REDUCING SECOND HAND SMOKE EXPOSURE FOR YOUNG CHILDREN
TOPIC REPORT

Tennessee Tobacco Settlement Program 2014-16

- There has been a 22.5% reduction of emergency department visits for children age 1-4 from 2013-16 for a diagnosis of asthma. 73% of counties improved, including Metro counties where rates were highest in 2013.
- Tobacco Settlement funding supported a wide variety of projects and partnerships to change public awareness of the dangers of second hand smoke and promote policies to reduce smoking in public places.

Background

Perhaps the most diverse set of projects supported through the Tennessee Tobacco Settlement Program (TTSP) funding addressed reducing second hand smoke exposure for little children. County projects targeted adoption of voluntary policies and ordinances to reduce smoking in child care centers (Gold Sneaker Program), in public parks and athletic fields, in vehicles, and in residences of multi-unit housing. Counties supported a nationally recognized project to promote more screening and guidance at pediatric provider offices for parents who smoke. Creative messaging, graphics and placement for public media initiatives were developed and used across the entire state.

A pivotal component of the projects' strategy recognized different *targets for change.* Targets were based upon well-crafted problem statements drawn from community health assessments:

- Family and community *knowledge* – second-hand smoke as a trigger that contributes to young children's asthma and earaches
- Community norms and *attitudes* – promote a sense of unacceptability of smoking around children, even in open and public spaces
- Organizational and community *behaviors* – adopt policies and ordinances that encourage voluntary compliance, or restrictions that prohibit smoking in places frequented by children

Local advice provided by county health councils and community partners guided the sense of projected community acceptability for the targets for change for messaging. Tennessee's smoking rates have always been higher than national rates, due in part to the strong tobacco growing and processing heritage in the state. County staffs recognized this and acknowledged the difference between promoting a goal of children's' health versus regulating tobacco use in public. Media efforts were seen as instrumental in creating a supportive environment for change, moving from awareness of the health of children to public attitude change to policy and ordinance adoption. The three-year timeframe for the Tennessee Tobacco Settlement Program was deemed important to enable a stepped intervention approach which relied upon iterative use of continuous improvement techniques to adjust and mix strategies.

The outcome measure selected for this topic was to reduce the number of emergency department visits for children under age 5 years old with a diagnosis of asthma. The measure was selected because of a general acceptance of second hand smoke exposure as a trigger to asthma. National studies and state hospitals' statements about the prevalence of the diagnosis and costs per visit spurred the choice. Reliable data was annually available through the Hospital Discharge Database. This quantitative measure was comparable to the two other topic measures. The association of funded project's impacts on the measure of emergency

department use were acknowledged as indirect, however success of projects aimed at community awareness, attitudes, and ultimately behavior change were seen as influential the in addressing the goal.

Methods

Ninety-five counties were allocated Tobacco Settlement funding over three years based upon population size and tobacco use statistics. County-specific plans were developed to address identify sources of second hand smoke exposure for children under age five. Problem statements, constructed based upon county health departments' community health assessment conducted in 2012 and 2013 and with beginning statements written as part of each county's three-year TTSP plan.

Projects fell into several broad categories, aligned with locations that are frequented by young children and where communities acknowledged exposure to smoking existed.

- Child care centers. TTSP funds to promote the Gold Sneaker Program, a TDH developed intervention, designed to encourage adoption of policies that promoted health in child care centers. One policy was to prevent smoking on campus by adult staff, parents and volunteers, thereby reducing second and third hand smoke exposure for children. County, regional and central office staff provided training and small incentives (supplies) in 59 counties to encourage adoption.
- Multi-unit housing. CDC chose reduction of smoking in multi-unit housing as a national goal. Sixteen counties used Tobacco Settlement funding to work with public and private housing managers to encourage adoption of no smoking policies.
- CEASE. This national best practice focuses on training pediatricians to screen and counsel parents and other adults for smoking around little children. The project build on the theory of providing information about the unhealthy impact of adults smoking around children at "the teachable moment" to reduce that behavior. Ten counties partnered with pediatric practices and their professional society to reach 768 pediatric providers with training.
- Public spaces. Counties creatively approached this most controversial subject. Using public forums such as tobacco conferences and count health council meetings, public locations where children were known to gather were identified. Common sites included playgrounds, recreation ball fields, and municipal parks (71 projects). Counties also focused attention on areas around public buildings, particularly schools and libraries (56 projects). Agreements were negotiated with public officials to place some standardized and some very creative signage that encouraged adults not to smoke in those places. Another popular effective practice which by almost half of counites was Knock Tobacco Out of the Park which installed signage at youth ball fields and supplied jerseys for teams emblazoned with anti-tobacco use messages. Localized public messages were supported as movie trailers, in social media campaigns, and roadside billboards.
- Smoking in autos with children as passengers. Several counites cooperated with local law enforcement child seat restraint checks to encourage information about the dangers of second hand smoke on children if adults were found smoking in cars with young children. One graphic and message developed in the East Region, Children Deserve the NO SMOKING section, was developed by staff with advised from county health councils. This graphic was diffused and adopted for use by 58 counties. With interdepartmental support from the Commissioner of Safety and Homeland Security, the Department of General Services included the message in statewide Gun Registration and over 240,000 Department

