Colorado Maternal and Child Health
2016 - 2020 Needs Assessment Report
Appendices

To view a document, click on the title

Appendix	Document
A	Advisory Group Team Charter
B	Key Principles Matrix
C	MCH Snapshot
D	Issue Brief: Mental Health among Women of Reproductive Age in CO
E	Issue Brief: Substance Abuse among Women of Reproductive Age in CO
F	Issue Brief: Unintended Pregnancy in CO
G	Issue Brief: Early Childhood Immunization
H	Issue Brief: Infant Mortality
I	Issue Brief: Early Childhood Obesity
J	Issue Brief: Children's Oral Health
K	Issue Brief: Child and Youth Injury
L	Issue Brief: Obesity in Children and Youth
M	Issue Brief: Mental Health among Children and Youth
N	Issue Brief: Substance Use among Youth
O	Youth Marijuana Report
P	Youth Sexual Health: Key Data Points
Q	Issue Brief: Children and Youth with Special Health Care Needs
R	HP2020 Comparison Data Table
S	Colorado Baseline National Performance Measure Data
T	2012 MCH Trend Analysis
U	Phase One Data Synthesis Table
V	Prioritization Template: Well-Woman Care
W	Prioritization Template: Pregnancy-Related Depression
X	Prioritization Template: Mental Health among Women
Y	Prioritization Template: Substance Use among Women
Z	Prioritization Template: Breastfeeding
AA	Prioritization Template: Infant Mortality among African-Americans
AB	Prioritization Template: Safe sleep
AC	Prioritization Template: Developmental Screening
AD	Prioritization Template: Early Childhood Obesity Prevention
AE	Prioritization Template: Bullying
AF	Prioritization Template: Mental Health among Youth
AG	Prioritization Template: Substance Use among Youth
AH	Prioritization Template: Youth Systems
AI	Prioritization Template: Youth Sexual Health
AJ	Prioritization Template: Medical Home for CYSHCN
AK	Prioritization Template: Transition for CYSHCN
AL	Prioritization Template: Respite for CYSHCN
AM	Prioritization Template: Oral Health
AN	Phase Two Scoring Rubric Results
AO	2011-2015 Mid-Course Review Part 1
AP	Mid-Course Review Part 2
AQ	Colorado's Special Report: Drug Overdose and Death
AR	Oral Health During Pregnancy Fact Sheet
AS	Future of Covering Kids Report
AT	Regional Meeting Capacity Summary
AU	Regional Meeting CYSHCN Data Summary

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Project Team Charter Checklist
MCH Needs Assessment Advisory Group
March 2014

Background

The reason(s) for chartering the team. State the perceived problem/project and any information that would be useful to those who must complete the project.

Federal legislation authorizing the Title V Block Grant requires States to conduct a needs assessment of the MCH population once every five years. Resulting priorities guide state and local MCH work for the following five year cycle (FY16-FY20).

Goal or Deliverable(s)

What the sponsor and/or process owner wants from the team. Clarify team expectations and what changes are expected to result from this teamwork.

To guide and inform the design and implementation of the 2015 MCH Needs Assessment process. To assure authentic engagement of a wide range of MCH stakeholders and to ultimately prioritize MCH issues that will drive state and local work for the next five year cycle (from FY16-FY20) to create visible and meaningful results/improvements in priority MCH issues.

Membership

Representation from every key part of the process as well as from different levels within the organization.

Current members include:

Karen Trierweiler	**Title V MCH Director, PSD Deputy Director**
Rachel Hutson	**CYSHCN Director, Children, Youth and Families Branch Director**
Anne-Marie Braga	**Population and Community Health Unit Manager, CYF Branch**
Heather Baumgartner	**MCH Unit Manager, CYF Branch**
Jennie Munthali	**HCP Unit Manager, CYF Branch**
Risa Friedman	**MCH Program Specialist, CYF Branch**
Cathy White	**MCH Generalist Consultant, CYF Branch**
Ashley Juhl	**Epidemiologist; Evaluation, Planning and Evaluation Branch; PSD**
Alix Hopkins	**Nurse Manager, Tri-County Health Department**
Amy Wineland	**Public Health Director, Summit County Public Health**
Tsering Dorjee	**PH Nurse Consultant, Office of Planning and Partnerships, CDPHE**

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MCH Needs Assessment Advisory Group
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Eileen Forlenza	**Family and Community Engagement Specialist**
Gina Febbraro	**MCH Needs Assessment Project Manager**

Duration
How long the team is expected to work on the project.

It is expected that the majority of the needs assessment process will be completed by January 2014. This group will meet until this time.

Checkpoints
When you expect the team to check in with the sponsor. At the very least, the team should check in at critical milestones.

The sponsors (Karen and Rachel) will participate on the Advisory Group so will be aware of progress and direction throughout the process. The Project Manager will identify and integrate intentional Advisory Group check-ins with the sponsor at critical milestones throughout the process, such as at the completion of the methodology design phase and each implementation phase that follows.

Feedback Mechanism
How the team communicates with the sponsor, the people they are representing and other members on the team.

It is expected that in addition to participating on the group, members will update and solicit feedback from their stakeholder groups upon request or as members deem appropriate. Feedback is also always welcome directly to the Project Manager (Gina) or to the Project Sponsors (Karen and Rachel).

Boundaries
Any issues that are "out of bounds" and not for the team to consider.

The "MCH Scope of Work" identifies programmatic areas or funding that cannot or will not be affected by the results of the needs assessment process. These programmatic areas should not be discussed during the NA process as they are out of bounds.

Members should consider the delineation between the MCH needs assessment process and the MCH planning process that follows once priorities are determined. There will inevitably be discussion about both phases in the NA Advisory Group however the primary focus of the group should be on the needs assessment.

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March 2014

Decisions

Most teams aim for consensus, with a fallback to the majority vote or the Project Lead.

The team will aim for consensus, with a fallback to the majority vote or sponsors, depending on the nature of the decision.

Final decision-making will default to the MCH Steering Team if:

1. The advisory group cannot agree on decisions throughout the process.
2. The group's decisions do not align with the MCH scope of work or strategic direction, including federal requirements.
3. If the process takes longer than intended and the group is no longer able to convene

Resources

What resources (money, training, specialists, support, equipment, supplies) will be needed.

- **Staff time and effort (Project Manager, NA Advisory Group members, stakeholders, CYF Branch Ops, EPE)**
- **Meeting materials**
- **Stakeholder feedback**
- **Other existing resources such as previous needs assessments, plans, report, crosswalks, etc.**
- **Reimbursement forms and funds (driving to meetings)**
- **Phone line (for meeting call-in option)**

Guidelines

Any specific areas to address, processes to be used, people to involve or whatever else needs to be considered in order to accomplish the team's goal.

- **Step up/step back**
- **Ask questions**
- **Take care of yourself**
- **Be flexible**
- **Don't let the perfect be the enemy of the good**
- **Adhere to PSD core values**
    - **Respect**
    - **Integrit**y
    - **Responsibility**
    - **Achievement**
    - **Excellence**

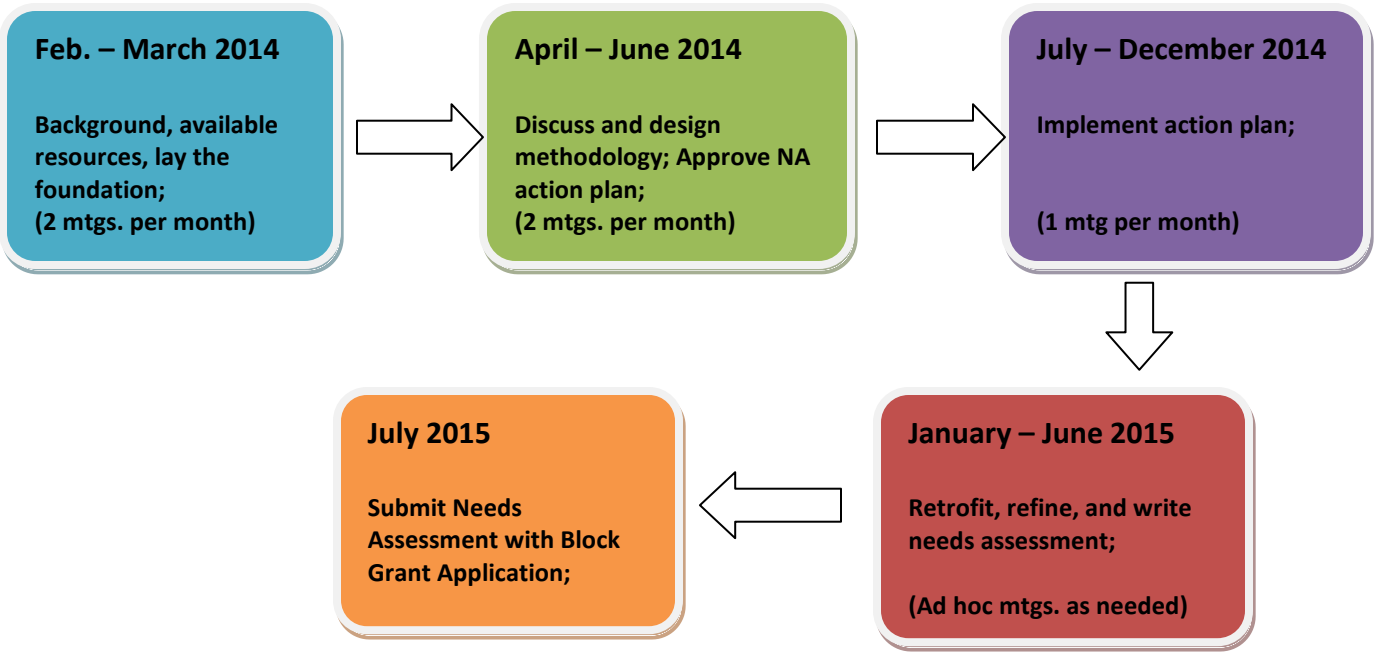
Project Team Charter Checklist
MCH Needs Assessment Advisory Group
March 2014

☐ **Logistics**

When, where, how often, and for how long the team will meet. How the team members' "normal work" will get done while they are involved on the team.

Advisory Group members' work between meetings will be kept to a minimum unless it is part of "normal" job or unless members volunteer to be part of working subcommittee (if applicable).

MCH Needs Assessment Advisory Group
Overall Timeline



Colorado Maternal and Child Health 2016-2020 Needs Assessment

Key Principles

Key Principle	Activities to Operationalize	Process Measures
MCH Target Population: Focus on children and youth (birth-25), children and youth with special needs (birth – 21), women of reproductive age (15-44) and their families.	Issue briefs and Colorado snapshot focus on these populations when collecting and presenting data.	Data is focused on MCH population
	Focus on these populations during stakeholder discussions	Population included in parameters of discussion
	Include and define MCH population during communication presentations.	MCH population defined and included in communication presentations.
Strengths-based Approach: Consider assets and gaps, risk and protective factors, and positive outcomes.	Integrate risk and protective factors in issue briefs	Risk and protective factors are included in briefs
	Use Appreciative Inquiry methodology to construct questions for the regional meetings and focus groups	Questions are worded in a strengths-based, appreciative way.
MCH Community and Stakeholder Integration: Seek MCH community and stakeholder experience and perspective to inform efforts and results.	Conduct regional meetings and stakeholder focus groups.	Regional meetings and stakeholder focus groups are held. Stakeholder perspective is obtained.
	Advisory Group members share stakeholder perspective during Advisory Group Meetings.	Stakeholder input is considered during Advisory Group meetings through members' feedback.
	Advisory work group process on existing resources;	List of findings is generated.

Don’t Reinvent the Wheel: Maximize resources/current efforts to produce the highest quality NA.	Reference CDPHE assessment in CO snapshot;	Snapshot includes reference to CDPHE assessment;
	MCH priority mid-course review findings contribute to overall prioritization process.	Prioritization process integrates finding of mid-course review.
Health Equity: Apply a health equity lens throughout process.	Include SDOH data in the MCH issue briefs	Issue briefs include SDOH data
	Develop Colorado snapshot using SDOH Framework.	Snapshot describes SDOH of the MCH population
	Integrate health equity questions into stakeholder discussions	Health equity is discussed during stakeholder conversations
Communication: Systematically communicate to the MCH community and stakeholders.	Present MCH Needs Assessment Introduction;	Ppt. is developed and presented at CALPHO, Nursing Directors, LPHA MCH webinar, PSD Supervisors, and other stakeholder groups
	Introduction to NA stakeholder meetings	Introduction presentation is shared at the regional meetings and stakeholder focus groups
	Selected priority presentation;	Advisory Council members present summary version to stakeholder groups;
Data-driven Decisions: Use quantitative and qualitative data to	Work group process on existing resources	List of conclusions is generated.

inform decision making	Prioritization process implemented	Colorado MCH priorities identified.
Best Practices: Apply best practices to methodology and planning efforts.	Identify and collect valid, relevant, and updated data to describe the MCH population and its needs	Issue briefs, snapshot and executive summary contains valid, relevant, and updated data.
	Qualitative method design and implementation	Use most widely accepted methods for collecting qualitative data
	Apply a systematic framework to the prioritization process	Prioritization process is document and can be easily explained
Openness to New Key Principles: Be open to new principles and questions during the process.	Consider and integrate newly proposed federal performance measures throughout the NA process.	State priorities align with federal requirements.

When to consider/address?	Who is responsible	Check-in Periods
When developing issues briefs and snapshot	Ashley, Risa, Gina and others	Upon review of the documents
When developing facilitation materials for stakeholder discussion	Gina	Advisory Group review of facilitation materials
Spring 2014	Gina	Summer 2014
Fall 2014	Gina, Risa, Ashley, Others?	1/1/2015 when reviewing briefs
June 2014	Gina, Advisory Group	July when meetings start
Spring 2014	Advisory Group	October 2014
Ongoing	Advisory Group	Ongoing
Spring 2014;	Advisory Group Members	Summer 2014

Spring 2014	Gina, Ashley	Summer 2014
Fall 2014	Advisory Group Members	Fall 2014
Ongoing	Ashley, Gina, Risa	Ongoing
Spring/Summer 2014	Gina, Ashley	Summer 2014
May/June 2014	Gina, Advisory Group	October 2014
June/early July 2014	Karen, Advisory Group members	Summer 2014 Winter 2014
July through September	Advisory Group members	Review of Introduction by Advisory Group
December 2014		May 2014 Advisory Group Meeting
Spring 2014;	Advisory Group Members	Spring 2014

Late Fall 2014	Advisory Group Members	Winter 2015
Ongoing	Ashley and all	January 2015
May 2014 - Advisory Group determining what approach to take	Advisory Group	May 2014
Fall 2014	Advisory Group	Winter 2014
Ongoing	Advisory Group	January 2015

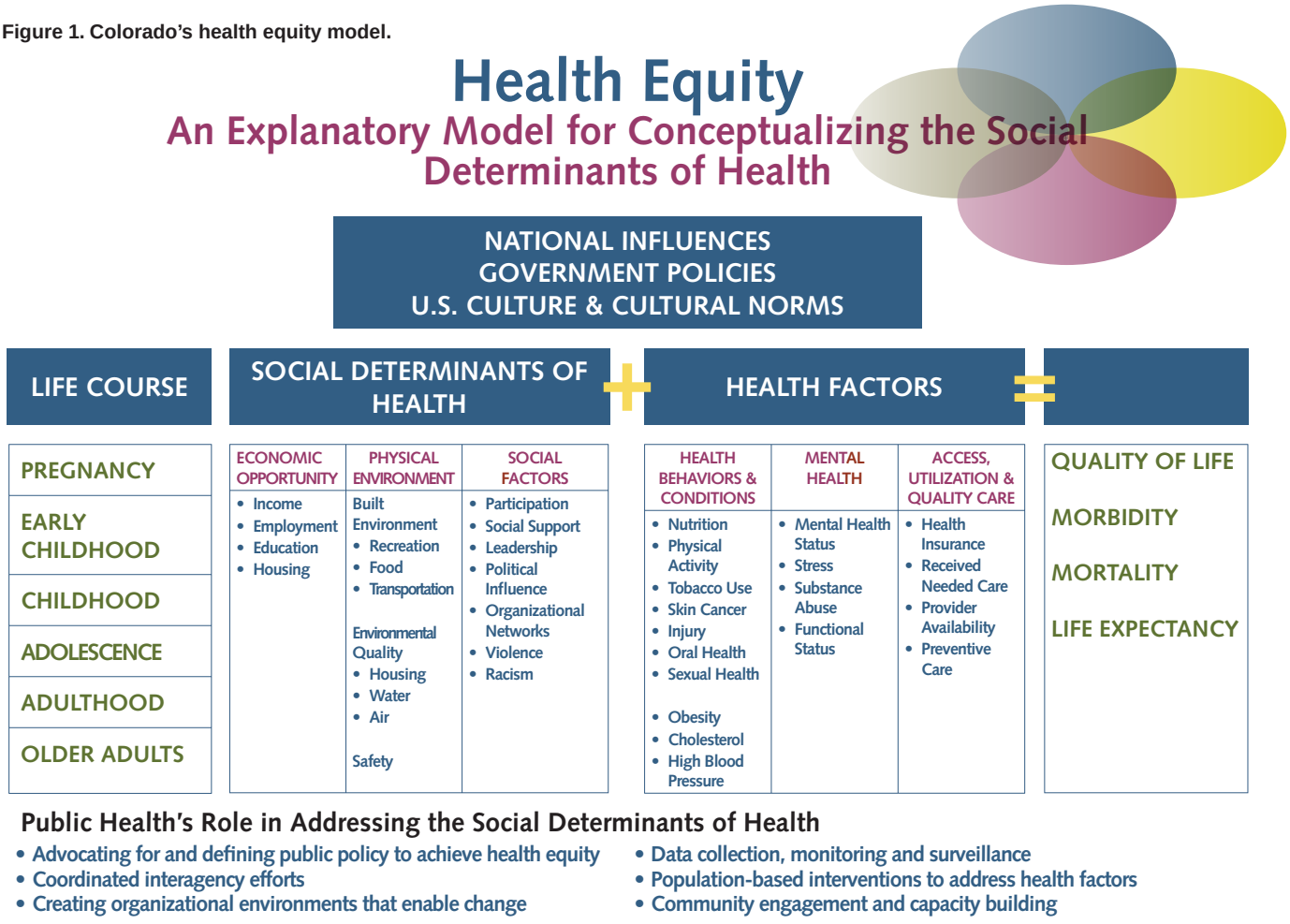
Maternal and Child Health Snapshot

Introduction

The Maternal and Child Health (MCH) population in Colorado includes women of reproductive age (15 to 44 years), children and youth (birth to 25 years), and children and youth with special health care needs (birth to 21 years). The health and health equity of these three populations is influenced by the social determinants of health such as geographical, social and economic factors. This snapshot includes an overview of key factors as they relate to the MCH population in Colorado in order to provide state-specific context for considering the health of the MCH population described in the twelve MCH epidemiologic issue briefs that follow.

In addition to this snapshot, the Colorado Department of Public Health and Environment (CDPHE) recently released the *2013 Colorado Health and Environmental Assessment*. This report provides detailed data on Colorado's overall population, key health and environmental issues, and the social determinants of health. The assessment presents indicators that align with Colorado's Health Equity Model. The Health Equity Model is a visual model for conceptualizing the broad, complex and interrelated determinants of health that was developed at the CDPHE and is being promoted by the Association of State and Territorial Health Officials (See Figure 1). Because the statewide health assessment was recently conducted and published, this MCH snapshot is a subset of social determinant indicators that specifically relate to the MCH population.

Figure 1. Colorado's health equity model.



Source: Colorado Department of Public Health & Environment.

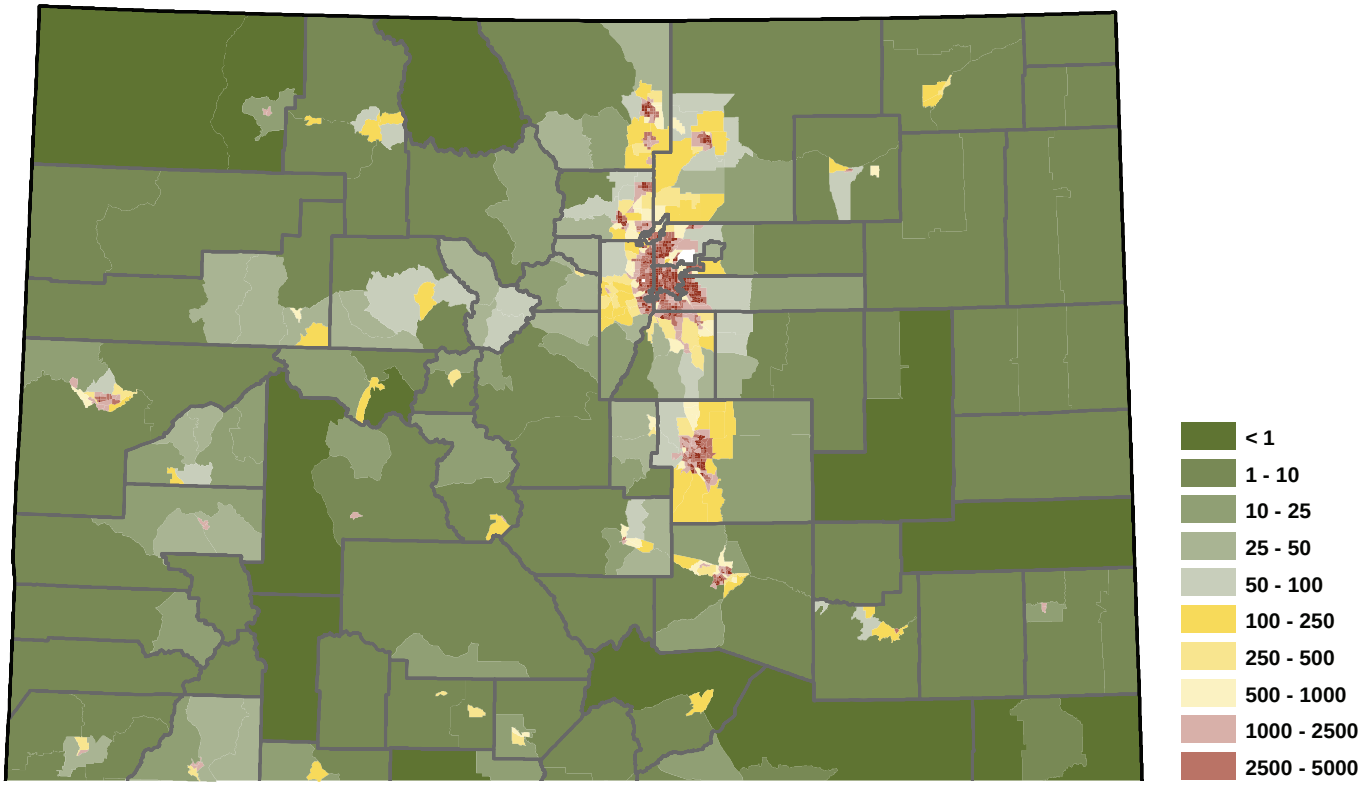
COLORADO
Department of Public Health & Environment

Geography

Colorado is located in the Rocky Mountain region of the United States. Colorado has the highest mean elevation of any state with more than a thousand mountain peaks over 10,000 feet high including 54 that are over 14,000 feet. The Continental Divide runs from north to south through west central Colorado and bisects the state into the eastern and western slopes.

The state is divided into five regions: the Front Range, the Western Slope, the Eastern Plains, the Central Mountains, and the San Luis Valley. Eighty-seven percent of the state's population lives in 15 urban counties along the Front Range, which include the metropolitan areas of Denver, Boulder, Fort Collins, Greeley, Colorado Springs and Pueblo, and in one county on the Western Slope. The remaining 13 percent of the state's population lives in the 48 rural and frontier counties.[1] In total, there are 64 counties in the state with 16 designated as urban, 25 rural and 23 frontier (see figure 2). Colorado's geography can make access to resources and travel difficult for residents living outside of the Front Range communities.

Figure 2. Colorado population density, 2010.



Population and Demographics

Colorado ranks 22nd among states in population size with a total state population in 2012 of 5,188,683. In terms of Colorado's MCH population, 20 percent of the state's population is female ages 15-44; 30 percent is children and youth ages 0-21; and approximately 256,000 are children and youth with special health care needs.[2]

Children and youth with special health care needs (CYSHCN) are those children and youth who have one or more chronic physical, developmental, behavioral or emotional condition for which they require health and related services of a type or amount beyond that required by children generally.[3] For more information on Colorado's CYSHCN population, see the CYSHCN Issue Brief.

Another important consideration about Colorado's youth is that among the high school population, 5.7 percent identify themselves as gay, lesbian or bi-sexual.[4] Among adults in Colorado, 4.3 percent identify themselves as gay, lesbian or bisexual.[5]

The two major racial and ethnic groups in Colorado are composed of White non-Hispanic persons and persons of any race who are of Hispanic origin or ethnicity. Estimates from the American Community Survey (2012) of the U.S. Census Bureau show that 69.4 percent of Coloradans identify themselves as White non-Hispanic and 21.0 percent identify themselves as of Hispanic origin. Other non-Hispanic groups include Black/African-American (3.9 percent), Asian and Native Hawaiian/Pacific Islander (2.9 percent), American Indian and Alaska Native (0.6 percent), and people who report another race or more than one race (2.2 percent).[6]

The Hispanic population has grown rapidly in recent years; from 735,601 in 2000 to an estimated 1,088,742 in 2012 according to the most recent one-year estimate available from the American Community Survey.[7] The vast majority of the Hispanic population is of Mexican descent, while the remainder of the population is mostly from Central and South America.[8] Almost 76 percent of the Hispanic population in Colorado was born in the United States; 24 percent was not.[9] Almost 25 percent of those born outside the U.S. are naturalized citizens.[10]

Approximately 17 percent of Colorado residents age 5 and older speak a language other than English at home; over 70 percent of those speaking another language in the home speak Spanish.[11] Three percent of households in Colorado are estimated to be linguistically isolated, i.e., all members 14 years and older have at least some difficulty with English.[12]

Although small, Colorado does have a refugee population. Between 2009 and 2013, an average of 1,750 refugees resettled in Colorado each year. This does not include overseas and domestic asylees, special immigrant visas, unaccompanied minors, parolees or victims of trafficking. Resettled refugees in Colorado come from approximately 50 countries around the world. In recent years, the majority of refugees are from Iraq, Myanmar, Somalia and Bhutan. Between 2009 and 2013, the largest number of refugees resettled in the state were ages 25-44 years followed by children ages 0-14 years and youth ages 19-24 years. The majority of refugees are resettled in the Denver metro area (Arapahoe, Adams, Denver and Jefferson counties). El Paso, Weld and Morgan counties receive an average of 200 refugees per year. Other Colorado counties with resettled refugees between 2009 and 2013 include Archuleta, Boulder, Broomfield, Douglas, Eagle, Garfield, Gunnison, Larimer, Mesa, Phillips, Pueblo, Summit and Teller.[13]

Though Colorado is a mid-sized state, it has had one of the fastest growth rates of all states. Migration continues to be an important factor in the state's population growth. Between 2010 and 2015, Colorado's population is expected to grow from 5,049,700 to 5,456,000. While natural increase (births minus deaths) will contribute 176,600 (43 percent), net migration will contribute 229,700 (57 percent) to the total increase of 406,300.[14]

The number of births for 2013 was 65,004, a slight decrease from the recent low of 65,052 in 2011, which had been the lowest level since 1999. While the declines in births in recent years have been attributed to the economic recession beginning in 2008, a large drop of over 1,800 births between 2009 and 2013 among unmarried mothers without a high school education and under the age of 25 may be attributed to the impact of the statewide Colorado Family Planning Initiative which began in 2009 and heavily emphasized long-acting reversible contraceptives for young women. Notably, Colorado has one of the lowest state rates of births to unmarried women: 24 percent in 2011, second only to Utah.[15]

It is instrumental for Colorado's Title V program to understand who lives in Colorado and what the needs and disparities are among the state's population groups so that we can best optimize the health and well-being of the MCH population and promote health equity. These data are a starting point for this public health work.

Economy

Employment

Employment, income and housing are all closely linked to health and wellness and should be considered in understanding the overall health status of the MCH population in Colorado. As of July 2014, Colorado's unemployment rate was 5.3 percent. This was lower than the national unemployment rate for the same time period, 6.1 percent.[16] Colorado's unemployment ranking was the 16th lowest in the nation.[17] The state unemployment rate has been on the decline since reaching a recent high of 9.1 percent in October 2010.

Income and Poverty

Colorado has an income advantage. In 2012, the median household income in Colorado was $56,765, higher than the national median of $51,371.[18] Colorado's median household income was the 14th highest among all 50 states.[19] The median household income does fluctuate among Colorado's counties. Douglas County, located just south of Denver along the Front Range, had the highest median household income at $101,108. While Costilla County, located in southern Colorado's San Luis Valley, had the lowest at $25,309.[20]

While Colorado is a wealthy state, racial and ethnic inequities exist by income. Median household incomes for Hispanic, Black and American Indian populations are significantly lower than those for the White and Asian populations.[21]

The percent of Colorado residents in poverty has been on the rise. In 2012, 30.6 percent of Coloradans lived below 200 percent of the Federal Poverty Level (FPL). This is up 12 percent

from 27.3 percent in 2007. When ranking states by the percentage of persons living below the poverty level, Colorado is tied for the 20th lowest poverty rate in the nation.[22]

Among children less than 18 years of age, 39.4 percent were living in families with incomes below 200 percent of the Federal Poverty Level[23] ($46,100 for a family of four in 2012 [24]). Racial and ethnic minorities have much higher rates of children who live in low-income families (incomes at less than 200 percent of the FPL) than the majority population (American Indian, 64 percent; Hispanic/Latino, 63 percent; Black, 62 percent; Asian, 30 percent; White, 25 percent;). Rural children (42 percent) are more likely to live in low-income families than urban children (37 percent). When looking at children living in families with incomes below 100 percent of the FPL, 18.0 percent of children in Colorado lived in poverty. Although this is lower than the national rate of 23.0 percent, the proportion of Colorado children living in poverty increased the third fastest in the nation between 2000 and 2012.[25] Colorado is currently tied for the 17th lowest child poverty rate in the nation.[26]

The majority of children living in low-income families live in families where the parents are married (55 percent) and have at least one parent who has full-time year-round employment (48 percent) indicating that many of these families are having trouble meeting expenses because they are working in low-wage jobs.[27]

Housing and Built Environment

Among occupied housing units in Colorado, 36.0 percent are rented. In renter-occupied units, 51 percent pay 30 percent or more of the household income to rent. The median home value for owner-occupied units in Colorado is $234,900. Of these units, 73.9 percent have a mortgage.[28]

The built environment influences access to recreational activities, alternative transportation and healthy food. The majority of Colorado adults (78.1 percent) report that they have access to public exercise facilities in their neighborhood. Related to transportation, 82.7 percent of adults report that the sidewalk or shoulders in their neighborhoods are sufficient to safely walk, run or bike. Almost nine in ten (86.6 percent) adults report that they can easily purchase healthy foods in their neighborhood.[29] Almost all (95.0 percent) Colorado parents feel that their children are safe in their community or neighborhood. Safety and violence varies however with socioeconomic factors in the area. For example, perceived neighborhood safety increases with income. Compared to children living above 200 percent of the poverty level, significantly fewer children living at or below 200 percent of the poverty level are perceived by their parent to be usually or always safe in their neighborhood or community (97.8 percent versus 90.2 percent).[30]

Education

Education is critical to the health and well-being of the MCH population. Education leads to greater employment opportunity and increased income along with reduced illness, increased longevity, and improved health and educational opportunity for future generations.[31] Overall, Colorado has a highly educated population. Over one-third (37.5 percent) of all Coloradans age 25 and older have a college degree or more, and Colorado is ranked 3rd among all states and the District of Columbia in the percentage of the population with a college degree.[32]

Inequities in educational attainment exist however among different racial and ethnic groups in Colorado. Almost half (48.7 percent) of Asians have a college degree or more as do 43.3 percent of White, non-Hispanics. One in four (23.7 percent) Black/African Americans, and 12.7 percent of Hispanics have a college degree or more.[33] While the prevalence of college graduates in Colorado is high among Asian and White, non-Hispanics, the percentage of high school students who graduate overall is relatively low (36 states have higher high school graduation rates[34]). This dynamic exists because many highly educated people migrate to Colorado after completing their education; they have completed at least high school elsewhere. The on-time high school graduation rate (graduation within four years) in Colorado was 72.4 percent in 2010 and increased to 76.9 percent in 2013.

Disparities in graduation rates mimic the disparities in college graduation attainment among adult Coloradans, with American Indians or Alaska Natives having the lowest high school graduation rate and Asians having the highest. Other groups that are consistently at risk of not graduating from high school include homeless children, students with disabilities and students who are not proficient in English (Table 1).

While college completion rates are an important measure of educational opportunity, national research shows that quality early childhood care and education contributes to the development of cognitive skills, social-emotional skills and character skills including attentiveness, persistence, motivation, self-control and teamwork. We know that when children are ready for school before kindergarten, they are more likely to be successful students, read at grade level by the end of third grade and graduate from high school on time.

Two in three (63.7 percent) Colorado children ages three to five years are enrolled in nursery school or kindergarten.[36] Among the 40 states with state-supported preschool programs, Colorado ranks 38th in spending, 20th in access to preschool for 4-year-olds, and 10th in access for 3-year-olds. Although Colorado's state spending on preschool is low by comparison, the Colorado Preschool Program (CPP) is an effective program that meets six out of 10 quality standards of the National Institute for Early Education and Research and con-

Table 1. Colorado high school graduation rates by race/ethnicity, sex and special groups, 2013.[35]

Student Groups	Graduation Rate (%)
Race/Ethnicity	
Asian	85.9
White non-Hispanic	82.8
Two or More Races	79.0
Native Hawaiian or Other Pacific Islander	75.5
Black/African American	69.5
Hispanic	65.4
American Indian or Alaska Native	61.4
Sex	
Female	80.9
Male	73.2
Special Groups	
Gifted & Talented	91.7
Economically Disadvantaged	63.7
Migrant	62.6
Limited English Proficiency	58.5
Students with Disabilities	53.8
Title 1 (at disadvantaged schools)	52.8
Homeless	50.4
State Total (all students)	76.9

Source: Colorado Department of Education.

sistently shows school readiness gains for Colorado's most at-risk children.[37]

Children being read to regularly at an early age can also improve school readiness and long-term success. Six in ten (59.9 percent) Colorado children ages one to five years are read to daily.[38]

Social Factors

Social Engagement and Civic Engagement

Social factors are highlighted in the social determinants of health framework as contributing to the overall health of individuals and communities. In particular, participation in civic life or religious organizations has been shown to positively impact individual longevity and well-being. In Colorado, 52.3 percent of adults report volunteering without pay on behalf of a group or an organization in the past year. This includes help provided to schools, organizations, sports, community associations, citizen groups or churches.[39] Almost seven in ten (68.0 percent) high school students participated in extracurricular activities. Nearly half (44.9 percent) of high school students participated in organized community services as a non-paid volunteer during the past 30 days.[40]

Social and Emotional Support

Social support can help improve quality of life and decrease emotional distress, but it varies by race/ethnicity and income. Over eight in ten (83.3 percent) White adults report getting the emotional or social support they need, but this is true for significantly fewer Hispanic adults, Black adults and adults in other racial/ethnic groups (74.1 percent, 73.8 percent and 78.3 percent, respectively). Adults with an annual household income less than $15,000 were significantly less likely to get the emotional support they needed compared to adults of all other household incomes. Conversely, adults in households

with annual incomes of $50,000 or more were significantly more likely to report getting the social support they needed compared to all others.[41] Overall, 23.7 percent of Colorado family households are headed by a single adult and may lack needed support systems, which is significantly less than the national estimate of 27.1 percent.[42]

Racism

Racism and discrimination are two other social determinants of health that deserve attention, though the data describing these issues in Colorado is limited. Adults have reported that within the past 30 days, 6.3 percent have felt emotionally upset, for example angry, sad or frustrated, as a result of how they were treated based on their race and/or ethnicity.[43] Among high school students, 13.1 percent have been a victim of teasing or name calling because of their race or ethnic background in the past year.[44]

As MCH professionals consider health-specific data, it is important to consider other indicators that describe the MCH population's experience such as social factors. Research supports the link between civic engagement, social and emotional support, racism, and overall health and well-being.

Insurance, Utilization and Medical Home

Health Insurance

Based on 2012 data, approximately 83 percent of Coloradans under age 65 have health insurance of some kind; over 90 percent of those under age 19 have health insurance. These percentages are low, however, compared to other states. Colorado is ranked 32nd among all states and the District of Columbia based on the percent of persons younger than 65 years who have health insurance coverage, 43rd for those under age 19, and 44th for those under age 19 and below 200 percent of the federal poverty guideline (85 percent).[45]

The highest rate of coverage is for White non-Hispanics with over 87 percent reporting that they have health insurance. By contrast, 64 percent of all Hispanics younger than age 65 with incomes below 200 percent of the federal poverty designation have health insurance.[46] It is unknown how many of those who are insured are underinsured because deductibles and co-payments act as barriers to receiving care.

Several programs are available to reach low-income families and those without health insurance. Pregnant women and children living in households at or below 260 percent of the federal poverty level are eligible for health insurance coverage either through Child Health Plan Plus (CHP+) or Medicaid. As of June 2014, 466,706 children were enrolled in Medicaid and 56,870 children were enrolled in CHP+.[47] Other health care services available to low-income and uninsured persons in Colorado include 19 Community Health Centers (CHCs) that operate 167 clinic sites in 39 counties and provide care to patients living in 60 of the 64 counties. Colorado CHCs provide care to more than 600,000 of their community members (1 in 10 Coloradans). Ninety-four percent of patients at CHCs have family incomes below 200 percent of the FPL and 37 percent were uninsured.[48]

With the opening of Connect for Health Colorado in October 2013, the state's new health insurance market place, came the opportunity for many more state residents to obtain insurance. As of April 2014, more than 305,000 Coloradans were enrolled in new health insurance coverage options. A total of 178,500 adults enrolled in expanded adult Medicaid coverage and more than 127,000 individuals enrolled in private health insurance.[49] Increased awareness and enrollment efforts tied to health care reform also impacted statewide enrollment in categories beyond new adult coverage. About 22,700 children who enrolled in Medicaid and Child Health Plan Plus (CHP+) between October 2013 and February 2014 were previously eligible for a public coverage program but had not enrolled due to lack of awareness or other barriers. The total number of Coloradans who now have health care coverage through Medicaid or CHP+ exceeds one million – or about one in five people living in Colorado.[50]

Colorado's insurance coverage rates have increased in recent years. It is anticipated that the Affordable Care Act will amplify this trend, providing health insurance and access to care to Colorado's most disparate populations.

Utilization and Medical Home

Two important health care quality indicators for the child population are receipt of standardized health screenings and provision of medical care that meets medical home criteria. Regular developmental and behavioral screening of infants and young children helps enable early identification of health concerns, which is important for following up with appropriate care, referrals and promoting healthy development. As such, standardized developmental and behavioral screening is recommended in the pediatric primary care setting by the American Academy of Pediatrics. Most validated screening instruments are parent-reported and can lead to referrals for early intervention opportunities. However, in 2013, 55.4 percent of children ages 1 through 5 years had a health care provider who asked their parent to fill out a questionnaire about the child's development, communication or social behavior.[51]

The medical home is considered one of the most promising approaches to delivering high-quality and cost-effective health care. It is a philosophy of healthcare that is patient- or family-centered, comprehensive, coordinated, accessible, continuous and culturally effective. In 2013, 63.6 percent of children age 1-14 years in Colorado received care that met medical home

criteria.[52] Colorado has a long history of supporting a family-centered medical home approach for all children.

The *Colorado Medical Home Initiative* began in 2001 in response to the Title V / Maternal and Child Health (MCH) national outcome measure, *All children will receive comprehensive coordinated care within a medical home*. The Colorado Medical Home Initiative is a systems-building effort to promote health and high quality health care for all children in Colorado through the development of state and local infrastructure that supports a medical home team approach for all children. Coordinated by the Colorado Departments of Public Health and Environment and Health Care Policy and Financing, the *Colorado Medical Home Initiative* partners with government agencies, families, health providers, non-governmental organizations and policy-makers to identify and promote solutions to state and local barriers to developing a quality-based system of health care that supports a medical home team approach for all children.

In 2007, the Colorado Legislature passed Senate Bill 130, *Concerning Medical Homes for Children*.[53] Signed by Governor Ritter in 2007, Senate Bill 130 designates the Department of Health Care Policy and Financing to take the lead in ensuring an increase in number of medical homes for children eligible for Medicaid and CHP+ in Colorado. The Department of Health Care Policy and Financing is responsible for collaborating with the Colorado Medical Home Initiative to implement the requirements of the bill. Much of this work is now being accomplished with close collaboration with the Accountable Care Collaborative and the key partners associated with the Colorado Medical Home Initiative.

The state Medicaid program, located within the Department of Health Care Policy and Financing, implemented the Accountable Care Collaborative (ACC) in 2011 to build a comprehensive statewide program to support a medical home infrastructure for all populations. This program includes seven Regional Care Collaborative Organizations (RCCOs) to support community-based solutions to care. The responsibility of each RCCO is to develop a comprehensive network of primary care medical providers, enhance the network of specialty providers, collect and analyze data to support population health, and most importantly provide care coordination for members. As of July 2014, 687,830 of Medicaid recipients were enrolled in the ACC program, of which 381,050 were children.

Conclusion

Although Colorado ranks well in health compared to other states (overall ranking of 8 in 2013[54]), women, infants, children and youth including those with special health care needs continue to face health challenges as demonstrated throughout the following 12 MCH Issue Briefs. In addition, there are notable inequities among those women, infants, children and youth who experience lower incomes, unstable housing, racism and/or have limited educational attainment and a lack of social support. This snapshot aims to provide important data on the social determinants of health that are so critical when considering the MCH Issue Briefs.

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Maternal and Child Health
Issue Brief

July 2014 № 6

Mental Health Among Women of Reproductive Age in Colorado

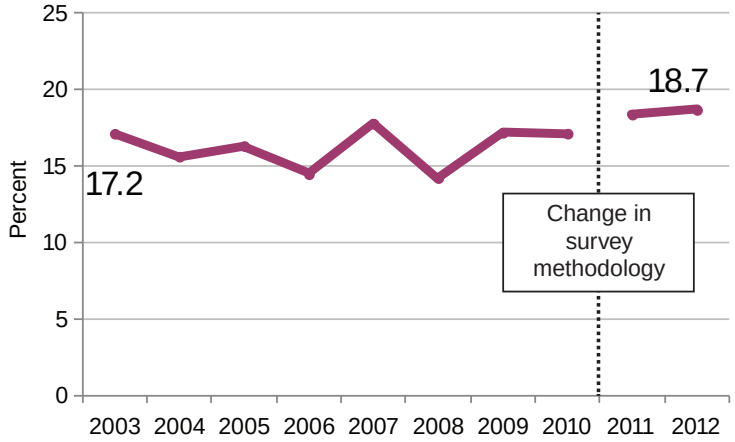
Depression Symptoms: A low or sad mood — loss of interest in fun activities — changes in eating, sleep, and energy —problems in thinking and making decisions — feelings of worthlessness, shame, or guilt — thoughts that life is not worth living — many symptoms occurring together and lasting more than a week or two.[6]

Why is women's mental health a concern?

Poor mental health, such as depression and anxiety, can diminish a woman's quality of life, work productivity and physical health, as well as have a negative impact on pregnancy.[1-3] Pregnancy-related depression (PRD) among women of reproductive age (ages 15-44) is a mood disorder that occurs during pregnancy or up to one year after giving birth or experiencing pregnancy loss.[4] Children of depressed mothers are more likely to display social and emotional problems, delays or impairments; poor self-control; aggression; poor peer relationships; and difficulty in school.[4]

More than one in every 10 (10.5 percent) Colorado women who gave birth between 2009 and 2011 experienced postpartum depressive symptoms (PDS) since their new baby was born.[5] This makes depression the most common complication of pregnancy.[4]

Figure 1. Percent of Colorado women ages 18-44 reporting 8 or more days of poor mental health in past 30 days, 2003-2012.[7]



What is the prevalence of poor mental health?

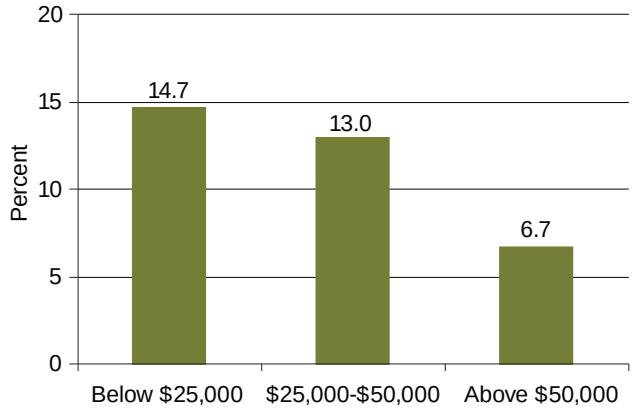
Since 2003, the number of Colorado women reporting poor mental health (stress, depression, and anxiety) has not improved (Figure 1).[7] In 2012, nearly 1 in every 5 (18.7 percent) Colorado women of reproductive age experienced 8 or more days of poor mental health in the past 30 days.[7]

Depression and anxiety often occur together. In 2012, 10.4 percent of Colorado women of reproductive age were currently depressed, and 43.9 percent ever diagnosed with a depressive disorder had also been diagnosed with an anxiety disorder.[7] Overall, 18.9 percent of women of reproductive age in Colorado reported an anxiety disorder diagnosis.[7]

Colorado's Goal:
By 2020, increase to 80 percent the number of mothers who report a healthcare provider talked to them about what to do if they felt depressed during pregnancy.

Social and economic health disparities

Figure 2. Current depression by income (ages 18-44).



In 2012, 1 in 7 (14.7 percent) women ages 18-44 in Colorado with household incomes below $25,000 were identified as currently depressed, significantly different from the 1 in 15 (6.7 percent) with incomes greater than $50,000.[7]

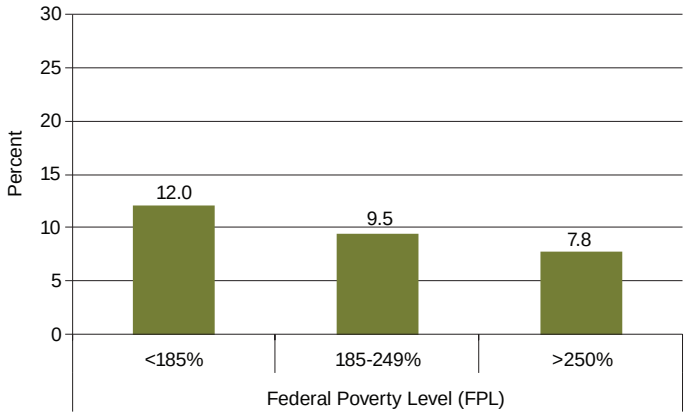
Women who experience low social support and/or stress from social, economic, or structural inequality may be more likely to be depressed.[1,8]

Depression is more common among low-income women ages 18-44 and among poor and non-married mothers.

Figure 3. Postpartum depressive symptoms (PDS) by marital status (ages 15-44).

In 2009-2011, 1 in 7 (14.7 percent) mothers who were not married experienced a significantly higher rate of PDS than mothers who were married.[5]

Figure 4. Postpartum depressive symptoms (PDS) by poverty status (ages 15-44).



In 2009-2011, mothers whose incomes were below 185% of the federal poverty level (FPL) experienced a significantly higher rate of PDS than mothers above 250% of the FPL.[5]

What contributes to poor mental health among women?

The experience of poor mental health among women is influenced by many factors including gender, social and cultural norms, life experiences, and social support.[2,9] Stigma and fear associated with mental illness and gender socialization affect differences in care-seeking and, ultimately, diagnosis and treatment.[10]

Many women may not realize their risks for depression or know that the feelings they experience are symptoms of depression. In a 1996 National Mental Health Association survey, more than half of female respondents perceived the experience of depression to be a "normal part of aging."[11]

In 2012, 42.9 percent of Colorado women ages 18-44 who were currently depressed had never been told by a health professional that they had a depressive disorder.[7]

Heredity and trauma, in addition to other factors and experiences, protect a woman or put her at risk for developing an anxiety disorder.[12] In 2012, an estimated 25.4 percent of divorced, separated, or widowed women and 26.1 percent of women with annual household incomes less than $25,000 experienced higher rates of anxiety than the 18.4 percent of married women or the 15.4 percent of women with incomes of $50,000 or more.[7]

Pregnancy related depression (PRD) occurs while a woman is pregnant or within one year of delivery or miscarriage.

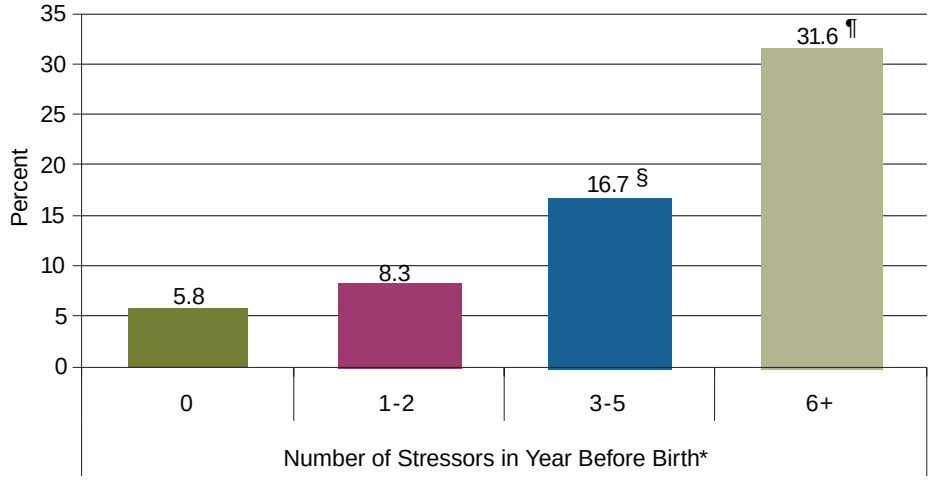
Postpartum Depressive Symptoms (PDS) occur after a delivery or miscarriage.

What risk and protective factors influence pregnancy-related depression?

The most significant biological predictors for both depression and pregnancy-related depression are personal or family history of major or postpartum depression.[13] Other biological indicators, environmental conditions, behaviors that occur together (such as eating habits or smoking), or situational stressors like pregnancy intention or infant health, can protect women or put them at risk for developing PRD or PDS.[13]

The prevalence of PDS was significantly higher among women who experienced six or more stressors in the year before birth (Figure 5) than among women with fewer stressors. Rates were higher among women who experienced unintended pregnancy, who were checked or treated for depression prior to pregnancy or who gave birth to low-birth weight infants.[5] In addition, the prevalence of PDS was significantly higher among women experiencing unique stressors such as a partner who did not want the pregnancy, who had more frequent arguments with a partner, or who were homeless.[5]

Figure 5. Prevalence of mothers with postpartum depressive symptoms (PDS) by number of stressors, women 15-44, Colorado residents, 2009-2011.[5]



*Partner-related, emotional, traumatic, and financial stresses.[5]
§ Significantly higher than those with 0, 1-2 stressors.
¶ Significantly higher than those with 0, 1-2, or 3-5 stressors.

What can prevent poor mental health among women?

