

***Smoke-Free
Families:***

State of the Science
Capstone Meeting

Conference Report, October 18–19, 2006



Robert Wood Johnson Foundation

Purpose of this Paper

On October 18 and 19, 2006, the Robert Wood Johnson Foundation (RWJF) sponsored a *State of the Science Capstone Meeting* for its national program *Smoke-Free Families: Innovations to Stop Smoking During and Beyond Pregnancy*.

The purpose of this conference was to convene the researchers, practitioners and advisers involved in *Smoke-Free Families* for reviews of the program's accomplishments, presentations of recent research findings and, as this RWJF-funded program winds down, discussions of directions for the future.

The meeting was planned and managed by the staffs of the Smoke-Free Families national program office at the University of Alabama at Birmingham and the national dissemination office at the University of North Carolina, led by their respective directors, Robert L. Goldenberg, M.D., and Cathy L. Melvin, Ph.D., and deputy directors Trinita Hall Ashford, M.P.H., and Catherine L. Rohweder, Dr.P.H.

This paper presents the key points discussed at this meeting, including the findings from research conducted under the auspices of Smoke-Free Families, the current (fall 2006) environment for tobacco control, the research questions that now need answers and the funding options that might support this research. Together, the presentations at the meeting provide a clear picture of the advances made—and the work that remains—in reducing the impact of tobacco on pregnant women and young families.

The Smoke-Free Families National Program

The meeting began with an overview of the history and accomplishments of Smoke-Free Families.

Dianne C. Barker, M.H.S., of Barker Bi-Coastal Health Consultants, the original RWJF program officer for Smoke-Free Families and now chair of the Smoke-Free Families national advisory committee, explained that RWJF had funded the program in 1993 to help women quit smoking before, during and after pregnancy by supporting both research into new interventions, and dissemination of this research into practice.

Over the duration of Smoke-Free Families funding period, Barker continued:

- The percentage of pregnant women who smoke has fallen from between 15 and 20 percent to 10 percent in 2004.
- There have been substantial increases in the percentages of smokers who report their physicians have advised them to quit, and in the number of state Medicaid programs covering at least one form of tobacco-cessation treatment.
- The percentage of health plans with tobacco-use cessation strategies related to pregnancy increased, from 45 percent in 1997 to 69 percent in 2003.
- There are now 51 tobacco quitlines, one in each state and the District of Columbia, and 38 of these use pregnancy-specific protocols.
- The national and state focus on tobacco-use cessation has increased, partly as a result of the publication in 2000 of the U.S. Public Health Service (USPHS) evidence-based clinical practice guideline, *Treating Tobacco Use and Dependence*, and the Centers for Disease Control and Prevention's (CDC) *Community Guide to Preventive Services*, increases in new monies for tobacco control to support comprehensive tobacco-control programs, improved tobacco-use surveillance, and more formal collaboration across tobacco-control stakeholders.

RWJF chose to target pregnant and postpartum women in its first cessation program for several reasons, including the potential to reach a low-income, vulnerable population during consecutive prenatal visits, and the evidence indicating high returns on investment, both in health improvements and cost savings.

Through Smoke-Free Families, RWJF sought to support both the development of effective interventions, through research, and then the translation of this research into practice (recognizing the need to build a policy environment that would support such work).

Smoke-Free Families has had three phases, supporting studies that:

- Established best practices in reducing smoking by pregnant women and identified the necessary adjuncts to make these best practices work.
- Further tested and then refined the best practices so they could be fully implemented.
- Developed the interventions that would spread the best practices to additional populations, and that would support health system change.

The results of the first two phases of Smoke-Free Families have been published in special issues of the journals *Tobacco Control* and *Nicotine and Tobacco Research* that are available via the Smoke-Free Families [Web site](#).

RWJF Distinguished Fellow, Senior Program Officer and Senior Scientist C. Tracy Orleans, Ph.D., then described the conceptual construct of the Smoke-Free Families program, the model that was developed to design a program that would, as Barker noted, support both the development of effective interventions and their adoption. The model, Orleans explained, has three parts:

- The “push,” the development of the intervention science. In Smoke-Free Families, this work was spearheaded by the national program office of the University of Alabama at Birmingham.
- A middle step that involves building the capacity to deliver this evidence-based treatment. In Smoke-Free Families, recognition of the importance of this phase led to the establishment of a national dissemination office housed at the University of North Carolina, close collaboration with another RWJF-funded program: *Addressing Tobacco in Managed Care*, and, in 2001, the creation of the *National Partnership to Help Pregnant Smokers Quit*, also supported by RWJF.
- Finally, there is a need for intervention, “pull,” or demand: the creation of demand by the health care market and by consumers for these proven interventions. This piece of the Smoke-Free Families project saw collaboration among Smoke-Free Families’ national program and dissemination offices, the *National Partnership to Help Pregnant Smokers Quit* and several national and state tobacco-control stakeholders, including the American College of Obstetricians and Gynecologists (ACOG), the Association of Maternal and Child Health Programs (AMCHP), the American Legacy Foundation, the *Campaign for Tobacco Free Kids*, CDC and others.

