pregnant people too: a recent study found that pregnant people who identified as BIPOC, experienced low income, and had low education attainment were more likely to use menthol cigarettes reporting fewer weeks of continued abstinence compared to non-menthol smokers (8.4 vs. 14.5 weeks quit, respectively).[76]

In addition to racist marketing practices, several research studies and meta-analyses have demonstrated continued smoking-related health inequities within communities that have a majority of Black residents.[77,78] For example, researchers have found that Black residents are less likely to receive quitting advice,[79,80,81] and be prescribed pharmacotherapies for tobacco cessation.[82-85] Further, individuals

residing in predominantly Black communities were less likely to join evidence-based cessation interventions or enroll in clinical trials.[86,87,88]

Finally, policies aimed at reducing tobacco prevalence that are formulated without deliberately considering how they will impact Black people (rather than just focusing on wide population-level benefits) may perpetuate the health inequities they purport to address.[89] Consider, for instance, when the federal Tobacco Control Act banned flavored cigarettes in 2009, but continued to allow the sale of menthol cigarettes until April of 2021, when the FDA finally banned them. And, in a study comparing cigarette use prevalence in California (the state with the longest continually funded tobacco program) with prevalence in the United States from 1992–2019, the authors found that while there was a decrease in prevalence in each racial/ethnic group within California, the only ethnic group that outpaced the decrease in the US was among White non-Hispanics, suggesting that these policies disproportionately advantaged White people while BIPOC failed to reap the benefits of this significant public health investment.[90]

Program-Level Factors

If pregnant or parenting individuals can access individual-level tobacco cessation interventions, the support they receive is still largely dependent on their provider's ability to deliver the intervention to fidelity, communicate without bias, and deliver women-centered care.

Implementation Fidelity

While the 5 A's is a widely endorsed model, the frequency of use and implementation fidelity continues to vary across providers and healthcare settings. A 2010 analysis of engagement across healthcare providers found that while more than 50% of providers asked women about their smoking status at visits and advised quitting, less than half took the subsequent steps to assess the situation, assist in cessation efforts, and arrange next steps as recommended.[91] Additional studies examining which of the 5 A's is implemented more faithfully have found that providers tend to *ask* and *advise* much more often than *assess*, *assist*, and *arrange*.[92,93] Research on the associations between staff characteristics and the likelihood of using the 5 A's in their work have yielded similar findings to ours: providers are more likely to employ the 5 A's when they: feel competent and confident,[92,93] have a positive attitude about the model,[45,93,94] have been trained,[93] are a non-smoker,[45,93] having strong organizational support,[45] and have a preconceived idea that the patient is ready to quit.[94] In one of the studies, the authors found that the associations between provider characteristics and implementation of each "A" grew more robust the higher the "A" in the model.[94]

Clinician Bias

Still today, infant mortality rates among predominantly Black communities are more than double that of White babies (10.8 vs. 4.6 per 1,000 live births, respectively).[95] This, in combination with research indicating that pregnant women who use tobacco often face judgment and stigma from healthcare providers can reduce the likelihood of a patient—especially those of color—disclosing smoking behavior with clinicians[96] suggests that even if individual-level interventions are delivered with fidelity, a lack of trust can impact the ability for a clinician to support a client. This further highlights the importance of alternative avenues for the delivery of tobacco cessation interventions to pregnant and postpartum

individuals, most notably family support agencies where staff have experience developing one-on-one nonjudgmental relationships with families.

Use of Women-Centered Care Approaches

Historically, perinatal tobacco cessation interventions have focused on altering women's individual behavior motivated by *fetal health* with less consideration either about the women's health or the broader contextual factors associated with women's tobacco use.[97] Women-centered care emphasizes the importance of addressing a woman's economic, social, and psychological circumstances as well as her longitudinal health for quitting.[98] A review published by the Centre of Excellence for Women's Health[97] defined women-centered care as follows:

> *Women-centered care focuses on a woman's needs in the context of her life circumstances. This includes an assessment of women's diversity that demands an understanding in the context of health. It also prescribes a holistic or comprehensive view of and approach to health, including mental and physical health considerations. This approach, when applied to pregnant smokers, indicates the need to develop a focus on women's health before and during pregnancy, and during and beyond the postpartum year. As we have seen… a focus on fetal health is still much more common.*

While the strategy of focusing on fetal health has been shown to be motivational for parents—as well as linked to decreases in tobacco use throughout pregnancy—it has also been found to be less effective postpartum and for longer-term abstinence.[1,97] While quitting is undeniably beneficial to protect fetal and newborn health, the emphasis on the fetus does not address the child's future exposure to secondhand and thirdhand smoke and, equally importantly, the mother's long-term health.

Next Steps

This literature review provides an overview of Massachusetts' tobacco cessation policies and programs, highlighting various strategies that MDPH can use to address smoking cessation. The framework outlined in Figure 1 demonstrates the importance of approaching population- and individual-level interventions in tandem and ensuring contextual factors are considered to promote quit success. We look forward to building upon this research by spotlighting the perspective of pregnant and parenting individuals affected by tobacco use and learning about stakeholders' views on access to cessation services, characteristics of successful tobacco cessation interventions, and the interplay of individual, interpersonal, program and community-specific factors in tobacco use and quit success.

Resource List

The following resources are usable documents – best practices and how-to manuals – for providers to use to support individuals and families with tobacco cessation, highlighting those for pregnant and parenting populations.