Reducing stress and its causes, increasing social and health services support, and improving resiliency can protect women from developing mental health disorders.[1,2,9] Regular screening and education can increase awareness and identification of PRD and PDS, and increase the number of women receiving treatment.[13] In 2011, 76.6 percent of Colorado mothers reported that a health care provider talked to them about what to do if they felt depressed during pregnancy or after delivery.[5] Colorado's goal is to increase the percentage to 80 by 2020.

How can women receive the care they need?

Preventing and treating mental health disorders can help women and their families lead happy, healthy lives. However, treatment can be limited by social and structural barriers like misinformation and access to services.[3,10,11] Fifty-five of Colorado's 64 counties are designated as Mental Health Professional Shortage Areas (HPSAs); 48 counties are designated due to geographic isolation or lack of sufficient providers, and 7 are designated due to high populations of low-income residents.[14]

Increasing access to mental health services for Colorado women and their families can be accomplished through screening at health care visits and appropriate follow-up and referral, the implementation of the Affordable Care Act, and the expansion and integration of services by mental health centers, safety-net clinics, and other primary care clinics.[15,16]

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Maternal and Child Health
Issue Brief

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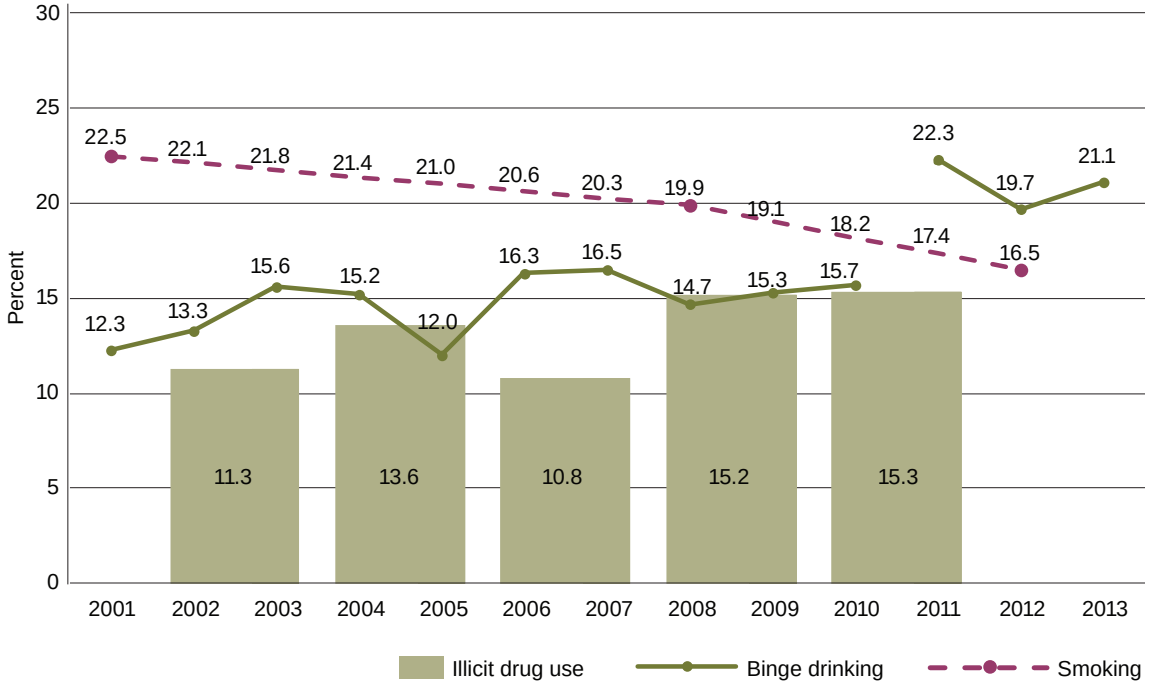
Substance Abuse among Women of Reproductive Age in Colorado

Why is substance abuse an issue among women of reproductive age?

Substance abuse poses significant health risks to women of reproductive age (18-44). The abuse and misuse of substances is associated with health risks like addiction, mental health disorders, organ damage, overdose, and death.[1] For women who become pregnant, substance abuse is associated with preterm birth, stillbirth, fetal development problems including brain abnormalities, infant death, and childhood developmental problems that can be longlasting.[1-3]

Women who abuse or misuse substances are also at higher risk for a range of social problems including domestic violence, unintended pregnancy, child abuse, motor vehicle accidents, and involvement in crime.[4-6] Many substances, both illegal and legal, have the potential for abuse or misuse; common examples include cocaine, heroin, marijuana, methamphetamine, tobacco, alcohol, and prescription drugs.

Figure 1. Past month use of substances, Colorado women ages 18-44, 2001-2013.[7-9]



Note: Illicit drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics (pain relievers, tranquilizers, stimulants, and sedatives) used nonmedically. Illicit drug use data are for any use in the past month. Surveys are compiled in two-year periods beginning with even-numbered years. Binge drinking data reflect four or more drinks at one time in the past month. Rates of binge drinking in 2011 and later cannot be compared with earlier rates because of changes in survey methodology. Tobacco data are available for 2001, 2008, and 2012 only. The dotted lines are estimated values for years when no surveys were done.

What is the prevalence of substance abuse among women of reproductive age?

An estimated 21.1 percent of women ages 18-44 in Colorado are binge drinkers,[7] 16.5 percent smoke tobacco regularly,[8] and 15.3 percent use illicit drugs, which includes the misuse of prescription drugs[9] (Figure 1). (State drug use data in this brief are from years prior to the legalization of retail marijuana.) The prevalence of smoking among women of reproductive age declined significantly after 2001, but no significant changes occurred in the prevalence of binge drinking through 2010 or illicit drug use through 2010-11. Colorado ranks among the 10 states with the highest rates of alcohol and drug use among adults[10] and has the second-highest rate of opiod abuse in the U.S. according to the 2011 National Survey on Drug Use and Health.[11]

What is the prevalence of substance abuse among pregnant women?

Women who are pregnant often reduce their use of alcohol, tobacco, and illicit drugs below their prepregnancy consumption levels. However, 7.8 percent of pregnant women reported smoking and 10.1 percent reported alcohol use in the last trimester of pregnancy according to Colorado data collected in 2011.[12] No Colorado-specific data are available yet on drug use among pregnant women, but national data from 2002-2007 indicate past month marijuana use among 4.6 percent of pregnant women in the first trimester, and 1.4 percent in the last trimester.[13]

Colorado's Goals

By 2018, reduce the prescription drug overdose death rate to 16 per 100,000 (ages 15 and older).[14]

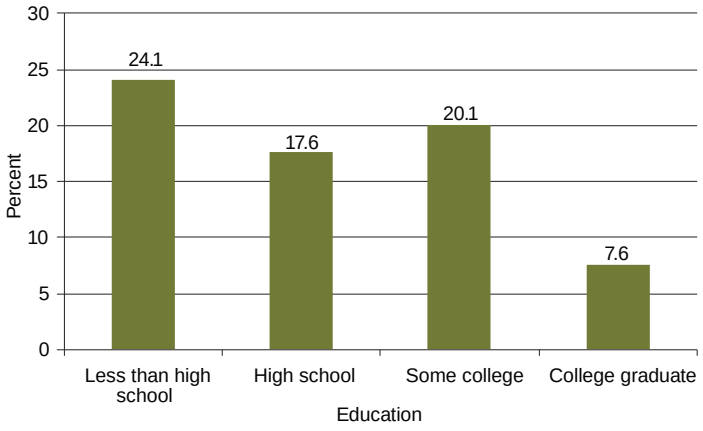
Healthy People 2020 Goals

By 2020, reduce the proportion of adults (men and women) in the past month who were:

- binge drinking, to 24.4 percent [4]
- using tobacco, to 12.0 percent [15]
- using illicit drugs, to 7.1 percent [4]

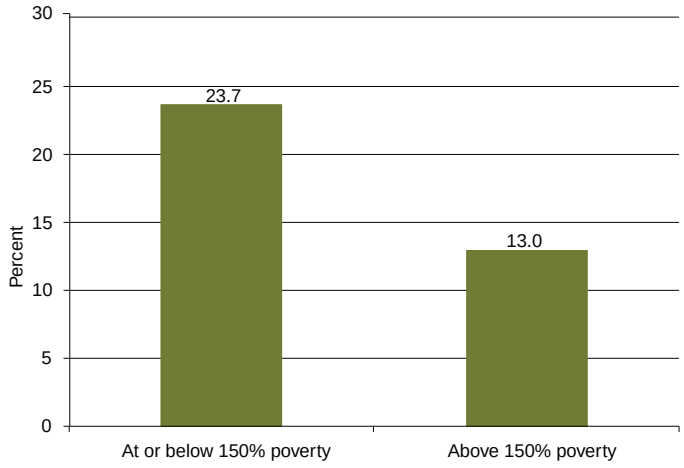
Social and economic health disparities

Figure 2. Current tobacco use by educational level, Colorado women ages 18-44, 2012.[8]



The prevalence of tobacco use (primarily cigarettes) among women who are college graduates is lower and significantly different from women with less education. One in 14 (7.6%) college graduates is a smoker, while at least 1 in 6 women with less education are smokers. Among women who did not graduate from high school, 1 in 4 (24.1%) are smokers.

Figure 3. Current tobacco use by poverty level, Colorado women ages 18-44, 2012.[8]

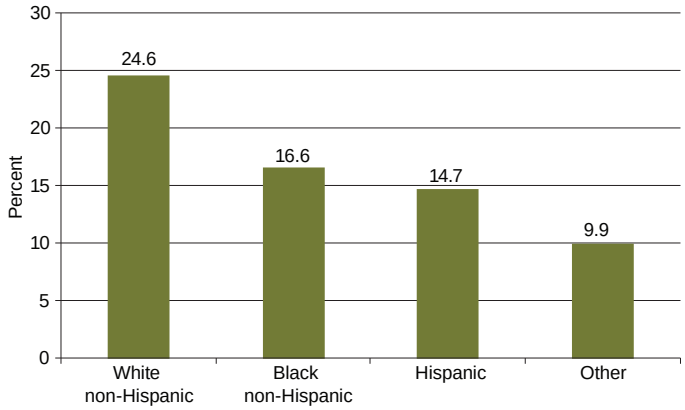


Nearly 1 in 4 (23.7%) women who are at or below 150% of the federal poverty level is a smoker, compared to about 1 in 8 (13.0%) women above 150% of poverty. The difference is statistically significant.

Who is more likely to abuse substances?

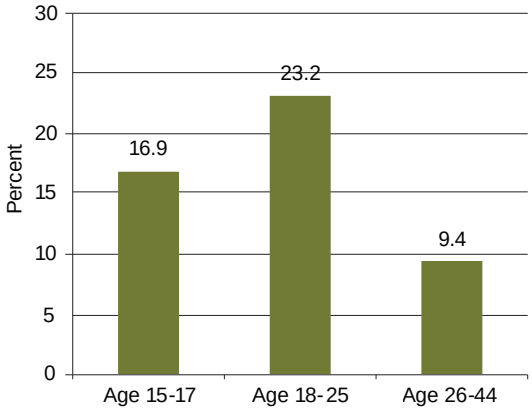
- **Women with less education or who live in poverty are more likely to smoke**
- **Women ages 25-29 compared to younger and older women (not shown) and White non-Hispanic women are more likely to binge drink**
- **Women ages 25 or younger are more likely to use illicit drugs**

Figure 4. Current binge drinking by race/ethnicity, Colorado women ages 18-44, 2011-2012.[7]



One in 4 (24.6%) White non-Hispanic women is a binge drinker, significantly different from Hispanic (14.7%) and Other (9.9%) women. The prevalence of binge drinking among Black non-Hispanic women (16.6%) is not significantly different from any other group.

Figure 5. Current illicit drug use by age, Colorado women ages 15-44, 2002-2012[9]



The prevalence of illicit drug use in the past month is significantly different among women ages 25 or less compared to women ages 26 and older. One in 7 (16.9%) young women age 15-17 and 1 in 4 (23.2%) women ages 18-25 are users, while 1 in 10 (9.4%) older women are users.

What contributes to substance abuse?

Many factors contribute to the use of tobacco, alcohol, and drugs, including widespread availability,[16-18] perceived norms encouraging substance use, predisposition among adolescents to take risks,[19,20] and misperceptions of safety.[21,22] A person's social background, including economic status, plays an important role in determining initiation and continuation.[23,24] In 2012, for example, smoking prevalence among Coloradans of low socioeconomic status was nearly three times as high (27.0 percent) as among the rest of the population (9.4 percent).[8] An individual with mental health issues is more likely to seek relief through substance use to help counter anxiety, pain, insomnia, and stress.[19] In Colorado, smoking prevalence is more than twice as common among people with mental illness and/or activity limitations due to mental or emotional conditions compared to the rest of the population.[25]

Advertising by tobacco and liquor industries has been shown to encourage initiation and continuation of cigarette and alcohol use.[20,26] The tobacco industry spends an estimated $123 million on marketing in Colorado each year,[27] while alcohol advertising expenditures amount to an estimated $6 billion nationally.[25]

How can substance abuse be minimized?

A number of strategies to reduce abuse of alcohol, tobacco, and drugs have proven effective. Alcohol use can be reduced by limiting access through regulating the density of liquor stores, increasing taxes, and making commercial hosts liable for injury and damage caused by intoxicated patrons.[28] Colorado state taxes for beer, distilled spirits, and wine are currently lower than the federal Community Preventive Services Task Force recommends; however, state commercial host liability policies are in partial accordance, and alcohol outlet densities meet recommendations.[28] Similar strategies are effective in controlling the onset of tobacco use, with increased taxes considered a valuable tool.[29] The overall prevalence of current smoking in Colorado has been on the decline, with significant improvements since 2008 among all women, young adult students, seniors, and people without a mental illness or mental or emotional limitation.[8] However, some pregnant women continue to smoke and use alcohol.

Controlling drug use may be more problematic. Young adults are particularly vulnerable to the temptation of stimulants,[30] but education, prevention, and early intervention programs can be an effective means to reduce use.[31,32] In 2008, the Colorado Substance Exposed Newborns Steering Committee helped enact legislation to protect pregnant women who test positive for drugs or admit to substance use during prenatal care from having that information used against them in criminal proceedings. This legislation may help to reduce substance use among pregnant women in Colorado.[32] A need for increased training and education, and standardized policies for screening, testing, and treatment of substance use during pregnancy have also been identified in Colorado. Increased knowledge about 1-800 referral lines for supporting women using substances during pregnancy, access to treatment, and increased awareness of statewide pregnancy substance abuse treatment resources may help minimize substance use.[33] Various state agencies recently received funding from retail marijuana taxes to expand substance abuse treatment options for pregnant women.[34]

How is prescription drug misuse being addressed?

In Colorado, partners from governmental and community agencies statewide are addressing prescription drug misuse, diversion, and overdose through the Colorado Plan to Reduce Prescription Drug Abuse developed in 2013.[35] The plan established the Colorado Consortium for Prescription Drug Abuse Prevention,[36] which has six workgroups charged with implementing the plan's strategies. The workgroups are focused on a social marketing campaign to educate the general public on safe use, safe storage, and safe disposal of prescription drugs; implementing legislative changes to the Prescription Drug Monitoring Program; educating medical providers on changes to prescribing policies; improving data collection; expanding substance abuse treatment opportunities; and increasing safe disposal options in the state based on changes to Drug Enforcement Administration regulations.

What are the implications of legalized marijuana?

Retail sales of marijuana became legal in Colorado in January 2014. The Colorado Department of Public Health and Environment has been funded through the taxation of marijuana to create statewide campaigns to educate the public about safe, legal, and responsible adult use of marijuana. In addition, the department is addressing high-risk populations, such as pregnant or breastfeeding women, youth, and parents with small children. The department is partnering with health-care professionals and experts to develop clinical prevention guidelines for physicians to assist in the screening of and recommendations for marijuana exposure in patients. Guidelines will address marijuana use among pregnant/breastfeeding women and the prevention of pediatric exposure. The department will conduct an evaluation of the effectiveness of the campaigns and prevention materials.

State data collection systems are being changed to yield new information on the impact of marijuana use or exposure. Questions about marijuana have been added to a variety of population-based surveys, including the Pregnancy Risk Assessment Monitoring System which surveys new mothers, the Child Health Survey covering children ages 1-14, the Healthy Kids Colorado Survey for middle and high school students, and the Behavioral Risk Factor Surveillance System for adults age 18 and older. Although these questions were not included in surveys conducted prior to legalization, Colorado will be able to monitor trends starting with 2013 or 2014 data, depending on the survey. Additionally, special pilot studies on marijuana use are being implemented in local WIC programs. Finally, the department will be implementing, in partnership with Denver Health, a pilot study of birth outcomes among women who report marijuana use while pregnant.

In a survey of Colorado women receiving WIC benefits at a large local public health department during 2014, 6 percent reported using marijuana during the previous month and 3 percent reported using marijuana during pregnancy.[37]

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Colorado Department of Public Health and Environment

Maternal and Child Health
Issue Brief

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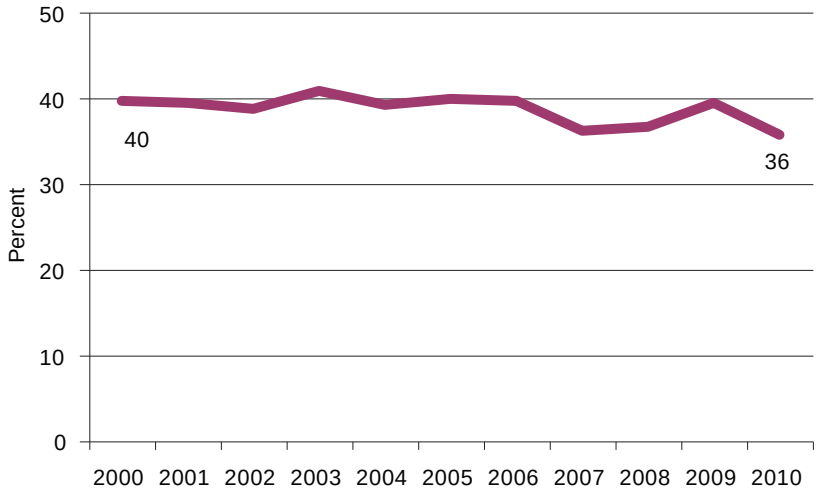
Unintended Pregnancy in Colorado

Why is unintended pregnancy an issue?

Unintended pregnancy occurs when a woman becomes pregnant sooner than she desires or when she does not desire the pregnancy at any time. Unintended pregnancy resulting in live birth is an unintended birth. In 2010, more than one-third (36 percent) of Colorado mothers reported their last pregnancy ending in birth was unintended. This included 26 percent reporting a mistimed pregnancy and 10 percent reporting an unwanted pregnancy.[1]

Unintended pregnancy resulting in birth is associated with many poor health and social outcomes for both mother and child. It is also costly. In 2006, more than one million births, or 64 percent of all unintended births in the United States, were publicly funded. Unintended births in Colorado cost Medicaid more than $160 million that same year.[2]

Figure 1. Unintended births of all births in Colorado, 2000-2010.



Source: Colorado Pregnancy Risk Assessment Monitoring System.

Colorado Pregnancy Risk Assessment Monitoring System (PRAMS) data indicate a rate of unintended birth of about 40 percent throughout the decade. This means that four out of 10 mothers reported the birth as unintended at the time of conception. The 2010 rate of 36 percent is not statistically different from any other year.

Health and Social Outcomes of Unintended Pregnancy and Birth

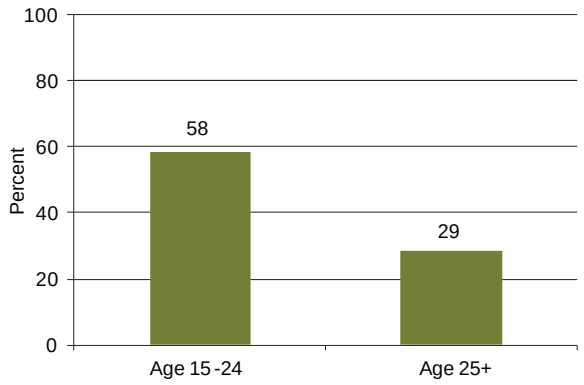
Colorado women whose pregnancies are unintended are significantly less likely to begin prenatal care early or to breastfeed for two months or more, and significantly more likely to suffer physical abuse during pregnancy or to experience postpartum depressive symptoms.[3]

Children born as a result of unintended pregnancy are more likely to experience child abuse and poor mental and physical health, as well as to experience lower educational attainment.[4]

Colorado's Goal: By 2020, no more than 33 percent of births will be unintended.

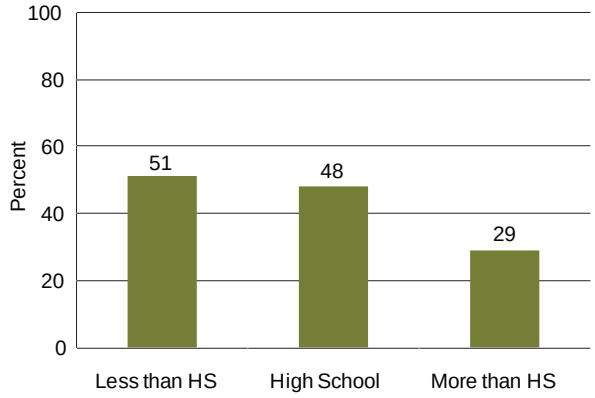
Health disparities among women

Figure 2. Unintended births by age.



For women age 15 to 24, 58 percent of all births are unintended, twice as many as among women age 25 and older, where 29 percent are unintended.

Figure 3. Unintended births by education.

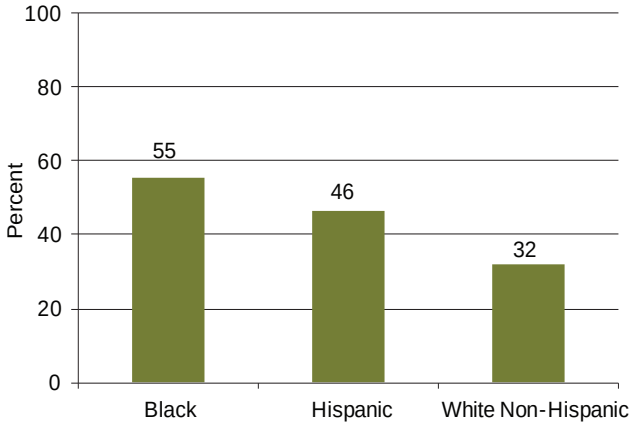


About half of births to women with a high school education or less are unintended. Among women with more than a high school education, three in 10 births are unintended.

Who is more likely to have an unintended pregnancy?

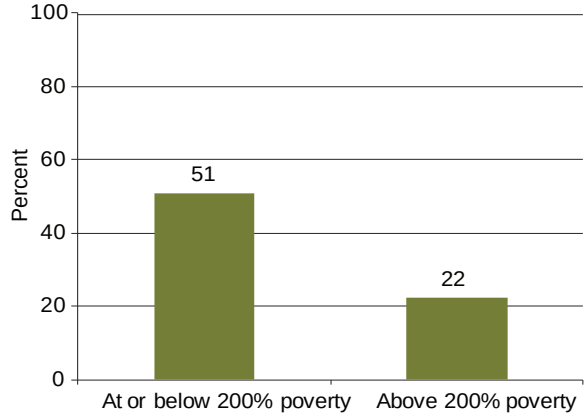
- **Young, less educated, minority and poor women**
- **Women who are not married (66%) compared to those who are married (29%)[3]**

Figure 4. Unintended births by race/ethnicity.



Among Black women, 55 percent of all births are unintended; among Hispanic women, close to half (46 percent) are also unintended. About one-third (32 percent) of births among White Non-Hispanic women are unintended.

Figure 5. Unintended births to women at or below 200% of federal poverty level are uninteded.



Among Colorado women whose family incomes are at or below 200 percent of the federal poverty level ($38,130 for a family of three), 51 percent of births are unintended. Among women whose family incomes are higher, 22 percent are unintended.

All data are from Colorado PRAMS, 2008-2010. Graphs show significant differences by pregnancy intendedness status.

How can unintended pregnancy be prevented?

Colorado couples use a variety of contraceptive methods to prevent pregnancy. About 20 percent of Colorado couples use hormonal methods and another 20 percent use condoms. Fifteen percent use long-acting reversible contraceptive (LARC) methods (IUDs, implants) and five percent use less effective methods (e.g., diaphragms, rhythm, and withdrawal). Sterilization is used by nearly 40 percent of all couples and is suitable for those who have completed their families.[5]

Long-Acting Reversible Contraceptive (LARC) Methods

Only two types of methods are considered to be LARC methods:

- **intrauterine device (IUD)**
- **contraceptive implant (Norplant, Implanon, and Nexplanon)**

15 percent of Colorado couples ages 18-44 were using a LARC method in 2011[5]

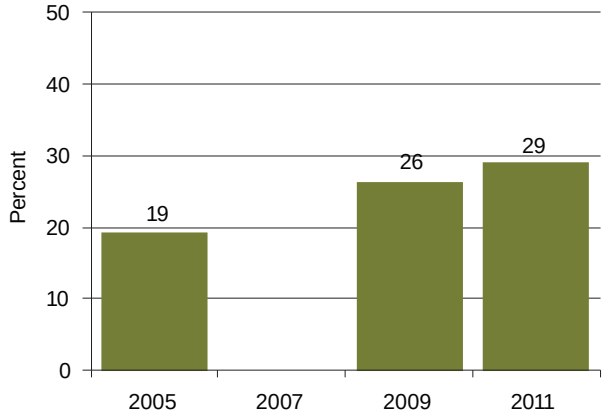
Methods vary greatly in their effectiveness. Those requiring the least amount of effort on a daily basis are the most effective, namely, sterilization and LARC methods. All others require the user to take a pill daily, change a patch weekly, visit a health care provider for an injection regularly, or employ a method before or during intercourse. Methods requiring user effort have been proven to be less effective than methods requiring no effort.[6] LARC methods require no effort (after the initial implant or insertion) and are especially popular among young women who are not planning pregnancy in the immediate future. LARC methods are growing in popularity. In 2002, just two percent of couples were using these methods.[5]

What factors help young people prevent unintended pregnancy?

Reducing the proportion of high school students having sex is one way to prevent unintended pregnancy. In 2011, the Youth Risk Behavior Survey showed that students who participated in extracurricular activities were less likely to have had sex in the three months before the survey compared to those who did not participate (28 percent vs. 42 percent).[7] Young people who feel a sense of connection and belonging make healthier decisions. Participation in extracurricular activities is one indicator of school connection.

Increasing the proportion of sexually active students using effective contraceptive methods is another way to prevent unintended pregnancy. In 2011, 29 percent of sexually active students were using effective methods (birth control pills or injections), significantly higher than the 19 percent using such methods in 2005.[8]

Figure 6. Sexually active high school students using effective contraception.



Weighted data are not available for 2007.

What is the future of unintended pregnancy in Colorado?

The percentage of women experiencing unintended pregnancy has changed little since the year 2000. Some women with unintended pregnancies are ambivalent about getting pregnant and report they were not trying to get pregnant although they were not using effective birth control. Other women report contraceptive failure as a reason for their unintended pregnancy. However, the popularity of LARC methods, and their increasing use among young women, suggests a reduction in the rate is on the horizon. Data from the Colorado Family Planning Initiative show a large increase in the number of women with low incomes choosing long-acting methods when the program began paying for LARC methods for Title X family planning clients in 2009. The following year a significant decrease was observed in the birth rate of low-income women.[9] As more women are able to obtain the most effective methods through changes in health care insurance, it is increasingly probable that unintended pregnancy will be reduced. The 2020 goal for the state is for no more than 33 percent of births to be unintended.

Will the Affordable Care Act reduce unintended pregnancy?

- **The ACA covers all forms of contraception without co-pays and deductibles beginning with all plans written after August 2012.**
- **The high price of long-acting reversible contraception should no longer be a barrier for most women.**
- **An estimated 110,000 Colorado women of reproductive age may be covered by health insurance in 2014.[10]**

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Maternal and Child Health
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Early Childhood Immunizations in Colorado

Why is early childhood immunization important?

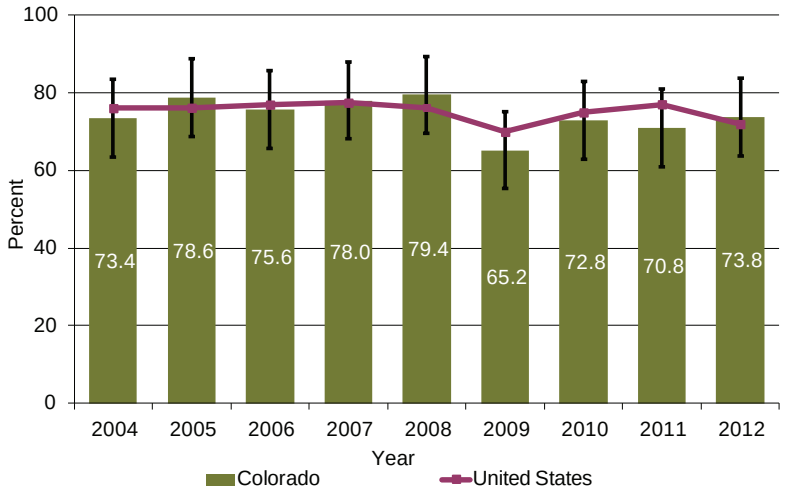
Vaccines are one of the most successful and cost-effective prevention tools available to public health systems.[1,2] Routine childhood immunization has helped to prevent many infectious diseases in the United States over the last four decades and eradicate smallpox.[2,3] Policy interventions such as immunization requirements for child care and school entry have helped increase vaccination coverage and decrease vaccine-preventable diseases (VPDs).[1] Infectious disease prevention is one of Colorado's Winnable Battles, with a focus on increasing the percentage of children up-to-date on their diphtheria, tetanus, and pertussis (DTaP) immunizations upon school entry into kindergarten.[4]

What is the prevalence of childhood immunization?

Since 2004, the vaccination rate for the 4:3:1:3:3:1* series among Colorado children 19-35 months of age has remained consistent, averaging about 75 percent (Figure 1). Colorado did not meet the Healthy People 2020 (HP 2020) goal of 80 percent of children aged 19-35 months to be completely immunized for the recommended vaccine series.[5,6]

Colorado requires vaccines for child care (care for children 0-5, before school entry) including DTaP, polio, MMR, Hib, Hep B, varicella, and PCV (Table 1, see Appendix).[7] In 2012, the individual vaccine coverage rate for 4+DTaP was significantly lower than the rate for 3+DTaP in Colorado for children by 19 months of age.**[6] Colorado requires four doses of DTaP by 19 months.[7] The difference in the rates for the 3+DTaP and the 4+DTaP vaccine demonstrates that multi-dose series vaccines have lower vaccination coverage rates.** Colorado did not meet the HP2020 goal of 90 percent for some recommended doses (4+DTaP, full series Hib, 1+Var, 4+PCV, Rotavirus) for individual vaccines among children aged 19-35 months.[5,6]

Figure 1. 4:3:1:3:3:1* vaccination coverage among children 19-35 months of age by year, Colorado and the United States.[6]



* ≥4 doses of DTaP (diphtheria, tetanus, pertussis) vaccine, ≥3 doses of polio vaccine, ≥1 doses of any MMR (measles, mumps, rubella) vaccine, ≥3 doses of Hib (Haemophilus influenzae type b) vaccine, ≥3 doses of HepB (hepatitis B) vaccine, and ≥1 doses of varicella vaccine
** 3+DTaP = 93.3 (89.5, 97.1); 4+DTaP = 69.4 (61.4, 77.4)

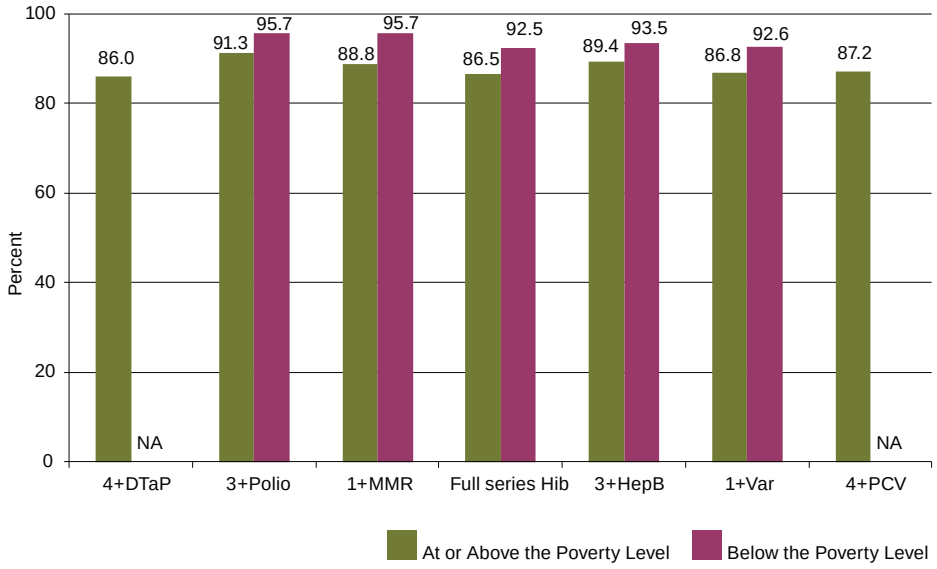
NOTE:
- In 2009 CDC changed the definition of what was up-to-date for Hib. Full series Hib: ≥3 or ≥4 doses of Hib vaccine depending on product type received (includes primary series plus the booster dose).
- The CDC changed the National Immunization Survey (NIS) series used to report coverage rates for children 19-35 months of age. The new series used for reporting includes 4 PCV (pneumococcal conjugate vaccine). The HP 2020 goal for the 4:3:1:3:3:1:4 series is still to be at or exceed 80 percent. Colorado child care immunization requires PCV vaccination.[5,7]

Healthy People 2020 Goals[5,8]

Increase the proportion of children aged 19 to 35 months with individual vaccine coverage to 90 percent and completion of recommended vaccine series to 80 percent.

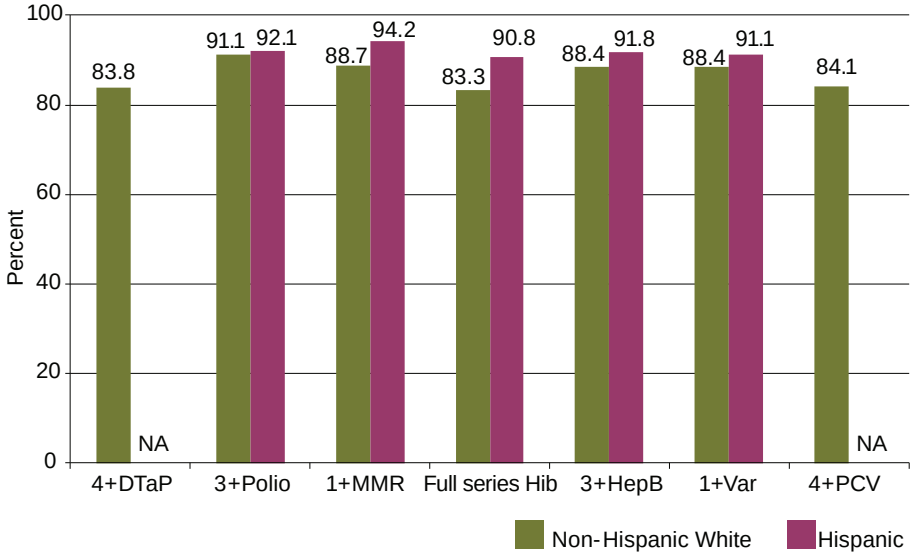
Social and economic health disparities

Figure 2. Vaccination coverage among children 19-35 months of age by vaccine type and poverty status, Colorado, 2012.[6]



There were no significant differences in individual vaccine coverage among Colorado children 19-35 months of age by poverty status.[6] Overall, children below the poverty level had slightly higher rates of vaccination coverage for individual vaccines compared with those at or above the poverty level; this may be due to the Vaccines for Children Program (VFC) implemented in Colorado. The VFC program is a federally funded program that provides vaccines at no cost to children who might not otherwise be vaccinated because of inability to pay.[9]

Figure 3. Vaccination coverage among children 19-35 months of age by vaccine type and race/ethnicity, Colorado, 2012.[6]



There were no significant differences in individual vaccine coverage among Colorado children 19-35 months of age by race/ethnicity.[6] Overall, Hispanic children of all races had slightly higher rates of vaccination coverage for individual vaccines when compared with non-Hispanic whites. Children of Hispanic descent in Colorado are three times as likely to be uninsured when compared with non-Hispanic white children, and are subsequently more likely to qualify for vaccines through the VFC program.[10] Since more Hispanic children may be eligible for the VFC program in Colorado, this might account for their overall slightly higher rates of vaccination coverage.

What are vaccine exemptions?

In Colorado, parents may exempt their child from one or more vaccines. There are three types of exemptions allowed.

- Medical exemption – a health practitioner indicates that the immunization would endanger the child's health or the child cannot be immunized due to other medical conditions.
- Religious exemption – the parent or guardian adheres to a religious belief whose teachings are opposed to immunizations.
- Philosophical/personal belief exemption (PBE) – the parent or guardian is opposed to immunizations.[11]

Exemption rates in states that allow PBEs are 2.5 times as high as rates in states that only permit religious exemptions.[12] States like Colorado with easy PBEs (only parental signature required to opt-out) have significantly higher rates of exemption than states with more complex procedures.[13]

How does the exemption process affect the population?

A growing concern is vaccine refusal or exemptions since the impact of immunization programs depends on high rates of vaccination acceptance and coverage. Geographic clustering of refusals or exemptions is increasing in the United States and can result in outbreaks.[1] With the reduction in incidence of VPDs, public perception about the severity and susceptibility of diseases decreases which may influence vaccine refusal or exemption decisions.[1] Lower vaccination coverage leads to decreased herd immunity and ultimately a more susceptible population, where children under five years are especially vulnerable.[1]

***Herd* or *Community* Immunity[8]**

Immunity that occurs when the vaccination of a significant portion of a population provides protection for individuals who have not developed immunity.

Ease of obtaining PBEs may play a role in high rates of VPDs. In states with an easy exemption process the incidence of pertussis was 41 percent higher than in states with more restrictive methods (i.e. health care professional's signature, notarized form, or a letter of explanation).[2,12] Research shows that Colorado children whose parents claim exemptions are 22 times more likely to acquire measles, 23 times more likely to acquire pertussis and 9 times more likely to acquire varicella.[8,14] Children with PBEs are at increased risk for measles and pertussis[14] and can infect others too young to be vaccinated, who cannot be vaccinated for medical reasons, and who are pregnant or have immune system problems.[1] A strong association between parental vaccine refusal or exemptions and increased risk of VPD infection exists among Colorado children.[3] Child care outbreaks and areas with high rates of exemptions increase the risk of transmitting VPDs to both unvaccinated and undervaccinated children and vulnerable populations in Colorado.[13]

Why do parents have doubts about vaccines?

Almost 45 percent of parents who report intentionally delaying vaccinations for their children do so because of vaccine safety and efficacy concerns.[15] Based on research using 2003 and 2004 NIS data, 28 percent of parents reported ever getting their child vaccinated although they were not sure it was the best thing to do ("unsure"), delaying a vaccination for their child ("delayed"), or deciding not to have their child vaccinated ("refused").[16] The majority of parents who changed their minds about delaying or refusing a vaccination for their child reported "information or assurances from health care provider" as the main reason.[16]

Current rates in Colorado for vaccines fall short of levels needed to prevent disease.[8] This coupled with an increasing trend of parents delaying or refusing to vaccinate their children and concern about vaccine safety makes Coloradans more vulnerable to incidence or outbreaks of VPDs. Efforts to educate parents and the public about the safety and benefits of childhood immunizations for child care, the development of a tutorial for primary care providers to help them address parental concerns, and strategies to make the PBE process more strict may help to improve Colorado's vaccination coverage rate to meet HP2020 goals in the future.[13,16]

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Appendix

Table 1. Colorado Child Care (age 0-5, before school entry) Vaccination Requirements, 2014-2015.[7]

Age of child	# of required doses **DTaP** Diphtheria, Tetanus, Pertussis	# of required doses **Polio** *Polio*	# of required doses **MMR** Measles, Mumps, Rubella	# of required doses **Hib** *Haemophilus influenzae* type b	# of required doses **Hep B** Hepatitis B	# of required doses **Varicella** *Chickenpox*	# of required doses **PCV7 or PCV13** *Pneumococcal Disease*
By 4 months	1	1		1	1		1
By 6 months	2	2		2	2x		2~
By 8 months	2	2		2	2x		3/2~
By 12 months	3	2		4/3/2 §	2x		3/2~
By 15 months	3	2	1+	4/3/2/1 §	2x	1*	4/3/2~
By 19 months	4	3	1	4/3/2/1 §	3x	1	4/3/2~
By 2 years	4	3	1	4/3/2/1 §	3x	1	4/3/2/1~
By 3 years	4	3	1	4/3/2/1 §	3x	1	4/3/2/1~
By 4 years	4	3	1	4/3/2/1 §	3x	1	4/3/2/1~

+ MMR given more than 4 days before the 1st birthday is not a valid dose. That dose must be repeated. Documentation of 1 dose of rubella vaccine and 2 doses of measles and 2 doses of mumps vaccines on or after the first birthday meets the school requirement for Kindergarten entry.

§ The number of Hib doses required depends on the child's current age and the age when the Hib vaccine was administered. If any dose is given at or over, 15 months, the Hib requirement is met. For children who begin the series before 12 months, 3 doses are required, of which at least 1 dose must be administered at, or over, 12 months. If the 1st dose was given at 12 to 14 months, 2 doses are required. If the current age is 5 years or older, no new or additional doses are required.

x The 2nd dose of Hep B is to be given at least 4 weeks after the 1st dose; 3rd dose to be given at least 16 weeks (4 months) after 1st dose; and last dose to be given at least 8 weeks after 2nd dose and at 6 months of age or older. (For those kids who have 3 doses prior to 7/1/09, they do not need to follow the above stated intervals.)

* If a child has had chickenpox disease and it is documented by a health care provider, that child has met the varicella requirement. Varicella given more than 4 days before the 1st birthday is not a valid dose. That dose must be repeated.

~ The number of doses of pneumococcal conjugate vaccine (PCV7 or PCV13) depends on the student's current age and the age when the 1st dose was administered. If the 1st dose was administered between 2 to 6 months of age, the child will receive 3 doses two months apart, and an additional dose between 12 to 15 months of age. If started between 7 to 11 months of age, the child will receive 2 doses, two months apart, and an additional dose between 12 to 15 months of age. If the 1st dose was given between 12 to 23 months of age, 2 doses, 2 months apart, are required. Any dose given at 24 months through 4 years of age, the PCV vaccine requirement is met. No doses required once the child turns 5 years of age.

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Maternal and Child Health Issue Brief

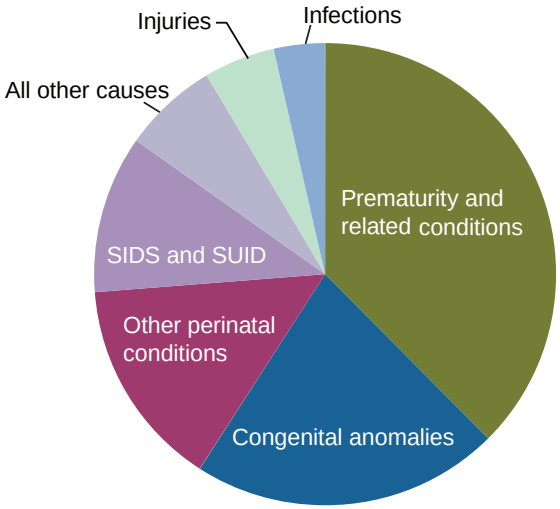
July 2014 № 2

Infant Mortality in Colorado

Why is infant mortality an issue?

Infant mortality refers to the death of an infant before his or her first birthday. Infant mortality rates are often used as indicators of the health and well-being of a nation or state. The infant mortality rate is defined as the number of deaths among all births in one year, expressed as deaths per 1,000 births. In the United States, 25,000 infants die every year, including nearly 400 in Colorado.[1,2] In 2011, Colorado had 362 deaths out of 65,052 births for a rate of 5.6; the U.S. rate was 6.1.[3] Twelve states have lower infant mortality rates than Colorado.[4] Forty-nine out of over 200 countries have lower infant mortality rates than the United States.[5]

Figure 1. Major causes of infant mortality, Colorado, 2011.[2,6]

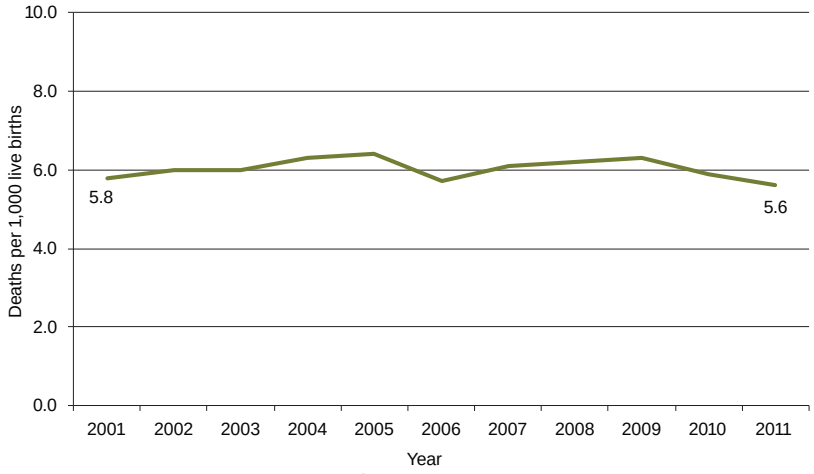


Major causes of infant mortality

Prematurity and related conditions contribute to 38 percent of all infant deaths.[2,6] Congenital anomalies comprise another 21 percent, and other perinatal conditions contribute 15 percent. Sudden Unexpected Infant Death (SUID) including Sudden Infant Death Syndrome (SIDS), accidental suffocation and strangulation in bed, and undetermined deaths make up 11 percent. Injuries comprise 5 percent and infections contribute 4 percent. All other causes make up the remaining 6 percent. Some causes of death are preventable, while others are more difficult to address. Over the past 10 years, Colorado's infant mortality rate has been close to the Healthy People 2020 goal of 6.0 deaths per 1,000 births. It met the goal in the two most recent years, 2010 and 2011, as well as in 2001 and 2006.

- **Prematurity and related conditions contribute to 38 percent of all infant deaths in Colorado.**
- **Colorado ranks 13th nationally in infant mortality**

Figure 2. Infant mortality rate, Colorado, 2001-2011.[2]



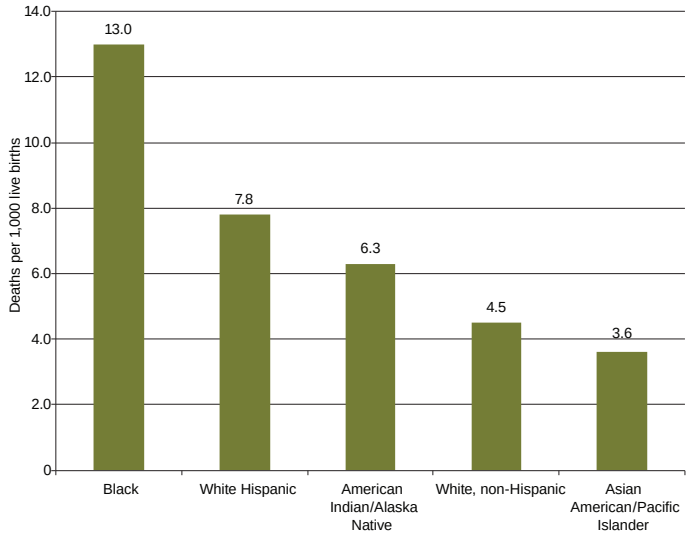
Healthy People 2020 Goal[1]

By 2020, the infant mortality rate will be reduced to 6.0 deaths per 1,000 births.

Social and economic health disparities

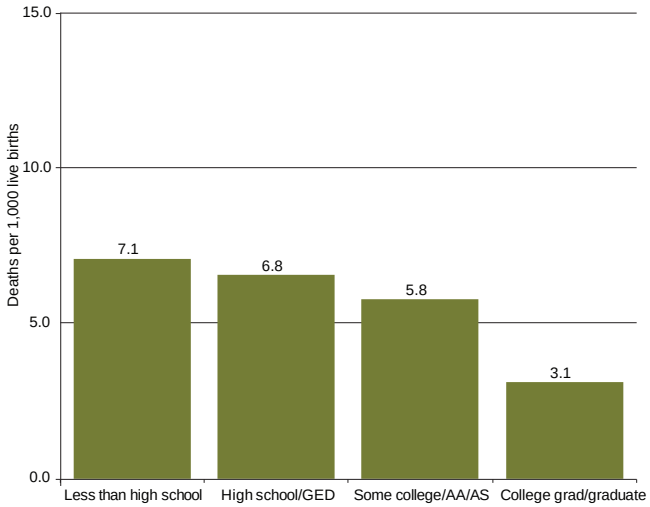
Racial disparity and associated socioeconomic inequality have been identified in the literature as root causes of infant mortality in the United States.[7]

Figure 3. Infant mortality rates by race/ethnicity, Colorado, 2011.[2]



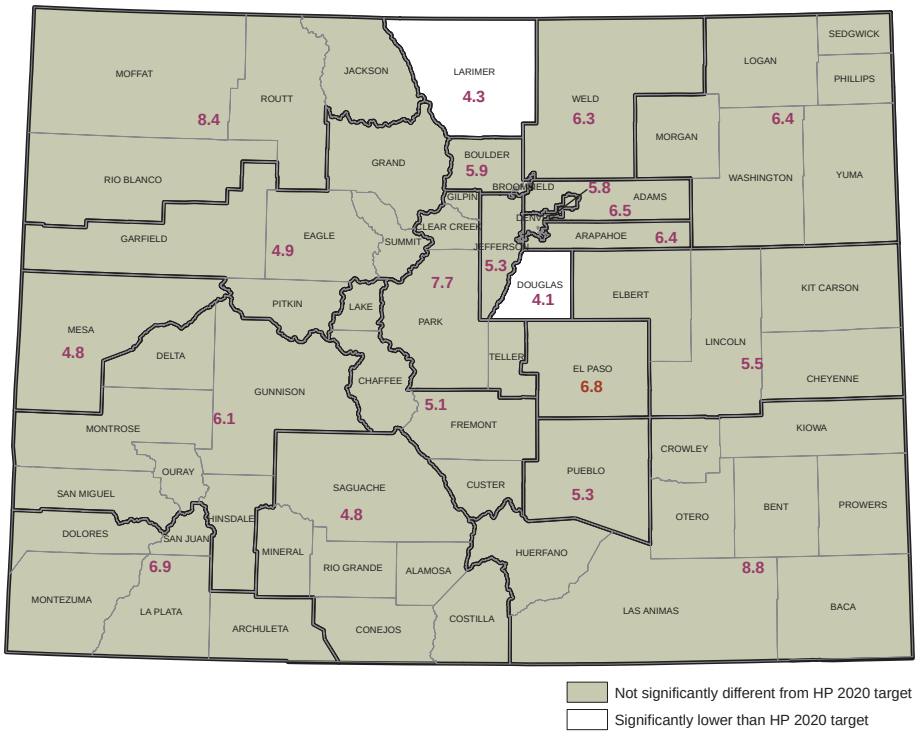
Infant mortality rates vary by race/ethnicity in Colorado. Infants of color, with the exception of Asian American/Pacific Islander infants, have higher infant mortality rates than White non-Hispanic infants.

