Medicaid Childhood Obesity Prevention Pilot

Final Report to the Texas Legislature

As Required By
S.B. 870
81st Legislature, Regular Session, 2009

Health and Human Services Commission

January 2013
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EXECUTIVE SUMMARY

The Texas Health and Human Services Commission (HHSC) submits the Medicaid Childhood Obesity Pilot Program Final Report to the Texas Legislature, in accordance with S.B. 870, 81st Legislature, Regular Session, 2009, and codified as Government Code, Section 531.0993, in collaboration with the Texas Department of State Health Services (DSHS), to develop and implement a two-year pilot program designed to:

- Decrease the obesity rate of children in the Children’s Health Insurance Program (CHIP) and the Medicaid program.
- Improve nutritional choices and increase physical activity levels.
- Achieve long-term reductions in CHIP and Medicaid program costs incurred by the state as a result of obesity.

HHSC is required to submit a report to the Legislature on or before November 1, of each year of the pilot, and a final report three months after the pilot ends. HHSC previously submitted reports in November 2010 and November 2011, and this is the final report related to the child obesity prevention pilot due in February 2013.

Pilot Program Implementation

HHSC issued a Request for Proposal (RFP) from organizations to develop and implement a pilot program as required by S.B. 870. The contract was awarded to the managed care organization Amerigroup. Amerigroup proposed the implementation of an intervention program which they had previously implemented in two other states. They reported that these programs had been associated with desired changes in children’s diets and nutrition, activity levels, and Body Mass Indices (BMI). A contract between HHSC and Amerigroup was signed in August 2010 for pilot implementation in the Travis Service Area. The program model included:

- visits with a primary care provider;
- assessments;
- care coordination; and
- a menu of “enhanced community services.”

As a result of increasing concerns regarding low enrollment numbers in the study, HHSC and Amerigroup negotiated a new contract in August 2011 to expand the model to Dallas County and to expand eligibility requirements.

Pilot Challenges

The pilot experienced various key challenges that affected its success in reaching the pilot goals such as, lack of parental and provider interest to participate in the pilot, a significant attrition rate, problems with recruiting clients and loss of Medicaid coverage during the pilot. The collective effect of these challenges resulted in less than expected client enrollment figures despite expanding the service area and adjusting the client eligibility criteria later in the pilot time period.
Program Evaluation

A program evaluation was planned at the time that the pilot program was designed and metrics which were to be collected were included in the contracts signed between HHSC and Amerigroup, and later, to Amerigroup’s subcontractor, Diabetes Health and Wellness Institute (DHWI). Due to problems with the data received, the existing outcomes data from the pilot program cannot be used to draw inferences about the effectiveness of any of the strategies used at the two pilot sites for preventing childhood obesity. The main problems with the data received were:

- The enrollment numbers were much lower than expected.
- Attrition was relatively high, leading to a small overall sample size and denying statistical power to the results.

The services which children received, both between and within each of the two subpilots, were different, mixed, inconsistent, and, largely, unknown, compounding the problem of low sample size for the purposes of analysis.

Conclusion

S.B. 870 directed HHSC and DSHS to establish a pilot program to address the public health problem of obesity by implementing strategies with children to improve their nutrition and physical activity behaviors, reduce childhood obesity, and create cost savings in Medicaid. Because of low sample size and problematic data quality received from the two pilot program sites, conclusions cannot be drawn regarding which strategies are or are not effective at achieving the goals set out in statute. A recent synthesis of research indicates that some other models of child obesity prevention hold some promise for meeting the goals specified in statute. This research, combined with the knowledge gained from experiences with this pilot, may be useful in guiding future efforts.
INTRODUCTION


S.B. 870 required HHSC, in collaboration with the Texas Department of State Health Services (DSHS), to develop and implement a two-year pilot program designed to:

- decrease the obesity rate of children in the Children’s Health Insurance Program (CHIP) and the Medicaid program;
- improve nutritional choices and increase physical activity levels; and
- achieve long-term reductions in CHIP and Medicaid program costs incurred by the state as a result of obesity.

