

Childhood Obesity in Primary Care: Results of a Novel Pilot Collaborative to Improve Obesity-related Risk Assessment at Well-child Visits

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Background & Methods

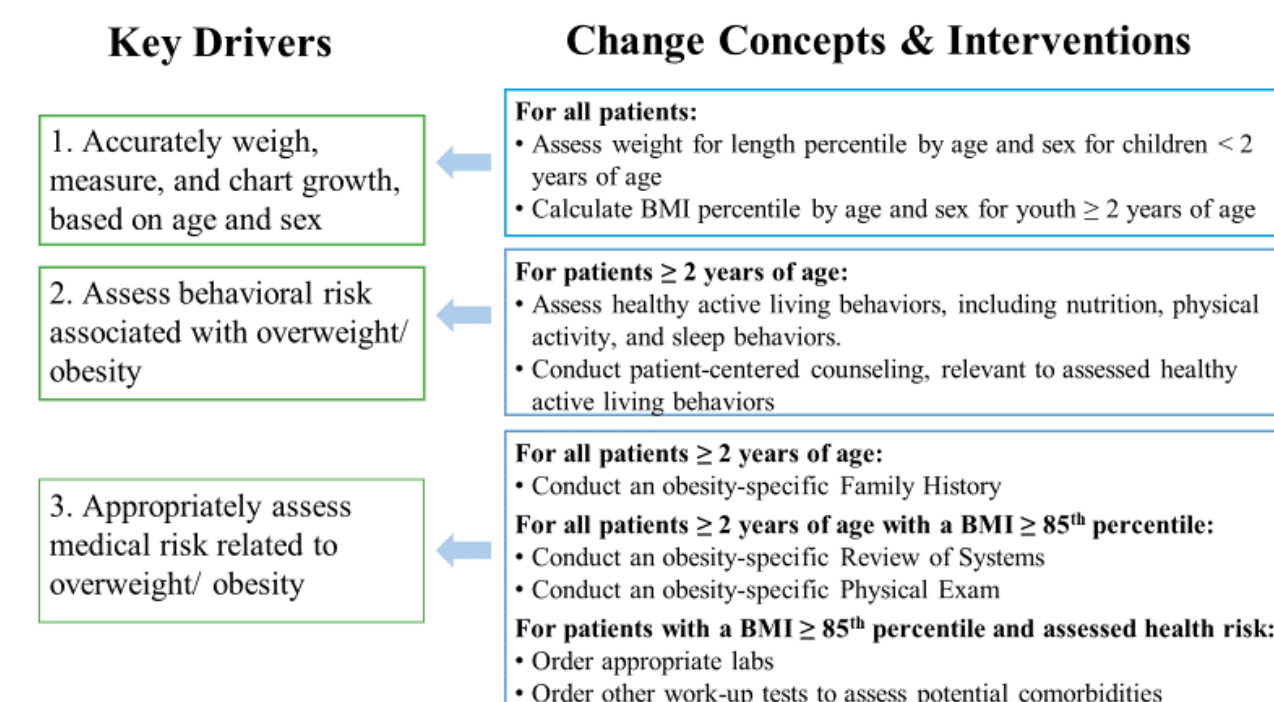
Rationale: A gap remains between the primary care provided to pediatric patients and standards for obesity prevention and treatment. Systems-level quality improvement (QI) processes are likely needed. However, QI projects are often time- and resource-intensive or focused at the level of individual providers. To address these issues, a brief, virtual, team-based, pilot QI collaborative was conducted to facilitate a comprehensive obesity-related risk assessment at well-child visits, including growth, behavioral, and medical risks.

Purpose: To evaluate the feasibility and effectiveness of a novel QI project to improve obesity-related care at well-child visits.