of Motor (DMV) vehicle registration mailers, and large banners were posted in all DMV office and Department of Transportation's interstate highway rest stops across the state.

Project efforts to address this topic exemplified the TDH vision state to engage and be partners in communities to improve the health of all Tennesseans. Though indicating that not all communities were ready to take advocacy positions to prohibit tobacco use in public, county health departments identified a broad variety of partners to develop, cooperate, and share in campaigns. In order to approve the adoption of policies, multi-unit housing managers, child care center owners, county parks and recreation directors, private pediatric providers, chambers of commerce and local government officials had to be moved from often from opposition to neutrality to approval of voluntary and sometimes mandated positions. This process, built on Stages of Change Theory, was made possible by flexible TDH guidelines and county initiative in cooperatively planning, adapting and evaluating its project investments over time. County ownership of targets of change, project selection and timing helped turn opponents into partners. Counties also reported that one-third of media materials used for campaigns were provided by community partners.

Results

All 95 counties invested in at least one second hand smoke project during the three-year program period. From 2014 to 2017, counties implemented 267 projects targeting youth smoking. Counties expended $2,964,000, 25% of all allocated funds, on strategies to reduce second hand smoke exposure for little children. Additionally, a significant portion of the $1,172,000 categorized as media projects to address reducing second hand smoke exposure for young children. Project investments across the counties included:

$332,550	Reduce smoking in multi-unit housing
$242,625	Reduce smoking in child care centers Gold Sneaker
$2,365,923	Reduce smoking in public spaces

Health Outcomes

The statewide reduction of the number of emergency department visits for children under age five for a diagnosis of asthma from the baseline year (2013) to the end of the three-year TTSP program demonstration (2016) was 22.5%. County-specific results are reported in the table at the end of the report. Variation in the outcome measure is noted in the Table below. Almost two-thirds of counties improved, including five of six Metro counties. Thirty-four counites, all rural and often without easy access to hospital emergency departments, had less than ten visits in 2016. When these small numbers counties are excluded from the outcome analysis, 72% of counties demonstrated improvement.

	All counties	METRO counties only	All counties minus counties with counts under 10 visits
Counties with reduction	58 (62%)	5 (83%)	44 72%
No change	8 (8%)	none	0
Counties with increase	29 (30%)	1 (17%)	17 28%

Population density and geography played a major role in the statewide analysis. A large amount of the decrease in statewide ER visit numbers (969) over three-years occurred in Shelby (348), Knox (157), and Davidson (96) counties, all of which were among counties with the top ten highest use rates in 2013.

Process Outcomes

- Twenty-nine multi-unit housing developments adopted no smoking rules in 16 counties. This reduced exposure to smoke for 5,500+ residents including 950 children under age 5.
- At Child care facilities the Gold Sneaker Program funding assisted 225 child care facilities in 94 towns adopted new no smoking on campus policies in 56 counties. This reduced smoke and secondhand smoke exposure for 16,047 children under age 5.
- New smoke-free voluntary policies or ordinances were approved in 117 towns in 61 counties
- Sixty-eight counties invested TTSP funding in campaigns to create smoke frees spaces frequented by children. Spaces Included public parks/playgrounds, athletic fields, sporting events, health care facilities/health departments and walking trails.
- Local municipalities adopted signage encouraging no smoking. Twenty-two county health departments shared samples of ordinances, agreements or signage.
- Through improved health provider office counselling with families (CEASE Program), 10 counties trained 768 health care providers whose practices served 29,010 children under age 5.
- Hundreds of messages using multiple media (posters, billboards, and jerseys) requesting no smoking at youth athletic fields and events across state

Discussion

Counties identified multiple reasons for the overall success of the effort to reduce statewide emergency department visit rates through reducing second hand smoke exposure. The overwhelming theme was that TTSP funds supported activities that were chosen by counties that strengthened health department partnerships and community involvement. The two primary strategies, media and policy change, were chosen by local health department staff, driven by local assessments, advised by local partners, conducted largely through local cooperative activities, and supported by state funding with cricial content expertise from state tobacco control experts. Counties noted that TTSP funding provided health departments with a unique opportunity to be innovative and develop their own local approaches to counteract the massive advertising and marketing of the tobacco industry.

