Nicotine & Tobacco Research, 2020, 498–505
doi:10.1093/ntr/nty256
Original investigation
Received October 23, 2017; Editorial Decision November 20, 2018; Accepted November 29, 2018

Original investigation

Disseminating a Smoke-free Homes Program to Low Socioeconomic Status Households in the United States Through 2-1-1: Results of a National Impact Evaluation

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Abstract

Introduction: Given homes are now a primary source of secondhand smoke (SHS) exposure in the United States, research-tested interventions that promote smoke-free homes should be evaluated in real-world settings to build the evidence base for dissemination. This study describes outcome evaluation results from a dissemination and implementation study of a research-tested program to increase smoke-free home rules through US 2-1-1 helplines.

Methods: Five 2-1-1 organizations, chosen through a competitive application process, were awarded grants of up to $70 000. 2-1-1 staff recruited participants, delivered the intervention, and evaluated the program. 2-1-1 clients who were recruited into the program allowed smoking in the home, lived in households with both a smoker and a nonsmoker or child, spoke English, and were at least 18 years old. Self-reported outcomes were assessed using a pre-post design, with follow-up at 2 months post baseline.

Results: A total of 2345 households (335–605 per 2-1-1 center) were enrolled by 2-1-1 staff. Most participants were female (82%) and smokers (76%), and half were African American (54%). Overall, 40.1% (n = 940) reported creating a full household smoking ban. Among the nonsmoking adults reached at follow-up (n = 389), days of SHS exposure in the past week decreased from 4.9 (SD = 2.52) to 1.2 (SD = 2.20). Among the 1148 smokers reached for follow-up, 211 people quit, an absolute reduction in smoking of 18.4% (p < .0001), with no differences by gender.

Conclusions: Among those reached for 2-month follow-up, the proportion who reported establishing a smoke-free home was comparable to or higher than smoke-free home rates in the prior controlled research studies.

Implications: Dissemination of this brief research-tested intervention via a national grants program with support from university staff to five 2-1-1 centers increased home smoking bans, decreased SHS exposure, and increased cessation rates. Although the program delivery capacity demonstrated by these competitively selected 2-1-1s may not generalize to the broader 2-1-1 network in the United States, or social service agencies outside of the United States, partnering with 2-1-1s may be a promising avenue for large-scale dissemination of this smoke-free homes program and other public health programs to low socioeconomic status populations in the United States.

Introduction

Protecting children and nonsmoking adults from secondhand smoke (SHS) exposure requires widespread adoption of smoke-free policies.[1,2] Worldwide, many settings are now smoke free because of passage of comprehensive smoke-free legislation as part of the Framework Convention on Tobacco Control (FCTC).[3,4] Despite this, many adults and more than 507 million children are still exposed to SHS,[5,6] including 58 million nonsmokers in the United States.[5,7] The FCTC provisions on SHS do not address smoke-free housing and the home is now a significant source of SHS exposure for both children and adult nonsmokers.[7] Although some home environments can be protected through government policies, such as those mandated for conventional public housing in the United States, or by voluntary policies established by property managers and owners of multi-unit housing,[8] for the majority, smoke-free policies are voluntary at the household level.

Interventions to prevent SHS exposure have focused on homes with young children, with the majority recruiting from clinical settings[9–16] and a few from settings that provide services to young families, such as supplemental nutrition programs.[17–19] Intervention strategies include home visits and fairly intensive telephone counseling, with messages often focused on cessation combined with actions to reduce smoking in the home. [14,15,16,17,19–24] With the exception of a pediatric office-based intervention[15] few interventions to reduce SHS exposure have been replicated or widely disseminated.