Design & Methods:

- Participants and Basic Structure:** 11 diverse practice teams, including 35 pediatricians and 37 staff, implemented changes while participating in a 19-week QI collaborative, involving 4 national webinars and 4 local meetings. Pediatricians seeking part 4 Maintenance of Certification (MOC) credit also completed four required Continuing Medical Education (CME) modules.
- Other Intervention Supports:** Teams had access to two additional (optional) CME modules, ongoing technical assistance, tools for each area of obesity-related risk assessment, and a comprehensive algorithm.
- Clinical Data:** To minimize burden, teams submitted clinical data at 3 time points, based on most-recent charts, including ≥ 20 charts/ team and ≥ 5 charts/pediatrician. Up to 9 clinical measures/team were calculated (as available), including universal measures and those specific to children with overweight/obesity.
- Surveys:** Individual participants completed brief pre- and post-project surveys containing Likert-type questions, to evaluate relevant changes in attitudes, perceived knowledge, and behavior. Post-surveys also included assessments of project resources and satisfaction with participation. After 11 months, team leaders were sent a follow-up survey, to assess the sustainability of practice changes. All surveys also invited comments.
- Data analysis:** Data were analyzed using SPSS 24.0. Distributions were examined and descriptive statistics generated for all measures. Fisher's exact test was used to compare aggregated and team-specific clinical measures at T2 and T3 with baseline values. Survey responses were compared over time using paired t-tests. Hypotheses were one-sided (improvement) with significance set at $p < .025$ for clinical measures and $p < .011$ for survey measures, to account for multiple comparisons.

Key Driver Diagram



Practice Characteristics (N=11)

Variable	Characteristic	N	Percent
Region	Northeast	4	36
	South	6	55
	Midwest	1	9
Location	Urban	3	27
	Suburban	3	27
	Rural	5	45
Practice Type	1-2 pediatrician practices	3	27
	3-10 pediatrician practices	3	27
	Non-government hospital/clinic	2	18
	Other (academic, multi-specialty, etc.)	3	27
	Medical Home Status (NCAQA PCMH Recognition)	Yes	3
	Some features or in progress	3	27
	No	5	45

Results: Clinical Measures

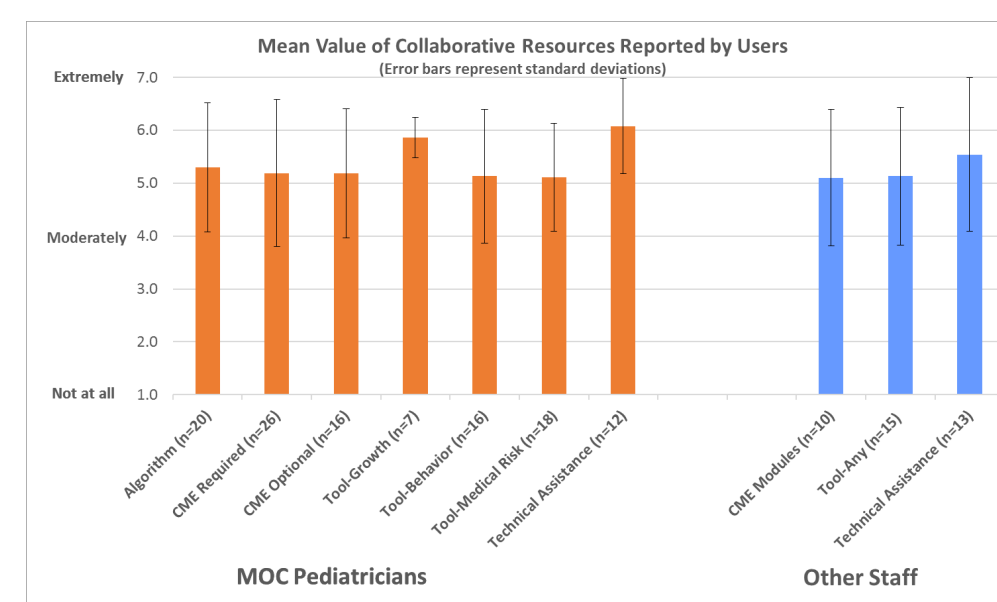
Comparison of the Percentage of All Submitted Charts Meeting Measurement Standards at Baseline Versus at Time 2 and Time 3. (Values are percentages with ns in parentheses.)

Measure	Baseline	T2 (Week 9)	T3 (Week 16)
Weight-for-length Percentile Assessed	75.0 (72)	99.2*** (121)	100*** (94)
Body Mass Index Percentile Assessed	82.8 (273)	99.1*** (220)	100*** (231)
Obesity-specific Family History Assessed	50.5 (273)	81.4*** (220)	80.5*** (231)
Healthy, Active Living Behaviors Assessed	56.0 (273)	84.1*** (220)	83.1*** (231)
Behavioral Counseling Provided	88.9 (153)	87.6 (185)	92.2 (192)
Obesity-specific Review of Systems Conducted	53.1 (98)	79.5*** (88)	76.8*** (95)
Obesity-specific Physical Exam Conducted	50.0 (98)	86.4*** (88)	89.5*** (95)
Labs Ordered	48.6 (35)	60.5 (38)	78.9** (38)
Work-up Tests Conducted (as appropriate)	71.4 (35)	78.9 (38)	89.5 (38)

Increases at T2 and T3 by Fischer's exact test are denoted as follows: * $p < .025$ (critical alpha); ** $p < .01$; *** $p < .001$.