Assessments of the results of this model formed the remainder of the capstone meeting, as the researchers, managers and practitioners looked back at what had been learned, and forward towards new directions in the effort to help pregnant women and young families become, and remain, smoke-free.

The Smoke-Free Families capstone meeting had three parts:

- **Presentations on the state of the science, the evidence base developed under the auspices of *Smoke-Free Families*.** These presentations discussed both specific, science-based interventions to help pregnant smokers quit and what the research has shown about how best to expand the reach and impact of these interventions.
- **Exploration of major developments in the policy environment that affect all tobacco-use cessation efforts.** The meeting began with a presentation on the recent Surgeon General's report on the impact of second-hand smoke by Ann Malarcher, Ph.D., M.S.P.H., acting chief of the Epidemiology Branch of the CDC's Office on Smoking and Health. Later in the meeting, Michael Fiore, M.D., M.P.H., of the University of Wisconsin and chair of the panel currently revising the U.S. Public Health Service's (USPHS) clinical practice guideline, described the guideline review process and plan.
- **Discussion of future directions for the work on smoking, pregnant women and young families, as the Smoke-Free Families program winds down.** Participants spoke about plans for the ongoing work of the National Partnership to Help Pregnant Smokers Quit, open research questions and opportunities to address them through funding offered by the major governmental and private agencies interested in tobacco-use cessation.

The specific information presented in each part of the meeting is summarized below.

Science-Based Interventions to Help Pregnant Smokers Quit

1. Best-practice prenatal counseling in clinical settings

In beginning the review of the science, Cathy Melvin, national dissemination office director, stressed that:

- The science shows us that augmented counseling as a routine part of prenatal care works. A five- to 15-minute counseling session delivered by a trained provider with the provision of pregnancy-specific self-help material increases cessation rates by 30 to 70 percent.
- We need to redouble our efforts at disseminating these findings and interventions throughout the health care delivery system.

Melvin then cited five recent (2000–2004) reviews of tobacco use, women and pregnancy that led her to this conclusion.

- The 2000 USPHS clinical practice guideline, *Treating Tobacco Use and Dependence*, which published a meta-analysis of randomized controlled trials published between 1975 and 1998 and found that extended or augmented counseling of pregnant women results in a three-fold likelihood that these women will quit smoking. USPHS staff then recommended a clinical practice application of these findings, published in the guideline, that stresses the need for support from prenatal clinicians as well as other social support, ongoing assessment throughout pregnancy and relapse-prevention strategies in the early postpartum period.

- *Women and Smoking, a Report of the Surgeon General*, published in March 2001, which reviewed randomized controlled trials published between 1976 and 1998 and found that pregnancy-specific programs can increase smoking-cessation rates and benefit infants—and generate substantial cost savings.
- Melvin’s own review (with colleague Cecilia Gaffney, M.Ed.), “Treating Nicotine Use and Dependence of Pregnant and Parenting Smokers,” published in 2004, of randomized, controlled-intervention trials for individual pregnant smokers published between January 1999 and March 2003. Melvin and Gaffney’s findings were consistent with those published in the USPHS clinical practice guideline and the 2001 Surgeon General’s report, that for women who are light to moderate smokers, the treatment recommended in 2000 is still consistent with the literature: that augmented prenatal care counseling offers an efficacious and safe approach to improving quit rates among pregnant smokers.
- A 2005 *Cochrane Review*¹ of randomized and cluster-randomized² trials of smoking-cessation programs in pregnancy, published between January 2002 and July 2003. This review found significant reduction in smoking in the intervention group for all trials. It also found that the smoking-cessation interventions reduced both low birthweight and pre-term birth. In a small number of studies, offering rewards and social support resulted in significantly greater smoking reduction than other strategies.
- An Agency for Health Care Research and Quality (AHRQ)-sponsored Evidence-Based Practice Center³ review, *Tobacco Use: Prevention, Cessation and Control*, published in 2006, synthesized prior reviews and concluded that, even with variation in the intensity of interventions, participants experienced significant continued reduction in smoking prevalence late in pregnancy.

