



## Strengthen the Evidence Base for Maternal and Child Health Programs

# Smoking in the Household

**Smoking** is one of 15 Maternal and Child Health (MCH) National Performance Measures (NPMs) for the State Title V MCH Services Block Grant program. The goal of **NPM 14.2: Smoking—Household** is to decrease the percent of children, ages 0 through 17, who live in households where someone smokes. The purpose of this evidence review is to identify evidence-based and evidence-informed strategies that MCH programs can implement to reduce child exposure to secondhand smoke (SHS) or environmental tobacco smoke (ETS)<sup>1</sup>. Interventions range from individual-level counseling and educational efforts to large, population-based policies such as smoking bans, smoke-free policies, and cigarette taxes.

This review focuses primarily on individual-level interventions to reduce child exposure to SHS in the household. The full report and supplemental implementation resources can be found at: [www.mchevidence.org/documents/reviews/npm-14.2-smoking-household.pdf](http://www.mchevidence.org/documents/reviews/npm-14.2-smoking-household.pdf), and [www.mchevidence.org/tools/npm/14-smoking.php](http://www.mchevidence.org/tools/npm/14-smoking.php). This review was conducted as part of Strengthen the Evidence Base for MCH Programs, a Health Resources and Services Administration (HRSA)-funded initiative that aims to support states in their development of strategies to promote the health and well-being of MCH populations.

## Background

In 1972, the United States (US) Surgeon General first addressed the topic of “passive smoking” or “involuntary smoking” and its health consequences (USDHEW, 1972). Substantial evidence has led to the conclusion that SHS is a known human carcinogen and exposure causes adverse health effects for children and adults alike. While workplace restrictions have protected the majority of adults, reductions have been slower for children with homes remaining the primary source of SHS exposure (SHSe) (USDHHS, 2006). Although levels of SHSe keep declining, children were the sub-group with the smallest rate of decline (Schober et al., 2008). With more than 23 million (about 35%) of children in the US exposed to SHS (CDC, 2018), the adverse health effects are pervasive and severe.

**National survey data.** Data from the National Survey of Children’s Health (NSCH) are used to monitor progress toward the goal of decreasing the percent of children who live in households where someone smokes. The most recent data from the 2017-2018 survey revealed that 14.9% of children live in a household where someone smokes.<sup>2</sup> Given that SHS may be a particular risk for children and youth with special health care needs (CYSHCN) given their chronic health conditions, looking by

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<sup>1</sup> Secondhand smoke is the combination of the smoke given off by a burning tobacco product and the smoke exhaled by a smoker ([https://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/secondhand\\_smoke/general\\_facts/index.htm](https://www.cdc.gov/tobacco/data_statistics/fact_sheets/secondhand_smoke/general_facts/index.htm)). It is also called environmental tobacco smoke, involuntary smoke, and passive smoke (<https://www.cancer.gov/about-cancer/causes-prevention/risk/substances/secondhand-smoke>).

<sup>2</sup> Data were obtained from the October 2019 NSCH Title V Block Grant Measure Fact Sheet at <https://mchb.hrsa.gov/sites/default/files/mchb/Data/NSCH/NSCH-factsheet-2019.pdf> and from using the interactive data search for the 2017-2018 NSCH at <https://www.childhealthdata.org/browse/survey>

## ONLINE TOOLS

The report is supplemented by implementation resources for Title V programs that can be found in the MCH Evidence website's NPM 14 Toolkit at <https://www.mchevidence.org/tools/npm/14-smoking.php>. These resources include links to introductory information, a summary of the evidence, examples of promising practices, sample evidence-based or informed strategy measures (ESMs), links to current, related ESMs in process across the country, learning opportunities, and resources from the leading.



special health care needs status, 19.7% of CYSHCN live in a household that uses tobacco as opposed to 13.8% of non-CYSHCN.<sup>3</sup> This is a marked decrease from the 2007 NSCH<sup>4</sup> which reported 30.3% of CYSHCN living in a household where someone smokes and 25.2% of non-CYSHCN living in a household with a smoker;<sup>5</sup> however, there is an urgent need to further diminish SHSe for all children.

