# Quality Improvement in Childhood Obesity Management through the Maintenance of Certification Process

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**Objective** To assess the Health and Obesity: Prevention and Education (HOPE) Curriculum Project, a web-based clinician education program that promotes appropriate screening, prevention, and management of weight among youth by pediatric practitioners, based on the 2007 Expert Committee recommendations. The project currently provides Maintenance of Certification (MOC) Part 4 credit through the American Board of Pediatrics.

**Study design** Participants identified themselves to the HOPE MOC Part 4 program. Enrollees were required to complete all continuing medical education modules (10.5 hours). Knowledge acquisition and self-reported confidence levels related to screening, prevention, and management practices of pediatric obesity were measured using preknowledge and postknowledge questionnaires. Participants were also required to perform a quality improvement project and submit practice performance data from repeated medical chart reviews over time. Knowledge acquisition, self-efficacy, and practice performance data were analyzed using repeated-measures analyses.

**Results** The 51 participants demonstrated significant improvements in knowledge acquisition and self-efficacy scores after viewing individual modules. In addition, participants demonstrated significant improvements in measured clinical compliance with recommended practices over time.

**Conclusions** Participation in the HOPE MOC Part 4 program appeared to improve knowledge acquisition, self-efficacy, and physician compliance with recommended practice recommendations for the screening, prevention, and management of pediatric obesity. Further data are required to determine whether such practice-based improvements translate into actual reduction in patient weight and/or reduction in health-related costs related to overweight and obesity in youth. *(J Pediatr 2013;163:1313-6)*.

Childhood overweight and obesity currently affect 1 in 3 children.[1] Associated morbidities and health concerns include type 2 diabetes, nonalcoholic fatty liver disease, obstructive sleep apnea, increased cardiovascular risk, and orthopedic issues.[2-4] Outpatient costs of $14.1 billion and inpatient costs of $237.6 million have been related to childhood obesity and overweight status in the US.[5,6]

It has been recommended that clinicians assess, monitor, and track growth and weight status and deliver prevention messages related to increased physical activity, reduced sedentary behavior, and promotion of nutritious foods.[7,8] However, clinician compliance with these published recommendations is not universal.[9-11] We aimed to improve clinician compliance with published practice recommendations via the Health and Obesity: Prevention and Education (HOPE) Curriculum Project.

Quality improvement (QI) project participation is now an American Board of Pediatrics (ABP) requirement to maintain general pediatric and pediatric subspecialty board certification. It is important to evaluate whether such participation in QI activities actually results in improved practices and clinical outcomes. The HOPE project has been accredited by the ABP to provide requisite Maintenance of Certification (MOC) Part 4 credit. We report on the performance of initial enrollees in the MOC Part 4 program of the HOPE project.

## Methods

The HOPE project was developed initially as a pediatric resident–based education program and designed to meet all American College of Graduate Medical Education competencies, including practice-based learning.[12] The project included web-based modules addressing various clinical issues related to childhood obesity (**Table I**; available at www.jpeds.com) that provided 10.5 hours of continuing medical education credits. In light of demonstrated lack of compliance with published recommendations,[9-11] the HOPE program

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| ABP | American Board of Pediatrics |
| HOPE | Health and Obesity: Prevention and Education |
| MOC | Maintenance of Certification |
| QI | Quality improvement |

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The HOPE Curriculum Project received funding from the Vitamin Cases Consumer Settlement Fund (Cypress Funds). The authors declare no conflicts of interest.

 http://dx.doi.org/10.1016/j.jpeds.2013.05.011

was also made available to clinicians in practice for education credit and for ABP MOC Part 4 credit.

