

# Building Capacity for Childhood Obesity Prevention and Treatment in the Medical Community: Call to Action

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## KEY WORDS

childhood obesity treatment, childhood obesity prevention, medical training, continuing medical education

## ABBREVIATION

CME—continuing medical education

[www.pediatrics.org/cgi/doi/10.1542/peds.2011-0480G](http://www.pediatrics.org/cgi/doi/10.1542/peds.2011-0480G)

doi:10.1542/peds.2011-0480G

Accepted for publication Jun 9, 2011

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PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

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**FINANCIAL DISCLOSURE:** The authors have indicated they have no financial relationships relevant to this article to disclose.

## abstract

Large gaps exist in the capacity of the US medical system to participate meaningfully in childhood obesity-prevention efforts and to meet the treatment needs of obese children. Current primary care practice for the prevention and treatment of childhood obesity often varies from evidence-based recommendations. Childhood obesity specialists have partnered successfully with schools of medicine, professional societies, and other organizations to collaboratively engage with primary care providers in quality improvement for obesity prevention and treatment. This review and commentary targets 2 audiences. For childhood obesity experts and their organizational partners, methods to support change in primary practice and the evidence supporting their use are outlined. For primary care providers and non-obesity specialists, effective strategies for changing practice and the potential benefits of addressing childhood obesity systematically are discussed. *Pediatrics* 2011;128:S71–S77

The need to adapt pediatric clinical care to address the prevention, identification, and treatment of childhood obesity is urgent. The profound scope of the childhood obesity epidemic has been well described. The cost of hospitalizing children for conditions caused or worsened by obesity has increased dramatically.<sup>1-3</sup> The negative effects of obesity on physical and emotional quality of life are equally, if not more, concerning.<sup>4</sup> Furthermore, gaps exist between the most basic standards of clinical care for obesity prevention and treatment and current practice; for example, only 52% of primary care providers reported routinely plotting a BMI percentile in 2006.<sup>5-7</sup> The use of BMI has slowly expanded after publication of BMI percentile charts in 2000 by the Centers for Disease Control and Prevention and strong recommendations by the American Academy of Pediatrics that have been repeated since 2003.<sup>8-10</sup> In the National Ambulatory Medical Care Survey from 2005 to 2007, obesity was diagnosed at 18% of well-child visits for obese children. Diet and activity counseling, recommended for all pediatric visits regardless of weight status, was documented for only 51% of obese children and only 44% of nonobese children.<sup>11</sup> Considering the wide scope and >20-year entrenchment of the childhood obesity epidemic, the US medical system response has gained momentum slowly with regard to screening, identification, lifestyle counseling, and treatment.<sup>12</sup>

Across the spectrum of clinical care, the level of evidence for preventive or treatment interventions varies on the basis of the clinical scenario, patient demographics, and available resources. However, there is a least 1 example of a common clinical task for which the level of evidence meets a high standard and recommendations are clear: screening and referral for

treatment. The US Preventive Services Task Force recently reviewed evidence for obesity screening and treatment and recommended that primary care providers screen and refer children aged 6 years and older to comprehensive multidisciplinary treatment programs that meet guidelines for treatment intensity.<sup>13</sup> Thus, at the most basic level, practice must be optimized to fulfill the identification-and-referral role. The majority of pediatric providers state a desire to participate in obesity prevention and treatment, beyond mere screening and referral, and have requested resources to help them participate in these activities.<sup>6,14</sup> The White House has partnered with the American Academy of Pediatrics in the “Let’s Move” initiative to give providers Internet-based resources for BMI, diet, and activity screening in primary care, plus counseling and advocacy tools.<sup>8,15</sup>

Tertiary referral centers are primary sites of obesity treatment for children, including those children who have comorbid medical conditions that require urgent weight loss. Centers that participate in the National Association of Children’s Hospitals and Related Institutions FOCUS on a Fitter Future group have reported that demand for treatment exceeds current capacity, that the weight status of obese children has often not been addressed by primary care providers until well after the onset of obesity, and that children have not received early intervention before referral.<sup>16</sup> In 2007, an Expert Committee proposed a staged approach to the prevention and management of obesity that ranges from stage 1 in primary care settings to stage 4, which is a tertiary care intervention.<sup>17</sup> Building clinical competence and expanding the scope of care in all 4 stages of treatment, including universal screening in primary care, might enable families to take action before obesity reaches a level that requires

intensive treatment. Expanding the availability of treatment programs to fill the void between primary and tertiary care might be an effective strategy for supporting earlier intervention in primary care, because providers with access to referral resources have reported better screening practice.<sup>6</sup>

Clinical capacity for obesity prevention and treatment needs to be built across a coordinated spectrum of care that includes inpatient, outpatient, specialty, and primary care. This article is meant to serve as a guide for obesity specialists, academic institutions, professional organizations, insurers, community agencies, pediatric specialists, hospitalists, and primary care providers, who can collaborate to improve care for child weight status.