Figure 4. Infant mortality rates by education, Colorado, 2011.[2]



Infants of Colorado mothers with less than a high school education have higher infant mortality rates than infants of mothers with college degrees.

Figure 5. Infant mortality rates by health statistics region, 2009-2011[2].



Only Larimer County and Douglas County have infant mortality rates that are significantly lower than the Healthy People 2020 goal, which is 6.0 deaths per 1,000 births. All other regions have rates that do not differ from the Healthy People 2020 goal.

Which infants in Colorado have higher mortality rates?

- **Infants born to mothers in minority groups**
- **Infants born to mothers who have less education**

What are the components of infant mortality?

Infant mortality is divided into neonatal and postneonatal time frames with different causes associated with each period. Neonatal deaths occur before 28 days of life, while postneonatal deaths occur between 28 and 365 days. Serious congenital anomalies (birth defects), prematurity (birth before 37 completed weeks of gestation) and maternal complications of pregnancy are important contributors to neonatal death. SUID and violent death due to suffocation or homicide are contributors to postneonatal death.

Neonatal Mortality[2]

- **Seven out of every ten (71%) Colorado deaths occur within 28 days of birth.**
- **Serious congenital anomalies contribute to one out of every four neonatal deaths.**
- **Colorado's neonatal death rate is 4.0 deaths per 1,000 births; the Healthy People 2020 goal is 4.1.**

Postneonatal Mortality[2]

- **Three out of every ten (29%) Colorado infant deaths occur between 28 days and one year of age.**
- **One out of every seven postneonatal deaths is caused by unintentional injuries.**
- **Colorado's postneonatal death rate is 1.6 deaths per 1,000 births; the Healthy People 2020 goal is 2.0.**

Are some types of mortality preventable?

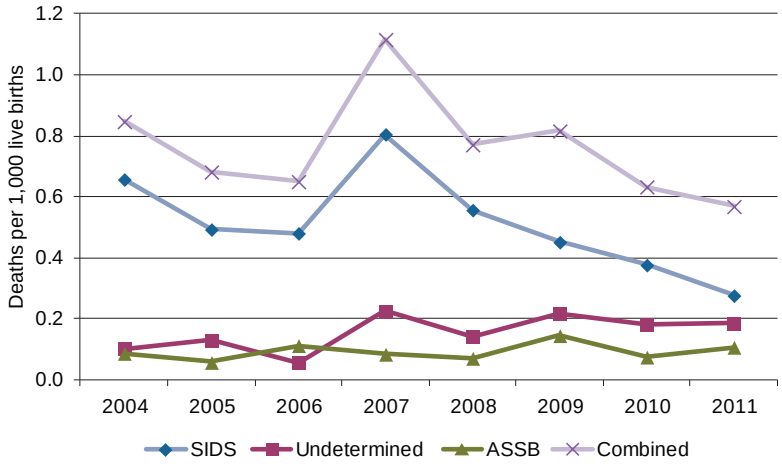
Prematurity and congenital anomalies are major contributors to neonatal mortality, but are complex issues to prevent. Some types of sleep-related infant death, however, may be completely preventable.

The drive to reduce SIDS deaths is one example of a national campaign begun in 1994[8] that reduced SIDS deaths by half in Colorado within six years. Colorado now ranks first among all states for the percentage of infants put to sleep on their backs, with 84 percent put to bed this way in 2010.[9]

Figure 6 shows infant mortality rates in recent years by type of SUID, a category accounting for 10 percent of all infant deaths. The top line combines deaths due to SIDS, undetermined cause of death, and accidental strangulation or suffocation in bed (ASSB); the combined rate in 2011 is just under 0.6 deaths per 1,000 births.

While deaths related to SIDS have decreased, undetermined and ASSB deaths may be increasing slightly due to a shift in how these types of death are classified. A reason for the diagnostic shift may be more thorough death scene investigations, resulting in more deaths being assigned to these categories.

Figure 6. Sudden unexpected infant death (SUID) mortality rates, Colorado, 2004-2011.[10]

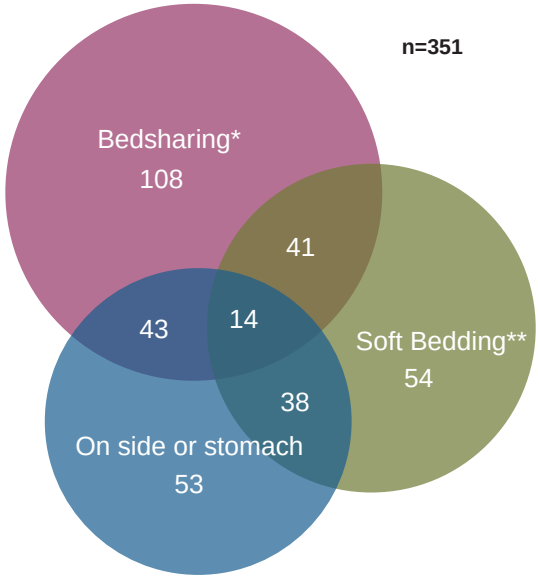


What circumstances surround deaths that occur while infants sleep?

The American Academy of Pediatrics recommends that infants sleep alone on their backs on a firm surface in their cribs. In addition, the Academy recommends that infants sleep in the same room as an adult (room sharing), but that they do not share the same bed.[11] Between 2004 and 2011 a total of 474 Colorado infants died in sleep environments. At least 74 percent (351) of these infants were not placed to sleep according to the Academy recommendations regarding bed sharing, soft bedding and sleep position. Figure 7 shows the identified sleep environment circumstances among these infants.

Bed sharing appears to be an important factor in sleep environment deaths, with 206 infants dying when sharing the bed with another person or persons. Where the circles overlap, two or more circumstances were present: for example, a total of 43 infants died who were sharing a bed and who were put to sleep on their side or stomach. Of the 474 infants who died between 2004 and 2011, only 9 percent (42) met the three major American Academy of Pediatrics recommendations (placed to sleep in a crib or bassinet alone, on their backs, on a firm surface). The sleep environments of 81 infants were unknown.

Figure 7. Number of sleep environment infant deaths by known type of circumstance, Colorado 2004-2011.[10]



*Bed sharing includes infants placed to sleep on the same sleep surface as one or more adults (e.g. adult bed, couch, or futon).

**Soft bedding includes infants placed to sleep with a pillow, blanket, comforter, or on a pillow-top mattress, or waterbed mattress.

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Addendum

Infant mortality efforts in Colorado

A number of common strategies have been identified to reduce the rates of infant mortality and prematurity in the United States. Colorado has focused efforts on the following four strategies: 1) reducing elective deliveries prior to 39 weeks; 2) increasing the number of pregnant women who quit smoking; 3) promoting safe sleep behaviors; and 4) improving regional perinatal systems. Additional client-level interventions are also in place for specific, high-risk populations.

Reducing elective deliveries prior to 39 weeks

To reduce non-medically indicated inductions and Cesarean sections prior to 39 weeks, the Colorado Chapter of the March of Dimes partners with the Colorado Perinatal Care Council, the Colorado Hospital Association and the Colorado Section of the American Congress of Obstetricians and Gynecologists to encourage hospitals to adopt a "hard stop" policy on elective deliveries and share materials with health care providers and their patients about the risks of early delivery. The March of Dimes also developed a public service announcement for consumers about the importance of waiting until 40 weeks for delivery. In July 2011, the Colorado Department of Health Care Policy and Financing (HCPF) changed Medicaid reimbursement payments to provide the same level of reimbursement for a non-complicated Cesarean section as for a complicated vaginal delivery.

Increasing the numbers of pregnant women who quit smoking

Tobacco cessation during pregnancy has been addressed through a variety of approaches in recent years. A 2005 tax increase on cigarettes and the 2006 Colorado Clean Indoor Air Act prohibiting smoking in most public places have been linked to a statistically significant decrease in the percentage of Colorado women who smoke before pregnancy, from a rate of about 20 percent between 2000 and 2007 to just under 17 percent in 2008. This decrease resulted in fewer women smoking during the last three months of pregnancy, declining from 10 percent during 2000-2007 to 8 percent in 2008.

The Baby & Me Tobacco Free program offers free diapers for participating pregnant women who stop smoking and stay quit postpartum. Since the program began in 2008, more than 2,000 pregnant smokers have enrolled with 1,350 women who quit smoking by delivery. Of those who quit smoking, 59 percent and 43 percent remained tobacco-free at 3- and 6-months postpartum, respectively.

Grant monies from the American Reinvestment and Recovery Act supported efforts to develop a specialized QuitLine program for pregnant women in Colorado. The program provides up to nine personal coaching calls from pregnancy through postpartum with the same, specially trained coach; text messaging support; and monetary rewards for completing calls with the coach. In 2010, HCPF expanded its Medicaid tobacco cessation medication benefit to provide coverage for FDA-approved medications up to two times per year rather than once in a lifetime. In 2012, HCPF expanded the Medicaid tobacco cessation counseling benefit for pregnant women to be billable by a wide array of health care providers. Payment is available, in addition to the global prenatal care package and includes up to eight counseling sessions per client per year.

Improving regional perinatal systems

Improving regional perinatal systems involves efforts to ensure high-risk deliveries are referred to hospitals designated as Level III neonatal intensive care units (NICUs), which provide comprehensive sub-specialty services for high-risk obstetric patients and newborns. The Colorado Perinatal Care Council oversees the hospital designation of obstetric and neonatal care levels. In 2010, 89 percent of very low birth weight infants were born at Level III NICUs, exceeding the Healthy People 2020 goal of 83.7 percent.

Promoting safe sleep behaviors

The Colorado Safe Sleep Coalition is working to prevent unintentional sleep-related infant deaths by improving statewide prevention systems to increase caregiver capacity to implement safe sleep best practices. This includes increasing the percentage of Colorado parents who place their child to sleep according to the American Academy of Pediatrics Infant Safe Sleep Recommendations. Currently, the coalition is working with the Colorado Department of Human Services Division of Early Care and Learning to incorporate safe sleep best practices in the 2012 revision of Rules and Regulations for Child Care Facilities. Colorado is one of nine states funded by the Centers for Disease Control and Prevention to participate in the Sudden Unexpected Infant Death (SUID) Case Registry. The SUID Case Registry builds upon the work of the Colorado Child Fatality Prevention System and the protocols and web-based data entry system developed by the National Center for the Review and Prevention of Child Death. The information gathered under this project will improve the state's understanding about which factors in the sleep environment are associated with SUID cases, and will assist in the development of effective prevention strategies.

Addendum

Direct service interventions

In addition to the efforts described above, Colorado has a number of programs that work directly with women who are at higher risk for poor birth and infant outcomes during pregnancy and during the early years of their child's life. Prenatal Plus is a Medicaid-reimbursed, case management program serving pregnant women. This program has consistently demonstrated decreases in low birthweight by reducing nutrition, psychosocial and behavioral risk factors. Since 2000, the Nurse-Family Partnership (NFP) home visitation program has addressed infant mortality through interventions aimed at reducing prematurity and low birthweight and decreasing child abuse. In 2010, Colorado received funding from the Affordable Care Act as part of the Maternal, Infant and Early Childhood Home Visitation (MIECHV) program. The primary goal of MIECHV is to improve health and developmental outcomes for children through the implementation of evidence-based home visitation programs in at-risk communities. The MIECHV funding in Colorado is expanding NFP, as well as three other evidence-based home visitation models that serve pregnant women and women with infants: Parents as Teachers; Healthy Steps; and Early Head Start. Colorado's Healthy Start project also provides case management services to pregnant women in Aurora, Englewood and Sheridan, with the goal of decreasing low birthweight and infant mortality.

Community-level efforts

Although Colorado has a relatively low infant mortality rate statewide, the data show that the African-American population is at a much higher risk for infant mortality. African-Americans, however, make up less than 4 percent of the state's population. Two local public health agencies serving communities with higher proportions of African-American women, Tri-County Health Department (serving Arapahoe, Adams and Douglas counties) and Denver Public Health (serving Denver County), each recently conducted the Perinatal Periods of Risk (PPOR) analysis to further explore the causes of infant mortality in their community. Tri-County Health Department's findings led to the development of Healthier Beginnings, Inc., a non-profit community collaborative focused on decreasing the disparity in infant mortality among minority populations, particularly Black/African-American women. The collaborative is implementing the federal Office of Minority Health's Preconception Peer Education Program. Denver Public Health is working through Phase II of the PPOR analysis to help determine next steps.

This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number H18MC00006, State Systems Development Iniative (SSDI) for $91,045. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

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Colorado Department
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Maternal and Child Health
Issue Brief

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Early Childhood Obesity in Colorado

Why is early childhood obesity a problem?

Overweight and obese young children often become overweight and obese school-age children, teens and adults, increasing their risk of chronic and obesity-related disease over time. The risk of early childhood obesity begins before conception, during pregnancy, and during the earliest years of life. Maternal overweight and obesity prior to and during pregnancy can perpetuate the occurrence of obesity into the next generation. In addition, early patterns of eating, physical activity and sleep greatly influence child health and weight, permanently altering neurological and metabolic systems and behavior.[1]

Just under 25 percent of children ages 2 to 4 years were overweight or obese in recent years, as shown below.[2] About 14 percent were overweight and 10 percent were obese. Reliable Colorado data are limited to the low-income population at this time though national data reveal that overweight and obesity are prevalent among children of all income levels.[3]

Reducing obesity is a Winnable Battle for the Colorado Department of Public Health and Environment with a focus on early childhood obesity prevention for the Colorado Maternal and Child Health Program.

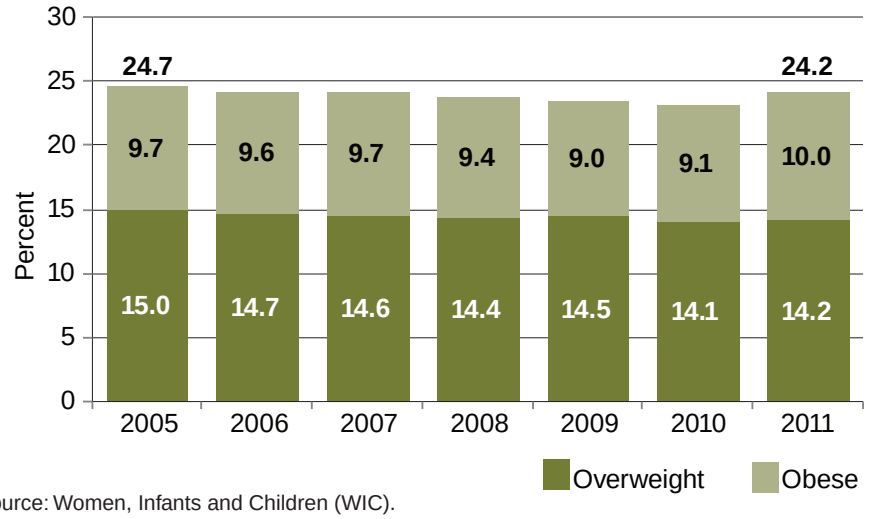
Definitions

Growth charts measuring length (or stature) and weight for age by gender are used to determine overweight and obesity. World Health Organization growth charts are used for infants and children under 2 years old, and Centers for Disease Control and Prevention growth charts are used for children ages 2 to 5 years.[4]

Infants or children under age 2 are considered **at risk of overweight** if their body mass index is between the growth chart percentiles of 84.1 and 97.7. Infants in excess of the higher percentile are considered **overweight.**

Children ages 2 to 5 are defined as **overweight** if they are between the 85th and 95th percentile on the growth chart and **obese** if they are at or above the 95th percentile.

Figure 1. Prevalence of overweight and obesity in children ages 2 to 4 in low-income families, Colorado, 2005-2011.

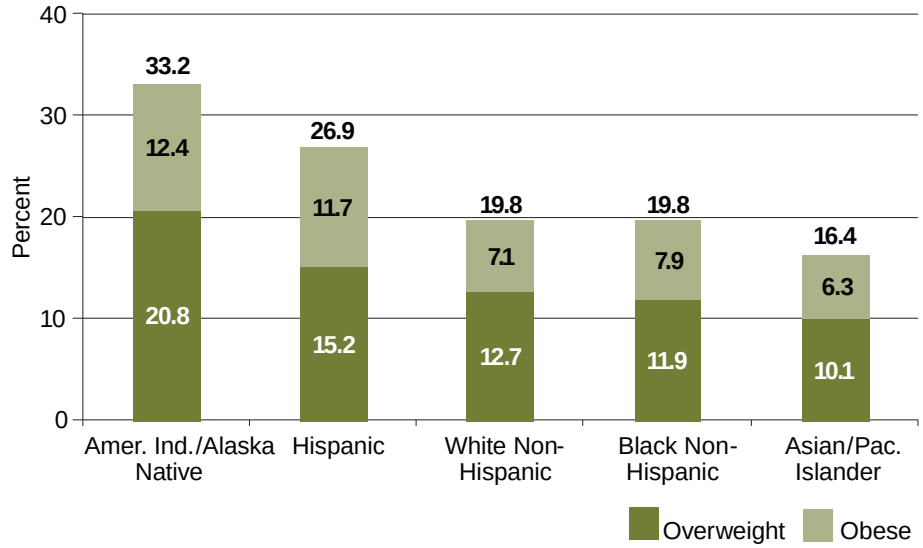


Source: Women, Infants and Children (WIC).

Healthy People Goal: By 2020 the proportion of children ages 2 to 5 who are obese will be reduced to 9.6 percent.[5]

Health disparities in young children (ages 2 to 4) and mothers

Figure 2. Prevalence of overweight and obesity in children ages 2 to 4 in low-income families, by race/ethnicity, 2011.[2]

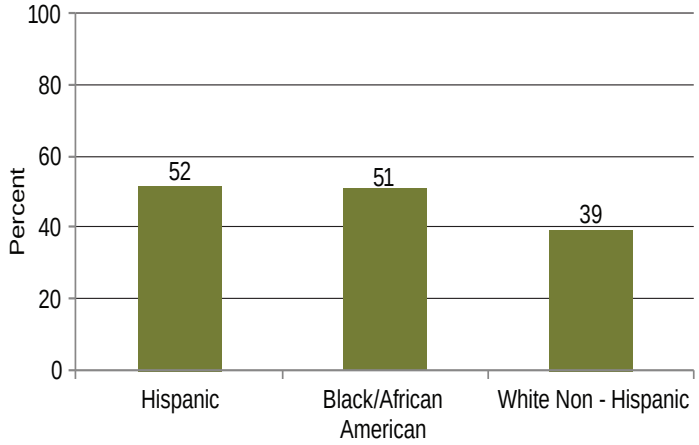


One-third of American Indian/Alaska Native children in low-income families are overweight or obese, which is double the prevalence for Asian/Pacific Islander children (16.4 percent). One-quarter of Hispanic children (26.9 percent) and close to 20 percent of White and Black Non-Hispanic children of low-income families are also overweight or obese.

Who is more likely to be overweight or obese?

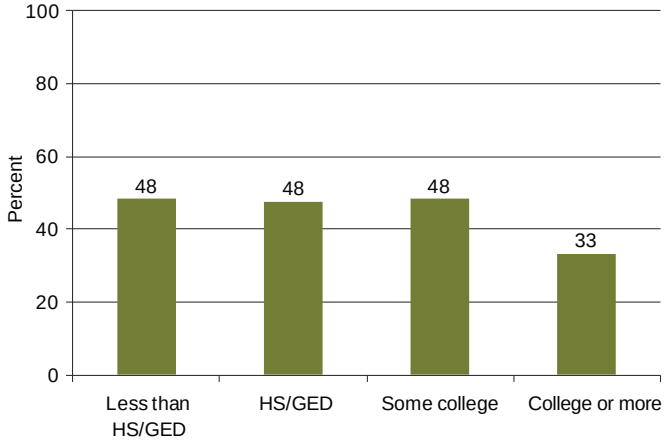
- **Native American or Hispanic children in low-income families**
- **Mothers who are Hispanic or Black**
- **Mothers who do not have at least a college education**

Figure 3. Prevalence of maternal prepregnancy overweight and obesity by race/ethnicity, 2010-2011.[6]



Before pregnancy, half of Hispanic or Black mothers are overweight or obese, while 39 percent of mothers who are White Non-Hispanic are overweight or obese. The difference between the prevalence in minority groups compared to White Non-Hispanic mothers is significant.

Figure 4. Prevalence of maternal prepregnancy overweight and obesity by education, 2010-2011.[6]



Before pregnancy, half of mothers who have less than a college education are overweight or obese, while one-third of mothers with a college education or more are overweight or obese. Overweight and obesity is equally prevalent in all groups with less education, and significantly different from the group with the most education.

What are the causes of early childhood obesity?

Obesity in early childhood results from a complex interplay of multiple environmental, behavioral, and genetic factors. Exposures to these factors occur among women prior to and during pregnancy and among children before the age of five years.

Factors related to the preconception, prenatal, and infancy periods are most strongly linked to obesity risk in early childhood. Maternal obesity prior to pregnancy is a strong predictor. Likewise, excessive weight gain during pregnancy increases the risk of obesity in the child.[1,7] In 2011, 43 percent of mothers in Colorado were overweight or obese before pregnancy and only 33 percent gained an appropriate amount of weight (neither too little nor too much) during pregnancy.[6] Contrary to popular belief that infants "outgrow their baby fat" over time, evidence also links rapid weight gain during infancy with obesity in childhood.[1,7]

Two factors closely related to gestational weight gain, high and low birth weight, are also risk factors for obesity in the child.[1,7] The percentage of low birth weight (less than 2500 grams) babies born in Colorado has improved, declining from 9.3 in 2005 to 8.7 in 2011. However, 48 percent of mothers gained an excessive amount of weight in 2011, more weight than recommended by the Institute of Medicine guidelines based on body mass index.[1] In addition, 5 percent of births in 2011 qualified as high birth weight (4000 grams or more).[6]

A number of studies have documented an association between maternal smoking during pregnancy and risk of obesity in the child,[1,7] and 6 percent of pregnant Colorado women smoked during pregnancy in 2011.[6]

Parenting practices clearly play an important role in this complex issue. Child consumption of sugar sweetened beverages and excessive time spent viewing television in combination with exposure to marketing of energy dense, nutrient-poor foods contribute to risk.[1,7] In 2011, 17 percent of Colorado children ages 1 to 5 years spent more than two hours daily watching TV or videos, playing video games, or playing on a computer, and 14 percent consumed at least one glass or can of regular soda pop or other sweetened drinks per day.[8]

In addition, poor sleep habits can result in shorter sleep duration among children, which is a strong predictor of obesity in early childhood.[1,7] In 2011, one-half (49 percent) of Colorado children ages 1 to 5 years typically did not get as many hours of sleep as were recommended for their age group (12 or more hours for under age 3 years and 11 or more for ages 3 to 5).[8]

Feeding practices that are not responsive to hunger and satiety among infants and young children may also contribute to the risk of obesity.[7]

How can early childhood obesity be prevented?

Promising prevention strategies aim to identify risky growth patterns in children early, increase physical activity and decrease sedentary behavior, and improve access to and consumption of healthy foods among women of reproductive age, children, parents, and caregivers.

In 2011, 31 percent of Colorado women of reproductive age did not meet aerobic and strengthening guidelines. In addition, despite recommendations to increase fruit and vegetable consumption as part of a healthy diet, the median fruit consumption was 1.1 times per day and the median vegetable consumption was 1.9 times per day.[9]

Prevention strategies also intend to increase the number of infants exclusively breastfed at six months and increase the duration of breastfeeding among infants. A number of studies associate breastfeeding and a reduction in obesity risk in childhood.[1,7] Colorado currently has just over a quarter (27 percent) of infants exclusively breastfed (no other food or liquids) at six months. A total of 57 percent receive some breast milk at that age and 27 percent of all infants continue breastfeeding to twelve months.[10]

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Colorado Department of Public Health and Environment

Maternal and Child Health
Issue Brief

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Children's Oral Health in Colorado

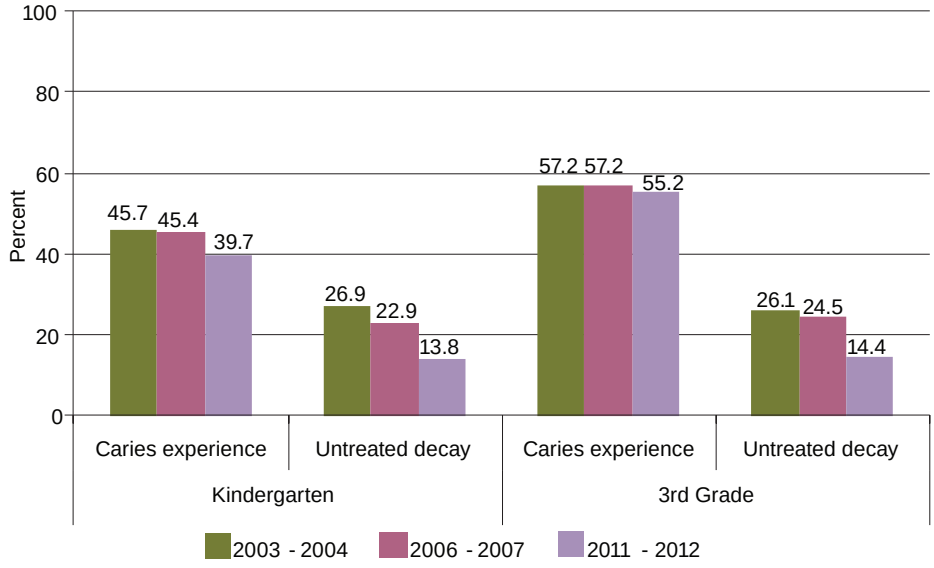
Dental caries is the most common chronic disease of childhood.

Why is children's oral health an issue?

Dental caries is the most common chronic disease of childhood in the United States.[1] Children with cavities can experience painful infections and have problems with eating, speaking and learning. Cavities are almost 100 percent preventable and improving oral health in children is one of the state health department's Winnable Battles and a priority for the Colorado Maternal and Child Health Program.

In 2011-2012, Colorado met the Healthy People 2020 goals for reducing untreated decay among children in kindergarten and 3rd grade. The state is also making some progress in meeting the Healthy People 2020 goals for reducing caries experience in the same age groups.

Figure 1. Caries experience and untreated decay in kindergarten and 3rd grade children by year, Colorado.[3]



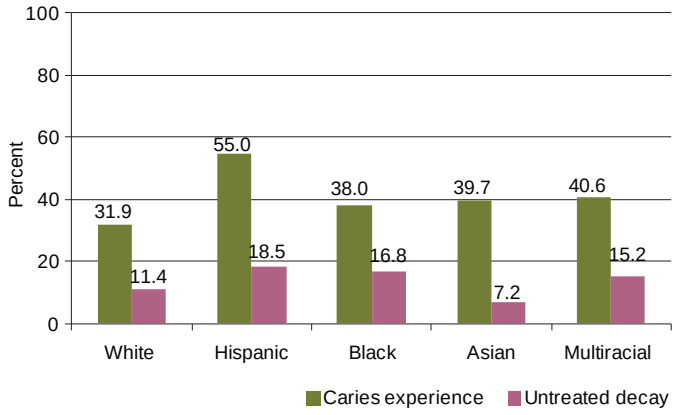
For young children, the overall prevalence of caries experience has not changed significantly since 2003–2004, but the prevalence of untreated decay has decreased significantly. Among children in kindergarten, the prevalence of untreated decay decreased from 26.9 percent in 2003–2004 to 13.8 percent in 2011–2012. Among children in 3rd grade, the prevalence of untreated decay decreased from 26.1 percent to 14.4 percent in the same time period.[3]

Healthy People 2020 Goals[2]

Reduce the proportion of children aged 3 to 5 years with caries experience to 30.0 percent and untreated decay to 21.4 percent.
Reduce the proportion of children aged 6 to 9 years with caries experience to 49.0 percent and untreated decay to 25.9 percent.

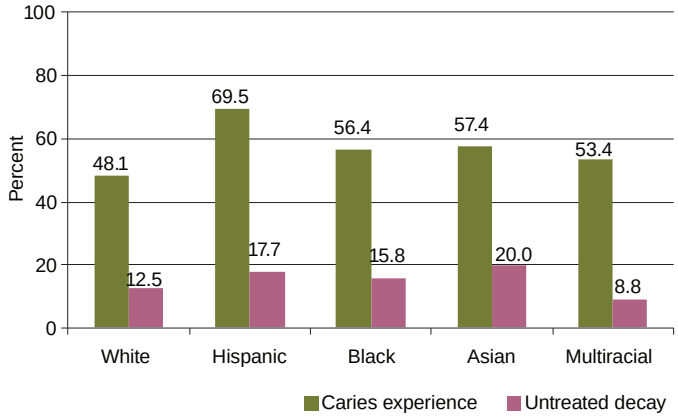
Social and economic health disparities

Figure 2. Caries experience and untreated decay in kindergarten children by race/ethnicity.[3]



Hispanic children in kindergarten have a significantly different prevalence of caries experience compared to White, Black, and Multiracial children. Hispanic children also have a significantly different prevalence of untreated decay compared to White and Asian children.[3]

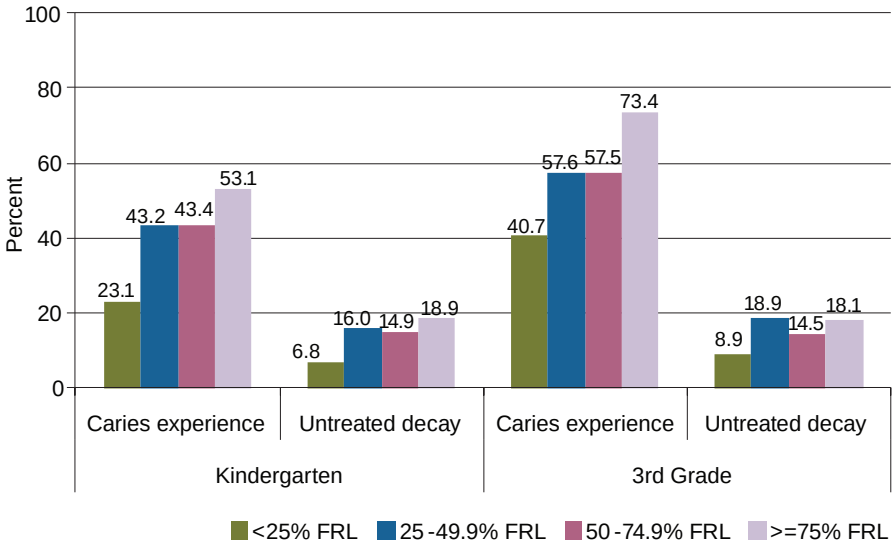
Figure 3. Caries experience and untreated decay in 3rd grade children by race/ethnicity.[3]



Hispanic children in 3rd grade have a significantly different prevalence of caries experience compared to White and Black children. There are no significant differences by race/ethnicity for untreated decay among children in 3rd grade.[3]

The prevalence of caries experience and untreated decay is highest in schools with the most students eligible for free and reduced lunch.

Figure 4. Caries experience and untreated decay in kindergarten and 3rd grade children by percent of students eligible for free and reduced lunch (FRL).[3]



For children in kindergarten and 3rd grade, the prevalence of caries experience and untreated decay is significantly different among children in schools with less than 25 percent of students eligible for free and reduced lunch compared to schools with a higher percentage of students eligible for free and reduced lunch.[3] This figure demonstrates that socioeconomic status can greatly impact children's oral health.

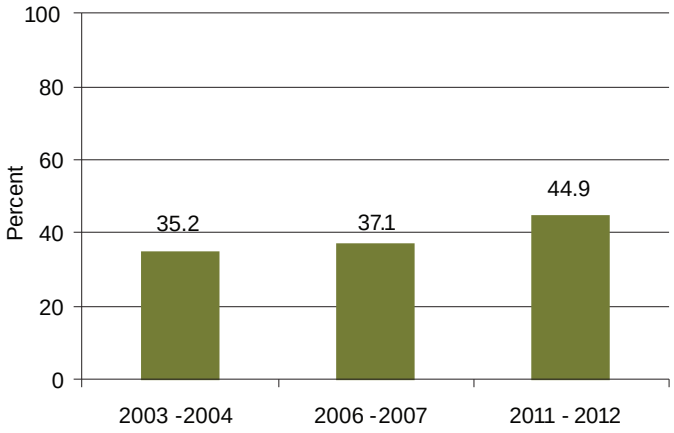
What behaviors support good oral health in children?

In addition to good oral habits such as avoiding sugary beverages, brushing twice a day with fluoridated toothpaste and daily flossing, regular visits to the dentist are important to maintain good oral health. For most children, at least one dental check-up annually is recommended.[4] The majority of children in Colorado, 91.2 percent, have a regular source of dental care.[5] Additionally, 81.2 percent of children went to the dentist for a preventive visit at least once in the past 12 months.[5] Among children eligible for Early Periodic, Screening, Diagnosis and Treatment, 45.0 percent received preventive dental services in the past year,[6] well below the percentage for all children, demonstrating that children from families with low incomes are less likely to receive preventive care.

Cavity prevention can also be achieved through application of fluoride treatments and dental sealants. Children at moderate or high cavities risk should receive professional fluoride treatment at least every six months, sometimes more often.[4] A Cochrane review showed a 37 percent and a 43 percent reduction in decayed, missing and filled tooth surfaces of primary and permanent teeth treated with fluoride varnish, respectively.[7] Sealants may be recommended for primary and permanent teeth with pits and fissures, but are especially important for children's six- and twelve-year molars.[4] In 2011-2012, 44.9 percent of children in 3rd grade had a dental sealant on at least one permanent molar, a significant increase from 2003-2004.[3]

Parents who visited a dentist in the last two years were almost twice as likely to take their child to the dentist by age 3 compared with parents who visited a dentist less frequently.

Figure 5. Dental sealants in 3rd grade children by year, Colorado.[3]



What environments and systems support good oral health in children?

A number of environmental and systems supports promoting oral health in children are present in Colorado. Fluoride in the community water supply is the most cost-effective preventive intervention, and 72.4 percent of the population served by community water systems receive optimally fluoridated water.[8] Dental insurance and availability of dental providers increase access to dental care and 79.0 percent of children under age 18 in the state had dental insurance.[9] However, access to a dentist can be a barrier even with dental insurance. Eight Colorado counties do not have a dentist offering care. Another nine counties do not have a private practice dentist who accepts Medicaid or a Federally Qualified Health Center that provides dental care.[10]

Systems outside the traditional dental environment also support children's oral health, and the health care system is one such leverage point. In 2011, 27.7 percent of children were ever referred to a dentist by a non-dental health care provider.[5] Parental behavior also greatly affects children's dental health. Parents who visited a dentist in the last two years were almost twice as likely to take their child to the dentist by age 3 years compared with parents who visited a dentist less frequently.[11]

Spotlight on dental visits by one year of age

Establishing a dental home is one easy way to combat dental disease. The American Academy of Pediatric Dentistry and the American Academy of Pediatrics recommend a first dental visit by one year of age, followed by regular dental visits. During the first dental visit, a dental professional should assess caries risk; evaluate the child's mouth and teeth; look for the beginning of caries (white spot lesions) and any other abnormalities; educate parents about healthy habits to prevent disease; and apply fluoride varnish if indicated. In Colorado, 8.1 percent of children visit a dentist by one year of age.[5]

In Colorado, primary care providers are providing limited preventive oral health services during well child visits to young children, and they are encouraging dental visits by one year of age. Cavity Free at Three (CF3), a statewide initiative, is leading the charge with a training program for health care providers. By teaching providers how to improve outreach, education and service delivery to families, CF3 seeks to eliminate early childhood caries in Colorado children.

The American Academy of Pediatric Dentistry recommends a first dental visit by one year of age, yet only 1 in 10 Colorado children visits the dentist by age one.

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Colorado Department of Public Health and Environment

Maternal and Child Health Issue Brief

June 2014 № 5

Child and Youth Injury in Colorado

Why is child and youth injury an issue in Colorado?

Injuries are the leading cause of death among Coloradans ages 1-24. Preventable, unintentional injuries resulted in 248 deaths in 2011, 40 percent of all deaths of children and youth ages 1-24.[1]

What are the major causes of child/youth deaths?

Table 1 shows the four leading causes of death of children and youth ages 0-24 from 2009-2011. Unintentional injuries are the leading causes of death for children and youth ages 1-24. Among unintentional injuries, suffocation was the leading type of unintentional injury death in infants.[1,2] Motor vehicle and drowning-related injury deaths were the leading types of unintentional injury deaths in children ages 1-4 years,[1] and motor vehicle injury was the leading cause of unintentional injury death in children and youth over five years of age.[1,3]

Colorado Goals and Priorities

By 2016, reduce the percentage of 9th-12th graders who report attempting suicide in previous 12 months to 5 percent.

By 2015, reduce youth motor vehicle fatalities to 10.5 fatalities per 100,000 youth ages 15-19.

Table 1. Leading causes of death, by age, Colorado residents, 2009-2011.[1,3]

Rank	<1 Year	1-4 Years	5-9 Years	10-14 Years	15-24 Years
1	Perinatal period conditions: N=597.	Unintentional injuries: N=55. 29% motor vehicle, 29% drowning, 16% suffocation, 7% fires, 5% falls	Unintentional injuries: N=37. 59% motor vehicle, 14% suffocation, 8% firearm (accidental)	Unintentional injuries: N=41. 56% motor vehicle, 7% drowning, 7% falls, 7% poisoning	Unintentional injuries: N=598. 50% motor vehicle, 33% poisoning, 5% drowning, 4% falls
2	Congenital abnormalities: N=263.	Congenital abnormalities: N=27.	Cancer: N=14.	Suicide: N=32.	Suicide: N=356.
3	Unintentional injuries: N=57. 79% suffocation, 11% drowning, 9% motor vehicle	Homicide: N=19. 95% child maltreatment	Congenital abnormalities: N=9.	Cancer: N=13.	Homicide: N=128. 1% Child mal-treatment,* 94% domestic violence and interpersonal violence, 5% legal intervention
4	Homicide: N=22. 100% child maltreatment	Cancer: N=13.	Influenza and pneumonia: N=8.	Homicide: N=7. 71% child maltreatment	Cancer: N=61.

* Child maltreatment data is collected for youth up to age 17. Here, child maltreatment of youth over 18 is considered domestic or interpersonal violence.

Shaded areas indicate injury-related deaths.

Considering all types of injury death, homicide was the second leading cause of injury death of infants and the first leading cause of death for children ages 1-4. In fact, homicide ranked in the four leading causes of death in four of the five age groups for children and youth ages 0-24. Suicide ranked as the leading cause of death in the 10-14 and 15-24 year-old age groups, followed by motor vehicle crashes, after considering all types of injury death. Figure 1 shows the leading causes of injury- or violence-related death for children and youth ages 0-24. Suicide and motor vehicle accidents make up nearly 60 percent of all injury- or violence-related deaths.[1,3]

Figure 2 displays the leading causes of injury hospitalizations among males and females, ages 1-9 and 10-24 years. Whereas 96.3 percent of injury hospitalizations of children ages 1-9 are due to unintentional injury, 71.6 percent of injury hospitalizations of males ages 10-24 and only 56.0 percent of injury hospitalizations of female youth ages 10-24 are due to unintentional injuries.[4]

Figure 1. Leading causes of injury- or violence-related deaths, 0-24 year-olds, Colorado residents, 2009-2011.[1,3]

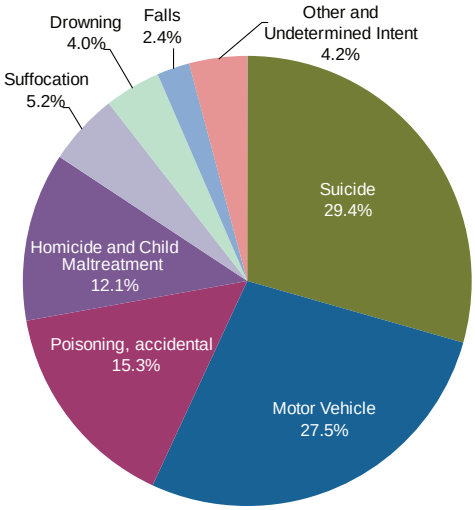
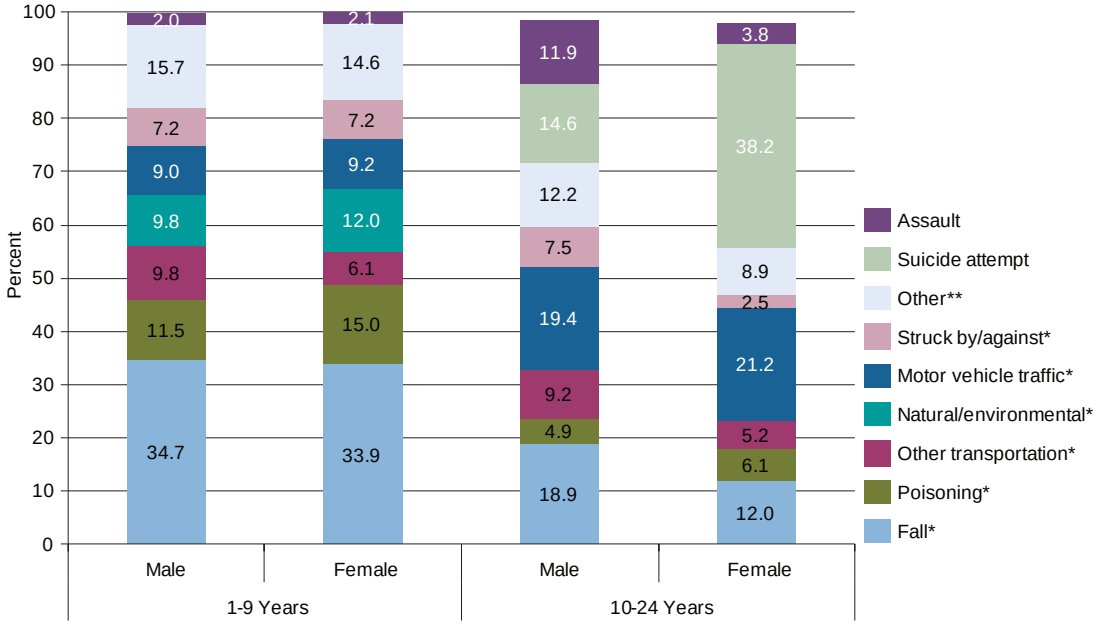


Figure 2. Leading causes of injury hospitalizations, by age and sex, Colorado residents, 2009-2011.[4]



* Unintentional/accidental

** Other includes: drowning, fire/burn, natural or environmental, machine, suffocation, other unintentional, child abuse, legal intervention, undetermined intent.

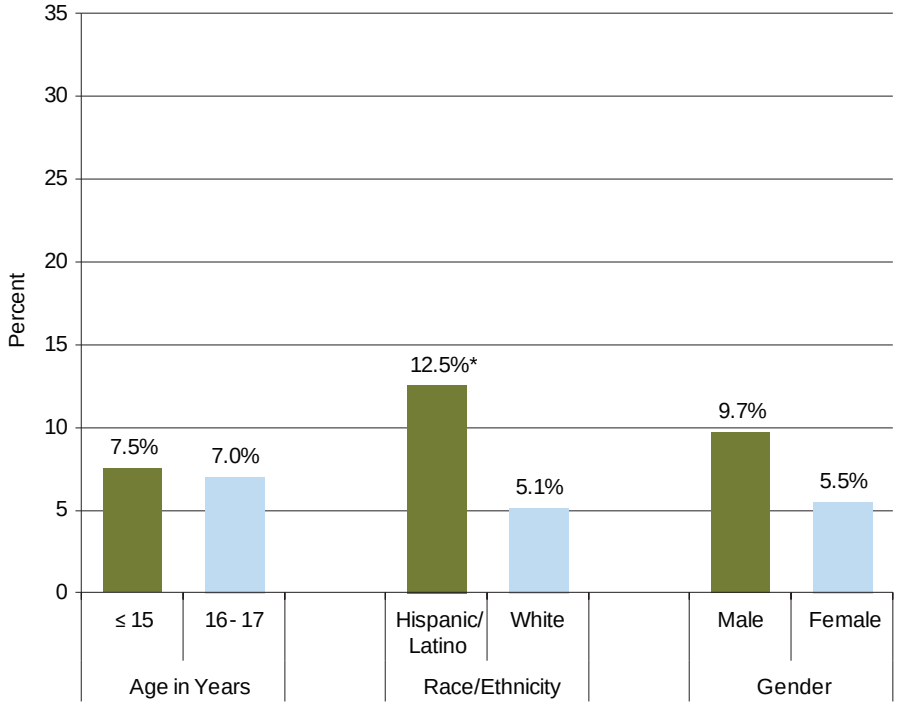
Who is more likely to experience injury, illness or adversity?

Children and youth living in communities with fewer economic opportunities and/or environments not built for safety, without positive adult relationships, and with more life stressors—among additional factors—are more likely than their peers to experience injury, illness, or adversity.[5,6] However, building safe, stable environments and fostering adult and peer connectedness can counteract negative influences in the lives of children and youth, and can assist them to build resiliency, make healthy decisions, and develop into happy, healthy adults.[6]

Differences in risk behavior

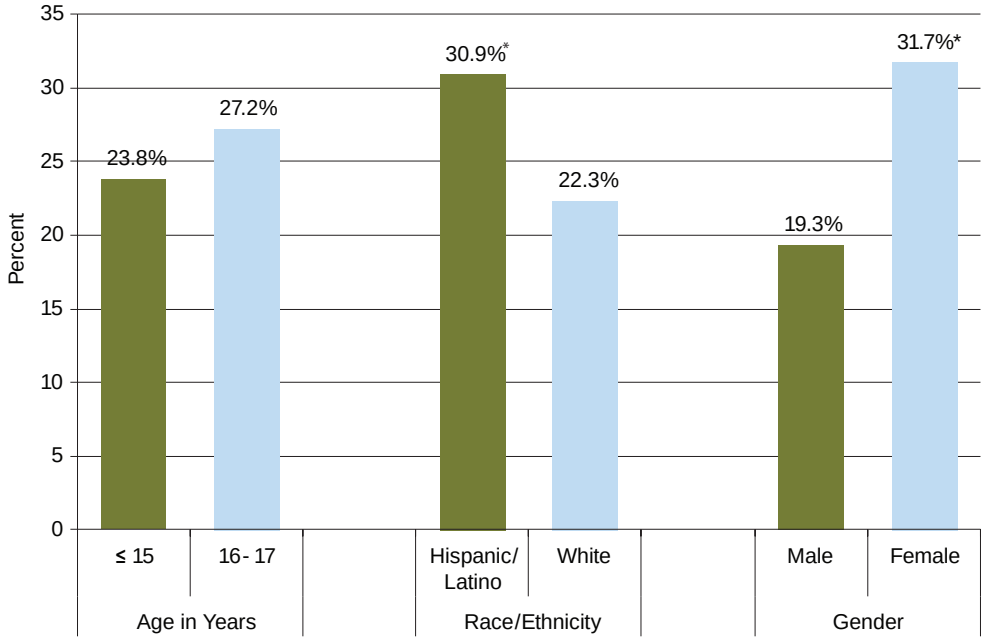
Resulting from a combination of environmental, developmental, and hormonal effects,[6] disparities in risk behavior can appear when describing data by age, race/ethnicity, and gender. In 2009, Hispanic youth and males wore seatbelts less often than youth of White/Non-Hispanic origin and females (Figure 3).[7] During the same year, 30.9 percent of Hispanic/Latino high school students and 31.7 percent of female youth reported stopping their usual activities due to feelings of sadness or hopelessness (Figure 4).[7]

Figure 3. Percentage of high school students that rarely/never wore a seatbelt while riding in a car driven by someone else, by age, race/ethnicity, and gender, Colorado residents, 2009.[7]



* Percentage is statistically significantly higher.

Figure 4. Percentage of high school students that felt so sad or hopeless for two or more weeks that they stopped doing usual activities, by age, race/ethnicity, and gender, Colorado residents, 2009.[7]



* Percentage is statistically significantly higher.

Unintentional injuries suffered by children and youth vary by age, environment, and gender of children and youth, among geographies and community systems.[5,6] Understanding risk and protective factors related to injury can help parents, children and youth, and systems prevent unintentional injury.

Creating environments that minimize hazard protect children and youth who take developmentally-appropriate risks.[6] Wearing recommended safety gear—like bicycle helmets—utilizing bike lanes, building safe spaces for sporting and walking, and parental/adult monitoring, among other protective measures, reduce accidental injury.[5,6]

Motor Vehicle Safety Risk and Protective Factors

Motor vehicle injuries account for nearly one of every ten injury hospitalization to children ages 1-9, and two of every ten for youth ages 10-24.[4] In 2012, 22 percent of Colorado children ages 1-14 did not use age-appropriate restraints[8] and in 2011 over 1,000 children and youth ages 0-14 were seriously injured from motor vehicle crashes, as reported by the officer at the time of crash.[9] In 2011 alone, 191 injury hospitalizations of 1-14 year-olds resulted from motor vehicle injuries.[4] Seatbelt and Graduated Driver Licensing laws, and alcohol age limits are among current regulations that prevent unintended injury.