HHSC is required to submit a report to the Governor, Lieutenant Governor, and the Speaker of the Texas House of Representatives on or before November 1, of each year of the pilot, and a final report three months after the pilot ends. HHSC previously submitted reports in November 2010 and November 2011, and this is the final report related to the child obesity prevention pilot due February 2013.

The statute requires the final report to include the following:
- a summary of the identified goals for the program and the strategies used to achieve these goals;
- an analysis of all data collected from the program as of the end of the period covered by the report and the capability of the data to measure achievement of the identified goals; and
- recommendations regarding the continued operation or expansion of the pilot.

BACKGROUND

The prevention of childhood obesity is a significant and growing public concern for reasons related directly to health and to associated healthcare costs. According to the Texas Interagency Obesity Council, obese adults and children have a much higher risk of developing high cholesterol, high blood pressure, heart disease, stroke, Type II diabetes, pulmonary disease, arthritis, and many other chronic conditions that reduce quality of life and cause premature disability and death.1

A recent report written by the Texas Office of the Comptroller of Public Accounts discusses the substantial and growing rates of childhood obesity, the link of childhood obesity to adult obesity, and the cost concerns for the state, related to population-level health care costs associated with obesity. The Comptroller’s report includes the following information:

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Prevalence, Increasing Rate, and Long-Term Impact

- “20.4 percent of Texas children aged 10 to 17 are obese.
- Since 1980, the rate of obesity among U.S. children and adolescents tripled.
- Obese children have an 80 percent chance of staying obese their entire lives.”

Costs Associated with Obesity

- “Average health care spending for obese individuals was $1,429 or 41.5 percent higher than that of non-obese persons in 2006.
- Individuals with a BMI greater than 35 kg/M^2 represent 37 percent of the population but account for 61 percent of the costs due to excess weight.
- A recent study of IBM’s self-insured program showed 2008 average per capita health insurance claims for obese children were $2,907, compared to $1,640 for non-obese children. Children with type 2 diabetes had average claims of $10,789. The study found that hospitalization rates for obese children with chronic health conditions were up to 2.9 times higher than for non-obese children with no chronic conditions.
- Obesity could cost Texas businesses $32.5 billion annually by 2030, if current trends in obesity and health care costs continue.”

The rates of childhood and adult obesity and the associated high healthcare costs discussed above should be sufficient to merit public interest in obesity prevention. However, the subject is particularly relevant for the long-term health and healthcare costs of the population of children who qualify for healthcare coverage through Medicaid and CHIP, based on low family income. Low-income people in the United States have higher prevalence of obesity, according to the Behavioral Risk Factor Surveillance System conducted by the Centers for Disease Control and Prevention.

Texas Initiatives to Address Obesity

It is generally recognized that the causes of overweight/obesity are multi-faceted. Children today, generally, are thought to eat too much high-calorie “fast food,” exercise too little, and spend too much of their time in sedentary activities. Texas has initiated several programs or initiatives designed to address obesity. Some of these initiatives include the following:

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3 Ibid “Gaining Costs, Losing Time.”
DSHS has a comprehensive nutrition, physical activity, and obesity prevention program that promotes community policies and environmental changes to help make healthy eating and active living easier for Texans. In addition, DSHS has developed a multi-year strategic plan to address obesity in the state.

The Women, Infants, and Children (WIC) program, administered in Texas by DSHS, promotes breastfeeding (associated with decreased levels of infant and childhood obesity) and has implemented a protocol for counseling overweight and obese children.

S.B. 556, 80th Legislature, Regular Session, 2007, created the Interagency Obesity Council, which includes the Commissioners of DSHS, the Texas Education Agency, and the Department of Agriculture, in order to monitor and evaluate obesity prevention efforts in the state for both children and adults. The council serves to enhance communication and coordination of the critical health issue of obesity among state leaders and guide future planning around obesity prevention, health promotion, and improved nutrition.

The Texas Pediatric Society developed an obesity toolkit available on its website to assist clinicians in providing care for both overweight and obese children. Topics addressed in the toolkit include diagnosis, treatment, practitioner tools, and sample patient handouts in both English and Spanish.