Counties' media strategies and investments often had combined effects on the pregnancy smoking, secondhand smoke and youth smoking prevention topics. Youth teams became senders of messages about the dangers of second hand smoke and advocates in public forums about creating smoke free spaces. Counselling for pregnant mothers included messages about reducing second hand smoke exposure for infants in their households. In addition to health professionals, counties found that children have a powerful voice in convincing loved ones to stop smoking (e.g., wearing athletic jerseys with pleas for adults not to smoke at athletic fields, making presentations for policy change at school boards and city councils) and to promote new social norms not to use tobacco. Counties creatively used community events and locations where youth and adults congregate as channels for public health education and advocacy.

Counties initiated voluntary "ASK campaigns" as a prelude to promoting specific law or policy adoption. Tremendous creativity was evident in these visual mass messaging "ASK campaigns" to promote smoke free public spaces (see samples below, county of origin noted for each graphic). Gaining support from public officials like mayors and elected councils, chambers of commerce, parks and recreation officials, youth

athletics coaches, school boards, and in some cases, local law enforcement, was the politically correct and strategic thing to do.

The chart below indicates the how the county health departments demonstrated growing proficiency in several public health competencies: communications, cultural competency, and community dimension of practice skills. As reported by counties, the pattern notes differences in the targets for change for each of the three TTSP topics which confirms attention to sensitivity to community input. Rather than developing messaging which challenged set community attitudes about freedom to smoke, effort was first aimed at building awareness and knowledge about the dangers of second (and third) hand smoke to infants and small children. Later, more projects focused on small behavior changes for parents and adults like avoiding smoking and vaping around children, and, after awareness campaigns, on behavior change through adoption of tobacco-free policies among organizations like child care centers and in multi-unit housing.

Targets of Change: Intent of county messaging	**Awareness-Knowledge**	**Attitudes-Beliefs**	**Behaviors-Habits**
Pregnancy Smoking	Medium	Low	High
Second Hand Smoke	High	Low	High
Helping children choose not to smoke	Medium	Medium	Low

Only 25 of 95 counties reported directly contact with hospitals and emergency department about their efforts to reduce visits by young children for asthma. Of those, 21 reported networking by sharing information about projects. One county participated in coordinated program planning. Montgomery, Rutherford and Shelby counties initiated cooperative projects with local hospitals. The lack of direct partnering with hospitals is a missed partnership opportunity. Counties reported because annual emergency department use data was provided by TDH, there was no need to solicit data from hospitals. Hospitals however remain consistent organizational partners in community prevention programs and representatives on county health councils.

Stages of Change Model for health promotion practice was introduced early in the TTSP as a framework for considering objectives for program investments. Usually used to assess individual behavior change, the Model was considered helpful in framing self-evaluation of the communities' status regarding reducing secondhand smoke. In response to the December 2016 survey question, 69 of 95 counties assessed that positive movement in their community's Stages of Change for the period from 2014-2016. Counties reported general changes or cited specific project-related changes. One hundred eleven different responses are summarized in the table below. Counties readily report difficulties in changing community norms, mostly reporting Precontemplative and Contemplative status. Alternatively, more optimistic assessments were given in areas in which specific investments enacted visible changes that reflected attitude and behavior changes on the part of individuals and organizations. Approval to place signage and/or passage of ordinances supporting tobacco-free areas in public spaces, athletic fields and other public facilities was deemed as evidence of movement from Precontemplative to Action status, especially in situations where opposition had previously been encountered. Counties also reported and provided evidence of changes in second hand smoke attitudes and behaviors regarding smoking in cars with little children, adopting smoke free child care center policies, and schools' permission and partnering in tobacco use prevention projects.