"Smoke-Free Homes: Some Things are Better Outside" (hereafter, "Smoke-Free Homes" or "SFH") is a brief intervention that aims to decrease SHS exposure in both adults and children and emphasizes establishing a smoke-free home rule rather than cessation.[25,26] Low-income families, in part due to higher smoking rates, are disproportionately affected by SHS exposure in the home, with lower income being associated with lower prevalence of smoke-free homes.[27–30] Because of disparities in SHS exposure by socioeconomic status (SES), we partnered with 2-1-1s to test the intervention's effectiveness. 2-1-1s are helplines for individuals seeking assistance finding services. In the United States, 2-1-1s respond to more than 17 million requests for help per year, connecting primarily socioeconomically disadvantaged individuals to local service and support agencies such as those that provide assistance with housing, food, and utility needs.[31–33]

The first randomized controlled trial (RCT) of SFHs was an efficacy trial in Atlanta in which 2-1-1 staff recruited participants and university staff delivered the intervention.[26] The second, an effectiveness trial in North Carolina, added intervention delivery to 2-1-1 staff responsibilities.[34] The third, a generalizability trial in the Texas Gulf Coast, was similar to the effectiveness trial but with more ethnically/racially diverse participants (ie, a higher proportion of Latinos).[35] A web-based SFHs data collection and tracking tool (hereafter, "Tracking Tool") supported intervention delivery and data collection. All three RCTs, with a sample size around 500 per trial, showed significant program effects, with 38%–63% of households reached for follow-up at 6 months establishing a smoke-free home (OR = 1.56, 1.72, and 2.19, respectively).[26,34,35] Consistent with 2-1-1 callers in general, participants' SES was low, with 79%–86% of participants living below the federal poverty threshold and 90% reporting no college degree.

Interventions that have been implemented and evaluated in diverse settings under real-world circumstances and that retain a meaningful program effect are most appropriate for dissemination.[36–38] Our series of efficacy and replication trials was an important step in building an evidence base for the intervention in low SES populations; key questions remained, however, including what level of support is needed to facilitate effective dissemination and implementation, and whether effectiveness can be maintained in a non-research environment and in diverse populations. The current article describes outcome evaluation results from a dissemination and implementation study of the SFHs intervention to 2-1-1 systems through a national grants program. Implementation facilitators and barriers have been reported elsewhere.[39]

Methods

Description of the National Grants Program and 2-1-1 Grantee Selection

2-1-1 organizations participating in this dissemination and implementation study were chosen through a competitive grant application process. Potential grantees learned of the opportunity to participate in two ways: (1) promotional information and a Request for Applications distributed to 2-1-1s that had previously partnered with research teams on other projects, and (2) distribution of the Request for Applications via a Listserv to state and local 2-1-1 leaders nationally. Interested 2-1-1s submitted a letter of intent describing overall impact the program would have in their communities, the need for the program in their client population, institutional support for program delivery, and details of the delivery plan. All letters of intent (n = 31) were reviewed and scored by at least two members of the research teams conducting the RCTs, and 11 finalists were invited to submit full applications describing their expected participants, plans for screening and enrollment, program delivery, team composition, and anticipated partnerships with other organizations. 2-1-1s also provided a timeline, estimated budget, and budget

justification. These full applications were evaluated by 2–3 reviewers based on the following criteria: project leadership and key personnel, approach to and feasibility of delivering the program, potential impact and benefit of the program to participants at the center, and the center's institutional environment, capacity, and support. These criteria were selected based on prior implementation experience and research on how organizational capacity contributes to implementation outcomes.[39–41] The five 2-1-1 centers with the highest scores were selected for participation and given a grant administered by Emory University ranging from $66 000 to $70 000.

Description of the Research-Tested SFHs Intervention Delivered to 2-1-1 Clients

The intervention consists of three mailings and one brief coaching call delivered by 2-1-1 staff over 6 weeks.[25,26] Mailing 1 contains a five-step guide to a SFH, a set of stickers, and a window cling. The first mailing is packaged in a 9 × 12 envelope with tear-off signs and a smoke-free home pledge, as well as additional information on reasons for establishing a smoke-free home, myths, and a quitline number. Two weeks later, participants receive a coaching call structured around five steps to making a smoke-free home. A trained coach addresses challenges faced or anticipated, reinforces progress, and negotiates goals related to the 5 steps and associated actions (eg, talk to family members). Mailing 2 is sent 2 weeks after the coaching call and contains a booklet on challenges and solutions, a *photo novella* (ie, comic-book story format) depicting a family making their home smoke free, and information on electronic cigarettes. Finally, mailing 3 is sent at 6 weeks post baseline and includes a newsletter with testimonials, a thirdhand smoke fact sheet, and an additional set of stickers and a smoke-free home window cling.