The Department of Family and Protective Services (DFPS) has established minimum standards for well-balanced meals for children in child-care centers.

The Texas Health Steps program requires that children on Medicaid receive a BMI measurement, nutritional counseling, and anticipatory guidance during their well-child visits.

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13 Body mass index (BMI) is a measure used to determine childhood overweight and obesity. It is calculated using a child's weight and height. BMI does not measure body fat directly, but it is a reasonable indicator of body "fitness" for most children and teens. A child's weight status is determined using an age- and sex-specific percentile for BMI rather than the BMI categories used for adults because children's body composition varies as they age and varies between boys and girls. . . For children and adolescents (aged 2—19 years): Overweight is defined as a BMI at or above the 85th percentile and lower than the 95th percentile for children of the same age and sex. Obesity is defined as a BMI at or above the
PILOT PROGRAM IMPLEMENTATION

After the passage of S.B. 870 in 2009, HHSC and DSHS worked collaboratively to create a pilot program to meet the specified goals. In a series of meetings in the fall of 2009, HHSC and DSHS laid out the high-level design for a pilot program. A public Request for Proposal (RFP) process was used to solicit ideas from external entities for the program design.

Pilot Program Model

Initial Model

Since the target population of children was defined in statute as being children in the Medicaid Program and CHIP, the decision was made to use a model of childhood obesity prevention that would be organized and administered by managed care organizations (as opposed to, for example, a school-based model). The rationale for that choice was that managed care organizations can identify and contact children/families based on health insurance status (e.g., Medicaid recipients) and can also recruit providers to participate in the pilot.

After the RFP was released, both Medicaid managed care health plans in the Travis Service Delivery Area, Amerigroup and Superior, submitted proposals for implementing the pilot project. Amerigroup was selected to deliver pilot services in the Travis Service Area (Travis county), based on the following qualifications:

- Implementation of similar programs in Georgia and Tennessee and evidence of effectiveness, based on Amerigroup’s report.
- Previous experience with development and utilization of client education materials.
- Experience with a model program that addresses all program requirements.

Amerigroup’s Pilot Program, Travis Service Area

In August 2010, HHSC and Amerigroup signed a contract for pilot implementation specifying the expectation of a pilot group of 350-400 participants completing 6 months in the program and a minimum of 300 participants completing 12 months of the program.

The eligibility criteria in the original contract (for the Travis service area) were:

- Ages 6-11 years at the time of enrollment.
- Pre-pubertal at the time of enrollment.
- Overweight but not obese, based on body mass index (BMI).
- No weight-related co-morbid health conditions.
- Enrolled in Medicaid.

Changes to Model: Contract Revisions and Addition of Dallas Pilot Site

Due to concerns regarding enrollment numbers in the study, after one year of implementation in the Travis service area, HHSC and Amerigroup negotiated a new contract to expand the model to Dallas County and to expand eligibility requirements. The Dallas County pilot was administered by the Diabetes Health and Wellness Institute (DHWI), affiliated with the Baylor Health Care System. The new contract was signed in August 2011, and included these changes:

- The DHWI pilot would seek to deliver healthy clinical outcomes through sport and play, with emphasis on combating obesity, sedentary lifestyles, and chronic diseases such as Type II diabetes.
- The enrollment period was extended to October 2011.
- Changes to eligibility criteria were made which were intended to include more children in the pilot, for example:
  - Children at a high risk for developing obesity although this is not clearly defined clinically. Children with “acceptable” co-morbid conditions could be included.
  - Children who were enrolled while insured through Medicaid were allowed to remain in the pilot, if they transitioned to the CHIP program through the same Managed Care Organization.

Pilot Program Models Utilized in Travis and Dallas Service Area

The strategies for achieving the goals laid out in statute were designed by the contractor (Amerigroup) and subcontractor (DHWI) who implemented the distinctive pilot programs at the two pilot sites. The pilot program models had some similarities and some differences between the two sites. Similarities and differences between the pilot programs at the two sites, Travis Service Area (Amerigroup) and Dallas (subcontracted from Amerigroup to DHWI), can be found in Appendix 1.