Finally, Melvin reported on the national dissemination office’s recent review of literature published from March 2004 to the present (fall 2006) that found four new studies. Further analysis showed that three of the four studies had similar findings: Augmented counseling is effective in reducing smoking among pregnant women.

2. Pharmacotherapy and its role before, during and after pregnancy

Cheryl Oncken, M.D., M.P.H., of the University of Connecticut Health Center then presented her review of the research on pharmacotherapy during pregnancy. In summary, Oncken reported that more research is needed. No study has yet established the safety or efficacy of the use of any of the pharmacotherapeutic smoking-cessation treatments during pregnancy.

Nicotine replacement is a useful treatment for the general population: Appropriate use of nicotine replacement therapy has been shown to double the quit rates in clinical trials of the non-pregnant population.

Of the different methods of nicotine replacement, Oncken noted that nicotine inhalers have been shown to provide the lowest steady state level of nicotine

1 Lumley et al., *Interventions for Promoting Smoking Cessation During Pregnancy*, Cochrane Collaboration, 2005.

2 A trial in which groups of individuals are randomized, not single individuals.

3 Under the Evidence-based Practice Centers (EPC) Program of the AHRQ, five-year contracts are awarded to institutions in the United States and Canada to serve as EPCs. EPCs review all relevant scientific literature on clinical, behavioral, and organization and financing topics to produce evidence reports and technology assessments. These reports are used for informing and developing coverage decisions, quality measures, educational materials and tools, guidelines, and research agendas. EPCs also conduct research on methodology of systematic reviews.

delivery of all the nicotine-replacement methods. As steady state nicotine exposure is most likely to be harmful to a fetus, the low dose provided by inhalers as a delivery method may make it the most potentially useful during pregnancy.

The research on this and other nicotine-replacement methods is, however, scanty. Oncken reported on one large study⁴ into nicotine patch use that found no overall advantage to the patch, although the study did find that use of the patch correlates to an increase in birthweight.

Oncken herself conducted a study on the use of nicotine gum in pregnancy⁵ that found nicotine gum may be effective as it results in a significant reduction in overall nicotine exposure compared to continued smoking, and also has a favorable effect when compared to smoking on maternal blood pressure and pulse.

The other pharmacological tobacco-use cessation agent that has been studied is Bupropion SR (Zyban). While its use has been shown to enhance quit rates among adult smokers, Bupropion SR is currently a Category B drug for pregnancy because its use during pregnancy has been harmful in rabbits and rats.

One study,⁶ Oncken reported, showed that Bupropion SR use in pregnancy did enhance quit rates, as measured by reduced cotinine levels. The study, however, was small and needs additional follow-up.

There may also be a potential use for Bupropion SR after pregnancy, to increase smoking cessation or to prevent relapses among women who quit while pregnant, but the research has not been done to establish either its safety or efficacy. Nicotine and Bupropion SR are both, also, transmitted in breast milk.

3. Incentives

Stephen J. Higgins, Ph.D., of the University of Vermont then reviewed the research results on the use of incentives in smoking cessation. Higgins summarized the three findings:

- Incentives appear to be a promising tool for reducing smoking among pregnant women.
- Contingency management (increasing incentives as quitting persists over time) appears to contribute to smoking cessation.
- More intensive interventions raise cessation rates.

Higgins cited four studies that led to his conclusions:

- Donatelle et al., 2000,⁷ a Smoke-Free Families-funded study that looked at pregnant women and their response to vouchers for merchandise and services that had been contributed by local businesses. The study results showed a smoking quit rate at eight-months gestation of 32 percent for those receiving vouchers and social support, contingent on biochemically confirmed tobacco abstinence,

4 Wisborg K, Henrikson TB, Jespersen LB and Secher N. "Nicotine Patches for Pregnant Smokers." *Obstetrics & Gynecology*, 96: 967-971, 2000.

5 Oncken CA, Hatsukami DK, Lupo VR, et al. "Effects of Short Term Nicotine Gum Use in Pregnant Smokers." *Clinical Pharmacology Therapy*, 59: 654-661, 1996.

6 Miller H, Ranger-Moore J, Hington M, et al. "Bupropion SR for Smoking Cessation and Reduction in Pregnancy." *American Journal of Obstetrics and Gynecology*, 189: S133, 2003.

7 Donatelle RJ, Prows SL, Champeau D and Hudson D. "Randomized Controlled Trial Using Social Support and Financial Incentives for High Risk Pregnant Smokers: Significant Other Supporter (SOS) Program." *Tobacco Control*, 9 (Suppl. III): iii67-iii69, 2000.

compared to 9 percent for the control group. A follow-up Smoke-Free Families-funded study will soon be completed and reported by these researchers.

