

Colorado Early Childhood Cost Model Technical Manual

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Overview

The Colorado Early Childhood Cost Model determines currently existing federal and state public funding for Colorado's early childhood system and allows users to develop various service delivery scenarios and project the fiscal impact of those scenarios. It encompasses a range of programs for pregnant mothers and children ages birth through 5.

The elements of the cost model are divided into four domains: early childhood education, mental health, family support, and health. In addition, two cross-domain elements are included, a state-level administrative cost and local Early Childhood Councils. The model addresses a wide range of services, but is necessarily not exhaustive and may omit some programs or services.

Each domain consists of a set of elements, each of which has its own Excel workbook page. Each element represents either a single program or a type of program. For example, the Early Childhood Education domain contains an element for Head Start (a program), while the Mental Health domain contains an element for parent information and home visiting (a type of program).

For each element, the tool reports current funding, the total funding that would be required to achieve a given level of service, and the funding gap – the difference between these two numbers. Current funding is based on the most recently available data for each element and is based on 12 months of funding. Total funding is computed based on the number of children projected to participate in the element, and on the cost per child based on expert research and empirical data.

How the Number of Projected Participants is Calculated

For each element, the projected cost is based on the projected number of participants and the cost per participant. The projected number of participants is calculated through the four-step process described below. (This process is represented graphically in Figure 1).

- 1) The entire **population** of pregnant women and children age infant through 5 is determined. (In 2007, this population was approximately 480,000).
- 2) The **universe** of children who are relevant to the program is determined. This number includes all children who might meaningfully partake in the program if eligibility requirements were expanded. For example, the universe of children for Head Start is all children ages 3, 4, and 5; the universe of children for mental health assessment and treatment is 16 percent of the population of all children, and the universe of children for health insurance is all children age infant through 5 plus pregnant mothers.
- 3) The **eligible** number of children within the universe is determined. This number is computed based on the current program parameters and user options, which may further restrict eligibility based on income or age.
- 4) The **projected number of participants** is determined based on the eligible number of children and the **participation rate**. The participation rate, usually determined by the user, represents the proportion of eligible children expected to participate in the service. The remainder of children are **eligible non-participants**.

Preschool cost calculations.

Costs are for Colorado Child Care Assistance Program (CCCAP), Colorado Preschool and Kindergarten Program (CPKP), Head Start, Early Head Start, and Build-Your-Own ECE, costs per child are based on Anne Mitchell's matrix. For each cell within the matrix, the projected number of children within the cell is determined by the user's selection of eligibility criteria and intended quality levels .

User Selections for Licensing, Quality Ratings, Child Care Resource and Referral, and ECE Professional Development

For these elements, the user can select from one of two options to determine the number of children receiving services. If the user selects "Serve Children in Current Facilities", the number of children is restricted to a maximum of 34 percent of all children statewide. (Currently, the number of licensed slots is equal to 34 percent of all children in Colorado). If the user selects "Serve Percent of All Children", the number entered in the white square determines the maximum percent of children statewide who could be served. If the element includes a participation rate slider, a participation rate below 100 percent further reduces the number of children served. For example, if the user selects "Serve Children in Current Facilities" and selects a participation rate of 50 percent, a total of 17 percent of all children would be served (34 percent x 50 percent).

Demographics.

Estimates of the total population of children by age and income category are derived from data from the Current Population Survey on the proportion of children within each of six income categories (<100 percent FPL, 100-150 percent FPL, 150-200 percent FPL, 200-300 percent FPL, 300-400 percent FPL, and over 400 percent FPL). The projected number of children in each age group in 2007 is from the Colorado State Demographer. The estimated number of children by income category and age group was determined by multiplying marginal population totals for each age by the proportion of children within each income group. In elements where income breakpoints are different from those provided above, children are assumed to be equally distributed throughout the income category. For example, within the 200 percent FPL to 300 percent FPL category, 25 percent of children are assumed to be between 200 percent FPL and 225 percent FPL.

How to use the simulation tool

Navigation

The cost simulation is an Excel workbook with three types of pages: a summary page for the entire early childhood system; summary pages for each of the four domains; and pages for each element within a domain. On each page, hyperlinked text can be clicked to navigate throughout the tool. Hyperlinks on the overall cost summary page lead to the domain summary pages, hyperlinks on each domain summary page connect to the elements within that domain, and hyperlinks on each element's page connect back to that element's domain summary page and to the overall cost summary page.