## CURRENT EFFORTS

Childhood obesity experts practicing at hospital- and university-based programs have conducted effective interventions to improve obesity prevention and treatment in a variety of practice settings. Capacity-building occurs through educational forums for practicing providers, such as formal continuing medical education (CME) workshops, trainings, or year-long quality-improvement collaboratives to enhance a system-wide approach to obesity identification and management.<sup>18</sup> These forums offer the opportunity for networking among groups engaged in obesity work, including creating linkages with community-based organizations and schools. In some locations, medical students and residents are being targeted, such as with the “Fit for Residents” curriculum being tested in some California pediatric residencies.<sup>19</sup> Other partners in training initiatives have included professional organizations, local public health departments, foundations, community nonprofit organizations, and clinical

practice groups.<sup>18,20,21</sup> National Institutes of Health–funded trials are in progress to evaluate the effects of different strategies for addressing obesity in primary care.<sup>22</sup>

Although some training efforts are ongoing, more are needed. By increasing the comfort and competence of primary care providers, referrals to obesity programs can be tailored to those with more medical necessity and readiness to use the expertise of an interdisciplinary team. Building the relationship between treatment programs and primary care providers can ease the referral process and might also lead to collaborations such as community-based initiatives to promote active living/healthy eating.

In addition to primary care providers, pediatric subspecialty providers will also benefit from training on screening and identification. Subspecialists treat conditions comorbid with pediatric obesity and can facilitate referral and treatment. Rates of obesity in tertiary care subspecialty clinics might range from ~12% to 30%.<sup>23</sup> Pediatric hospitalists and other hospital-based specialists who are aware of the evidence-based principals of screening and treatment for childhood obesity might provide important services to hospitalized obese children. Obese children, especially the 4% of the population who are severely obese (BMI at the >99th percentile for age), can suffer from obesity-related conditions that require inpatient treatment.<sup>24</sup> Inpatient and outpatient treatment of the severely obese child often involves multidisciplinary collaboration between teams of medical professionals including those in intensive care, pulmonary medicine, gastroenterology, endocrinology, orthopedics, hospital medicine, and others. A truly coordinated system of care for the hospitalized obese child is built on a shared understanding and uniformity of

screening and treatment messages between providers from different disciplines within pediatrics.

### BENEFITS TO PROVIDERS

Overall, studies of current practice have revealed low use and documentation of BMI and BMI percentiles for identifying overweight and obese children.<sup>6,25–31</sup> Providers' responses to surveys have indicated tension between a strong desire to address the problem and low confidence in the effectiveness of what they can do.<sup>6</sup>

However, research results have suggested that providers do play an important role in motivating change through systematic screening. Recent studies have found that provider counseling on BMI status is strongly correlated to accurate parental perception of child weight status and that parents who perceived a child's weight as a health problem were almost 10 times more likely to be motivated to make healthy lifestyle changes.<sup>32,33</sup>

Evidence indicates that early identification and referral for treatment during early childhood yields much greater success in treatment. Two large-scale long-term observational studies of treatment programs that served children from 2 to 14 years of age recently demonstrated a large-magnitude increase in long-term treatment efficacy among obese children who were identified and referred for treatment between 2 and 6 years of age compared with those with obesity identified and treated in later childhood.<sup>34,35</sup> Providers who identify obese children early and refer them to successful treatment will positively reinforce their own screening behaviors.

Providers are being asked to meet increasing quality-improvement standards. New in 2009 are Healthcare Effectiveness Data and Information Set (HEDIS) measures that include documentation of BMI category as well as

counseling for nutrition and physical activity via administrative data or medical record review. HEDIS measures are set by the National Committee for Quality Assurance (NCQA). These measures are used as a tool by the majority of health care plans to measure performance on important dimensions of care and service. In addition, the American Board of Pediatrics now requires demonstration of a quality-improvement initiative to obtain recertification. Online quality-improvement support for childhood obesity is offered by the American Academy of Pediatrics through the "Let's Move!" initiative. Obesity-related quality improvement might satisfy this new requirement for maintenance of certification.

There are potential financial benefits to providers who learn how to code for their time in a manner that will be reimbursed by insurers for obesity care. Some insurers reimburse providers at higher rates for demonstrable quality-improvement measures for various conditions. In addition, educational outreach from hospital-based obesity experts can teach providers how to advocate with insurers to obtain higher or appropriate reimbursement for obesity care.

### STUDIES OF PRACTICE-CHANGE INTERVENTIONS

Two collections published as supplements to *Pediatrics* are excellent resources for those seeking more detailed description of the evidence supporting the recommended clinical approach and successful training interventions: "Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity,"<sup>36</sup> published in December 2007, and "Responding to the Childhood Obesity Epidemic,"<sup>37</sup> a collection of articles that describe a spectrum

of interventions for changing clinical care, which was published in June 2009.