Suicide Attempt Risk and Protective Factors

Suicide attempt was among the top two leading causes of injury hospitalization and is the top leading cause of death among youth ages 15-24 in 2011.[1,4] In 2011, 22 percent of Colorado high school students reported feeling so sad or hopeless almost every day for two or more consecutive weeks that they stopped their usual activities, and 15 percent reported seriously considering attempting suicide in the past year.[7] In the same year, 17 percent of Colorado middle school students reported *ever* seriously thinking about killing themselves.[7] Depression, gender, adverse childhood or family experiences, access to lethal means, behaviors considered "high-risk"—such as smoking, drinking, and fighting—and absence of school connectedness are associated with suicide ideation, attempt, or death.[10] Positive community environment and support, family and peer connectedness, school connectedness, and positive relationships can help youth build resiliency.[10] In 2011, Colorado high school students who participated in extra-curricular activities, a measure of school connectedness, were significantly less likely to have seriously considered suicide than students who did not participate in extra-curricular activities (13.3 percent compared to 17.7 percent).[11]

Child Maltreatment Risk and Protective Factors

Assault of children and youth includes child maltreatment (abuse and neglect), teen dating violence, interpersonal violence, and legal intervention. Child maltreatment is the leading cause of all injury deaths for children ages 1-4 and the second leading cause of all injury deaths for infants.[3] According to the Colorado Child Fatality Prevention System (CFPS), child maltreatment caused or contributed to 51 deaths of Colorado residents under age 18 in 2011. Sixty-nine percent of these children were under five years old, 62.8 percent were male, and 80.4 percent lived in urban counties.[3] In 2011, 57.1 percent of the child maltreatment perpetrators were the biological parent of the child and another 16.1 percent were the biological mother's boyfriend. Risk factors for perpetrators of child maltreatment included known criminal histories (35.7 percent), known history of substance abuse (33.9 percent), and known history as a domestic violence perpetrator (23.2 percent).[3]

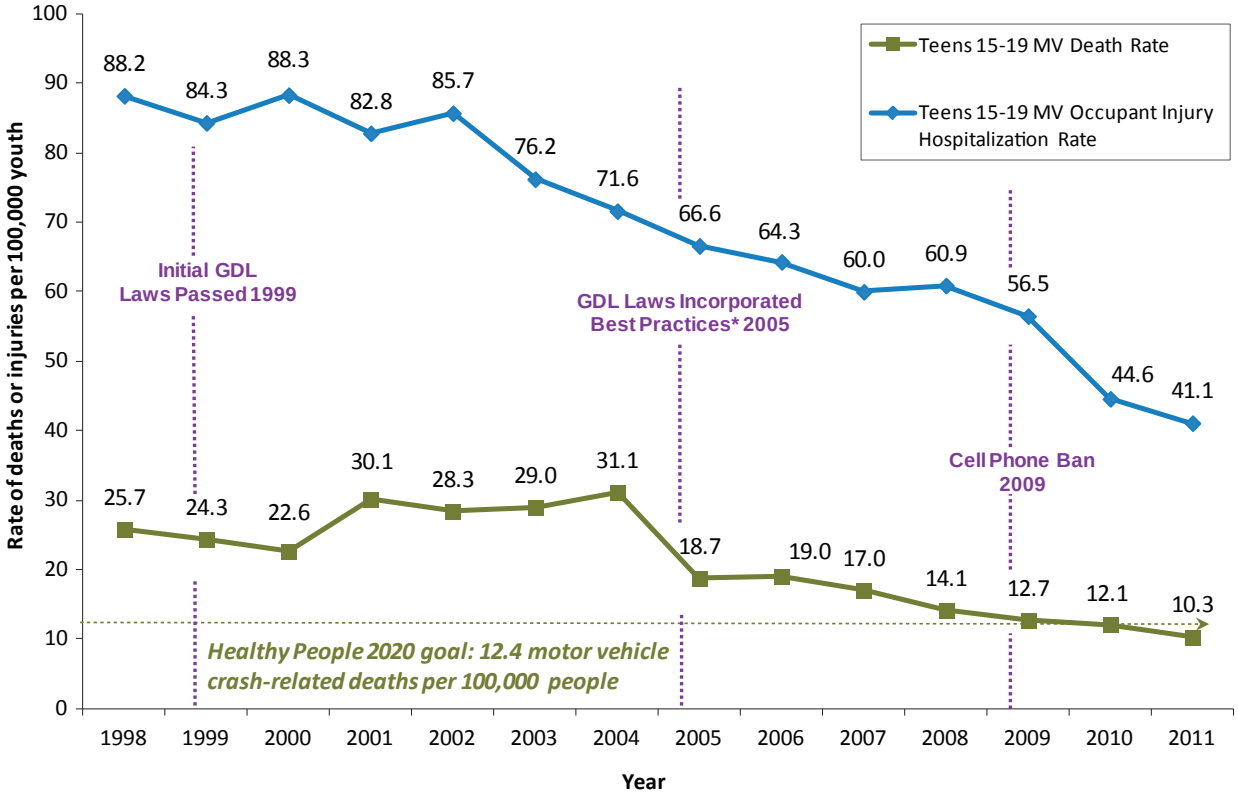
Spotlight on Colorado's Graduated Driver Licensing Laws

Graduated Driver Licensing (GDL) laws reduce motor vehicle injuries, crashes, and deaths by limiting driving distractions and supporting young drivers. GDL laws remove a variety of distractions, including peer passengers, and create driving environments in which parents or adults assist learning drivers. The laws reduce exposure to external risks, such as those occurring late at night, and "phase in" risk as drivers gain experience.[6,12]

In 2011, motor vehicle accidents were the leading cause of unintentional injury hospitalization for youth ages 15-19,[4] and more than three-fourths of the fatal crashes involving youth ages 16-19 were caused by 16-19 year-old drivers.[13] In order to prevent motor vehicle death and injury, Colorado enacted a GDL law in 1999 which was strengthened in 2005 to include passenger restriction and extended curfew best practices.[12]

In addition to restrictions required by the GDL law, a 2009 law banned youth under 18 years from using cell phones while driving.[12] As a result of the legislation, as well as public health programs and other efforts, the motor vehicle injury hospitalization rate per 100,000 15-19 year-old youth decreased from 88.2 in 1998 to 41.1 in 2011.[4] Similarly, motor vehicle deaths per 100,000 youth ages 15-19 decreased from 25.7 in 1998 to 10.3 in 2011.[1]

Figure 5. Colorado youth motor vehicle death and injury hospitalization rates by year, 15-19 year-olds, Colorado residents, 1998-2011. [1,4,12,14]



* Best practices include passenger restrictions and extended curfews.[12]
Note: The Healthy People 2020 goal includes crash deaths of people of all ages.[14]

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Colorado Department of Public Health and Environment

Maternal and Child Health Issue Brief

June 2014 № 4

Obesity in Children and Youth in Colorado

Why is obesity in children and youth an issue?

In Colorado, the prevalence of obese children ages 6-14 years is 14.0 percent (2012).[1] Among high school youth the prevalence is 7.3 percent (2011).[2] Nationally, 15.7 percent of children ages 10-17 years are obese[3] and 13.0 percent of high school youth are obese.[2]

The rate of childhood obesity has tripled in the last generation.[4] The current generation of children may be the first to "live sicker and die younger" than older generations because of the serious health complications of obesity.[5] Obese children have an increased risk of asthma, sleep apnea, fatty liver disease, gallstones, orthopedic and joint problems, abnormal glucose tolerance, insulin resistance, type 2 diabetes, high blood pressure, high cholesterol, and cardiovascular disease. Obesity is also associated with psychosocial problems such as low self-esteem, social exclusion, discrimination, depression, and anxiety.[4,5]

Overweight or obese children and youth are more likely to become overweight or obese teenagers. A recent study showed that a child who is overweight at age five years is four times more likely than a child of normal weight to become obese by the age of 14 years.[6] Obesity is associated with serious health complications such as heart disease, diabetes, and some cancers.[4] Although Colorado children and youth currently meet the Healthy People 2020 goals, the prevalence of obesity among children is cause for concern.

Definitions

Body Mass Index (BMI) is used to determine overweight and obesity in children and youth. BMI is calculated by comparing weight and height against age– and gender-specific ranges.

- Children and youth are considered **overweight** if their BMI falls between the 85th and 94th percentile for their age and gender.
- Children and youth are considered **obese** if their BMI is at or above the 95th percentile.

Figure 1. Prevalence of overweight and obesity in children ages 6-14 years, Colorado, 2005-2012.

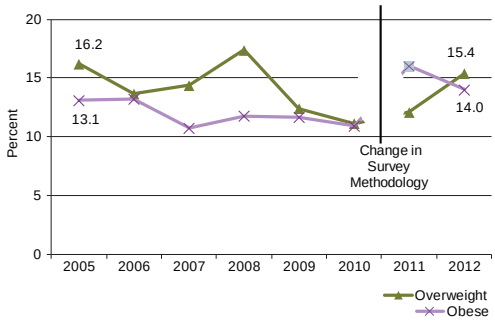
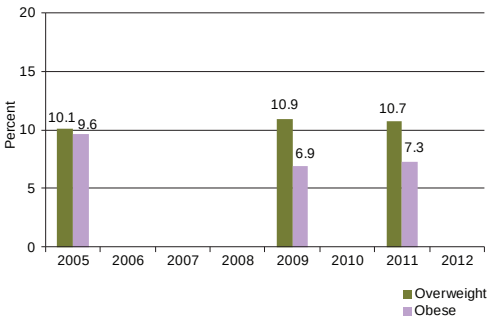


Figure 2. Prevalence of overweight and obesity in high school youth, Colorado, 2005-2011.

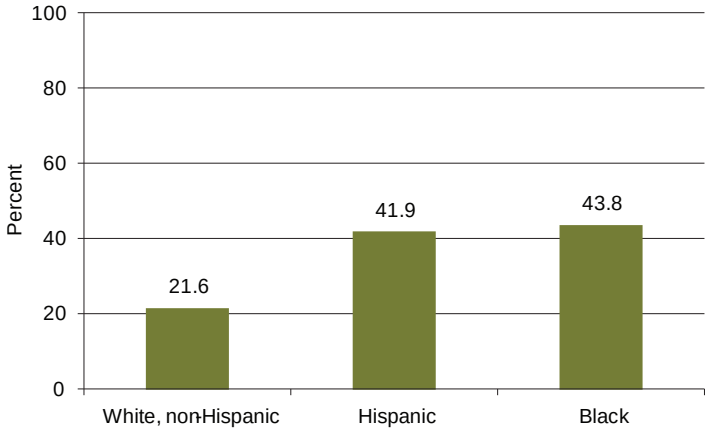


Healthy People 2020 Goals[7]

Reduce the proportion of children ages 6-11 years who are obese to 15.7 percent.
Reduce the proportion of children ages 12-19 years who are obese to 16.1 percent.

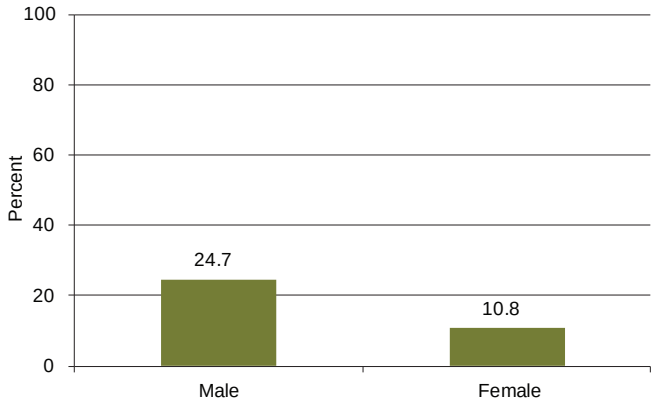
Social and economic health disparities in Colorado

Figure 3. Prevalence of overweight and obesity in Colorado children ages 6-14 by race/ethnicity.



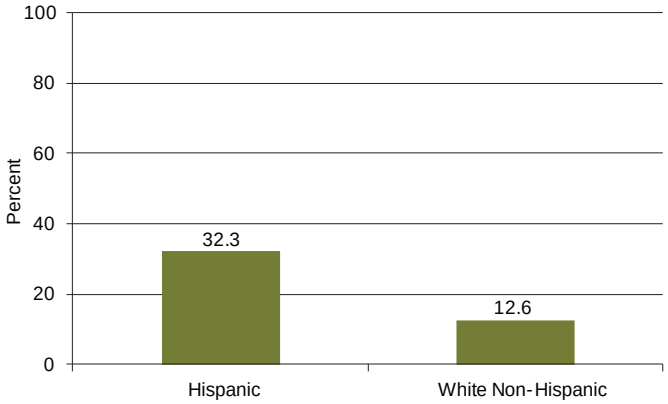
More than two in five Hispanic and Black children ages 6-14 years are overweight or obese. One in five White, non-Hispanic children ages 6-14 years is overweight or obese, this is statistically significant compared to the estimates for Hispanics and Blacks (2011-2012).[8]

Figure 4. Prevalence of overweight and obesity in Colorado youth by sex.



One in four boys in high school is overweight or obese. Among girls in high school, one in ten is overweight or obese. The difference between the estimate for males is statistically significant compared to the estimate for females (2011).[9]

Figure 5. Prevalence of overweight and obesity in Colorado youth by race/ethnicity.



One in three Hispanic high school students in Colorado is overweight or obese, while one in eight White Non-Hispanics is overweight or obese. The difference between the estimate for Hispanics is statistically significant compared to the estimate for White Non-Hispanics (2011).[9]

Who is more likely to be overweight or obese?

- **Males in high school are more likely to be overweight or obese than females in high school, but boys and girls ages 6-14 years are equally likely to be overweight or obese.**
- **Hispanic youth in high school are more likely to be overweight or obese than White Non-Hispanic youth in high school, but children ages 6-14 years of different race/ethnicities are equally likely to be overweight or obese (not shown).[8]**
- **Children ages 6-14 years in families with annual household incomes under $25,000 (41.1 percent) (not shown).[8]**

What are the causes of obesity in children and youth?

The Physical Activity Guidelines for Americans issued by the U.S. Department of Health and Human Services recommend that children and adolescents, ages 6-17 years, have 60 minutes or more of physical activity each day. In recent years, national data show that children and youth have lower levels of physical activity, both at home and at school. In Colorado, 53.7 percent of 5-11 year olds, 40.9 percent of 12-14 year olds, and 53.1 percent of high school students met recommended levels of physical activity for their age group.[10,11] These data suggest nearly half of Colorado's children are not meeting the daily recommended amount of physical activity needed to prevent obesity.

In addition, the majority of children and youth do not consume the recommended amount of fruits and vegetables. In Colorado, 8.6 percent of 5-11 year olds, 7.7 percent of 12-14 year olds and 15.5 percent of high school students met fruit and vegetable consumption recommendations.[10,11] The availability and consumption of high-calorie convenience foods and sugar-sweetened beverages, more meals eaten away from home, and greater portion sizes all may contribute to childhood obesity.

Obesity is influenced by a complex interaction of environmental, behavioral and genetic factors, as well as demographic factors like socioeconomic status. These factors contribute to health disparities. For example, among low-income children ages 2-14 years in Colorado, the prevalence of obesity is 27.9 percent, significantly higher than the prevalence of obesity among children from higher income families (11.0 percent).[12] Low-income families experience a disproportionate number of barriers including a lack of safe places for physical activity and inconsistent access to healthful food choices, especially fruits and vegetables.

In addition, children and youth spend nearly half their waking hours at school. In 2012, 42.0 percent of Colorado students qualified for free and reduced meals, suggesting that many children are consuming the majority of their daily calories at school.[13] Schools play an important role in offering nutritious meals and physical activity classes as a way to prevent obesity.

Colorado Youth Are Doing It Right!

- **Eight in ten high school students watch less than three hours of TV per day (CO = 79 percent vs. U.S. = 67 percent)**
- **Nine in ten high school students drink soda/pop less than three times per day (CO = 93 percent vs. U.S. = 89 percent)}**

Spotlight on Obesity in Families

Obesity rates in Colorado are lower than the national average; however, the state is experiencing an upward trend among children and youth. Findings from a 2008 Institute of Medicine Report in *Preventing Childhood Obesity: Health in the Balance* suggest that the stress and challenge of daily living significantly influence family healthy eating and physical activity behaviors.

A 2007 analysis linking Colorado adult and child obesity and contributing behaviors found a correlation between parental and child behavior. If a Colorado parent is obese, a child is 2.3 times more likely to be overweight or obese than if the parent is not obese.[14] Interestingly, this association does not hold if the parent is overweight and not obese. As for nutrition, children are 3.1 times more likely to eat fruits or vegetables five times per day if their parents do so and two times more likely to eat fruits and vegetables five times per day if the family eats meals together at least once per day.[14] Similar results are found with physical activity where a child is nearly two times more likely to be on a sports team if the parent meets the recommended guidelines for physical activity.[14] Additional results found that children of obese parents are more likely to consume sugary beverages and fast food.[14] Providing good nutrition at home and at school and ensuring children and youth receive the recommended physical activity can reduce obesity among Colorado children and youth.

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Maternal and Child Health
Issue Brief

November 2014 №7

Mental Health among Children and Youth in Colorado

Why is mental health of children and youth a concern?

Mental health is important to overall health and well being; it can be affected by chronic disorders that interfere with growth and development. If disorders are not diagnosed or treated early, children and youth can develop problems at home, in school, or with forming friendships. Mental disorders can persist throughout the lifespan, continuing through childhood and adolescence into adulthood.[1]

Symptoms of mental disorders usually start in early childhood, but diagnoses sometimes do not occur until the teenage years. A history of depression or other mental disorder along with other factors can lead to suicide, a serious public health issue among youth.[1] Suicide was the leading cause of death for young people ages 15-24 in Colorado in 2013.[2]

- **An estimated one in five children living in the United States experiences a mental disorder in a given year and an estimated $247 billion is spent annually on childhood mental disorders.[1]**
- **In 2012, Colorado had the 10th highest teen (ages 15-19 years) suicide rate when compared to all other states.[3]**

What is the prevalence of mental disorders among children?

The most prevalent mental disorder among Colorado children ages 4-14 years is current anxiety (7.0 percent) followed by current attention deficit disorder/attention deficit hyperactivity disorder (ADD/ADHD) (6.4 percent). Among Colorado children of the same age, 3.7 percent have current behavioral or conduct problems, and 2.7 percent have current depression (Table 1).

Table 1. Percentage of children ages 4-14 years with specific mental disorders, Colorado, 2013.[4]

Mental Disorders	Prevalence (%)
Current anxiety	7.0
Current ADD/ADHD*	6.4
Current behavioral or conduct problems^	3.7
Current depression	2.7

*ADD/ADHD: Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder
^e.g., oppositional defiant disorder or conduct disorder

DEFINITIONS

Anxiety: characterized by persistent, excessive, and unrealistic worry about everyday things.[5]

Attention Deficit Hyperactivity Disorder: characterized by developmentally inappropriate levels of inattention, hyperactivity, impulsivity, or a combination of these, which impair functioning in multiple settings.[6]

Oppositional Defiant Disorder: characterized by a pattern of developmentally inappropriate, negative, aggressive, and defiant behavior that occurs for 6 months or more.[6]

Conduct Disorder: characterized by consistent ignorance of the basic rights of others and violation of social norms and rules.[6]

Depression: characterized by feelings of sadness or hopelessness, a lack of motivation, or a disinterest in life in general.[5]

What is the prevalence of depression and suicide intention among youth?

Among Colorado's high school youth, one in four (24.3 percent) felt so sad or hopeless almost every day for two weeks or more in a row that they stopped doing some usual activities. One in seven (14.5 percent) high school youth seriously considered attempting suicide in the past year, 12.0 percent made a plan about how they would attempt suicide, 6.6 percent actually attempted suicide one or more times, and 2.3 percent reported that their suicide attempt resulted in an injury, poisoning, or overdose that needed medical treatment (Table 2).[7]

Table 2. Percentage of high school youth reporting depression and suicide intention, Colorado, 2013.[7]

Depression and Suicide	Prevalence (%)
Felt sad or hopeless almost every day for two weeks or more in a row that they stopped doing some usual activities during the past 12 months	24.3
Seriously considered attempting suicide during the past 12 months	14.5
Made a plan about how they would attempt suicide during the past 12 months	12.0
Actually attempted suicide one or more times during the past 12 months	6.6
Made a suicide attempt during the past 12 months that resulted in an injury, poisoning, or overdose that had to be treated by a doctor or nurse	2.3

In 2013, the hospitalization rate for suicide injury among youth ages 15-19 years was 108.2 per 100,000 teens.[8] In the same year, the suicide death rate was 13.7 per 100,000 teens (Table 3).[2] For more information on teen suicide, see the Spotlight on Youth Suicide in Colorado on page 6.

Table 3. Youth (ages 15-19) suicide injury hospitalization rate and suicide death rate, Colorado, 2013. [2,8]

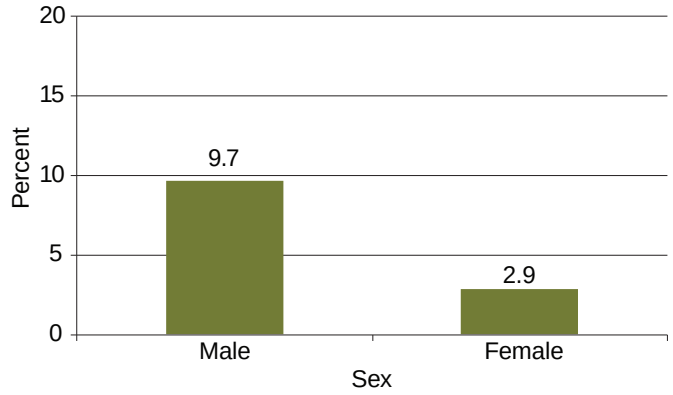
Teen Suicide	Rate (per 100,000)
Suicide injury hospitalization rate (per 100,000 teens)	108.2
Suicide death rate (per 100,000 teens)	13.7

Colorado's Goal[9]

By 2016, reduce to 5.0 percent the proportion of youth (high school students) who report attempting suicide in the previous 12 months.

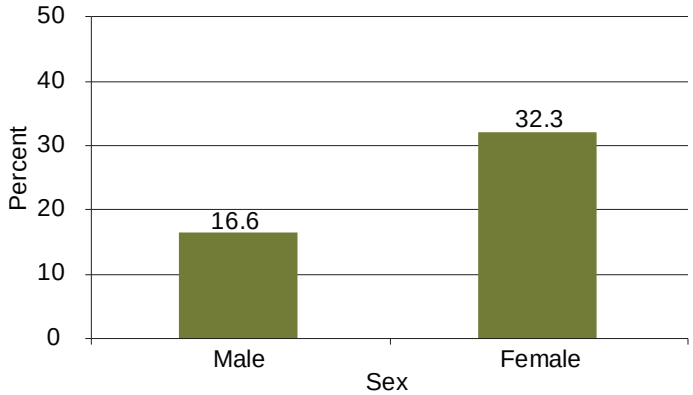
Social disparities

Figure 1. Percentage of children ages 4-14 years with current attention deficit disorder/attention deficit hyperactivity disorder by sex, Colorado, 2013.[4]



In Colorado, one in ten (9.7 percent) males ages 4-14 years was diagnosed with attention deficit disorder/attention deficit hyperactivity disorder. This is significantly different from the 2.9 percent of females diagnosed with attention deficit disorder/attention deficit hyperactivity disorder.[4]

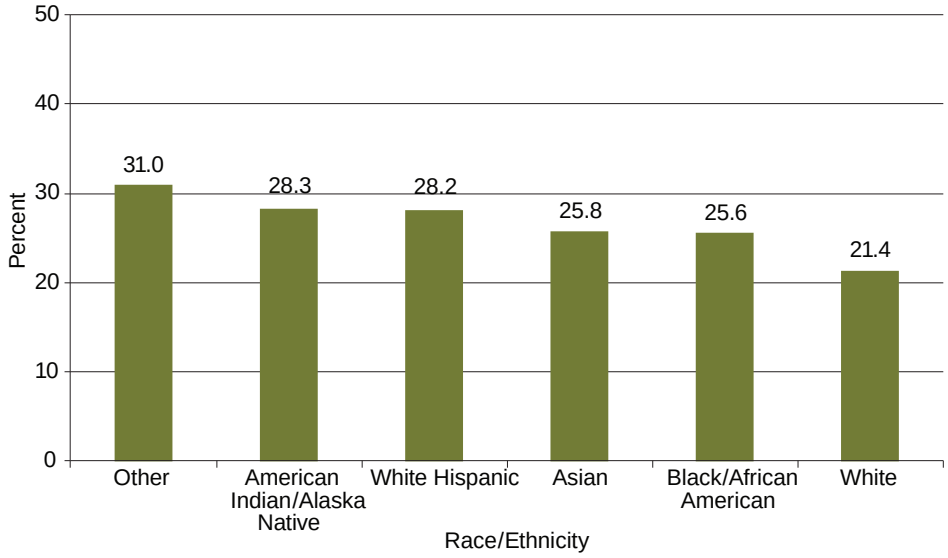
Figure 2. Percentage of high school youth who felt so sad or hopeless for two weeks or more in a row that they stopped doing some usual activities by sex, Colorado, 2013.[7]



One in three (32.3 percent) females in high school felt so sad or hopeless for two weeks or more in a row that they stopped doing some usual activities. This is nearly double the 16.6 percent of males in high school, and significantly different.[7]

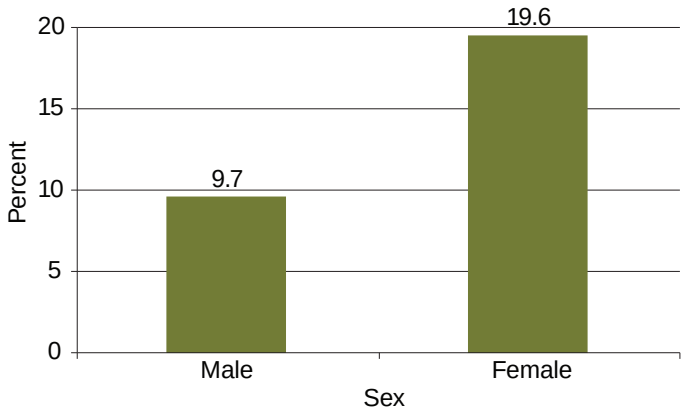
A difference by sex for current attention deficit disorder/attention deficit hyperactivity disorder was the only disparity revealed by the Child Health Survey. Differences by sex, race/ethnicity, or poverty level were not apparent for the other mental disorders shown in Table 1.

Figure 3. Percentage of high school youth who felt so sad or hopeless for two weeks or more in a row that they stopped doing some usual activities by race/ethnicity, Colorado, 2013.[7]



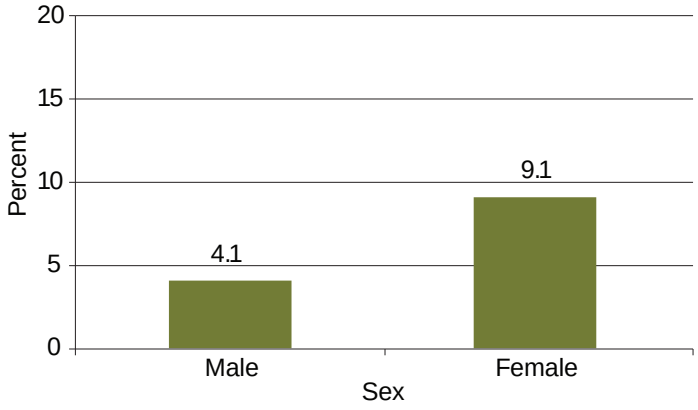
Three in ten youth of other race/ethnicities (31.0 percent) felt so sad or hopeless for two weeks or more in a row that they stopped doing some usual activities compared to one in five (21.4 percent) White high school youth, a significant difference.The prevalence among American Indian/Alaska Native youth (28.3 percent), White Hispanic youth (28.2 percent), and Asian youth (25.8 percent) was also significantly different from White youth.[7]

Figure 4. Percentage of high school youth who seriously considered attempting suicide by sex, Colorado, 2013.[7]



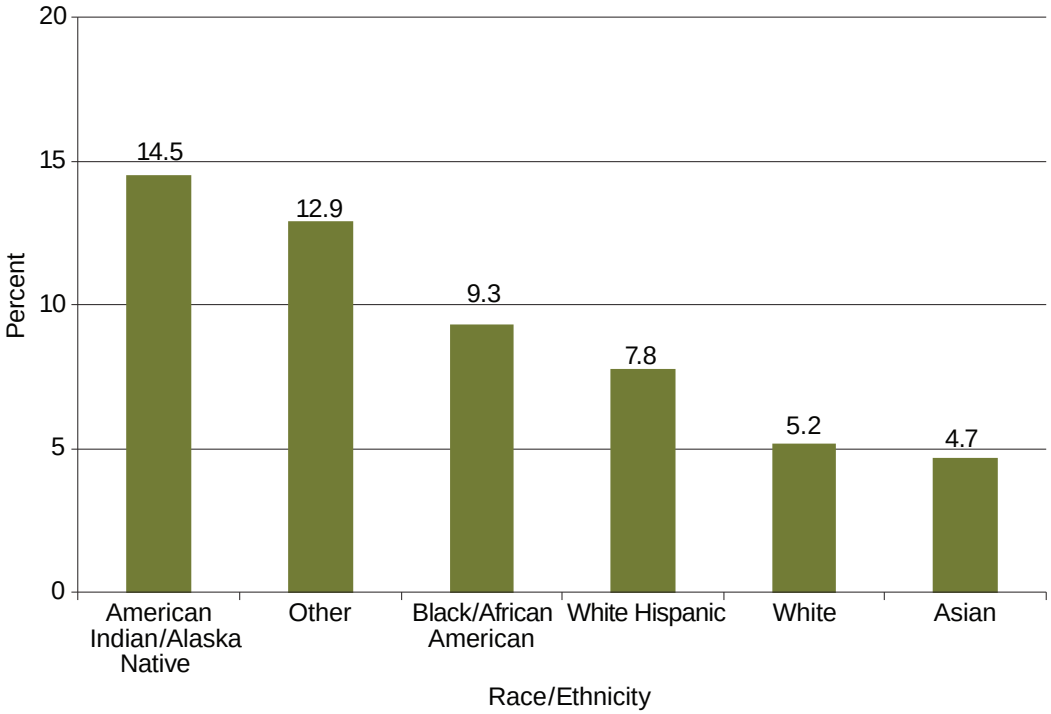
One in five (19.6 percent) females in high school seriously considered attempting suicide; this is significantly different from the 9.7 percent of males in high school.[7]

Figure 5. Percentage of high school youth who actually attempted suicide one or more times by sex, Colorado, 2013.[7]



Almost one in ten (9.1 percent) females in high school actually attempted suicide one or more times; this is double and significantly different from the 4.1 percent of males in high school.[7]

Figure 6. Percentage of high school youth who actually attempted suicide one or more times by race/ethnicity, Colorado, 2013.[7]

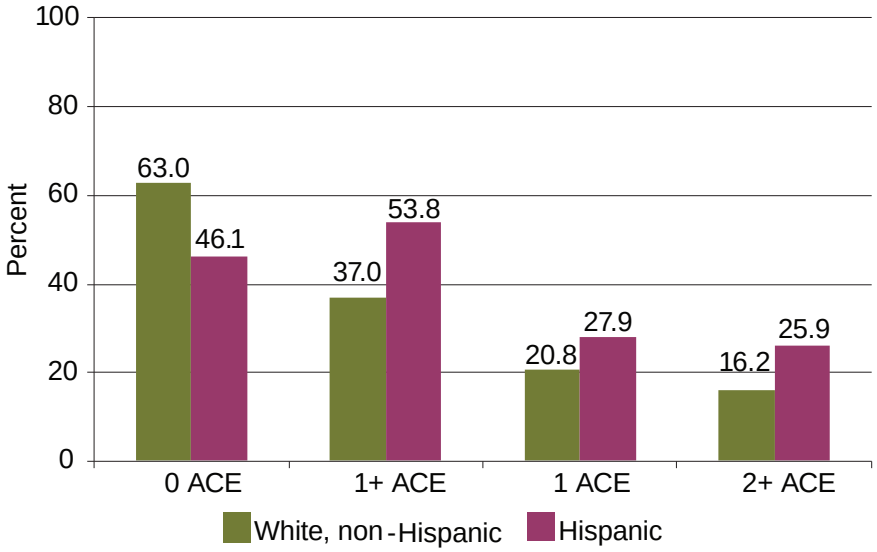


One in seven (14.5 percent) American Indian/Alaska Native youth attempted suicide at least once compared to one in twenty (5.2 percent) White high school youth, a significant difference. The prevalence among youth of other race/ethnicities (12.9 percent), Black/African American youth (9.3 percent), and White Hispanic youth (7.8 percent), was also significantly different from White youth.[7]

What contributes to mental disorders among children and youth?

Family history and biological factors affect the development of mental disorders.[10] Research also indicates that children raised in stressful environments are more likely to develop stress response systems that negatively impact development.[11] Toxic stress is repeated intense stress that is not buffered through emotional support,[11] and adverse childhood experiences (ACEs) can result in toxic stress. ACEs include household substance abuse, violence, and parental divorce.[12] ACEs and toxic stress may be more likely to occur when families experience trauma and face social, economic, and structural inequalities.[11,13]

Figure 7. Prevalence of adverse childhood experiences (ACEs) among children and youth ages 0-17 by race/ethnicity, Colorado, 2011-2012.[12]



Four in ten (43.7 percent) Colorado children and youth ages 0-17 experienced at least one ACE; 23.8 percent experienced one ACE and 19.9 percent experienced two or more ACEs (not shown). One in four Hispanic children and youth (25.9 percent) experienced 2 or more ACEs compared to 16.2 percent of White, non-Hispanic children and youth; a significant difference. Hispanic children and youth are more likely to experience an ACE, putting them at higher risk of developing mental and physical disorders.[11]

Among children living in households at 0-99% FPL, 35.0 percent experienced two or more ACEs, significantly different from the 8.7 percent of children living in households at 400% of the federal poverty level (FPL) or higher.

Among Colorado children and youth ages 0-17 who had one or more emotional, behavioral or developmental issues, over half (57.6 percent) experienced two or more adverse childhood experiences. Among children who did not have emotional, behavioral, or developmental issues, one in four (23.9 percent) had experienced two or more ACEs;[12] this difference is significant. Adverse childhood experiences are associated with emotional issues in adulthood such as anger, depression, or anxiety.[13]

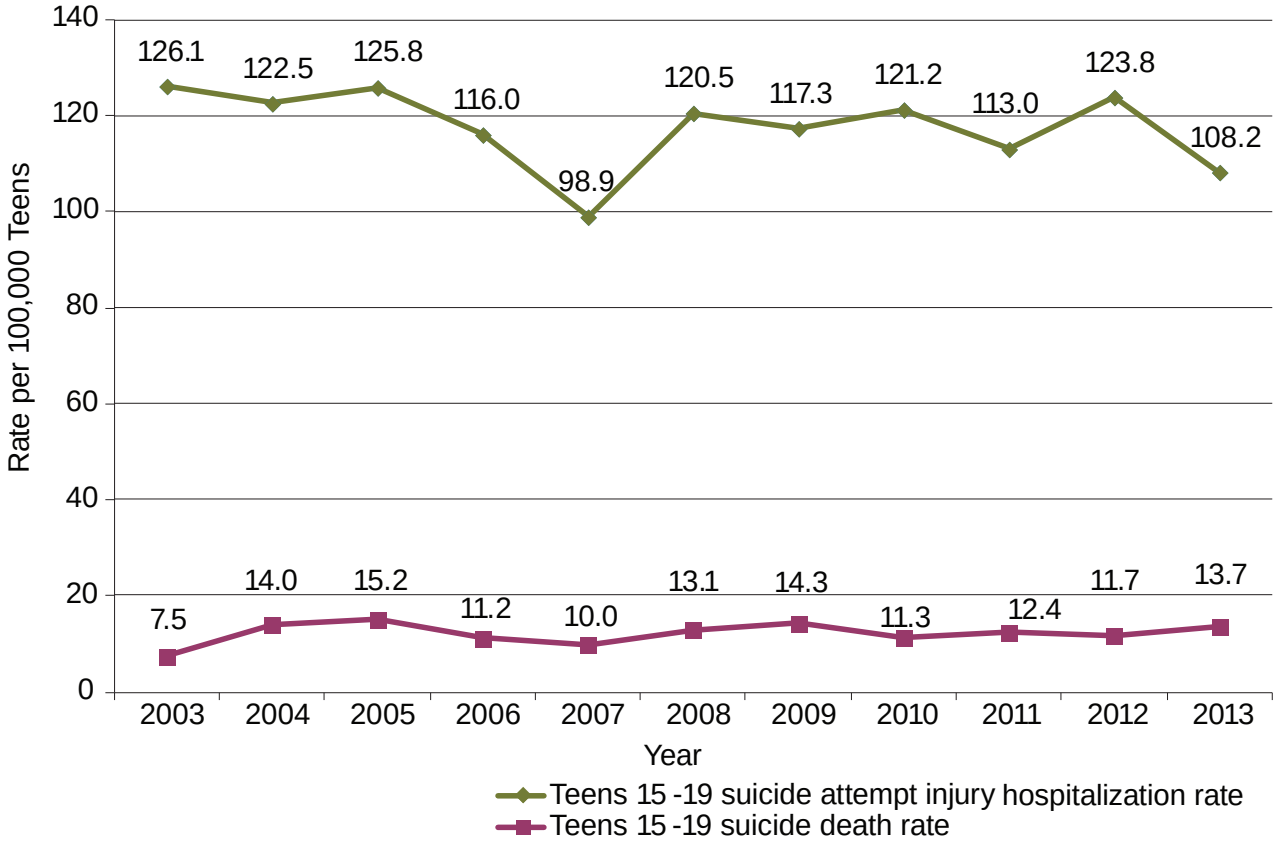
What can prevent mental disorders among children and youth?

Childhood and adolescence are critical periods of emotional, physical, and mental growth and development, making children and youth vulnerable to mental disorders but also capable of building resiliency.[11] Individual, family, community and social factors can support children and youth as they develop and protect them from developing poor mental health. Positive influences, such as connectedness, support, and self-efficacy can lessen the effects of stress and trauma, and medication and counseling can be effective treatments for mental health disorders.[10] Data on protective factors such as connectedness and support are quite new. In Colorado, 68.0 percent of high school youth participated in extracurricular activities. Almost half (44.9 percent) of high school youth participated in organized community services as a non-paid volunteer one or more times during the past month. Among high school youth, 81.0 percent reported that they have someone to go to for help with a serious problem.[7]

Spotlight on youth suicide in Colorado.

Adverse childhood experiences, depression, gender, access to lethal means, behaviors considered "high-risk"—such as smoking, drinking, and fighting—and absence of school connectedness are associated with suicide ideation, attempt, or death.[10,14,15] Resiliency can protect youth from developing mental distress that puts them at higher risk for suicide ideation.[16] Positive peer, parent, or mentoring relationships can build resiliency and provide the emotional support youth need to cope with developmental and life challenges.[16]

Figure 8. Youth (ages 15-19) suicide injury hospitalization rates and suicide death rates by year, Colorado, 2003-2013.[2, 8]



Between 2003 and 2013, the suicide attempt injury hospitalization rate among youth ages 15-19 years decreased, but not significantly, and the suicide death rate did not change significantly. The Colorado teen suicide rate in 2013 (13.7 per 100,000) did not meet the Healthy People 2020 target of 10.2 per 100,000.[17]

In 2013, the suicide attempt injury hospitalization rate differed significantly between females and males ages 15-19 years (147.3 per 100,000 and 71.3 per 100,000, respectively). Although the hospitalization rate was higher among females, the death rate was higher among males. In 2013, the suicide death rate differed significantly between males and females ages 15-19 years (17.7 per 100,000 and 9.4 per 100,000, respectively).

Data on circumstances and methods for suicides among adolescents is available from the Colorado Violent Death Reporting System. Data from 2008-2011 show that 50.5 percent of suicides among adolescents ages 10-19 involved a current depressed mood and 40.4 percent disclosed intent to commit suicide. Among adolescents, hanging (50.7 percent) was the most common method for suicide followed by firearms (36.3 percent), poisoning (7.9 percent) and other (5.2 percent).[18]

Note: Access to mental health screening, referral, and treatment is difficult to measure in Colorado. Some data on access and treatment for the medically indigent population are available from the Office of Behavioral Health at the Colorado Department of Human Services. Data on access and treatment for Medicaid recipients is available from the Colorado Department of Health Care Policy and Financing.

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Colorado Department of Public Health and Environment

Maternal and Child Health
Issue Brief

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Substance Abuse among Youth in Colorado

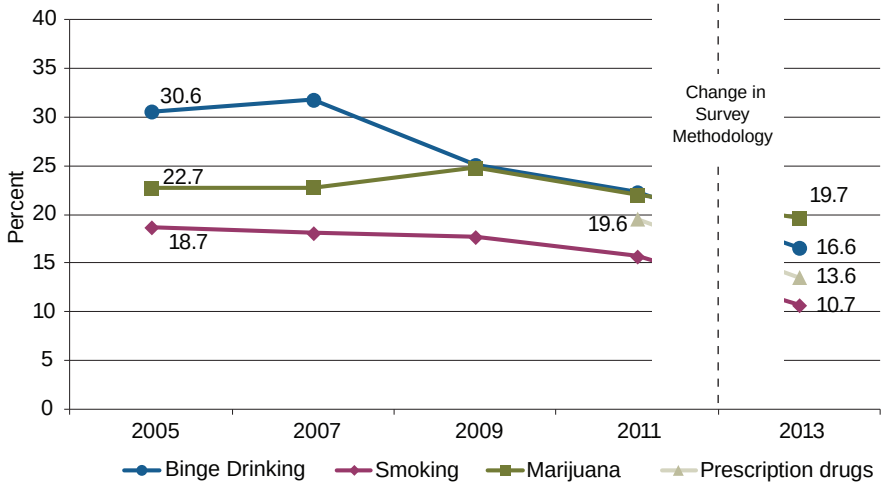
Why is substance abuse an issue among youth?

Substance abuse among youth is defined as using alcohol, tobacco, or marijuana, or misusing prescription drugs. Abuse begins to appear among middle school (grades 6-8) students and becomes common among high school (grades 9-12) students.[1] The definition of youth in this brief refers to ages 11 through 18 years.

Substance abuse among youth can lead to drug dependence, addiction, and substance use disorders which often have detrimental effects on health. Each year, underage drinking leads to the death of some 5,000 youth under the age of 21 nationwide.[2] The health effects from smoking have been widely publicized and include cancer, cardiovascular disease, and chronic obstructive pulmonary disease among others. While the health effects of marijuana use are still being studied, current evidence shows that marijuana use among youth is associated with impaired memory and learning; future high-risk use of alcohol, tobacco, and other drugs; and the development of psychotic disorders in adulthood.[3] Prescription drug abuse can also have damaging effects on the brain, including addiction, and can lead to death as a result of overdose.[4]

In addition to direct health effects, substance abuse is associated with other potentially harmful behaviors such as risky sexual activity, reckless driving, and delinquency.[5] Youth substance abuse can have social and educational consequences, leading to poor performance in school, difficulties with social and professional relationships and diminished career aspirations and achievement. Therefore, preventing and reducing substance abuse among youth is key to the wellbeing and success of the current generation as well as future generations.

Figure 1. Substance abuse among Colorado high school youth, 2005-2011[6] and 2013.[1]



Note: Binge drinking is defined as having five or more drinks of alcohol in a row, within a couple of hours, on one or more of the past 30 days. Cigarette smoking and marijuana use is defined as use one or more times during the past 30 days. Data related to marijuana reflect illegal use through 2011 and underage (illegal) use of marijuana in 2013. Prescription drug abuse is reported use of a prescription drug (e.g., OxyContin, Percocet, Vicodin, Codeine, Adderall, Ritalin, or Xanax) ever without a doctor's prescription.

What is the prevalence of substance abuse among youth?

In 2013, the Healthy Kids Colorado Survey revealed that an estimated 16.6 percent of Colorado high school youth reported binge drinking, 10.7 percent reported cigarette smoking, and 19.7 percent reported marijuana use in the 30 days prior to the survey (Figure 1).[1] As many as 13.6 percent abused prescription drugs at some point in their lives. Data for 2005 to 2011 show a downward trend in the prevalence of substance abuse among youth, but changes and improvements to the 2013 survey methodology prohibit comparison with data from earlier years.

Of note, the 2013 prevalence of Colorado high school youth ever having used other illicit drugs ranged between 2.7 percent for heroin and 7.3 percent for inhalants. Methamphetamine use was reported as 3.2 percent; cocaine, 5.8 percent; and Ecstasy, 6.7 percent.[1]

Healthy People 2020 Goals[7]

By 2020, reduce the proportion of adolescents in the past month who were:

- smoking cigarettes to 16.0 percent
- binge drinking to 8.6 percent
- using marijuana to 6.0 percent

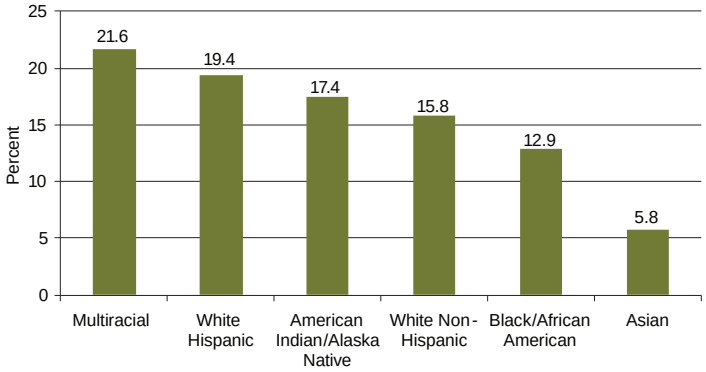
Colorado Goal[8]

By 2015, reduce the proportion of people age 12 and older in the past month who were:

- misusing prescription drugs to 5.5 percent

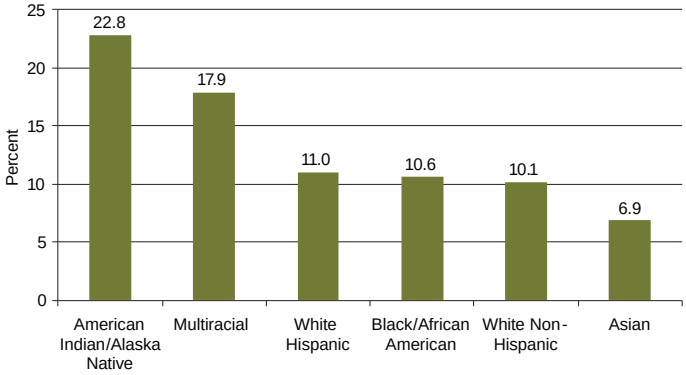
Social health disparities

Figure 2. Prevalence of binge drinking among Colorado high school youth by race/ethnicity, 2013[1]



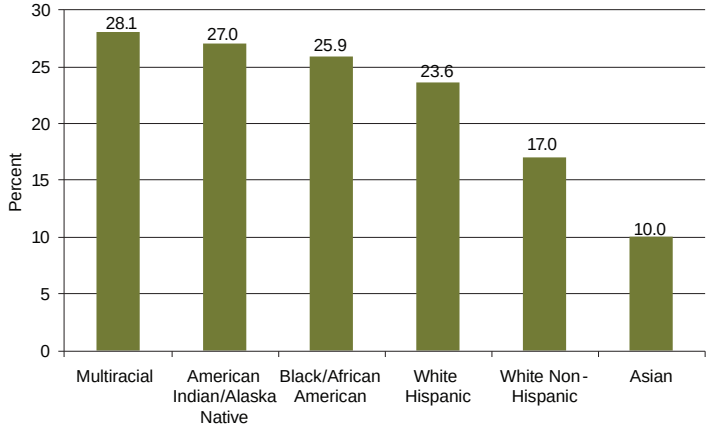
One in 5 multiracial (21.6 percent) and White Hispanic (19.4 percent) high school students reported binge drinking (five or more drinks within a couple of hours) in the past month, significantly different from White non-Hispanic students (15.8 percent). There was also a significant difference between Asian students (5.8 percent) and White non-Hispanic students. The prevalence of binge drinking among Black/African American students was not significantly different from White non-Hispanic students.

Figure 3. Prevalence of cigarette smoking among Colorado high school youth by race/ethnicity, 2013.[1]



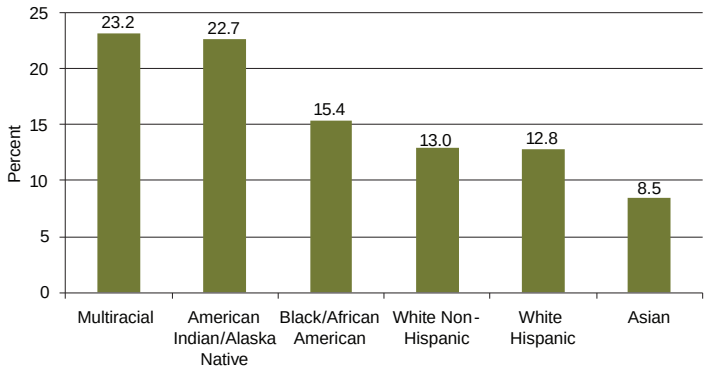
In 2013, approximately 1 in 5 (22.8 percent) American Indian/Alaska Native and 1 in 6 (17.9 percent) multiracial high school students was a current (past month) smoker, significantly different from White non-Hispanic students (10.1 percent). The prevalence of smoking among Asian high school students (6.9 percent) was significantly different from White non-Hispanic students, while the prevalence of smoking among Black/African American students was similar to White non-Hispanic students.

Figure 4. Prevalence of marijuana use among Colorado high school youth by race/ethnicity, 2013.[1]



The prevalence of marijuana use in the last month among multiracial (28.1 percent), American Indian/Alaska Native (27.0 percent), Black/African American (25.9 percent), and White Hispanic (23.6 percent) high school students was significantly different from White non-Hispanic high school students (17.0 percent). Asian high school students had the lowest prevalence (10.0 percent) of current marijuana use, significantly different from all other racial and ethnic groups. Marijuana use was the most commonly used substance among high school students across all racial/ethnic groups.

Figure 5. Prevalence of prescription drug abuse among Colorado high school youth by race/ethnicity, 2013.[1]



The prevalence of prescription drug abuse (defined as ever having misused a prescription drug) was highest among multiracial (23.2 percent) and American Indian/Alaska Native students (22.7 percent) and lowest among Asian students (8.5 percent), similar to the pattern of other substance use across racial and ethnic groups. The differences for these groups were significant compared to White non-Hispanic students (13.0 percent), while Black/African American (15.4 percent) and White Hispanic (12.8 percent) were not different.

Who else is more likely to abuse substances?

Gay, lesbian, and bisexual (GLB) students reported significantly higher prevalences for cigarette smoking, marijuana use, binge drinking and prescription drug abuse compared to heterosexual students, with prevalence rates that were often double or triple.[1] For example, current cigarette use among GLB students was 30.8 percent in 2013 compared to 9.1 percent among heterosexual students.[1]

Male high school students reported significantly higher prevalences for cigarette smoking and marijuana use than female high school students. There were no differences between males and females for binge drinking and prescription drug abuse.[1]

Substance Abuse among Middle School Youth

The prevalences of binge drinking, cigarette smoking, and marijuana use are substantially lower among middle school youth compared to high school youth (not shown).[1] For example, the prevalence of binge drinking was 1.3 percent among White non-Hispanic middle school students compared to 15.8 percent among White non-Hispanic high school students.

Racial and ethnic patterns of use among middle school students, for the most part, were similar to patterns of use among high school students, with the highest prevalences among multiracial and American Indian/Alaska Native students.

What contributes to substance abuse among youth?

Substance abuse among youth is a complex issue with many potentially contributing factors that include an individual's biology, family and peer influence, and the social context in which use occurs.[9] Adolescence is characterized as a period of substantial growth and development, and during this stage, the changes that occur in the brain make it particularly vulnerable to the effects of addictive drugs.[10] Research shows an estimated 9.0 percent of adolescent marijuana users will become addicted.[11] Substance abuse is also associated with poor mental health,[11-13] and in Colorado 60.1 percent of high school students reported poor mental health on one or more days in the past month.[1]

Family and peer influence can contribute substantially to substance use or abuse; examples of familial risk factors include child neglect and abuse, parental marital status, substance use among family members, and family socioeconomic status.[10] Perhaps even more influential are social risk factors including deviant peer relationships, peer pressure, bullying, and gang affiliation.[10]

The social context in which substance use occurs can also influence which substances youth select to use.[9] For example, high school students may use alcohol and marijuana at parties, while they typically misuse prescription drugs alone and at home.[9] Youth perceptions about drug availability, potential risk/harm, and parental and neighbor opinion about certain substances can influence their choices to use.[14] The supply or availability of alcohol or illegal drugs also leads to increased use.[14] The majority of Colorado high school students felt it would be "sort of easy" or "very easy" to get cigarettes (60.8 percent), alcohol (58.6 percent), and marijuana (54.9 percent).[1]

How can substance abuse among youth be minimized?