Pilot Funding

The pilot began on November 1, 2010 and concluded on October 31, 2012. Amerigroup was appropriated funds totaling $1,135,249 pursuant to legislation.

An amendment changed the contract’s payment method to a cost-based methodology, i.e., HHSC paid Amerigroup for actual costs that were directly attributable to the pilot, reasonable and verified. The HMO was to return all unspent funds to HHSC upon termination or completion of the pilot.

Barriers to the Pilot’s Success

Both Amerigroup and DHWI reported significant problems with enrolling clients into and retaining them in the pilot. Many more children and families were approached about the pilot than those who were ultimately enrolled.
Reasons Given for Problems with Enrollment

Amerigroup reported that the following reasons may have contributed to low enrollment:

- Parents did not believe that their children in the “overweight” or “at-risk” categories needed the program.
- Some parents were not willing to commit to requirements for participation.
- Strict guidelines for member inclusion, such as the BMI percentile requirements, excluded otherwise engaged members and their parents, who expressed a high level of readiness.
- Some eligible members chose not to enroll because a non-qualified sibling was not able to participate.
- Some clinically obese members screened were not otherwise eligible, although they expressed need and desire to participate.  

\(^{14}\) Ibid “Medicaid Child Obesity Final Report.”
PROGRAM EVALUATION

Government Code, Section 531.0993, as amended by the passage of S.B. 870, 81st Legislature, Regular Session, 2009, requires that an analysis of data from the program period and a report on the capability of the data to measure achievement of the identified goals be provided to the Legislature. A program evaluation was planned at the time that the pilot program was designed and metrics that were to be collected were included in the contracts between HHSC and Amerigroup (and later, to their subcontractor, DHWI). Due to the small sample size, data quality problems, the heterogeneity of services received, and the too-short evaluation period, the existing outcome data from the pilot program cannot be used to draw inferences about the effectiveness of any of the strategies used at the two pilot sites for preventing childhood obesity.

Evaluation Questions and Metrics

Following statute, the primary questions for the pilot program evaluation were:

1. How much did participants' body mass indices change?
2. How did participants' nutritional choices change?
3. How did participants' physical activity levels change?

In order to measure whether the goals of the pilot were achieved, Amerigroup and their subcontractor in Dallas, DHWI, agreed to provide to HHSC data regarding the following metrics for pilot participants:

- Data about participants (e.g., name and age) and enrollment/disenrollment dates.
- Data related to weight, e.g., body mass index.
- Data about participants' nutritional behavior (e.g., fruit and vegetables eaten per day, water and sodas consumed).
- Data about participants' physical activity (e.g., number of physical activity sessions).
- Data about actual services received.

Data Limitations

Insufficient Sample Size to Conduct Meaningful Analysis

For logistical and budget constraint reasons, this was not a randomly assigned study. For this reason, the group of children who participated may have been characteristically different from the Medicaid pediatric population as a whole (for example, children who participated almost certainly were more motivated regarding obesity prevention). In addition, in order to draw valid conclusions from the data that could be inferred to the entire child Medicaid population, a sample size of over 2,000 children would have been necessary.

The number of children participating in the pilot needed to complete statistically valid analysis, and agreed to in the contract with Amerigroup, was 300 children completing the pilot program and the 12-month assessment, which was not achieved. Due to low enrollment and high attrition,
there is insufficient sample size to conduct meaningful analysis.

- **Low sample size** - Although an expectation of participation by 300 children completing the program was explicitly stated in both the August 2010 and revised August 2011 contracts with Amerigroup, the actual number who completed 12 months of an intervention was 66 children in Travis County and 58 children in Dallas County (total of 124). These are raw numbers, not considering specific problems with data quality. Since the interventions at the two pilot projects were different, the pilot group size needed to be considered separately for each site for analysis purposes, and 58 at one site and 66 at another are both too small for meaningful analysis to be performed, especially in the context of high attrition (discussed next).