Resources for Providers:
Integrating Tobacco Interventions into Daily Practice (Third Edition), Registered Nurses of Ontario
Tobacco-Free Living in Psychiatric Settings, SAMHSA
Implementing Tobacco Cessation Programs in Substance Use Disorder Treatment Centers, SAMHSA
Tobacco Publications, Centre of Excellence for Women's Health (bccewh.bc.ca)

Evidence-Based Programs for Pregnant & Parenting Individuals:
BABY & ME - Tobacco Free Program
You Quit, Two Quit
Smoking Cessation and Reduction in Pregnancy Treatment Program, Society for Public Health Education

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Appendix D—Substance Use Treatment Provider Survey

ABOUT THIS SURVEY

Researchers from Tufts Interdisciplinary Evaluation Research (TIER) at Tufts University in Medford are helping the Massachusetts Department of Public Health (MDPH) better tailor its tobacco cessation efforts to meet the unique needs of pregnant and parenting populations in Massachusetts. As part of this project, we are conducting a survey of substance use treatment providers in the BSAS system. We'd like to understand how substance use treatment service providers approach tobacco/nicotine use with individuals who are pregnant and/or parents of young children (birth to 3 years old). **Your candid feedback is appreciated and there are no right or wrong answers.**

By "tobacco/nicotine use", we are referring to any of the following products:

- Cigarettes
- Cigars or cigarillos
- E-cigarettes or vape pens (e.g., JUUL)
- Smokeless (e.g., chewing tobacco or snuff) or dissolvable tobacco (e.g., lozenges, strips, or sticks) products
- Waterpipes (e.g., hookahs)
- Other nicotine products, such as salts, pouches, toothpicks

The survey takes approximately 15 minutes to complete. Your participation in this survey is voluntary. Your responses will be kept confidential; only the research team will have access to your responses. Information will be reported only in aggregate, meaning no answers will be connected with your name. Survey responses will be categorized and used to inform and shape current and future tobacco/nicotine cessation programs and policies for pregnant and parenting populations. At the end of the survey, you will be asked to provide your name and email address so we can send you a $5 Dunkin' gift card as a thank you for your time. We will not use your name or email address for anything other than sending you the e-gift card. If you have questions or would like to discuss this further, please contact Nikita Singhal at Nikita.Singhal@tufts.edu.

Do you agree to complete this survey?

❍ Yes
❍ No

ABOUT YOUR WORK

First, we would like to ask a few questions about you and the program you work for.

1. What program(s) do you work for? *Select all that apply.*

- ❑ Detox/Acute Treatment Services Education (ATS)
- ❑ Clinical Stabilization Services (CSS)
- ❑ Transitional Support Services (TSS)
- ❑ Residential (Recovery Homes, Family Residential Services, etc.)
- ❑ Outpatient (OP)
- ❑ Opioid Treatment Program (OTP)
- ❑ Office-based Opioid Treatment Program (OBOT)
- ❑ Other (Please specify: _____

If selected Residential (Recovery Homes, Family Residential Services, etc.) for Q1

1a. Which population(s) does your residential program serve? Select all that apply.

- ❑ Men
- ❑ Women
- ❑ LGBTQ+
- ❑ Pregnant individuals
- ❑ Families with young children (birth to 3 years old)
- ❑ Other (Please specify: _____

2. What is your role within your program(s)? Select all that apply.

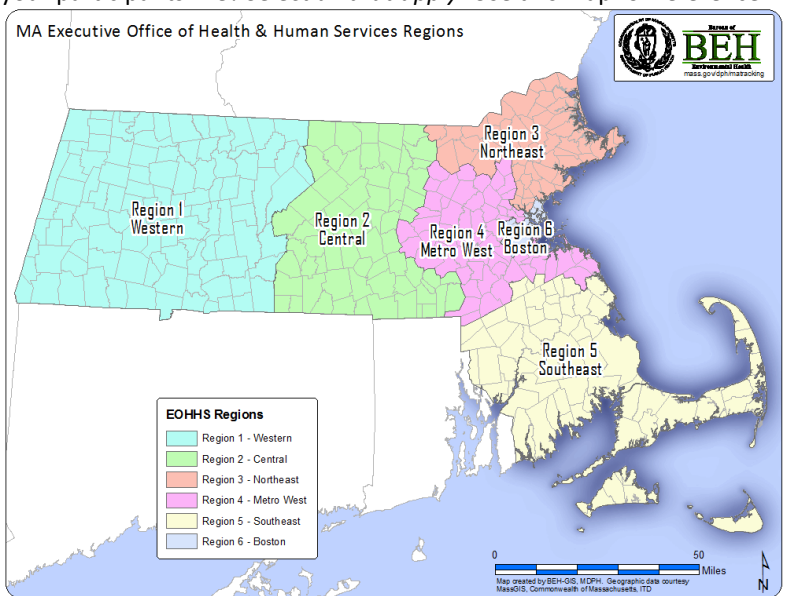
- ❑ Program Director
- ❑ Clinical Director
- ❑ Counselor/Clinician
- ❑ Case Manager
- ❑ Recovery Specialist
- ❑ Recovery Coach/Peer Support
- ❑ Other—please specify: _____

2a. Are you a Tobacco Education Coordinator (TEC) at your program?

- ❍ Yes
- ❍ No

3. In which region(s) do the majority of your participants live? *Select all that apply.* Use this map for reference.

- ❑ Western
- ❑ Central
- ❑ Northeast
- ❑ Southeast
- ❑ Metrowest
- ❑ Boston



4. How do you currently describe your racial/ethnic identity? *Select all that apply.*

- ❑ American Indian or Alaska Native
- ❑ Black or African American
- ❑ East Asian
- ❑ Hispanic, Latino/a, Latinx
- ❑ Middle Eastern or North African
- ❑ Native Hawaiian or Other Pacific Islander
- ❑ South Asian
- ❑ White

5. Do you currently use tobacco/nicotine products?

- ❍ Yes, daily/frequently
- ❍ Yes, occasionally
- ❍ No

If selected no for Q5

5a. Did you regularly use tobacco/nicotine products in the past?

