

Early Childhood Obesity Prevention (ECOP) Impact Evaluation Plan

Executive Summary

Colorado's Maternal and Child Health (MCH) Program began implementing state and local strategies aimed at early childhood obesity prevention (ECOP) on October 1, 2012. Eleven strategies are being carried out across three sectors: Early Care and Education, Public Health, and Health Care Systems. The primary purpose of the evaluation effort described in this plan is to understand the collective impact of these ECOP strategies within and across settings. The intended audience is broad, including federal, state and local MCH leaders, the Nutrition Services Branch at the Colorado Department of Public Health and Environment (CDPHE), the Healthy Living and Chronic Disease Prevention (HLCDP) Branch at CDPHE, and public health partners seeking to implement obesity prevention strategies including health care systems and child care centers. Kristin McDermott, Leah Brooke and Colleen Kapsimalis from the Epidemiology, Planning, and Evaluation (EPE) Branch at CDPHE led the planning effort, in collaboration with CDPHE's ECOP Program Manager, Tracy Miller. Stakeholders representing state and local agencies, programs and other organizations were consulted during the planning process.

Program Background

Childhood overweight and obesity¹ is a serious public health problem which requires attention in multiple sectors, settings, and environments. The development of overweight and obesity early in life (from birth to age 5) increases the risk for obesity throughout childhood and adulthood. Obesity has been selected as a PSD priority and a "Winnable Battle" by both CDPHE and the Governor's Office. Early childhood obesity prevention was identified as one of nine Maternal and Child Health (MCH) Priorities for FY 2011-2015. In 2011, the Early Childhood Obesity Prevention (ECOP) initiatives were formed within PSD and are led by Tracy Miller.

A recent literature review completed by PSD has provided key insight about the risk and protective factors strongly linked to early childhood obesity risk:

- too little or too much gestational weight gain,
- high and low birth weight,
- rapid rate of weight gain between the ages of 0-2 years,
- high pre-pregnancy Body Mass Index (BMI),

¹ Children less than 2 years of age are at risk for overweight if their growth measurements are between the 84.1st and 97.7th percentiles on the World Health Organization (WHO) growth charts, and are overweight if their measurements exceed the 97.7th percentile on the WHO growth chart. Children aged 2–5 years are overweight if their measurements are between the 85th and 95th percentiles on the Centers for Disease Control and Prevention (CDC) growth charts, and are obese if their measurements exceed the 95th percentile on the CDC growth charts. (Source: Institute of Medicine's *Early Childhood Obesity Prevention Policies*; <http://www.iom.edu/Reports/2011/Early-Childhood-Obesity-Prevention-Policies.aspx>)

- unresponsive feeding practices,
- short sleep duration,
- lack of physical activity, and
- too much screen time and exposure to food advertising.
- Breastfeeding appears to have a protective effect against early childhood obesity.

PSD ECOP initiatives systematically address these risk and protective factors by targeting women of reproductive age (before or between pregnancies), pregnant women, and families with children under the age of 5 years. The ECOP initiatives do not directly target or treat overweight or obese children. Rather, the initiatives are based on a logical assumption that if public health initiatives improve the status of the above factors, there will be a flow-on effect to early childhood obesity.

The ECOP initiatives contain 11 distinct strategies, some of which are being implemented at the state-level, some that are intended for implementation by local health agencies, and some that involve both a state and local component. Preventing obesity requires collaborative, multi-sector approaches at the state and local levels, and therefore these 11 strategies span three major sectors:

- **Early Care and Education Settings.** Nationally, child care settings have been recognized as a tremendous opportunity to prevent obesity. The overall child care strategy is to use the capacity of state and local early childhood systems and partners to support healthy child care environments, primarily through training and coaching of staff members. Currently, Colorado's rules and regulations governing licensed child care centers are under revision. Several provisions in the new draft address higher standards for nutrition and physical activity. As these standards become rule, child care providers will need training and support to comply with them.
- **Health Care Systems.** Preconception health, appropriate weight gain during pregnancy, successful management of gestational diabetes, and healthy birth weight are key factors in the prevention of obesity in children. Health care providers influence families' health practices and impact the health of women and children. Professional development in early childhood obesity practices and effective messaging for health professionals has been identified as a need in many organizations and programs.
- **Public Health Programs.** Many early childhood obesity prevention programs and initiatives exist throughout Colorado, presenting great opportunities to improve coordination, standardize messages, and leverage resources. The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) plays an essential role in addressing early childhood obesity through prevention and early intervention services, which reach a large percentage of low-income pregnant women and families with young children. The capacity of partners and programs to implement additional early childhood obesity prevention efforts varies widely.

