Clinicians Deliver Brief Messages to Prevent Childhood Obesity in Maine Pilot Program

Pilot program to train physicians to coach families to modify behavior and prevent childhood obesity in Maine

SUMMARY

From April 2004 through October 2005, staff at MEM Associates worked with subcontractors to design and pilot test a program—called the Maine Obesity Primary Prevention Project—aimed at preventing obesity among pregnant women and children under age 5.

The central strategy focused on training physicians and other clinical staff to use brief counseling interventions to instill in their pregnant patients and parents of young children a family culture of healthy habits in nutrition and physical activity.

Three clinics in Farmington, Maine, and one in Trexlertown, Pa. (added at the request of RWJF staff) participated in the project.

Key Results

- From January through September 2005, physicians and clinical staff participating in the pilot provided approximately 1,500 pregnant woman and parents of young children with messages about the importance of a healthy lifestyle, nutrition and physical exercise.

Key Findings

- The Maine Obesity Primary Prevention Project was effective in positively changing some providers' practices and patients' perceptions of healthy lifestyle messages coming from their providers.

Project Management

Staff from ICF Consulting managed and directed the project under a subcontract. Staff from the Yale-Griffin Prevention Research Center assisted in project design and developed a provider training manual. Staff from the Maine-Harvard Prevention Research Center conducted an evaluation of the intervention.
**Funding**

The Robert Wood Johnson Foundation (RWJF) provided $60,000 for this *unsolicited* project.

**THE PROBLEM**

Overweight among children in the United States has reached epidemic proportions, as confirmed by the following:

- The prevalence of overweight among children and adolescents in the United States has doubled in the past two decades. More than 15 percent of children ages 6–11 and 15 percent of children ages 12–19 are overweight. Rates are even higher among minority and economically disadvantaged children (*National Health and Nutrition Examination Survey 1999–2003*, Centers for Disease Control and Prevention (CDC), available online).

- More than 17 percent of Maine kindergartners were classified as overweight, with an additional 23 percent classified as at risk in 2003 (*Maine Child and Youth Weight Status Fact Sheet*, Bureau of Health, Maine Department of Human Services, 2003).

- Some 18 percent of children in Pennsylvania are reported as overweight. Among rural school districts, 42 percent were classified as having more than 21 percent overweight students. The comparable figure for urban districts is 20 percent (*Overweight Children in Pennsylvania*, Center for Rural Pennsylvania, 2005).

Obesity in children can lead to increases in the incidence of type 2 diabetes, hyperlipidemia (i.e., excess levels of fats in the blood), hypertension and psychological and social stigma.

Studies suggest a number of reasons to design obesity interventions that begin in pregnancy and continue through early childhood:

- Mothers who are overweight or obese before becoming pregnant may put the child they eventually bear at greater risk of childhood obesity.

- Smoking during pregnancy may be a risk factor for childhood obesity.

- Breastfeeding may decrease the risk of obesity.

- Early infancy feeding practices may continue through the later childhood years.

References:


- Parents Can Play a Role in Preventing Childhood Obesity. Institute of Medicine Fact Sheet, September 2004.


**CONTEXT**

RWJF is committed to tackling one of today's most pressing threats to the health of children and families—childhood obesity. The goal is to help halt the rise in childhood obesity rates by promoting healthy eating and physical activity in schools and communities throughout the nation. RWJF places special emphasis on reaching children at greatest risk: African-American, Hispanic, Native-American and Asian/Pacific Islander children living in low-income communities.

RWJF has a four-pronged approach to halting the increase in childhood obesity:

- Building the evidence regarding what works to promote healthy eating and increase physical activity among kids.
- Testing innovative approaches in order to spread promising models.
- Educating leaders and investing in advocacy strategies.
- Working on ways to help health care providers screen and counsel to prevent and manage childhood obesity.

**THE PROJECT**

The Maine Obesity Primary Prevention Project is designed to assist and enable primary care pediatricians, family physicians and obstetricians—and their clinical staff members—to explicitly, regularly and systematically convey messages regarding healthy lifestyle, nutrition and physical activity to pregnant women and parents of young children.