Elements

Each element represents a program or type of program serving young children in Colorado. The page for each element consists of the following four components:

1) User Options: User options are located on the right panel of each page. These options allow the user to determine a range of settings that determine the cost of the element, such as the categories of children who will be eligible for the service, or the proposed quality level to deliver. For example, user options on the CCCAP page include eligibility settings by age and income, the proportion of children in half day and full day, the proposed quality level of services, and the overall participation rate among eligible children.

2) Graphical Output

The graphical output, located on the left side of each page, displays the number of children in each of several categories. In most cases, the output displays 1) the current number of participants; 2) the projected number of participants under the user's selected scenario; and 3) the number of eligible but non-enrolled participants. In many cases the display is disaggregated by income level, based on a family's percentage of the federal poverty level (FPL); in others a simpler pie graph is used to represent all children.

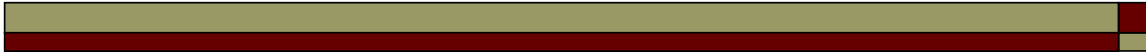
3) Numeric Summary

A numeric summary of cost data is located in the lower left of each page. This summary displays the current funding for the element, the additional funding required based on the proposed program specifications (the "funding gap"), and the total funding required for the new program. This section also displays cost summary data for the domain as a whole and for the entire early childhood system.

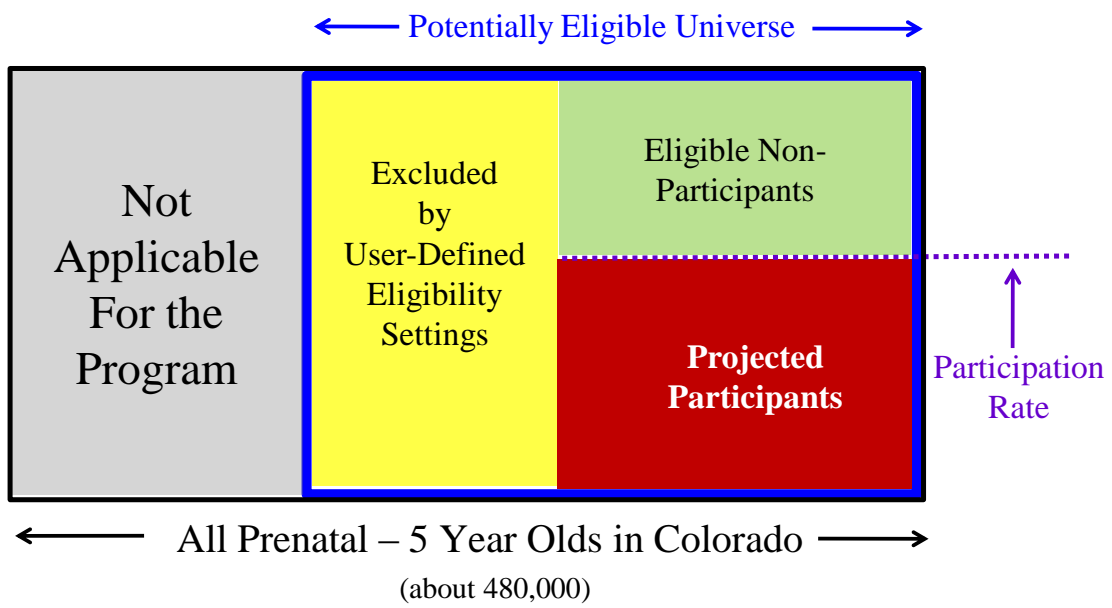
4) Information Box

The information box, in the lower right corner of the page, can be clicked to produce a brief explanation of the data used for that element, as well as any other important explanatory.

Figure 1.



Projected Participants for A Program



Funding Streams and Elements

Funding Streams

The following funding streams are incorporated on the domain summary pages. They are factored in to the domain's total current funding, but are considered to be static funding sources that cannot be expanded.

Funding Stream: Child and Adult Care Food Program (CACFP) Funding

Domain: Early Childhood Education

Description: The cost of serving children in child care settings for FFY 06 (meal reimbursement).