Number of counties reporting status of community stages of change for Second Hand Smoke Interventions in 2016

State of Change	General Population	Public spaces	Cars	Child Care Centers	Schools	Homes
Maintenance		5	3	4		1
Action	5	18	7	7	7	5
Preparation	5	6	3		1	3
Contemplative	12	5			3	2
Precontemplative	8					1

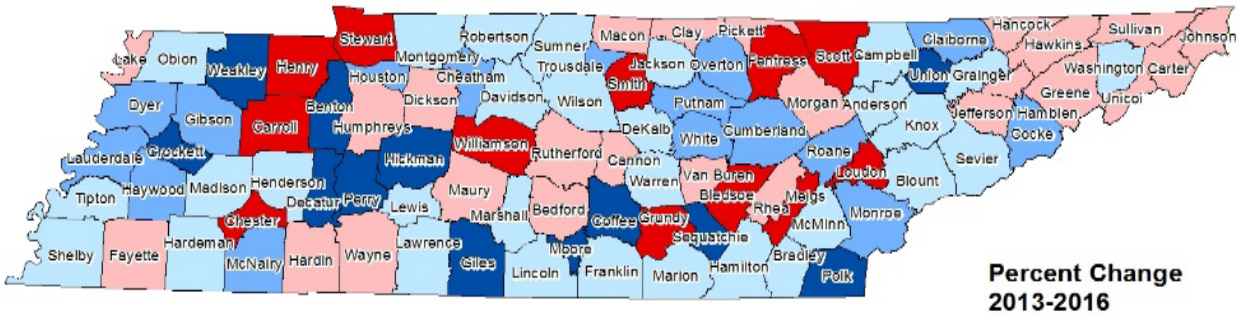
One clear lesson learned about attitude and behavior change is summarized in one county's narrative response. It explains a level of complexity of operating projects with dual interacting objectives, changing individual awareness about the dangers of second hand smoke while gaining organizational support for public change.

> *There are key stakeholders in our community such as our public schools, community college and parks and recreation department that have put smoke free policies in place and are in the Maintenance Stage. I feel that there is success with the Maintenance part because of the partnerships we have created which allow for education and materials to be provided to these organizations and assist in their efforts to remain smoke free and limit second hand smoke exposure. There has also been success in moving the view of second hand smoke exposure to the Contemplative Stage when it comes to individual attitudes. Many people were and are still unaware of the harmful effects of secondhand smoke exposure because tobacco use is still a social norm for many in rural counties like mine. However, when you start talking to community members about these dangers they do listen. I think that the children listen the most and will become advocates for eliminating second hand smoke exposure as they become adults.*

Over time it was realized that other evaluation measures beyond emergency department use could have been selected for this topic. Ideas emerged from completing Plan-D-Check-Act cycles of learning which refined project logic models over the three years. Future additional outcomes proposed by counties include:

- Counting visits to school health nurses for asthma
- Monitoring insurance forms and clinic reports of parents smoking in home
- Coordinating data collection with health department programs (e.g., WIC, Home visiting programs) that record high risk smoking in home
- Documenting smoking policies in public places and businesses
- Documenting other environmental exposures associated with asthma

Percent Change in Number of ER Visits for Asthma
Children Age 1-4, 2013-2016



Negative (blue) is improvement.
Positive (red) represents worsening/no change.

Tennessee reduction: -22.5%

*Perry County had
0 ER Visits in 2016

Note: Primary Diagnosis code for ICD-9 beginning with (493) or ICD-10 beginning with (J44, J45) was used to identify asthma patient

Data Source: Hospital Discharge Data System, 2011-2016. Office of Healthcare Statistics, Division of Policy, Planning and Assessment, Tennessee Department of Health. Nashville, Tennessee.

Countering tobacco industry advertising became an important strategy. Counties used free educational brochures and national public service announcements. Counties were very creative in developing their own messages and graphics.

Student poster contest winners became roadside billboards. Staff and students created social media postings. Logos were found on everything: athletic team jerseys, Bonnaroo fans, park benches, pens, banners, backpacks, retail pharmacy bags, diaper tote bags, portfolios, umbrellas and stress balls.