Early Care and Education

The following strategies are being implemented in Early Care and Education Settings:

1. Physical activity training for child care providers. This state-level strategy involves identifying an evidence-based physical activity training program suitable for implementation in low-income child care centers and using a train-the-trainer model to train child care center staff to implement the program.
2. Promote breastfeeding-friendly practices in child care facilities. This state-level strategy involves disseminating breastfeeding-friendly standards and best practices to providers who care for children under the age of two years, including those who participate in the Child and Adult Food Care Program (CACFP). It also involves assessing gaps regarding child care providers' knowledge, attitudes, and skills with regard to breastfeeding support in child care settings, and implementing professional development and tools to address these gaps.
3. Modify food service practice in child care (Child and Adult Food Care Program Healthier Meals Initiative). This state-level strategy involves supporting CACFP providers to comply with the CACFP program's higher nutrition standards by offering culinary workshops; assessing barriers and implementing solutions regarding food access, equipment, and health inspections; developing a menus and recipes toolkit; and providing online and in-person healthier meals training to CACFP providers.
4. Promote physical activity, healthy eating, responsive feeding, sleep, and reduced screen time in child care settings. This local-level strategy involves targeting child care centers in low-income areas of the local community to receive coaching from an early childhood obesity prevention expert. Coaching will be customized based on an assessment of the child care centers' staff knowledge, skills and practices. In addition, it involves partnering with local health inspection agencies to create and train local inspection staff around a shared understanding and set of best practices to achieve safe and healthy meals in childcare settings.

Health Care Systems

The following strategies are being implemented in Health Care Systems:

1. Provide ECOP professional development for health care professionals. This state-level strategy involves assessing the professional development needs of targeted health care professionals (i.e., pediatricians, nurses, obstetricians, dietitians, family physicians, home visitors, local prenatal care program professionals, WIC consultants/educators) and based on the assessment, providing online tools and resources for ECOP, including consumer-tested consistent ECOP messages.
2. Baby-Friendly Hospitals. This state-level strategy involves working with hospital administrators and labor and delivery staff to incorporate baby-friendly practices into their service delivery system. This will be accomplished through the implementation of a grant-funded "Baby Friendly

Hospital Collaborative” led by CDPHE. It also includes a focus on data collection, analysis and reporting regarding hospital breastfeeding rates.

Public Health Programs

The following strategies are being implemented by Public Health Programs:

1. Evaluate and strengthen ECOP practices in WIC operations, protocols, policies, and Local Agency nutrition education plans. This state-level strategy involves incorporating a standard and consistent ECOP focus and messaging into WIC operations at the state and local levels through training, resource development, and guidance/monitoring. It includes partnership and coordination with other women and child-focused programs, development of ECOP resources for WIC participants and staff, worksite wellness in local WIC offices, and strengthening staff competencies around ECOP.
2. Promote cross-sector consistent messaging related to ECOP evidence-based practices. This strategy involves both a state and local component. At the state level, the strategy involves developing and conducting market research and disseminating specific messages in the following areas: appropriate gestational weight gain, physical activity, reducing screen time, sleep, and responsive feeding. At the local level, the strategy involves developing a message dissemination plan for use among local partners, and for delivery to the target population and evaluating awareness among individuals utilizing services of one or more partnering public health programs. The goal of this work is to ensure that families and women hear the same messages from all professionals and settings that influence their behaviors related to health.
3. Promote local collaborative ECOP efforts by linking partners whose efforts align. This state-level strategy involves developing an inventory and map of Colorado’s local ECOP efforts and disseminating the inventory to local partners.
4. Promote adoption of workplace policies and practices to accommodate breastfeeding and promote healthy weight. This local strategy involves collaborating with local partners to outreach to local employers of a low-wage workforce to provide them with breastfeeding and healthy weight supportive workplaces training. The result of this work is compliance with the workplace accommodation for nursing mother laws and adoption of additional healthy weight promotion practices.
5. Improve access to healthy food choices through community food resources. This local strategy involves implementing one of four identified methods to improve access to healthy food choices to women of childbearing age and families with young children who reside in low-income areas of the local community. The methods include a) increasing participation in selected federal nutrition assistance programs, b) partnering with organizations providing food to the target population to provide healthy food options at reasonable prices and/or expanding display space for healthy foods, c) collaborating with community partners to create or expand local community gardens or farmers markets, and d) partner with local coalitions working to

incentivize small grocers or supermarkets to locate in food deserts or provide transportation to outlets with healthy foods.

Although the ECOP initiative is young, its strategies have been clearly conceived and well-defined based on the scientific literature. Logic models exist to guide the implementation of the ECOP and SMART objectives spanning three years have been clearly articulated in action plans (the logic models and action plans can be found [here](#)). October 2012 began the first year of ECOP implementation. Seven Local Health Agencies (LPHAs) are implementing one or more of the above ECOP strategies as part of their local MCH action plan: Alamosa County, Boulder County, El Paso County, Jefferson County, Mesa County, Pueblo County, and Weld County. These LPHAs are some of the largest LPHAs in Colorado that cover a large proportion of the Front Range population and frequently have population-based data available at the county / local level. Six of the seven LPHAs have selected strategies in the early care and education setting, four of the seven LPHAs have selected the consistent messaging strategy, and three of the seven LPHAs have selected the workplace strategy. Several other LPHAs that were not required to complete the MCH planning process have also prioritized ECOP for their work.