## Methods and Results

For this evidence review, 89 peer-reviewed studies met the inclusion criteria.<sup>6</sup> These studies examined the effectiveness of interventions aimed at reducing the primary outcomes of children's exposure to SHS in the household and/or caregiver smoking cessation. These studies were categorized into interventions in community-based and clinic-based settings and with well- and ill-child target populations. Program characteristics were identified for each study, and a roster of 11 key components (A-K) were used to describe intervention strategies used in the studies (see table with intervention components listed from most ("A") to least ("K") prevalent).

**Intervention clusters and evidence continuum.** Each study was characterized by its intervention components<sup>7</sup> (e.g., A + B + C + D = In-person counseling + educational materials + telephone counseling + home visits).

### Distribution and Description of Intervention Components

LETTER	INTERVENTION COMPONENT	N = 89 STUDIES	DESCRIPTION OF INTERVENTION COMPONENT
A	<b>In-person counseling</b> <ul style="list-style-type: none"> <li>Community/well (30)</li> <li>Community/ill (12)</li> <li>Clinic/well (20)</li> <li>Clinic/ill (11)</li> </ul>	<b>73 (82%)</b>	Counseling focused on motivation to quit or reduce household SHS, and on problem-solving. These interventions used a variety of theoretical frameworks including motivational interviewing, cognitive behavioral therapy, psychotherapy, empowerment ideology, and relaxation techniques. Counseling also differed by level of individualization (standard advice vs. customized information), frequency, and duration.
B	<b>Educational materials</b> <ul style="list-style-type: none"> <li>Community/well (33)</li> <li>Community/ill (7)</li> <li>Clinic/well (19)</li> <li>Clinic/ill (9)</li> </ul>	<b>68 (76%)</b>	Education materials provided information about the risks of smoking and advice to quit. They differed by type (novellas, magnets, self-help manuals), content (how to create a home smoking ban, harm of SHS, where to access nicotine replacement therapy (NRT)), delivery (health care provider, home visitor, school, or mailed from 2-1-1 program), and volume/frequency (multiple mailings, single fact sheet).

<sup>3</sup>Data were obtained using the interactive data search for the 2017-2018 NSCH at <https://www.childhealthdata.org/browse/survey>

<sup>4</sup>The NSCH was redesigned between 2012 and 2015.

<sup>5</sup><https://mchb.hrsa.gov/nsch/07cshcn/national/2chf/1hdr/pages/01sh.html>

<sup>6</sup>Refer to the full report for the inclusion criteria and citations for the 89 included studies.

<sup>7</sup>While the focus of this review is on studies where these intervention components have been combined in various ways, there is limited evidence of the effectiveness of the positive impact of these components when used on their own. Previous systematic reviews have demonstrated that individual counseling can increase cessation rates and advice from a physician may have a positive effect in triggering quit attempts; otherwise, the evidence has not been well-established for the other individual intervention components.