Interventions that have been attempted to support improved obesity prevention and treatment among primary care providers have varied widely on 3 key aspects:

- reach: the number of providers affected;
- intensity: duration, number, and frequency of contacts with expert or practice-change system (increasing intensity is often directly correlated with time and monetary resources required to carry out the intervention); and
- effectiveness: demonstration of changes in practice patterns and sustainability of changes over time (see Table 1).

### The Most Commonly Used Interventions Have Modest Effectiveness

In a 2009 survey of 15 National Association of Children's Hospitals and Related Institutions FOCUS group hospitals, 86% of childhood obesity-treatment programs reported being active in educating and training pediatric providers in the community. Didactic CME lectures were the most commonly reported format, whereas interactive and long-term interventions were reported less frequently. However, systematic reviews and meta-analyses have revealed only small changes in primary care practice for CME targeting a variety of health conditions; an average of 6% improved in frequency of following a given guideline.<sup>38</sup> A smaller effect is seen for complex behaviors such as screening, prevention, and treatment of obesity. Combining didactic and interactive sessions increases effectiveness.<sup>38</sup> With this understanding, traditional CME should be used as part of a larger, progressive strategy for sup-

porting practice change. For example, traditional CME can be used as a method for building consensus and interest among providers for more extensive efforts.

### What Types of Interventions Are Effective?

Intense interventions tend to be most effective but are limited in reach by available resources. Several moderate-intensity interventions have had moderate effectiveness in changing clinical practices according to a systematic review: repeated interactions with experts, small-group discussions, real-time clinical reminders, and educational outreach visits.<sup>39</sup> Attention should be paid to the importance of training providers in the full spectrum of obesity care, from identification to counseling and referral. When Kaiser Permanente in Georgia trained physicians to screen for obesity, there was poor uptake of screening practices until the physicians were also trained in counseling for treatment.<sup>40,41</sup> This finding suggests that primary care providers might hesitate to screen for excess weight gain without confidence in their ability to provide obesity-prevention or -treatment options. In general, interventions with more intense and longer-term follow-up by the trainers, those that teach quality-improvement methodology to providers, and those that provide booster trainings have reported success in changing primary care practice.<sup>18,20,21</sup>

Most of the available evidence points to effective changes in practice patterns. Data on the effects of adapting clinical practice on child BMI status are beginning to emerge. One-year follow-up data from a planned 2-year study of office-based motivational interviewing and practice redesign show effective BMI reduction in low-income overweight preschool-aged children and girls of any income level.<sup>42</sup> Addi-

tional data are expected from multiple ongoing studies that are using the practice-change techniques described in the next section and examining child BMI outcomes.<sup>43</sup> Although further research in this area could lend even further justification for practice change, other experts agree that change should not wait and that insurers should consider subsidizing these change efforts.<sup>44</sup> There is already sufficient evidence of the need for providers to engage in screening and referral and for increased availability of evidence-based treatment programs, as recommended by the US Preventive Services Task Force.<sup>13</sup>

### TOOLS AND INTERVENTIONS FOR IMPROVING CHILDHOOD OBESITY PREVENTION AND TREATMENT IN CLINICAL PRACTICE

The body of literature regarding effective techniques is evolving rapidly. Technological tools might allow effective interventions with wide reach to be delivered at lower cost. These interventions include interactive computer-based training and electronic health records that guide clinical decision-making and counseling.<sup>45</sup>

Table 1 provides a brief overview of interventions and summary ratings of relative intensity, cost (inversely associated with reach), effectiveness (if evidence exists), and an example that has been published or is available on the Internet. Some, but not likely all, of the knowledge and skills that need to be imparted will be amenable to Web-based dissemination.

### KEY COMPONENTS OF PRACTICE-CHANGE INTERVENTIONS

Expert Committee recommendations and published studies of successful practice-change interventions highlight content and thematic elements of training that providers should seek and that expert/society-driven inter-