- **High proportion attrition** - High attrition from a project contributes to low sample size, obviously, but it also creates additional problems by introducing bias: subjects who disenrolled may be different in important characteristics than those who remained, making the experiences of those who remained in the study less representative of all children in the original sample. In Travis/Williamson County, 92 children in total were enrolled and 26 children (28 percent) were disenrolled before 12 months. In Dallas County, 93 total children were enrolled and 35 children (38 percent) were disenrolled before 12 months.

**Data Quality Problems**

Data quality problems in the Amerigroup reports raise questions about the completeness and accuracy of the data in hand. As a result, data interpretation was unreliable. These problems included:

- **Inconsistent Measurement Dates/Appointments** - Of the children remaining in the pilot, dates of actual measurements were often widely discrepant from the expected baseline dates and of the 3-month, 6-month, and 12-month assessments, making pre- and post-intervention data comparisons between participants impossible.

- **Missing Baseline Data** - In the Dallas County pilot, baseline data were not collected at all with regard to several possible variables (e.g., fruit and vegetable intake, outside activity levels, etc.). Instead, they were collected only after children had been in the program for one month.

- **Services Received Were Different for Different Children** - The services being offered to and received by the children that might lead to changes in activity, nutrition, and/or BMI were largely different between the two sites and for different children within each site. For instance, if one child attended physical activity classes and another child received a fruit and vegetable voucher, the data on their outcomes cannot usefully be combined or compared in order to inform the question of what strategies work for obesity prevention. This was not a failure of contract compliance; however, the heterogeneity of services compounded the problem of low sample size for the purposes of analysis.

- **Services Offered That Could Be Anticipated to Impact BMI Appear to Have Been Minimal in Travis County** - In Travis County, the enhanced community services described in the contracts with HHSC included five items: the MEND program (described in more detail in Appendix 1), physical activity classes, nutrition classes, vouchers for fruit and vegetables, and transportation vouchers—but the services children actually received were minimal, in
comparison. The item that likely could have had the greatest impact on individual-level BMIs was the MEND program. However, the final spreadsheets provided to HHSC noted that only six children completed the MEND program. Moreover, almost all children in the Travis/Williamson County pilot received no reported enhanced community services other than $2 fruit and vegetable vouchers to be spent at specific farmers’ market locations, and there was no documentation as to whether those vouchers were “spent.” Sixty-seven (67) children received between two and seven $2 fruit and vegetable vouchers during the project (keeping in mind that the fruit and vegetable voucher data were discrepant over time and, therefore, may not be complete).

**Considerations that May Help Guide Future Efforts**

Although it is not possible to draw specific conclusions about the effectiveness of individual obesity-prevention strategies from these two pilots, some of the problems encountered with implementation provide program-level information which might be used in designing future prevention efforts. Observations from this implementation include:

- The two pilot program implementations, using a model which was administered by a managed care organization and organized around visits/assessments with primary care physicians or program staff, were not successful in enrolling or retaining children in services (see discussion above regarding low enrollment and high attrition).
- There was lack of interest among parents and children in an intervention (using this model) for use with children who were overweight or at risk for obesity, but not actually obese. The lack of motivation among families, despite incentives to the children for participating, signals potential problems with this intervention model. High parent motivation was critical for success in this model since children could not receive any intervention services without the parents providing transportation to the appointments with the doctor or DHWI program staff, physical activity center, food stand, etc.
- There was lack of interest among physicians in participating in the pilot, given providers’ other responsibilities and time constraints. Lack of interest among physicians contributed to the problems with child enrollment. Of note, there was no incentive provided to physicians for participation in the pilot program, other than an educational opportunity.
- One common reason for attrition was an individual child’s change in health insurance status: children who started the program while enrolled in Medicaid and subsequently lost that Medicaid status, therefore, lost their eligibility for the pilot program.