Data Source: Audrey Christensen, CDPHE

Funding Stream: Community Based Child Abuse Prevention (CBCAP)

Domain: 2005 Funding

Description: Family Support

Data Source: U.S. Department of Health and Human Services, Administration for Children and Families

Funding Stream: Supporting Safe and Stable Families

Domain: Family Support

Funding Stream: Supplemental Nutrition Program for Women, Infants and Children (WIC)

Domain: Health

Description: Funding for age prenatal through 5 estimated by multiplying the proportion of WIC recipients who are age prenatal through 5 (47 percent) by the total 2007 funding for WIC (\$76.2 million).

Data Source: Phil Waggoner, CDPHE

Funding Stream: Maternal and Child Health Block Grant

Domain: Health

Description: Funding for prenatal through 5 year olds estimated by multiplying total funding by proportion of children receiving services who are prenatal through 5. Funding is total of federal block grant (\$7.3 million), and the state's portion of the state match (\$4.7 million). Proportion of children age prenatal through 5 based on 100 percent of pregnant women and infants and 33 percent of children 1-22 years and 33 percent of children with special health care needs.

Data Source: Rachel Hutson, CDPHE

Element Summaries by Domain

Early Childhood Education

Element: Early Childhood Councils

Domain: Cross domain

Universe: All children

Description: Funding supports 31 councils in 56 counties.

Current Funding: Current funding of \$6,132,618 consists of current council funding (\$4,370,752) and School Readiness Quality Improvement Program funding (\$1,761,866).

Projected Costs: Based on the percentage increase in total current funding entered by the user.

Data Sources: Early Childhood Councils funding: Kim Stokka, CDE.

Element: State-Level Administration

Domain: Cross domain

Universe: All children

Description: Amount includes state-level administrative costs and does not include administrative costs incorporated in individual program costs.

Current Funding: None

Projected Costs: 2.5 percent of all other elements.

Data Source: Estimate by Anne Mitchell.

Element: Colorado Child Care Assistance Program (CCCAP)

Domain: Early Childhood Education

Universe: All children age infant through 5, under 300 percent FPL.

Description: CCCAP currently serves 26,139 children ages infant through 5. Eligibility varies by county and ranges from 130 percent FPL to 225 percent FPL.

Current Funding: \$52,964,000 for 2006-2007. Additionally, up to 20 percent of TANF funds may be used for childcare, and 65 percent of this amount is allocated to children age infant through 5. Total projected TANF funds for 2006 are \$149,626,381. Percentage of allowable transfer refers to percentage of \$24.6 million of TANF useable for childcare for children under 5. TANF transfers were not used in 2005 and 2006.

Projected Costs: Based on preschool cost estimates from Anne Mitchell. Full time is assumed to be 8 hours per day; half time is assumed to be 3.5 hours per day.

Data Sources: CCCAP enrollment and funding: Leslie Bulicz, CDHS. TANF transfer total, Todd Jorgenson, CDHS.

Element: Colorado Preschool and Kindergarten Program (CPKP) Age 0-2

Domain: Early Childhood Education

Universe: All children age infant through 2.

Description: CPKP serves 87 children birth through 2.

Current Funding: \$289,648 for 2007.

Projected Costs: Based on preschool cost estimates from Anne Mitchell. Costs assume quality level of "better".

Data Sources: CPKP enrollment and funding: Lori Bowers, CDE.

Element: Colorado Preschool and Kindergarten Program (CPKP) Age 3

Domain: Early Childhood Education

Universe: All children age 3.

Description: CPKP serves 2,459 children age 3.

Current Funding: \$8,186,712 for 2007.

Projected Costs: Based on preschool cost estimates from Anne Mitchell. Costs assume quality level of "better".

Data Sources: CPKP enrollment and funding: Lori Bowers, CDE.

Element: Colorado Preschool and Kindergarten Program (CPKP) Age 4

Domain: Early Childhood Education

Universe: All children age 4.

Description: CPKP serves 11,360 children age 4.

Current Funding: \$37,320,678 for 2007. .

Projected Costs: Based on preschool cost estimates from Anne Mitchell. Costs assume quality level of “better”.

Data Sources: CPKP enrollment and funding: Lori Bowers, CDE.

Element: Colorado Preschool and Kindergarten Program (CPKP) Age K

Domain: Early Childhood Education

Universe: All children age 5.

Description: CPKP currently provides funding for 2454 children to attend full-day kindergarten.

Current Funding: \$8,170,065 for 2007.

Projected Costs: Based on preschool cost estimates from Anne Mitchell. Costs assume quality level of “better”.