To receive ABP MOC Part 4 credit, HOPE participants were required to perform a QI project, which involved reporting performance of clinical care objectives as documented via medical chart review over 3 sessions, which were scheduled at baseline, 3 months, and 4 months. Each medical chart review session required participants to determine whether they had performed (as measured by chart documentation) the screening, prevention, and management care activities and practices promoted by the 2007 Expert Committee recommendations over 10 patient visits as reviewed in the 15 education modules. Specific clinical activities and practices that were retrieved from the medical record are listed in Table II (available at www.jpeds.com). After each chart review session, participants were required to enter their data into a data collection system, where their data were compared with their own data over time and with available group participant data. Reports regarding participant progress over time were provided to each participant after each data entry session. Participants were also required to watch all medical education modules and complete associated before-and-after questionnaires. After completion of all education modules and the 3 medical chart review sessions, participants were given 25 points of the required MOC Part 4 40-point credit minimum to maintain their board certification; no partial credit was granted. MOC Part 4 and associated continuing medical education credits were provided to participants free of charge. Availability of this program was not actively advertised; however, program administration contact information was provided at the ABP MOC website and at the websites of the American Academy of Pediatrics and the North American Society of Pediatric Gastroenterology, Hepatology, and Nutrition.

No patient identifying information (name, date of birth, sex) was collected from medical record review. Only performance of clinical practices such as body mass index and weight status assessment, screening for overweight- and obesity-related comorbidities, and discussion of obesity prevention messages were assessed.

Data from questionnaires and medical chart reviews were recorded on participant entry into the website. For participants who attempted to repeat knowledge questionnaires, only data from the initial attempt were credited to the participant as documented by time entry data. Answers to knowledge questions were scored as correct versus incorrect with overall performance scored as the proportion of number of correct answers compared with the total number of questions. Suboptimal knowledge in a given area was defined as responding correctly to <75% questions asked in the knowledge assessment questionnaire. Participants' compliance in the 12 goal areas of obesity screening, prevention, and management was scored independently and across all measures.

Suboptimal practice performance was defined as <70% participant compliance with a specific clinical practice recommendation across 10 medical charts in a given review session of 10 medical charts. Suboptimal self-efficacy was defined as a score of <7 of the 10-point Likert scale. Categorization by suboptimal performance or self-efficacy allowed areas for QI to be identified.

To determine the effect of the education modules on participants' knowledge and self-efficacy, participants' knowledge and self-efficacy scores were compared before and after viewing a given education module. Similarly, participants' performance in the 12 goal areas of obesity and overweight screening, prevention, and management were compared across the 3 data collection sessions. Comparison analyses over time were performed using the analysis of multivariate analysis of variance repeated-analyses model as provided by JMP version 9 (SAS Institute, Cary, North Carolina).

## Results

Fifty-one participants from North America participated in the HOPE ABP MOC Part 4 program; 75% were women, and 50 participants were from the US (32% from the West, 30% from the South, 22% from the Midwest, and 16% from the Northeast). One participant resided and practiced in Canada. Most completed the process within a median 8-month (IQR 6-11 months) period, with an average time interval of 4 (IQR 3-5) months between data collection sessions 1 and 2 and 2 (IQR 1-3) months between sessions 2 and 3. The majority of participants (69%) reported learning about the program via the ABP MOC website.

Table III presents participant outcome data in knowledge acquisition. At baseline, the majority of participants demonstrated suboptimal knowledge in the epidemiology of childhood obesity (63%), the Expert Committee recommendations (55%), how to put the Expert Committee recommendations into practice (53%), motivational interviewing (71%), advanced parenting (56%), Latino and Asian/Pacific Islander concerns in regard to obesity (61%), and advocacy for childhood obesity (61%). After the modules were viewed, significant improvement was demonstrated in knowledge acquisition in all topic areas ($P < .01$).

Table IV presents participant outcome data in reported self-efficacy over time. The majority of participants reported suboptimal self-efficacy in 12 of the 15 areas at baseline. However, the majority achieved significant improvements in self-efficacy after participation in the HOPE program ($P < .001$).

Table V presents participant outcome data on performance of the 12 clinical practice recommendations over time. At baseline, the majority of participants demonstrated suboptimal performance of clinical practice recommendations regarding dietary assessment (67%), patient readiness for change (57%), and identification of management stage (57%). Over time, participants as a group demonstrated significant improvements in performance of selected practice recommendations ($P \leq .02$). Analyses demonstrated significant improvement in clinical practice performance of evaluated practice