Stakeholders and Primary Intended Users

Stakeholders of the evaluation include the following groups:

- PSD and EPE staff at CDPHE
- Funding sources for obesity prevention programs (MCH Block Grant funding; CDC Coordinated FOA; Colorado Health Foundation funding)
- Local public health agencies (LPHAs) (i.e., MCH program and health inspection agencies)
- Early care and education settings (i.e., child care centers)
- Health care professionals in clinical settings (i.e., primary care practices, health care centers, and baby-friendly hospitals)
- State and local WIC programs
- Participating workplaces
- Target populations (i.e., women of reproductive age, pregnant women, and families of children ages 0-5 years)

Table 1 describes the interests and anticipated uses of the evaluation stakeholders and how they will be engaged in the evaluation process.

Table 1: Stakeholder interests and anticipated evaluation uses

Stakeholder	Interest/Use	When to Engage	How to Engage	Findings to Communicate	Communication Plan
PSD and EPE staff at CDPHE	<ul style="list-style-type: none"> ▪ Contribute to the evidence around ECOP/ Share successes and lessons learned ▪ Determine effectiveness of ECOP efforts ▪ Determine next steps for state-led ECOP initiatives in Colorado ▪ Determine most appropriate allocation of resources ▪ Determine how ECOP initiatives fit into CDPHE central services ▪ Connect with champions at the local level 	Throughout	Through participation in evaluation planning and implementation process	Final impact evaluation results	<ul style="list-style-type: none"> ▪ Final evaluation report
Funding sources for obesity prevention funding	<ul style="list-style-type: none"> ▪ Determine state/local roles for ECOP initiatives ▪ Ensure sustainability of ECOP efforts 	At points when progress or annual reports are due	Written documentation of progress	Final impact evaluation results	<ul style="list-style-type: none"> ▪ Progress and/or annual reports ▪ Final evaluation report
Local public health agencies (LPHAs)	<ul style="list-style-type: none"> ▪ Determine next steps for local ECOP efforts ▪ Secure future funding 	During evaluation planning workshops	Through participation in evaluation planning process	Final impact evaluation results	<ul style="list-style-type: none"> ▪ Final evaluation report ▪ Presentations during future MCH conferences
Early care and education settings	<ul style="list-style-type: none"> ▪ Determine effective strategies for obesity prevention 	At already-established points during implementation of action plan	Through implementation teams	Results specific to early education and care setting	<ul style="list-style-type: none"> ▪ Final evaluation report ▪ Presentations during future MCH conferences
Health care professionals in clinical settings	<ul style="list-style-type: none"> ▪ Determine effective messaging and strategies to counsel patients 	At already-established points during implementation	Through implementation teams	Results specific to health care professionals setting	<ul style="list-style-type: none"> ▪ Final evaluation report ▪ Webinars to

Stakeholder	Interest/Use	When to Engage	How to Engage	Findings to Communicate	Communication Plan
		on of action plan			health care professionals
State and local WIC programs	<ul style="list-style-type: none"> ▪ Determine effective strategies to educate WIC clients 	At already-established points during implementation of action plan	Through implementation teams	Results specific to WIC setting	<ul style="list-style-type: none"> ▪ Final evaluation report
Participating work places	<ul style="list-style-type: none"> ▪ Determine effective strategies to promote worksite wellness 	At already-established points during implementation of action plan	Through implementation teams	Results specific to the work place setting	<ul style="list-style-type: none"> ▪ Final evaluation report ▪ Presentation during future MCH conferences
Target populations	<ul style="list-style-type: none"> ▪ Gain knowledge about most effective ECOP strategies to participate in 	At end of evaluation	Through CDPHE outreach to general public (i.e., CO Prevent, media, etc.)	Final impact evaluation results	<ul style="list-style-type: none"> ▪ Final evaluation report ▪ COPrevent.org

Based on the interests identified above, the evaluation will be designed to help decision makers:

- Contribute to the evidence around ECOP by sharing successes and lessons learned regarding effective ECOP strategies and factors aiding or inhibiting effectiveness.
- Determine the next steps for ECOP in Colorado.
- Secure future funding.
- Determine the most appropriate allocation of resources, roles, and responsibilities across partners.