Data Sources: CPKP enrollment and funding: Lori Bowers, CDE.

Element: Head Start

Domain: Early Childhood Education

Universe: All children age 3 through 5.

Description: Head Start serves approximately 10,000 children ages 3, 4, and 5. The program is currently required to enroll 90 percent of its children under 100 percent FPL. Increasing the eligibility level would require federal legislation or additional state and/or local funding sources.

Current Funding: Estimate of \$52,994,600 for 2007 is based on enrollment of 9,137 children at \$5,800 per child.

Projected Costs: Based on preschool cost estimates from Anne Mitchell.

Data Sources: Head Start enrollment: Sacia Wing, Contractor to Region VIII. Per child estimate: Pamela Harris, Rocky Mountain SER.

Element: Preschool Special Education Services

Domain: Early Childhood Education

Universe: 16 percent of all children age 3 through 5.

Description: Funds special education services such as occupational therapy, physical therapy, speech-language therapy, etc. and screening to children with special educational needs.

Current Funding: Current funding of \$35,686,180 includes Part B and Child Find. Funding currently serves 10,939 children and does not include administrative costs.

Projected Costs: Cost per child of \$3,262 computed by dividing current funding by current number of children served.

Data Sources: Total funding and enrollment: Tom Patton, CDE.

Element: ECE Professional Development

Domain: Early Childhood Education

Universe: All children age infant through 5

Description: Pre-service and ongoing training and supports for early childhood educators.

Current Funding: Temple Hoyne Buell Scholarships (\$124,019), TEACH Scholarships (\$237,500), Childcare R&R Provider Training (\$62,500) and Office of Professional Development (\$480,000).

Projected Costs: This element incorporates two separate costs. The cost to train professionals to reach the indicated credential levels is based on an estimated cost per professional for each credential level.

The cost to provide ongoing training to professionals is based on the cost per professional for each of four quality levels. (These quality levels are not associated with quality levels for preschool).

Data Sources: Temple Hoyne Buell Scholarships: Susan Steele. TEACH Scholarships and Child Care Provider R&R Training: Stacy Buchanan, Qualistar. Office of Professional Development: Kathleen Stiles.

Element: Child Care Licensing

Domain: Early Childhood Education

Universe: All children age infant through 5

Description: Cost to license child care providers.

Current Funding: Computed based on the current number of children served and the cost to provide enough licensing professionals to serve them. The current estimated number of children served, 140,722, is based on the total number of licensed slots in centers and homes. These children are enrolled in facilities comprising 9,247 weighted units. These facilities are served by licensing professionals at a rate of 142 weighted units per FTE. Therefore, it currently requires 65 FTE to serve these children (9,247/142). At a cost of \$56,048 per FTE, the total current funding is \$3,649,830

Projected Costs: Computed by dividing the projected number of children served by the number of children served per FTE, and multiplying by the cost per FTE. The projected number of children served is based on the Facility Selection user option. If 'Serve Children in Current Facilities' is selected, this number is 140,722. If 'Serve Percentage of All Children' is selected, the total number of children in the universe is multiplied by the percentage entered in the white box. The number of children served per FTE is computed by multiplying the current ratio of children to weighted units (15.2) by the user-selected Caseload per FTE value. The cost per FTE is \$56,048.

Data Sources: Current weighted caseload and salaries: CDE (Source: <http://www.cde.state.co.us/cdeprevention/download/pdf/CostEffectivenessStudy-FinalVersionSept2004.pdf>). Number of licensed slots: Leslie Bulicz, CDHS.

Element: Child Care Resource and Referral.

Domain: Early Childhood Education

Universe: All children age infant through 5.

Description: Cost to provide three levels of resource and referral to all children.

Current Funding: Estimate of \$511, 116 based on current Qualistar Early Learning funding for local CCR&R's.

Projected Costs: Computed by multiplying the projected number of children served by the percentage served in each of four categories (Internet, Standard, Enhanced, No Referral) by the cost per referral in each category. The projected number of children served is based on the Facility Selection user option. If 'Serve Children in Current Facilities' is selected, this number is 140,722. If 'Serve Percentage of All Children' is selected, the total number of children in the universe is multiplied by the percentage entered in the white box. The percentage served in each category is entered by the user. The cost per referral is based on costs per 100,000 referrals using Qualistar Early Learning's formula to determine operating costs. Internet referral costs of \$11.65 each are based on 10 minutes each, telephone referral costs of \$22.41 each are based on 40 minutes each, and enhanced referral costs of \$89.20 each are based on 4 hours each.