**TABLE 1** Types of Interventions to Improve Primary Care Obesity Practice and Representative Examples.

Type of Educational Tool/Strategy	Relative Intensity	Relative Cost	Effectiveness at Practice Change	Example
Multiday, multisite practice-change collaborative model with instruction in quality-improvement methods	High	High	Evidence of large change in practice maintained long-term	Washington State Steps to Health, King County and Maine Youth Overweight Collaborative <sup>10,13</sup>
Breakthrough-series collaborative plus electronic medical record distribution with integrated obesity decision support	High	High	A large-scale intervention was effective in changing practice, but there were challenges with implementation	Nemours (Wilmington, DE) <sup>30</sup>
One-day trainings with follow-up visits (academic detailing or booster training)	Moderate	Moderate	Low effectiveness without follow-up per Cochrane reviews; moderately effective with follow-up	Envision New Mexico school-based health centers <sup>12</sup>
Webinars/calls on topics of interest	Low to moderate	Low to moderate	Evidence not available	NICHQ-COAN Q-calls ( <a href="http://www.nichq.org/conferences_training/q-calls/index.html">www.nichq.org/conferences_training/q-calls/index.html</a> )
Internet listing of collected resources	Low	Low	Evidence not available	NICHQ childhood obesity implementation guide: best practices and tools ( <a href="http://www.nichq.org">www.nichq.org</a> )
Internet-based distribution of a comprehensive toolkit for providers plus Internet-based quality improvement	Low	Moderate (to develop toolkit)	Evidence not available; the AAP Web site will allow individual practice to compare results with a national reference database	AAP "Let's Move in the Clinic" ( <a href="http://www.aap.org/obesity/letsmove">www.aap.org/obesity/letsmove</a> )
Internet-based interactive training	Low	Moderate (to develop training)	Evidence not available	Kaiser Permanente online tutorial in motivational interviewing ( <a href="http://www.kphealtheducation.org/pwm">www.kphealtheducation.org/pwm</a> )
Traditional didactic CME lectures	Low	Low	Evidence of small effect for multiple conditions	Cochrane reviews <sup>26</sup>

NICHQ-COAN indicates National Initiative for Children's Healthcare Quality Childhood Obesity Action Network; AAP, American Academy of Pediatrics.

ventions should include. Content should include assessment of weight status and contributory history; comorbidity assessment; counseling, including motivational interviewing techniques; treatment staging according to severity and readiness to change; knowledge and building of referral resources; design of an office environment that supports healthy lifestyles; and support for community advocacy activities.<sup>18,20,21,30</sup> Those who seek to deliver or participate in practice-change interventions might examine these references to find example interventions that best suit the organizational structure and resources available.

The most robust interventions use a common set of theoretical frameworks and improvement paradigms that have been used to improve management of many chronic conditions and have been adapted successfully to studies that target childhood obesity:

the model for improvement; the chronic care model; and the collaborative-learning model.<sup>44,46-48</sup> Improvement in practice is accomplished by engaging providers and office staff in "plan-do-study-act" cycles to redesign practice around the chronic care model through redesign of the practice system, patient self-management support, and provider decision support. Collaboratives allows practices to learn from the experience of other participating practices that are facing similar challenges. In addition to using these processes, those who create the most successful interventions have recognized the linkage between providers' self-efficacy in counseling and participation in screening.<sup>18,23</sup> Resources to improve providers' counseling self-efficacy are provided, typically by training providers/office staff in motivational interviewing techniques and providing counseling hand-

outs and/or electronic decision support for the office visit.<sup>45</sup>

### METRICS OF TARGETED OUTCOMES

We also aim to summarize the evidence for measurements that can be used to evaluate practice change. A Cochrane review meta-analysis of educational interventions for health care providers categorized outcomes as changes in professional practice, changes in patient outcomes, or changes in both.<sup>38</sup> Metrics used to obtain data on changes in the professional practice included participant surveys, patient surveys, and logging tests performed by providers. Studies that measured patient outcomes did so for outcomes that were already established as standard of care, such as laboratory-test levels. From the few publications that addressed the effectiveness of medical provider education on childhood obesity, the metrics used have been lim-

ited. The most detailed of the group, the Maine Youth Overweight Collaborative, used chart reviews for provider documentation along with parent and provider surveys.<sup>21</sup> One group that investigated the effects of educating providers in the school-based health centers on childhood obesity used chart review of well-child checks and sports physicals.<sup>20</sup> Another group, which introduced the 5-2-1-0 (5 servings of fruit and vegetables per day, <2 hours of screen time per day, at least 1 hour of physical activity per day, and no sugar-sweetened beverages) message to schools used surveys of parents and providers to evaluate their success.<sup>49</sup>

Last, a group from the University of Washington collaborated with other organizations to educate providers. In addition to using chart review, the group required its clinic teams to maintain a patient registry that facilitated tracking data.<sup>18</sup> To date, a single randomized controlled trial of the impact of an intervention similar to those just described has found positive BMI-change outcomes in subgroups of overweight preschool-aged children, and BMI outcomes from several other studies are expected soon.<sup>42,43</sup>

## CONCLUSIONS

There is great need to expand capacity for prevention of obesity and care

of obese children throughout the continuum of care in pediatrics. There have been innovative and effective interventions for changing practice, but interventions must extend beyond traditional didactic CME to make a significant impact. Obesity experts engaged in practice-change initiatives can reference evidence-based guidelines for the content and evaluation of these programs to improve obesity care. The justification for individual providers and institutions to expand capacity for obesity care is strong on multiple levels, including financial and quality concerns.

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