Evaluation Background

The overarching goal of ECOP’s 11 strategies is to reduce the prevalence of overweight and obesity in children ages 2-5 and prevent new cases in Colorado. The initiatives have been designed to achieve the overarching goal by changing these target behaviors:

- Breastfeeding and other infant feeding practices
- Physical activity among women of reproductive age, pregnant women, and children
- Healthy eating among women of reproductive age, pregnant women, and children

- Time spent engaged in TV viewing and other “screen time” activities among children

There are three primary mechanisms by which the 11 strategies propose to engage target populations and change behavior:

- Improving policy and practice
- Reducing barriers to the target behaviors
- Increasing competency, knowledge, and consistency in ECOP messages

The ECOP initiatives are top down approaches designed collectively to reach the overarching goal. Figure 1 demonstrates this pictorially. Generally speaking, the change in early childhood obesity happens sequentially from the top of the pyramid down, although there are some instances in which State Government (namely WIC services) is aiming to directly target parents and children.

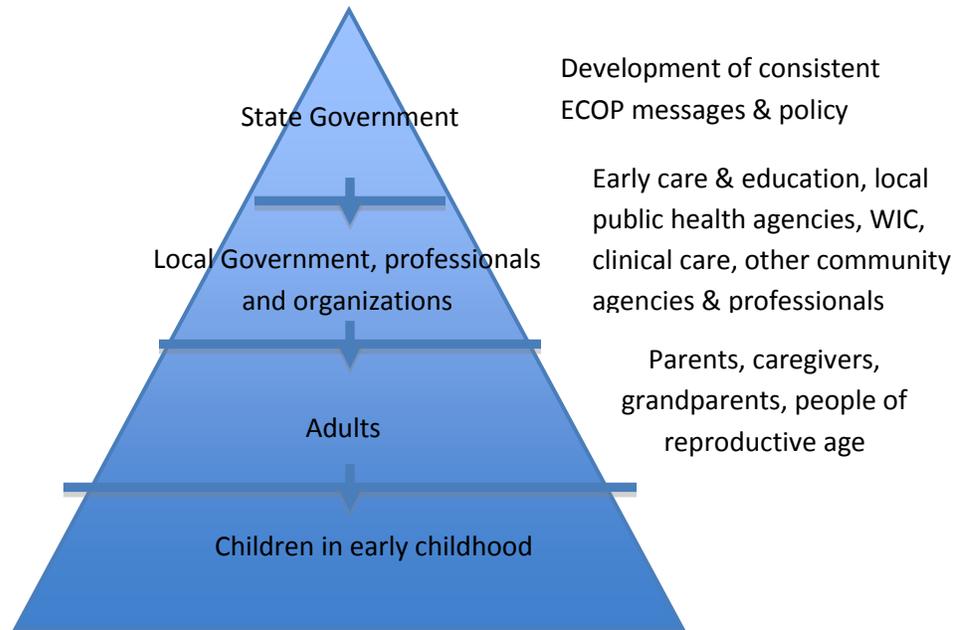


Figure 1. A pictorial representation of ECOP initiatives

The focus of this evaluation project is to assess impact rather than understand process. However, to a degree, each question (and step in the evaluation) is dependent on the next. For example, if the initiatives have not been successful at impacting local government, professionals & organizations, it is unlikely the evaluation will find any impact on adults or, subsequently, children in early childhood.

The hierarchical nature of the initiatives and the quasi-experimental design of the evaluation do not allow for rigorous scientific measurement of the ultimate outcome – reduced obesity prevalence in young Coloradans. This means that the exact impact of the different strategies on obesity prevalence may not be known even if a decrease in statewide obesity in early childhood is seen in the later years of the evaluation. The outcomes that this impact evaluation can directly measure are changes to the three

primary mechanisms listed above: improving policy and practice; reducing barriers to the target behaviors; and increasing competency, knowledge, and consistency in ECOP messages. In the later years of the evaluation, changes to the target behaviors in populations accessible to the evaluators and their partners can also be measured. For example, changes to healthy eating in child care or improved breastfeeding practices in targeted clinical settings.

Methodology

A multi-level evaluation design is required to adequately capture the different sequences of the ECOP initiatives as well as the overall impact of the initiatives as a collective. A group of evaluation stakeholders were convened to brainstorm and gain consensus on evaluation questions. Five evaluation questions are proposed:

1. As a whole, how effective were the ECOP initiatives? Which is the best combination of strategies to prevent early childhood obesity?
2. Did the initiatives impact local government, professionals, and organizations as expected?
 - a. Did their knowledge and competency increase?
 - b. Is knowledge and competency consistent across settings?
 - c. Did policy and practice improve?
 - d. Were barriers reduced?
3. Did ECOP strategies impact parents, caregivers, and other adults as expected?
 - a. Did their knowledge and competency increase?
 - b. Did they receive consistent messages from different settings?
 - c. Were barriers reduced?
 - d. Are they engaged in ECOP and changing their behavior accordingly?
4. Did ECOP strategies impact children in early childhood and prevalence of overweight and obesity?
 - a. Are they engaged in ECOP and changing their behavior accordingly?
5. What were the barriers and challenges to implementation, success, and durability of the strategies?