- ❍ Yes, daily/frequently
- ❍ Yes, occasionally
- ❍ No

6a. Among clients you have worked with in the past year, about how many were *pregnant*?

- ❍ None
- ❍ Few
- ❍ Some
- ❍ Around Half
- ❍ Most/All
- ❍ N/A (did not work with any pregnant individuals)

6b. Among clients you have worked with in the past year, about how many were *parenting a child (birth to 3 years old)*?
- ❍ None
- ❍ Few
- ❍ Some
- ❍ Around Half
- ❍ Most/All
- ❍ N/A (did not work with any individuals parenting a child 3 or younger)

6c. Among clients you have worked with in the past year, how many identified as Black, Indigenous, or People of Color [BIPOC]?
- ❍ None
- ❍ Few
- ❍ Some
- ❍ Around Half
- ❍ Most/All
- ❍ N/A (did not work with any individuals identifying as BIPOC)

Participant Tobacco Use

The next few questions ask about tobacco/nicotine product use among the participants you have worked with in the past year who were pregnant and/or parenting a child (birth to 3 years old).

7a. Among clients you have worked with in the past year *who were pregnant*, how many were using tobacco/nicotine?
- ❍ None
- ❍ Some
- ❍ Around Half
- ❍ Most/All
- ❍ N/A (did not work with any pregnant individuals)

7b. Among clients you have worked with in the past year *who were parenting a child (birth to 3 years old)*, how many were using tobacco/nicotine?
- ❍ None
- ❍ Some
- ❍ Around Half
- ❍ Most/All
- ❍ N/A (did not work with any individuals parenting a child 3 or younger)

8. Thinking about the pregnant and/or parenting participants you have worked with in the past year who were using tobacco/nicotine, select the three products most commonly used:
- ❑ Cigarettes
- ❑ Cigars or cigarillos
- ❑ E-cigarettes or vape pens (e.g., JUUL))
- ❑ Heat-not-burn devices (e.g., IQOS)
- ❑ Smokeless (e.g., chewing tobacco or snuff) or dissolvable tobacco (e.g., lozenges, strips, or sticks) products
- ❑ Waterpipes (e.g., hookahs)
- ❑ Other nicotine products (e.g., salts, pouches, toothpicks)

The next several questions focus on some ways substance use treatment providers may try to address tobacco/nicotine use among clients. We ask these in order of what some people refer to as the "5 A's" intervention: *Ask, Advise, Assess, Assist, and Arrange*.

9. *This question focuses on some ways substance use treatment providers might **Ask** clients about their tobacco/nicotine use.*
Does your program require that you screen all clients for tobacco/nicotine use?
- ❍ Yes
- ❍ No

If selected yes for Q9

9a. If a client indicates in the screen that they do not use tobacco/nicotine products, do you continue to ask clients about their tobacco/nicotine use (e.g., periodic check-ins, etc.) beyond this required screen?

- ❍ Yes, I do this with every client I work with, regardless of whether I know/suspect they are using tobacco/nicotine
- ❍ Yes, but only with clients whom I know/suspect are using tobacco/nicotine
- ❍ No, I do not start discussions with clients about their tobacco/nicotine use outside of formal screenings

If selected no for Q9

9b. Even if there is no formal screen, do you ask clients about their tobacco/nicotine use?

- ❍ Yes, I do this with every client I work with, regardless of whether I know/suspect they are using tobacco/nicotine
- ❍ Yes, but only with clients whom I know/suspect are using tobacco/nicotine
- ❍ No, I do not ask; I wait for clients to approach me about their tobacco/nicotine use
- ❍ No, I do not address tobacco/nicotine use among clients

10. *These two questions focus on some ways substance use treatment providers might **Advise** clients who are pregnant and/or parenting a child (birth to 3 years old) to quit.*
Thinking about your caseload in the past year, how often did you *give pregnant and/or parenting clients a pamphlet or handout* about the effects of tobacco/nicotine on:

	Never	Sometimes	Most of the time	Always	N/A (did not work with clients who were pregnant and/or parenting and using tobacco/nicotine)
their health?	❍	❍	❍	❍	❍
their unborn fetus's health?	❍	❍	❍	❍	❍
their child's health?	❍	❍	❍	❍	❍

11. Thinking about your caseload in the past year, how often did you *talk with pregnant and/or parenting clients* about the effects of tobacco/nicotine use on:

	Never	Sometimes	Most of the time	Always	N/A (did not work with clients who were pregnant and/or parenting and using tobacco/nicotine)
their health?	❍	❍	❍	❍	❍
their unborn fetus's health?	❍	❍	❍	❍	❍
their child's health?	❍	❍	❍	❍	❍

12. *This question focuses on some ways* substance use treatment *providers might* ***Assess*** *readiness to quit among clients who are pregnant or parenting a child (birth to 3 years old).*

Thinking about your caseload in the past year, indicate how often you did the following with pregnant or parenting clients who were using tobacco/nicotine:

	Never	Sometimes	Most of the time	Always	N/A (did not work with clients who were pregnant and/or parenting and using tobacco/nicotine)
Asked them how ready they are to quit on a scale from 1 to 10.	❍	❍	❍	❍	❍
Conducted "Stage of Change" assessment.	❍	❍	❍	❍	❍
Just asked them if they were ready to quit (I didn't use any particular tools or techniques).	❍	❍	❍	❍	❍
Used some other strategy.	❍	❍	❍	❍	❍

If selected Sometimes, Most of the time, or Always for Q12

12a. Please specify:

_____

13. *This question focuses on some ways* substance use treatment *providers might* ***Assist*** *clients who are pregnant or parenting a child (birth to 3 years old) with their tobacco/nicotine cessation efforts.*

Thinking about your caseload in the past year, indicate how often you did the following with pregnant and/or parenting clients who indicated readiness to quit:

	Never	Sometimes	Most of the time	Always	N/A (did not work with clients who were pregnant and/or parenting and using tobacco/nicotine)
Provided self-help materials (e.g., pamphlet or video) or information (e.g., brochures, contact information) about support service options and approaches	❍	❍	❍	❍	❍
Referred them to a program or service in your own agency (e.g., support group, class, provided NRTs or pharmacotherapies in-house)	❍	❍	❍	❍	❍
Referred them to an outside program or service (e.g., makingsmokinghistory.org smokefree.gov, ALA Freedom from Smoking, MA Smokers' Helpline 1-800-QUIT-NOW, Nicotine Anonymous, other support groups, NRTs)	❍	❍	❍	❍	❍
Referred them to a medical provider	❍	❍	❍	❍	❍
Referred them to some other program(s) or service(s)	❍	❍	❍	❍	❍

If selected Sometimes, Most of the time, or Always for Q13

13a. Please specify:

_____

14. *This question focuses on some ways substance use treatment providers might **Arrange** for follow-up with clients who are pregnant or parenting a child (birth to 3 years old) to support their tobacco/nicotine cessation efforts.*
Thinking about your caseload in the past year, indicate how often you did the following with clients who were trying to quit:

	Never	Sometimes	Most of the time	Always	N/A (did not work with clients who were pregnant and/or parenting and using tobacco/nicotine)
Scheduled follow-up visits/contacts to talk with them about their cessation efforts.	❍	❍	❍	❍	❍
Followed up with them about a cessation-related referral.	❍	❍	❍	❍	❍
Followed up with their provider about a cessation-related referral	❍	❍	❍	❍	❍
Arranged for some other type of follow-up support.	❍	❍	❍	❍	❍

If selected Sometimes, Most of the time, or Always for Q14

14a. Please specify:

_____

15. Where do you most often refer pregnant and/or parenting clients to help them quit tobacco/nicotine use? *Select all that apply.*

- ❑ I do not refer clients to services that address tobacco/nicotine use.
- ❑ My program's counseling/cessation supports and groups
- ❑ Participant's PCP, OBGYN, clinic, or hospital
- ❑ CVS Minute Clinics
- ❑ Nicotine Anonymous (NicA)
- ❑ Living TOBACCO-FREE, through Mass General Hospital
- ❑ Massachusetts Smokers' Helpline (1-800-QUIT-NOW)
- ❑ Smokefree.gov or smokefreewomen.gov text message program or mobile app
- ❑ Becomeanex.org online resources
- ❑ Other program, service, website, etc.

If selected other program for Q15

15a. Please specify:

_____

16. Think about all the pregnant and/or parenting clients you have worked with who have successfully quit tobacco/nicotine products. Which programs or services worked best for them? *Select all that apply.*

- ❑ No specific program/service; they quit on their own
- ❑ My program's counseling/cessation supports and groups
- ❑ Participant's PCP, OBGYN, clinic, or hospital
- ❑ CVS Minute Clinics
- ❑ Nicotine Anonymous (NicA)
- ❑ Living TOBACCO-FREE, through Mass General Hospital
- ❑ Massachusetts Smokers' Helpline (1-800-QUIT-NOW)
- ❑ Smokefree.gov or smokefreewomen.gov text message program or mobile app
- ❑ Becomeanex.org online resources
- ❑ Other program, service, website, etc.
- ❑ Not sure

If selected Other program, service, website, etc., for Q16

16a. Please specify:

_____

The next several questions focus on your comfort level with supporting clients who use tobacco/nicotine products while they are pregnant or parenting a child (birth to 3 years old).

17. How confident are you in your ability to talk with pregnant and/or parenting clients about quitting tobacco/nicotine?

- ❍ Not at all confident
- ❍ Not very confident
- ❍ Somewhat confident
- ❍ Extremely confident

18. From *your* perspective, how important is it to have conversations with pregnant and/or parenting clients about quitting tobacco/nicotine?

- ❍ Not at all important
- ❍ Not very important
- ❍ Somewhat important
- ❍ Extremely important

19. From *your program's* perspective, how important is it to have conversations with pregnant and/or parenting clients about quitting tobacco/nicotine?

- ❍ Not at all important
- ❍ Not very important
- ❍ Somewhat important
- ❍ Extremely important

20. Have you received any training to deliver any tobacco/nicotine cessation interventions?

- ❍ Yes
- ❍ No
- ❍ Not sure

If selected Yes for Q20

20a. Please select the type of intervention you have been trained to provide:

- ❍ Individual coaching/counseling
- ❍ Parent/family support groups
- ❍ Education through formal curriculum/resources
- ❍ Other: _____

21. Has your program created its own approach or curriculum to address tobacco/nicotine use among participants?

- ❍ Yes
- ❍ No

The next question asks about clients you worked with in the past year who experienced a smoking relapse (i.e., quit using tobacco/nicotine and started again) while they were pregnant and/or parenting a child (birth to 3 years old).