Substance abuse among youth can be minimized by educating and intervening with youth, strengthening caring adult relationships and providing treatment to those who need it. The majority of students (81 percent) reported having someone to go to for help with a serious problem.[1]

A variety of factors have been shown to be protective against youth substance use. For example, national data show an inverse relationship between the perception of risk and substance use. As the percentage of adolescents perceiving a great risk of harm from binge drinking increases over time, the prevalence of binge drinking decreases, and as the perceived risk of harm from smoking marijuana decreases over time, use increases.[15]

In Colorado, a greater percentage of female high school students perceived substance users were at moderate/great risk of harming themselves compared to males in the same grades, and a greater percentage of male students reported substance use.[1] Therefore, targeted education and interventions can raise awareness of the potential harms associated with substance use during adolescence.[16] Another important component relates to family support and structure. Parent-family connectedness (feeling cared for and loved) is protective against a number of adolescent health risk behaviors including substance use.[17] The majority (78.1 percent) of Colorado high school students said they could ask their parents/guardians for help with a personal problem.[1] Lastly, providing evidence-based treatment that is tailored to the specific needs of each adolescent has been shown to be effective in treating youth addiction and dependence.[11] However, challenges remain for many adolescents seeking treatment, since national data indicate that fewer than one in 10 (9.1 percent) youth ages 12 to 17 who needed treatment at a specialty facility were able to obtain treatment in 2013.[2]

What are the implications of legalized marijuana?

Colorado decriminalized marijuana use for medicinal purposes in 2000, and in November of 2012 became one of the first two states to legalize recreational marijuana for adults age 21 and over. Carefully examining the potential impacts of recreational marijuana on the health and safety of youth is a high priority.

Colorado has stated a goal of holding steady the percentage of youth that report past 30-day use of marijuana at 2011 levels of 22 percent as measured by the Healthy Kids Colorado Survey. In order to hold the rate of youth use steady despite increased availability, Colorado is funding various state and local agencies to implement a number of strategies; three are described below.

The first strategy is to restrict youth access to marijuana products. Colorado is implementing this strategy by increasing enforcement, monitoring compliance with point-of-sale regulations, and strengthening local marijuana-related ordinances and policies to align with best practices policies learned from alcohol and tobacco prevention. Some local level policy strategies include support for local taxes to fund local prevention work, increased enforcement of marijuana laws and implementing strict marketing regulations. In addition, other strategies include passing marijuana-

free multi-unit housing ordinances for secondhand marijuana smoke exposure prevention, strengthening restricted hours of operation for stores and increasing store setbacks from schools, playgrounds and other youth-oriented locations. State and local partners are working together to educate the general public on the retail marijuana laws in Colorado and the importance of safe storage for all marijuana products. Colorado also adopted a marijuana-free schools law to restrict use of marijuana products on all school property.

The second strategy is to increase youth knowledge about marijuana and increase perceptions of risk of underage use. State and local stakeholders are working together to educate the general public about marijuana laws and the effects of marijuana on health, and educational campaigns are targeting youth with prevention messages. Stakeholders are encouraging the implementation of effective curricula that address health education standards and incorporate a shared risk and protective factor approach using a positive youth development framework.

Finally, Colorado agencies are working together to increase screening for teen use of marijuana and access to treatment by providing funding for schools and community-based organizations. The funding will support more highly trained professionals who can effectively identify, treat and refer students with marijuana-related concerns, expanding the availability of substance abuse treatment services for youth across the state.

More information and resources about retail marijuana in Colorado can be found at http://www.colorado.gov/marijuana.

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HEALTHYKIDS COLORADOSURVEY

Healthy Kids Colorado Survey- Marijuana Findings

The Healthy Kids Colorado Survey (HKCS) collects self-reported health information from Colorado middle and high school students. A unified version of the survey was launched in 2013 that consolidates multiple needs for youth health data and allows for both state and regional-level results. The unified HKCS was administered in Fall 2013 to over 40,000 middle and high school students.

This summary outlines findings from the marijuana-related items included in the 2013 HKCS high school survey. The survey was primarily administered before retail marijuana sales went into effect.

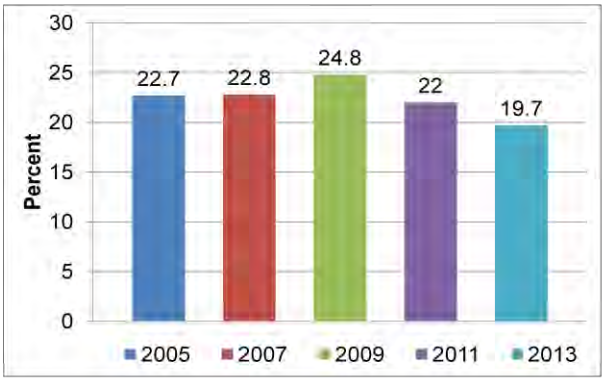
Marijuana Behaviors and Perceptions: 2013 HKCS – High School Survey

Tried marijuana 1+ times in life (lifetime use): 36.9%	Tried marijuana before age 13: 8.1%
Used marijuana in the past 30 days (current use): 19.7%	Drove one+ times using marijuana past 30 days: 10.9%
Think access to marijuana is easy/very easy: 54.9%	Used marijuana on school property in past 30 days: 5.2%
Think people risk harming themselves from using marijuana regularly: 54.0%	Think it is wrong/very wrong for someone the student's age to use marijuana: 60.2%
Think parents feel it is wrong/very wrong for the student to use marijuana: 86.4%	Think adults feel it is wrong/very wrong for kids the student's age to use marijuana: 82.5%
Think police would catch kids who used marijuana in student's neighborhood: 32.9%	Know someone with Medical Marijuana License: 36.0%

Trends for Marijuana Use in the Past 30 days and for Lifetime Use: 2005-2013 High School Surveys

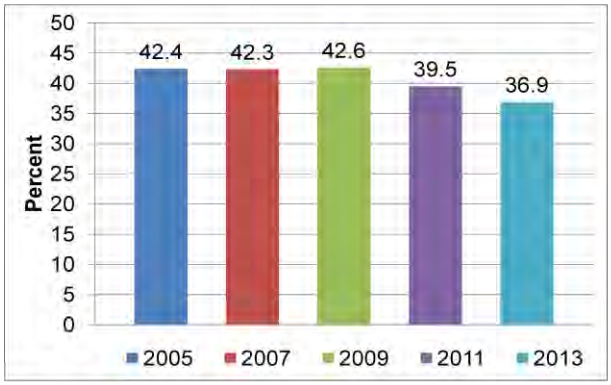
The following charts present data collected between 2005-2013. The sample sizes from 2005-2011 ranged from ~700-1500 students and the sample size for 2013 for these items was ~25,000 students. Although the estimates for marijuana use are lower in 2013, ***these estimates are within the margin of error and do not represent a statistically significant decrease between 2005-2013.***

Percent of Colorado 9-12 graders who used marijuana in the past 30 days, 2005-2013



Source: 2005, 2007*, 2009, and 2011 data from Youth Risk Behavior Survey, Health Statistics and Evaluation Branch, CDPHE
2013 Healthy Kids Colorado Survey, Health Statistics and Evaluation Branch, CDPHE
*unweighted YRBS data from 2007

Percent of Colorado 9-12 graders who used marijuana in their lifetime, 2005-2013



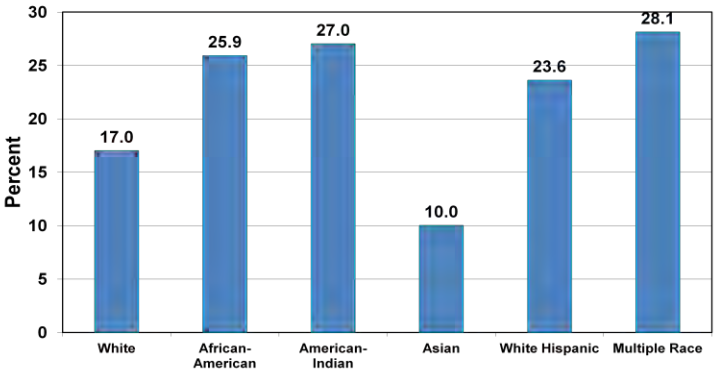
Source: 2005, 2007*, 2009, and 2011 data from Youth Risk Behavior Survey, Health Statistics and Evaluation Branch, CDPHE
2013 Healthy Kids Colorado Survey, Health Statistics and Evaluation Branch, CDPHE
*unweighted YRBS data from 2007

HEALTHYKIDS COLORADOSURVEY

Marijuana Use by Race/Ethnicity, Sex and Sexual Orientation: 2013 HKCS- High School Survey

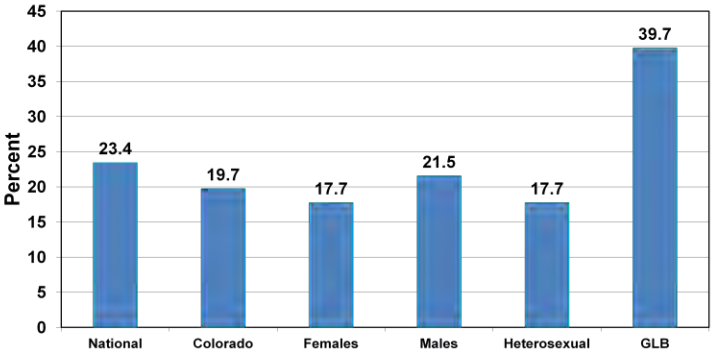
The following charts present data comparing current marijuana use by race/ethnicity, sex and sexual orientation (students reporting as gay, lesbian or bisexual, i.e., GLB). Data by race/ethnicity and by sexual orientation was not available in previous years.

Percent of Colorado 9-12 graders who used marijuana in the past 30 days by race and ethnicity, 2013



Source: 2013 Healthy Kids Colorado Survey, Health Statistics and Evaluation Branch, CDPHE

Percent of Colorado 9-12 graders who used marijuana in the past 30 days by sex and sexual orientation, 2013



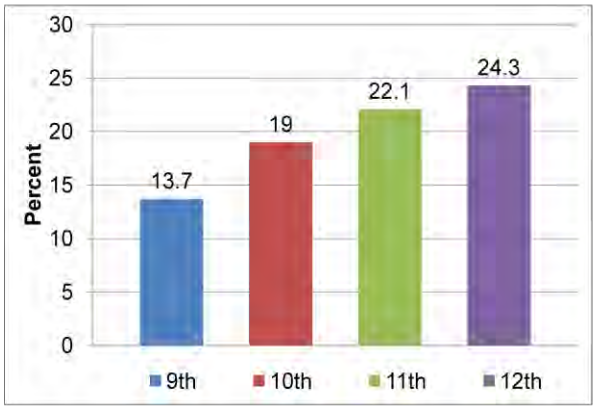
Source: 2013 Healthy Kids Colorado Survey, Health Statistics and Evaluation Branch, CDPHE

Additional Data and Comparisons

The high school survey also found that most students reported that they accessed marijuana by someone giving it to them (42.6%) while a smaller number took it from a family member (2.5%) or got it at school (4.2%). Most high school students who used marijuana smoked it (85.0%) while a smaller number ate it (5.2%) or vaporized it (6.2%).

Based on additional analysis of the 2013 high school HKCS data, students who felt they have someone who they could go to for help with a serious problem had significantly lower rates of current marijuana use. Also, students are more likely to use marijuana as they progress through high school, as shown in the chart below.

Percent of Colorado 9-12 graders who used marijuana in the past 30 days by grade level, 2013



Source: 2013 Healthy Kids Colorado Survey, Health Statistics and Evaluation Branch, CDPHE

For additional data tables, middle school results, and to request comparisons, visit:
www.chd.dphe.state.co.us

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Youth Sexual Health - Beyond Teen Pregnancy Prevention
Key Data Points for Colorado

Youth sexual health is about more than teen pregnancy prevention. Although teen pregnancy is a key health outcome that is measured, sexual health includes ensuring youth can access the information, resources and services they need to make informed and responsible decisions about their sexual health. Young people must be allowed to develop hopes and dreams for their future, have goals to work toward, and receive support and guidance from trusted adults. Youth sexual health is often measured through pregnancy data but several indicators help give a more accurate picture of what youth face in Colorado.

Below are data grouped by key strategy areas to improve sexual health: Askable Adults, access to sexuality education, preventing STIs/HIV, and preventing sexual violence.

Creating "Askable" Adults

Research shows that youth who have more information about sexuality and sexual risk behaviors may experiment less and at later ages compared to youth who have less information (Advocates for Youth). In Colorado, youth who reported having a trusted adult were less likely to have ever had sex and their behaviors related to sexual risk were less (see bullet #6 below). These findings support efforts to increase the number of Askable Adults across Colorado and underscore the importance of parents and other trusted adults having the skills and resources to address sexaul health with youth.

1) Among Colorado parents with children ages 3-14 years (n=1,036), more than half (51.9 percent) reported not having ever talked about the basic facts about sexual reproduction with their children. (CHS)
2) There are disparities in how often parents are talking to their kid(s) about sex and the rates vary depending on the parents' household income level. In Colorado, 60.5 percent of parents who live in households at or below 200 percent of the federal poverty level reported that they had not ever talked about the basic facts about sexual reproduction with their children, significantly different compared to parents who live in households above 200 percent of the federal poverty level (47.2 percent).
3) The age of parents is also a factor when looking at disparities related to parents talking to their kids about sexual reproduction. Among parents in Colorado ages 18-29 years, 14.1 percent reported ever talking about the basic facts about sexual reproduction with their children. This is significantly less than the parents in all other age groups
4) Parents talking to their children about sex varies by age of the children also, with younger children receiving these conversations at a much lower rate. Among Colorado parents with children ages 3-14 who reported never talking about the basic facts about sexual reproduction with their children, almost seven in ten had children who were ages 3-8 years old.
5) While best practice shows that conversations about sexual health should take place more than a couple of times to ensure the conversations are age-appropriate and evolve as the children mature, among Colorado parents with children ages 3-14 who reported talking to their children (n=550), 70.0 percent reported talking to their children about sexual reproduction a couple of times and only 28.2 percent talked with them regularly.
6) According to the HKCS, students who report having a trusted adult were less likely to:
   - Have ever engaged in sexual intercourse (29.2% vs 43.2%)
   - Be sexually active (20.6% vs 32.9%) --- *had sex in past 3 months*
   - Have had sex before age 13 (2.3% vs 6.6%)
   - Have had sex with four or more people in lifetime (7.2% vs 15.3%)

Youth Sexual Health - Beyond Teen Pregnancy Prevention
Key Data Points for Colorado

- Have used alcohol or drugs during last sexual intercouse (20.0% vs 30.0%)
- Have not used any method of birth control during last intercourse (9.3% vs 14.7%)

And were more likely to:

- Have used a condom during last intercourse (65.4% vs 57.1%)
- Have used an effective method of birth control to prevent pregnancy during last intercourse (34.5% vs 27.4%) *-- used birth control pills, IUD, implant, patch, or birth control ring*

All of these differences are statistically significant.

Access to Sexuality Education:

Colorado has two laws that support comprehensive sexuality education. However, compliance varies widely across the state. HB07-1292 states that if sex ed it being taught, then it must be comprehensive. HB13-1081 strengthens definitions and language related to HB07-1292. For example, it explains what comprehensive sexuality education must include, defines Positive Youth Development and defines culturally sensitive.

1) The vast majority of parents in Colorado support schools providing comprehensive sexuality education for their children. The 2010 Child Health Survey asked parents if they support school children receiving age-appropriate education in school about human sexuality (84.2 percent said they support it) and sexually transmitted disease or STD prevention (87.2 percent said they support it).
2) The only data Colorado has related to what is happening at schools is an informal survey of Colorado teachers and administrators conducted by Colorado Youth Matter. In the 2012 survey from Colorado Youth Matter, many district administrators and teachers still didn't know what was being taught in classrooms. Further, only one in four teachers stated that they receive professional development on HIV-related topics, which 45% of these reporting the professional development wasn't enough. (CYM's 2012 Snapshot)
3) Funding for comprehensive sexuality education is needed. Currently, $1,609,934 or 39% of current federal funding for sexual health in Colorado is being invested into abstinence-only programming that must adhere to A-H Guidelines (see below). This programming in schools from this funding is in direct conflict to HB13-1081, which states that funds going directly to schools must be used for comprehensive education.

Increasing condom use to prevent STIs/HIV

Measuring STI/HIV rates also helps paint a broad picture for youth sexual health. Having skills necessary to negotiate condom use, understanding how diseases are spread, advocating for individual needs, having access to information and services, and communication with partners can all lead to increased or decreased rates of infection. Youth experience disproportionately high rates of Chlamydia and Gonorrhea and account for 1 in 5 of every new case of HIV in Colorado.

1) In 2013, youth (ages 9-25) made up 71% of all cases of Chlamydia in Colorado (27% 9-19, 44% 19-25) and 56% of all Gonorrhea cases in Colorado (29% 9-19, 71% 19-25). Further, 21% of all new cases of HIV in 2013 were seen in youth.
2) Condom use among youth having sex decreased by approximately 7% (from 70% reporting using a condom at last intercourse in 2011 to 63% in 2013)

Youth Sexual Health - Beyond Teen Pregnancy Prevention
Key Data Points for Colorado

3) Overall, 33% of youth reported ever having sex. However, by the time students are 18 or older, 57% report ever having had sex.

Preventing Sexual Violence:

Sexual Violence prevention strategies include helping youth develop negotiation skills, recognize healthy relationships, deconstruct gender norms and understand consent.

1) According to the 2013 Healthy Kids Colorado Survey, 7% of youth reported being hurt by their date 1 or more times. Additionally, 7% reported being forced to have sex, which equates to about 1 in every 14 students.
2) In 2013, law enforcement agencies in Colorado reported 2,903 rapes, which is a 41.3 percent increase in rapes from 2012.
3) Prevention of sexual violence includes looking at primary prevention strategies. The Sexual Violence Prevention Unit uses a shared risk and protective factor approach and its grantees' year one posttest data demonstrated that grantees made a positive, statistically significant impact on constructs critical to sexual violence prevention. Specifically, the following positive outcomes were identified:
    1. Youth showed positive changes towards views about gender roles, consent for sexual activity, sexual harassment and sexual abuse that are related to a reduced likelihood of being a perpetrator or victim of sexual violence. A total of 22.8% of the youth scored significantly higher than would be expected if the programming has no effect on gender attitudes.
    2. Youth reported lower acceptance of jealous behaviors in a relationship and demonstrated a better understanding of behaviors that lead to a healthy dating relationship. A total of 25.6% scored significantly higher than would be expected if the programing had no effect on jealous behaviors.
    3. Youth showed decreased acceptance of anti-social, delinquent and violent behavior related to making physical and sexual threats towards one another. A total of 17.9% scored significantly higher than would be expected if programming had no effect on tolerance to violent and bullying behaviors.

In summary, MCH funding can continue support and lead this important health area. in order to improve youth sexual health, strategies must be implemented across many topic areas. Parents and adults need support, policies must be in support of youth access and a holistic and comprehensive message must be given to youth so that they can make decisions best for them.

A-H Definition of Abstinence Education

1. Have as its exclusive purpose teaching the social, psychological, and health gains to be realized by abstaining from sexual activity
2. Teach abstinence from sexual activity outside marriage as the expected standard for all school-age children
3. Teach that abstinence from sexual activity is the only certain way to avoid out-of-wedlock pregnancy, sexually transmitted diseases,

and other associated health problems

4. Teach that a mutually faithful, monogamous relationship in the context of marriage is the expected standard of sexual activity
5. Teach that sexual activity outside the context of marriage is likely to have harmful psychological and physical effects
6. Teach that bearing children out of wedlock is likely to have harmful consequences for the child, the child's parents, and society
7. Teach young people how to reject sexual advances and how alcohol and drug use increases vulnerability to sexual advances
8. Teach the importance of attaining self-sufficiency before engaging in sexual activity

Source: Title V, Section 510 (b)(2)(A-H) of the Social Security Act (P.L. 104-193).

Maternal and Child Health
Issue Brief

January 2015 №12

Children and Youth with Special Health Care Needs in Colorado

Who are children and youth with special health care needs?

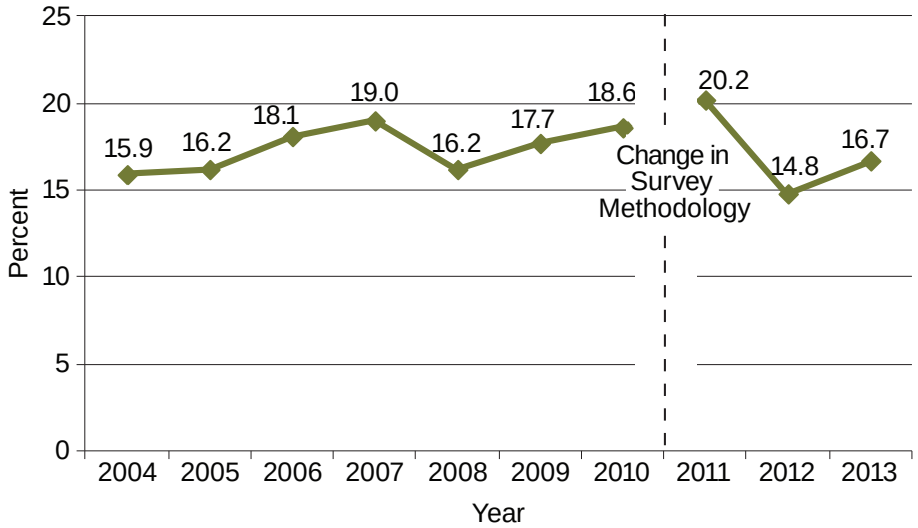
Children and youth with special health care needs (CYSHCN) are "those [children and youth] who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally."[1] This is a broad and inclusive definition that does not focus on specific health conditions.[2] The definition is based on how children's conditions affect their lives and their need or use of health services.[3]

What is the prevalence of children and youth with special health care needs?

In Colorado, 13.7 percent of children and youth ages 0-17 years have special health care needs.[4] The Colorado prevalence for this age group is not significantly different from the prevalence of CYSHCN at the national level (15.1 percent).[4] This translates to approximately 168,000 children and youth ages 0-17 years with special health care needs in Colorado.

Since national survey data are only available every four years, Colorado added questions to the annual Child Health Survey in order to monitor prevalence more frequently (see note at bottom of page 1). In 2013, 16.7 percent of Colorado children and youth ages 1-14 years had special health care needs.[5] Data for 2004 to 2010 show an upward trend in the prevalence of CYSHCN, but changes and improvements to the 2011 through 2013 survey methodology prohibit any comparison with data from earlier years.

Figure 1. Prevalence of children and youth with special health care needs ages 1-14 years in Colorado, 2004-2013.[5]



Healthy People Goals[6]

- **By 2020, increase the proportion of children and youth with special health care needs who have access to a medical home to 51.8 percent**

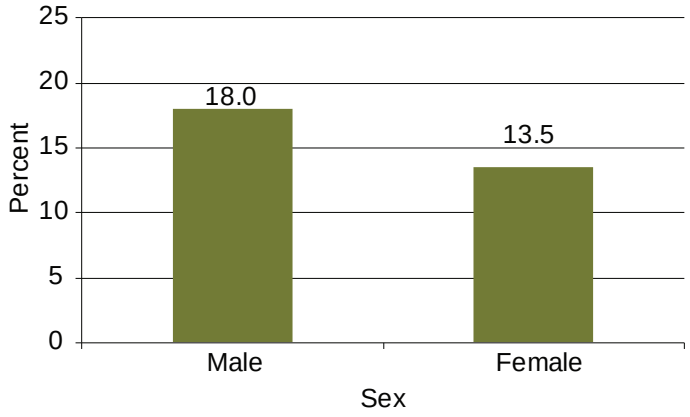
(Colorado data for the HP2020 goal are on page 4.)

Note: Data in this issue brief come from the National Survey of Children with Special Health Care Needs (NS-CSHCN) and the Colorado Child Health Survey (CHS). These two population-based surveys use the same validated, non-condition specific, consequences-based screening tool to identify CYSHCN.[1] However, comparisons between the two sets of survey results should not be made because the age groups are different: the NS-CSHCN covers children and youth ages 0-17 years and the CHS covers children and youth ages 1-14 years.[4,5]

Demographics of Children and Youth with Special Health Care Needs

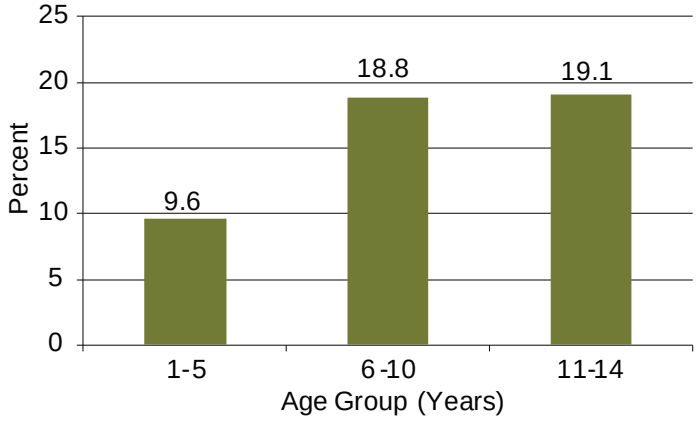
The prevalence estimates shown below are from the Colorado Child Health Survey (ages 1-14 years) and represent the proportions of the total child population that have special health care needs.

Figure 2. Prevalence of children and youth with special health care needs ages 1-14 years in Colorado by sex of child, 2012-2013.[5]



Almost one in five (18.0 percent) males ages 1-14 years in Colorado has special health care needs. This is not significantly different from females (13.5 percent).

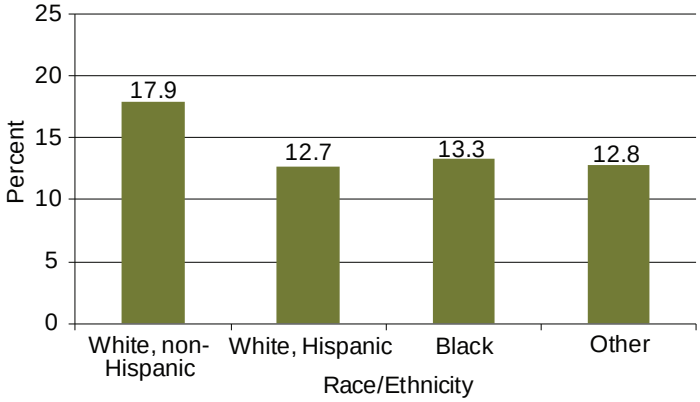
Figure 3. Prevalence of children and youth with special health care needs ages 1-14 years in Colorado by age of child, 2012-2013.[5]



One in ten (9.6 percent) Colorado children ages 1-5 years has special health care need. This is significantly different from children ages 6-10 years (18.8 percent) and youth ages 11-14 years (19.1 percent).

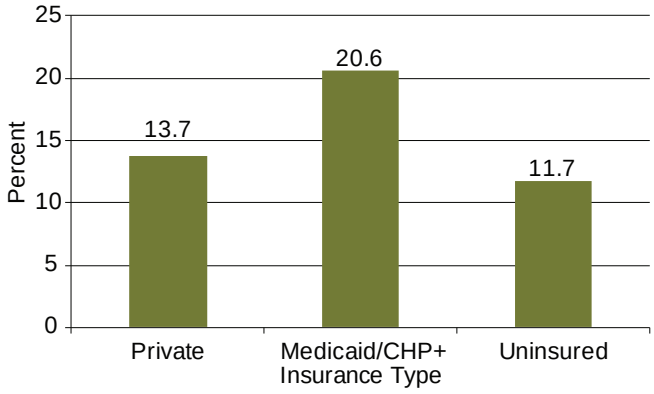
The Child Health Survey did not reveal any significant difference in the prevalence of children and youth with special health care needs based on household poverty level or on urban/rural residence.

Figure 4. Prevalence of children and youth with special health care needs ages 1-14 years in Colorado by race/ethnicity, 2012-2013.[5]



Almost one in five (17.9 percent) White, non-Hispanic children and youth has special health care needs. There are no significant differences between different racial/ethnic groups.

Figure 5. Prevalence of children and youth with special health care needs ages 1-14 years in Colorado by insurance type, 2012-2013.[5]



Based on Child Health Survey data, among children and youth insured by Medicaid or CHP+, an estimated one in five (20.6 percent) has special health care needs. Among children insured by private insurance at the time of the survey, an estimated one in seven (13.7 percent) has special health care needs. These are significant differences.

What are the challenges experienced by children and youth with special health care needs and their families?

Fifteen national indicators are used to describe the well-being of CYSHCN and their families.[7] These key indicators are grouped into five areas: child health, health insurance coverage, access to care, family centered care, and impact on family.

Table 1. National indicators for children and youth with special health care needs ages 0-17 years, Colorado and the Nation, 2009-2010.[4]

Indicator	Colorado (%)	Nation (%)
Child Health		
CYSHCN whose conditions affect their activities usually, always, or a great deal	26.1	27.1
CYSHCN with 11 or more days of school absences due to illness	17.7	15.5
Health Insurance Coverage		
CYSHCN without insurance at some point in past year	10.6	9.3
CYSHCN without insurance at time of survey	4.6	3.5
Currently insured CYSHCN whose insurance is inadequate	44.8*	34.3
Access to Care		
CYSHCN with any unmet need for specific health care services	26.1	23.6
CYSHCN with any unmet need for family support services	8.1	7.2
CYSHCN needing a referral who have difficulty getting it	30.5	23.4
CYSHCN without a usual source of care when sick (or who rely on the emergency room)	10.4	9.5
CYSHCN without any personal doctor or nurse	8.6	6.9
Family Centered Care		
CYSHCN without family centered care	33.5	35.4
Impact on Family		
CYSHCN whose families pay $1,000 or more out of pocket in medical expenses per year for the child	30.3*	22.1
CYSHCN whose conditions cause financial problems for the family	29.2*	21.6
CYSHCN whose families spend 11 or more hours per week providing or coordinating child's health care	11.0	13.1
CYSHCN whose conditions cause family members to cut back or stop working	25.9	25.0

*Colorado estimate is significantly different from the national estimate

Colorado prevalence estimates were significantly different compared to national estimates for three key indicators. In Colorado, 44.8 percent of CYSHCN have insurance that is inadequate compared to 34.3 percent of CYSHCN nationally. Three in ten (30.3 percent) CYSHCN in Colorado live in families who pay $1,000 or more out of pocket in medical expenses compared to two in ten (22.1 percent) CYSHCN nationally. Three in ten (29.2 percent) CYSHCN in Colorado have conditions that cause financial problems for the family compared to two in ten (21.6 percent) CYSHCN nationally. These data demonstrate that some CYSHCN in Colorado, as well as throughout the nation, experience barriers to care and lack a well-functioning system of services. These data also demonstrate that families of CYSHCN in Colorado experience financial stressors beyond that reflected in the national data.

Systems Outcomes for the CYSHCN Population

There are six national core outcomes considered critical for a well-functioning system of services for the population of children and youth with special health care needs.[2] All data in this section are from the National Survey of Children with Special Health Care Needs and refer to children and youth with special health care needs ages 0-17 years.

- Families of CYSHCN partner in decision-making regarding their child's health: Two-thirds (66.5 percent) of CYSHCN in Colorado live in families who are partners in shared decision-making for the child.
- CYSHCN receive coordinated, ongoing, comprehensive care within a medical home: Less than half (43.7 percent) of CYSHCN in Colorado receive coordinated, on-going, comprehensive care within a medical home. This outcome does not meet the Healthy People 2020 goal of 51.8 percent.
- Families of CYSHCN have adequate private and/or public insurance to pay for needed services: Half (49.9 percent) of CYSHCN in Colorado have adequate private and/or public insurance to pay for the services they need. This is significantly different compared to 60.6 percent of CYSHCN with adequate private and/or public insurance nationwide.
- Children are screened early and continuously for special health care needs: Eight in ten (81.7 percent) CYSHCN in Colorado are screened early and continuously for special health care needs.
- Community-based services are organized so families can use them easily: Six in ten (60.1 percent) CYSHCN in Colorado can easily access community based services.
- Youth with special health care needs (YSHCN) receive the services necessary to make appropriate transitions: Four in ten (42.1 percent) YSHCN in Colorado receive the services necessary to make appropriate transitions to adult health care, work, and independence.[4]

Focus on Medical Home Systems Outcome for the CYSHCN Population

The medical home is considered one of the most promising approaches to delivering high-quality and cost-effective health care.[8] Because the CYSHCN population requires care beyond that of a typical child/youth, the components of a medical home approach are essential in order to fully meet the needs of the child/youth and their family. The medical home approach refers to health care that is patient/family-centered, comprehensive, coordinated, accessible, continuous, and culturally effective.[9] This approach to care improves quality of care, reduces costs, and improves patient/family experience in receiving care.[10]

Colorado added the set of medical home questions from the National Survey of Children's Health to the Child Health Survey in order to measure the prevalence of medical home at both the state and regional levels, among all children and youth, as well as among children and youth with special health care needs. All the data below are from the Colorado Child Heath Survey and are for children and youth with special health care needs ages 1-14 years.

Based on data from 2010-2012, 54.8 percent of CYSHCN in Colorado received coordinated, ongoing, comprehensive care within a medical home. This is significantly different from the 67.2 percent of non-CYSHCN in Colorado who received care in a medical home.[5]

The medical home measure includes five components. Having a personal doctor or nurse is one component of a medical home approach that supports accessibility to care. In Colorado, 96.1 percent of CYSHCN have a personal doctor or nurse.

A usual source of sick and well care is a medical home component that supports comprehensive care. Almost all CYSHCN (96.0 percent) have a usual source for both sick and well care.[5] Obtaining needed referrals is an additional comprehensive care component. Among CYSHCN who needed a referral, 22.6 percent had difficulty getting it.[5]

Family centered-care is another critical medical home component. One-third (32.2 percent) of CYSHCN in Colorado did not receive family-centered care.[5]

Effective cross-system care coordination is a component of the medical home approach that supports coordinated and continuous care. Among CYSHCN in Colorado who needed care coordination, 46.6 percent failed to receive all needed care coordination.[5] Of the five medical home components, the prevalence of effectively coordinated care is the lowest.

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HP2020 Comparison Table (for Phase 1 Prioritization)					
Issue	**HP2020 Objective**	**HP2020 Goal**	**Colorado Prevalence**	**Distance to Goal**	**Colorado Indicator**
WOMEN AND INFANTS					
Unintended pregnancy	Increase the proportion of pregnancies that are intended	56.0%	64.0%	Meets the goal	Percent of live births that are intended
Well-woman care (including access to care)	N/A	N/A	62.2%	Data Not Available	Percent of women ages 18-44 who visited a doctor for a routine check-up in the past year
Insurance coverage	Increase the proportion of persons with medical insurance	100%	85.7%	Close/Some Distance	Percent with health insurance (all ages)
Medical home	home	63.3%	66.5%	Meets the goal	medical home
Mental health	Reduce the proportion of adults aged 18 years and older who experience major depressive episodes	5.8%	10.4%	Close/Some Distance	Percent of women ages 18-44 with current depression
Pregnancy-related depression	(Developmental) Decrease the proportion of women delivering a live birth who experience postpartum depressive symptoms	N/A	N/A	Data Not Available	N/A
Substance use/marijuana prevention (both pregnant and non-pregnant women)	Reduce the proportion of adults reporting use of any illicit drug during the past 30 days	7.1%	15.3%	Far from the goal	Percent of women ages 18-44 who used an illicit drug during past 30 days
	Reduce the proportion of persons engaging in binge drinking during the past 30 days - adults aged 18 years and older	24.4%	21.1%	Meets the goal	Percent of women ages 18-44 who engaged in binge drinking in past 30 days
	Reduce cigarette smoking by adults	12.0%	16.5%	Close/Some Distance	tobacco
	Increase the proportion of women delivering a live birth who did not drink alcohol prior to pregnancy	56.4%	40.1%	Close/Some Distance	Percent of women who did not drink alcohol during 3 months before pregnancy
	Increase the proportion of women delivering a live birth who did not smoke prior to pregnancy	85.4%	77.1%	Close/Some Distance	Percent of women who did not smoke during 3 months before pregnancy
	Increase smoking cessation during pregnancy	30.0%	66.0%	Meets the goal	pregnancy
Healthy eating, active living	Increase the proportion of women delivering a live birth who had a healthy weight prior to pregnancy	53.4%	52.7%	Close/Some Distance	Percent of women with a live birth who were at normal prepregnancy BMI
	(Developmental) Increase the proportion of mothers who achieve a recommended weight gain during their pregnancies	N/A	N/A	Data Not Available	N/A
	Reduce the proportion of adults who are obese	30.5%	19.8%	Meets the goal	obese
	Increase the proportion of adults who are at a healthy weight	33.9%	49.5%	Meets the goal	normal weight
	Reduce the proportion of adults who engage in no leisure time physical activity	32.6%	18.3%	Meets the goal	Percent of female adults ages 18+ who engaged in no leisure time physical activity
Low-risk cesarean deliveries	Reduce cesarean births among low-risk women with no prior cesarean births	23.9%	20.7%	Meets the goal	Percent of cesarean deliveries among low-risk births (term, singleton, vertex births to
Perinatal regionalization	Increase the proportion of very low birth weight (VLBW) infants born at Level III hospitals or subspecialty perinatal centers	83.7%	87.9%	Meets the goal	Percent of VLBW births in Level III hospitals
Inadequate maternity leave	N/A	N/A	N/A	Data Not Available	N/A
Safety/injury of women	(Developmental) Reduce violence by current or former intimate partners	N/A	N/A	Data Not Available	N/A
	(Developmental) Reduce sexual violence	N/A	N/A	Data Not Available	N/A
Safe sleep	Increase the proportion of infants who are put to sleep on their backs	75.9%	84.5%	Meets the goal	backs
Breastfeeding (This is part of the ECOP state and local plans.)	Increase the proportion of infants who are ever breastfed	81.9%	81.0%	Close/Some Distance	Percent of infants who are ever breastfed
	Increase the proportion of infants who are breastfed at 6 months	60.6%	55.2%	Close/Some Distance	months
Infant mortality	Reduce the rate of all infant deaths	6.0 per 1,000	5.1 per 1,000	Meets the goal	Rate of all infant deaths
Oral health	Increase the proportion of children, adolescents, and adults who used the oral health care system in the past year	49.0%	46.1%	Close/Some Distance	Percent of women who had a dental visit during pregnancy
YOUTH					

Issue	HP2020 Objective	HP2020 Goal	Colorado Prevalence	Distance to Goal	Colorado Indicator
Bullying	Reduce bullying among adolescents	17.9%	20.0%	Close/Some Distance	Percent of high school youth who were bullied on school property during the past 12 months
Safety/Injury prevention (TMV, risky behaviors)	Reduce motor vehicle crash-related deaths	12.4 per 100,000	11.4 per 100,000	Meets the goal	Teen (15-19 years) motor vehicle death rate
	Reduce the proportion of adolescents who report that they rode, during the previous 30 days, with a driver who had been drinking	25.5%	17.9%	Meets the goal	Percent of high school youth who rode, during the previous 30 days, with a driver who had
	Reduce physical fighting among adolescents	28.4%	20.4%	Meets the goal	Percent of high school youth who were in a physical fight during the past 12 months
Mental health	Reduce the proportion of adolescents aged 12 to 17 years who experience major depressive episodes	7.5%	8.2%	Close/Some Distance	Percent of youth ages 12 to 17 years who experienced a major depressive episode in the
Suicide prevention	Reduce the suicide rate	10.2 per 100,000	11.7 per 100,000	Close/Some Distance	Teen (15-19 years) suicide death rate
	Reduce suicide attempts by adolescents	1.7%	6.6%	Far from the goal	Percent of high school youth who attempted suicide one or more times during the past 12
Insurance coverage	Increase the proportion of persons with medical insurance	100%	91.8%	Close/Some Distance	health insurance
Medical home	home	63.3%	50.8%	Close/Some Distance	in a medical home
Health care access/adolescent well visit	Increase the proportion of adolescents who have had a wellness checkup in the past 12 months	75.6%	84.7%	Meets the goal	Percent of youth ages 12-17 years who had a preventive medical care visit in the past year
Active living, healthy eating	Increase the proportion of students in grades 9-12 who get sufficient sleep	33.1%	33.8%	Meets the goal	Percent of high school youth who sleep 8 or more hours per night on average school nights
	Reduce the proportion of adolescents ages 12 to 19 years who are considered obese	16.1%	10.9%	Meets the goal	Percent of youth ages 10-17 years who are obese
	Increase the proportion of adolescents who meet current federal physical activity guidelines for aerobic physical activity	20.2%	26.4%	Meets the goal	Percent of youth who were physically active for a total of 60 min or more per day on all seven
Marijuana/substance abuse prevention	Reduce the proportion of adolescents reporting use of marijuana during the past 30 days	6.0%	10.7%	Close/Some Distance	Percent of youth ages 12 to 17 years who used marijuana in the past 30 days
	Reduce the proportion of persons engaging in binge drinking during the past month - adolescents aged 12 to 17 years	8.6%	7.8%	Meets the goal	Percent of youth ages 12 to 17 years who engaged in binge drinking in the past 30 days
	Reduce use of cigarettes by adolescents (past month)	16.0%	10.7%	Meets the goal	cigarettes in the past 30 days
Youth systems	N/A	N/A	N/A	Data Not Available	N/A
Sexual health	Reduce pregnancies (live births, induced abortions, and fetal losses) among females 15-17	36.2 per 1,000	11.4 per 1,000	Meets the goal	Teen (15-17 years) birth rate
Transition	Increase the proportion of youth with special health care needs whose health care provider discussed transition planning from pediatric to adult health care	45.3%	42.1%	Close/Some Distance	Percent of youth with special health care needs ages 12-17 years who receive the services necessary to make appropriate transitions to
Concussions	N/A	N/A	N/A	Data Not Available	N/A
Diabetes, asthma	Reduce the annual number of new cases of diagnosed diabetes in the population	7.2 per 1,000	N/A	Data Not Available	N/A
	Reduce hospitalizations for asthma among children and adults aged 5 to 64 years	8.7 per 10,000	14.7 per 10,000	Close/Some Distance	Rate of asthma hospitalizations among children and youth ages 5-19 years
Overmedication of foster	N/A	N/A	N/A	Data Not Available	N/A
Youth homelessness	N/A	N/A	N/A	Data Not Available	N/A
CHILDREN					
Developmental screening, id, referral	Increase the proportion of parents who receive information from their doctors or other health care professionals when they have a concern about their children's learning, development, or behavior	52.8%	23.7%	Far from the goal	Percent of parents who received specific information from a health care provider to address concerns about their child's learning,
Healthy eating/active living (ECOP)	Reduce the proportion of children aged 2 to 5 years who are considered obese	9.4%	7.9%	Meets the goal	Percent of children ages 2-4 years enrolled in WIC

Issue	HP2020 Objective	HP2020 Goal	Colorado Prevalence	Distance to Goal	Colorado Indicator
	Increase the proportion of children aged 2 to 5 years who view television, videos, or play video games for no more than 2 hours a day	83.2%	83.3%	Meets the goal	Percent of children ages 1-5 years who view tv or videos, play video games or play on a computer for no more than 2 hours a day on
Healthy eating/active living (6-11 year olds)	Reduce the proportion of children aged 6 to 11 years who are considered obese	15.7%	14.0%	Meets the goal	Percent of children ages 6-14 years who are consi
	Increase the proportion of children aged 6 to 14 years who view television, videos, or play video games for no more than 2 hours a day	86.8%	85.2%	Close/Some Distance	Percent of children ages 1-14 years who view tv or videos, play video games or play on a computer for no more than 2 hours a day on
Mental health	Increase the proportion of children with mental health problems who receive treatment	75.8%	70.4%	Close/Some Distance	Percent of children ages 4-14 years who receive all needed mental health care or counseling
Insurance coverage	Increase the proportion of persons with medical insurance	100%	95.0%	Close/Some Distance	Percent of children ages 1-14 with health insuranc
Health care access	Increase the proportion of persons with a usual primary care provider	83.9%	92.0%	Meets the goal	Percent of children ages 1-14 with a personal doc
Safety/injury prevention (home, auto, childcare, environmental, guns, marijuana, etc.)	Reduce fatal injuries	53.7 per 100,000	9.0 per 100,000	Meets the goal	Child (ages 0-14 years) injury death rate
	Reduce hospitalizations for nonfatal injuries	555.8 per 100,000	121.9 per 100,000	Meets the goal	Child (ages 0-14 years) injury hospitalization rate
	Reduce motor vehicle crash-related deaths	12.4 per 100,000	1.6 per 100,000	Meets the goal	Child (ages 0-14 years) motor vehicle death rate
Affordable and quality preschool	(Developmental) Increase the proportion of children who are ready for school in all five domains of healthy development	N/A	N/A	Data Not Available	N/A
Child abuse and toxic stress	Reduce nonfatal child maltreatment	8.5 per 1,000	8.4 per 1,000	Meets the goal	Rate of maltreatment of children younger than 18 years
Medical home	home	63.3%	63.6%	Meets the goal	care in a medical home
Oral health	Reduce the proportion of children aged 3 to 5 years with caries experience	30.0%	39.7%	Close/Some Distance	Percent of children in kindergarten with caries ex
	Reduce the proportion of children aged 6 to 9 years with caries experience	49.0%	55.2%	Close/Some Distance	Percent of children in third grade with caries expe
	Reduce the proportion of children aged 3 to 5 years with untreated dental decay	21.4%	13.8%	Meets the goal	Percent of children in kindergarten with untreate
	Reduce the proportion of children aged 6 to 9 years with untreated dental decay	25.9%	14.4%	Meets the goal	Percent of children in third grade with untreated
	Increase the proportion of children aged 6 to 9 years who have received dental sealants on one or more of their primary molar teeth	28.1%	44.9%	Meets the goal	Percent of children in third grade who have received dental sealants on one or more of their
Household smoke	Increase the proportion of smoke-free homes	87.0%	80.3%	Close/Some Distance	Percent of children ages 1-14 not exposed to secondhand smoke even if a smoker lives in the
Immunizations	Increase the percentage of children ages 19 to 25 months who receive the recommended doses of DTaP, polio, MMR, Hib, Hep B, varicella, and PCV	80.0%	69.2%	Close/Some Distance	Percent of children ages 19 to 25 months who receive the recommended doses of DTaP, polio, MMR, Hib, Hep B, varicella, and PCV
Diabetes, asthma	Reduce the annual number of new cases of diagnosed diabetes in the population	7.2 per 1,000	N/A	Data Not Available	N/A
	Reduce hospitalizations for asthma among children and adults aged 5 to 64 years	8.7 per 10,000	14.7 per 10,000	Close/Some Distance	Rate of asthma hospitalizations among children and youth ages 5-19 years

Developmental HP2020 Objectives: A potential data source has not yet been identified so a 2020 goal cannot be set.

Proposed MCH National Performance Measures

National Performance Measure (NPM)	Priority Area	Population Domain	Colorado Baseline	Comparison (HP2020* or US)	Distance to HP2020 Target
NPM #1: Percent of women with a past year preventive visit	Well woman care	Women/Maternal Health	62.2%	74.4%[1]	Not Available
NPM #2: Percent of cesarean deliveries among low-risk[2] first births	Low risk cesarean deliveries	Women/Maternal Health	20.7%	23.9%*	Meets Target
NPM#3: Percent of very low birth weight (VLBW) infants born in a hospital with a Level III+ Neonatal Intensive Care Unit (NICU)	Perinatal regionalization	Perinatal/Infant Health	89.3%	83.7%*	Meets Target
NPM #4: a) Percent of infants who are ever breastfed b) Percent of infants breastfed exclusively through 6 months	Breastfeeding	Perinatal/Infant Health	a) 81.0% b) 25.8%	a) 81.9%* b) 25.5%*	a) Close to Target b) Meets Target
NPM #5: Percent of infants placed to sleep on their backs	Safe sleep	Perinatal/Infant Health	84.5%	75.9%*	Meets Target
NPM #6: Percent of children, ages 9 through 71 months, receiving a developmental screening using a parent-completed screening tool	Developmental screening	Child Health	47.0% [3]	30.8%	Not Available
NPM #7: Rate of injury-related hospital admissions per population ages 0 through 19 years	Injury	Child Health and/or Adolescent Health	175.9/100,000	555.8/100,000[4]*	Meets Target
NPM #8: Percent of children ages 6 through 11 years and adolescents ages 12 through 17 years who are physically active at least 60 minutes per day	Physical activity	Child Health and/or Adolescent Health	53.7%[5] 26.4% (HS)	Not Available 20.2% (HS)*	Not Available Meets Target
NPM #9: Percent of adolescents, ages 12 through 17 years, who are bullied	Bullying	Adolescent Health	20.0% (HS) 47.4% (MS)	17.9% (HS)* Not Available	Close to Target Not Available
NPM #10: Percent of adolescents with a preventive services visit in the last year	Adolescent well-visit	Adolescent Health	84.7%	75.6%*	Meets Target
NPM #11: Percent of children with and without special health care needs having a medical home	Medical home	Children with Special Health Care Needs	Non-CYSHCN: 56.7% CYSHCN: 48.3%	All Children: 63.3%* CYSHCN: 51.8%*	Close to Target Close to Target
NPM #12: Percent of children with and without special health care needs who received services necessary to make transitions to adult health care	Transition	Children with Special Health Care Needs	Non-CYSHCN: N/A CYSHCN: 42.1%	Non-CYSHCN: N/A CYSHCN: 45.3%*	Not Available Close to Target
NPM #13: a) Percent of women who had a dental visit during pregnancy b) Percent of infants and children, ages 1 through 17 years, who had a preventive dental visit in the last year	Oral health	Cross-cutting/Life course	a) 46.1% b) 58.5%	a) 49.0%* b) 54.3%	Close to Target Not Available
NPM #14: a) Percent of women who smoke during pregnancy b) Percent of children who live in households where someone smokes	Smoking	Cross-cutting/Life course	a) 7.1% b) 20.6%	a) 9.0% b) 24.1%	Not Available Not Available
NPM #15: Percent of children 0 through 17 years who are	Adequate insurance	Cross-cutting/Life course	92.4%	100%[6]*	Close to Target

[1] Females ages 18+ years
[2] Low risk: term, singleton, vertex births to nulliparous women
[3] Children ages 10mo-5yrs
[4] HP2020 target is for all ages
[5] Children ages 5-11 years
[6] HP2020 target is for all ages

Proposed MCH National Performance Measures

adequately insured	coverage				

Comparison: HP2020 Target (*) or national estimate; HS: High School Students; MS: Middle School Students

State of Colorado Trend Analysis, 2012

Progress Toward Healthy People 2020 Targets or Colorado 2020 Targets

Maternal and Child Health Indicator	Source	Healthy People 2020 Target	Year						Short Term Trend: 2006 to 2010	Long Term Trend: Percent Change 2000 to 2010	2010 Position Relative to 2020 Target
			2000	2006	2007	2008	2009	2010			
Preconception/Prenatal											
% mothers who smoked 3 months before pregnancy	BC	14.6%	NA	NA	11.2%	11.1%	10.7%	10.4%	Improved[a]	NA	Meets target
% mothers gained appropriate weight during pregnancy[b]	BC	38%[c]	NA	NA	31.2%	31.6%	32.3%	33.1%[d]	NA	NA	Close to target
% mothers overweight or obese before pregnancy[b]	BC	38%[c]	NA	NA	35.0%	34.8%	35.9%	43.2%[d]	NA	NA	Close to target
% mothers received adequate prenatal care	BC	77.6%	68.4%	74.0%	67.0%	67.9%	68.5%	69.1%	Worse	+1.0%	Close to target
% births unintended	PRAMS	33%[c]	40%	40%	36%	37%	40%	36%	No real change	-10%	Close to target
% women 18-44 mental health not good in past 30 days	BRFSS	40%[c]	48%	41%	45%	42%	43%	47%	Worse	-2%	Close to target
% women 18-44 with any physical activity in last 30 days	BRFSS	90%[c]	78%	82%	83%	82%	84%	82%	No real change	+5%	Close to target
% women and men 18-44 using effective birth control	BRFSS	80%[c]	68%[e]	65%	NA	NA	67%	68%	No real change	0%[g]	Close to target
% mothers who smoked during last 3 months of pregnancy	BC	1.4%	NA	NA	7.3%	7.2%	6.7%	6.5%	Improved[a]	NA	Far from target
% mothers drinking alcohol last 3 months pregnancy	PRAMS	1.7%	9%	11%	11%	11%	11%	12%	No real change	+29%	Far from target
% mothers with excessive weight gain during pregnancy[b]	BC	NA	NA	NA	44.8%	47.2%	49.4%	47.7%[d]	NA	NA	NA
% women 18-44 eating 5+ fruits and vegetables daily	BRFSS	NA	23%	NA	30%	NA	27%	NA	NA	NA	NA
Unemployment rate (%), women with children under 6	ACS	NA	NA	NA	7%	5%	9%	10%	Worse[a]	NA	NA
Infants											
% mothers initiating breastfeeding	PRAMS	88%[c*]	86%	90%	90%	90%	92%	93%	No real change	+9%	Meets target
% mothers breastfeeding at 6 months	CHS	60.6%	51%[f]	54%	56%	60%	61%	61%	Improved	+20%[h]	Meets target
% very low birth weight births in Level IIIs	BC	82.5%	74.8%	87.5%	87.1%	88.3%	87.8%	89.2%	Improved	+19.3%	Meets target
Infant mortality rate	BC/DC	6.0	6.1	5.7	6.1	6.2	6.3	5.9	Worse	-3.3%	Meets target
Postneonatal mortality rate	DC	2.0	1.9	1.3	1.9	1.8	2.1	1.6	Worse	-15.8%	Meets target
Newborn hearing screening (%)	EHDI	98%[c*]	90.7%	97.6%	97.2%	97.8%	97.3%	97.3%	Worse	+7.3%	Close to target
% births low birth weight	BC	7.8%	8.5%	9.0%	9.0%	8.9%	8.8%	8.8%	Improved	+3.5%	Close to target
Neonatal mortality rate	DC	4.1	4.3	4.4	4.2	4.4	4.2	4.3	Improved	0.0%	Close to target
Black/white infant mortality ratio	DC	NA	NA	2.3	2.3	2.5	2.9	2.4	Worse	NA	NA

Note: See page three for explanation of headings.