Distribution and Description of Intervention Components			
LETTER	INTERVENTION COMPONENT	N = 89 STUDIES	DESCRIPTION OF INTERVENTION COMPONENT
C	<b>Telephone counseling</b> <ul style="list-style-type: none"> <li>• Community/well (27)</li> <li>• Community/ill (5)</li> <li>• Clinic/well (8)</li> <li>• Clinic/ill (7)</li> </ul>	<b>47 (53%)</b>	Telephone counseling might be a primary, ancillary, or follow-up component and might also include client-initiated contact. Interventions differed by frequency of calls, duration of intervention, inclusion of in-person counseling, focus (quitting vs. implementing a home smoking ban) and program model (2-1-1 call center; behavioral counseling).
D	<b>Home visits</b> <ul style="list-style-type: none"> <li>• Community/well (23)</li> <li>• Community/ill (12)</li> </ul>	<b>35 (39%)</b>	A trained home visitor delivered services within the home to family members. Interventions differed by purpose (education, delivery of materials, counseling), topic (home smoking ban, asthma management), target audience (parents, fathers), type of home visitor (community health worker, nurse), duration, length, and frequency.
E	<b>Cotinine and/or SHSe (air quality) feedback</b> <ul style="list-style-type: none"> <li>• Community/well (11)</li> <li>• Community/ill (4)</li> <li>• Clinic/well (4)</li> <li>• Clinic/ill (4)</li> </ul>	<b>23 (26%)</b>	Studies provided personalized feedback to caregivers on cotinine levels and/or household air quality (SHS concentrations). Measurement of cotinine differed by type (hair, saliva, or urine), frequency, setting for obtaining measures (clinic vs. home), and target (adult and/or child). Measures of air quality feedback differed by type (continuous lights and brief sound alerts based on fine particle levels in “real time” vs. personalized feedback on SHS concentrations at specific time intervals).
F	<b>NRT information and/or access</b> <ul style="list-style-type: none"> <li>• Community/well (6)</li> <li>• Community/ill (3)</li> <li>• Clinic/well (4)</li> <li>• Clinic/ill (1)</li> </ul>	<b>14 (16%)</b>	Nicotine replacement therapy (NRT) gives the smoker nicotine—in the form of gum, patches, sprays, inhalers, or lozenges—but not the other harmful chemicals in tobacco. Interventions differed by how and where the parent received NRT (health care provider, community-based program), duration, and whether it was offered for free or for a fee.
G	<b>School-based</b> <ul style="list-style-type: none"> <li>• Community/well (4)</li> <li>• Community/ill (1)</li> </ul>	<b>5 (6%)</b>	The school-based component included programs where counseling was sponsored by the school, and/or where materials were distributed to families via the school.
H	<b>Air purifiers in home</b> <ul style="list-style-type: none"> <li>• Community/well (2)</li> <li>• Community/ill (2)</li> </ul>	<b>4 (4%)</b>	Air purifiers have been used to reduce indoor air pollution in homes of smokers with children. Interventions differed by type of purifier, number of purifiers per home, and length of time purifiers stayed in the home.
I	<b>Group counseling</b> <ul style="list-style-type: none"> <li>• Community/well (3)</li> </ul>	<b>3 (3%)</b>	Group counseling focused on motivation to quit smoking, social support, and/or acquisition of problem solving skills. Interventions differed by theoretical frameworks, setting (school, community center), participants (parent-child dyad, adults only, mothers), structure (regular sessions, drop-in), frequency, and duration.
J	<b>EHR prompt and referral</b> <ul style="list-style-type: none"> <li>• Clinic/well (2)</li> </ul>	<b>2 (2%)</b>	The electronic health record (EHR) prompt and referral focused on improving provider adherence to American Academy of Pediatrics best practice guidelines of ask, advise, and refer (AAR) by embedding assessment prompts and clinical decision aids within the EHR to improve the quality and workflow for clinical interventions and referral to individualized, telephone-based behavioral counseling.
K	<b>Text messages</b> <ul style="list-style-type: none"> <li>• Community/well (1)</li> </ul>	<b>1 (1%)</b>	Text messages are a part of mobile-phone based education to help create smoke-free homes and increase quitting. The content, frequency, and duration could vary.

