Colorado Department of Public Health and Environment (CDPHE)

Overview

CDPHE focuses on population health. Public health interventions are often not evaluated using randomized controlled trials because these interventions often serve populations[1] rather than individuals or intended populations. Other types of scientific study designs are often used to evaluate public health strategies. These types of study designs are not typically included in the Results First model, which may impact the categorizations of certain public health interventions that may otherwise be considered evidence-based by other resources and/or entities. This does not mean that CDPHE's strategies lack scientific study and/or evaluation; it simply means that their programs do not align with the Results First model standards.

CDPHE utilizes several high-quality and respected resources including the Cochrane Review and the CDC Community Guide, both of which are discussed in the "Further Discussion on Definitions and Evidence Ratings" section. Other resources CDPHE accesses are guidelines and recommendations issued by the World Health Organization, the U.S. Preventive Services Task Force, the National Academies of Sciences, Engineering, and Medicine (previously the Institute of Medicine), and other reputable, peer-reviewed research.

Program Inventory

As mentioned previously, Colorado Results First reports have traditionally presented benefit-cost analyses, or return on investment projections, of evidence-based programs. These analyses use the Results First model, which requires cost data for specific program activities. Currently, CDPHE is able to provide varying levels of cost data for their evidence-based programs; however, since data is not available consistently for all programs, the decision was made to exclude benefit-cost projections from this report. What is presented, however, are benefit projections. Benefit projections are an estimate of the monetary benefits that accrue as a result of a participant going through the evidence-based program. These projections are included to provide a general estimate of how beneficial an evidence-based program may be.

To streamline the presentation of CDPHE's program information, the Research and Evidence-Based Policy Initiatives team is presenting CDPHE's program information in a program inventory, rather than in the traditional Colorado Results First report format. The program inventory identifies programs supported by the Department and their

[1] As discussed by the CDC, population health is concerned with protecting the health of entire populations, which can be as small as a local neighborhood or as large as an entire country or region of the world. Please see the CDC's website on public health for more information at https://www.cdcfoundation.org/what-public-health.

levels of evidence, and highlights the best available research demonstrating evidence of program efficacy and outcomes affected.

The Research and Evidence-Based Policy Initiatives team will continue to work with CDPHE to identify ways that the information assessed through the Results First model and process can provide utility to the Department and providers. Particularly, the team hopes this inventory can be used as a resource to identify programs that can improve health for Coloradans.

The program inventory contains the following information:

- **Program Name:** Provides the name of the program as referred to by the Department.
- **Program Description**: Provides general information about the population served by the program and the program's purpose, goals, and operations.
- **Population(s) Served:** Provides who is intended to benefit from, or who participates in, the program.
- **Frequency/Duration:** Describes how long the program lasts.
- **Level of Research:** Lists the Research and Evidence-Based Policy Initiatives team's ranking of program research, as determined through an assessment of the available research on WSIPP's website and in the clearinghouses.[2]
- **Source(s) of Evidence**: Provides the name of the resource that contains program research, and the search term one can use to locate the research findings.
- **Evidence of program favorably impacting outcome(s)**: Indicates, based on the research, whether the program has been shown to favorably impact outcomes. If so, the outcomes are listed. For evidence-based programs, the outcomes must have: (1) statistical significance based on a meta-analysis of multiple, rigorous studies that measured the outcome,[3] or (2) statistical significance from one rigorous research study that measured the outcome,[4] and the research study had to have had a sample size (n) that was over 400. For evidence-informed/promising programs, outcomes must be listed in the clearinghouse's review of the program and be favorable.
- **Evidence of program having neutral or no impact on outcome(s)**: Indicates, based on the research, whether the program has been shown to have no impact, or a neutral impact, on outcomes. If so, the outcomes are listed. Outcomes included in this category are those that had no statistical