22. Among pregnant and/or parenting clients you have worked with in the past year who used tobacco/nicotine, around how many experienced a smoking relapse at some point?

- ❍ None
- ❍ Some
- ❍ Around Half
- ❍ Most/All
- ❍ N/A (did not work with clients who were pregnant and/or parenting and using tobacco/nicotine)
- ❍ Not Sure

If selected Some, Around, or Most/All for Q22

22a. Thinking about those families, when did the smoking relapse most often occur?

- ❍ During pregnancy
- ❍ Within the first year after the child's birth
- ❍ More than a year after the child's birth
- ❍ Not sure

If selected Some, Around, or Most/All for Q22

22b. How difficult do you find initiating the quitting conversation with clients who have relapsed versus those who have not yet quit?

- ❍ Much less difficult
- ❍ Somewhat less difficult
- ❍ No difference
- ❍ Somewhat more difficult
- ❍ Much more difficult

The next questions ask about challenges related to supporting clients who are pregnant and/or parenting a child (birth to 3 years old) and using tobacco/nicotine products.

23. In your experience, how much of a barrier have each of the following been for pregnant and/or parenting clients when trying to quit tobacco/nicotine?

	Not a barrier	Small barrier	Big barrier
Lack of access to quality programs and services (e.g., insurance, transportation, language barriers)	❍	❍	❍
Lack of encouragement from family or social network	❍	❍	❍
Lack of support for quitting in the substance use recovery community	❍	❍	❍
Strained or ineffective relationships with healthcare providers	❍	❍	❍
Living in a household with someone who smokes	❍	❍	❍
Living in a community with high rates of smoking	❍	❍	❍
Living in a community with many tobacco retailers and easy access to tobacco/nicotine products.	❍	❍	❍
Experiencing racism or other forms of discrimination from providers who would try to help them quit	❍	❍	❍
Food insecurity, job insecurity, housing insecurity, or other economic stressors	❍	❍	❍
Mental health challenges/high levels of stress	❍	❍	❍
Not a pressing priority for my clients	❍	❍	❍
Other—please specify	❍	❍	❍

25. Of the following, select the things that are barriers to *your* ability to provide support to pregnant and/or parenting clients who use tobacco/nicotine? *Select all that apply.*

- ❑ I'm not sure when and how to bring the issue up with participants, outside of formal screenings
- ❑ I'm not sure where to refer people
- ❑ I don't think the available tobacco/nicotine cessation programs are effective
- ❑ I don't have enough time to address this with participants
- ❑ It's not one of the primary goals of our program/It's beyond my scope of work
- ❑ I haven't been sufficiently trained in how to address tobacco/nicotine use with participants
- ❑ I use tobacco/nicotine products myself
- ❑ I have never used any tobacco/nicotine products myself
- ❑ Participants haven't disclosed tobacco/nicotine use to me
- ❑ Referral processes are difficult
- ❑ There are not enough accessible tobacco/nicotine cessation or treatment services (e.g., English-only programming)
- ❑ Our program does not have tobacco/nicotine cessation policies
- ❑ Our program has tobacco/nicotine policies but does not consistently enforce them
- ❑ Other—please specify: _____

Appendix E—Family Support Provider Survey

ABOUT THIS SURVEY

Researchers from Tufts Interdisciplinary Evaluation Research (TIER) at Tufts University in Medford are helping the Massachusetts Department of Public Health (MDPH) better tailor its tobacco cessation efforts to meet the unique needs of pregnant and parenting populations in Massachusetts. As part of this project, we are conducting a survey of family support providers. We'd like to understand how family support service providers approach tobacco/nicotine use with program participants who are pregnant and/or parents of young children. The survey takes approximately 10–15 minutes to complete.

By "tobacco/nicotine use", we are referring to any of the following products:

- Cigarettes
- Cigars or cigarillos
- E-cigarettes or vape pens (e.g., JUUL)
- Smokeless (e.g., chewing tobacco or snuff) or dissolvable tobacco (e.g., lozenges, strips, or sticks) products
- Waterpipes (e.g., hookahs)
- Other nicotine products, such as salts, pouches, toothpicks

The survey takes approximately 15 minutes to complete. Your participation in this survey is voluntary. Your responses will be kept confidential; only the research team will have access to your responses. Information will be reported only in aggregate, meaning no answers will be connected with your name. Survey responses will be categorized and used to inform and shape current and future tobacco/nicotine cessation programs and policies for pregnant and parenting populations. At the end of the survey, you will be asked to provide your name and email address so we can send you a $5 Dunkin' e-gift card as a thank you for your time. We will not use your name or email address for anything other than sending you the e-gift card. If you have questions or would like to discuss this further, please contact Danyel Moosmann at danyel.moosmann@tufts.edu .

Do you agree to complete this survey?

❍ Yes
❍ No

First, we would like to ask a few questions about you and the program you work for.