Then the studies were grouped to form clusters with the same intervention “signature.” Each study received a rating of effectiveness based on its own merit and each intervention cluster was rated for its overall level of evidence. The clusters were then placed along a continuum from *evidence against* (least favorable) to *scientifically rigorous* (most favorable).<sup>8</sup>

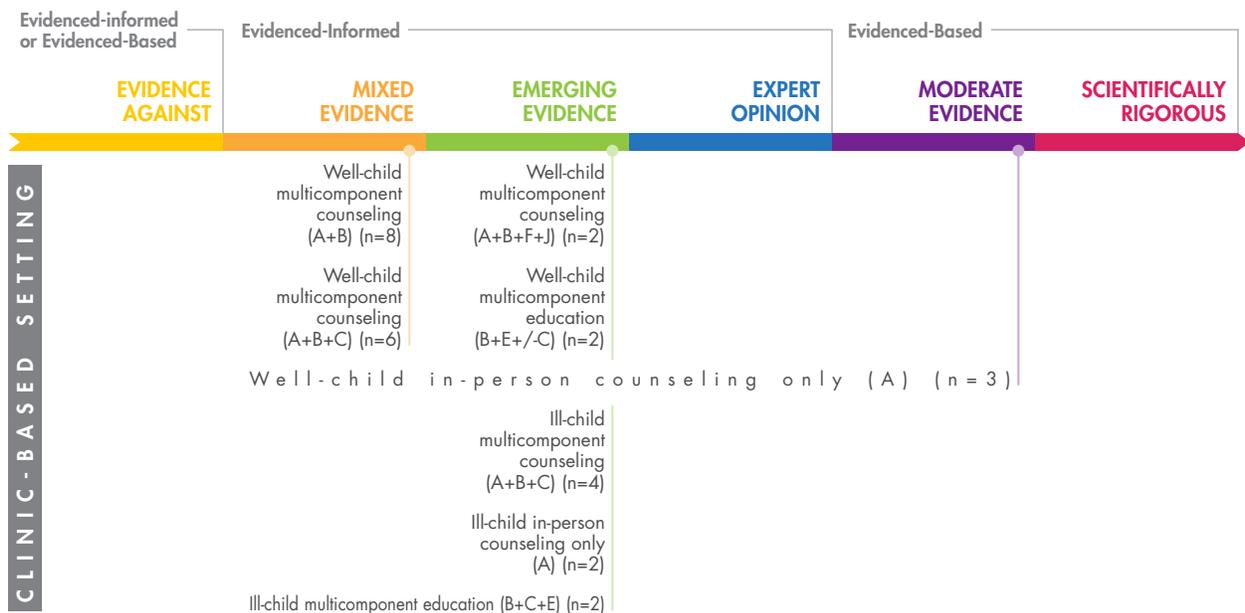
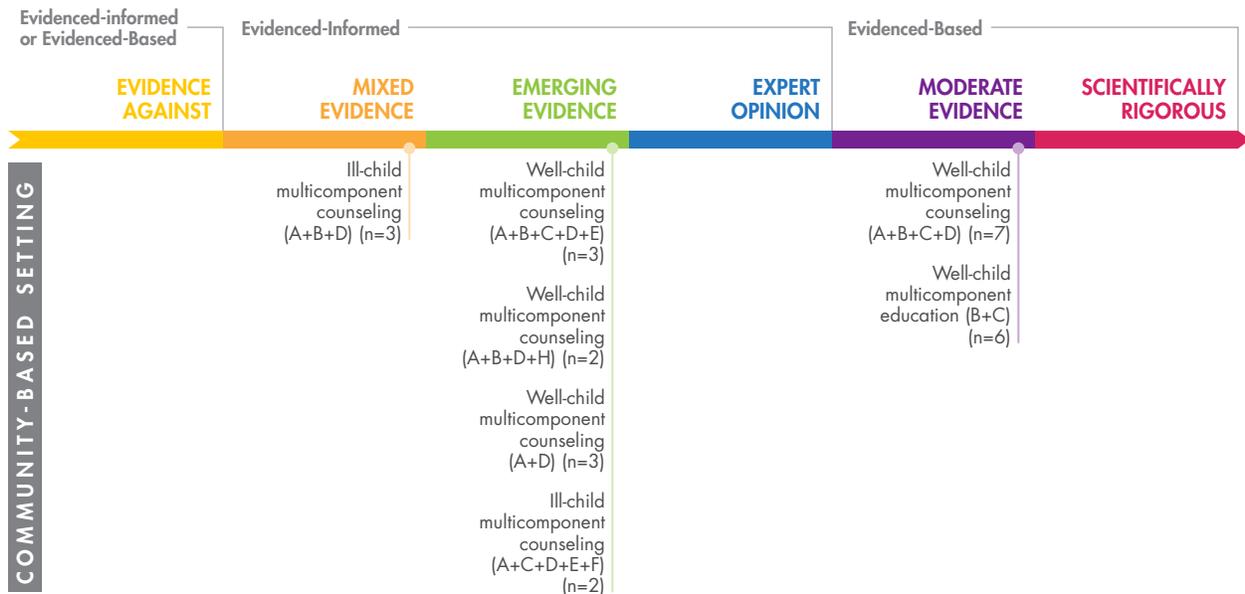
<sup>8</sup>Refer to the full report for a listing of studies for each cluster.