Under two grants from RWJF, MEM Associates, working through a team led by Michael C. Barth, PhD, of ICF Consulting [now ICF International], designed, conducted and evaluated a pilot of the prevention project in four health care practices, three in Maine and one in Pennsylvania.
MEM Associates is a New York City organization that provides programming, planning and research services for nonprofits. It is headed by Margaret E. Mahoney, former president of the Commonwealth Fund and vice president of RWJF. ICF Consulting, which participated in the project under a subcontract with MEM Associates, is a management, technology and policy consulting firm based in Fairfax, Va.

**Understanding the Problem**

The project team began during the planning phase with a review of the relevant literature and practices. They then conducted extensive telephone conversations with experts in the obesity field, including representatives from three main physician organizations:

- American Academy of Pediatrics
- American Academy of Family Physicians
- American College of Obstetrics and Gynecology

**Conclusions**

From this work, the team drew the following conclusions:

- Far more resources were going into treatment of already overweight and obese persons, including children, than into preventing obesity and overweight in the first place.
- Treatment of obesity has had, at best, moderate success.
- Clinicians noted the following impediments to clinical staff dealing with overweight and obesity that should be reflected in the intervention:
  - Inadequate knowledge.
  - Inadequate confidence and ability to have an impact on patients.
  - Inadequate time.
  - Lack of reimbursement.

**Clinics Participating in the Study**

The team wanted to test the intervention in a variety of clinical settings, so they considered communities that had a mix of pediatrics, family medicine and obstetrics practices. Farmington, Maine, fit the description, and the team invited three clinics to participate in the pilot, all of which accepted:

- Pine Tree Pediatrics, Farmington, Maine
- Pine Tree Women's Care, Farmington, Maine
• Pine Tree Family Practice, Farmington, Maine

The team also hoped that by conducting the pilot at three sites in one community, the intervention might "spread" to other clinical settings in that community through publicity and word of mouth.

The project team added a fourth site, ABC Family Pediatricians in Trexlertown, Pa., at the request of staff from RWJF. ABC Family Pediatricians is a Healthy Steps for Young Children site, and RWJF wanted to see if a site already committed to practice change would more effectively implement the obesity prevention intervention. (For more on the initiative and RWJF's support of it, see Program Results Report on ID# 040304.)

The practices in Maine included a relatively high percentage of Medicaid and underinsured patients (approximately 30 percent Medicaid and 5 to 20 percent under or uninsured). The Pennsylvania practice consisted of a non-Medicaid population.

Creating the Counseling Intervention

The Bingham Program, a philanthropy based in Augusta, Maine, provided an additional $122,000 toward the project, which covered the participation of the Yale-Griffin Prevention Research Center (founded by the CDC in 1998) and the Maine-Harvard Prevention Research Center, which conducted the evaluation.

A team from Yale-Griffin, led by David Katz, MD, designed a brief counseling protocol that physicians and clinical staff (nurses, nurse practitioners, physician's assistants, nurse's aides and medical assistants) can use to instill healthy nutrition and physical activity habits in pregnant woman and parents with young children.

The intervention draws on the Pressure System Model—which applies behavior modification theories such as "stages of change" to the constraints of the primary care setting. The goals are to address both the patient's motivation to change and the barriers to change.

The process begins with pregnant women or parents of young children completing a brief questionnaire. Their responses suggest which counseling protocol to use. For example:

- For a patient with "low motivation," clinicians emphasize the many benefits of physical activity and a healthy diet, relate the benefits to the patient's personal and family health status and offer print or online resources to read.
- For a patient "motivated but anticipating barriers," clinicians emphasize the benefits but also ask the patient to list the three major barriers he or she faces and gives a decision worksheet to complete.
- For a patient "relapsing or burned out," the clinician reemphasizes self-efficacy—the patient's own judgment about her or his ability to succeed in reaching a goal—and
asks her or him to list the reasons why he or she stopped being active and how he or she can start again.

- For a patient at the "maintenance" stage, clinicians offer praise and encouragement, elicit information about difficulties and address existing or potential roadblocks.

The team submitted a draft of the intervention protocol to a group of external reviewers, including nationally known experts in obesity research and to the four practices that agreed to participate.