Participants allowed smoking in the home, were 18 years of age and older, spoke English, and were either a smoker living with a nonsmoker (including children) or a nonsmoker living with a smoker. Only one participant per household could participate.

Training, Quality Control, and Technical Assistance

2-1-1 staff from each center underwent a combination of onsite and online training on the program. Trainings, led by Emory University staff with advanced degrees in education and counseling and experience in training from the prior trials (Table 1), included an overview of the program, recruitment strategies and tips, data collection at baseline and follow-up, intervention delivery, and use of the web-based Tracking Tool. Webinars were segmented for different staff roles (eg, recruiter, survey specialist, intervention delivery program specialist), with a general overview webinar for all staff and program managers. Four 2-hour webinars were held for all centers and all program roles in June 2015, with 69 staff members participating (center participation ranged from 4 to 39 over time). Webinars were recorded and served as reference guides for trained staff and were made available to all new program staff. On the basis of prior experience, we conducted the 1-day intervention delivery training in-person to provide one-on-one instruction and practice opportunities. A detailed Implementation Toolkit was developed and provided to all staff. University staff traveled to each 2-1-1 center in June and July 2015 to train program managers and specialists during the 1-day training. A total of 37 staff were trained as intervention delivery program specialists during these visits. Recruiters and survey specialists received 4 hours of training, whereas program specialists received a total of 8 hours of training.

As a method of quality control, university research staff formally cleared each survey and recruitment specialist based on mock phone sessions that assessed knowledge of the program, ability to screen for eligibility, and ability to collect and record accurate data. As in our prior research, we cleared program specialists after five successful consecutive coaching calls and recorded and reviewed every tenth call throughout the duration of the program. The SFHs program was officially launched in all centers by mid-August 2015, and program and data collection activities, including follow-up, were completed by October 2016.

Each center set its own protocol for incentivizing participants to complete program activities (recruitment, baseline and follow-up data collection, and the coaching call). Incentives ranged from $10 to $25 for completing program activities and took the form of gift cards to vendors, including grocery stores, gas stations, and coffee shops. Some centers also included staff incentives for meeting recruitment and program delivery goals. These staff incentives ranged from $5 to $25 per recruitment, coaching call, and/or follow-up interview.

Grantees received ongoing technical assistance throughout the program from July 2015 through October 2016 (see Table 1). A total of 125 technical assistance episodes were documented. Technical assistance included troubleshooting Tracking Tool issues, program delivery, survey scripting, participant retention, implementation of new recruitment strategies, and discussions of recruitment barriers. In addition to providing technical assistance as needed, the university team hosted 14 monthly booster calls for discussing progress and addressing questions and concerns. Center managers were asked to present updates on their efforts in a segment called "Smoke-Free Homes Spotlight." This allowed for free-flowing discussions on center-specific challenges, lessons learned, and strategies for improvement (eg, how best to use incentives).

Tracking Tool and Its Role in Program Delivery and Evaluation

A web-based Tracking Tool was adapted from the three trials for use by 2-1-1s to support program delivery. Compared to the trial version, it was programed with fewer follow-up calls, simplified processes for baseline and follow-up data collection, and a metrics site. The metrics site was designed to give program managers a snapshot of real-time center progress in recruitment and program delivery efforts, and to allow for easy export of reports. Report queries included recruitment efforts and eligibility status, outstanding program and data collection tasks (eg, how many participants were due or past-due for a survey), and status of all completed program activities (eg, how many surveys or coaching calls were completed, missed, cancelled/dropped, or in-progress).

In addition to basic functionality for program management and delivery, it also provided scripts for each encounter with a participant and provided staff with daily task lists for each participant (ie, alerting staff when a mailing is due). Built-in skip patterns and mandatory response fields, as well as center-specific scripts (eg, tailored introductory scripts), allowed 2-1-1 staff to accurately record final outcome data at the 2-month follow-up.