Data Sources: Current funding and cost per referral, Qualistar Early Learning.

Element: Quality Ratings

Domain: Early Childhood Education

Universe: All children age infant through 5.

Description: Cost to enter childcare facilities into the quality rating process. Does not include costs to improve quality.

Current Funding: Computed by multiplying the current number of rated classrooms (468) by the cost to rate each classroom (\$875).

Projected Costs: Computed by dividing the projected number of children served by the number of children per facility, and then multiplying by the cost to rate each facility. The projected number of children served is based on the Facility Selection user option. If 'Serve Children in Current Facilities' is selected, this number is 140,722. If 'Serve Percentage of All Children' is selected, the total number of children in the universe is multiplied by the percentage entered in the white box. The number of children per facility is estimated using the average number of licensed slots per facility in centers and in homes, weighted by the number of children per facility in centers and in homes.. The average cost to rate each facility is computed by multiplying the average number of classrooms per facility by the cost to rate one classroom, weighted by the number of children per facility in centers and in homes.

Data Sources: Current number of licensed slots: Leslie Bulicz, CDHS. Cost per classroom: Qualistar Early Learning.

Element: Build Your Own ECE

Domain: Early Childhood Education

Universe: All children age infant through 5.

Description: A statewide early childhood education program built according to user specifications.

Current Funding: None.

Projected Costs: Based on preschool cost estimates by Anne Mitchell.

Mental Health

Element: Mental Health Consultation

Domain: Mental Health

Universe: All children age infant through 5.

Description: Comprehensive mental health consultation represents a Master's level clinician delivering on-site promotion, prevention and intervention services to staff, parents and children for 8-10 hours per week. In-service training and coaching represents a Master's level clinician delivering on-site promotion, prevention and early identification services through training and educational opportunities and mental health screenings for 4-5 hours per week

Current Funding: \$1,152,786 for consultation through Early Childhood Mental Health Specialists

Projected Costs: Computed based on costs per child for each type of service and the number of children receiving each service. Costs are \$209 per child for in-service training and coaching and \$350 per child for comprehensive services. The number of children receiving each service are computed by the user-entered percentage of children receiving each service times the universe of children times the user-entered participation rate.

Data Sources: Current funding and cost per child: Jordana Ash, KidsConnect and Claudia Zundel, CDHS.

Element: Mental Health Assessment and Treatment

Domain: Mental Health

Universe: 10 percent of all children infant through 5.

Description: Mental health assessments and treatment for children who have been screened and identified as having severe emotional disturbances.

Current Funding: \$9,045,039.

Projected Costs: Computed by adding the total cost for assessment and treatment and the total cost for wraparound (coordination of services). Total cost for assessment and treatment is computed by multiplying the cost per child (\$3,063) by the total number of children served in assessment and treatment. The total number of children served in assessment and treatment is computed for each income category by multiplying the user-entered participation rate for that category by the universe of children in that income category (10 percent of all children). The total cost for wraparound is computed by multiplying the cost per child (\$3,600) by the total number of children served in wraparound. This number is equal to the user-entered percent of participants requiring wraparound times the number of projected participants in assessment and treatment.

Data Sources:

Element: Mental Health Professional Development

Domain: Mental Health

Universe: For consultants, 100 percent of all children; for clinicians, 20 percent of all children

Description: Preservice and on-going training for mental health consultants and clinicians.

Current Funding: None

Projected Costs: Total costs for both consultant and clinician PD are calculated by multiplying the cost per professional by the number of professionals required. Cost per professional is equal to the number of hours required to train one professional (416) times the cost per hour of training (\$60). Number of professionals required is calculated by dividing the projected number of children served (based on user-entered percent of children being served by either consultants or clinicians receiving PD) by the number of hours required to train each professional (200 for consultants and 45 for clinicians).

Data Sources: Claudia Zundel, CDHS.

Family Support

Element: Early Head Start

Domain: Family Support

Universe: 100 percent of all children age birth through 2.

Description: Comprehensive services for eligible children age birth through 2 including early childhood education, family support/home visiting, and health and mental health screenings.

Current Funding: Computed by subtracting estimated Head Start funding from total funding for both Head Start and Early Head Start.