1. What program(s) do you work for? *Select all that apply.*

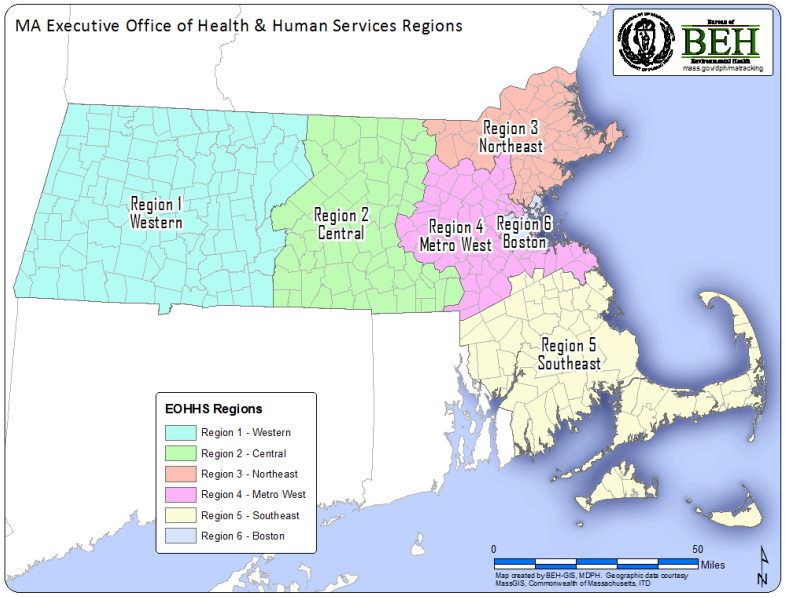
- ❑ Early Head Start
- ❑ Early Intervention
- ❑ Early Intervention Partnership Program
- ❑ Family Center
- ❑ FIRST Steps Together
- ❑ Healthy Families
- ❑ Healthy Start
- ❑ Parents as Teachers
- ❑ Welcome Family
- ❑ WIC
- ❑ Other (Please specify: _____

2. What is your role within your program(s)? Select all that apply.

- ❑ Program Director
- ❑ Supervisor
- ❑ Direct Service Provider (works with families)
- ❑ Other—please specify: _____

3. In which region(s) do the majority of your participants live? *Select all that apply.* Use this map for reference.

- ❑ Western
- ❑ Central
- ❑ Northeast
- ❑ Southeast
- ❑ Metro West
- ❑ Boston



4. How do you currently describe your racial/ethnic identity? *Select all that apply.*
- ❑ American Indian or Alaska Native
- ❑ Black or African American
- ❑ East Asian
- ❑ Hispanic, Latino/a, Latinx
- ❑ Middle Eastern or North African
- ❑ Native Hawaiian or other Pacific Islander
- ❑ South Asian
- ❑ White
- ❑ Other—please specify _____

5. Do you currently use tobacco/nicotine products?
- ❍ Yes, daily/frequently
- ❍ Yes, occasionally
- ❍ No

If selected no for Q5

5a. Did you regularly use tobacco/nicotine products in the past?
- ❍ Yes, daily/frequently
- ❍ Yes, occasionally
- ❍ No

Participant Tobacco Use

The next few questions ask about tobacco/nicotine product use among the participants you have worked with in the past year who were pregnant and/or parenting a child (birth to 3 years old).

6. Among pregnant participants you have worked with in the past year, how many were using tobacco/nicotine? None
- ❍ None
- ❍ Some
- ❍ Around Half
- ❍ Most/All
- ❍ N/A

7. Among participants you have worked with in the past year who were parenting a child (birth to 3 years old), how many were using tobacco/nicotine?
- ❍ None
- ❍ Some
- ❍ Around Half
- ❍ Most/All
- ❍ N/A

8. Thinking about the pregnant and/or parenting participants you have worked with in the past year who were using tobacco/nicotine, select the three products most commonly used:
- ❑ Cigarettes
- ❑ Cigars or cigarillos
- ❑ E-cigarettes or vape pens (e.g., JUUL))
- ❑ Heat-not-burn devices (e.g., IQOS)
- ❑ Smokeless (e.g., chewing tobacco or snuff) or dissolvable tobacco (e.g., lozenges, strips, or sticks) products
- ❑ Waterpipes (e.g., hookahs)
- ❑ Other nicotine products (e.g., salts, pouches, toothpicks)

The next several questions focus on some ways family support providers may try to address tobacco/nicotine use among participants. We ask these in order of what some people refer to as the "5 A's" intervention: *Ask, Advise, Assess, Assist, and Arrange*.

9. *This question focuses on some ways family support providers might **Ask** participants about their tobacco/nicotine use.*
Does your program require that you screen all participants for tobacco/nicotine use?

- ❍ Yes
- ❍ No

If selected yes for Q9

9a. Do you initiate discussions with participants about their tobacco/nicotine use beyond the required screen?

- ❍ Yes, I do this with every participant I work with, regardless of whether I know/suspect they are using tobacco/nicotine
- ❍ Yes, but only with participants whom I know are using tobacco/nicotine
- ❍ No, I do not initiate discussions with participants outside of formal screenings

If selected no for Q9

9b. Do you initiate discussions with participants about their tobacco/nicotine use?

- ❍ Yes, I do this with every participant I work with, regardless of whether I know/suspect they are using tobacco/nicotine
- ❍ Yes, but only with participants whom I know are using tobacco/nicotine
- ❍ No, I do not initiate discussions with participants outside of formal screenings

10. *These two questions focus on some ways family support treatment providers might **Advise** participants to quit.*

Thinking about your caseload in the past year, how often did you *give pregnant and/or parenting participants a pamphlet or handout* about the effects of tobacco/nicotine on:

	Never	Sometimes	Most of the time	Always	N/A
their health?	❍	❍	❍	❍	❍
their unborn fetus's health?	❍	❍	❍	❍	❍
their child's health?	❍	❍	❍	❍	❍

11. Thinking about your caseload in the past year, how often did you *talk with pregnant and/or parenting participants* about the effects of tobacco/nicotine use on:

	Never	Sometimes	Most of the time	Always	N/A
their health?	❍	❍	❍	❍	❍
their unborn fetus's health?	❍	❍	❍	❍	❍
their child's health?	❍	❍	❍	❍	❍

