

Making CHOICES in a Health Department

CHOICES Case Study #1 (Introductory)

Teaching Note

Introduction

This teaching note provides teachers with the information and guidance needed to adopt this case in your classroom. The teaching note covers background material on the case narrative, including synopsis, explanation of its real-world basis, teaching objectives, target audience, and a list of case materials and required readings for students. It also includes a detailed lesson plan and brief PowerPoint mini-lecture presentation for the teacher designed with a 1.5 hour session in mind. Of course, teachers can modify the lesson plan to accommodate a class period of a different length. At the end of this teaching note are a written homework assignment and in-class assignment instructions. The written homework assignment should be given to students along with the required reading one week before the class session in which the case will be discussed. The instructions for the in-class assignment should be handed out to students in class at the time the activity will begin after the class discussion of this case.

Synopsis

In the teaching case, a (fictional) county health team from a Southern state has an opportunity to join the Childhood Obesity Intervention Cost-Effectiveness Study (CHOICES) learning collaborative that investigates cost-effective approaches to address childhood obesity, a major problem in the county. With lots of ideas on how to encourage healthy eating and physical activity for children, the team comes to realize they lack evidence for what actually works. Engagement with the collaborative over a series of visits provides the health agency team the chance to narrow down the list of possible interventions using principles of cost, reach, and effectiveness to identify an intervention that has a real chance of reducing the childhood obesity rate in Bird County at a relatively low cost.

Evidence-Basis: CHOICES Overview

The Childhood Obesity Intervention Cost-Effectiveness Study (CHOICES) is working to help reverse the U.S. obesity epidemic by identifying the most cost-effective childhood obesity interventions. Adults and children in the U.S. consume more calories from foods and beverages than they are expending. Over the past few decades, this trend has created an obesity epidemic. Identifying what works to prevent childhood obesity has become a priority for public health researchers, policymakers, and the general public. Little attention has been paid, however, to identifying solutions that not only work, but that deliver the best results for the dollars invested in them. Some interventions can even produce cost savings. CHOICES is focused on identifying these cost-effective interventions.

The CHOICES study has generated cost-effectiveness estimates for more than 40 of the most widely promoted or implemented childhood obesity prevention interventions, many of which have never been fully evaluated for comparative- or cost-effectiveness. Our research identifies cost-effective childhood obesity intervention strategies within four key settings:

- **School:** Strategies in the school setting involve policies and programs that impact formal educational settings for children, where students learn under the direction of teachers. Typically, this setting refers to elementary and secondary educational spaces for children in kindergarten through 12th grade.
- **Early Care and Out of School Time:** Strategies in the early care and education and out of school time setting involve policies and programs that impact formal programs for infants, toddlers and preschoolers (often referred to as early care and education) and formal programs for school age children during out-of-school time, such as afterschool and before school care and summer programs.
- **Clinical/Treatment:** Strategies in the clinical setting involve policies and programs that impact children either in medical care settings (such as pediatric primary care offices, hospitals or community health centers) or in connection with medical care providers (for example referrals from primary care providers to group nutrition and physical activity counseling programs). These strategies will include treatment strategies for children with obesity.
- **Community:** Strategies in the community setting involve policies and programs that often involve a range of actions by various entities, like revenue/finance (taxes), health agencies (inspectional services), nutrition assistance programs (like SNAP, WIC) and transportation/planning (engineering changes to allow for bike lanes). Multi-setting strategies will often be included in this group.

The CHOICES Learning Collaborative Partnership is one way in which the CHOICES team works with health agencies to create new evidence to inform decision-making. This training, technical assistance and modeling initiative is designed to build capacity among state and local decision-makers to understand and use cost-effectiveness analysis to identify childhood obesity prevention strategies that offer the best value for money.

This teaching case is a fictionalized composite of real-world experiences of individual stakeholders who have participated in the CHOICES Learning Collaborative Partnership. With realistic story elements and characters, the case allows students to step into the alliance of researchers, public health practitioners, and community partners who are working to help reverse the U.S. obesity epidemic by identifying the most cost-effective childhood obesity interventions. Along the way, students will learn the principles and techniques they will need to identify solutions with good evidence for effectiveness and integrate concepts of reach and cost into decision-making processes.

Learning Objectives

Upon successful completion of this case study module, participants and students should be able to:

1. **Describe** the concepts of cost, effect, and reach in your own words.
2. **Identify** intervention strategies that have any evidence
3. **Identify** intervention strategies that have good evidence for effectiveness at reducing obesity

Target Audience

The primary target audience for this teaching case is graduate students in public health, particularly in courses focused on obesity, nutrition, public health planning, intervention design, and health policy. The case is also suitable for graduate students in other disciplines, such as community medicine, communications, community health, and for undergraduate or advanced high school students in similar courses. Journalists and nonprofit organizations interested in health-based academic collaborations with practitioners might also be interested.

Case Materials

The complete case consists of the teaching case narrative with cast of characters (“stakeholders”), a teaching note, which includes a lesson plan, written homework assignment, in-class activity instructions, a PowerPoint mini-lecture that teachers can present in class to introduce the case, plus two companion technical documents that are available at no cost via the Internet and several required scientific articles, lay articles and investigative journalism pieces.

Provided in Teaching Case:

1) Cover page, authors, suggestion citation, and funding (1 page) & case narrative for students “Making CHOICES in a Health Department: Case 1” (11 pages)

2) Teaching note document, including introduction, synopsis, evidence-basis and CHOICES overview, learning objectives, target audience, reading for students, acknowledgments and funding, lesson plan, and case group work activity (6 pages)

Keep in mind that teachers can modify the lesson plan and assigned readings to accommodate a shorter or longer class period or to extend the case over two class periods to spend more time introducing key concepts about cost, effect, and reach of interventions.