Each of the evaluation questions can be asked for each ECOP initiatives target behaviors:

- Breastfeeding and other infant feeding practices
- Physical activity among women of reproductive age, pregnant women, and children
- Healthy eating among women of reproductive age, pregnant women, and children

- Time spent engaged in TV viewing and other “screen time” activities among children

Tables 2-6 summarize the specific indicators that will be measured in order to answer these five questions.

Methods for selection of indicators

A thorough review of all ECOP action plans and logic models yielded a comprehensive list of all possible indicators for each of the evaluation questions. Key stakeholders were invited to a workshop of which the primary goal was to critique the list of indicators, highlight any gaps, and prioritize the most meaningful and impactful. Workshop attendees were instructed to consider this question: *What are the indicators that will produce the most useful information for improving Early Childhood Obesity Prevention practice?* Attendees provided their feedback on each of the indicators and then voted for the indicators that would best answer this question.

Evaluation staff reviewed the total list of indicators and created a sub-list of indicators based solely on the votes cast by the workshop attendees. A review was then conducted of the logic models for each initiative, the five evaluation questions, and the specific evaluands to ensure that the list of indicators would provide a satisfactory measure of each. Indicators were added or subtracted at the discretion of the evaluation team (LB, TM, CK, and KM) in order to adequately capture the strategies of ECOP and the desired outcomes. Figure 2 demonstrates the steps taken to select, prioritize, and integrate indicators into an overall evaluation plan.

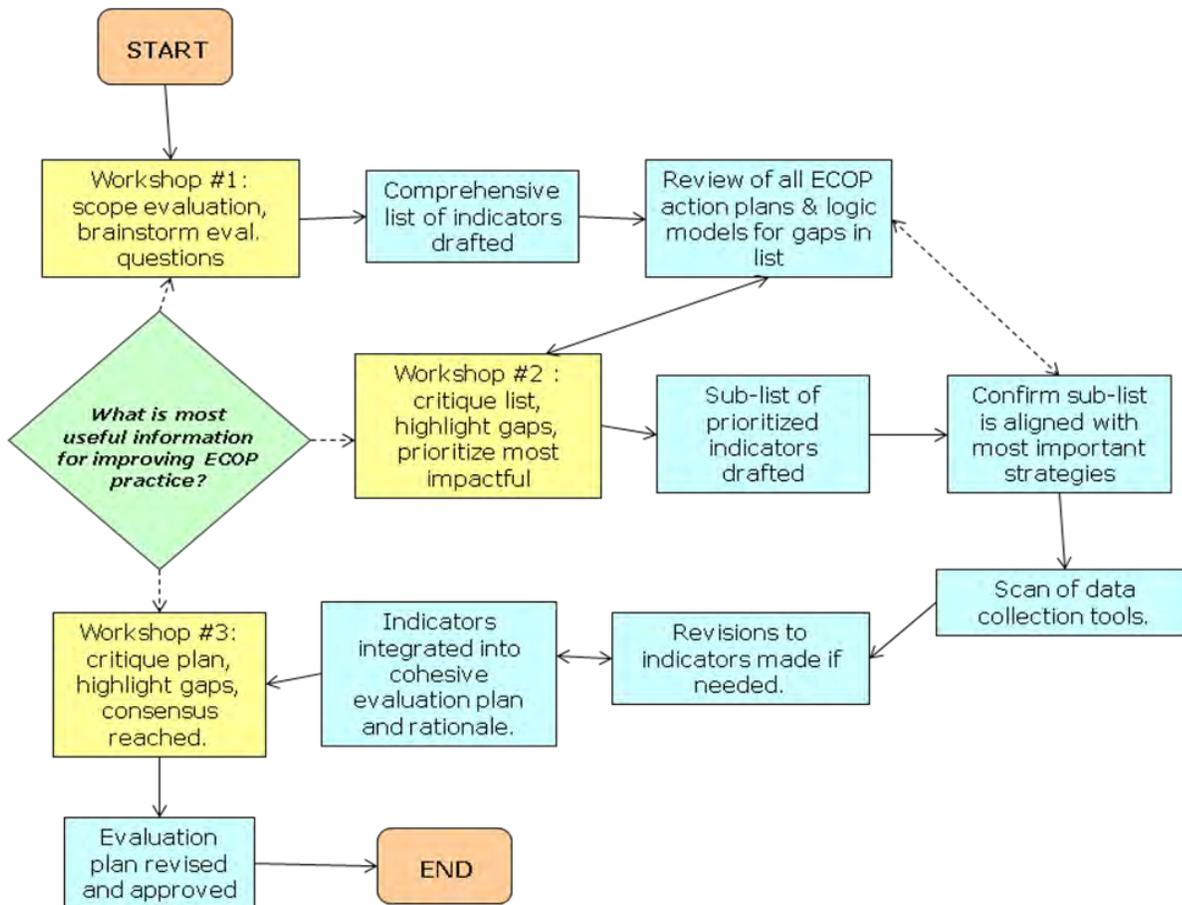


Figure 2. Steps in selection of indicators and evaluation planning

The following five tables contain the complete list of indicators per evaluation question and setting. Data sources with which to measure the indicator are listed correspondingly. These five tables form the overall plan for the ECOP evaluation. The four settings – early care and education, state and local WIC offices, clinical settings, and community – have different indicators to measure the evaluation questions and different methodologies.