- A study currently underway that will be a fully randomized trial of the impact of abstinence-contingent incentives in pregnancy.
- Higgins, 2004,⁸ a study that compared the impact of incentive contingent incentives (in which the value of incentive starts low and increases with time) to non-contingent incentives, found the contingent incentive (i.e., contingent upon confirmed tobacco abstinence) had a greater impact than the non-contingent incentive.
- Lussier et al., 2006,⁹ a meta-analysis of 65 controlled studies from 1991 to 2004 of the use of vouchers and other financial incentives in the treatment of substance use disorders, shows the value of multiple modes of delivery, variation in results that are linked to size of the incentive, and the importance of the timing of incentives, with a clear negative effect from delay in the delivery of the incentive.

These findings, and the substantial and rapid (within nine to 12 months) return on investment from tobacco-use cessation in pregnancy, point to the need for more research and augur well for cost-saving insurance incentives.

4. Interventions to reduce children's exposure to environmental tobacco smoke

Melbourne Hovell, Ph.D., M.P.H., of San Diego State University discussed the mixed results of studies of interventions to reduce children's exposure to environmental tobacco smoke. In his summary, Hovell highlighted that:

- The impact of brief counseling by physicians about the harms associated with exposure to environmental tobacco smoke has not been adequately tested. One Smoke-Free Families-funded study¹⁰ showed some short-term reduction in parental smoking in the home, but this effect was not sustained. Larger studies and a more precise definition of "brief" counseling are both needed.
- Intensive counseling can be efficacious. A 1997 study¹¹ tested the impact of a directed counseling procedure that involved goal-setting, social support and counseling over time. Participants using this full range of services showed the greatest sustained drop in cigarette smoking over 30 months.
- Feedback to patients and providers appear almost as effective as counseling. Two studies¹² showed parallel changes in both the intervention (with counseling) and the control groups. Hovell stressed the need for more cleverly designed trials to clarify the comparative impacts of counseling and merely

8 Higgins ST, Heil SH and Lussier JP. "Clinical Implications of Reinforcement as a Determinant of Substance Use Disorders." *Annual Review of Psychology*, 55: 431-461, 2004.

9 Lussier JP, Heil SH, Mongeon JA, Badger GJ and Higgins ST. "A Meta-Analysis of Voucher-Based Reinforcement Therapy for Substance Use Disorders." *Addiction*, 101: 192-203, 2006.

10 Wall MA, Severson HH, Andrews JA, Lichtenstein E and Zoref L. "Pediatric Office-Based Smoking Intervention: Impact on Maternal Smoking and Relapse." *Pediatrics*, 96: 522-528, 1995.

11 Wahlgren DR, Hovell MF, Meltzer SB, Hofstetter CR and Zakarian JM. "Reduction of Environmental Tobacco Smoke Exposure in Asthmatic Children. A 2-year Follow-up." *Chest*, 111: 81-88, 1997.

12 Conway TL, Woodruff SI, Edwards CC, Hovell MF and Klein J. "Intervention to Reduce Environmental Tobacco Smoke Exposure in Latino Children: Null Effects on Hair Biomarkers and Parent Reports." *Tobacco Control*, 13: 90-92, 2004; and Zakarian JM, Hovell MF, Sandweiss RD, Hofstetter CR, Matt GE, Bernert T, Pirkle J and Hammond SK. "Behavioral Counseling for Reducing Children's ETS Exposure: Implementation in Community Clinics." *Nicotine & Tobacco Research*, 6: 1061-1074, 2004.

providing information on, for example, the cotinine levels found in children living in the households of smokers.

- Feedback systems may sustain change. Hovell cited a final Smoke-Free Families-funded study that looked at evidence of children’s exposure to environmental tobacco smoke up to 12 months after a counseling intervention, and found that the group that received feedback on the cotinine levels in their children kept those levels stable, while the control group saw levels increase dramatically.

Hovell concluded by calling for more sophisticated studies that would account for such possibilities as delayed metabolic reactions to changes in exposure to environmental tobacco smoke. He added that some studies are showing evidence of environmental smoke exposure in children whose parents use tobacco and do not allow smoking in their homes, raising the question of whether the tobacco smoke has widely contaminated the environment.

Questions and Discussion

In discussing these reports, capstone meeting participants raised two issues:

- **Does the impact of either pharmacotherapy or incentives vary depending on whether the woman is a heavy or light smoker?** Oncken reported that light smokers, or women who smoke irregularly, may benefit less from pharmacotherapy than heavy smokers. Higgins added that initial studies of the effect of incentives on light smokers are showing some success. Higgins added that contingency management, the idea of increasing incentives as quitting persists over time, appears not to work as well in women who smoke more than 10 cigarettes per day.
- **Participants then raised the question of investigating women’s smoking behavior postpartum.** Both Oncken and Higgins reported that recruiting postpartum women for research studies is difficult, and that more work is needed to understand effective strategies for women who smoke after they give birth.