- Relative to baseline values for 9 clinical measures, aggregated across all submitted charts, 6 and 7 measures were improved at T2 and T3, respectively.
- Despite the modest sampling strategy, at least 1 significant improvement was noted for 8 of 11 teams (median = 2 per team), with a significant decrease only observed within a single team and measure.

Results: Key Resources



- Pediatricians and staff who completed post-project surveys (n= 26 and 31, respectively) and reported using various key project resources, considered them to be easy to use and valuable.

Results: Pediatrician Capacity

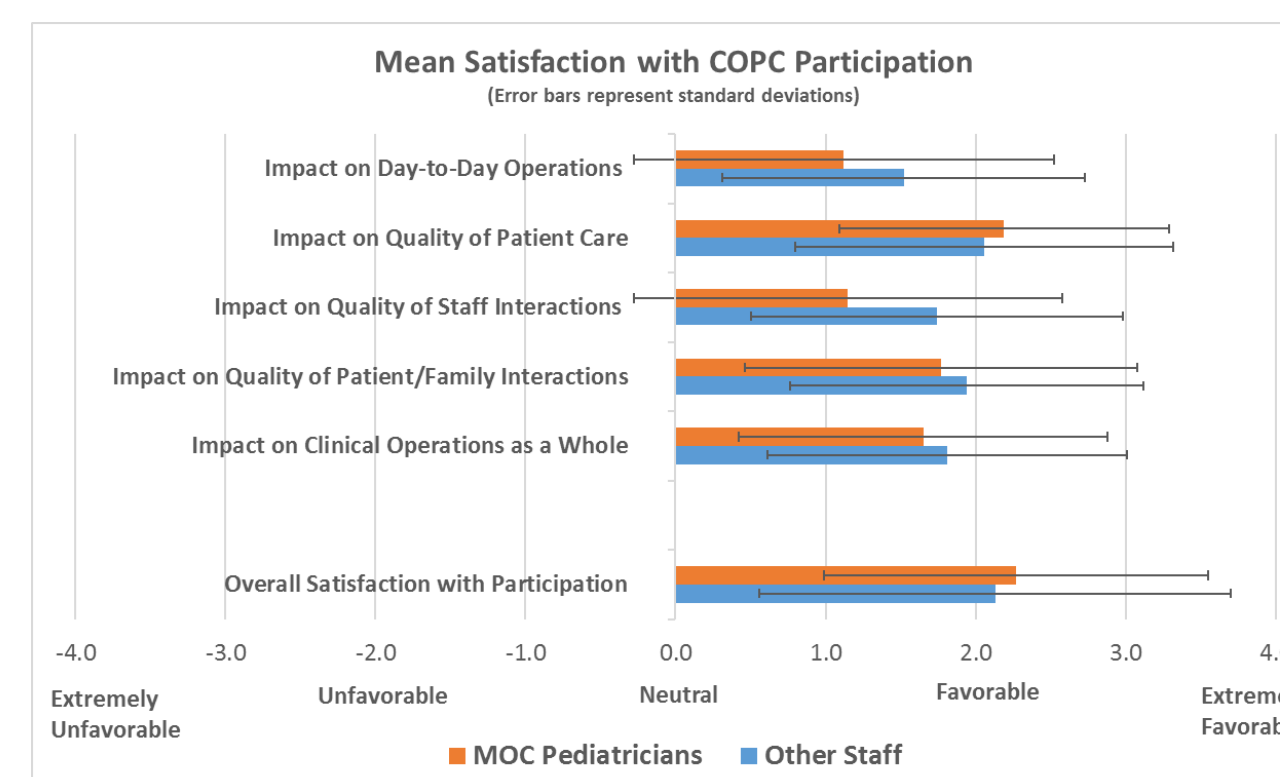
Paired T-test Comparison of the Self-reported Capacity of Pediatricians (n=27) for Various Aspects of Obesity-related Care Before Versus After Participation

