DENVER: Study of Technology to Accelerate Research (STAR)

CHOICES Learning Collaborative Partnership

This brief summarizes findings from a CHOICES Learning Collaborative Partnership model of implementation of the "Study of Technology to Accelerate Research" (STAR) intervention in Denver Health pediatric primary care settings. Denver STAR leverages electronic health record (EHR) decision support tools to facilitate the diagnosis and management of childhood obesity during well-child care visits.

The Issue

Over the past four decades, childhood obesity has tripled.[1] Health care costs for treating obesity-related health conditions are high, costing $147 billion in 2008.[2] Interventions in clinical settings that aim to manage childhood obesity have the potential to help children lead healthier lives, reduce obesity prevalence in adulthood, and reduce health care costs.[3]

In Denver, 13.9% of 2-12 years old seen at Denver Health clinics have obesity. Although time-intensive counseling to improve dietary intake and physical activity is recommended, these interventions are often time consuming, resource intensive, and difficult to implement and sustain.[3,4] Leveraging existing EHRs to facilitate childhood obesity diagnosis and management, and engaging families through direct-to-parent communications, is a promising clinical strategy to reduce the prevalence of childhood obesity at a relatively low cost.

About STAR

The Denver STAR intervention leverages EHR decision support tools, operated by EPIC software, to promote recognition of pediatric obesity and facilitate recommended screening and management during pediatric well-child care visits. In addition, the Denver STAR intervention includes direct-to-parent communications in which parents receive text messages to support behavior change for their children. Families would also have access to a webpage that shares local health and wellness resources. Primary Care Physicians (PCPS) who see pediatric patients at Denver Health clinics would be trained in the EHR changes and motivational interviewing techniques to facilitate weight management discussions with the patients and families. Evidence obtained in a cluster randomized controlled trial showed that STAR helped to prevent excess weight gain compared to usual care.[4]

Comparing Costs and Outcomes

CHOICES cost-effectiveness analysis compared the costs and outcomes of the implementation of STAR within pediatric primary care practices in Denver Health with the costs and outcomes associated with not implementing STAR over a 10 year time period (2017-2027). The approach assumes that all Denver Health pediatric primary care clinics would implement STAR. We assume that all children ages 2- 12 with obesity (BMI > 95th percentile) who visit Denver Health clinics for well-child visits would benefit from the intervention.

Implementing STAR in Denver Health pediatric primary care settings is an investment in the future. By the end of 2027:

19,400 CHILDREN REACHED

by the Denver STAR Intervention over 10 years

303 CASES OF CHILDHOOD OBESITY PREVENTED

in 2027, the final year of the model

COST PER CHILD

to implement the Denver STAR intervention over 10 years

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Conclusions and Implications

Every child deserves a healthy start in life. This includes developing innovative clinical strategies that can be feasibly implemented to improve the quality of care for childhood obesity in pediatric primary care settings. By leveraging EHR tools managed by EPIC, Denver STAR is a scalable intervention that can be feasibly implemented in all Denver Health primary care clinics. The intervention is expected to reach 19,400 children over 10 years and would prevent 303 cases of childhood obesity in the final year of the model.

Denver STAR is a good buy as it is likely to have a high magnitude of effect on improving children's health at a relatively low cost per child. For every $1 spent on implementing Denver STAR, a projected $0.78 would be saved in obesity-related health care costs. Denver STAR also supports institutional policies by collecting reportable data for Healthcare Effectiveness Data and Information Set (HEDIS) performance measures.

Denver STAR intervention is projected to both improve overall population health, as well as reduce disparities in childhood obesity. The modeled implementation of STAR in Denver Health, a health system that predominantly serves a higher proportion of racial/ethnic minority groups, is projected to result in significant health benefits among Hispanic and Black populations in Denver.

Evidence is growing about how to help children achieve a healthy weight. Interventions such as Denver STAR, which is evidence-based, feasible to implement, and relatively low cost, can improve the quality of care of childhood obesity in pediatric primary care.

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