3) Additional materials including data tables on cost, effect, and reach of sample childhood obesity prevention interventions (1 page), PowerPoint mini-lecture (11 slides), and a definitions document (1 page)

Teachers can present the brief mini-lecture with slides in class to introduce students to key concepts related to cost, effect, and reach.

Reading for Students

1) Provided case narrative document plus Appendix with cost/effect/reach terms and peer-reviewed and news articles. Teachers should distribute the readings to students at least one week before the class session in which the case will be discussed.

2) Required peer-reviewed article: **Three Interventions That Reduce Childhood Obesity Are Projected to Save More Than They Cost to Implement.** Gortmaker SL, Claire Wang Y, Long MW, Giles CM, Ward ZJ, Barrett JL, Kenney EL, Sonnevillie KR, Afzal AS, Resch SC, Craddock AL. *Health Affairs*, 34, no. 11 (2015):1304-1311.

3) Recommended articles (including Appendices)

Using cost-effectiveness analysis to prioritize policy and programmatic approaches to physical activity promotion and obesity prevention in childhood. Cradock AL, Barrett JL, Kenney EL, Giles CM, Ward ZJ, Long MW, Resch SC, Pipito AA, Wei ER, Gortmaker SL. *Prev Med*. 2017 Feb;95 Suppl:S17-S27.

Cost-Effectiveness of a Clinical Childhood Obesity Intervention. Sharifi M, Franz C, Horan CM, Giles C, Long M, Ward Z, Resch S, Marshall R, Gortmaker S, Taveras E. *Pediatrics*. 2017; 140(5): e20162998.

Forecasting Trends in Child Obesity with Zach Ward. <https://vimeo.com/245188474>

Simulation of Growth Trajectories of Childhood Obesity into Adulthood.

Ward Z, Long M, Resch S, Giles C, Cradock A, Gortmaker S. *N Engl J Med*. 2017 Nov 30;377(22):2145-2153.

“More than half of U.S. kids will be obese by the time they’re 35, study predicts” LA Times. Nov 30, 2017 <https://www.latimes.com/science/sciencenow/la-sci-sn-childhood-obesity-future-20171130-story.html>

“Prudent Ways to Fight Childhood Obesity” New York Times. June 22, 2015 <https://well.blogs.nytimes.com/2015/06/22/seeking-efficient-paths-to-slimmer-children/>

4) Companion website: <http://choicesproject.org/actionkit>

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Questions and Feedback

Please send an email to HPRC@hsph.harvard.edu to submit any questions or feedback.

Lesson Plan

Activity	Time allocated
Introduction to the Case with Overview Slides	25 minutes
Case Group Work Activity (3-5 students per group)	45 minutes
OPTIONAL ADDITIONAL EXERCISES: Estimating reach Estimating cost	30 minutes each
Class Discussion and Wrap up	20 minutes

Introduction

- 5 minute overview of case and plan for the day
- 10 minute class discussion
 - Before we start the small-group work, let’s take a look at the case and its underlying narratives together:
 - Q1: What surprised you about the readings?
 - Q2: What were the conflicts in the case?
 - Q3: What did you learn about cost, effect, and reach from the readings?
- 10 minutes of slides: Use existing CHOICES slides on the basics of cost, effect, and reach to get class on the same page with the terms being discussed

Case Group Work Activity

- The Bird County Team has chosen to work on the **Active Recess** school intervention and **Electronic decision support for pediatric medical providers** (STAR) clinical intervention as part of the CHOICES project. Use the CHOICES action kit to compare these two interventions. (45 minutes)
 - What do you notice about the estimated national 10-year population reach of these interventions?
 - Which intervention do you think will reach more people in Bird County?
 - What do you notice about the cost (per person) of each intervention if it were implemented at a national level?
 - If you were to implement in Bird County, who/what organization do you think this intervention would be funded by?
 - What do you notice about the intervention effect of each of these interventions?
 - How were these effectiveness estimates determined?

OPTIONAL ADDITIONAL EXERCISES

- **Estimating Reach:** There are currently 500,000 people living in Bird County. Use the worksheet provided to estimate the reach of each intervention within the county. (30 minutes)

- If the current U.S. population is 320 million, how many people do you think each intervention will actually receive the intervention?
- Walk through each of the embedded circles on the worksheet. Who do you consider the relevant population? How did you distinguish the eligible population from the intent-to-treat and benefiting population?
- If you were completing this tool for a non-fictional county or state, what sources could you use to help identify the population numbers?
- **Estimating Cost:** Use the worksheet provided and Appendix materials in the readings to identify the activities and resources that would be necessary to implement each intervention within the county. (30 minutes)
 - What would the major labor costs be for each intervention? Would labor be needed for training? Implementation? Other aspects of delivery like monitoring or communication?
 - Given the reach estimate you calculated above, how many full time, part-time, and volunteer individuals would you need to implement each of the interventions?
 - Would travel costs such as per diem and travel allowances for hotel and food or mileage for ground transportation be needed for training or implementing these interventions?
 - Are there other material costs needed to deliver these interventions? What are they?
 - How might you determine the value of the personnel and material costs associated with each intervention?

Class Discussion

- 10 minutes for group report backs: the Bird County health team have decided to move forward with implementing one intervention from the CHOICES project. Given what you've learning about the cost, reach, and effect of the interventions how do you recommend they take action?
- 10 minute class discussion:
 - Q: Are there common themes across groups?
 - Q: What are the most challenging aspects of determining the next step for Bird County?
 - Q: How did stakeholder input influence your recommendation?