**Training and Technical Assistance**

The Yale-Griffin team used the second draft of the protocol at a training session for participating providers on November 28–29, 2004, in Farmington, Maine. The training session included:

- Didactic lectures on behavioral theories and their application in the clinic.
- Role-play exercises for the attendees.
- Question-and-answer sessions.

Based on feedback from the training and further reviews, the team produced the final version of the training manual—*Health Enhancement Through Lifestyle Practices (HELP)*—and distributed it to the four practices.

The Yale-Griffin team also set up a listserv to solicit continuous feedback from the practice staff and to encourage ongoing discussion with the practices testing the intervention. (As it turned out, the listserv was rarely used.)

**Engaging an Evaluation Team**

A team from the *Maine-Harvard Prevention Research Center*, led by Michele Polascek, PhD, conducted an evaluation of the intervention (see Evaluation section for details). The Maine-Harvard Prevention Research Center, funded by the Maine Center for Disease Control and Prevention and the Harvard Prevention Research Center, focuses, among other things, on the reduction of overweight among Maine youth.

**RESULTS**

The project yielded the following results:

- **From January through September 2005, physicians and clinical staff participating in the four pilot sites provided messages about the importance of a healthy lifestyle, nutrition and physical exercise to approximately 1,500 pregnant woman and parents of young children.**
EVALUATION

Conducted by a team from the Maine-Harvard Prevention Research Center, the evaluation included:

- A process evaluation to assess the quality and usefulness of the materials and describe how providers and staff implemented the intervention, including use of the manual, the protocols and handouts.

- An outcome evaluation focused on two questions:
  - Do the physicians and their practice staff transmit the message about healthy nutrition and physical activity to patients during normal clinical interactions?
  - Do the patients hear the message and increase their knowledge regarding healthy lifestyles, good nutrition and physical activity?

- An assessment at post test of whether patients made any changes based on what they heard from their providers.

The evaluation team developed four surveys to measure process and outcomes. (For details on the surveys, see the Appendix.) The surveys included:

- A provider implementation survey.
- A staff implementation survey.
- A provider outcome survey.
- Parent/caretaker outcome survey.

Evaluation Findings

The evaluators issued an unpublished report entitled the Maine Obesity Primary Prevention Project: Evaluation and Monitoring Report (see the Bibliography for details). It notes the following limitation: "The [Maine Obesity Primary Prevention Project] is a pilot study, seeking to develop an intervention and learn whether it will work in a practice setting. As a result, robust statistical analysis of outcomes was not an expectation."

The report highlights the following findings:

- Overall, the Maine Obesity Primary Prevention Project had a positive effect on providers' practice and on patients' perception of healthy lifestyle messages coming from their providers.

- Providers' practice
  - While provider beliefs about the importance of lifestyle interventions remained largely unchanged, providers’ perceived efficacy seemed to increase slightly
overall, though more for addressing nutrition than for addressing physical activity. Providers' perceptions of their potential impact on their patients also increased slightly (a marginally significant finding).

— The greatest changes occurred in provider behavior. At post test, providers were significantly more likely to address physical activity with all patients, not just overweight patients.

— At post test, providers felt they had more resources to deal with lifestyle issues in general.

— More work needs to be done to improve providers' awareness of and linkages with community resources and organizations.

• Patients’ perceptions

— The percentage of patients (both pregnant women and the parents of young children) who improved their perceptions of whether their and their family's pattern of physical activity was healthy increased from 80 percent to 87 percent, perhaps reflecting the providers' changes in addressing physical activity with their patients.

— The percentage of patients and parents who heard physical activity messages from their providers was significantly increased (51% to 64%).

— Patients and parents who reported hearing nutritional messages from their providers increased only slightly (from 68 to 72%)—a small increase perhaps because substantial numbers were already hearing them at baseline.

— The perceived helpfulness of the messages heard by patients and parents was significantly improved from baseline (66%) to post test (92%).

— Substantial numbers of patients reported making behavioral changes based on what they heard from their providers. Greater numbers reported making nutritional changes (27%) than reported making physical activity changes (18%).

• The evaluators noted specific implementation difficulties at several of the sites, and made recommendations for future implementations. Difficulties reported include:

— Time constraints during implementation.

— Lack of commitment of some physicians.