Data for children and youth with special health care needs (CYSHCN) are available for only 3 years: 2001, 2005-2006, and 2009-2010. Meaningful trends are difficult to determine for most CYSHCN measures and are not available in this document.

Cells shaded in light blue represent survey data results which require greater change over time to be considered "Improved" or "Worse" compared to non-survey data. Percentages from surveys are all rounded as is the percentage change between 2000 and 2010.

NA denotes data not available or trend not applicable.

[a] Short term trend is measured from 2007.

[b] Data through 2009 use the 1990 Institute of Medicine (IOM) guidelines while data beginning in 2010 use the 2009 IOM guidelines.

[c] Colorado 2020 target shown where no HP target available.

[c*] Colorado 2020 target; HP target already achieved.

[d] Change in calculation methodology in this year; do not compare with earlier estimates.

[e] Data shown are for the year 2002.

[f] Data shown are for the year 2004.

[g] Long term trend measured from 2002 data point.

[h] Long term trend measured from 2004 data point.

State of Colorado Trend Analysis, 2012

Progress Toward Healthy People 2020 Targets or Colorado 2020 Targets

Maternal and Child Health Indicator	Source	Healthy People 2020 Target	Year						Short Term Trend: 2006 to 2010	Long Term Trend: Percent Change 2000 to 2010	2010 Position Relative to 2020 Target
			2000	2006	2007	2008	2009	2010			
Children											
Injury hospitalization rate ages 0-14	CTR	555.8[i]	224.3	160.7	156.3	162.1	150.8	148.2	Improved	-33.9%	Meets target
Motor vehicle death rate ages 0-14	DC	12.4[i]	4.9	3.3	2.8	2.7	2.4	2.0	Improved	-59.2%	Meets target
% children 1-14 with a medical home	CHS	63.3%	NA	NA	NA	NA	NA	69%	NA	NA	Meets target
% children 2-14 overweight or obese	CHS	25%[c]	29%[f]	28%	26%	29%	25%	23%	Improved	-20%[h]	Meets target
Child abuse rate ages 0-17	CDHS	8.5/1000	6.8	9.3	8.9	9.3	9.2	9.1	Improved	+33.8%	Close to target
Health insurance coverage (%) ages 1-14	CHS	100%[i]	90%[f]	88%	90%	92%	91%	95%	Improved	+6%[h]	Close to target
% parents asked by provider to fill out child q'naire ages 1-5	CHS	50%[c]	NA	NA	NA	44%	48%	44%	Mixed[j]	NA	Close to target
% children 1-14 drinking SSB* 1+ times per day	CHS	15%[c]	21%[f]	19%	17%	16%	NA	16%	Improved	-23%[h]	Close to target
% of children 2-14 eating 2+ fruits and 3+ veg per day	CHS	15%[c]	4%[f]	7%	8%	10%	11%	10%	Improved	+119%[h]	At some distance
CHP+ number of enrollees 0-18	HCPF	NA	NA	NA	NA	80,851	107,095	109,127	Improved[j]	NA	NA
Medicaid number of enrollees 0-18	HCPF	NA	NA	NA	NA	308,026	342,625	398,291	Improved[j]	NA	NA
Child death rate ages 1-14	DC	NA	21.8	18.7	15.8	18.4	16.3	16.8	Improved	-22.9%	NA
% children 0-18 at or below 100% federal poverty level	ACS	NA	16%	17%	18%	19%	20%	22%	Worse	+38%	NA
Teens											
Teen injury hospitalization rate ages 15-19	CTR	555.8[i]	653.3	506.8	455.4	500.8	459.4	444.2	Improved	-32.0%	Meets target
Teen motor vehicle death rate ages 15-19	DC	12.4[i]	22.8	19.6	17.8	14.8	13.4	12.1	Improved	-46.9%	Meets target
% physically active 60 minutes 7 days per week†	YRBS	20%	NA	17%[k]	NA	NA	27%	29%	Improved	NA	Meets target
Graduation rate (%)	CDE	82.4%	80.9%	74.1%	75.0%	73.9%	74.6%	72.4%	Worse	-10.5%	Close to target
Teen suicide death rate ages 15-19	DC	10.2[i]	12.6	11.2	9.9	13.1	14.3	11.5	Worse	-8.7%	Close to target
% using effective birth control†	YRBS	35%[c]	NA	19%[k]	NA	NA	26%	29%	Improved	NA	Close to target
Teen fertility rate ages 15-17	BC	10.0/1000[c]	28.8	23.7	22.2	21.6	20.0	17.4	Improved	-39.6%	At some distance
% participating in any extracurricular activities†	YRBS	90.8%	NA	NA	NA	NA	NA	70%	NA	NA	At some distance
% drinking SSB* 1+ times per day†	YRBS	NA	NA	NA	NA	NA	25%	23%	NA	NA	NA
% eating breakfast 7 days per week†	YRBS	NA	NA	NA	NA	NA	NA	39%	NA	NA	NA
% often or almost always enjoying school in past year†	YRBS	NA	NA	NA	NA	NA	NA	41%	NA	NA	NA
Chlamydia rate ages 15-19	CDPHE	NA	22.6	25.6	25.4	28.3	27.8	28.8	Worse	+27.4%	NA
Oral Health											
% children 1-5 who went to a dentist by age 1	CHS	NA	NA	2%	3%	2%	3%	3%	No real change	NA	NA
Medicaid dental % served	HCPF	NA	NA	NA	NA	41.6%	43.7%	45.8%	Improved[j]	NA	NA

*SSB: Sugar-sweetened beverages

† High school students (grades 9-12)

NA denotes data not available or trend not applicable.

[c] Colorado 2020 target shown where no HP target available.

[f] Data shown are for the year 2004.

[h] Long term trend measured from 2004 data point.

[i] Target is for all ages, not just for age group shown.

[j] Short term trend is measured from 2008.

[k] Data shown are for the year 2005.

Explanation of Headings

Maternal and Child Health Indicator
Data are shown for some new measures as well as for measures that have been included in the Maternal and Child Health County Data Sets for a number of years. Most measures are expressed as percentages, including the unemployment rate for women with children under 6. Three measures are based on deaths per 1,000 births: infant mortality, neonatal mortality, and postneonatal mortality. The child abuse rate is based on events per 1,000 population, and the teen fertility rate is based on births per 1,000 female population ages 15-17. Some rates are expressed per 100,000 population: injury hospitalization ages 0-14 and teen injury hospitalization, motor vehicle death ages 0-14, and teen motor vehicle death, child death ages 1-14 and teen suicide. Chlamydia rates are reported cases per 1,000 women in the age group. Black/white infant mortality is a ratio of the Black rate divided by the white rate. Enrollees in the Child Health Plan Plus (CHP+) and Medicaid are numbers.

Source
Many measures are based on survey data from the Behavioral Risk Factor Surveillance System (BRFSS), the Pregnancy Risk Assessment Monitoring System (PRAMS), the Child Health Survey (CHS), the Youth Risk Behavior Survey (YRBS), and the American Community Survey (ACS). Data and short term trends for these measures are lightly shaded in blue. Most other measures come from birth certificate (BC) and death certificate (DC) data, but some measures are derived from special registries or data sets. Newborn hearing screening data are from the state health department's Early Hearing Detection and Intervention program (EHDI), while injury hospitalization data come from the Central Trauma Registry (CTR). Child abuse data are from the Colorado Department of Human Services (CDHS) and the number of enrollees in the Child Health Plan Plus (CHP+) and Medicaid come from the Department of Health Care Policy and Financing (HCPF). The Colorado Department of Education (CDE) provides data on high school graduation rates and the Colorado Department of Public Health and Environment (CDPHE) provides data on chlamydia rates.

Healthy People 2020 Target
Every ten years, Healthy People sets targets for numerous public health objectives. For 2010 there were 467 separate objectives; for 2020, the number increased to nearly 600. While many 2010 objectives were retained for 2020, the targets for nearly all of them were changed; the new targets are virtually all more modest than those set for 2010. For more information, visit: http://www.healthypeople.gov/2020/default.aspx. Colorado 2020 targets were added for measures without HP targets or where HP targets have already been met, and were set by the MCH Program in 2012.

Year
Data reported below each year's heading are data pertaining to that year. For example, the percent of women 18-44 eating 5 or more fruits and vegetables shown for 2009 (27%) are from the data from the Behavioral Risk Factor Surveillance System obtained during 2009. These values will differ from those shown in the Maternal and Child Health County Data Sets released through 2011 because they refer to data for a single year, while most data in the Data Sets cover several years. Data obtained from surveys are rounded to the nearest whole percentage.

Short Term Trend: 2006 to 2010
Short term trends are categorized as “Improved,” “Worse,” “Mixed,” or “No real change.” For a variety of reasons, some trends cannot be determined and are shown as “NA.” The description of the change between the 2006 and 2010 data sets (or other years as noted) may be somewhat arbitrary. Values based on survey data need relatively large changes to obtain “Improved” or “Worse” labels because percentages shown are estimates with confidence intervals. Rates based on full count data (births, deaths, registries) require smaller changes to obtain descriptions indicating change. Some trends are measured from a year other than 2006 and are noted.

Long Term Trend: Percent Change 2000 to 2010
Long term trends are presented when data are available and comparable between 2000 and 2010. The percent change is the difference between the 2000 and 2010 values divided by the 2000 value. The result is multiplied by 100 to yield a percent. The percent change is how much the measure has increased (+%) or decreased (-%) over the ten-year period. The percent change is based on unrounded values for 2000 and 2010.

2010 Position Relative to 2020 Target (HP or Colorado)
“Meets target” indicates that the value shown for 2010 is the same or better than the target set for 2020. “Close to target” indicates that the value is within 20 percent of the target. “At some distance” describes values that are more than 20 percent away from the target, but are less than double the target for measures requiring a decrease and are up to half the target for measures requiring an increase. “Far from target” indicates a value that is either double or half the 2020 target, depending on whether the measure requires a decrease or an increase.

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Phase One Prioritization Data Synthesis

ISSUE	Quantitative Data				Qualitative Data			
	HP2020 Comparison	**Proposed National Performance Measure**	**LPHA Agency or MCH Priority** (Population Unknown)	**Current MCH Priority Significant Traction** (Based on mid-course review)	**Regional Meeting Top Five (Number of groups = 44)**	**State Meeting Top Five (Number of groups = 5)**	**Stakeholder Survey Multiple Choice (N=73)**	**Stakeholder Survey Open-ended (N=73)**
WOMEN AND INFANTS								
Unintended pregnancy	Meets the goal	No	8	No (Preconception)	4	2	N/A	1
Well-woman care (including access to care)	Data Not Available	Yes	10 (Access to care)	N/A	12	1	40	2
Insurance coverage	Close/Some Distance	No	0	N/A	3	0	N/A	3
Medical home	Meets the goal	No	0	N/A	8	0	N/A	1
Mental health	Close/Some Distance	No	21	N/A	17	1	N/A	6
Pregnancy-related depression	Data Not Available	No	10	Yes	10	2	32	1
Substance use/marijuana prevention (both pregnant and non-pregnant women)	Far from the goal	Yes (Smoking during pregnancy)	16 (Substance use)	N/A	7	1	23 (Smoking during pregnancy)	7
	Meets the goal							
	Close/Some Distance							
	Close/Some Distance							
	Close/Some Distance							
	Meets the goal							
Healthy eating, active living	Close/Some Distance	No	34	no (preconception)	7	1	N/A	8
	Data Not Available							
	Meets the goal							
	Meets the goal							
	Meets the goal							
Low-risk cesarean deliveries	Meets the goal	Yes	0	N/A	0	0	12	1

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Phase One Prioritization Data Synthesis

ISSUE	Quantitative Data				Qualitative Data			
	HP2020 Comparison	**Proposed National Performance Measure**	**LPHA Agency or MCH Priority** (Population Unknown)	**Current MCH Priority Significant Traction** (Based on mid-course review)	**Regional Meeting Top Five (Number of groups = 44)**	**State Meeting Top Five (Number of groups = 5)**	**Stakeholder Survey Multiple Choice (N=73)**	**Stakeholder Survey Open-ended (N=73)**
WOMEN AND INFANTS								
Perinatal regionalization	Meets the goal	Yes	0	N/A	0	0	N/A	0
Inadequate maternity leave	Data Not Available	No	0	N/A	2	0	N/A	1
Safety/injury of women	Data Not Available Data Not Available	No	0	N/A	0	0	N/A	5
Safe sleep	Meets the goal	Yes	0	N/A	2	0	9	2
Breastfeeding	Close/Some Distance Close/Some Distance	Yes	This may relate to obesity prevention.	Yes (Part of ECOP)	10	0	32	4
Infant mortality	Meets the goal	No	0	N/A	0	0	N/A	0
Oral health	Close/Some Distance	Yes	6	N/A	9	1	9	0

ISSUE	Quantitative Data				Qualitative Data					
	HP2020 Comparison	**Proposed National Performance Measure**	**LPHA Agency or MCH Priority** (Population Unknown)	**Current MCH Priority Significant Traction** (Based on mid-course review)	**Regional Meeting Top Five Number of groups = 49)**	**State Meeting Top Five (Number of groups = 5)**	**Stakeholder Survey Multiple Choice (N=69)**	**Stakeholder Survey Open-ended (N=70)**	**Youth Survey Multiple Choice (N=165)**	**Youth Survey Opend-ended (N=165)** This question was optional
YOUTH										
Bullying	Close/Some Distance	Yes	No	N/A	7	1	37	0	81	6
Safety/Injury prevention (TMV, risky behaviors)	Meets the goal Meets the goal Meets the goal	Yes	5	No (TMV)	13	1	13	1	36 (Teen Motor Vehicle)	18
Mental health	Close/Some Distance	No	21	N/A	22	1	N/A	14	N/A	31

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Phase One Prioritization Data Synthesis

Suicide prevention	Close/Some Distance Far from the goal	No	21 (mental health)	N/A	6	1	N/A	0	N/A	7
Insurance coverage	Close/Some Distance	Yes	0	N/A	1	0	10	0	20	0
Medical home	Close/Some Distance	No	0	N/A	9	0	8	0	14	2
Health care access/adolescent well visit	Meets the goal	Yes	10 (Access to care)	N/A	7	0	6	2	3	2
Active living, healthy eating	Meets the goal Meets the goal Meets the goal	Yes	34	N/A	8	1	23	4	54	17
Marijuana/substance abuse prevention	Close/Some Distance Meets the goal Meets the goal	No	16 (substance use)	N/A	14	1	N/A	13	N/A	34 (5 -Tobacco smoking)
Youth systems	Data Not Available	No	N/A - No local action plan	Yes	8	1	28	2	38	7
Sexual health (including healthy relationships)	Meets the goal	No	9 (Unintended pregnancy and youth sexual health)	No	16	3	29	3	70	4
Transition	Close/Some Distance	Yes	0	N/A	0	1	23	0	34	2
	Quantitative Data				**Qualitative Data**					
ISSUE	**HP2020 Comparison**	**Proposed National Performance Measure**	**LPHA Agency or MCH Priority** (Population Unknown)	**Current MCH Priority Significant Traction** (Based on mid-course review)	**Regional Meeting Top Five Number of groups = 49)**	**State Meeting Top Five (Number of groups = 5)**	**Stakeholder Survey Multiple Choice (N=69)**	**Stakeholder Survey Open-ended (N=70)**	**Youth Survey Multiple Choice (N=165)**	**Youth Survey Opend-ended (N=165)** This question was optional
YOUTH										
Concussions	Data Not Available	No	0	N/A	0	0	N/A	0	N/A	0
Diabetes, asthma	Data Not Available Close/Some Distance	No	0	N/A	0	0	N/A	0	N/A	0
Overmedication of foster kids	Data Not Available	No	0	N/A	0	0	N/A	0	N/A	0

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Phase One Prioritization Data Synthesis

Homelessness	Data Not Available	No	0	N/A	1	0	0	0	N/A	3
	Quantitative Data				**Qualitative Data**					
ISSUE	**HP2020 Comparison**	**Proposed National Performance Measure**	**LPHA Agency or MCH Priority** (Population Unknown)	**Current MCH Priority Significant Traction** (Based on mid-course review)	**Regional Meeting Top Five (Number of groups = 44)**	**State Meeting Top Five (Number of groups = 5)**	**Stakeholder Survey Multiple Choice (N=75)**	**Stakeholder Survey Open-ended (N=75)**		
CHILDREN										
Developmental screening, id, referral	Far from the goal	Yes	11	Yes	19	2	43	8		
Healthy eating/active living (ECOP)	Meets the goal Meets the goal	No	34	Yes	17	2	38	2		
Healthy eating/active living (6-11 year olds)	Meets the goal Close/Some Distance	Yes	0	N/A	0	0	38	0		
Mental health	Close/Some Distance	No	21	N/A	9	1	N/A	9		
Insurance coverage	Close/Some Distance	Yes	0	N/A	2	0	24	1		
Health care access	Meets the goal	No	10	N/A	2	0	N/A	3		
Safety/injury prevention (home, auto, childcare, environmental, guns, marijuana, etc.)	Meets the goal Meets the goal Meets the goal	Yes	5	N/A	10	1	27	3		
Affordable and quality preschool	Data Not Available	No	0	N/A	3	0	N/A	3		
Child abuse and toxic stress	Meets the goal	No	0	N/A	3	0	N/A	3		
Medical home	Meets the goal	Yes	10 (Required for large agencies)	No	8	0	19	2		
Oral health	Close/Some Distance Close/Some Distance Meets the goal	Yes	14	No	7	1	11	0		

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Phase One Prioritization Data Synthesis

	Meets the goal Meets the goal							

	Quantitative Data				Qualitative Data			
ISSUE	**HP2020 Comparison**	**Proposed National Performance Measure**	**LPHA Agency or MCH Priority** (Population Unknown)	**Current MCH Priority Significant Traction** (Based on mid-course review)	**Regional Meeting Top Five (Number of groups = 44)**	**State Meeting Top Five (Number of groups = 5)**	**Stakeholder Survey Multiple Choice (N=75)**	**Stakeholder Survey Open-ended (N=75)**
CHILDREN								
Household smoke	Close/Some Distance	Yes	5	N/A	2	0	2	0
Immunizations	Close/Some Distance	No	0	N/A	3	0	N/A	0
Diabetes, asthma	Data Not Available Close/Some Distance	No	0	N/A	0	0	N/A	0

Criteria Coding Key			
HP2020 Comparison	Far from the goal	Close/some distance to the goal	Meets the goal
National Performance Measure	Yes	N/A	No
LPHA Agency or MCH Priority	Yes (≥1)	N/A	No (0)
Current Priority - Significant Traction	Yes	N/A	No
Regional Meetings - Top Five	≥10	5 to 9	0 to 4
State Meeting - Top Five	1, 2 or 3	N/A	0
Stakeholder Survey - Multiple Choice	20 to 40	N/A	0 to 19
Stakeholder Survey - Open ended	≥6	1 to 5	0.00
Youth Survey - Multiple Choice	>50	20 to 50	<20
Youth Survey - Open ended	>20	10 to 20	<10

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Well woman care

1. Issue under consideration

Well woman care

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

With implementation of the Affordable Care Act, a number of preventive services are now covered without co-pay or co-insurance. Those services that apply specifically to women of reproductive age and could result in improved maternal health include screening for: alcohol and tobacco use, HIV, blood pressure, depression, domestic violence, type 2 diabetes, and obesity. In addition, counseling for alcohol abuse, prevention of sexually transmitted diseases, contraception, healthy diet and obesity are covered, along with tobacco cessation interventions.[1] 62.2% of Colorado women ages 18 & over had a preventive visit during the past year as compared to 74.4% of women nationally. Access to preventive care is often associated with the availability of insurance to cover visits. According to 2012 CO BRFSS data, 1 in 5 (20%) White women stated they were unable to see a doctor due to cost compared to 1 in 3 (33%) Hispanic women.[2]

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

The greatest benefit of addressing this performance measure would be to focus the efforts on receipt of a postpartum visit, as well as integration of other priority topic areas with this indicator. This would allow a number of health issues post pregnancy to be addressed including depression screening, diabetes screening, substance use screening, establishment of a birth control method and recommendations around postpartum weight loss.

North Carolina established a postpartum incentive ($150) to better track postpartum visits separate from the global billing payment for prenatal care. Initial results show that the incentive appears to drive earlier scheduling of postpartum visits to allow time for follow-up if the client misses the first appointments, and improved use of standardized screening tools for depression. The initiative has focused on provider outreach around standard postpartum clinical guidance, including timing & content of postpartum visit and transition to primary care along with reproductive life planning and use of a well-matched contraceptive method.[3]

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

To address health inequities it is important to look at both the social determinants of health and health factors such as health behaviors, mental health status and access/utilization of health care. An access to care priority does not have a direct impact on the social determinants of health part of the equation, but it does have the potential to influence health factors. By expanding access to quality, preventive care there is the potential to improve a myriad of health indicators that we often see as inequalities in the data between income categories and various racial & ethnic groups (ex: higher rates of unintended pregnancy, higher rates of postpartum depression, etc.). Since non-citizens do not have access to the expanded benefits under the Affordable Care Act, there would likely continue to be inequities based on citizenship status.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

Estimated costs for implementation is $75,000 to include: funding for internal CDPHE staff to coordinate activities (estimate .5 FTE at HPIII and .1 FTE at GPV), external contracts for project-related activities, travel, training, and operational support (computers, etc.).

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1 U.S. Centers for Medicare and Medicaid Services. Preventive Health Services for Adults. https://www.healthcare.gov/preventive-care-benefits/

2 CDPHE, BRFSS data 2012

3 CMMS Maternal & Infant Health Initiative. "Improving the Health of Mothers and Infants in Medicaid and CHIP: Investing in the Future of Our Nation." Webinar held on October 7, 2014.

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

Two years: Increased awareness among women of reproductive age of the importance of preventive care to address health & wellness before illness develops. If focus is on postpartum visit, increased awareness of the importance of continuing to address health factors after pregnancy.

Five years: Increased % of women receiving a preventive care visit, increased % of women receiving a postpartum visit

Ten years: Increased identification and connection to treatment for poor health indicators, particularly in the postpartum period (ex: depression, substance use, diabetes, obesity, etc.)

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

NPM #1: Percent of women with a past year preventive visit

Percent of women who received a postpartum visit. (Medicaid data)

Percent of women who state that they did not see a doctor due to cost (BRFSS).

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

This has not been a recent focus of the MCH work, except under the previous MCH priority of preconception health, therefore there is minimal state staff expertise on this topic. Given the shift in work over the past few years away from access to care and preconception health initiatives there has been a lag in maintaining content expertise, partnerships, and collaborations. These efforts could be renewed with additional staff resources. With the expansion of Medicaid under the ACA, there is likely increased capacity to implement this activity at the state level due to its priority status with other state partners including the Department of Health Care Policy & Financing and Connect for Health Colorado. Locally there is now a network of Regional Care Coordination Organizations (RCCOs) who could help support this effort as well. With a postpartum visit being established as a key performance indicator for the RCCOs, there is a corresponding method for collecting this level of data for the majority of Medicaid clients.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

MCH would primarily play a role as partner in this activity. Connect for Health Colorado and the Department of Health Care Policy & Financing currently have the primary lead role in improving access to care and ensuring consumers are aware of their benefits related to preventive health care. MCH would bring the public health perspective to the table to ensure that the effort encompassed broader prevention goals beyond just a single health care visit.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

I am unaware of any local public health interest or capacity to address this issue. There would be an opportunity to connect local public health agencies with their area regional care coordination organizations to pursue efforts on this topic. We have intentionally tried to move LPHAs away from a focus on access to care over the past 5-7 years, so this would be a shift in expectations.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

The IOM has recommended coverage for at least one well-woman preventive care visit annually for adult women to obtain the recommended preventive services, including preconception and prenatal care. As a result, as of August 1, 2012 the Affordable Care Act required that health plans provide one well-woman visit each year without co-pay, co-insurance or deductible.

In addition, the Centers for Medicare and Medicaid Services Maternal & Infant Health Initiative has developed strategies that align with the increasing well-woman care by establishing a goal to "increase by 10 percentage points the rate of postpartum visits among women in Medicaid and CHIP."[4]

Colorado has moved forward with full implementation of the ACA, including a state-run health care exchange platform and expansion of Medicaid. This allows for about 2/3 of the previously uninsured non-elderly population in the state to now have coverage through one of these two platforms.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

Although embracing preventive care is a move in the right direction for the health care system broadly, and it affords us the opportunity to promote wellness rather than just treat sickness, I do not consider this issue to be a good use of limited MCH resources. There is a lot of investment in the Affordable Care Act and its implementation elsewhere in our state and federally. I can understand the need to align efforts across many federal grants, however I think a focused effort on improving access to healthcare takes us away from our more population-based approach in MCH.

13. Additional comments

If this ends up being selected as a priority, I would focus the effort on the components of preventive care that are provided at the visit rather than the visit itself (and in particular at a postpartum visit) and align with other potential MCH and/or CDPHE priority areas working to impact the broader systems level work including depression, obesity, substance use, and access to birth control. This would establish an approach that addresses both the social determinants of health for the various topic areas and improve the health factors component by addressing access and utilization of health care. I could also see this being one strategy under individual priority areas, as applicable, rather than an entire priority focus itself.

[4] CMMS Maternal & Infant Health Initiative. "Improving the Health of Mothers and Infants in Medicaid and CHIP: Investing in the Future of Our Nation." Webinar held on October 7, 2014.

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Pregnancy-related Depression

1. Issue under consideration

Pregnancy-related depression

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

Please see MCH Issue Brief #6 on Mental Health of Women of Reproductive Age. Additionally, maternal death data from 2004 – 2012 shows the leading causes of death up to one year post delivery are accidental drug overdose (#1) and suicide (#3), both of which may indicate poor maternal mental health status.[1]

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

Although not yet universal, postpartum depression screening rates in Colorado have improved in recent years and we know that providers are aware of and know how to use appropriate, evidence-based screening tools.[2] To continue to move the mark on pregnancy-related depression, we need to move beyond screening and begin to focus on the referral to evaluation component of the screening continuum, including addressing the obstacles that exist for women to access the services, and identifying opportunities to finance the system. This is a similar theme to the work of the developmental screening priority area, and similar strategies could be applied. This would include identifying in a community the essential roles of 1) screening for pregnancy-related depression, 2) referring when concerns exist, and 3) evaluating and connecting women to services when appropriate. Related to each of these roles, there is a need to identify the quality standards and key community partners, develop a screening to referral protocol and develop capacity to provide technical assistance. Working systematically through this process would help to address the concerns of providers who want to know what to do once a woman is identified with symptoms of pregnancy-related depression in their community. Beyond community level systems coordination, the following strategies could be pursued at the state level:

1) Continued efforts to expand the available network of specialized providers by exploring barriers in the insurance industry that limit the number of providers who can be considered "in network" and addressing challenges among specialized providers in accepting various types of insurance including Medicaid
2) Working with insurance companies to create a category of specialization for maternal mental health
3) Continued capacity building activities, including investments in certificate training, developing a maternal mental health endorsement and encouraging inclusion of PRD-related treatment in the curriculum for various health fields
4) Developing/supporting a professional consultation line using telehealth resources to enable providers in rural communities to access appropriate expertise

There also needs to a focus on awareness & community mobilization to begin addressing stigma and the social norms that prohibit women from asking for help postpartum. [3]

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

If all women have access to screening, referral and treatment regardless of income status or race/ethnicity we will begin to level the playing field, but we also begin to de-stigmatize the condition, in particular among families who might be less likely to ask for help. "Stigma can prevent families from acknowledging and talking about what they are experiencing. It also can prevent them from seeking help. Stigma can be a particularly significant barrier for low-income families and families of color. (Focus groups indicated they were) wary of the stigma involved in admitting they have a problem, fearful of what admitting to depression will mean for their children, fearful that if they are not seen as good parents, the child welfare department will take their children away and reluctant to take medications because they fear that the side effects will impair their parenting"[4]

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[1] Maternal Mortality Database, CDPHE

[2] Beckwith, K. The State of Pregnancy-Related Depression Efforts in Colorado. Retrieved at: https://www.colorado.gov/pacific/sites/default/files/PF_The-State-of-PRD-Efforts-in-Colorado.pdf.

[3] Oregon Health Authority. Maternal Mental Health - Community Strategies. Retrieved at: https://public.health.oregon.gov/HealthyPeopleFamilies/Women/MaternalMentalHealth/Pages/CommunityStrategies.aspx

[4] Mental Health America & SAMHSA. Maternal Depression Making a Difference Through Community Action: A Planning Guide. Retrieved at: http://www.mentalhealthamerica.net/sites/default/files/maternal_depression_guide.pdf

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

Estimated costs for implementation is $250,000 to include: funding for internal CDPHE staff to coordinate activities (estimate 1.5 FTE at HPIII and .5 FTE at GPV), external contracts for project-related activities, travel, training, and operational support (computers, etc.).

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

Two years: Increase in % of women identified with pregnancy-related depression; increase in % of maternal mental health providers who are accessible to women; increase in the level of benefits available to women to address mental health issues through private pay or public insurance; increase in % of providers willing to address PRD in their community

Five years: Increase in % of women successfully referred to treatment; decreased stigma in the community around seeking help for pregnancy-related depressive symptoms

Ten years: Improved child outcomes related to having a mother who is emotionally well and able to provide a safe, stable relationship during critical development years; decreased incidence of child maltreatment; mitigation of toxic stress in early childhood

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

- Current SPM: Percent of mothers who reported that a health care worker talked to them about what to do if they were depressed during or after pregnancy.
- Percent of mothers who reported that they *were asked if they were depressed* before, during and after their most recent pregnancy.
- Percent of mothers who reported that they *were depressed* before, during and after delivery.
- Percent of mothers who reported that they were taking prescription medicine for depression during their most recent pregnancy.
- Percent of mothers who reported that they were taking prescription medicine for depression since their new baby was born.
- Percent of mothers who reported that they were receiving counseling for depression during their most recent pregnancy.
- Percent of mothers who reported that they were receiving counseling for depression since their new baby was born.

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

Given the work on this priority over the past 4 years, there has been a tremendous increase in staff capacity at the state level to implement these efforts. There is also a lot of interest among other community partners statewide in working together to tackle these issues including from private funders, academia, medical professionals, Medicaid and health plans and early childhood partners – including the Early Childhood Colorado Partnership, Project LAUNCH and Essentials for Childhood. These external stakeholders are willing to come to the table to think about how we can address this issue from multiple facets and with a multi-stakeholder approach. We also have an engaged PRD Advisory Committee of roughly 50 members (30 of whom actively participate in quarterly meetings to inform our work.) Members include content experts, community champions, direct service providers, and organizational decision makers. We have also garnered the support of partners at the national level who have provided technical assistance and guidance, including staff with the 2020Mom Project and Postpartum Support International. Both of these organizations see Colorado at the forefront of making innovative and important changes to address pregnancy-related depression and often refer to us in their efforts with other states as a model. At the local level, there has also been an increase in capacity in a number of communities that have chosen to work on PRD over the past couple of years. Twenty-seven of 53 local communities have chosen to address mental health as a priority in their public health improvement plans, but without specificity as to areas of focus it is unknown what the capacity is in these communities.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?
The MCH public health role is to serve as a lead in making the connections between the various levels of services, benefits and awareness and driving the conversations at the population health level. It also is an essential partner at the table with health plans to determine how best to improve access to maternal mental health services, and improve availability of maternal mental health expertise. Other agencies will likely serve as the lead on different aspects of the priority work (for example, health plans and HCPF will need to be the lead in the implementation of any expanded health benefits related to screening and treatment). In addition, there are other partners who are leading complementary efforts that need to be taken into consideration – ex: developmental screening, ECCS, Essentials for Childhood, Project LAUNCH, etc.
10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.
There are currently 4 large public health agencies that have selected pregnancy-related depression as a priority area (Tri-County HD, Denver Health, Larimer County PH, Northeast County HD), in addition to some of the smaller public health agencies that are aligning this priority with other work on mental health.
11. Describe the state and federal will (interest, politics, investment) concerning this topic.
Mental health is currently part of the Governor's health plan and a state Winnable Battle. Over the past 4 years we have seen an increasing interest in addressing pregnancy-related depression in particular. There are a number of key initiatives at the state level currently looking at the proposed priority, including but not limited to the SIM grant and the Behavioral Health Transformation Council. The State Innovation Model (SIM) grant has a significant focus on the integration of behavioral health integration in physical health settings. Colorado was the recipient of funding from Project LAUNCH – a 5-year grant focused on social-emotional development in young children, which includes a strategy focused on improving maternal mental health. Aspects of this grant will also focus on behavioral health integration related to early childhood mental health. There is also an early childhood mental health funders group that is forming, and they are interested in expanding the efforts initiated through Project LAUNCH to other communities in the state. Through the collective impact efforts of the Essentials for Childhood grant, housed here at CDPHE, the topic of improved social/emotional health for children and their caregivers has risen to the top as one of the common agenda areas. In addition to these grant specific efforts, Colorado also expanded Medicaid through the Affordable Care Act – and with that came an expansion of mental health screening and treatment. This has resulted in an increase in access to mental health services for many adults who previously did not qualify for Medicaid. Also during 2014, HCPF approved an expansion of their depression screening code to all adults, inclusive of pregnant and postpartum women. The benefit can be billed once per year per client, and is also billable by the child's pediatrician using the child's Medicaid number. Finally, in December 2014, Colorado launched a new 24/7 mental health crisis line with increased 24/7 access to crisis services in all counties in the state. All of the additional resources currently going into mental health in the state indicate that this is a prime time to continue to include pregnant and postpartum women in the conversation, as well as provide resources to ensure services are aligned across the various initiatives.
12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?
"Health in the earliest years—beginning with the future mother's well-being before she becomes pregnant—strengthens developing biological systems that enable children to thrive and grow up to be healthy adults."[5] By addressing the mental health of the mother during and after pregnancy, we have the potential to improve not only the woman's health outcomes, but also support the early relationship she will build with her child. The health of the next generation is dependent on the existence of safe, stable and nurturing relationships early in life. Focusing on this priority now has the potential to impact all of the MCH populations throughout the life course.
13. Additional comments
There is opportunity for integration of these efforts with other mental health and substance abuse efforts, as well as with child health priorities focused on developmental screening. The key to the next five years will be coordinating efforts at the community and policy level to improve access to mental health services.

[5] Center on the Developing Child at Harvard. InBrief: Foundations of Lifelong Health. Retrieved at: http://developingchild.harvard.edu/index.php/resources/briefs/inbrief_series/inbrief_foundations_of_lifelong_health/

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Mental Health Among Women

1. Issue under consideration
Women's mental health including but not limited to pregnancy-related depression. Good mental health is a critical part of a woman's overall health. The most common forms of mental illness that affect women include depressive disorders, anxiety disorders and substance abuse, all of which carry a significant burden of disability. Despite the fact that these disorders can be identified through screening and are treatable, there are considerable barriers in Colorado to accessing treatment. These barriers include issues related to insurance parity, workforce shortages, as well as the stigma associated with seeking help for mental and substance abuse disorders.
2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.
Please refer to the MCH Issue Brief Number 6 on Mental Health Among Women of Reproductive Age in Colorado. Some of the following is data extracted from the aforementioned brief: Consistent with Essentials for Childhood's framework for developing safe, stable and nurturing relationships and environments to assure children reach their full potential, preventing and treating mental health disorders can help women and their families lead happy, healthy lives. However, treatment can be limited by social and structural barriers like misinformation and access to services.[1,2,3] Fifty-five of Colorado's 64 counties are designated as Mental Health Professional Shortage Areas (HPSAs); 48 counties are designated due to geographic isolation or lack of sufficient providers, and seven are designated due to high populations of low-income residents.[4] In 2012, 42.9 percent of Colorado women ages 18-44 who were currently depressed had never been told by a health professional that they had a depressive disorder.[5] Children of depressed mothers are more likely to display social and emotional problems, delays or impairments; poor self-control; aggression; poor peer relationships; and difficulty in school.[6] Since 2003, the number of Colorado women reporting poor mental health (stress, depression, and anxiety) has not improved indicating a gap or lack of service.[7] Children face comparable circumstances when it comes to access to mental health services. "Unlike children's physical health services, for which there is a robust private and publicly funded functioning system, management and delivery of mental health services are much less well developed or coherent. From significant disconnects among the multiple institutions that serve children and their families to chronic financial instability, the children's mental health system is fragile and at-risk. Realizing the promise of the ACA for children and adolescents will require acknowledging systemic barriers that often lead to significant disparities and gaps in care."[8]

[1] Farr SL, Bitsko RH, Hayes DK, Dietz PM. Mental health and access to services among US women of reproductive age. Am J Obstet Gynecol 2010;203(6):542.e1-9.

[2] Ojeda VD, Bergstresser SM. Gender, race-ethnicity, and psychosocial barriers to mental health care: an examination of perceptions and attitudes among adults reporting unmet need. J Health Soc Behav. 2008;49(3):317-34.

[3] Mental Health Association America of CO. What You Need to Know... Depression in Women. Accessed 7/8/13.
[4] Colorado Dept. of Public Health & Environment. Mental Health: Health Professional Shortage Areas (HPSAs). February 2013. http://coloradohealthservicecorps.org/wp-content/uploads/2011/09/HPSA_mental_health_chsc_feb2013.pdf
[5] Colorado Behavioral Risk Factor Surveillance System (BRFSS), CO Dept. of Public Health & Environment.
[6] Concise Statement of the Issue: Pregnancy-Related Depression. CO Dept. of Public Health & Environment.
[7] Colorado Behavioral Risk Factor Surveillance System (BRFSS), CO Dept. of Public Health & Environment.
[8] Improving Access to Children's Mental Health Care: Lessons from a Study involving Eleven States, George Washington University Center for Health and Health Care in Schools, March 2013.

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

Effective strategies to address the issue must include change efforts at the community and societal level of the social ecology. Supporting policy, administrative and regulatory changes to increase best practice mental health integration in primary care, as well as payment reforms to increase incentives for the provision of services is critical to improving access to care.

Access to health insurance reduces parental depression and stress[9]; has the potential to provide family planning and prevent unwanted pregnancies[10]; and provides the opportunity to enroll in home visitation programs and screen for intimate partner violence, depression and substance abuse and link to intervention which reduces child maltreatment[11,12]. Although Colorado was one of 26 states that expanded Medicaid benefits for adults in 2014 there still exist many systemic gaps that are not being addressed by this expansion, including: early mental health intervention for all families, parental risk factor screening, and early childhood mental health screening and access to name a few examples. Screening for depression early and often is critical in mitigating some of the adverse effects on children that can result from PRD, post-partum depression and depression in general in parents and caregivers. This is why it is of critical importance that systems and services are integrated and prepared to address mental health issues.

There is a growing body of evidence that demonstrates that integrating services provides better quality care and can result in significant cost savings. The League of Women Voters of Colorado Behavioral Health Task Force Final Report on Colorado's Behavioral Health System noted siloed funding as a problem when it comes to mental health services. Most importantly, this funding problem affects the continuity of services an individual receives. In other words, if the treated individual leaves an agency where they are receiving treatment, they lose their services.

Additional strategies should include: 1) advocating for the adoption of training specific to early childhood and maternal social/emotional health in degree programs; and 2) advocating for the expansion of comprehensive screening for mental health disorders for women.

Finally, addressing the stigma of seeking help for mental health disorders requires a social norms change strategy to break down the barriers created by unhealthy norms that prevent mothers from appropriately seeking medical attention for mental health care when necessary. From SAMHSA guide (http://www.mentalhealthamerica.net/sites/default/files/maternal_depression_guide.pdf) Stigma can prevent families from acknowledging and talking about what they are experiencing. It also can prevent them from seeking help.

These strategies are in alignment with the Essentials for Childhood (EfC) strategic priorities to create safe, stable, nurturing relationships and environments for children. The EfC priorities were selected following a review of the literature, an environmental scan, and a strategic planning workshop with experts in the fields of mental health, early childhood, human services and public health.

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

Again, from the SAMHSA guide referenced above, stigma can prevent families from acknowledging and talking about what they are experiencing. It also can prevent them from seeking help. Stigma can be a particularly significant barrier for low-income families and families of color. Addressing social norms in order to reduce stigma could lead to increased help-seeking, treatment compliance, and family support.
Providing more inclusive integrated access to mental health services in Colorado impacts the social determinants of health by creating a level playing field so that all parents, caregivers and children have the

[9] Aumann & Galinsky, 2009
[10] Frost et al.
[11] Dubowitz, Lane, Semiatin, & Magder (2012)

[12] Dubowitz, Feigelman, Lane & Kim. (2009)

ability to access mental health services regardless of socio-economic status.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

This priority is aligned with existing work on pregnancy related depression, as well as the EfC initiative described above. Given this, resources could be leveraged to work on women's mental health. Needed resources include a portion of an FTE to coordinate partnerships and integrate work across existing initiatives at CDPHE, and across state agencies. The FTE needs could be combined with those submitted for the PRD priority.

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

Two year impact: Increased number of strategic partnerships between stakeholders engaged in behavioral health integration, implementation of ACA, including Medicaid expansion, EfC maternal health and mental health.. Evidence-based and promising programs and policies are identified, shared as models, and expanded or replicated.

Five year impact: Increased number of health providers offering integrated care models, increased number of screenings for depression, anxiety and substance abuse in traditional and non-traditional settings, decreased stigma about seeking mental health care, increased awareness of and commitment to the integration of mental health services in order to establish safe, stable, nurturing relationships and environments for parents, caregivers and their children.

Ten year impact: Change in societal norms that reflect the health sectors support and responsibility to children and families, increased access to mental health services for parents, caregivers and children in Colorado, increased percentage of women who report mental health conditions and who report receiving treatment for those conditions by a health care provider..

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

See the document ProposedNationalPerformanceMeasures located at:

I:\MCH\MCH Needs Assessment 2015\Stakeholder Engagement\Facilitation materials

Percentage of mothers who report a health care provider talked to them about what to do if they felt depressed during pregnancy or after delivery (BRFSS)

Percent of adults who reported taking medication or receiving treatment from a doctor or other health professional for any type of mental health condition or emotional problem.

Percent of adults who report experiencing symptoms of depression

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

There is strong capacity at the state level given the PRD and EfC projects, as well as the winnable battle are housed at the CDPHE. Mental Health is a state winnable battle and is part of the Governor's health plan. There are a number of key initiatives at the state level currently looking at the proposed, including but not limited to the SIM grant and the Behavioral Health Transformation Council. Twenty-seven of 53 local communities have chosen to address mental health as a priority in their public health improvement plans but without specificity as to areas of focus so it is unknown what the capacity is at the local level.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

The MCH public health role is to serve as a lead in making the connections between the various levels of services, benefits and awareness and driving the conversations at the population health level. It also is an essential partner at the table with health plans to determine how best to improve access to maternal mental health services, and improve availability of maternal mental health expertise. Other agencies will likely serve as the lead on different aspects of the priority work (for example, health plans and HCPF will need to be the

lead in the implementation of any expanded health benefits related to screening and treatment). In addition, there are other partners who are leading complementary efforts that need to be taken into consideration – ex: developmental screening, ECCS, Essentials for Childhood, Project LAUNCH, etc.
10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.
As stated above: Twenty-seven of 53 local communities have chosen to address mental health as a priority in their public health improvement plans but without specificity as to areas of focus so it is unknown what the capacity is at the local level.
11. Describe the state and federal will (interest, politics, investment) concerning this topic.
There is a great deal of state and federal will around addressing mental health, integration of care and reduction of stigma. Examples of this include the SIM Grant; Project Launch; EfC; ACA expansion; a state mental health crisis service line; System of Care; and the Office of Behavioral Health
12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?
This issue cuts across a number of MCH priorities in that it addresses infrastructural and systems gaps that are affecting health services at many levels.
13. Additional comments

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Substance Use Among Women

1. Issue under consideration

Substance abuse poses significant health risks to women of reproductive age (18-44). The abuse and misuse of substances is associated with health risks like addiction, mental health disorders, organ damage, overdose, and death. For women who become pregnant, substance abuse is associated with preterm birth, stillbirth, fetal development problems including brain abnormalities, infant death, and childhood developmental problems that can be long-lasting. Women who abuse or misuse substances are also at higher risk for a range of social problems including domestic violence, child abuse or motor vehicle accidents. Additionally, substance use among women poses potential exposure issues for children, including secondhand smoke exposure or risk of unintentional ingestions.

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

The MCH brief that addresses substance abuse among women of reproductive age provides data.

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

State level strategies to address substance abuse; specifically prescription drug abuse or misuse and marijuana use or exposure include the following.

- Engage with or convene **strategic partners** across the state, including the Substance Abuse Trend and Response Taskforce, the Colorado Consortium for Rx Drug Prevention, the Marijuana Education Oversight Committee, the Substance-Exposed Newborns Committee, the state advisory committee on pregnancy-related depression, environmental health, and many others.
- **Use/Improve data systems**, particularly through the maternal mortality data review system access for prescription drugs or other substance use, and monitoring prescription drug misuse through CDPHE's new access to the prescription drug monitoring system. Continue support for improving data collection systems throughout the state to better understand the impact of marijuana use or exposure on women of reproductive age. Questions on marijuana use and exposure have been added to the Healthy Kids Colorado Survey, Behavior Risk Factor Surveillance System, Child Health Survey, and Pregnancy Risk Assessment Monitoring System. Though these questions were not added prior to legalization to establish a strong baseline, Colorado will be able to monitor trends moving forward.
- **Systems, policy and program strategies,** including 1) increasing training and standardized practices for screening, testing, and treatment of substance use during pregnancy, particularly with prescription drug and marijuana use; 2) requiring use of the PDMP (2012 Brandeis Best Practices for PDMP White Paper); 3) promoting the new clinical prevention guidance document to assist healthcare providers with standardizing screening and treatment referral for marijuana use in women who are pregnant or capable of becoming pregnant; 4) promoting the new clinical prevention guidance document to assist healthcare providers with standardized screening and prevention recommendations for marijuana exposure in the home;5) partnering with DORA to educate providers on the newly adopted opioid prescribing guidelines (CDC Policy Impact: Prescription Painkiller Overdoses); 6)increasing integration of PDMP reports within electronic health records (2012 Brandeis Best Practices for PDMP White Paper); 7) enhancing the use of unsolicited reporting through the PDMP by cross-promoting prescriber education in order to reduce overprescribing (2012 Brandeis Best Practices for PDMP White Paper); 8)restricting access to prescription opioid medications through the institutionalization of DORA supported provider education curriculum on prescribing and pain management best practices, including PDMP use, particularly with obstetrics (Governor's Plan to Reduce Prescription Drug Abuse); 9)increasing knowledge about 1-800 referral lines for supporting women using substances during pregnancy, improving access to treatment, and increasing awareness of statewide pregnancy substance abuse treatment resources(Association of State and Territorial Health Officials, Neonatal Abstinence Case Study, 2013); 10)restricting access to prescription opioid medications through the development of a sustainable statewide medication disposal program (Governor's Plan to Reduce Prescription Drug Abuse); 11)disseminating patient-focused education materials to inform pregnant and breastfeeding women on the potential risks of substance use, including fact sheets and mass

reach media (In development for marijuana specific to pregnant/breastfeeding populations. In development for prescription drug misuse, but not specific to this population) (Governor's Plan to Reduce Prescription Drug Abuse); 12)increasing public education on the laws related to smoke-free vehicles and public spaces to prevent exposure of pregnant women and children to secondhand marijuana smoke. Increase public education about the importance of reducing secondhand marijuana smoke exposure in homes (Community Guide recommended strategy for secondhand tobacco smoke); 13) increasing enforcement of bans on public and vehicle use of marijuana to reduce potential secondhand smoke exposure (Community Guide recommended strategy for secondhand tobacco smoke); 14) increasing local level policy measures to enforce smoke-free multi-unit housing (Lung.org); 15)enhancing safe sleep education efforts around the dangers of secondhand smoke to include marijuana smoke (National Institute of Child Health and Human Development).

- **Evaluation** of impact of PDMP now that registration is mandated for eligible prescribers and delegated access can be granted to other health care professionals on the medical team(2012 Brandeis Best Practices for PDMP White Paper).

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

Addiction, stress, and early childhood development are all commonly accepted social determinants of health. By reducing levels of addiction among women of reproductive age, levels of family stress are reduced and opportunities for appropriate early childhood development are increased.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

Many of the strategies proposed above are currently funded activities either through CDC or state funds. However, LPHA's do not currently have funding for marijuana and although many have named substance abuse as a priority in their Public Health Improvement Plans, funding for prevention activities is limited. LPHA's could use funding to support staff time to integrate local level strategies with state-level priorities. LPHA's could also provide safe storage/means restriction options (i.e. lock boxes) to families.
At the state level, funding could be used to enhance and further leverage the strategies currently being implemented. Funding for an additional 0.5 FTE to provide technical assistance on and evaluate the strategies recommended above plus associated costs include travel to meet with partners across the state, development and printing costs of public-facing materials, drug disposal costs, conference travel and registration, etc. are estimated to be $60,000 annually.

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

Due to a lack of data on current levels of marijuana use among this population, secondhand marijuana smoke exposure in the home, and the impact of prevention strategies in a state with legalized recreational marijuana, we are unable to estimate the impact of marijuana efforts at this time.
The Governor's office set the goal of reducing prescription drug misuse from 6 to 3.5 percent through the implementation of some of the above strategies. With the addition of mandatory use of the PDMP and EHR integration, state agencies may be able to further reduce misuse beyond the stated Colorado goal.
Based on the Adverse Childhood Experiences study, reducing parental addiction can reduce a variety of other long term negative impacts among those children.