The baseline and follow-up surveys, built into the tracking tool, were kept intentionally short to facilitate administration by busy 2-1-1 staff outside of a research setting. Presence of a full home smoking ban was assessed at baseline and follow-up by asking, "Which statement best describes the rules about smoking inside your home?" Participants selected one of the following response options: "smoking is not allowed anywhere inside your home; smoking is allowed

Table 1. Description of Training and Technical Assistance Provided to the Grantees

Event title	Event description	Event type	Number of sessions	Duration of sessions	Attendees	Total number of attendees	Trainer/TA provider information
SFH training module 1	Overview of program background, purpose, and components; protecting participant information; staff roles; use of the SFH Tracking Tool	Webinar	2	2 h	All staff (managers, recruiters, survey specialists, program specialists)	69	Trainers with ≥3 y of program experience; 2 master's level program staff
SFH training module 2	Training on recruitment and screening of SFH candidates; collecting baseline and follow-up survey data	Webinar	2	2 h	Managers Recruiters Survey specialists	68	Trainers with ≥3 y of program experience; 2 master's level program staff
SFH intervention delivery training	Overview of program delivery and coaching call; coaching techniques and tips; step-by-step coaching guidance using the Tracking Tool; coaching call practice	In-person	5	6 h	Managers Program specialists	37	Trainers with ≥3 y of program experience; 2 master's level program staff
Monthly technical assistance booster calls	Program and grantee updates, recruitment, data collection, and program delivery, addressing questions and concerns, troubleshooting Tracking Tool issues	Webinar	14	1 h	All staff (managers, recruiters, survey specialists, program specialists)	1–3 per center	Trainers with ≥3 y of program experience; 2 master's level program staff
Individual grantee technical assistance	Supporting Tracking Tool issues, program delivery, survey scripting changes, participant retention, implementation of new recruitment strategies, and discussions on recruitment barriers	Phone/E-mail	125	Varied	All staff (managers, recruiters, survey specialists, program specialists)	1–2 per encounter	Trainers with ≥3 y of program experience; 2 master's level program staff

SFH = Smoke-Free Home, TA = technical assistance.

in some places or at some times; smoking is allowed anywhere inside your home; or there are no rules about smoking inside your home."[42] Although restricting smoking in vehicles was not a focus of the intervention, it was assessed as a secondary outcome at baseline and follow-up with a parallel item.[27] SHS exposure was assessed by asking, "During the past 7 days, how many days have people smoked in your home in your presence?"[43] Two other secondary outcomes were asked of only the daily smokers: cessation attempts in the past 3 months and number of cigarettes smoked per day.[42]

Home rental status (eg, own, rent, and other) and landlord's smoking rules were assessed, as was smoking status (eg, every day, some days, not at all). Demographic questions covered sex, race/ethnicity, employment status, educational level, relationship status, and household composition. Education level was used as a proxy for SES to avoid staff discomfort in asking personal questions not generally asked of 2-1-1 callers.

Process Measures

To assess engagement with the program components at follow-up, we asked whether participants made a list of reasons to create a smoke-free home rule, had a family talk, signed the pledge, posted the pledge, posted the signage, used the stickers, or called for cessation assistance.

Data Analysis

Data were downloaded from the Tracking Tool for analyses and screened for outliers and missing data. Descriptive statistics were calculated for the overall sample and by center. Differences across centers were assessed using chi-square tests for dichotomous variables and analyses of variance with Tukey's post hoc tests for continuous variables. Because of differences by center, all subsequent analyses controlled for center. The main outcome was determined two ways: (1) ban status (full/not full) among those reached for follow-up, and (2) an intent-to-treat approach where those who were not reached for follow-up data collection were considered to not have a full smoking ban. We conducted multivariable linear and logistic regressions for continuous and binary outcomes, respectively, for change from baseline to follow-up accounting for center and baseline values. For vehicle smoking bans, those reached for follow-up who did not have a vehicle at either baseline or follow-up were excluded from the analysis (n = 512, 33.2% of follow-up participants). All analyses

were conducted in SAS 9.4, and list-wise deletion was used throughout for those with missing data on predictor variables.