— Too much material (referring to the size of the manual and the number of handouts).
Recommendations

- Schedule meetings with each practice, with an outside project expert present, to explain the project. These meetings should be held both before and after the training. The first would be relatively brief to explain the project and gain support from the practices; the second would be to plan the implementation in detail.

- It is essential to have a champion for the project and to empower the person with the day-to-day responsibility for driving the project.

- Give practices time to learn more about the project and how they can best implement it.

- The manual should be more concise and the handouts reduced in number.

- Consider renaming the project something like "Maine Healthy Lifestyle Project," to avoid use of the word "obesity."

LESSONS LEARNED

1. Consider models of rapid practice change as an alternative to the more expensive and time-consuming "learning collaborative" approach. Learning collaboratives often involve several day-long meetings with extensive follow-up and monitoring. The training session used for this intervention took one and a half days. According to the evaluator, "Given the considerable investments that are directed to practice change in … learning collaboratives, this should be considered an achievement." (Project Director and Evaluator)

2. Competent people who want to change will find a way to do it. The lead physician at the Healthy Steps for Young Children site in Pennsylvania implemented the program "with aplomb," according to the project director. Yet another physician at one of the Farmington sites, who did not have the experience with a program dedicated to practice change, did equally well. (Project Director)

3. Use "snowball surveys" to identify potentially helpful experts and useful interventions. Snowball surveys—also called "rolling telephone surveys"—rely on referrals from initial contacts to generate additional contacts and referrals. The project director used this technique in the initial phases of the project to:
   - Identify major experts in the field.
   - Identify whether work similar to the intervention had already been done.
   - Provide early constructive criticism.
   - Identify experts who might serve as reviewers of work in progress. (Project Director)
AFTERWARD

The Bingham Program, the Maine-Harvard Prevention Research Center and the Maine Center for Public Health are developing a phase 2 of this project, which will merge it with some of the strategies from the Maine Center’s Maine Youth Overweight Collaborative. The collaborative brings together clinical experts, primary care practices and community partners to address overweight youth in Maine. As of August 2006, the collaborative has secured much of the needed funding for phase 2 and begun the design process.

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APPENDIX

Evaluation Surveys

The evaluation team developed and used the following four surveys:

- **A provider implementation survey**, consisting of 22 items. Providers received the survey by mail in April 2005 and returned the questionnaire within two weeks. The survey focused on:
  - Providers' use of the manual.
  - Satisfaction with the manual and manual protocols (i.e., interview strategies).
  - Use of the individual protocols.
  - Ideas for protocol improvement.
  - Satisfaction with specific handouts.
  - Awareness of the MOPPP listserv.
  - Overall suggestions for improvement.

- **A staff implementation survey**, consisting of 22 items. Clinic staff received the survey by mail in April 2005 and returned them two weeks later. The survey focused on:
  - Staff's ability to perform expected roles.
  - Satisfaction with the manual overall, and satisfaction with specific protocols.
  - Feedback on how to improve the protocols and handouts.
  - Satisfaction with the manual training, as well as awareness of the project's listserv.

- **A provider outcome survey**, consisting of 16 items. The evaluators conducted the pretest in November 2004, at the training and mailed post-test surveys to providers in August 2005. The surveys measured:
  - Provider beliefs.
  - Provider self-efficacy.
  - Outcome expectations, measuring providers' confidence in their ability to have more of an impact on patients' lifestyles than at baseline.
  - Providers' practices addressing physical activity and nutrition with all patients and families and overweight patients and families.
  - Providers' awareness of community resources.
A patient/parent/caregiver survey, consisting of eight items at baseline and nine items at post test. Parents and patients completed the baseline survey as part of their pre-visit paperwork; they completed the post test survey during visits to the clinic after August 2005. This survey assessed:

- Parents’ (or patients’, if seen at the obstetrical practice site) beliefs about their and their family's physical activity and nutrition pattern.

- Awareness of ever having heard physical activity or nutrition messages from their child's provider or nurse in the office and the perceived helpfulness of those messages.

- At post test, patients and parents/caregivers were also asked if they made any physical activity or nutrition changes based on what they heard from their provider or nurse, whether they had received any written materials and whether those materials were helpful.
BIBLIOGRAPHY

(Current as of date of the report; as provided by the grantee organization; not verified by RWJF; items not available from RWJF.)

Reports