## Key findings

Overall, 14 key findings emerged from the analysis in 3 distinct areas.

### A. Descriptive analysis of the interventions:

- Interventions tended to take place in community-based or clinical health care settings and were provided in the context of well- or ill-child visits.
  - With the ill-child target population, the majority of studies were focused on children



- with asthma. Infants who graduated from the neonatal intensive care unit and children with cancer were also the focus of interventions.
- With the well-child visits, the target populations tended to be infants, toddlers and preschool-age children, school-aged children, families from disadvantaged backgrounds, and those from underrepresented racial and ethnic backgrounds.
- Standalone counseling and/or educational interventions were rare. Most interventions were multi-component.
  - An array of multi-component counseling-based interventions were tested that provide motivation to quit, support to increase problem solving and coping skills, and incorporate models of change to support parental or caregiver smoking cessation. The dosage, intensity, and delivery varied greatly across studies.

4. An array of multi-component education-based interventions were also tested wherein parents or caregivers were provided with information about the risks of smoking, including the effects of SHS on children, and advice to quit; however, they were not given further support or advice about how to make this change to smoking cessation.
5. Eleven intervention components were identified from the included studies: in-person counseling, educational materials, telephone counseling/follow-up, home visits, cotinine and/or SHSe (air quality) feedback, NRT and/or access to information, school-based component, air purifiers in the home, group counseling, EHR prompt and referral, and text messages.
  - a. The top three most frequently used components across settings were in-person counseling (73 studies; 82% overall), educational materials (68 studies; 76% overall), and telephone counseling/follow-up (47 studies; 54% overall). For each specific setting, in-person counseling was either the first or second most frequently used component.
  - b. Some of the less frequently used intervention components – EHR prompts and referrals, text messages, real time air quality feedback, and air purifiers—all use rapidly developing technologies. Future advances may increase their utilization and effectiveness.
6. Counseling, in all of its different iterations (in-person, telephone, group, home-based, clinic-based, school-based), was overwhelmingly the most frequently used strategy across all settings (85 studies; 96%). Only 4 of the 89 studies (4%) did not have a variation of counseling as an intervention component. Counseling was oftentimes coupled with educational materials and other components to form a multi-component intervention.
7. The studies examined the effectiveness of interventions aimed at reducing the primary outcomes of child exposure to SHS in the household and/or parent/caregiver smoking cessation.
  - a. More specifically, the interventions tended to focus on achieving change for the following child/parent/family outcome measures:

household smoking ban, vehicle smoking ban, cigarette consumption, quit rates, cotinine levels,<sup>9</sup> parental smoking in the presence of children, children’s SHS avoidance behavior, maternal or paternal exposure to SHS, provider adherence to AAR guidelines, family functioning,<sup>10</sup> home environment, particulate matter, knowledge/attitudes, access to care,<sup>11</sup> and caregiver quality of life.