Emergency Department Use for Children Age 1-4 for Diagnosis of Asthma 2013-16

County Name	Number of Visits 2013	Number of Visits 2014	Number of Visits 2015	Number of Visits 2016	Percent change 2013 - 2016
Tennessee	***5,285***	***5,684***	***4,645***	***4,316***	-22.5%
Anderson	59	46	39	44	-34%
Bedford	23	45	32	30	23%
Benton	5	3	5	2	-150%
Bledsoe	0	4	4	2	100%
Blount	94	119	104	77	-22%
Bradley	51	56	54	35	-46%
Campbell	30	20	22	22	-36%
Cannon	4	6	1	4	0%
Carroll	8	7	6	15	47%
Carter	40	61	44	51	22%
Cheatham	26	21	17	13	-100%
Chester	4	3	4	8	50%
Claiborne	19	17	10	9	-111%
Clay	2	0	2	2	0%
Cocke	29	25	18	12	-142%
Coffee	50	36	34	20	-150%
Crockett	3	3	1	1	-200%
Cumberland	24	26	14	13	-85%
Davidson	753	789	661	657	-15%
Decatur	6	4	1	2	-200%
DeKalb	9	13	11	7	-29%
Dickson	34	40	24	40	15%
Dyer	31	24	19	14	-121%
Fayette	29	40	19	29	0%
Fentress	3	2	12	7	57%
Franklin	13	17	13	9	-44%
Gibson	40	38	24	21	-90%
Giles	12	17	11	4	-200%
Grainger	8	14	9	7	-14%
Greene	20	17	24	29	31%
Grundy	1	3	3	4	75%
Hamblen	26	40	21	28	7%
Hamilton	291	262	290	258	-13%
Hancock	1	2	2	1	0%
Hardeman	28	33	24	21	-33%
Hardin	11	9	5	11	0%
Hawkins	14	16	28	20	30%

Haywood	14	12	18	7	-100%
Henderson	7	11	10	6	-17%
Henry	13	19	12	23	43%
Hickman	24	12	11	9	-167%
Houston	6	4	5	4	-50%
Humphreys	5	15	17	6	17%
Jackson	4	8	2	3	-33%
Jefferson	24	50	26	32	25%
Johnson	6	10	11	7	14%
Knox	502	524	360	345	-46%
Lake	7	8	5	7	0%
Lauderdale	43	30	13	26	-65%
Lawrence	10	15	16	7	-43%
Lewis	4	4	2	3	-33%
Lincoln	14	23	10	12	-17%
Loudon	12	23	22	22	45%
McMinn	11	18	21	9	-22%
McNairy	9	11	14	5	-80%
Macon	12	14	10	13	8%
Madison	54	86	63	53	-2%
Marion	13	10	8	9	-44%
Marshall	17	10	9	16	-6%
Maury	37	42	32	49	24%
Meigs	4	7	4	7	43%
Monroe	33	37	15	15	-120%
Montgomery	93	112	76	65	-43%
Moore	5	1	1	1	-400%
Morgan	7	11	7	7	0%
Obion	19	15	10	15	-27%
Overton	9	6	2	4	-125%
Perry	3	3	1	0	
Pickett	2	0	0	2	0%
Polk	9	7	6	3	-200%
Putnam	33	25	10	17	-94%
Rhea	6	8	6	8	25%
Roane	44	33	24	25	-76%
Robertson	54	57	41	41	-32%
Rutherford	149	172	118	163	9%
Scott	7	23	6	15	53%
Sequatchie	5	4	4	2	-150%
Sevier	72	78	50	56	-29%
Shelby	1,589	1,686	1,488	1,241	-28%
Smith	4	9	22	10	60%
Stewart		5		2	100%
Sullivan	39	63	52	48	19%
Sumner	101	76	84	69	-46%

Tipton	62	47	62	44	-41%
Trousdale	2	3	4	1	-100%
Unicoi	8	16	17	8	0%
Union	32	20	16	8	-300%
Van Buren	2	3	2	3	33%
Warren	16	16	16	14	-14%
Washington	101	155	89	70	-44%
Wayne	3	7	3	4	25%
Weakley	15	18	4	4	-275%
White	11	7	6	6	-83%
Williamson	53	51	51	100	47%
Wilson	44	64	38	35	-26%

Note:

Primary Diagnosis code for ICD-9 beginning with (493) or ICD-10 beginning with (J44, J45) was used to identify asthma patient

Data Source: Hospital Discharge Data System, 2011-2016. Office of Healthcare Statistics, Division of Policy, Planning and Assessment, Tennessee Department of Health. Nashville, Tennessee.

This is one of four final topic reports of the Tennessee Tobacco Settlement Program prepared in 2018 by Tennessee Department of Health, Bruce Behringer, Deputy Commissioner for Continuous Improvement and Training Emeritus.