Expanding the Reach and Impact of Proven Interventions—Building Capacity and Demand

1. Health care system strategies

Susan J. Curry, Ph.D., of the University of Illinois at Chicago, led off the discussion of how best to work at the population level to ensure the adoption of evidence-based tobacco-use cessation interventions. Curry reported on strategies within the health care system, noting that there are some positive trends and also areas of underutilized treatments.

Health care system strategies that have been most successful are those that support implementation of the “5 As.” Clinicians:

- ASK about smoking status.
- ADVISE their patients to stop smoking.
- ASSESS readiness to quit.
- ASSIST patients with how to quit.
- ARRANGE for treatment services.

Among the existing health system interventions that have supported (and improved) the use of the 5 As, Curry cited:

- Treating smoking status as a vital sign. Something as simple as a smoking status stamp to be filled out in a medical record has been shown¹³ to improve physician counseling patterns.
- Multi-component interventions that combine reminders, provider education and feedback on performance also change provider behavior and improve quit rates.¹⁴
- Increased health system accountability for addressing tobacco, as evidenced by:
 - The three HEDIS® (Health Plan Data and Information Set) measures that evaluate interventions on tobacco use.
 - New standards issued by the Joint Commission on the Accreditation of Healthcare Organizations that require evidence of tobacco-use interventions with patients hospitalized for certain medical conditions.

Curry stressed the need for more transparent and comprehensive health insurance coverage for evidence-based smoking-cessation treatments. Her research and that of others¹⁵ shows increased use of these treatments when plan members are aware that they are covered, and also that treatment use falls as co-payments and other restrictions increase.

For Curry, the real impact will come when an organized delivery system, one that can deliver the appropriate system supports and reminders, is coupled with a sound, comprehensive payment methodology for providers. To that end, she recommends adopting:

- Uniform, portable electronic health records.
- A single-payer insurance system.
- Tobacco-dependency expertise as a basic competency for health care practice.

2. Reaching special populations

With the National Center for Health Statistics showing that American Indian and Alaska Native populations have the highest incidence of smoking during pregnancy, Smoke-Free Families—through the *National Partnership to Help Pregnant Smokers Quit* and the Prenatal Demonstration Projects—have paid special attention to these communities.

At the capstone meeting, LaDonna BlueEye, M.P.H., described the findings of focus groups that shed light on what researchers, program planners and funders should know about tobacco use among Native Americans and Alaska Natives.

- First, attitudes towards tobacco in American Indian communities may differ

13 Ahluwalia JS, Gibson CA, Kenney RE, Wallace DD, and Resnicow K. “Smoking Status as a Vital Sign.” *Journal of General Internal Medicine*, 14(7): 402–408, 1999.

14 Hopkins DP, Briss PA, et al. and The Task Force on Community Preventive Services. “Reviews of Evidence Regarding Interventions to Reduce Tobacco Use and Exposure to Environmental Tobacco Smoke.” *American Journal of Preventive Medicine*, 20(2) (Supplement 1): 16–66, 2001.

15 Curry SJ, Grothaus LC, McAfee T and Pabiniak C. “Use of Cost Effectiveness of Smoking-Cessation Services Under Four Insurance Plans in a Health Maintenance Organization.” *New England Journal of Medicine*. 339(10): 673–679, 1998, and Boyle RG, Solberg LI, Magnan S, Davidson G and Alesci NL. “Does Insurance Coverage for Drug Therapy Affect Smoking Cessation?” *Health Affairs*, 21(6): 162–168, 2002.

from other communities. For example, traditional tobacco is held in high regard and is used in ceremonies and in other culturally specific ways. The sacred use of tobacco is distinct from the abuse of commercial tobacco.

- Second, BlueEye explained, communication and learning styles are different in American Indian communities. More traditional clients may expect more respectful, slower-paced interactions with clinicians. Providers in turn need to understand how their American Indian clients value silence and nonverbal communication.

The Smoke-Free Families/National Partnership held focus groups with American Indian women, and Native and non-Native providers in several states. In the client-level focus groups, participants highlighted the need for:

- Self-help cessation materials that are tailored to Native Americans and acknowledge the role of traditional tobacco.
- Cessation materials and messages that are targeted to family members, including partners and other multi-generational family members who are a significant source of support for pregnant women.