Results

Description of Grantees and Program Implementation Metrics

Service areas for the 2-1-1 grantee centers ranged from a single county to an entire state (Table 2). Yearly call volume for centers at the time of application in 2014 ranged from 78 000 to 279 000. Grantees enrolled 2345 clients, 335–605 households per center. Coaching calls were completed 60.3% of the time (centers ranged from 43% in center B to 75% in center D) and 66% of participants completed follow-up surveys (centers ranged from 53% in center B to 76% in centers A and D). By comparison, coaching call delivery rates ranged from 72% to 92% and 3-month follow-up rates ranged from 72% to 83% in our prior RCTs.

Description of Participants

The majority of the 2-1-1 clients who participated were smokers (n = 1773; 76.4%), with some variability in the distribution of daily to nondaily smoking across centers; one center, center A, had a significantly higher percentage of smokers enrolled (n = 459; 85.8%). The average number of cigarettes smoked per day was 12.6 (SD = 9.7). Similar to our trials, participants were mostly female (n = 1925; 82.1%), with some variation by center (Supplementary Table 1). Overall, about half of the participants were African American (n = 1246; 54.2%). There was considerable variation in race/ethnicity by center, with half of participants identifying as white in both center D and center E. Center E also had a sizable number of American Indian participants. About one-quarter of participants were employed (n = 625; 27.2%), and over half had a high school education or less (n = 1456). The majority were single (n = 1192; 51.1%) and reported at least one child in the home (n = 1626; 69.4%). Two-thirds of participants (n = 1559; 66.5%) reported that half or more of their friends and relatives smoked. The majority rented their home (n = 1814; 77.5%), and the vast majority of landlords did not have a smoke-free policy in place (n = 1727; 97.2%).

Process Measures

Process measures indicated a high level of engagement with the various program components among those reached for follow-up (n = 1543). In addition to the 78.8% who reported receiving a coaching call, 83.0% developed a list of reasons to establish a smoke-free home, 87.8% had a family talk, 60.8% signed the pledge, 56.8% posted the pledge, 70.5% used the signs, 75.0% used the stickers, and 30.5% called a cessation service. Although the coaching call response rate was lower than in two of our prior trials, engagement with the program materials was comparable or higher.[44]

Smoke-Free Home Outcomes

In the intent-to-treat analysis, in which all participants who were lost to follow-up at 2 months were assumed not to have adopted a smoke-free home, 40.1% (n = 940) reported creating a full household smoking ban. Among the 1543 participants reached for follow-up, 60.9% (n = 940) reported establishing a full household smoking ban. Although centers varied in reported rates of full bans from 55.5% to 65.2%, the differences were not statistically significant. Relatively few participants (n = 132; 8.6%) reported no form of rule at follow-up. Among those who did not establish a smoke-free home at follow-up, 66.3% (n = 603) reported an attempt to do so.

Smoke-Free Vehicle Outcomes

We also looked at potential spillover effects on smoke-free vehicles. Among those with a vehicle at both data collection timepoints (n = 1031), 18.5% reported all vehicles were smoke free at baseline. This increased to 49.0% at follow-up, an absolute increase of 30.5%.

Table 2. Description of 2-1-1 Centers and Program Delivery and Evaluation Follow-up Rates for Participants

Center and service area	Yearly number of calls	Population served[a]	Program delivery
Center A 1 county	78 000	79% Female 53% African American, 46% white	Enrolled 546 Coached 71.6% Reached 75.8% for follow-up
Center B Entire state	131 000	81% Female Primarily African American	Enrolled 605 Coached 42.8% Reached 53.4% for follow-up
Center C 15 counties	279 000	70% Female 57% African American, 41% white, 1% Hispanic, 1% Asian/other	Enrolled 490 Coached 66.9% Reached 71.6% for follow-up
Center D 3 counties	150 000	78% Female 39% African American, 32% white, 28% Hispanic, 1% other	Enrolled 335 Coached 75.2% Reached 75.5% for follow-up
Center E 37 counties	143 000	76% Female 54% white, 28% African American, 8% Native American	Enrolled 369 Coached 49.6% Reached 54.7% for follow-up

Call volume was rounded to the nearest 1000. Some demographic information was estimated because not all centers collect that information from callers. Information about service area, yearly number of calls, and population served came from centers' applications to participate in the program, submitted in 2014.
[a]Information obtained from grantee applications for funding.