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

Percent of mothers reporting marijuana use during pregnancy or after delivery. (PRAMS)
Percent of parents that report smoking marijuana inside the home. (Child Health Survey – CHSMJ4&5)
Percent of mothers reporting prescription drug use during pregnancy. (PRAMS)

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

Existing maternal mortality review program.
Existing state advisory committee on pregnancy related depression.
Existing state level Colorado Consortium for Prescription Drug Abuse Prevention and related mass reach media campaigns and patient-focused materials.
Existing CDC funding for Core Violence and Injury Prevention Programs, including prescription drug overdose

prevention as a priority.
Existing funding for the Retail Marijuana Education Program, which includes patient-focused materials and mass reach media campaigns.
Existing best practice policies for mandatory PDMP registration, public health access to the data, and opioid prescribing guidelines.
Existing winnable battle prioritization of substance abuse prevention, highlighting prescription drugs.
Local level prioritization of winnable battles in public health improvement plans.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

Convene partners to reduce access to substances and connect the public with screening and treatment. Public health is a lead in conducting public education. Public health is the lead to use and improve data collection systems, collect population level data and to identify effective strategies.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

Many local public health agencies (LPHAs) have adopted the Winnable Battle model and are prioritizing substance abuse prevention. LPHAs have selected approximately 25 different strategies to address substance abuse prevention at the local level.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

Existing winnable battle prioritization of substance abuse prevention, highlighting prescription drugs. The Governor's office has prioritized prescription drug abuse prevention through leadership in accessing funding, creating a statewide strategic plan, and convening the Consortium. The White House Office of National Drug Control Policy has prioritized similar strategies to address prescription drug abuse as those outlined above. AMCHP created learning collaboratives and funded states to enhance maternal mortality review data-to-action activities nationally.
Additionally, there is state and federal will to assure that the legalization of marijuana does not create lasting negative public health outcomes. Based on systematic reviews of literature, there are particular public health concerns related to secondhand marijuana smoke exposure and to marijuana use during pregnancy.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

There is increased interest across all MCH priorities to address toxic stress in young children. Reducing maternal substance use is an effective strategy to prevent toxic stress, as identified through the Adverse Childhood Experiences Study and the Essentials for Childhood funding CDPHE has received to improve safe, stable and nurturing relationships and environments.
Due to the current lack of funding at the local level for LPHAs to implement the strategies listed above necessary to address substance abuse among women of reproductive age, identifying this as a priority will increase efforts to reduce substance use and exposure in this population. LPHAs that have selected this priority seem to lack specific information on the steps that they will take to address the issue and no systematic approach to identifying strategies that align with statewide priorities. MCH funding will provide guidance through the local level action plan templates to inform the public health role and how to integrate local and state level strategies.

13. Additional comments

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Breastfeeding

1. Issue under consideration

A. Percent of infants who are ever breastfed and
B. Percent of infants who are breastfed exclusively through 6 months.

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

Evidence is mounting that diet and nutrition can have long-term health effects on infants. Leading health organizations recommend infants receive only breastmilk for the first 6 months of life to protect the health of the infants and their mothers, including protection from some health risks and prevention of childhood obesity.[1,2] A 2014 meta-analysis showed a significantly reduced risk of childhood obesity associated with breastfeeding, with a dose-response effect between reduced obesity risk and breastfeeding duration.[3] Breastfeeding has the potential to impact the approximately 4 million infants born each year in the U.S. and their mothers.[4] The 2014 CDC Breastfeeding Report Card shows Colorado ahead of the national average in all breastfeeding categories, however, Colorado still falls short of the Health People 2020 targets, as shown in the table below.[5,6] Disparities in breastfeeding rates continue by birth country, race/ethnicity, and socioeconomic status. Birth certificate data for Colorado show large disparities between mothers born inside the U.S. compared to foreign-born mothers, with high breastfeeding rates at hospital discharge in foreign-born mothers at 93.12% in 2009-2011 compared to 89.2% in mothers born inside the U.S.[7] This disparity is especially prevalent in Hispanic women, with 93.07% of foreign-born mothers breastfeeding at hospital discharge compared to 82.95% of U.S. born women, and in black/African-American, with only 81.7% of U.S. born mothers breastfeeding compared to 93.13% of foreign-born mothers.[7] In low-income mothers participating in Colorado WIC, 79% initiate breastfeeding (ever breastfed), however, only 13% exclusively breastfeed their infants through 6 months.[8] Health disparities in WIC also exist by race, with 24% of white, non-Hispanic women, 33% of Hispanic women, and only 5% of black, non-Hispanic women ever breastfeeding their infants.[8] The rates by race/ethnicity of WIC participants exclusively breastfeeding their infants through 6 months drop dramatically, with only 6% of white, non-Hispanic women, 5% of Hispanic women, and a mere 1% of black women breastfeeding exclusively through 6 months.[8] Such disparities in breastfeeding initiation, duration and exclusivity among different races/ethnicities in Colorado further provide evidence for the need to increase the promotion, support and protection of breastfeeding in Colorado.

Breastfed	U.S National	Colorado	2020 Target[5]
Ever	79.2%	81.0%	81.9%
At 6 months	49.4%	55.2%	60.6%
At 1 year	26.7%	29.3%	34.1%
Exclusively through 3 months	40.7%	50.3%	46.2%
Exclusively through 6 months	18.8%	25.8%	25.5%

Centers for Disease Control and Prevention Breastfeeding Report Card 2014 – National Immunization Survey (NIS), 2011 births[5] and Healthy People 2020 breastfeeding targets[6]

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

The Surgeon General's Call to Action to Support Breastfeeding outlines 20 recommended actions and associated implementation strategies to better support women and reduce the barriers women face when choosing to breastfeed.[2] In addition, the CDC Guide to Strategies to Support Breastfeeding Mothers and Babies provides guidance on how to select strategies to increase breastfeeding rates and best support breastfeeding mothers.[9] The Guide provides the most relevant information for each strategy, rationale, evidence of effectiveness and program examples. The Guide focuses

on 9 strategies outlined below and in **bold** are current partners/strategies the State uses to achieve these strategies (in [brackets] are possible/proposed strategies):[9]

1. Maternity care practices – **Chronic Disease and School Health grant (CDSH), Colorado Baby-Friendly Hospital Collaborative (CBFHC)**
2. Professional education – **WIC, MCH, CDSH**
3. Access to professional support – **WIC, MCH, CDSH, CBFHC, [ACA/Insurance implementation]**
4. Peer support programs – **WIC**
5. Support breastfeeding in the workplace – **CDSH, WIC, MCH**
6. Support breastfeeding in early care and education – **MCH, Child and Adult Care Food Program (CACFP)**
7. Access to breastfeeding education and information – **WIC, MCH, CBFHC, CDSH**
8. Social marketing
9. Addressing the marketing of infant formula

Although a variety of evidence indicates breastfeeding reduces many health risks for both mothers and children, numerous barriers to breastfeeding remain and action is necessary to overcome these barriers to improve the health and lives of women and children throughout the state.[2] Barriers include, lack of breastfeeding knowledge, cultural acceptance and support, lactation problems, barriers to appropriate health services, and employment and child care.[2]

An important strategy recommended by the Surgeon General's Call to Action to increase breastfeeding initiation and exclusivity is the Baby-Friendly Hospital Initiative (BFHI). BFHI is a global program launched by the WHO and United Nations Children's Fund (UNICEF) to recognize birthing facilities who successfully implement the Ten Steps to Successful Breastfeeding, providing mothers information, confidence and skills necessary to breastfeed.[10] The Ten Steps consist of evidence-based practices shown to increase breastfeeding initiation and duration with the overall intent of improving the health of children around the world.

Mothers are currently the fastest growing segment of the U.S. workforce, with 57.3% of new mothers in the workforce, an increase of 80% in the past 20 years.[11,12] Working outside the home negatively impacts both initiation and duration of breastfeeding.[13-15] Lack of workplace lactation support and paid maternity leave are significant barriers to breastfeeding.[2,16] Studies indicate women planning to return to work after childbirth are less likely to initiate breastfeeding and breastfeed for shorter durations compared to unemployed mothers.[16-18] Women with longer maternity leaves are more likely to breastfeed even during employment and the duration of breastfeeding can be increased by almost one-half week for each week of maternity leave.[19,20] Additionally, an extra week of maternity leave reduces infant mortality rates by 0.5 deaths per 1,000 live births in industrialized countries.[21] Effective strategies demonstrated to improve breastfeeding initiation and duration rates are the option of paid maternity leave and the development of supportive workplace policies and programs to enable women to continue providing breastmilk to their infants after returning to work.[2,17] Without supportive workplace programs, hourly workers face additional challenges compared to salaried workers, such as less control over their schedule, pay reductions due to increased break time for pumping and pressure from coworkers and supervisors not to take breaks.[2,22]

The Affordable Care Act (ACA) passed in 2010 includes support for breastfeeding women through trained lactation support professionals, appropriate breastfeeding equipment and improved follow-up breastfeeding care, which has the potential to greatly increase breastfeeding rates and improve follow-up care for low-income families.[2,23,24] The United States Breastfeeding Committee has developed a model policy which will guide CDPHE activities for supporting ACA coverage of breastfeeding services, supplies and pumps.[24] Additional funding is requested to develop a coordinated role with CDPHE's Health Systems unit to support Colorado health plans' implementation of USPSTF level B breastfeeding recommendations.

An additional strategy impacting breastfeeding involves the promotion of breastfeeding standards in child cares. Since most employed mothers return to work during the infant's first year of life, child care providers can play a critical role in helping mothers to initiate and sustain breastfeeding. While national standards on supporting breastfeeding mothers and caring for breastfed infants exist for child cares, few states have regulations mandating breastfeeding standards be enforced.

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

The most important strategies Colorado has chosen to focus on to increase breastfeeding initiation, duration and exclusivity include working to ensure support for exclusive breastfeeding in the hospital and increase the support mothers receive after they leave the hospital through the promotion of Baby-Friendly Hospital Initiative practices and hospital designation.[10] The Colorado Baby-Friendly Hospital Collaborative (CBFHC) was formed to provide a collaborative environment to support 18 hospitals around the state during their journey to becoming Baby-Friendly designated. In 2013, 47% of live births in Colorado occurred in facilities participating in CBFHC.[7] According to 2009-2013 Colorado birth certificate data, hospitals participating in the CBFHC represent greater ethnic diversity than current Baby-Friendly designated hospitals and non-participating hospitals by serving larger percentages of Hispanics and African-Americans.[7] Furthermore, CBFHC hospitals serve a greater proportion of mother's from low-income households (especially <$15,000/year) and approximately 40% of patients at CBFHC hospitals utilize Medicaid to pay for delivery.[7]

Average breastfeeding initiation rates for CBFHC hospitals in 2013 exceeded the state average at 87% and only 16% of mothers eligible for exclusive breastfeeding received formula during their hospital stay.[7,25]
An additional strategic focus area involves strengthening mother-to-mother support through hospital and community health groups, including WIC, to connect breastfeeding mothers with each other. WIC provides breastfeeding education, services and support, via lactation consultants, peer counselors, and pump equipment, to low-income families and advocates for workplace breastfeeding protection and rights. Peer support is a proven method to increase and improve breastfeeding practices by providing counseling and support to reinforce breastfeeding recommendations in a socially and culturally appropriate manner.[26-28]
To increase a woman's access to breastfeeding support, workplaces and childcares are another targeted strategy. Employers with mostly entry level and hourly staff are targeted in order to better reach economically disadvantaged women and those with diverse cultural backgrounds to increase employer support and development of lactation programs. Work with child cares focuses not only on lactation programs for employees, but also on increasing breastfeeding education, beliefs and support by promoting the adoption of best practices standards. Work will continue on this strategy as results are compiled from a 2014 survey of Colorado child care providers assessing breastfeeding knowledge, attitudes and practices. CDPHE will work to develop tools necessary to fill the gaps demonstrated in the survey with the possibility of developing a statewide breastfeeding-friendly child care recognition program.
Given the importance of breastfeeding for the health and well-being of mothers and children, all of the chosen strategies work to increase breastfeeding rates and support of mothers and infants in a variety of ways.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

To implement the above mentioned strategies, currently only 0.25 FTE is allocated utilizing MCH funds totaling $19,262 per year. To carry out the strategies detailed above additional funds would be needed as laid out below:

- Development of child care training, materials and recognition program: $5,000.
- Pending CDSH funding to continue the CBFHC (post June 2016) with new hospitals (FTE, technical assistance and hospital support): $50,000.
- New coordinated role with Health Systems Unit regarding health plan/ACA interpretation and implementation of lactation supportive services (including breastfeeding legislation regarding extended and paid maternity leave) (0.25 FTE): $20,000.

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

According to the CDC Breastfeeding Report card data, WIC Compass report data, and the CDC Pregnancy Risk Assessment Monitoring System (PRAMS), all breastfeeding rates appear to be generally increasing 1-2% per year in each category (ever breastfed, breastfed at 6 months, breastfed at 12 months, exclusively breastfed at 3 months, exclusively breastfed at 6 months). With increased work and influence to increase breastfeeding rates in Colorado, the proposed strategies could increase all breastfeeding rates in all categories by 2-4% in two years, up to 5-10% in five years and possibly reach a U.S. high in ten years, if the current trends and prioritization is sustained. As shown in the table within question 2, if the current increase in breastfeeding rates continues, by 2016, Colorado will have met the Health People 2020 target for the percentage of infants ever breastfed, exclusively breastfed through 3 months and those exclusively breastfed through 6 months. With increased efforts and sustained growth, by 2019, Colorado has the possibility of meeting and far exceeding all of the Healthy People 2020 targets for breastfeeding and by 2024, Colorado could become a nationwide leader in breastfeeding initiation, duration and exclusivity rates. By continuing to focus on increasing breastfeeding rates in Colorado, the health of women and infants could dramatically improve, including a reduction in childhood illness and obesity resulting in decreased health care, insurance and economic costs associated with increased breastfeeding rates.[2,29-33]

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

The most important population-based measures to demonstrate the MCH impact on breastfeeding rates would be the proposed national performance measure of the percent of infants ever breastfed, as well as indicators of breastfeeding duration (percent of infants breastfed at 6 months and 12 months) and exclusivity (percent of infants exclusively breastfed at 3 months and 6 months). Increasing the exclusivity and duration of breastfeeding are associated with improved maternal and infant health outcomes, including lower risk of obesity, respiratory tract infections, ear infections, gastrointestinal infections, diabetes, asthma, sudden infant death syndrome (SIDS) and some cancers.[2,3,29,34-40]
Additional population-based measures include WIC breastfeeding numbers and childhood weight data. Colorado data among WIC participants shows that as breastfeeding rates rise, the percent of children age 2-5 years that are overweight

and obese declines.[8] The number of hospitals in the state designated as Baby-Friendly or on the pathway to designation, and the number of workplaces and child cares with lactation programs and possibly breastfeeding-friendly designation could provide measures to demonstrate the impact MCH prioritization strategies have on breastfeeding promotion, protection and support to increase breastfeeding rates throughout the state.

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

To successfully implement current strategies (hospitals, workplaces, child cares) to increase breastfeeding rates in Colorado, the Breastfeeding Specialist position at 0.25 FTE and proper funding for strategy execution and success is necessary. If additional proposed strategy focus areas are to be included (ACA, insurance, Medicaid, paid maternity leave policy, early child education recognition), an additional 0.25 FTE would be necessary, as well as additional funding for strategy implementation projects. Additionally, to successfully implement current and proposed strategies, collaborations and partnerships with key stakeholders are vital, including, but not limited to, local public health agencies, the Colorado Breastfeeding Coalition, statewide local breastfeeding coalitions, hospitals both within and outside of the CBFHC and those currently Baby-Friendly designated, local employers (including use of Health Links) and child cares (CACFP and state licensed). Collaboration with the Health Statistics and Epidemiology Branch (HSEB) at CDPHE is also essential to the tracking and analysis of the breastfeeding strategies.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

Strategies and MCH public health roles:

- Hospitals, CBFHC – partner and convener roles. Lead is the hospitals themselves and other partners include all hospitals in the CBFHC. We lead the CBFHC.
- Workplace – convener and resource roles. Lead is the employer and other employers throughout the state are partners.
- Child care – lead role, providing information, education, resources and empower. Partners include CACFP, Qualistar, and members of ECOP and Early Child Education committees.
- ACA, insurers, Medicaid, maternity leave policies, health care provider training – provide subject matter expertise and technical assistance

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

Many local public health agencies (LPHA) have expressed interest or have already started work in implementing the workplace and child care breastfeeding strategies, and some have expressed interest in hospital and healthcare provider training strategies. LPHA may have the capacity and opportunities to implement, execute and advance the current and proposed strategies to increase breastfeeding rates throughout the state with proper resources and support. Without the proper resources, progress on this issue is likely to falter. Ongoing CDPHE leadership ensures efforts advance appropriately to achieve and exceed national targets, and allows Colorado to continue to be a model in the region.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

There is a great deal of interest at both the state and federal level to increase breastfeeding rates to improve the health and well-being of mothers and children. Examples of such interest and investment include the CDC Guide to Strategies to Support Breastfeeding Mothers and Babies and the Surgeon General's Call to Action to Support Breastfeeding.[2,9] The CDC's Division of Nutrition, Physical Activity, and Obesity has made increasing breastfeeding rates and decreasing childhood obesity national priorities. Additionally, CDPHE has made obesity part of the 10 Winnable Battles, in which breastfeeding specifically is a priority known to be an effective solution to this health issue. Both in Colorado and in the nation, workplace lactation policies and laws have increased the last several years and the politics behind increased and paid maternity leave to benefit breastfeeding and overall maternal and child health have increased in awareness and priority recently. Breastfeeding is also included as a National Performance measure for the MCH block grant.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

Most definitely. Using MCH resources to increase breastfeeding rates has the potential to improve the health and well-being of all mothers and children in Colorado, reduce obesity risk and reduce economic, health care, and insurance costs. While the breastfeeding rates in Colorado are near or above the national average in many instances, we still have a long way to go as a state. Colorado is still limited in breastfeeding knowledge and support and, according to recent CDC Breastfeeding Report card results, Colorado may have lost some ground in breastfeeding, with a decrease in the initiation (ever breastfed) and duration (breastfed at 6 and 12 months), as demonstrated in the table below. These

variations in percentages over the last 10 years and given the importance of breastfeeding for the health of mothers and children, it is critical that action is taken to promote, protect and support breastfeeding in Colorado.

Year Children born (approx# responses)	Year Reported	Ever Breastfed	Breastfed at 6 months	Breastfed at 12 months	Exclusively breastfed at 3 months	Exclusively breastfed at 6 months
2002 (392)	2005	82.1	46.4	27.2	Not collected	Not collected
2003 (488)	2006	84.4	47.1	20.9	Not collected	Not collected
2004 (366)	2007	83.5	46.0	26.7	38.8	11.6
2005 (353)	2008	85.4	51.0	26.4	43.9	14.8
2006 (434)	2009	84.9	59.4	33.0	48.0	23.5
2007 (499)*	2010	87.7	57.1	31.1	45.3	21.5
2008 (540)*	2011	81.4	52.4	27.2	44.9	22.3
2009 (429)**	2012	86.0 +5.6	51.1 +7.9	28.0 +7.2	44.8+8.0	21.9+7.1
2010 (255)**	2013	79.5+8.1	50.4+9.1	28.2+7.6	44.5+8.9	21.2+7.2
2011 (278)**	2014	81.0+6.3	55.2+7.4	29.3+6.2	50.3+7.4	25.8+6.2

Centers for Disease Control and Prevention Breastfeeding Report Card – National Immunization Survey (NIS). Available at http://www.cdc.gov/breastfeeding/data/.
*Data collected via landline telephone only
**Data collected via landline and cell phone

13. Additional comments

Lack of paid maternity leave is a significant barrier to breastfeeding initiation, exclusivity and duration. Currently, the U.S. is the only developed nation without paid maternity leave and one of four countries among 173 countries studied without a national paid maternity leave policy.[41,42] Only 9 states offer paid family and/or medical leave and most usually cover only part of the wage, have an upper limit on the benefit, and typically rely upon the State Temporary Disability Insurance program and state-administered insurance systems for leave that is financed by employer or employee payroll deductions.[2] Unpaid leave is usually not an option for low-income mothers and typically paid maternity leave eligibility criteria (similar to the eligibility for the Family and Medical Leave Act) excludes large percentages of low-wage workers.[2] Paid maternity leave is essential to reduce the effect employment has on breastfeeding, especially among disadvantaged racial, ethnic, and economic workers, who can benefit the most from breastfeeding.

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Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

1. Issue under consideration

Infant Mortality among African Americans

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

While birth outcomes have improved dramatically over the past century, 25,000 infants still die during the first year of life in this county, placing the U.S. below most developed nations in this health indicator. In Colorado, close to 400 infants under age 1 die each year.

Infant Mortality overall
HP2020 Target: 6.0 infant deaths per 1,000 live births
U.S. infant mortality (2011) rate: 6.1 infant deaths per 1,000 live births
CO rate (2013), all infant deaths: 5.1 infant deaths per 1,000 live births

While Colorado's IM rates fall below the U.S. and HP 2020 rates, significant racial, ethnic and socioeconomic disparities exist. African Americans experience more than twice the rate of infant mortality as White, non-Hispanic infants (at a ratio of 2.4 with the 5-year trend worsening). Colorado's African American population also demonstrates poorer health outcomes in the following related areas:

- The Black low birth weight rate (infants born at < 2,500 grams) in 2013 was 14.5 percent compared to the White, non-Hispanic rate of 8.3 percent.
- Unintended pregnancy is more common among African Americans with 57.1 indicating that a birth was unintended vs. 31.3 among White, non-Hispanic women.
- African American women are less likely to initiate breastfeeding than White, non-Hispanic women (82.6 percent and 93.7 percent, respectively) or to place their infant on their back to sleep than White, non-Hispanic women (67.5 percent and 85.8 percent respectively).
- The estimated rate of sudden unexpected infant death for African American infants (2008-2012) is 23.7 per 10,000 live births compared to 7.8 per 10,000 for White, non-Hispanics.

Source: Colorado Infant Mortality Collaborative Innovation and Improvement Network

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

Strategies will impact the following most common contributing causes

- Prematurity and related conditions: 38 percent of all infant deaths
- Congenital anomalies: 26 percent of all infant deaths
- Other perinatal conditions: 10 percent of all infant deaths
- Sudden, unexpected infant death: 9 percent of all infant deaths

Note: Prematurity and related conditions are a more common cause of infant death among the Black/African American population at 42 percent.

Proposed Strategies

A) Develop and disseminate statewide preterm birth prevention guidelines and B) Identify and/or develop incentives for adoption of PTB guidelines through health benefit plan payment policies.

The implementation of preterm birth guidelines for Colorado will influence provider practice and reimbursement. Among other interventions, the guidelines will likely aim to reduce early, elective C

sections and promote clinical use of 17 Alpha-Hydroxyprogesterone Caproate. Weekly injections of 17P resulted in a substantial reduction in the rate of recurrent preterm delivery among women who were at particularly high risk for preterm delivery and reduced the likelihood of several complications in their infants.
http://www.nejm.org/doi/pdf/10.1056/NEJMoa035140

C) Identify and promote strategies for safe sleep

Sleep-related infant deaths are the leading cause of infant death after the first month of life and the 3rd leading cause of infant death overall. The AAP recommends safe sleep environment including back-sleep position on a separate firm sleep surface (room-sharing without bed sharing) without loose bedding, breastfeeding, and avoiding smoke exposure.
http://www.mchlibrary.org/evidence/NPM-5-safe-sleep.html

D) Establish a family friendly business (FFB) award/seal that acknowledges support for pregnant and postpartum women.

Cited as a promising community intervention by the Community Toolbox, Workgroup for Community Health and Development, these include adoption of a portfolio of policies and practices at either an organizational or legislative level. Associated outcomes include increased worker productivity, increased breastfeeding initiation and duration, reduced stress, increased bonding and positive attachment. *http://ctb.ku.edu/en/table-of-contents/implement/changing-policies/business-government-family-friendly/main*

E) Support development & implementation of Help Me Grow to include resources for pregnant and postpartum women.

A 2012 study by the University of Hartford Center for Social Research evaluated the impact of *Help Me Grow* on children's healthy development by examining whether the system is enhancing protective factors and facilitating families' successful negotiation of risk factors.

"Overall, study findings indicate that support from *Help Me Grow* and subsequent linkage to programs and services enhance protective factors and perhaps even mitigate risk factors," the study notes. "Even among families with differing needs and risks, all responded similarly and positively."

F) Centering (local strategy)

Centering is a model of group health care designed to change how mothers and babies experience their care. Health assessment, education, and support are provided in a group facilitated by a care provider. Implementation of the model resulted in a 33-47 percent reduction in pre-term births, a leading cause of IM. Increases in breastfeeding and child immunization rates are also seen. Evidence rating: Strong (HHS Agency for Healthcare Research and Quality)
http://www.centeringhealthcare.org/
http://www.nichq.org/childrens-health/infant-health/stories/group-care-reduces-preterm-births

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

Infants born to mothers in minority groups have higher rates of infant mortality. Each of Colorado's selected strategies will engage this population specifically.

Example: Family Friendly Policies. There is some evidence that family friendly policies can allow employees to improve their economic status and quality of life. It is posited by some that they confer a number of advantages for the community and the society at large, such as being better for family stability and for children, thus improving the outlook for the next generation and allowing more people to work, and thus to contribute to the society.
http://ctb.ku.edu/en/table-of-contents/implement/changing-policies/business-government-family-friendly/main

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

Partial FTE (.3 absorbed among 4 existing staff members) to serve as a:

a. content expert in IM
b. coordinator/backbone of state efforts
c. internal organizer of monitoring, surveillance, and communication
d. liaison to national and local efforts

Local plans (Denver and Tri County) will be funded through the MCH funding formula.

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

2 Years:

- Increased awareness among providers, hospitals & consumers of preterm birth guidelines
- PTB reduction payment policies developed by health benefit plans
- Increased awareness of safe sleep practices among providers and consumers, particularly African Americans
- Business leaders are informed about FFB policy benefits/implementation strategies
- FFB award program developed and awards presented annually
- Help Me Grow program includes resources and referrals for pregnant and postpartum women

5 Years:

- Increased adoption of PTB prevention strategies in medical settings
- Health care benefit plans and payment policies encourage adoption of PTB guidelines
- Increased safe sleep practices among African Americans
- Number of businesses implementing FFB practices increases by 10%
- Increased number of pregnant and postpartum women receive appropriate information and referrals

10 Years:

- African American infant mortality rate is equivalent to the infant mortality rate among white, non-Hispanic populations
- Increased # of pregnant and postpartum women and their infants receive support needed to prevent infant mortality

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

- Well-woman care - Percent of women with a past year preventive visit
- Low-risk cesarean deliveries - Percent of cesarean deliveries among low-risk first births
- Safe sleep - Percent of infants placed to sleep on their backs
- Breastfeeding - Percent of infants who are ever breastfed
- Child safety/injury - Rate of injury-related hospital admissions per population ages 0-19 years

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

Efforts are being coordinated at the national, state, and local levels through a federal initiative to reduce infant mortality (Collaborative Improvement & Innovation Network to Reduce Infant Mortality **-** CoIIN). Colorado will focus on reducing infant mortality among African Americans, aiming for a rate of 4.0 for all Coloradans through implementation of state and local work plans. The state CoIIN Team will participate in three national IM learning collaboratives in 2015: a) Social Determinants of Health, b) Prevention of preterm and early term births, and c) Preconception-Interconception health.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

MCH state- level role:
Lead (convening, organizing, strategic planning, monitoring, surveillance, communication)

Current additional state-level partners: Kaiser Permanente, March of Dimes, HCPF, City of Aurora, Denver

Public Health, Tri County HD

Common CoIIN partners in other states by focus area:

- State Medicaid program, hospital associations, March of Dimes chapters (focus: reducing early elective deliveries)
- March of Dimes, state hospital associations (focus: increase voluntary 'hard stop' policies on non-medically indicated induction or cesarean prior to 39 weeks. As of August, more than 50 percent of hospitals in 9 of the 13 states have these policies to stop EEDs. The TX, SC, and GA Medicaid programs no longer pay for EEDs.)
- Hospitals and medical societies (focus: perinatal regionalization)
- Provider groups, home visiting programs (focus: increase referrals to quitlines and evidence-based tobacco cessation interventions for pregnant women who smoke)

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

Denver Public Health and Tri County Health Department have conducted infant mortality assessments (Perinatal Periods of Risk) and activities over the past five years. Both agencies are actively participating in CDPHE's state-level CoIIN Team and are adopting African American infant mortality work plans for 2015-2015. Among other developing strategies, an awareness and organizing event is being planned; the social determinants of health will serve as a framework and inform the content and structure of a summit focusing on: a) education and awareness, b) families' lived experiences, c) history of accomplishments related to infant mortality reduction, d) provider engagement, and e) planned action.

Active partners in Metro CoIIN efforts (add'l members being recruited):

- City of Aurora
- City of Aurora Healthier Beginnings
- Collaborative Improvement & Innovation Network to Reduce Infant Mortality
- Colorado Black Health Collaborative
- Colorado Black Round Table
- Colorado Black Women for Political Action
- Colorado Department of Public Health & Environment
- Colorado School of Public Health
- Clinicians/health care providers/OB/GYN
- Denver Office on Women and Families
- Denver Public Health
- Far Northeast Health Alliance/Lowry Family Center
- Healthy Start Program participants
- Mental Health Center of Denver
- Midwives and doulas
- Tri-County Health Department
- US Department of HHS, Office of Minority Health and Office on Women's Health

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

HRSA is encouraging (though not funding) all states to participate in the Collaborative Improvement and Innovation Network to Reduce Infant Mortality. CoIIN is a public-private partnership to reduce infant mortality and improve birth outcomes. Participants learn from one another and national experts, share best practices and lessons learned, and track progress toward shared benchmarks. Colorado began participation in the summer of 2014 and participation is expected to continue indefinitely.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

This issue of infant mortality among African Americans in Colorado:

- Represents a measurable health inequity
- Is a federal priority
- Is geographically targetable
- Is supported by motivated, organized local partners
- Leverages an existing, community-based grant

13. Additional comments: N/A

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Safe Sleep

1. Issue under consideration

Sudden unexpected infant deaths (SUID), also referred to as sleep-related infant deaths, are fatalities of infants under one year of age that occur suddenly and unexpectedly in sleep environments. SUIDs include sudden infant death syndrome (SIDS), accidental suffocation, positional asphyxia, and overlays as well as deaths occurring in sleep environments that are from undetermined causes. Due to this complex definition of SUID, there is a continual need for data collection for more accurate and consistent classification of SUID and to better understand the incidence, risk factors, and trends associated with SUID cases to develop effective prevention strategies.

The American Academy of Pediatrics (AAP) identifies several risk and protective factors for sleep-related infant deaths and endorses specific recommendations for safe infant sleeping environments (http://pediatrics.aappublications.org/content/early/2011/10/12/peds.2011-2284.full.pdf+html). The AAP recommends the following for safe infant sleep: 1. Place infant on his or her back to sleep for every sleep; 2. Use a firm sleep surface covered by a fitted sheet; 3. Do not place infant in an adult bed or share the same sleep surface; 4. Keep soft objects, toys, loose bedding out of the infant's sleep area; 5. Receive prenatal care for pregnant women; 6. Do not smoke during pregnancy, and do not smoke around the infant; 7. Avoid alcohol and illicit drug use; 8. Breastfeed the infant; 9.Give infant pacifier during sleep; 10. Avoid overheating the infant during sleep; 11. Immunize infant; 12. Avoid commercial devices marketed for SIDS reduction; 13. Do not use home cardiorespiratory monitors for SID reduction; 14. Tummy time for the awake and supervised infant; 15. Endorsement of the AAP recommendations by providers, nurses, and child care; 16. Media and manufacturers to follow safe sleep guidelines; 17. National campaign on reducing all sleep-related deaths with a focus on minorities; 18. Continued research and surveillance.

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

From 2009-2013, there were 260 sleep-related infant deaths in Colorado, accounting for 13 percent of all infant deaths. There were 30 fewer such deaths in 2013 compared to 2009, almost a 43 percent decrease. Among the 260 sleep-related deaths, 36 percent were classified as Sudden Infant Death Syndrome (SIDS), 35 percent as asphyxia, 25 percent as undetermined, and 3 percent as other causes, such as prematurity or pneumonia. Of the 260 Colorado sleep-related infant deaths from 2009-2013: 55 percent were male; 83 percent were white; 32 percent were Hispanic ethnicity; and 83 percent lived in urban parts of the state. The American Academy of Pediatrics recommends that infants sleep alone on their backs on a firm surface in their cribs. Infants can sleep in the same room as an adult, but without bed-sharing. Of the 260 Colorado sleep-related infant deaths from 2009-2013: 25 percent were not placed on their back to sleep; 52 percent were placed to sleep with soft bedding; 43 percent were placed to sleep in an adult bed; and 45 percent were sharing the same sleep surface with one or more adults or children. Of the 260 primary caregivers of infants who died in their sleep: 52 percent were 18-25 years of age; 45 percent had public insurance (e.g. Medicaid); 40 percent smoked either before or after birth of the baby; 69 percent received regular prenatal care; and 57 percent breastfed their babies. (Data from the Colorado Child Fatality Prevention System's Sudden Unexpected Infant Death Case Registry)

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

The American Academy of Pediatrics (AAP) recommendations for infant safe sleep are based on the best available evidence and research (http://pediatrics.aappublications.org/content/early/2011/10/12/peds.2011-2284.full.pdf+html). Although strategies to increase adherence to the AAP recommendations have not been well-evaluated to understand the level of evidence, the following promising practices have been promoted at the national level:

- Campaigns to encourage parents to place infants on their backs to sleep. (http://www.ncsl.org/research/health/sudden-infant-death-syndrome-laws.aspx)

- Crib distribution programs (such as Cribs for Kids) for low-income families are one common strategy to reduce infant sleep-related deaths. Program also provides education about safe infant sleep to caregivers. (http://www.astho.org/Programs/Access/Maternal-and-Child-Health/Safe-Sleep/)
- WIC messaging about safe sleep: mothers who receive benefits from the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) also receive messages on safe sleep. For example, safe sleep messages that are printed on WIC vouchers, provision of board books with safe sleep messages to WIC mothers, and local WIC offices having safe sleep demonstration displays in their offices. (http://www.astho.org/Programs/Access/Maternal-and-Child-Health/Safe-Sleep/)
- Safe infant sleep education and behavior modification within home visiting programs. (http://www.astho.org/Programs/Access/Maternal-and-Child-Health/Safe-Sleep/)
- Partnerships among other state agencies, hospitals, nonprofits, media, and other stakeholders to develop innovative programs and policies that promote safe infant sleep, reduce infant mortality, encourage smoking cessation, and promote breastfeeding, immunizations, and prenatal care. (http://www.astho.org/Programs/Access/Maternal-and-Child-Health/Safe-Sleep/)

In addition, the following strategies address the difficulty in defining SUID, which have the potential to accurately and consistently classify SUIDs as well as better understand the incidence, risk factors, and trends associated with SUID cases:

- Implementation of laws related to SIDS/SUID: laws that provide guidance for coroners or medical examiners and set protocol for autopsies of SIDS and/or SUID cases; laws requiring a SIDS expert on child fatality review teams; laws requiring special training about SUID/SIDS for child care personnel, firefighters, emergency medical technicians, or law enforcement officials. (http://www.ncsl.org/research/health/sudden-infant-death-syndrome-laws.aspx)
- Providing death scene investigation training so that coroners and law enforcement can learn how to use the Sudden Unexplained Infant Death Investigation (SUIDI) Reporting Form, which is designed to assist investigative agencies to better understand the circumstances and factors contributing to unexplained infant deaths. (http://www.cdc.gov/sids/suidrf.htm)

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

Several of the strategies listed above target populations that are at risk for health inequities such as low income mothers and families. For example, WIC, home visiting programs, and crib distribution programs are targeted specifically to families who are low income. In addition, there are resources to engage ethnic media to inform communities about safe infant sleep (http://nccc.georgetown.edu/engaging-ethnic-media/index.html).

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

Although the cost of implementation depend on which strategies are chosen, it is estimated that $50,000 would be reasonable to partially fund a position that would be responsible for coordinating the Infant Safe Sleep Partnership as well as support prevention initiatives at the state and local levels (including public awareness campaigns to increase adherence to the AAP recommendations).

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

Between 2009 and 2013, there was almost a 43 percent decrease in sleep-related infant deaths in Colorado. Based on these estimates, the health impact over the next several years is estimated as follows:

- In two years, there will be 34 sleep-related infant deaths.
- In five years, there will be 24 sleep-related infant deaths (40 percent decrease over five years)
- In ten years, there will be 14 sleep-related infant deaths (additional 40 percent decrease over five years)

Current decreases in sleep-related infant deaths have coincided with safe sleep initiatives implemented in Colorado. As such, it is also anticipated that there will be knowledge and behavior changes for how infants are placed to sleep following the AAP recommendations as a result of the proposed strategies.

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

National Performance Measure 5 is the percent of infants placed to sleep on their backs.

State performance measures include the following:

- Colorado-added questions to PRAMS that include questions about the use of soft bedding and bed-sharing
- Data from the Colorado Child Fatality Prevention System's Sudden Unexpected Infant Death Case Registry, which monitors the number of sleep-related infant deaths, demographics of sleep-related infant deaths, and risk factors (i.e., soft bedding, sleep position not on back, bed-sharing) and protective factors (i.e., breastfeeding, non-smoking environment) present based on the AAP recommendations

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

Staff time and staff technical expertise: Currently, CDPHE staff members from the Child Fatality Prevention System (CFPS) coordinate efforts related to infant safe sleep and SUID. For example, CFPS staff helps to:

- Coordinate and facilitate the Infant Safe Sleep Partnership;
- Develop and disseminate brochures based on AAP safe sleep recommendations;
- Modify child care licensing requirements and regulations regarding infant safe sleep to better align with AAP safe sleep recommendations;
- Incorporate safe sleep education and how to address safety concerns related to infant safe sleep as part of the Colorado Department of Human Services Child Welfare Training System;
- Develop tools and documents related to safe sleep (i.e., scripts for providers to talk with parents/caregivers about safe sleep and rationale documents about AAP recommendations); and
- Provide ongoing trainings and webinars related to safe sleep.

In addition, through the CFPS infrastructure at the local level, local child fatality prevention review teams have the staff time and small amounts of prevention dollars that can be applied to safe sleep initiatives.

Funding: CDPHE received a $50,000 grant from the CDC to participate in a pilot project to create a Sudden Unexpected Infant Death (SUID) Case Registry. The information gathered for the case registry under this project will allow more accurate and consistent classification of SUID. It will also improve the state's understanding of the incidence, risk factors, and trends associated with SUID cases in order to develop effective prevention strategies. The data collected will also be used for modifying public health practice and public health policy for maternal and child health programs. This grant ends in August 2015 and CDPHE will be up for competitive renewal of the grant in spring/summer 2015.

However, much of the work related to prevention strategies is being completed in Colorado with little or no funding due to the engagement of other state agencies and commitment of external stakeholders.

Partnerships/collaborations: Infant Safe Sleep Partnership (a coalition coordinated by the CFPS State Review Team, Safe Kids Colorado, CDPHE, and the Children's Hospital Colorado) advocates for safe sleeping conditions and meets on a monthly basis to develop statewide safe sleep promotion messaging and implement activities to promote safe sleeping environments to reduce infant deaths. Members include public health practitioners, nurses, pediatricians, physicians, child welfare professionals, home visitors, and more. This partnership could serve as the MCH Implementation Team if safe sleep is selected as an MCH priority.

Data and technology resources: SUID and sleep-related infant death data is housed under the Colorado Child Fatality Prevention System's Sudden Unexpected Infant Death Case Registry. The CFPS Data Analyst provides statistical support to analyze and interpret the data collected for this case registry.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

Due to the public health role (both at the state and local levels) of implementing MCH-related programs (such as WIC and home visiting programs) that impact pregnant women and new mothers/new families, there is an

opportunity for public health to take a lead role in promoting infant safe sleep. This would be a lead role in applying the public health framework to select safe sleep strategies to prevent sleep-related infant deaths and working with partners to implement the safe sleep strategies

In addition, public health already takes a lead role to collect and understand SUID data through the Child Fatality Prevention System and the Sudden Unexpected Infant Death Case Registry. Public health also takes a lead role in convening the Infant Safe Sleep Partnership, which includes partners from the medical field, Colorado Department of Human Services, researchers, home visitors, local public health, and more.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

Among several local child fatality review teams, which are established and coordinated by LPHAs in Colorado, there is interest to address safe sleep and implement prevention strategies that address sleep-related infant deaths. For example, Denver Public Health is planning to commit funding to a safe sleep campaign in spring 2015 to promote infant safe sleep. In addition, there is an opportunity for LPHAs to promote safe sleep due to the LPHA implementation of other MCH-related programs (such as WIC and home visiting programs) that impact pregnant women and new mothers/new families. Through the CFPS state support staff at CDPHE, there is the opportunity to further develop the capacity at LPHAs to address this topic area. Finally, the majority of funding for coordination of local child fatality review teams is incorporated into OPP contracts with LPHAs and there may be the opportunity to include implementation of safe sleep initiatives into these contracts.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

At the state level, there is strong will concerning infant safe sleep:

- Colorado is participating in the Collaborative Improvement and Innovation Network to Reduce Infant Mortality (CoIIN), which aims to reduce infant mortality. Sleep-related infant deaths in Colorado accounts for 13 percent of all infant deaths.
- The Infant Safe sleep Partnership has engaged coalition members including public health practitioners, nurses, pediatricians, physicians, child welfare professionals, home visitors, and more.
- There are engaged state-level partners such as CDPHE and Colorado Department of Human Services working to implement safe sleep initiatives through home visitation programs and child welfare.

There is also strong interest and political will at the federal level to address infant safe sleep:

- The U.S. Maternal and Child Health Bureau funds the National Action Partnership to Promote Safe Sleep, which aims to “make safe sleep a national norm.” (http://www.nappss.org/)
- Safe sleep is a CDC priority through the Division of Reproductive Health (http://www.cdc.gov/sids/index.htm)
- Recent legislation (Sudden Unexpected Death Data Enhancement and Awareness Act) was enacted in December 2014

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

There is a momentum and strong interest in Colorado to address infant safe sleep. Having dedicated MCH resources and monetary support from MCH will further the work in the state and could help implement safe sleep initiatives statewide with minimal resources (right now efforts are focused in the Denver metro area).

13. Additional comments

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Developmental Screening

1. Issue under consideration
Early Childhood Developmental Screening (inclusive of general, social-emotional, autism and newborn hearing)
2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

In 2013, Colorado had 405,883 children ages birth through five.[1] As many as one in four children through the age of five are at risk for a developmental delay or disability with less than half of these children being identified before starting school.[2] Thus, in Colorado, potentially 101,471 children are at risk for developmental delay or disability.

Screening with the use of standardized tools has been shown to correctly identify 70-80% of developmental disabilities, and 80-90% of mental health problems. Screening is a quick and low-cost assessment that may indicate the need for further evaluation. Health care providers play a unique role in early childhood developmental screenings because they see children and their families regularly during the critical ages between birth and three years old. The American Academy of Pediatrics (AAP) advises primary care providers to conduct developmental screening at age 9, 18, and 30 months and before starting preschool or kindergarten. In Colorado, 93% of pediatric providers are using a standardized developmental screening tool as a routine component of well child-care.[3] Colorado Early Intervention data indicates that primary care physicians accounted for 43% of all referrals in 2013, an increase of 400% since 2006. In 2012, Colorado ranked 2nd in number of children receiving screens.[4] When parents of children 10 months to five years, were asked about developmental screening, 47% said they did a developmental screening.[5] Nationally, the same question is 30.8%.

Early Intervention Colorado 2012 State Performance plan has established that 1.05% of birth to one year olds will have an active Individualized Family Service Plan (IFSP) and that 2.5% of birth to three year olds will have an active IFSP. In 2012, 1.00% of birth to one year olds had an active IFSP and 3.00% of birth to three year olds had an active IFSP.[6] Thus, the very youngest of our children are still under identified, while as a state we are almost on target with children birth to three. However, many Community Centered Boards (CCBs) demonstrate a gross under identification rate based on the 2.5% State Performance target.[7] Although, in Colorado there has been a significant increase in the number of primary care providers and other screening entities doing ongoing routine standardized developmental screening, FY 2013 Early Intervention data states that only 11,658 children were referred to Early Intervention. Of these referrals only 69% went on to a multi-disciplinary evaluation, which means that 30% of the original referrals terminated for reasons such as parent decline.

Hearing is fundamental to a child's speech, language and cognitive development. In Colorado, 1 of 500 babies is born deaf or hard of hearing and 95% of those babies are born to parents with no family history. Therefore, Colorado law requires that newborn hearing screening be conducted on at least 95% of the infants born in Colorado. Although nearly 98% of all infants born in Colorado receive a newborn hearing screen soon after birth, Colorado's "loss to follow-up" rate (75%) is significantly higher than that of the national average (35%) and home birth/ birthing center screening rates are much lower (30%) than Colorado's neighboring state of Utah (78%). "Loss To Follow-up" is defined as the number of children whose final screen is a "not pass" and follow-up services were not completed or documented. Based on a CDC data analysis, of the approximate 600 children who are lost to follow-up each year in Colorado, it is statistically likely that up to 92 of those children (each year) could have a hearing loss that goes undetected until after developmental delays have already occurred. Hearing loss is an invisible condition, but can be identified early with timely screening. Children who are deaf or hard of hearing who are not identified early through newborn hearing screening, will likely not be identified until about 2 years of age when irreversible learning, cognitive and developmental delays have already occurred.

New research also connects early brain development with the impact of toxic stress caused by environments such as

[1] Colorado Demographer's Office, 2013
[2] US Department of Health and Human Services
[3] Assuring Better Child Health & Development (ABCD) Access Database
[4] Kids Count, 2014 (*unknown how this data was calculated as there is currently no know data system that tracks birth to five screening data)
[5] Colorado Child Health Survey, 2011-2012
[6] Early Intervention Colorado 2012 Annual Performance report, submitted February 2014
[7] Early Intervention Colorado 2014 Utilization Report

abuse and neglect, exposure to domestic violence and caregiver mental illness. One study that examined children with these types of risk factors found a cumulative effect: the more adverse experiences a child has during his or her first three years of life, the higher his or her chance of having a developmental delay. Children with six or seven of these risk factors present in their lives have a 90-100% chance of having a delay in their development.[8] Odds like these are very difficult to overcome for even the most resilient child. Zero to Three reported in 2011 that 61% of Colorado's infants and toddlers have at least one risk factor known to increase the chance of poor health, school, and developmental outcomes. In 2012, one in five Colorado children under age six (20% or ~81,000 kids) lived in poverty.[9] Colorado is ranked 3rd in the top 10 states with the fastest growing rate of children living in poverty and Colorado continues to fall below the national average for number of children living in poverty.

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

A lot of work has been done to increase developmental screening rates in Colorado, and we have documented success in those efforts. To continue to move the mark on early childhood development, we need to move beyond screening and begin to focus on the referral to evaluation component of the screening continuum. This holds true for the work in newborn hearing screening as well, as evidenced by the poor "Loss To Follow-up" rates. "An approach that identifies concern early and links children to services is vital. Those studies that have looked beyond referral show significant gaps between the identification of a concern and the receipt of developmental services. This has prompted increasing awareness for the need for better care coordination across systems involved in meeting the needs of children."[10]

Hearing should be screened by 1 month of age. If the baby does not pass (on 2 separate occasions) they should see an audiologist for an infant evaluation by 3 months of age. If there is a hearing loss, early intervention should begin by 6 months of age. By following this timeline, children can develop at the same rate as their hearing peers.

For standard developmental screening, Assuring Better Child Health and Development (ABCD) developed the Model Community Framework (MCF) inspired by the SERIES: "An Integrated Approach to supporting Child Development" article that was published by Children's Hospital of Philadelphia. "SERIES challenges all systems serving young children to broaden their focus to include practices that promote shared responsibility for ensuring that each child successfully completes the entire pathway from screening to services."[11]

All MCF work proceeds from an identified and agreed upon community goal relative to the essential roles of screening for developmental delay, referring early when concerns exist, evaluating and connecting children to services when appropriate. Related to each of these roles, the MCF guides communities through a process that allows them to address each role consistently with the following steps: 1) *Agree* to Quality Standards, 2) *Identify* Community Partners, 3) *Develop* Protocol and 4) *Develop* Technical Assistance. A common launching point is essential to ensure children successfully complete the path between screening and services. Therefore, ABCD also identified Quality Standards based on published current literature (evidence and best practices available) for each of the essential roles.

The MCF work is based also on the Collective Impact approach that in order to create large-scale social changes, it requires broad-sector coordination in which actions are supported by a shared measurement system, mutually enforcing activities and ongoing communication which is supported by an independent backbone organization (ABCD).[12]

The Association of Maternal & Child Health Programs (AMCHP) in August 2014 published findings from an environmental scan across 19 states. The scan described the identified strategies that state Title V and early childhood programs and partners are using to improve various aspects of the developmental screening process, amidst multiple challenges. The findings include the importance of supporting capacity of health care and community partners to have processes from screening to services that are data driven, evidenced based strategies are critical to having functional and efficient statewide screening systems.[13]

An approach that focuses on quality, starting with the primary care provider, is proving to be a key strategy in creating a process that supports children from screening to services. In a recently funded quality improvement initiative that fulfills

[8] Barth, et al. (2008). Developmental status and early intervention service needs of maltreated children. Washington, DC: U.S. Department of Health and Human Services.

[9] Kids Count, 2014

[10] The National Academy for State Health Policy. About ABCD III. http://www.hashp.org/abcd-welcome. Accessed 01/14/2012.

[11] Johnson K Rosenthal J. Improving care coordination, case management, and linkages to service for young children: Opportunities for states. Portland, ME: The Commonwealth Fund and National Academy for State Policy; 2009.

[12] Stanford Social Innovation Review Collective Impact Winter 2011.

[13] Environmental Scan: State Strategies and Initiatives to Improve Developmental and Autism Screening and Early Identification Systems. August 2014.

pediatric maintenance of certification, ABCD has been recently awarded endorsement from the American Board of Pediatrics to implement a quality initiative project focused on creating a sustainable process for pediatric providers supporting families through a referral process to early intervention.

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

Quality initiatives that focus on creating sustainable systems to support families from screening to services ensure that all families, regardless of challenges and barriers, can access and navigate systems. Collective impact proposes bringing together people and organizations from across multiple sectors (economic, education, health, housing, environment, business, law enforcement, etc.) to accomplish a shared set of goals. By using a collective impact approach to support child development, health care and community partners focus on the challenges, barriers, resources and supports that families need to ensure children successfully complete the entire pathway from screening to services.

As part of the ABCD Model Community Framework, an essential role for communities is to identify partners in the resources and support role. The role of these partners is to focus on the family as a whole. There are many reasons a family may decline a developmental evaluation for their child, least of which is the worry about their child's development. It is more often due to all the other potential challenges in their lives.