[2] Please see the section "Further Discussion on Definitions and Evidence Ratings" for more information regarding the clearinghouses used by the Research and Evidence-Based Policy Initiatives team.
[3] Statistical significance defined as $p < 0.1$. Put in another way, the Research and Evidence-Based Policy Initiatives team deems an outcome as "favorable" if we can say with 90 percent or greater confidence that the outcome measured is due to the program.
[4] Ibid.

significance based on either a meta-analysis of multiple rigorous studies or one single rigorous study.[5]

- **Evidence of program unfavorably impacting outcome(s)**: Indicates, based on the research, whether the program has been shown to unfavorably impact outcomes. If so, the outcomes are listed. To be included in this category, the adverse outcome must have statistical significance based on either a meta-analysis of multiple, rigorous studies or one single rigorous study.[6]
- **Projected Benefits:** Provides an estimate of the monetary benefits that accrue over the lifetime as a result of a participant going through the evidence-based program.[7] These projections are included to provide a general estimate of how beneficial an evidence-based program may be to the participant, taxpayers, and society, overall.
- **How Program is Funded:** Describes the origin of funds used to pay for the program.
- **Provider(s):** Lists where in the state the program is being administered and/or provided.

In the inventory, two programs are listed twice: the Colorado Baby-Friendly Hospital Collaborative and the Special Supplemental Nutrition Program for Women, Infants, and Children. They are listed as "evidence-based" in the "Maternal and Infant Health Program" section and as "evidence-informed" in the "Obesity Prevention and Intervention Programs" section. This is because both programs have rigorous evidence demonstrating they impact maternal and infant health outcomes, but not enough rigorous evidence regarding obesity outcomes.

As the conversation around the definition of "evidence-based" continues, it is important to ask what an evidence-based program is evidence-based ***for***. Put in another way, it is important to consider what outcome(s) was/were measured during evaluation and what outcome(s) a program is being promoted and/or funded to support. Both the Colorado Baby-Friendly Hospital Collaborative and the Special Supplemental Nutrition Program for Women, Infants, and Children are considered by national researchers and government organizations to be "evidence-based" for "breastfeeding promotion" due to numerous, rigorous program evaluations that demonstrate that the programs are capable of impacting breastfeeding uptake. An

[5] Neutral effect defined as $p > 0.1$. Put in another way, the Research and Evidence-Based Policy Initiatives team deems an outcome as "neutral" if we cannot say with 90 percent or greater confidence that the outcome is not due to chance.

[6] Statistical significance defined as $p < 0.1$. Put in another way, the Research and Evidence-Based Policy Initiatives team deems an outcome as "unfavorable" if we can say with 90 percent or greater confidence that the outcome measured is due to the program.

[7] Program benefits are monetized over the lifetime of the participant, starting at the age the participant receives the program. For example, if a participant begins a program at age 16, benefits of the program are estimated from age 16 onward. Benefits of health programs may include future health care cost avoidance, benefits associated with a participant earning higher wages over their lifetime, and benefits associated with reduced mortality rates.

increase in breastfeeding is associated with “improved health outcomes” for both mother and infant.

As previously discussed, the Research and Evidence-Based Policy Initiatives team relies on the systematic program evaluation reviews performed by WSIPP, and WSIPP has not reviewed either program, nor has WSIPP focused on reviewing programs that impact “breastfeeding.” WWFH reviewed rigorous program evaluations related to breastfeeding and lists each program as being capable of impacting breastfeeding uptake. After reviewing the program evaluations listed in WWFH, the Research and Evidence-Based Policy Initiatives team feels confident listing these programs as “evidence-based” for “increased breastfeeding rates” in the “Maternal and Infant Health Program” section of the inventory.

CDPHE states that a goal of supporting the Colorado Baby-Friendly Hospital Collaborative and the Special Supplemental Nutrition Program for Women, Infants, and Children is also to impact obesity rates. There is a lack of rigorous evaluation to establish a causal link between breastfeeding and obesity; therefore, both programs are listed as “evidence-informed” in the “Obesity Prevention and Intervention Programs” section of the inventory.