Table 3. Evaluation Results for Smoke-free Homes Program in Five 2-1-1 National Grants Program Centers

Outcome	*n*	Baseline	2-Month follow-up	Change
Smoke-free home rules among all participants (intent-to-treat)	2345	0%[a]	40.1%	+40.1%
Smoke-free home rules among those reached for follow-up	1543	0%[a]	60.9%	+60.9%
Smoke-free vehicles among participants with vehicles at pre and post	1031	18.5%	49.0%	+30.5%*
Days nonsmokers exposed to SHS in the home among those reached for follow-up	389	4.9 (2.52)	1.2 (2.20)	−3.65 (−0.32)*
Proportion of smokers among those who smoked at baseline and completed follow-up	1148	100%	81.6%	−18.4%*
Daily smokers with a quit attempt among those reached for follow-up	477	38%	45.3%	+7.3%*
Number of cigarettes smoked per day among those reached for follow-up	927	12.7 (10.04)	8.2 (7.01)	−4.5 (7.90)*

SHS = secondhand smoke.

[a]No statistical tests available due to 0% at baseline based on eligibility criteria.

*Significant at $p < .0001$.

Impact of the Intervention on Nonsmokers

Table 3 also shows impact on SHS exposure among nonsmoking adult participants. Among nonsmokers reached at follow-up (n = 389), days of exposure to SHS at home in the past week decreased from 4.9 (SD = 2.52) to 1.2 (SD = 2.20), a mean decrease of 3.65 (SD = 0.32) fewer days of SHS exposure in the past week ($p < .0001$).

Impact of the Intervention on Smoking Behavior

Among participants with both baseline and follow-up data, 74.4% (n = 1148) smoked at baseline. Of these, 81.6% (n = 937) reported smoking at follow-up, an absolute decrease in smoking of 18.4% (ie, 211 people quit smoking, $p < .0001$). The quit rates for men (n = 49 who quit) and women (n = 162 who quit) were not significantly different ($p = .09$). Among smokers with baseline and follow-up data (n = 927), cigarette consumption decreased by an average of 4.5 (SD = 7.90) cigarettes/day ($p < .0001$). Among daily smokers with data at both timepoints (n = 477), at least one quit attempt in the last 2 months increased from 38% to 45.3% ($p < .0001$).

Discussion

A series of RCTs conducted in partnership with 2-1-1's has shown that the Smoke-Free Homes: Some Things are Better Outside program has been effective in creating household smoking bans to reduce SHS exposure.[26,34,35] This study further examined its effectiveness in the same type of practice setting (ie, 2-1-1 centers) with less oversight than in the randomized trials. Our evaluation results show that the rate of establishing a smoke-free home among those reached for follow-up was comparable to or higher than smoke-free home rates in the intervention arms of our prior controlled trials.[26,34,35] When those not reached for follow-up were treated as failures (ie, in the intent-to-treat analysis), rates were still comparable or higher than in the more rigorous controlled studies.

Consistent with prior trials, this level of success may be due to how the program was supported during the implementation phase with use of the Tracking Tool to enhance fidelity, and proactive technical assistance. With this level of support, the chances of maintaining fidelity to the original program are much higher than if staff had simply attended an initial training and then implemented the intervention using their own approach and tracking procedures.[45] Centers also provided incentives to participants and staff. We learned from prior studies that incentives were essential to motivate people, particularly smokers, to participate in the intervention and related evaluation. This study did not assess whether or how participant incentives affected participation or intervention effects, but it does seem likely that they helped with participant accrual and follow-up.

Quality control activities and monthly booster sessions with technical assistance were provided throughout the program period. The program might be less effective without the Tracking Tool and the quality control provided by the university staff. Nevertheless, the findings are promising and suggest the intervention is effective in a broader range of populations and settings than initially tested. Research has noted the importance of establishing infrastructure (eg, data systems) to support implementation, training, and building capacity and capability of systems as important factors in scalability of effective interventions.[46,47]

The intervention also appeared to catalyze a series of secondary outcomes. Of primary importance, establishing a smoke-free home was related to reduction in SHS among nonsmokers. We also observed reductions of cigarettes smoked per day, and increased cessation among smokers. Although SFHs have been conceptualized as an intervention to reduce SHS exposure, these positive secondary outcomes suggest that the intervention may provide spillover benefits by supporting cessation attempts and helping smokers take the incremental steps needed to change their environment and reduce cigarette consumption or quit smoking altogether. In qualitative interviews, staff felt recruitment was aided by emphasizing the fact that SFHs was not a cessation intervention[39]; it is possible that this made the intervention more acceptable to smokers who might resist participating in a cessation intervention.