Variable ^a	Aspect of Care	Pre-survey Mean (SD)	Post-survey Mean (SD)	T-statistic
Knowledge ^b	Weight for length assessed	6.3 (1.0)	6.6 (0.7)	-1.35
	BMI assessed	6.5 (0.9)	6.7(0.5)	-1.44
	Healthy active living behaviors assessed	6.1 (0.9)	6.6 (0.5)	-2.37
	Counseling conducted	5.4 (1.1)	6.3 (0.8)	-3.28*
	Family history assessed	4.9 (1.5)	6.3 (0.8)	-4.62**
	Review of systems assessed	5.0 (1.4)	6.3 (0.8)	-4.39**
	Physical exam performed	5.4 (1.1)	6.4 (0.8)	-3.99**
	Labs obtained	5.6 (1.2)	6.4 (0.7)	-3.70*
	Work-up tests performed	5.4 (1.1)	6.2 (0.7)	-4.08**
	Model for Improvement	3.9 (1.8)	5.6 (1.1)	-6.12**
Confidence ^b	Weight for length assessed	6.4 (0.9)	6.8 (0.4)	-1.99
	BMI assessed	6.6 (0.7)	6.8 (0.4)	-1.22
	Healthy active living behaviors assessed	5.8 (1.0)	6.4 (0.7)	-2.77*
	Counseling conducted	5.4 (1.2)	6.2 (0.8)	-3.25*
	Family history assessed	4.9 (1.2)	6.1 (1.0)	-4.35**
	Review of systems assessed	4.9 (1.2)	6.0 (0.9)	-4.51**
	Physical exam performed	5.3 (1.1)	6.3 (0.9)	-3.71*
	Labs obtained	5.5 (1.0)	6.1 (1.2)	-2.40
	Work-up tests performed	5.4 (1.2)	6.1 (1.2)	-2.66
	Behavior ^c	Weight for length assessed	82.0 (31.4)	92.7 (21.4)
BMI assessed		97.6 (4.9)	98.6 (3.4)	-1.17
Healthy active living behaviors assessed		80.7 (19.1)	88.6 (12.1)	-2.38
Counseling conducted		73.7 (21.3)	77.8 (20.7)	-0.73
Family history assessed		43.2 (28.6)	68.6 (23.6)	-3.80*
Review of systems assessed		44.8 (31.4)	73.7 (18.8)	-4.77**
Physical exam performed		66.2 (28.8)	85.5 (13.2)	-3.07*
Labs obtained		62.2 (30.6)	76.1 (25.8)	-2.37
Work-up tests performed		58.9 (29.0)	66.7 (27.8)	-1.44

^aCapacity domains included perceptions of importance, knowledge, confidence, and behavior during the past two months. No differences in importance were noted (not shown).
^bResponse categories include: 1=not at all, 2=a little, 3=somewhat, 4=moderately, 5=rather, 6=very, 7=extremely
^cScale is percent of well-child visits from 0 to 100.
^{*} $p < .011$ (critical alpha); ^{**} $p < .001$.

- Comparisons of pediatrician survey responses support favorable changes in mindsets and behavior over time for those who completed both surveys (RR= 74%).
- Capacity changes were not observed for growth assessments but were particularly evident regarding clinical assessments for children with overweight/obesity.