In the provider focus groups, participants highlighted:

- The importance of visual imagery to Native communities; they recommended images that convey positive messages, rewards and other ways to reinforce the concept of the mother protecting her baby.
- Challenges caused by easy access to cigarettes and lenient attitudes towards commercial tobacco use in these communities.
- The need to work proactively and positively with women's partners who use commercial tobacco.

Finally, BlueEye commented on the negative perceptions around quitlines that exist in many Native communities. Some of this negativity arises from a lack of knowledge of how quitlines operate and what kind of follow-up care to expect. In other cases, however, the negativity reflects a view that the quitlines do not have counselors or information tailored to Native communities. There is also a problem with access, especially to cell phone coverage, in many of the regions where Native Americans live.

3. The cost-effectiveness of smoking-cessation interventions in pregnancy

E. Kathleen Adams, Ph.D., of Emory University concluded the presentations on the state of the science with a discussion of what is currently known about the cost-effectiveness of smoking-cessation interventions in pregnancy.

Like most economic analyses, Adams explained, this type of analysis depends first on estimates of the costs likely to be averted if a pregnant smoker quits, which can then be compared to the estimated cost of the stop-smoking interventions. While a true cost-effectiveness analysis compares one type of intervention to another, an alternative option is to look instead at just the potential costs and cost savings from implementation of the recommended “5 As.”

Adams reported that an analysis completed in the mid-1990s, using “Maternal and Child Health Smoking Attributable Morbidity, Mortality and Economic Cost” information, showed that the “5 As” did constitute a cost-saving intervention.

The simulation that arrived at this conclusion included assumptions that accounted for a range of increases in the quit rate above the baseline, and a range of intervention costs. At each end of this sensitivity analysis, from a high quit rate and low cost to a lower estimate of additional quitter and a high cost, the ratio of dollars saved to dollars spent was at least 1.1:1, or \$1.10 saved for every \$1 spent.

Adams and her colleagues recently conducted the same analysis with an updated source, the “2001 Pregnancy Risk Assessment Monitoring” data. Adams reported that their initial review of this data indicated that maternal smoking has no effect on neonatal intensive care unit admissions, and therefore their estimates of the cost of maternal smoking have been lowered.

Using these estimates, then, the benefit of the “5 As” intervention in this limited analysis becomes less clear. Conservatively, at a low estimate of the increase in quit rates from the intervention, and using the higher end of the range of estimated intervention costs, the ratio of dollars saved to dollars spent falls to 0.49:1.

Adams stressed that this analysis is preliminary, that many costs are missing such as pediatric health care costs and the costs of adverse outcomes to the mother. Other participants recommended that, in calculating the benefit of the intervention, the analysis be expanded to include the impact on the health of future children (from pregnancies after the mother had quit smoking) and other members of the family as well. Adams reminded conference attendees that her findings were preliminary.

What's Happening in the Environment?

1. The Surgeon General's Report, The Health Consequences of Involuntary Exposure to Tobacco Smoke

In June, 2006, the Office of the Surgeon General issued *The Health Consequences of Involuntary Exposure to Tobacco Smoke*, a landmark document with particular importance to the Smoke-Free Families program, with its focus on the impact of tobacco use on the families of smokers. Ann Malarcher, Ph.D., M.S.P.H., of the CDC's Office on Smoking and Health summarized the Surgeon General's report findings during her dinner keynote presentation.

The report formally concluded that second-hand smoke causes diseases in children and adults who do not smoke. “The scientific evidence shows no level of risk-free exposure to second-hand smoke,” Malacher explained, adding that their review of the research found:

- A causal relationship between maternal exposure to second-hand smoke during pregnancy and a small reduction in infant birthweight.
- A causal relationship between exposure to second-hand smoke and sudden infant death syndrome.
- A link between maternal smoking during pregnancy and persistent adverse effects on lung function in the child throughout childhood.
- That second-hand smoke exposure after birth leads to children with a lower level of lung function and higher rates of lower respiratory-tract illness, middle-ear disease, respiratory symptoms and asthma.

The report also showed that more than half of all children in the United States are exposed to second-hand smoke, with prevalence varying by income, gender, ethnicity and location.

The publication of the report generated significant publicity and supported such actions as the decision by the Marriott hotel chain to make its businesses smoke-free. Malacher, however, cautioned participants about the challenges that remain, including:

- Sustaining federal funding for comprehensive tobacco-control programs.
- Countering new product development and deep price discounting by the tobacco industry.
- Continuing to get smokers to quit, as prevalence of tobacco use is stalling at current levels.
- Addressing the disparities in tobacco use by education, socioeconomic status and race/ethnicity.