Indicators and methodologies per setting

Early Care and Education (ECE) (Table 2). The ECOP strategies in early care and education setting focus on improving the policy, practice, and knowledge of child care facilities and their staff. ECOP messages regarding healthy eating, physical activity, and breastfeeding have been prioritized. There are no indicators to measure the impact of ECOP in ECE on parents because these strategies are not primarily targeting parents’ behavior change or knowledge increase. There are also no indicators to measure the impact of ECOP in ECE on children directly. This decision was made late in the evaluation planning process during the scan of data sources phase. There are no available measures to directly observe the eating habits, physical activity, or breast milk consumption of children in ECE, nor are the resources

available to implement a new measure for the purposes of this impact evaluation. It is assumed that if children in these facilities are offered healthy food, breast milk, and physical activity time, they will engage in these ECOP activities.

State and Local WIC Offices (Table 3). The ECOP strategies occurring in WIC offices are focused on the delivery of consistent ECOP messages and focus from WIC staff to parents, which intend to prompt parent behavior change and a reduction in early childhood obesity. The impact of these strategies will be measured by assessing the extent WIC staff use ECOP messages and emphasize ECOP topics in their counseling sessions with clients, the behavior changes parents have made that are consistent with these messages, and any corresponding reduction in early childhood obesity in this population.

Clinical settings (Table 4). The ECOP strategies in clinical settings that were chosen for part of this impact evaluation are focused on improving breastfeeding practice, policy, and rates of initiation and exclusivity. The rationale for these ECOP strategies is to improve the breastfeeding and ‘baby friendliness’ of maternity services in hospitals in order to support more mothers to initiate breastfeeding and continue breastfeeding at three, six, and 12 months. The indicators in this setting will be measured by hospital self-report at the organizational level, and by community-based health data at the parent and child level.

Community (Table 5). Community-based ECOP strategies are focused on improving worksite wellness in order to promote continued breastfeeding after returning to work, healthy eating and active living in the workplace, appropriate weight in the work force, and appropriate weight gain during pregnancy. The impact of these strategies will be evaluated by reviewing Local Public Health Agencies’ evaluation data. This data can be compared with birth certificate data specifically to assess any impact on healthy weight gain during pregnancy. The impact of these strategies on children’s early childhood obesity risk and prevention cannot be measured. The available data sources are not divisible to a small enough level to be able to compare counties.

Overall Evaluation (Table 6). Table 6 contains the methodology for evaluating the collective impact of the ECOP initiatives. In order to understand the collective impact, a map of the number of initiatives occurring across the state will be compared with the corresponding levels of early childhood obesity data. A web-based survey of participating organizations will also be used to evaluate the perceived successes of ECOP initiatives, barriers and challenges of implementation, and durability of strategies.

Table 2. Indicators and data collection methods for Early Care and Education ECOP strategies

Evaluation Question	Indicators	Data Collection Sources	Data Collection Method	Data Collection/Timing	Data Analysis
EARLY CARE AND EDUCATION					
Did the initiatives impact local government, professionals, and organizations as expected?	2.1. Child care facilities have implemented practices consistent with CDPHE ECOP recommendations.	2.1.1. I am Moving, I am Learning (IMIL) tool 2.1.2. Let's move assessments 2.1.3. CACFP monitoring tools	2.1.1. Providers complete IMIL Evaluation of Knowledge Change Tool 2.1.1. Observers complete IMIL Implementation Tool 2.1.2. Online self-assessment (providers rate if their practice is best practice) 2.1.3. CDPHE Nutritionists review & monitor	1. Data collection will occur as part of a specific evaluation of IMIL. Pilot data will be available in July 2014. 2. 6 LPHAs are implementing Let's Move at different times. Data will be available through the local evaluation efforts. It is estimated data will be available from all LPHAs in October 2014. 3. Monitoring of each facility occurs	1. Descriptive statistics. Comparison of pilot data with later implementation. 2. Descriptive statistics. Comparison of pilot data with later implementation 3. Compare baseline & after initiatives

				on a 3-yearly basis. The earliest review cycle after the implementation of ECOP policies will be in November 2013.	
	2.2. Improvement in the capacity for food service equipment, health inspections, and food access/buying power to provider healthier meals.	2.2.1. CACFP food sources scan and equipment scan. 2.2.2. Child care provider surveys on barriers	1. Child care providers self-reported scan of food sources and equipment. Pre- and post-initiatives. 2. Already completed July 2010. Can be used as a baseline measure.	1. Pre-measures available already collected. Post-measure to be collected after long-term intervention activities completed (July 2017+) 2. Re-administer survey after intervention activities (post July 2017).	1. Compare baseline with post-initiative data 2. Compare baseline with re-administered survey.
	2.3. CACFP child care providers are serving healthy foods that are safely prepared.	2.3.1. Healthier Meals Initiative evaluation. 2.3.2. Culinary Curriculum evaluation	1. Pre- and post-measure of nutrition knowledge of child care providers taking online & classroom training. 2. 3 and 4 week follow up of providers taking	1. Julie Graves lead on project. Evaluation for first year completed collected July 2013. 2. Evaluation will occur after initiative is rolled out in September	1. Utilize data from stand alone evaluation to comment on impact of ECOP initiatives. 2. As above.