This study also highlights the potential public health benefits of partnering with 2-1-1s to reach low SES populations. With relatively modest efforts to promote a Request for Applications, we were able to interest at least thirty 2-1-1s in our grants program. As anticipated, the grantees were able to recruit relatively large numbers of participants given their reach into populations with higher prevalence of smoking and lower prevalence of smoke-free home rules. Partnering with university researchers to deliver a public health program allowed 2-1-1s to test the potential to proactively screen and

engage callers on important health issues and afforded the opportunity to fulfill the centers' mission to improve the health of their community and empower clients with information to improve their lives. Similarly, this experience was equally rewarding for 2-1-1 staff who reported feeling as if they had a substantial impact on their clients' lives.

Although the SFHs Program was a success on multiple levels, implementing a new program does not come without its challenges. 2-1-1s operate on a limited budget to provide free services to the community while ensuring the quality and excellence of service (eg, multiple avenues of contact: phone, text, chat; 24/7 availability, short wait times). Restructuring the call flow and staffing presented a brief challenge but was overcome with the versatility of 2-1-1 specialists, innovation from 2-1-1 management, and support from the university team. This project offered 2-1-1 management staff valuable insight into service delivery models, as well as useful feedback from callers about the impact of the program (eg, unprompted and informal testimonials from their clients). In exchange, 2-1-1 provided researchers a real-world view of barriers to engagement, uptake, and follow through.

Limitations

The limitations of the current study are mostly artifacts of the uncontrolled design of this dissemination study. There was no control group; self-reported smoke-free home rules were not confirmed with objective measures; and agency staff served as internal evaluators—that is, 2-1-1 staff collected follow-up data instead of an objective outsider. However, given multiple prior controlled tests of the intervention, a controlled trial was not our intent.[26,34,35] In addition, the follow-up period was very brief. Some households may have struggled to maintain rules over time, although we saw increased rates of smoke-free home rules over time (eg, from 3 to 6 months) in all three previous trials rather than the expected decrease.[26,34,35] We also acknowledge that incentives were provided to all participants to enroll and complete surveys. Although nonsmokers might have a compelling reason for joining the program (ie, to protect themselves and other nonsmokers from SHS exposure), smokers might not have been as motivated to enroll without an incentive. We also acknowledge that effectiveness may vary by tobacco control contexts, especially where smoking rates are still quite high and/or where tobacco industry influence is pervasive.

The nature of the national grants program and its competitive bidding process should also be considered. Funded centers demonstrated the need, capacity, and interest in delivering this program, which may not be the case for other social service systems. A broader dissemination of the program across other systems and settings in the United States and/or globally may have yielded different results.

This study further substantiates the value of partnering with 2-1-1s to reach low SES populations. Among those reached for follow-up, the proportion who reported establishing a smoke-free home was comparable to or higher than rates reported in three prior efficacy and replication studies. Additional implementation research could explore options for flexible staffing and full integration of the Tracking Tool with 2-1-1 information systems. Partnering with other types of high volume helplines and other social service systems that reach low SES populations is also warranted. Evaluating the potential scalability of the SFH program across additional diverse settings can contribute to the dissemination literature and impact tobacco-related health disparities.

Supplementary Material

Supplementary data are available at *Nicotine and Tobacco Research* online.

Funding

This work was supported by the National Cancer Institute's State and Community Tobacco Control Research Initiative (grant number U01CA154282).

Declaration of Interests

No financial disclosures were reported by the authors of this article.

Acknowledgments

The authors wish to thank all the staff at the affiliated organizations who assisted in the recruitment, data collection, and delivery of the Smoke-free Homes Program.

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