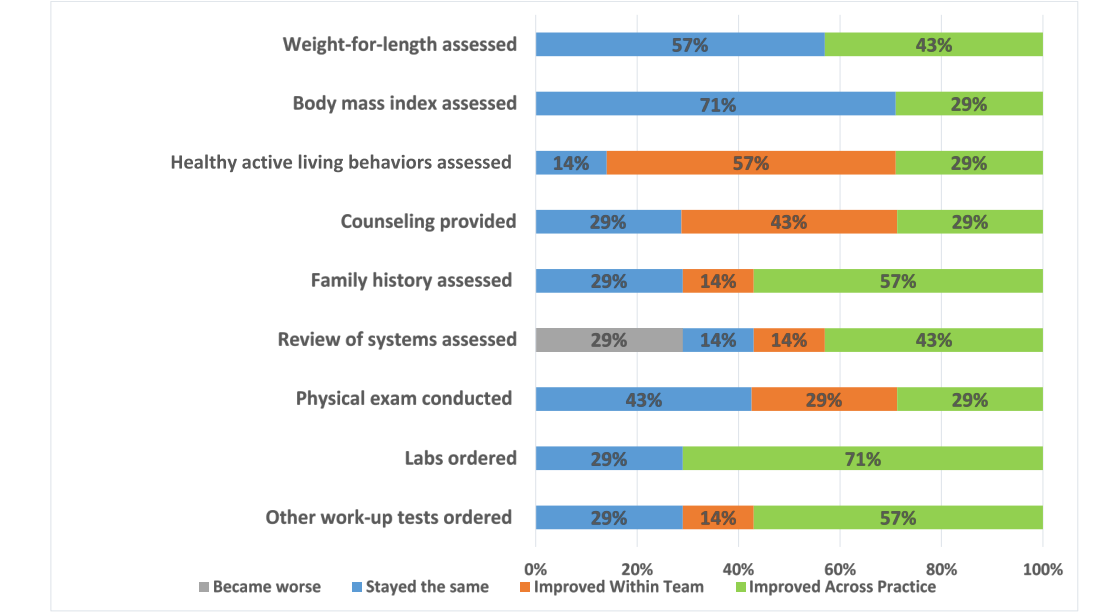
Results: Staff Satisfaction



- Both pediatricians and staff reported favorable levels of satisfaction with participation across specific aspects of clinical care and overall.
- 89% of pediatricians also completed MOC criteria.

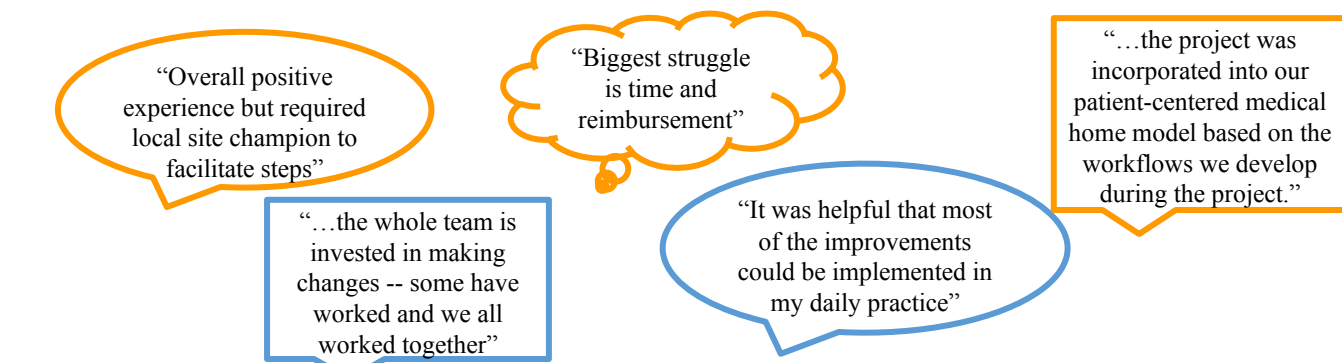
Results: Sustainability

Percent Teams Reporting Maintenance of or Changes in Final COPC Results at 11-Month Follow-up (n=7)



- Responses to follow-up surveys by pediatrician team leaders (RR = 64%) support sustained changes or continued improvements.
- Leaders typically reported using 3 information sources, including personal observation (100%) or judgment (71%) and formal data collection efforts (57%).

Participant Feedback



Conclusions

Conclusions: Pilot results support the general feasibility and effectiveness of participation in a brief, virtual QI collaborative to facilitate the implementation of a comprehensive obesity-related risk assessment during well-child visits. Evidence includes:

- Improvements over time observed for most clinical measures and teams
- Increased self-reported pediatrician capacity to provide quality care, particularly in areas relevant to children with overweight or obesity
- A high MOC completion rate for pediatricians
- Favorable pediatrician and staff perceptions regarding the:
 - Feasibility and value of using key project resources
 - Impact of participation on everyday clinical operations
 - Overall value of participation
 - Sustainability of achieved changes

Limitations: A relatively modest number of practices participated in the pilot. Interpretation is also limited by the convenience sampling strategy used for clinical measures and incomplete response rates for surveys.

Next Steps: A replication/expansion of the project is presently underway, involving 23 practices from around the US, with results expected by fall, 2017.

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