			culinary curriculum. Measures practice change, plans to continue implementing recipes, and barriers to change.	2013.	
	2.4. Increases in BF friendly policy & practices in CACFP facilities	North Carolina survey of BF knowledge & practice in Child Care	Collect survey responses from directors and staff.	Baseline data collected by December 2014. Post-intervention data collection approximately May 2015.	1. Compare baseline and post-intervention data.
Did ECOP strategies impact parents, caregivers, and other adults as expected?	NO INDICATOR – early care and education strategies are not targeting parents				
Did ECOP strategies impact children in early childhood and their rates of obesity?	NO INDICATOR – available measures cannot measure the child’s experience . ASSUMPTION – by serving healthier meals and opportunities for PA children at childcare will engage in these activities, thus				

	reducing their early childhood obesity risk.				
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Table 3. Indicators and data collection methods for State and Local WIC ECOP strategies

Evaluation Question	Indicators	Data Collection Sources	Data Collection Method	Data Collection/Timing	Data Analysis
STATE AND LOCAL WIC OFFICES					
Did the initiatives impact local government, professionals, and organizations as expected?	3.1. WIC providers are consistently focusing on CDPHE risk-reducing messaging and conveying these messages to their clients.	3.1.1. WIC counseling points. 3.1.2. Chart Review (department audit of local WIC services)	Review of existing data sources.	Use data collected prior to September 2013 as baseline. Messages rolled out September 2013 (first wave) and September 2014 (second wave).	Compare data from before and after roll-out of messages.
Did ECOP strategies impact parents, caregivers, and other adults as expected?	3.2. Parents have made behavior changes consistent with ECOP risk-reducing messages.	Participant's satisfaction survey.	Online survey for WIC participants.	Every other year data collection.	As above.
Did ECOP strategies impact children in early childhood and their rates of obesity?	3.3. Decrease in the prevalence of childhood overweight and obesity in WIC	WIC overweight & obesity prevalence	Compass data completed by local agencies.	Growth chart rolled out in WIC in August 2013. See dates in row 3.1 for roll-out timeline.	As above.

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Table 4. Indicators and data collection methods for ECOP strategies in clinical settings

Evaluation Question	Indicators	Data Collection Sources	Data Collection Method	Data Collection/Timing	Data Analysis
CLINICAL SETTINGS					
Did the initiatives impact local government, professionals, and organizations as expected?	4.1. Health care professionals are consistently delivering CDPHE risk-reducing messaging	4.1.1. Web-based survey. Survey based heavily on intended use of ECOP consistent messages. 4.1.2. Data from Baby-Friendly Hospitals evaluation	1. Professionals who have completed the message dissemination webinar complete survey after webinar and 6 month follow-up. 2. Hospitals who participate in the Colorado Baby-Friendly Hospital Collaborative will share data and provide self-report information on practice change.	1. October 2013 webinars are launched and April 2014 6-month posttest. 2. Baseline data collection beginning August 2013. F/U data collection will occur regularly. Timing TBD.	1. Compare data on intended implementation (taken after webinar) with actual implementation (6-month F/U data). 2. Analyze trends in data over time with reference to roll-out of messaging and other breastfeeding initiatives.

	4.2. Increase in policy and practice consistent with Baby-Friendly hospitals	Data from Baby-Friendly Hospitals evaluation	As above	As above	As above
	4.3. Professionals are actively supporting mothers to breastfeed at birth and with follow up support.	As above	As above	As above	As above
Did ECOP strategies impact parents, caregivers, and other adults as expected?	4.4. Greater proportion of breastfeeding initiation at BF hospitals than non-BF,	Birth certificate data.	Compare counties with BF hospitals with matched county w/o BF hospital.	Use data collected prior to October 2013 as baseline.	Analyze trends in data over time with reference to roll-out of messaging and other breastfeeding initiatives.
Did ECOP strategies impact children in early childhood and their rates of obesity?	4.5. Increase in proportion of exclusively breastfed infants at 6 months and breastfeeding at 12 months.	PRAMS or CDC National Immunization Survey or CDH	Community-wide sampling.	Use data collected prior to October 2013 as baseline.	Analyze trends in data over time with reference to roll-out of messaging and other breastfeeding initiatives.