#### B. Evaluation methods used by researchers:

1. Researchers tended to use 3 methods to evaluate SHSe including:
  - a. Questionnaires and/or self-reports,
  - b. Measures of concentrations of the airborne components of SHS (air particulate matter, carbon monoxide levels), and
  - c. Measurements of biomarkers (hair, saliva, or urine cotinine measurements) with strengths and limitations to each technique.
2. The majority of studies used both self-report measures and biochemical verification as data sources. Although biochemical feedback was used as an outcome measure, it was also an intervention component with parents or caregivers given either real time or delayed feedback and information about the levels of SHSe (air quality) and/or their children’s health status via cotinine feedback at different study intervals.

#### C. Findings from the included studies:

1. Of the 89 studies included in this evidence review:
  - a. The rating of *scientifically rigorous* was given to 1 study (1%),
  - b. The rating of *moderate evidence* was given to 13 studies (15%),
  - c. The rating of *emerging evidence* was given to 46 studies (52%),
  - d. The rating of *mixed evidence* was given to 28 studies (31%), and
  - e. The rating of *evidence against* was given to 1 study (1%)<sup>12</sup>.
2. The ability to compare studies was limited due to variability in the target population, intervention design, comparison group, setting, and outcome. Although like studies were grouped into clusters,

<sup>9</sup>Hair, urine, and/or saliva cotinine levels; for child and/or caregiver.

<sup>10</sup>Defined as a greater sense of competence in parenting.

<sup>11</sup>Access to health department services.

<sup>12</sup>In the full report, refer to Table 2: Evidence Rating Criteria for more descriptive information on the ratings.

no two studies were the same. It was also often difficult to figure out why a study with the same configuration of components led to positive results while another reported mixed results. Future research should report on intervention fidelity and reach into the study population.

3. There was primarily *emerging evidence* and *mixed evidence*<sup>13</sup> regarding interventions to decrease child exposure to SHS in the house.
  - a. *Emerging evidence* and *mixed evidence* were found across settings and with different configurations of components.
  - b. Over a third of the studies reported positive effects in favor of the intervention with 33 of 89 studies reporting statistically significant findings.
  - c. For children, study results described whether interventions were successful or unsuccessful in reducing child exposure to SHS, absorption of ETS and changes in cotinine exposures, health status (e.g., frequency of illness events, respiratory problems), and health care utilization (e.g., asthma-related medical visits, hospital admissions).
  - d. Outcomes for parents and caregivers focused on changes in smoking behavior including quit attempts, cessation, reduction, or uptake using self-reports and/or biochemically validated measures, adoption of home and/or vehicle smoking bans, and quality of life measures.
4. The highest level of evidence (*moderate evidence*) was found for intervention types in the community-based, well-child setting via:
  - a. Multi-component counseling-based interventions consisting of in-person counseling + educational materials + home visits + telephone counseling/follow-up, and
  - b. Multi-component education-based interventions with educational materials + telephone counseling/follow-up.
5. Overall, intervention designs that used in-person counseling + educational materials seemed to yield the most promising results with ratings of *scientifically rigorous*, *moderate evidence*, or *emerging evidence* (46 of 89 studies).

## Highlights of Effective Intervention Studies

Below are descriptions of 6 studies that showed positive results, and illustrate the wide range of intervention strategies that are being tested to reduce SHSe for children, including those with health problems.

### #1: Example of an evidence-based program to reduce tobacco exposure through a 2-1-1 call center.

Bundy (2018) tested the effectiveness of using 2-1-1 organizations to establish smoke-free homes. Five 2-1-1 call centers enrolled a total of 2,345 households from predominantly low SES communities. The intervention consisted of three mailings and one brief coaching call. The first mailing contained a 5-step guide to a smoke-free home and a quit-line number. Two weeks later, participants receive a coaching call structured around 5 steps to making a smoke-free home. The second mailing contained a booklet on challenges and solutions and a *photo novella* (comic-book story format) depicting a family making their home smoke-free. The last mailing included a newsletter with testimonials.