With the involvement of new sectors of the economy in tobacco control, the pending revision of the USPHS clinical practice guideline and a potential influx of funds from the Master Settlement Agreement balloon payment in 2008 (if these funds are, in fact, channeled to tobacco control), there will be opportunities to address these challenges.

2. The update of the U.S. Public Health Service clinical practice guideline

Over lunch, the chair of the clinical practice guideline review panel, Michael Fiore, M.D., M.P.H., described the critical role of the 2000 edition of the *Treating Tobacco Use and Dependence* guideline in building acceptance of tobacco treatment as “part of what a good doctor does,” as Fiore described it.

His panel has set the first quarter of 2008 as their projected date for the publication of what Fiore stressed will be a guideline update, not a full revision, as the goal is to complete the work quickly.

He reminded participants that the scope of the update will be the treatment of tobacco use and dependence, not prevention and not policy. The panel is looking at the roughly 10 topics with the greatest evidence base to support an update.

The work to produce the guideline update will take place in two phases.

- Phase One was complete as of the date of the capstone meeting. It involved taking potential topics for update from the field and conducting a literature screen, and ended with the first full panel meeting on October 10, 2006.
- Phase Two was underway as of the date of the meeting. It includes a full literature search, coding, meta-analysis, and the development of specific recommendations and supplemental analyses. This work will be followed by additional panel meetings, the preparation of drafts, peer review, and then final approval and publication.

Future Directions

As befits a capstone meeting, the day ended with a discussion of where and how the knowledge gained and partnerships generated as part of the Smoke-Free Families program could be used and sustained for the advancement of work on tobacco control.

3. Next steps for the National Partnership to Help Pregnant Smokers Quit

The national dissemination office's Cathy Melvin presented the current state of planning to continue the effective collaboration housed in the National Partnership to Help Pregnant Smokers Quit. The partnership, Melvin explained, will be reconfigured as a new 501(c)3 organization, perhaps with a new name, and will expand its focus to help young families become smoke-free. Next steps will include forming a board of directors and developing a funding strategy.

Current plans have the new partnership's work focusing on the development and dissemination of suites of products, aimed at providers, communities, policy-makers and the media, that will increase the visibility of the partnership's work and help drive the adoption of evidence-based practices.

The partnership's *Web site*, Melvin continued, will be reconfigured to be targeted to consumers and their specific needs, and will be made interactive. Additional planning work continues, with a focus on defining priorities and recruiting new partners.

4. Report of the Partnership's Research Work Group

As many of the day's presentations highlighted, more research is needed into the impact of tobacco and second-hand smoke on pregnant women and children. To summarize these needs, Cecilia A. Gaffney, M.Ed., from Dartmouth-Hitchcock Medical Center presented the report of the Research Work Group of the National Partnership to Help Pregnant Smokers Quit. After reviewing the literature, consulting the Computer Retrieval of Information on Scientific Projects database and developing its own database of funded-but-not-yet-published research, the workgroup called for more research on:

- The biological mechanisms underlying nicotine's effects in pregnancy.
- The efficacy and safety of pharmacological smoking-cessation treatments—especially the use of nicotine-replacement therapy and Bupropion (Zyban)—during and after pregnancy.
- Adjunctive behavioral interventions that may boost care treatment efficacy, especially the impact of support from partners, incentives and other support networks.
- The best ways to disseminate the evidence: Information technology? Research networks? Other community linkages?

5. Future funding opportunities

Finally, to identify how to continue to support this research, capstone meeting organizers invited representatives from the major funding agencies and foundations to describe their current interests, commitments and grantmaking requirements.