Table 5. Indicators and data collection methods for community ECOP strategies

Evaluation Question	Indicators	Data Collection Sources	Data Collection Method	Data Collection/Timing	Data Analysis
COMMUNITY					
Did the initiatives impact local government, professionals, and organizations as expected?	5.1. Implementation of worksite wellness policies and procedures that support breastfeeding and healthy weight	Worksite wellness toolkit.	Data collection to be coordinated with LPHAs.	To be determined with LPHAs	Aggregate of post-intervention assessments at the local level
	5.2. Increase in compliance with Nursing Mothers’ Act at targeted worksites	Survey from Breastfeeding in the workplace toolkit.	As above	As above	As above
	5.3. Local partners consistently delivering CDPHE risk-reducing messaging	Survey to measure intent to use and deliver messages	As above	As above	Compare data on intended implementation after messaging rollout with actual implementation

Did ECOP strategies impact parents, caregivers, and other adults as expected?	5.4. More women gain the appropriate amount of weight in pregnancy.	Birth certificate data	County level birth certificate data.	As above	As above
	5.5 Parents have made behavior changes consistent with ECOP risk-reducing messages.	LPHA consistent messaging evaluation tool for evaluating messaging reach and impact of target population.	Survey by administered by LPHAs.	Per specific LPHA action plan, if applicable.	
Did ECOP strategies impact children in early childhood and their rates of obesity?	NO INDICATOR – available measures are not divisible to the county level or smaller community level.				

Table 6. Indicators and data collection methods for additional questions of the ECOP impact evaluation

Evaluation Question	Indicators	Data Collection Sources	Data Collection Method	Data Collection/Timing	Data Analysis
ADDITIONAL QUESTIONS					
Which strategies and/or settings were most effective in preventing early childhood obesity?		Map of initiatives occurring across the state. Compare with matched BRFSS, CHS, and WIC data.	Community wide surveys. Comprehensive analysis of ECOP initiatives and location.	Use 2013 data as baseline. Compare with yearly data.	Bi-variate correlations.
What were the barriers and challenges to implementation, success, and durability of the strategies?		Local government, professionals, and organizations.	Qualitative survey and/or nominal group technique. Cross-sectional picture through MCH LPHA progress calls or template.	Internet-based survey and/or focus groups. Administer yearly.	Thematic analysis. Trend analysis per year.

Draft timeline for ECOP Impact Evaluation

Pre-2013

ECE: Baseline barriers assessment completed

Plan: Workshop #1 completed

2013

January 2013

Plan: Workshop #2 completed

March 2013

Plan: Workshop #3 completed. Evaluation plan finalized.

May 2013

ECE: 'Train the trainer' begins for IMIL

WIC: 6 of 9 ECOP messages rolled out in WIC

September 2013

ECE: Healthier Meals Initiatives are offered to CACFP facilities. HMI policies are rolled out.

September 2013

ECE: Healthier Meals Initiative evaluation completed (Julie Graves – Lead evaluator). Evaluation planning begins with LPHAs to evaluate child care coaching (Let's Move) initiatives.

WIC: Tentative date for baseline data collection in WIC

WHO growth chart rolled out in WIC

Clinical: Publication of CDPHE ECOP risk-reducing messages for health care professionals and dissemination of online resources/tools for ECOP.

Local: Evaluation planning begins with LPHAs to evaluate worksite wellness initiatives (breastfeeding and pregnancy weight gain measures built into evaluation plan).

October 2013

Clinical: Webinar for health care professional is complete– start collecting baseline and time 1 data.

December 2013

ECE: Standards and best practice for breastfeeding in child care are established

WIC: Tentative post-message roll out data collection in WIC (phase 1)

Report: Year One report completed

2014

January 2014

ECE: Standards and best practice for breastfeeding in child care are disseminated

April 2014

Clinical: Collect time 2 data from health professionals who completed a webinar.

ECE: Culinary curriculum offered to CACFP facilities evaluation to take place after curriculum rolled out

July 2014

ECE: Post-intervention measure of breastfeeding policy in child-care

September 2014

WIC: Remaining 3 messages rolled out in WIC

Clinical: Collect comparison data from CDC MPINC, birth certificate data, and PRAMS breastfeeding data. Compare with last year's data.

October 2014

ECE: Data should be available from all 6 LPHAs implementing Let's Move

December 2014

ECE: Baseline data collection for breastfeeding policy in childcare (North Carolina Survey). Then interventions rolled out based on survey result.

WIC: Tentative data collection date for post-roll out data collection in WIC (Phase 2)

Report: Year Two report completed

2015

July 2015

ECE: Data collection of BF change in child care – tentative date

September 2015

Clinical: Collect comparison data from CDC MPINC, birth certificate data, and PRAMS breastfeeding data.
Compare with last year's data.

December 2015

Report: Year Three report completed

Post-2015

July 2017

ECE: Follow up scan of food sources and equipment post intervention activities.