12. *This question focuses on some ways family support providers might **Assess** readiness to quit.*

Thinking about your caseload in the past year, indicate how often you did the following with pregnant or parenting participants who were using tobacco/nicotine:

	Never	Sometimes	Most of the time	Always
Asked them how ready they are to quit on a scale from 1 to 10.	❍	❍	❍	❍
Conducted "Stage of Change" assessment.	❍	❍	❍	❍
Just asked them if they were ready to quit (I didn't use any particular tools or techniques).	❍	❍	❍	❍
Used some other strategy.	❍	❍	❍	❍

If selected Sometimes, Most of the time, or Always for Q12

12a. Please specify:

_____

13. *This question focuses on some ways family support providers might **Assist** participants with their tobacco/nicotine cessation efforts.*

Thinking about your caseload in the past year, indicate how often you did the following with pregnant and/or parenting participants who indicated readiness to quit:

	Never	Sometimes	Most of the time	Always
Provided self-help materials (e.g., pamphlet or video) or information (e.g., brochures, contact information) about support service options and approaches	❍	❍	❍	❍
Referred them to a program or service in your own agency (e.g., support group, class)	❍	❍	❍	❍
Referred them to an outside program or service (e.g., Making Smoking History, smokefree.gov, ALA Freedom from Smoking MA Smokers' Helpline 1-800-QUIT-NOW, Nicotine Anonymous, other support groups)	❍	❍	❍	❍
Referred them to a medical provider for pharmacotherapies (e.g., nicotine patch, gum, Chantix, Wellbutrin)	❍	❍	❍	❍
Referred them to some other program(s) or service(s)	❍	❍	❍	❍

If selected Sometimes, Most of the time, or Always for Q13

13a. Please specify:

_____

14. *This question focuses on some ways family support providers might **Arrange** for follow-up with participants to support their tobacco/nicotine cessation efforts.*

Thinking about your caseload in the past year, indicate how often you did the following with participants who were trying to quit:

	Never	Sometimes	Most of the time	Always
Scheduled follow-up visits/contacts to talk with them about their cessation efforts.	❍	❍	❍	❍
Followed up with them about a cessation-related referral.	❍	❍	❍	❍
Followed up with their provider about a cessation-related referral	❍	❍	❍	❍
Arranged for some other type of follow-up support.	❍	❍	❍	❍

If selected Sometimes, Most of the time, or Always for Q14

14a. Please specify:

_____

15. Where do you most often refer pregnant and/or parenting participants to help them quit tobacco/nicotine use? *Select all that apply.*

- ❑ My program's counseling/cessation supports and groups
- ❑ Participant's PCP, OBGYN, clinic, or hospital
- ❑ CVS Minute Clinics
- ❑ Nicotine Anonymous (NicA)
- ❑ Living TOBACCO-FREE, through Mass General Hospital
- ❑ Massachusetts Smokers' Helpline (1-800-QUIT-NOW)
- ❑ Smokefree.gov or smokefreewomen.gov text message program or mobile app
- ❑ Becomeanex.org online resources
- ❑ Some other program, service, website, etc. that you have referred a participant to for the purpose of helping them quit tobacco/nicotine use

If selected some other program for Q15

15a. Please specify:

_____

16. Thinking about your current/past participants who have successfully quit tobacco/nicotine products, which programs or services worked *best* for them? *Select all that apply.*

- ❑ My program's counseling/cessation supports and groups
- ❑ Participant's PCP, OBGYN, clinic, or hospital
- ❑ CVS Minute Clinics
- ❑ Nicotine Anonymous (NicA)
- ❑ Living TOBACCO-FREE, through Mass General Hospital
- ❑ Massachusetts Smokers' Helpline (1-800-QUIT-NOW)
- ❑ Smokefree.gov or smokefreewomen.gov text message program or mobile app
- ❑ Becomeanex.org online resources
- ❑ Some other program, service, website, etc. that you have referred a participant to for the purpose of helping them quit tobacco/nicotine use

If selected Other program, service, website, etc., for Q16

16a. Please specify:

_____

The next several questions focus on your comfort level with supporting participants who use tobacco/nicotine products.

17. How confident are you in your ability to talk with pregnant and/or parenting participants about quitting tobacco/nicotine?

- ❍ Not at all confident
- ❍ Not very confident
- ❍ Somewhat confident
- ❍ Extremely confident

18. From *your* perspective, how important is it to have conversations with pregnant and/or parenting participants about quitting tobacco/nicotine?

- ❍ Not at all important
- ❍ Not very important
- ❍ Somewhat important
- ❍ Extremely important

19. From *your program's* perspective, how important is it to have conversations with pregnant and/or parenting participants about quitting tobacco/nicotine?

- ❍ Not at all important
- ❍ Not very important
- ❍ Somewhat important
- ❍ Extremely important

20. Have you received any training to deliver any tobacco/nicotine cessation interventions?

- ❍ Yes
- ❍ No
- ❍ Not sure

If selected Yes for Q20

20a. Please select the type of intervention you have been trained to provide:

- ❍ Individual coaching/counseling
- ❍ Parent/family support groups
- ❍ Education through formal curriculum/resources
- ❍ Other: _____

21. Has your program created its own approach or curriculum to address tobacco/nicotine use among participants?

- ❍ Yes
- ❍ No

The next question asks about participants you worked with in the past year who experienced a smoking relapse (i.e., quit using tobacco/nicotine and started again) while they were pregnant and/or parenting a child (birth to 3 years old).