Projected Costs: Based on cost estimates by Anne Mitchell. Program is assumed to provide 8 hours of care for 180 days per year. Available quality levels do not include Basic because this quality level falls below the required student-teacher ratio for Early Head Start.

Data Sources: Total funding: Funding Matrix, Claudia Zundel, CDHS. Current enrollment: Sacia Wing, Contractor to Region VIII.

Element: Parent Education

Domain: Family Support

Universe: All children, age infant through 5.

Description: Includes family support programs of varying intensities like Nurse Family Partnership and home visiting and parent education programs like Bright Beginnings, Parents as Teachers, Incredible Years and Home Instruction for Parents of Preschool Youngsters. Data shows that the costs for low, medium and high intensity home visiting programs closely aligns with those costs for low, medium and high intensity parent education programs.

Current Funding: Based on funding for Bright Beginnings, Parents as Teachers, Nurse-Family Partnership, and HIPPY. Does not include Incredible Years and other sources.

Projected Costs: Computed by multiplying number of children served in each type of program by costs per program. Number of children served in each program computed by multiplying user-entered participation rates by universe of children for selected age groups. Cost per program based on average costs per child for Bright Beginnings (Low Intensity, Age 0-2, \$65.45/child), Parents as Teachers (Medium Intensity, Age 0-2, \$1100/child), Nurse Family Partnership (High Intensity, Age 0-2, \$4500/child), and HIPPY (Medium Intensity, Age 4-5, \$1100/child).

Element: Parent Information

Domain: Family Support

Universe: All children

Description: A variety of parent information and support from printed material to parenting classes.

Current Funding: Based on funding for infant through 5 year olds from Parent Information Resource Centers (estimated at \$200,000 of total \$1,050,000 budget) and Family Resource Centers (estimated at \$178,154 of total \$777,020 budget).

Projected Costs: Based on projected number of participants times cost per child for PIRCs (\$46).

Data Sources: Current PIRC funding: Tina House. Current FRC funding: Claudia Zundel, Funding Matrix. Current number of enrollees: Scott Bates, CDPHE.

Element: Early Intervention Services

Domain: Family Support

Universe: Children birth through 2 years with a significant developmental delay or a condition associated with significant developmental delay. Colorado serves approximately 2 percent of all children.

Description: Includes identification, assessment, service coordination, and early intervention services such as physical therapy, speech- language therapy, special instruction, et c. in a child's natural environment.

Current Funding: \$21,417,591

Projected Costs:

Data Sources: John Miles, CDHS.

Element: TANF Work Exemption

Domain: Family Support

Universe: 100 percent of all children up to the federally-mandated cap of 85 percent of the state's median income (approximately 130 percent FPL).

Description: Funding is for exempt, single custodial parents with child under age 1 and child care unavailable.

Current Funding: Calculated by multiplying average monthly amount (\$7,294) by average monthly cases (24), and multiplying by 12.

Projected Costs: Computed by multiplying projected number of families by current average amount per family.

Data Sources: Current funding and enrollees: Vince Romero, Colorado Works Program.

Health

Element: Health Insurance

Domain: Health

Universe: All children age prenatal through 5

Description: Comprehensive health insurance coverage in Medicaid, CHP+, or a state program.

Current Funding: Total funding equals sum of Medicaid prenatal funds (\$94,712,447), CHP+ prenatal funds (\$16,753,440), and current funding for Medicaid and CHP+ recipients age infant through 5.

Current funding for Medicaid age infant-5 computed by multiplying total state and federal Medicaid funding (\$383,198,400) by the estimated percentage of Medicaid children between birth and 5 (26 percent). Current funding for CHP+ age infant-5 computed by multiplying total state and federal CHP+ funding (\$68,355,809) by the estimated percentage of CHP+ children between birth and 5 (26 percent).

Projected Costs: Projected costs for Medicaid, CHP+, and state plan computed by multiplying the number of children in each plan by the cost per child in each plan. The number of children in each plan is determined by user selections for the following four thresholds: Medicaid lower limit; Medicaid upper limit/CHP+ lower limit; CHP+ upper limit/state lower limit; and state upper limit. The cost per child for each plan is \$9405 (prenatal CHP+), \$1462 (birth-5 CHP+), \$7801 (prenatal Medicaid), and \$1794 (birth-5 Medicaid).

Data Sources: Current funding and enrollment for Medicaid and CHP+: Tara Trujillo, CCC.