- The National Institute on Drug Abuse (NIDA) currently funds \$7.2 million in clinical research on tobacco and \$9.2 million in pre-clinical research. Iván D. Montoya, M.D., M.P.H., of NIDA explained how its current portfolio consists of request for applications (RFA)-developed projects—e.g., Transdisciplinary Tobacco Use Research Centers and SPIRCAP funds (Strategic Program for Innovative Research on Cocaine Addiction Pharmacotherapy)—directed towards moving pre-clinical research to the clinical stage—and projects developed from program announcements and collaborations with the other National Institutes of Health branches.
- The National Cancer Institute (NCI), explained Michele Bloch, M.D., Ph.D., has a new, fully electronic application process. There are opportunities for funding unsolicited grants, and staff can help in the design of these and in determining the best funding vehicle to use (Bloch stressed the value of getting to know the NCI’s tobacco-control staff). A challenge will be meeting NCI’s criterion to fund innovative work: Some areas of current interest are incarcerated smokers and comparisons of tobacco-control strategies across countries.
- Robert Merritt, M.A., spoke for the CDC’s Office on Smoking and Health, noting that most of their funding goes to the states to support the National Tobacco Control Program, for which the next RFA will be issued in 2008. He advised participants to partner with state programs, adding that particular areas of interest include the viability of quitlines in supporting pregnant women, the integration of evidence-based indicators into program delivery, especially at the state level, and engaging the business sector in tobacco control.
- Amber Hardy Thornton, M.P.H., C.H.E.S., of the American Legacy Foundation, explained that her organization’s focus is changing and that they expect to be making fewer grants. One upcoming funding possibility is their Small Grants Program, the next round of which will be announced January 2007. The foundation favors innovative programs and provides up to \$150,000 over two years. The foundation has also recently accepted applications for Phase Two of its Priority Populations work. Funded projects (awards will average \$200,000) will support community-level interventions, with one target area being the reduction of secondhand smoke exposure through the use of in-home smoking bans.
- The *Flight Attendant Medical Research Institute* (FAMRI) is an organization that sponsors scientific and medical research for the early detection, prevention, treatment and cure of diseases and medical conditions caused from exposure to second-hand smoke. Elizabeth Kress, M.J., the executive director of the institute described their grantmaking through one cycle per year, with the next coming in 2007. FAMRI also is beginning a collaboration with the American Academy of Pediatrics that will address second-hand smoke exposure in children.

Summary

C. Tracy Orleans of RWJF concluded the capstone meeting by summarizing RWJF's historic role in funding the work of the presenters, who then leveraged this for additional support from other funders. Over the past decade, RWJF has been a principal funder of work to discover and disseminate effective cessation treatments for prenatal and postpartum smokers, and the Foundation is eager to see this work sustained and expanded.

RWJF's tobacco-cessation work is now incorporated into RWJF's public health agenda and, Orleans explained, future tobacco-related projects will focus on policy initiatives, emphasizing collaboration with other funders. Examples of continuing funding mechanisms and programs include:

- RWJF's *Substance Abuse Policy Research Program*, led by David Altman, Ph.D., and Marjorie Gutman, Ph.D., which looks at the policy drivers of consumer demand for proven cessation treatments and at sustaining policy gains in tobacco control.
- The *Youth Tobacco Cessation Collaborative*, formed in 1998 to coordinate the efforts of major national funders¹⁶ involved in designing and disseminating effective youth cessation programs.
- The *National Tobacco Cessation Collaborative* and Consumer Demand Roundtable, both funded by multiple funders and managed by Todd Phillips, M.P.H., of the Academy for Educational Development in Washington, D.C.
- The National Youth Smoking Cessation Survey (led by Dianne C. Barker, M.H.S., of Barker Bi-Coastal Health Consultants and Gary Giovino, Ph.D., of the State University of New York at Buffalo).
- *Helping Young Smokers Quit: Identifying Best Practices for Tobacco Cessation* (led by Susan J. Curry, Ph.D., of the University of Illinois at Chicago).
- *Tobacco Policy Change: A Collaborative for Healthy Communities and States*, an RWJF national program providing resources and technical assistance for community, regional and national organizations and tribal groups interested in advocating for effective tobacco-prevention and cessation policy initiatives.
- *Addressing Tobacco in Health Care*, an RWJF national program led by Curry, Fiore and Paula Keller, M.P.H., of the University of Wisconsin. It is intended to integrate effective tobacco treatment as part of basic health care.
- RWJF's *Smoking Cessation Leadership Center*, working with a variety of health professional organizations and institutions to increase their motivation and capability to refer smokers into treatment, and directed by Steven Schroeder, M.D., at the University of California, San Francisco.

¹⁶ Participants included the American Cancer Society; American Lung Association; Centers for Disease Control and Prevention; National Cancer Institute; National Institute on Drug Abuse; National Heart, Lung, and Blood Institute; National Cancer Institute of Canada; American Legacy Foundation; Canadian Tobacco Control Research Initiative; and RWJF.

Finally, Orleans added, RWJF has funded a set of “roots and wings” initiatives, to strengthen and sustain the impact of Smoke-Free Families and the National Partnership to Help Pregnant Smokers Quit. These funds are supporting:

- Smoke-Free Families: State of the Science Capstone Meeting.
- An upcoming 2007 journal supplement or monograph on Smoke-Free Families-sponsored research.
- A grant to the National Partnership to Help Pregnant Smokers Quit to build the business case for its continuation.
- The creation and dissemination of policy briefs, research syntheses and other knowledge tools that will help translate findings from the Smoke-Free Families national program and thus sustain its accomplishments.