22. Among participants you have worked with in the past year who used tobacco/nicotine, around how many experienced a smoking relapse at some point?

- ❍ None
- ❍ Some
- ❍ Around Half
- ❍ Most/All
- ❍ N/A (did not work with participants who were pregnant and/or parenting and using tobacco/nicotine)
- ❍ Not Sure

If selected Some, Around, or Most/All for Q22

22a. Thinking about those families, when did the smoking relapse most often occur?

- ❍ During pregnancy
- ❍ Within the first year after the child's birth
- ❍ More than a year after the child's birth
- ❍ Not sure

If selected Some, Around, or Most/All for Q22

22b. How difficult do you find initiating the quitting conversation with participants who have relapsed versus those who have not yet quit?

- ❍ Much less difficult
- ❍ Somewhat less difficult
- ❍ No difference
- ❍ Somewhat more difficult
- ❍ Much more difficult

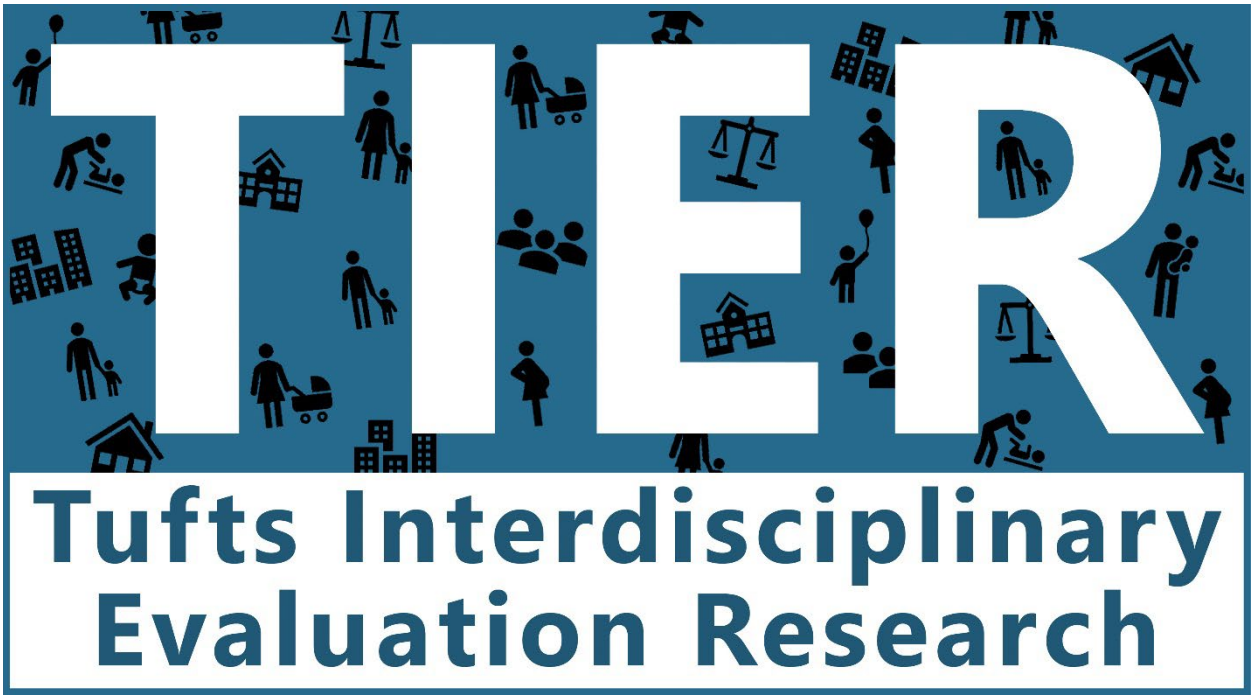
The next questions ask about challenges related to supporting families who use tobacco/nicotine products.

23. In your experience, how much of a barrier have each of the following been for participants when trying to quit tobacco/nicotine?

	Not a barrier	Small barrier	Big barrier
Lack of access to quality programs and services (e.g., insurance, transportation, language barriers)	❍	❍	❍
Lack of encouragement from family or social network	❍	❍	❍
Strained or ineffective relationships with healthcare providers	❍	❍	❍
Living in a household with someone who smokes	❍	❍	❍
Living in a community with high rates of smoking	❍	❍	❍
Experiencing racism or other forms of discrimination from providers who would try to help them quit	❍	❍	❍
Food insecurity, job insecurity, housing insecurity, or other economic stressors	❍	❍	❍
Mental health challenges/high levels of stress	❍	❍	❍
Not a pressing priority for my participants	❍	❍	❍
Other—please specify	❍	❍	❍

25. Of the following, select the things that may impact *your* ability to provide support to participants who use tobacco/nicotine? *Select all that apply.*

- ❑ I'm not sure when and how to bring the issue up with participants, outside of formal screenings
- ❑ I'm not sure where to refer people
- ❑ I don't think the available tobacco/nicotine cessation programs are effective
- ❑ I don't have enough time to address this with participants
- ❑ It's not one of the primary goals of our program/It's beyond my scope of work
- ❑ I haven't been sufficiently trained in how to address tobacco/nicotine use with participants
- ❑ I use tobacco/nicotine products myself
- ❑ Participants haven't disclosed tobacco/nicotine use to me
- ❑ Referral processes are difficult
- ❑ There are not enough accessible tobacco/nicotine cessation or treatment services (e.g., English-only programming)
- ❑ Our program does not have tobacco/nicotine cessation policies
- ❑ Our program has tobacco/nicotine policies but does not consistently enforce them
- ❑ Other—please specify: _____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