For these reasons, aspects of this model appear not to work well for achieving program-level goals (enrollment, retention, etc.), suggesting that different models altogether for childhood obesity prevention might be more fruitful areas for future pilot program efforts. A recent journal article has summarized the evidence base of different strategies for child obesity prevention, organized by treatment setting (e.g., early childcare-based, school-based, healthcare setting based, etc.)\(^\text{15}\) which may provide direction on more effective solutions to childhood obesity prevention and to inform future efforts.

\(^{15}\) Ibid Foltz.
CONCLUSION

S.B. 870 directed HHSC and DSHS to establish a pilot program to address the public health problem of obesity by implementing strategies with children to improve their nutrition and physical activity behaviors, reduce childhood obesity, and create cost savings in Medicaid. Because of low sample size and problematic data quality received from the two pilot program sites, conclusions cannot be drawn regarding which strategies are or are not effective at achieving the goals set out in statute. A recent synthesis of research indicates that some other models of child obesity prevention hold some promise for meeting the goals specified in statute. This research, combined with the knowledge gained from experiences with this pilot, may be useful in guiding future efforts.
Appendix 1

Components of Pilot Program Models

The strategies for achieving the goals laid out in statute were designed by the contractor (Amerigroup) and subcontractor (DHWI) who implemented the distinctive pilot programs at the two pilot sites. The pilot programs had some similarities and some differences between the two sites. Similarities between the pilot programs at the two sites—Travis Service Area (Amerigroup) and Dallas (subcontracted from Amerigroup to DHWI)—include the following:

- **Parent/Child Screening & Readiness Assessment** - Amerigroup and DHWI were to screen each child for eligibility criteria, determine whether the child and parent(s) wanted and were ready to participate in the pilot project, obtain consent to participate, collect demographic information, and identify barriers to participation for the family.

- **Periodic Visits and Measurements** - Children who were enrolled in the pilot were to have visits with a primary care provider (in the Travis Service area) or with intervention program staff (Dallas area) in order to take baseline, 3-month, 6-month, and 12-month assessments of nutrition-related behavior, physical activity, height, weight, and BMI.

- **A Menu of “Enhanced Community Services” Offered** - At both pilot sites, enrolled children were offered a menu of services from which to choose, such as nutrition classes or physical activity opportunities. Services actually received depended upon family choices. More information about Extended Communities Services is addressed below, under the list of differences between the two pilot sites.

- **Information/Educational Materials** - Amerigroup and DHWI developed and distributed program information and educational materials to pilot participants.

- **Incentives for Participation** - Children received tangible incentives for participation, such as a bicycle for completing the 12-month assessment, after program completion.

Implementation at the two pilot sites was different in the following ways:

- **Physician-Based versus Program Staff-Based** - In the Travis Service area, the periodic assessments/visits were provided by primary care physicians. At the Dallas pilot site, they were provided by DHWI program staff. In the Travis Service Area, Amerigroup identified, recruited, and trained providers to participate in the pilot. Amerigroup identified high-volume, pediatric Medicaid providers to target for outreach about the study. Provider training included information on childhood obesity, motivational interviewing techniques, and facilitating behavioral change.

- **Types of Enhanced Community Services Received** - The community services that children received were different at the two pilot sites.
  - **Travis Pilot Site** - In the Travis Service Area pilot, six children participated in a program called Mind-Exercise-Nutrition-Do It! (MEND) which included twice-a-week intervention meetings for the participating children and their parents addressing “healthy eating, regular physical activity and behavior change.” The other enhanced community service (ECS) children received were $2 fruit and vegetable vouchers which could be spent at specific farmer’s market locations and transportation vouchers.
  - **Dallas Pilot Site** - In the Dallas County pilot site, enhanced community services that children received included visits to a DHWI fruit and vegetable stand; “support classes”
that included physical fitness sessions, nutrition lectures, snack/cooking demonstrations, and follow-up; one-on-one coaching sessions; and physical activity sessions (separate from that received in the support classes).

- **Care Coordination in Travis Service Area**—Amerigroup used full-time, dedicated case managers in order to maintain communication with participants, so that they could help to identify and resolve issues or obstacles to the child’s ongoing participation and compliance with the intervention protocol for that pilot.