*Results:* At follow-up, the majority of families reported establishing a full household smoking ban and reported increases in smoke-free vehicles. Also at follow-up, smokers reported statistically significant decreases in cigarette consumption.

### #2: Example of an evidence-informed smoking cessation intervention offered to parents in their children's schools.

Caldwell (2018) recruited 453 parent smokers (predominantly African American from low income urban and rural communities) whose 4th grade children were enrolled in a tobacco prevention program in their schools. Parents in the intervention group received 8 motivational interviewing sessions, 8 weeks of nicotine replacement therapy, self-help brochures based on level of readiness to quit, and 3 follow-up phone counseling calls.

*Results:* The intervention group achieved and maintained statistically significant higher quit rates, based on self-report and biochemical verification, through year 4.

<sup>13</sup>This conclusion is in alignment with the Robert Wood Johnson Foundation What Works for Health rating of mixed evidence for SHS education interventions: <https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/policies/secondhand-smoke-education-interventions>

**#3: Example of an evidence-based program to reduce tobacco exposure using group counseling.**

Chen (2016) tested the effectiveness of a school-based program in Taiwan using group counseling (3 sessions) with 48 parent/child pairs. In session 1, parent/child pairs learned about strategies to reduce SHS, and played a trivia game to reinforce the information. In session 2, parent/child pairs formulated a plan for implementing a smoke-free home, and composed a written contract. In session 3, parent/child pairs evaluated their attempts to create and maintain a smoke-free home. Families also received an interactive self-help booklet, feedback on their child's cotinine level, and an individual counseling phone call at 4 weeks after the group sessions ended.

*Results:* The percentage of children with high cotinine levels was significantly lower in the intervention group at both the 8-week and 6-month assessments. The intervention significantly reduced parental smoking in the presence of children and increased parents' prevention of children's SHSe and children's SHS avoidance behavior from the baseline to the 20-week assessment.

**#4: Example of an evidence-informed well-child clinic-based intervention to reduce tobacco exposure.**

Collins (2018) trained 334 pediatric providers in a low income urban minority community to adhere to best practice AAR (ask, advise, refer) guidelines by using decision aid prompts embedded in routine electronic health records. Smoking parents received referral to 5 sessions of telephone counseling and NRT prescriptions.

*Results:* Over 80% of the providers adhered to AAR guidelines and faxed referrals for parents who smoke. Treatment effects for participating parents were robust: More parents who received AAR + counseling (versus AAR only) eliminated all sources of tobacco smoke exposure and quit smoking.

**#5: Example of an evidence-based program to reduce tobacco exposure among asthmatic Latino children.**

Hovell (2002) recruited the parents of 204 asthmatic Latino children (ages 3-17) to participate in the study. All received asthma management education in 1 or 2 home visits. In addition, the intervention group received 7 coaching sessions (approximately 45 minutes each) over 3 months to reduce their child's exposure to SHS.

*Results:* Asthma management education plus coaching reduced exposure to SHS more than asthma management alone. Intervention parents reported that their children were exposed to significantly fewer cigarettes than control parents by 4 months (post-coaching).

**#6: Example of an evidence-informed program to reduce tobacco exposure through a mobile-phone based smoking cessation intervention.**

Yu (2017) assessed whether an intervention incorporating traditional and mobile-phone based education using text messages would help create smoke-free homes in China. The study had 2 intervention arms with one group receiving in-person counseling and educational materials, and a second group receiving the same intervention along with 3 text messages a day for one month describing the harms of SHS.

*Results:* Among the participating families, smoking abstinence at 6 and 12-month follow-up was significantly higher in the group that received text messages. Exposure rates to SHS among mothers was significantly decreased at 12-month follow-up in the group that received the text messages.

