

Rationale, Design, and Methods for Process Evaluation in the *Childhood Obesity Research Demonstration* Project

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ABSTRACT

Objective: The cross-site process evaluation plan for the *Childhood Obesity Research Demonstration* (CORD) project is described here.

Design: The CORD project comprises 3 unique demonstration projects designed to integrate multi-level, multi-setting health care and public health interventions over a 4-year funding period.

Setting: Three different communities in California, Massachusetts, and Texas.

Participants: All CORD demonstration projects targeted 2–12-year-old children whose families are eligible for benefits under Title XXI (CHIP) or Title XIX (Medicaid).

Intervention(s): The CORD projects were developed independently and consisted of evidence-based interventions that aim to prevent childhood obesity. The interventions promote healthy behaviors in children by applying strategies in 4 key settings (primary care clinics, early care and education centers, public schools, and community institutions).

Main Outcome Measure(s): The CORD process evaluation outlined 3 main outcome measures: reach, dose, and fidelity, on 2 levels (researcher to provider, and provider to participant).

Analysis: The plan described here provides insight into the complex nature of process evaluation for consortia of independently designed multi-level, multi-setting intervention studies. The process evaluation results will provide contextual information about intervention implementation and delivery with which to interpret other aspects of the program.

Key Words: process evaluation, childhood obesity, methods, reach, dose, fidelity (*J Nutr Educ Behav.* 2015; ■ :1-6.)

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INTRODUCTION

Process evaluation offers a systematic way to examine intervention delivery and implementation, and identifies effective vs ineffective program components and settings.¹ The basic elements of process evaluation include: 1) the proportion of the target population who received the intervention (reach); 2) what was delivered to par-

ticipants (dose delivered); and 3) whether the intervention was delivered as intended (fidelity).² Process evaluation can provide critical insights into program effects (eg, groups with which an intervention is most likely to be successful); barriers and facilitators that influence program implementation³; and the degree to which key aspects of an intervention are implemented.^{4,5}

The purpose of this paper is to describe the methods and rationale for the cross-site process evaluation plan of the *Childhood Obesity Research Demonstration* project (CORD). CORD is a consortium funded by the Centers for Disease Control and Prevention (CDC) that includes 3 unique multi-level, multi-setting demonstration projects to prevent childhood obesity, an evaluation center, and CDC personnel who oversee the CORD cooperative agreement. CORD demonstration projects support healthy eating and active living among 2- to 12-year-old children whose families are eligible for Title XXI (CHIP) or Title XIX (Medicaid).⁶ Its goals are to improve health care services delivery, health outcomes, quality of life, and provider satisfaction among eligible children and their families.⁶

METHOD

The CORD Project

Each demonstration project was independently designed and included

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multi-setting interventions across multiple levels encompassing family- and child-focused activities and system-level changes that influence communities, organizations, and provider practices. Although developed independently, all projects are based on the obesity chronic care model⁷ and promote healthy child and family behaviors in 4 key settings: 1) primary care clinics, 2) early care and education centers, 3) public schools, and 4) community institutions. Targeted health behaviors include diet, physical activity, screen time, and sleep.⁸ Activities are integrated across settings in various ways, including coordinated messaging and media, community health workers linking health care and community efforts, and community coalitions to foster cross-sector communication.

Collaborative teams of academic and community partners from San Diego State University, California⁹; Massachusetts State Department of Public Health¹⁰; and University of Texas School of Public Health¹¹ are implementing the demonstration projects. The Evaluation Center (EC) (University of Houston), a collaborative team of academic partners coordinated through the CDC, is tasked with analyzing the pooled data from all 3 demonstration projects to provide an evaluation of the overall project.⁸ Within EC-CORD, different workgroups address specific aspects of the evaluation, including process evaluation. The cross-site evaluation plan was approved through the Institutional Review Board at University of Houston.

Development of Process Evaluation Plan

The primary challenge to designing the CORD cross-sectional process evaluation plan was, unlike a multi-center trial with a single intervention protocol, the 3 projects involve different populations, interventions, measures, and schedules. To develop the process evaluation plan in light of this challenge, a 3-stage approach was established:

STAGE 1: Identify the goals of the process evaluation workgroup. The workgroup defined 3 main goals: to

identify a standardized set of objective measures collected consistently across all projects; to identify the goals of the CORD process evaluation; and to limit additional resources spent on process data collection.

STAGE 2: Identify the goals of CORD process evaluation. The workgroup initially focused on assessment of 4 primary process constructs: reach, dose delivered, dose received, and fidelity.^{2,12,13} Discussions with the demonstration site investigators revealed that resource constraints made it unlikely that EC-CORD would receive consistent data across all sites on dose received. Therefore, this component was excluded from the CORD cross-site process evaluation plan, resulting in an emphasis on reach, dose delivered, and fidelity. To ensure consistency in data collection across sites, standardized definitions were created for each construct (Table 1). Similar to other large interventions,¹⁴ the process evaluation constructs were considered at 2 levels: components delivered from the research team to provider (researcher-to-provider), and components delivered by the provider to family members (provider-to-family). This 2-tiered approach will capture key information that will contribute to a more thorough process evaluation and interpretation of the resulting outcomes.

Reach indicators will provide information about characteristics of the participants exposed to CORD components.^{1,15} At the researcher-to-provider level, data collection includes the proportion of institutions/organizations and the proportion of staff at these institutions/organizations who participate in delivery of CORD. At the provider-to-family level, reach measures will quantify the total number of eligible families/persons enrolled overall and by each setting of the CORD project as compared to the total number of eligible persons overall and by setting who could have enrolled.

Dose-delivered indicators describe CORD activities presented to target audiences.^{1,15} Examples of intervention components tracked at the researcher-to-provider level include the number of trainings conducted, number of staff trained, training objectives delivered, and materials and equipment

provided. Evaluation at the provider-to-family level will identify the CORD intervention components and materials delivered to families by CORD providers (eg, teachers) such as activities, lessons, and materials specific to the CORD intervention.

Fidelity indicators will provide information about the degree to which CORD intervention components were delivered as intended (ie, comparison of what was planned to what was actually delivered).^{1,15} Both the researcher-to-provider and provider-to-family levels will be assessed by comparing proposed activities identified in the project grant proposals to current evaluation reports, intervention component checklists, and provider surveys and interviews. This will provide information about the degree of conformity of intervention delivery to planned intervention delivery (Table 1).

Upon examination of the CORD activities to be implemented across all sites, it became clear that each construct (ie, reach, dose delivered, and fidelity) within each level (ie, researcher-to-provider and provider-to-family) could be further evaluated depending on the goal of the activity (eg, developing skills; increasing knowledge; and changing policies, environments, or systems). Therefore, the plan was expanded to assess 3 standard elements for dose delivered and fidelity: a) training, b) educational, and c) policy, systems, and environmental changes in each setting (Table 2). Although this adds complexity to the plan, it will enrich the data obtained by providing specific information to better assess dose delivered and fidelity. Furthermore, the 3 elements are objective, measurable, and will help to quantify the activities and materials in each setting. Collecting such measures consistently across all sites will provide a means by which to describe each project's activities in equivalent terms, which would otherwise be difficult given the differences in intervention designs across the sites. Modifications to the process evaluation plan were made to adjust for special issues often encountered in multi-site projects (eg, identification of site-specific implementation timelines and activities).¹²

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