## From Evidence to Action

This review is part of a series of scholarly works focused on each NPM to identify and describe evidence-based and informed strategies from peer-reviewed and grey literature. The 89 studies analyzed in this review provide an overview of the scientific literature that can inform Title V program design, implementation, and measurement in reducing children's exposure to SHS. Currently, 14 states and jurisdictions have chosen smoking in the household as one of their NPMs.

There are 18 evidence-based or informed strategy measures (ESMs) that have been chosen by Title V agencies to monitor progress in advancing NPM 14.2. These ESMs fall into three categories:

- 2 ESMs focus on training and technical assistance activities directed to professionals,
- 9 ESMs focus on activities directed to families and their children (e.g., outreach materials to families, family-to-family support, development of care coordination plans), and
- 7 ESMs relate to systems-building (e.g., engagement of stakeholder groups, quality improvement initiatives, collaboration between systems of care).

Findings from this report—specifically the evidence-based and evidence-informed interventions identified—can be used by Title V programs as models to strengthen current ESMs or develop new measures to affect change for each of these categories.

Against a matrix of the “MCH Pyramid,” the conceptual framework for services of the Title V MCH Block Grant program, of the 18 ESMs that focus on NPM 14.2:<sup>14</sup>

- 3 measure activities related to public health services and systems (foundational level of the pyramid), and
- 15 measure strategies related to enabling services (middle level of the pyramid).
- No Title V programs are currently funding strategies related to direct services in regards to reducing SHSe in the home (gap-filling level of the pyramid).

The MCH Evidence Center uses Results-Based Accountability (RBA)<sup>15</sup> as a conceptual framework to track how ESMs are measured. This framework consists of increasing levels of measurement across four quadrants (Quadrant 1 being the simplest measurement and Quadrant 4 being the most complex). States and jurisdictions should focus efforts in expanding how they measure programs by moving up the RBA quadrant scale.<sup>16, 17</sup>

- 17 smoking in the household ESMs measure effort:
  - 9 ESMs fall within Quadrant 1 (measuring the quantity of agency effort) and answer the question “what did we do?” (e.g., counts and “yes/no” activities).
  - 8 ESMs fall within Quadrant 2 (measuring the quality of effort) and answer the question “how well did we do it?” (e.g., reach, quality of materials, satisfaction of intervention).
- 1 current smoking in the household ESM measures effect (e.g., increases in skills/knowledge, change in behavior or circumstance):
  - No ESMs fall within Quadrant 3 (measuring the quantity of the effect) to answer the question “is anyone better off?” (e.g., numbers of providers with increased knowledge).
  - 1 ESM falls within Quadrant 4 (measuring the quality of the effect) and answer “how are they better off?” (e.g., percentages of families whose self-efficacy improved).

The MCH Evidence Center has developed a framework, tips, and resources to support Title V agencies in implementing evidence-based and evidence-informed program strategies and assessing complex outcomes to reduce children’s exposure to SHS. An NPM 14: Smoking Toolkit is available at <https://www.mchevidence.org/tools/npm/14-smoking.php>. Email us with questions, comments, and requests for technical assistance at [mchevidence@ncemch.org](mailto:mchevidence@ncemch.org).

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<sup>14</sup>The conceptual framework for the services of the State Title V MCH Block Grant is envisioned as a pyramid with three tiers of services and levels of funding that provide comprehensive services. A goal is to “move on down” the pyramid with more states and jurisdictions engaging in public health services and systems. See <https://mchb.tvvisdata.hrsa.gov/Glossary/Glossary> for a graphical representation of the pyramid.

<sup>15</sup>RBA is described in the RBA Implementation Guide <http://raguide.org/index-of-questions/>

<sup>16</sup>ESM Review & Resources: National Summary <https://www.mchevidence.org/documents/ESM-Review-National-Summary.pdf>

<sup>17</sup>To search the MCH Library to find state ESMs, visit: <https://www.mchlibrary.org/evidence/state-esms.php>