Using the quality standards, communities identify who in their community is a potential screening entity. Many communities across Colorado identify multiple screening entities to ensure universal screening and identify potential delays among all children, especially those who don't have advocates at home with knowledge about normal development. These activities will help to close the achievement gap between children living in resource poor vs. rich environments. The key to this approach is coordination between health care and community partners, with agreed upon community protocols for sharing results of screening results and coordinating referrals and follow-up.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

Estimated $280,000/year to include ABCD contract that will provide: project oversight, community technical assistance and physician outreach, mileage, supplies and operating costs; and CDPHE staff of .7 FTE to provide additional oversight and coordination activities related to developmental screening (including a portion of newborn hearing).

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

Measurement	2 years	5 years	10 years
Percentage of referrals that are terminated from other (due to parent decline, etc.)	Decrease by 15%	Decrease by 20%	Decrease by 25%
Number of Child Abuse Prevention and Treatment Act (CAPTA) referrals that go on to a multi-disciplinary evaluation	Increase by 15%	Increase by 20%	Increase by 25%
Percent of children that complete a developmental screening using a parent-completed tool	Increase to 60%	Increase to 61%	Increase to 62%
Number of new primary care practices will participate in a quality initiative focused on supporting children from screening to services	Increase by 30 each year	Increase by 30 each year	Increase by 30 each year
Number of pediatric providers implementing a quality improvement initiative focused on referral	Increase by 15%	Increase by 20%	Increase by 25%

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

National Performance Measure-Percent of children 9-71 months, receiving a developmental screening using a parent-completed tool.

SPM-Terminated from other (EI data)
SPM-Increase the number of primary care providers implementing a quality improvement initiative focused on supporting families from screening to referral to services

Using Result Based Accountability (RBA)- Identify a process outcome that can be used as a performance measure that would measure short-term outcomes of the work. Examples include: Increase the number of meaningful partnerships across agencies that serve the MCH population, percent of partners who report more knowledge about the work of other partner agencies, percent of partners who report increased knowledge of barriers that prohibit families from accessing services.

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

ABCD has the staff, state and local partners and expertise, to support LPHA teams in implementing this priority. ABCD's five-year strategic plan is focused on all the components under Health Equity. Strategies include: broader and stronger support to primary care providers, expanding the menu of quality initiatives and looking at "health leads" as a strategy to support families from screening to services. Local MCH teams have the education and resources to participate or lead in the physician outreach efforts as well as to provide "paid" staff to support the priority efforts.

The Colorado Department of Public Health and Environment's Newborn Hearing Program is responsible for ensuring all Colorado babies receive screening, and if necessary, an evaluation and enrollment into early intervention services. Staff expertise exists to focus on "Loss to Follow-Up". Funding for this effort is primarily provided by CDC with some additional support dollars needed from MCH.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

ABCD has developed a document that outlines the roles for lead and other partners that are focused on this priority. By defining roles, leads have clearly defined expectations of the work and therefore can set budgets, workplans, etc accordingly. There are a few times that public health is a partner in the work and can also reference the roles document to clarify expectations. For newborn hearing, CDPHE is the lead for the state as identified in statute.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

Local public health MCH teams have been very engaged in this priority to date. Many are leading the efforts in their local communities. Many LPHA teams are starting to provide physician outreach supported by ABCD staff. The largest opportunity is that MCH is the only funding source in local communities to establish LPHA as a lead and provide staff.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

Many current federal and state efforts are focused on the early identification and referral of young children birth to five. Through the Department of Health and Human Services, the Birth to Five Watch Me Thrive initiative has developed resources that provide training and support to screening entities to implement and support screening and referral practices. The Center for Disease Control, Milestone Moments continues to develop and distribute materials for parents, primary care providers and community partners around the importance of developmental screening and educational materials on the developmental milestones of young children. Many Colorado initiatives are focused on the importance of supporting the development of young children including Race to the Top, Project LAUNCH and the 10-year Health Equity strategy of the Colorado Trust.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

Supporting the healthy development of young children can reduce the prevalence of developmental and behavioral disorders that are linked to high costs and long-term consequences for health, mental health, education, child welfare, and justice systems. It is estimated that the savings is $7 for every $1 spent on early intervention. By addressing a child's development early, you can change their health trajectory for a lifetime.

13. Additional comments

Efforts will be made to connect this priority with other screening priorities that are selected, such as pregnancy-related depression, as we see the benefit of moving all of these efforts forward with a focus on systems level improvements that can improve the path from referral to evaluation to services in a variety of areas.

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Early Childhood Obesity Prevention

1. Issue under consideration
Early Childhood Obesity Prevention (Child Health) 0-5 years
2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.
MCH Issue Brief June 2014 No. 3 described increased prevalence in WIC overweight and obese children ages 2-4 through 2011. WIC data for 2012-2014 reveals decreasing obesity, and no change in overweight. The percentage of women who were overweight or obese before becoming pregnant (a predictor of early childhood obesity) has increased significantly from 43.1% (combined 2010 & 2011) to 44.76% (combined years 2012-2013). Pre-pregnancy overweight/obesity increases the risk of LGA, HBW, macrosomia, and subsequent offspring overweight/obesity. Colorado is moving closer to the national data (2009-2010 National Health and Nutrition Examination Survey) with more than 50% of pregnant women defined as overweight or obese. In 2003, the economic costs, including treatment expenditures and lost productivity, of common chronic diseases (of which obesity is a major risk factor) was at $16.5B for Colorado alone. If we stay on the current course, they will reach $54.6B by 2023 (Milken Institute, "An Unhealthy America: Economic Burden of Chronic Disease").
3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence. * 2012 Obesity Integration Boot Camp Sector Reports, ** 2011 IOM Early Childhood Obesity Prevention Policies,
Breastfeeding – (see Breastfeeding Template) **Physical Activity** Structured physical activity programs in early care and education providers (Likely effective* /**) Variety of components of work-based strategies to increase physical activity for families (Proven*) Consistent messaging to raise awareness of developmentally appropriate physical activity and guidance on an active lifestyle (Proven when used with goal setting*) **Healthy Eating** Healthier Meals Initiative to modify food service practices in child care (Likely effective*), support parents to provide better nutrition (Likely effective*), Food access through promotion of farm to preschool (promising*), community gardens and farmers' markets (Likely effective*), and referral to SNAP-Ed, CACFP, WIC, TANF, food banks, Consistent messaging to raise awareness of encourage healthy eating (Promising when paired with patient-centered approaches*) **Sleep** Consistent messaging to raise awareness of and encourage adequate sleep and sleep hygiene. **Reduce Screen Time and Exposure to Food and Beverage Marketing** Consistent messaging to raise awareness of and encourage alternative activities (Likely effective*/**) **Professional Development for Health Care Providers** Educate health care partners on recommended early childhood obesity prevention practices, guidelines, messages. (Likely effective ** and promising when provider uses patient-centered approaches*) **Interconceptual and Prenatal Weight** Educate health care partners on recommended healthy weight and appropriate prenatal weight gain for a healthy weight infant. (Promising when paired with patient-centered approaches*) **Possible innovations to strengthen strategy reach and sustainability:** 1) Community-based on-going technical assistance for practice and policy change (in implementation of appropriate physical activity, healthy eating, sleep, & screen time practices) in early care and education settings. Would need to assess the current technical assistance structure. 2) Technical assistance (e.g., training, resource refinement) and continued strategic marketing and dissemination of the CDPHE ECOP messages. 3) Update and disseminate HealthTeamWorks Childhood Obesity Guidelines for providers

4) Community-based focus on interconceptual and prenatal weight through use of Heart Smart Moms or other weight to health awareness efforts in addition to scripting for WIC providers

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

All strategies focus on populations with higher overweight and obesity prevalence rates and long standing health disparity as their children are at greater risk for becoming obese. These populations include individuals of low-socioeconomic status and of American Indian/Alaskan Native, Black, and Hispanic races.
The strategies are implemented in settings prepared to serve these populations: CACFP (and non-CACFP) child care providers, WIC, local public health programs (Prenatal Plus, Healthy Start), recipients of SNAP Ed, hospitals, primary care clinics, and food banks with a potential to target messaging and some activity in faith-based settings.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

Current MCH/ECOP funding $80,738 (does not include BF funds): Covers .5 FTE and continued work in ECOP mapping, messaging, local public health planning and support plus additional $62,000:

ECE Focus ($25,000)

Expanded ECE Healthier Meals Initiative (HMI) and I am Moving, I am Learning (policy adoption, technical assistance) (.25 FTE): $20,000, marketing HMI culinary training program, community technical assistance trainings (LPHAs, community health workers, nurse consultants, environmental inspectors, others) and materials: $5,000

Maternal Weight Focus ($12,000)

Expanded outreach to community-based organizations (LPHAs, primary care clinics, WIC, faith-based organizations) with focus on for maternal weight (interconceptual and prenatal): $12,000 (.20 FTE)

Messaging Focus ($25,000)

Expanded marketing and dissemination of messages to providers and parents: $25,000

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

Using obesity trend data, WIC 2-5 year old overweight and obesity rates were 21.3% in 2001 and reached a high of 24.7% and 24.2% in 2005 and 2011, respectively. Reportedly in 2005 the obesity rates of 2-5 year olds nationwide doubled over the previous three decades. 2014 WIC data shows CO achieved and exceeded the HP2020 objective for the rate of 2-5 year old obesity (9.6%) by reducing the rate to 7.6%. Sustained and strengthened programming directed at improving healthy eating, active living, and sleep practices in places (e.g., child care) where families of low-socioeconomic status access services could result in the continued reduction in overweight and obesity targets by a one percent decrease in overweight and obesity rates every two years.

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

Potential state MCH population-based measures are:
1) Prevalence of obesity and overweight by children aged 2-5 years of age and by race/ethnicity (CO WIC data)
2) Prevalence of live births to mother with an IOM defined pre-pregnancy BMI as overweight or obese. (CO Birth Certificate data)

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

Current 1.0 FTE ECOP manager is fully engaged in obesity prevention activities, with .5 FTE dedicated to CDSH and WIC ECOP programming, project management and staff supervision and the remaining .5 MCH – funded FTE supports the development of strategic partnerships, training, communication, resource development, and technical expertise for local public health agencies.
Presently there is not the state capacity to improve the integrity of the work required to provide the level of technical assistance needed to advance and measure the adoption of practices. There are potential opportunities to strengthen existing and engage new partners. LiveWell, University of Colorado Denver, Colorado State University and CO Department of Human Services are potential current and new partners to

support the early care and education work and the interconception /preconception weight messaging. New technology to engage mothers in discussing their weight and healthy habits exists (i.e., HeartSmart Moms). There may be an opportunity to pilot the technology in local public health agencies to give mothers contemplating change access to participant-based counseling.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

The MCH role in implementing the current and potential strategies are as follows:
Lead with identifying best practices and resources for Colorado. There are unlimited resources on the Internet; CDPHE can distill them to most applicable for Colorado.
Lead in identifying a need (e.g., many child care providers are not skilled to prepare scratch meals) and planning the evidence-based, cost effective, sustainable way to address the need.
Lead with obesity and breastfeeding prevalence (access to WIC database) and evaluation data.
Convener of partners working specifically to prevent early childhood obesity. Many organizations influence this work because of its lifecourse span; however gaps exist in program implementation and services. CDPHE brings partnering organizations together to assess reach of programs and to enhance potential collaboration to fill gaps. For example, the University of Colorado Denver Culture of Wellness in Preschool program with Colorado Health Foundation and SNAP Ed funding engages ECEs in healthy eating and active play (using IMIL) for ECE policy and practice change in the metro area with a desire to expand their successful model. They request CDPHE to bring partners together to determine how to identify overlap and gaps and potential new partnerships. LPHAs request to know the “how to” implement all the resources available. CDPHE is convening potential collaborators to share best practices and lessons learn.
Partner as a member of Healthy Child Care Colorado Partnership and Steering Committees, in coordination with WIC Wellness Coordinator System, as a host of the Early Childhood Obesity Prevention in Early Care and Education Advisory Committee which informs the work of CDPHE and participating partners.
Provider of technical assistance such as when offering training or learning sessions to partners and creating/providing fact sheets, curricula and other resources.
There are partner agencies such as Qualistar’s Healthy Child Care Colorado and Colorado Department of Human Services however their focus is broad and obesity prevention is not their leading issue.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

LPHAs recognize the most critical time to preventing obesity is at the beginning of the life course when healthy habits are being formed. Over 20 agencies are implementing strategies to improve the health of their communities. At least 19 LPHAs participated on a webinar to learn Boulder County Public Health’s best practice experiences working with child care providers. The ECOP manager will be discussing ECOP strategies on two calls in January with interested non-MCH funded LPHAs. Staff from several LPHAs have already registered to attend a statewide ECOP in ECE sharing/informing meeting to be held in February to include all partners doing this work and potential funders. While their capacity is minimal their interest is great. They have implemented gardens, messaging, and are beginning to work in better coordination with WIC to be able to extend their efforts in to community for reach and support.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

Obesity has been identified as a priority by both the State and Federal governments. At the State level, obesity has been identified as one of the 10 winnable battles. At the federal level, there has been significant interest as well as funding, on top of the First lady’s “Let’s Move” campaign which has been central in the fight against obesity.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

Obesity is an issue that spans the life course of the MCH population (women of childbearing age, infants and children through 5 years of age). The initial five year plan underway is gaining momentum in the final year of implementation of the ECOP strategies as familiarity with resources, best practices and programs are shared among LPHAs and partnering organizations. This work is in its infancy and must be continued to impact the continued rise in maternal obesity and stagnation in early childhood overweight rates. The encouraging news is Colorado’s childhood obesity rate appears to be trending down which implies the possibility that some Colorado families are adopting healthy living practices.

13. Additional comments

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Bullying

1. Issue under consideration

Bullying – Bullying in schools is a significant public health issue. Bullying is intentional, aggressive behavior that involves an imbalance of power or strength.[i] In Colorado, Senate Bill 01-80 requires schools to have a bulling policy as part of the Colorado Safe Schools Act. In 2011, legislative updates added a number of requirements and recommendations to strengthen statewide bullying prevention efforts. House Bill 11-1254 prohibits bullying against students on the basis of disability, race, creed, color, sex , sexual orientation, national origin, religion, ancestry, or need for special education services; all categories protected by state and federal anti-discrimination laws. Research has shown that enumerating characteristics in anti-bullying legislation is essential because it provides clear notification to students and staff that bulling on the basis of certain characteristics is not permitted., and may encourage earlier reporting and teachers are more likely to intervene if their actions are supported by specific language in a policy.[ii] The US Department of Education, the Gay, Lesbian & Straight Education Network (GLSEN) and other lead agencies recommend that comprehensive anti-bullying school policies be implemented to ensure the safety for all youth. School safety is best supported by fully enumerated anti-discrimination, bullying and harassment policies and well-trained students and staff.

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

According to the MCH Brief on bullying, "current estimates suggest nearly 30% of American adolescents reported at least moderate bullying experiences as the bully, the victim, or both. The 2013 Healthy Kids Colorado Survey (HKCS) found that 20 percent of high school students identified being bullied within the past 12 months.[iii] For the first time, HKCS collected data on sexual orientation, specifically asking young people whether they identified as gay, lesbian or bisexual (GLB). Similar national data on sexual orientation is not available. Almost 1 out of 10 of Colorado high school students report being bullied because someone thought they were gay, lesbian or bisexual (GLB).[iv] Across multiple types of bullying (i.e., electronically, physical fight, threatened or injured with a weapon or missed school because felt unsafe) young people who identified at GLB experienced bullying at significantly higher percentages than their heterosexual counterparts.

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

According to the Centers for Disease Control and Prevention (CDC), violence is interconnected and often shares the same root causes.[v] An effective approach identified by the CDC is to utilize a shared risk and protective factor strategy that recognizes the overlapping causes of violence as well as the protections from experiencing violence. According to the CDC, "understanding shared risk and protective factors of violence can help us plan how to prevent multiple forms of violence at once." [vi]It also affords an opportunity to leverage existing funding streams by understanding how different forms of violence are linked to one another. Thus, an effective strategy examines the research, understands the connections between different types of violence, focuses on shared risk or protective factor rather than type of violence and evaluates for impact.

At the individual level, implementation of a shared risk and protective factor strategy could focus on the risk factor substance use, which research has demonstrated an association on the following types of violence: child maltreatment, teen dating violence, intimate partner violence, sexual violence, youth violence, bullying, suicide and elder maltreatment.[vii] The strategy would be to target the shared risk factor substance use by implementing programs that research has demonstrated impact substance use, like Sources of Strength, Life Skills Training, Social Emotional Learning Programs and others.

At the relationship level, implementation of a shared risk and protective factor strategy could focus on the protective factor connection/commitment to school, which research has demonstrated an association on the following types of violence: teen dating violence, sexual violence, youth violence, bullying and suicide. Potential programs that could be implemented to impact the shared protective factor strategy include Sources of Strength or Mentoring/Peer Mentoring Programs.

At the community level, an effective strategy would be to focus on relevant policies within a school to ensure the safety and well-being of all youth. Colorado is one of eighteen states that have a comprehensive anti-bullying/harassment bill passed; however, implementation and enforcement of this policy is low and has resulted in high numbers of young people experiencing bullying, particularly young people that identify as lesbian, gay, bisexual or transgender (LGBT). According to the 2013 GLSEN State Snapshot, only 13 percent of youth who identify as lesbian, gay, bisexual or transgender (LGBT) attended a school with a comprehensive anti-bullying/harassment policy that included specific protections based on sexual orientation and gender identity/expression.[viii] Findings demonstrate that young people attending schools with comprehensive anti-bullying/harassment policies, school personnel who are supportive of LGBT students, Gay-Straight Alliances and LGBT-inclusive curricular resources report more positive school experiences, including lower victimization and absenteeism and higher academic achievement. [ix]

At the societal level, an effective strategy would be to focus on the risk factor of harmful norms around masculinity and femininity, for which research has demonstrated an association on the following types of violence: child maltreatment, teen dating violence, intimate partner violence, sexual violence, youth violence and bullying.[x] Potential approaches that could be implemented to impact the shared risk factor strategy include Media Literacy or adapting current curriculums to include gender based rigidity analysis.

Therefore, through effective policy implementation and enforcement as well as strategically implementing shared risk and protective factor strategies at multiple levels of the social ecological model, Colorado is more likely to impact bullying and other types of violence for a more comprehensive approach.

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

According to the 2013 Healthy Kids Colorado Survey, “students who identify as lesbian, gay or bisexual (41.4%) were more than twice as likely as their heterosexual peers (18.2%) to have been bullied at school in the previous 12 months.” This data demonstrates that school environments have conditions that negatively impact the social determinants for youth that identify as lesbian, gay or bisexual. The strategies proposed work to impact the school climate to ensure health, safety and well-being for all youth. By focusing on policies that impact school climate, one effectively changes the context which is necessary to support individual behavior change.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

Staff time = .25 FTE (for grant reporting related to this funding and training)
Funding = $20,000 for training and expansion to local public health to build capacity to implement a shared risk and protective factor strategy and capacity related to policy implementation and enforcement.

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

Within two years, there would be an increased awareness of how to implement a shared risk and protective factor strategy as well increased knowledge about HB 1254, Colorado’s comprehensive bullying prevention law.

Within five years, there would be an increased percentage of schools effectively implementing and enforcing a comprehensive bullying prevention policy, as reported via the GLSEN state snapshot report.

Within ten years, there would be a decrease in bullying behaviors, an increase in connection to school and an increase to caring adults, as reported via the Healthy Kids Colorado Survey.

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

National Performance Based Measure: Percent of adolescents ages 12 through 17 who are bullied.
Relevant population-based measures may include:
Healthy Kids Colorado Survey Data:

- Been bullied at school in past 12 months
- Been electronically bullied in past 12 months
- Been bullied because someone thought GLB
- Been in a fight in the past 12 months

- Been threatened/injured with a weapon on school property
- Missed school because felt unsafe

GLSEN (Gay, Lesbian & Straight Education Network) School Climate Survey

National and Colorado specific reports

- LGBT students' perceptions of the Effectiveness of Staff Response to Incidents of Harassment and Assault
- Harassment and Assault in Colorado Schools (verbal harassment, physical harassment and physical assault)
- Availability of LGBT-Related Resources and Supports in Colorado Schools

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

The Violence & Injury Prevention – Mental Health Promotion Branch has the staff technical expertise to provide guidance around implementing a shared risk and protective factor framework and strategy selection. The Branch also has the necessary partnerships with other entities that are working on bullying prevention like Tony Grampsas Youth Services and the Children, Youth and Families Branch. Additionally, the SVP Unit can leverage funding from the Centers for Disease Control and Prevention (CDC) to support comprehensive bullying prevention implementation and capacity building related to policy engagement by local communities.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

The MCH public health role would be a lead role in implementing the strategies listed.
Other agencies would serve as partners on this issue.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

Lake county is currently the only local public health agency that has indicated a focus on bullying. The current strategy is to create and fund a community-wide anti-bullying campaign.

Additionally, the Sexual Violence Prevention (SVP) Unit, through funding from the Centers for Disease Control and Prevention (CDC), prioritized HB 11-1254 in their most recent Request for Funding Announcement and currently funds two community based agencies working within their schools to enumerate classes of persons to ensure a comprehensive bullying prevention approach, in alignment with best practice. The SVP Unit could leverage its funding from the CDC to expand policy work related to comprehensive bullying prevention policy enforcement across Colorado.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

According to the Maternal and Child Health Bureau (MCHB) Title V Maternal and Child Health Services Block Grant to States Program guidance, "Bullying, particularly among school-age children, is a major public health problem." Colorado has prioritized bullying prevention through legislative efforts such as HB 11-1254.

Unified prevention efforts across the state related to shared risk and protective factors for the positive development of young people will garner political support from public health partners, school partners and others with whom collaborations are productively engaged.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

Addressing bullying through a shared risk and protective factor lens is a good use of MCH resources because strategies employed will impact other types of violence in addition to bullying. A shared risk and protective factor framework is built on the foundation that individuals do not experience violence in a vacuum. Solutions to one problem must recognize the interconnected forms of violence that often stem from the same root causes. A shared risk and protective factor strategy such as the one proposed here, will evaluate the impact across multiple forms of violence within one strategy. For instance, by focusing on the shared protective factor, "connection/commitment to school", research has demonstrated an association with teen dating violence, sexual violence, youth violence, bullying and suicide."[xi] With limited resources, a good strategy is one that impacts multiple problems.

13. Additional comments

[i] U.S. Department of Health and Human Services. *Health Resources and Services Admnistration, Bullying Prevention Campaign.* 2014.
[ii] 2014 Macmillan Publishers Ltd. 0197-5897. **Journal of Public Health Policy.** 1-15 www.palgrave-journals.com/jphp/
[iii] Colorado Department of Education, Colorado Department of Human Services, Colorado Department of Public Health and Environment, Healthy Kids Colorado Survey (HKCS), www.chd.dphe.state.co.us
[iv] Ibid.
[v] Wilkins, N., Tsao, B., Hertz, M., Davis, R., Klevens, J. (2014). Connecting the Dots: An Overview of the Links Among Multiple Forms of Violence. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention Oakland, CA: Prevention Institute.
[vi] Ibid.
[vii] Ibid.
[viii] GLSEN. (2014). *School Climate in Colorado* (State Snapshot). New York: GLSEN. http://www.glsen.org/sites/default/files/GLSEN%202013%20Colorado%20State%20Snapshot.pdf
[ix] Ibid.
[x] Wilkins, N., Tsao, B., Hertz, M., Davis, R., Klevens, J. (2014). Connecting the Dots: An Overview of the Links Among Multiple Forms of Violence. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention Oakland, CA: Prevention Institute
[xi] Ibid.

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Mental Health Among Youth

1. Issue under consideration

Adolescent Health – Mental health including but not limited to suicide prevention.
For adolescents, depression and other mood disorders are the most common mental health conditions. These conditions often include sadness, discouragement, lower self-esteem and a loss of interest in everyday activities. Depression and other mood disorders can be difficult to diagnose in the context of normal adolescent hormonal changes and maturation. These mood disorders are often coupled with substance abuse, negative behavior, relationship problems and poor school performance.

Over the past decade the annual prevalence of Colorado students reporting symptoms that meet the diagnostic criteria for depression has remained troublingly high – fluctuating between 22 percent and 31 percent. These percentages are even higher among GLB and Latina youth. This is cause for concern because teens experiencing depression are at higher risk for suicide.

Presently, suicide in the *leading cause* of death among Colorado youth. There are more Colorado youth ages 10-25 dying by suicide than dying in motor vehicle crashes (158 compared to 106 in 2013).

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

According to the Colorado Death Dataset, suicide is the leading cause of death for Colorado youth ages 10-25. In 2013, 158 Colorado youth ages 10-25 died by suicide (rate of 14.0/100,000). Colorado's youth suicide rate is significantly higher than the national rate (CDC-WISQARS).

Prevalence data regarding self reported suicide ideation and feelings of sadness and hopelessness, as well as associated risk behaviors, are available through the Healthy Kids Colorado Survey. In 2013, 24.3 percent of CO high school students, 38.7 percent of Latina students and 54.9 percent of GLB students, indicated feeling sad or hopeless almost every day for two weeks or more in a row in the previous 12 months.

More than fourteen percent (14.5%) of students, 19.3 percent of Latina students and 48.5 percent of GLB students reported seriously considering suicide in the previous 12 months. Nearly seven percent (6.6%) of students, 11.2 percent of Latina students and 28.2 percent of GLB students reported a suicide attempt in the previous 12 months.

Additional information about suicide deaths is available from the Colorado Violent Death Reporting System (CVDRS). This reporting system, managed by the Health Statistics Unit, aggregates information from several sources including coroners/medical examiners, law enforcement, Child Fatality Prevention Systems, and newspapers. Of the 650 suicides that occurred in Colorado among those aged 10-24 between 2008 and 2012, 40.8 percent were by firearm and 43.1 percent were by hanging (16.1% poisoning/other). Of the 650 youth suicides, detailed circumstance information is available for 91 percent of the total. Coroner and law enforcement investigations revealed that 53.2 percent of decedents had a current depressed mood, 42.4 percent were experiencing intimate partner problems, and only 30.5 percent were in mental health treatment at the time of death.

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

Addressing the issue of youth mental health and suicide requires a multifaceted approach that focuses on preparing adults to recognize and respond to mental health needs and suicidal ideation, as well as improving those factors that protect students from suicidal crisis. The following strategies encompass this multifaceted approach:

1. Sources of Strength – NREPP evidence based program, and Section I of the Suicide Prevention Resource Center's (SPRC) Best Practice Registry. Sources of Strength (Sources) is a universal suicide prevention program designed to build socio-ecological protective influences among youth to

reduce the likelihood that vulnerable students become suicidal. The program trains students as peer leaders and connects them with adult advisors at school and in the community. With support from adult advisors, peer leaders create messages and conduct activities intended to change the norms that influence coping practices and problem behaviors for all students. Activities are designed to reduce the acceptability of suicide as a response to distress, to increase the acceptability of seeking help, to improve communication between youth and adults, and to develop healthy coping attitudes among youth.

2. Assessing and Managing Suicide Risk (AMSR) – Section III of the SPRC Best Practice Registry (the training adheres to accepted standards but effectiveness has not been demonstrated). AMSR is a one-day training workshop for mental health professionals designed to provide attendees skills to better assess suicide risk, plan treatment, and manage the ongoing care of at-risk adolescents.
3. Kognito Interactive, At-Risk for High/Middle School Educators (Kognito) – NREPP evidence based program, and Section I of the SPRC Best Practice Registry. Kognito is a 1-hour, online, interactive gatekeeper training program that prepares teachers and other school personnel to identify, approach, and refer students who are exhibiting signs of psychological distress such as depression, anxiety, substance abuse, and suicidal ideation. Other gatekeeper training programs are also available, including Mental Health First Aid; Applied Suicide Intervention Skills Training; Question, Persuade, Refer; and others.
4. Emergency Department Counseling on Access to Lethal Means (ED-CALM). New program – evidence-base is under development. The content of the ED-CALM training was created using current program development standards and recommendations of NREPP and SPRC. ED-CALM is designed to help emergency department physicians, nurses, mental health providers, etc. learn to counsel parents/guardians of suicidal youth to reduce access to lethal means upon discharge from the ED. ED-CALM is a 1-hour, online training module.

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

All of the interventions described above are targeted at a universal audience. Sources targets the entire student population; AMSR targets all mental health professionals working with all suicidal adolescents; Kognito is designed for all teachers and school staff; and, ED-CALM is designed for all ED professionals working with all suicidal adolescents and their families. However, all of the interventions can be targeted toward specific high risk adolescents (i.e., LGBT youth, Hispanic youth), and/or to high need parts of the state.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

1. Sources - ~ $5,000 / year for each participating school. Cost to implement in five schools=$25,000
2. AMSR - ~ $110 / participant. Cost to train 100 clinicians / year = $11,000
   AMSR Training of trainers - ~ $1,000 / participant. Cost to train 10 trainers = $10,000
3. Kognito –$28.95 / staff person. Specific numbers of licenses can be purchased and the cost per license decreases with higher numbers purchased. as well. Cost to train 100 staff =$2,895
4. ED-CALM – The on-line training is already developed and can be made available broadly on CO-TRAIN. Cost is for ED staff to organize and manage the adoption of ED-CALM as a training and quality assurance program ED-wide. ~ $5,000 / hospital. Cost to implement in three hospitals = $15,000

Depending on the level of adoption of the above programs, additional FTE will be required to coordinate the implementation, compliance and oversight of programming. .5 FTE = $36,105
Total cost estimate for implementation of all strategies would be $100,000.

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

Two year impacts include an increase the number of individuals ages 10-25 who are identified, assessed for risk and referred for mental health or related interventions; an increase in the number and percentage of individuals receiving mental health or related services after referral; an increase in the number of individuals exposed to mental health awareness messages and utilizing crisis support services; increase number of schools who are implementing Sources.

Five year impacts include an increase in the number of students at Sources schools who report greater school connectedness, positive peer bonding and bonding with caring adults, all protective factors for suicide; a decrease in the percentage of students who report on the Health Kids Survey feeling sad or hopeless , considered suicide, and/or attempted suicide in the previous 12 months; increase in system level changes within Colorado schools, emergency departments, mental health and substance abuse treatment services, crisis response services and youth serving organizations at the community level.

Ten year impacts include a reduction in suicide attempt rates and suicide death rates among Colorado youth ages 10-25.

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

Self-reported suicidal behavior (HKCS)
Suicide attempt hospitalizations and emergency department visits (CO Health Information Dataset)
Suicide deaths (COHID, CO Violent Death Reporting System).
Self reported feelings of sadness and /or hopelessness (HKCS)

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

State and local capacity to implement the proposed strategies is strong. The Office of Suicide Prevention (OSP) has $465,000 of state general funds to lead suicide prevention and intervention efforts in Colorado (funds are for all ages, not specifically adolescents). The OSP partners with many local and regional suicide prevention and mental health organizations. The OSP works closely with a state suicide prevention coalition made up of partners representing various sectors important to youth suicide prevention. Additionally, the OSP works with a suicide prevention commission established through legislative action to advise on OSP priorities and to strengthen public/private partnerships around suicide prevention.

Implementation of the Sources of Strength program is a priority for OSP. Three OSP community grantees are currently funded to implement Sources through June 2017 (Montezuma County, Boulder County, Aurora Public Schools). The OSP has an established relationship with the Sources program, which is poised to expand programming in CO.

Although AMSR training is a focus of the OSP, training is currently limited in CO. Providing a training of trainers in CO would quickly build capacity and OSP staff can help oversee and manage trainings statewide. The Kognito online program is easy to implement and most training logistics are managed by Kognito. Recruiting trainees and gaining buy-in from schools and communities would require partnership with the CDE, School Safety Resource Center, local partners, parent organizations, and others. Currently the manager of the OSP serves on the board of the School Safety Resource Center as well as relationships with CDE.
The OSP has the capacity to implement ED-CALM. The online training is already developed and available. The OSP is already partnering with the Colorado Hospital Association to implement House Bill 2012-1140, which requires the OSP to send materials and information regarding suicide and suicide prevention to all CO hospitals. Additionally, the OSP just completed the implementation and evaluation of ED-CALM at the Children's Hospital and can use the success of this pilot to garner support for more widespread implementation.
A number of local public health agencies identified suicide prevention as a priority in their public health improvement plans. The OSP is providing a webinar and informational session through the Office of Planning and Partnerships to these agencies in order to identify a common set of objectives and performance indicators which will build capacity at the local level to implement youth suicide prevention.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

As the leading cause of death for young people 10-25, suicide is a public health issue. The implementation of programs that mitigate risk factors for, and increase protective factors against suicide in the role of public health. More specifically, the OSP will work with state MCH staff as well as local public health agencies

interested in youth suicide prevention to coordinate the implementation of the proposed strategies. This coordination includes convening necessary partners, planning the implementation of the various strategy components, and measuring the success of program implementation.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

Multiple public health agencies have included mental health and/or suicide prevention as priorities of their public health improvement plans. Historically, local public health agencies have not had the awareness or resources to focus on mental health and suicide. Recently, however, their interest is increasing as public health partners recognize the relationship that mental health has to other health issues, as well as the burden of suicide in our communities and state. Having youth mental health, and specifically suicide prevention, as an MCH priority provides the attention and resources necessary to leverage the growing interest in these issues. Mental health issues and youth suicidality share risk and protective factors with a number of other key public health issues, including priorities identified by MCH partners such as bullying and substance abuse, The implementation of Sources may impact other public health concerns like those stated, because the strategies address shared risk and protective factors.

Given that suicide is the leading cause of death among 10-25 year olds, local child fatality review teams operating out of LPHA's will review a significant number of suicide deaths each year. Having suicide prevention be an MCH priority provides an opportunity for LPHAs to leverage funding between MCH and CFPS, which in turn will increase their ability to implement suicide prevention strategies.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

State will is at an all time high concerning this topic. As mentioned above, public health partners are increasingly aware of the relationship that mental health has to physical health. Coloradans and policy makers have recently prioritized mental health services and suicide prevention in a way not matched in the previous ten years. This is evident in new funding to support expanding mental health crisis services, cross agency partnership to integrate behavioral health and primary care, and legislation to strengthen suicide prevention efforts in the state (House Bill 1140, described above, and Senate Bill 088, creating the Suicide Prevention Commission).

Federal will remains consistent, with regular appropriations to support block grants for mental health services and competitive grants for youth suicide prevention. However, the funding levels do not match the need. There is a sustained resource at the national level for suicide prevention-the Suicide Prevention Resource Center, as well as a national membership organization for suicide prevention-American Association of Suicidology.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

Suicide is the leading cause of death among Colorado's youth, and Colorado consistently has one of the highest suicide rates in the U.S. Unaddressed mental health issues and their associated behavioral problems set young people on a path to poor health across their lifespan, affecting their success in school, their potential to earn, and their success in relationships, and in too many cases, suicide. There are not currently adequate state and federal resources available to comprehensively implement youth suicide prevention strategies statewide. There are limited options for training caring adults to recognize and respond to mental health needs. Mental health professionals and other health care providers who do treat youth at risk lack the skills and training to assess and intervene with suicidal individuals.

13. Additional comments

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Substance Use Among Youth

1. Issue under consideration

Substance abuse among youth can lead to drug dependence, addiction and substance use disorders which often have detrimental effects on current and future health, as well as overall success in life. While the health effects of marijuana use are still being studied, current evidence shows that marijuana use among youth is associated with impaired memory and learning; future high-risk use of alcohol, tobacco, and other drugs; and the development of psychotic disorders in adulthood. Prescription drug abuse can also have damaging effects on the brain and can lead to death as a result of overdose. Opioid analgesics are among the most commonly abused prescription drugs and are highly addictive. Many teens feel that prescription drugs are safe to use because they are prescribed by a physician.

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

The MCH brief that addresses substance abuse among youth provides a general overview of the data.

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

State level strategies to address substance abuse; specifically prescription drug abuse or misuse and marijuana use or exposure among youth include the following:

- Engage with or convene **strategic partners** across the state, including the Substance Abuse Trend and Response Taskforce, the Colorado Consortium for Prescription Drug Prevention, CDHS Office of Behavioral Health, Tony Grampsas Youth Services, environmental health, and many others.
- **Use/Improve data systems**, particularly through monitoring prescription drug misuse through CDPHE's newly acquired access to the prescription drug monitoring system. Continue support for improving data collection systems throughout the state to better understand the impact of marijuana use or exposure on women of reproductive age. Questions on marijuana use and exposure were added to the Healthy Kids Colorado Survey, Behavior Risk Factor Surveillance System and Child Health Survey. Though these questions were not added prior to legalization to establish a strong baseline, Colorado will be able to monitor trends moving forward.
- **Systems, policy and program strategies,** including: 1) increasing training and standardized practices for screening, testing, and treatment of substance use among youth, particularly with prescription drug and marijuana use; 2) requiring provider use of the PDMP (2012 Brandeis Best Practices for PDMP White Paper); 3) promoting the new clinical prevention guidance document to assist healthcare providers with standardizing screening and referral for marijuana use among parents; 4) partnering with DORA to educate providers on the newly adopted opioid prescribing guidelines (CDC Policy Impact: Prescription Painkiller Overdoses); 5) increasing integration of PDMP reports within electronic health records (2012 Brandeis Best Practices for PDMP White Paper); 6) enhancing the use of unsolicited reporting through the PDMP by cross-promoting prescriber education in order to reduce overprescribing (2012 Brandeis Best Practices for PDMP White Paper); 7) restricting access to prescription opioid medications through the institutionalization of DORA supported provider education curriculum on prescribing and pain management best practices including PDMP use(Governor's Plan to Reduce Prescription Drug Abuse); 8) increasing knowledge about 1-800 referral lines for supporting women using substances during pregnancy, access to treatment, and increased awareness of statewide pregnancy substance abuse treatment resources(Association of State and Territorial Health Officials, Neonatal Abstinence Case Study, 2013); 9) restricting diversion of prescription opioid medications through the development of a sustainable statewide medication disposal program (Governor's Plan to Reduce Prescription Drug Abuse); 10) restricting access to marijuana by promoting safe storage practices among parents. Combine these efforts to restrict access to substances with the efforts of the Means Restriction Education projects currently housed at CDPHE to prevent suicide; 11) disseminating patient-focused education materials to inform parents and teens on the potential risks of substance use, including fact sheets and mass reach media (in development for marijuana and already released through Rise Above CO for prescription drug

misuse); 12) increasing local level enforcement of the laws that prevent youth access to retail marijuana products; 13) monitoring compliance with point-of-sale regulations and strengthening local marijuana-related ordinances which have been shown to impact substance use (Quinlan et. al., 2014); 14) educating the general public about marijuana laws through mass reach media campaigns to inform and support state and local prevention work and influence positive community and social norms (Birckmayer et al., 2008); 15) targeting youth with prevention messages to increase youth knowledge about marijuana to impact youth's self-efficacy, perceived norms, and perceptions of risk of underage use (Walker et al., 2011, Pedersen et al., 2013, Pimrack, Switzer, & Dalton, 2007); 16) strengthening local marijuana-related ordinances and policies to align with best practices policies learned from alcohol and tobacco prevention (The Community Guide); 17) partnering with other programs using a pro-social and shared risk/protective factor approach to prevent youth violence, sexual violence and increase positive public health outcomes for youth (CDC).

- **Evaluation** of the impact of the PDMP now that registration is mandated for eligible prescribers and delegated access can be granted to other health care professionals on the medical team (2012 Brandeis Best Practices for PDMP White Paper). Evaluate the effectiveness of campaign efforts through the work of the Colorado Schools of Public Health to measure pre-post knowledge, attitudes and behaviors related to retail marijuana and youth.

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

Education of community members about marijuana laws combined with local prevention efforts and increased law enforcement creates a supportive environment with restricted access to substances. These strategies provide opportunities for youth pro-social activities while decreasing the availability of substances. Additionally, these policy and community level efforts address individual factors and raise awareness of the potential harms associated with substance use during adolescence. Youth substance abuse impacts the potential growth of future generations because abuse among youth can lead to drug dependence, addiction and substance use disorders which often have detrimental effects on health. These effects include social and educational consequences, leading to poor performance in school, and achievement. The effective strategies implemented aim to improve the social and community environments youth are born into by limiting access to substances and providing prevention resources.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

Many of the strategies proposed above are currently funded activities either through CDC or state funds. However, LPHA's do not currently have funding for marijuana and although many have named prescription drug abuse as a priority in their Public Health Improvement Plans, funding for prevention activities is limited. LPHA's could use funding to support staff time to integrate local level strategies with state-level priorities. LPHA's could also provide safe storage/means restriction options (i.e. lock boxes) to families.
At the state level, funding could be used to enhance and further leverage the strategies currently being implemented. Funding for an additional 0.5 FTE to provide technical assistance on and evaluate the strategies recommended above plus associated costs include travel to meet with partners across the state, development and printing costs of public-facing materials, drug disposal costs, conference travel and registration, etc. are estimated to be $60,000 annually.

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

The Governor's office set the goal of maintaining current levels of youth marijuana use and reducing prescription drug misuse from 6 to 3.5 percent through the implementation of some of the above strategies. With the addition of mandatory use of the PDMP and EHR integration, state agencies may be able to further reduce prescription misuse beyond the stated Colorado goal.

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

Percent of parents that report safe storage of marijuana products inside the home. (Child Health Survey – CHSMJ2&3)
Percent of parents that report talking about marijuana (or planning to) with their children. (Child Health Survey –CHSMJ1)

Percent of youth that report past 30-day marijuana use. (HKCS) Percent of youth that perceive marijuana use as risky. (HKCS) Opioid overdose death rate among youth in Colorado (CDPHE death dataset) Rate of hospitalizations due to opioid overdose among youth (CDPHE CHA dataset) Percentage of self reported non medical use of pain relievers in the past year (NSDUH)
8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]
Existing Marijuana Education Advisory Committee. Existing state level Colorado Consortium for Prescription Drug Abuse Prevention and related mass reach media campaigns and patient-focused materials. Existing CDC funding for Core Violence and Injury Prevention Programs, including prescription drug overdose prevention as a priority. This funding is up for competitive renewal in 2016 and the funding level will likely be reduced. Existing funding for the Retail Marijuana Education Program, which includes patient-focused materials and mass reach media campaigns. Existing best practice policies for mandatory PDMP registration, public health access to the data, and opioid prescribing guidelines. Existing winnable battle prioritization of substance abuse prevention, highlighting prescription drugs. Local level prioritization of winnable battles in public health improvement plans. Local level grantees funded by OHB, TGYS, CDE or HCPF to address substance abuse prevention.
9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?
Convene partners to reduce access to substances and connect the public with screening and treatment. Public health is a lead in conducting public education. Public health is the lead to use and improve data collection systems, collect population level data and to identify effective strategies.
10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.
Many local public health agencies (LPHAs) have adopted the Winnable Battle model and are prioritizing substance abuse prevention. LPHAs have selected approximately 25 different strategies to address substance abuse prevention at the local level.
11. Describe the state and federal will (interest, politics, investment) concerning this topic.
Existing winnable battle prioritization of substance abuse prevention, highlighting prescription drugs. The Governor's office has prioritized prescription drug abuse prevention through leadership in accessing funding, creating a statewide strategic plan, and convening the Consortium. The White House Office of National Drug Control Policy has prioritized similar strategies to address prescription drug abuse as those outlined above. Additionally, there is state and federal will to assure that the legalization of marijuana does not create lasting negative public health outcomes and to prevent youth use.
12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?
There is increased interest across all MCH priorities to address shared risk and protective factors that influence a variety of social and public health concerns. These efforts align with the prevention of interpersonal violence, tobacco prevention, bullying prevention, and efforts to build safe, stable and nurturing relationships and environments in Colorado under the Essentials for Childhood project. Due to the current lack of funding at the local level for LPHAs to address shared risk and protective factors, as well as recommended strategies to reduce prescription drug abuse and prevent youth marijuana use, Identifying this as a priority will increase efforts to prevent substance abuse among youth. MCH cab provide the necessary guidance and support to inform the public health role and to integrate local and state level strategies.
13. Additional comments

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Youth Systems

1. Issue under consideration

Youth-Systems Building: To build a coordinated, integrated system of services and initiatives for youth, including youth with special health care needs.

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

Adolescence is an age of opportunity and is generally defined as the period of life ranging from 10 to 24 years of age. The number of youth and young adults in the US is expected to grow by almost one million by 2020 and also increase in diversity.[i] There continue to be significant racial, ethnic, geographic, socioeconomic, and other disparities that affect the health and well-being of this population. Improving the health of youth and young adults is a critical national issue, as the well-being of young people has "a major impact on the overall health of society: today's adolescents are tomorrow's work force, parents and leaders.[ii] Research shows that while investments in early childhood are important, later investments in improving the health of youth and young adults results in more favorable results.[iii]

Although generally a healthy time of life, adolescence brings with it a unique set of developmental changes. These changes can result in young people disproportionately facing health issues related self-regulation of behaviors and emotions, putting them at greater risk participating in behaviors that contribute to an increase in morbidity and mortality[iv]. Such health issues include suicide, injury, substance use, risky sexual behaviors, and various other high-risk activities.

Data related to youth and young adult health outcomes supports the need for a coordinated and comprehensive system that serves all youth while addressing and engaging them through a strength-based, developmentally appropriate, and inclusive youth development approach. Youth and young adult health needs to be addressed holistically. Their choices and behaviors are not created in a vacuum, but rather are influenced by their peers; families and relationships; their communities; and the policies and systems that shape their opportunities and outcomes. Therefore, it is imperative to coordinate the systems dedicated to serving youth and young adults in order to make the greatest collective impact on the comprehensive health and well-being of young people statewide.

A comprehensive system is an ideal mechanism to reach consensus on a vision for the health and well-being of youth and young adults, to increase and improve public/private partnerships and to avoid duplication of programs and services.[v] Developing a comprehensive system for adolescents is a prudent use of existing state and national resources because it promotes partnerships and collaboration between people and organizations that work to address adolescent health and well-being. An adolescent comprehensive systems approach provides a cutting edge opportunity to help young people and their families safely navigate the complex biological, behavioral, cognitive, and social factors that impact their lives.

Colorado's MCH program has spent the past 4 years funding the development of a statewide youth-system, Colorado 9to25 (CO9to25). There has been significant momentum made on this priority, of which has resulted in greater stakeholder buy-in, as well as an increase in national attention and interest. It is critical that we continue the investments made in this past MCH funding cycle, as not prioritizing this now would likely negatively impact the infrastructure of CO9to25, a system that has just begun implementation.

For specific health outcome data for youth and young adult health, please review the MCH Data Briefs.

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

The concept of developing a comprehensive system approach to youth and young adult health was proposed by the Association of Maternal and Child Health Programs (AMCHP) and continues to be informed by the work of the Early Childhood Comprehensive Systems Initiative (ECCS). Theoretically, systems-thinking is a holistic approach that recognizes that the component parts of a system are very much interrelated, and that incorporating many parts of a larger system can produce more creative, flexible, and responsive approaches.[vi] Current research supports this idea by recent paradigm shifts related to the priorities and issues facing youth—particularly the life-course perspective, which conceptualizes the longitudinal influence of socio-environmental determinants on health and acknowledges that different life periods provide the opportunity for interventions to improve health outcomes. An integrated, comprehensive systems approach for youth provides a cutting edge opportunity to help young people and their families safely navigate the

complex biological, behavioral, cognitive, and social factors that impact their lives.

The infrastructure of Colorado 9to25 has been/is currently being developed and implemented, including the hiring of a back-bone organization, structuring a systems-level evaluation, creating a clear framework for how the system functions, and the development of action (implementation) teams. The action teams are creating and implementing activities such as youth-engagement standards, a youth endorsement system, a youth bill of rights, and a training and technical assistance system. Building off of the last 4 years, the following have been identified as the strategies to focus on during these next 5 years:

- Continue supporting the Colorado 9to25 backbone organization who will ensure linkages of partners, momentum of action teams, implementation of the evaluation, etc.
- Facilitate regional youth development trainings to ensure youth-serving professionals understand positive youth development and how to apply it to their work
- Develop and implement a training and technical assistance system
- Develop, implement and support regional Colorado 9to25 Councils for the local integration and implementation of the Colorado 9to25 framework, including participation (and ideally leadership) from local public health agencies (e.g. Denver Health)
- Revamp/repackage and disseminate the department's positive youth development process evaluation tool
- Continue to provide oversight and facilitation for the Youth Partnership for Health
- Continue implementing the Youth Advisor Model as an innovative way to increase the capacity of department staff to integrate youth needs, interests and perspectives into relevant programs, practices and policies. Disseminate tools and support other agencies to replicate the Youth Advisor Model

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

We know that youth of color, those who identify as LGBTQ, and those who live in poverty face poorer health outcomes than those of their peers. This is due to many factors, including institutionalized racism, lack of pro-social and engaging leadership opportunities in and out of school, scarcity of quality resources including caring and engaged adults, and infrequent coordination of services for youth involved in multiple systems. Colorado 9to25 addresses the needs and interests of *all* youth and young adults, including those with special health care needs, focusing on their healthy and optimal development. By utilizing a positive youth development approach, Colorado 9to25 engages the stakeholders who are most likely to face health disparities in an effort to collaboratively address and overcome inequities. In addition, this approach ensures that resources and opportunities are meaningful, relevant and accessible to the needs and interests of young people. Colorado 9to25 hosts community conversations and trainings that allow young people to be seen as solutions to the issues their communities are faced with and ensures that young people and the adults who support them are aware of the rights and responsibilities of young people statewide.

Colorado 9to25 does not focus solely on the individual youth behavior. Instead, it identifies strategies and secures partnerships across the four spheres of influence – individual, family, community and policy/system. This approach leads to policies, practices and programs at each of the levels creating meaningful and relevant change, thus influencing the health and function of each sphere. This is important in impacting the social determinants of health, as we know that individual behaviors do not often function in isolation of an individual's environment, relationships and resources. When policies and systems support the actual needs of a community, while engaging those community stakeholders as leaders in the development and implementation of them, communities can better address the needs of the people. Additionally, people who have their basic needs met, in conjunction with opportunities for advancement of any capacity are more engaged, healthy and contributing.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

Similar to, yet building upon, past year's cost of implementing a youth system, the estimated cost is between $200-250K. This includes:

- Salaries of current MCH staff already working on this priority,
- Funding to support the backbone agency
- Implementation of other strategies identified in the updated logic model (as listed above)

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

- It is anticipated that in two years, local CO9to25 infrastructure would exist, including 3-4 CO9to25 Regional Councils and CO9to25 Youth Development Coordinators.
- In five years, all CO9to25 regions report an increase in staff trained and using PYD; increase in program

linkages; and trained youth systematically informing and shaping state and local decision making.

- Within five to ten years, we would see an impact on the larger population health measures related to mental health, injury, suicide, drug use, etc.

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

MCH Data Sets, YRBS data and Healthy Kids Colorado Survey can be used to demonstrate long-term impact on adolescent health measures.

Any of the proposed national performance measures related to adolescent health will be impacted by the prioritization of youth-systems building, including Injury, Physical Activity, Bullying, Adolescent Well-Visits, Medical Home, Transition, Oral Health, Smoking and Adequate Insurance Coverage.

Although the ultimate outcome of youth-systems building is to impact adolescent health measures of youth in our state, the way we measure the system is by changing the policies, programs and practices that impact those outcomes.

Therefore, a proposed state measure could be: The number and quality (e.g. staff trained in PYD, # of program linkages; # of groups with trained youth actively informing local decision making; overall score of the Wilder or similar collaboration instrument) of Colorado 9to25 Regional Councils implementing the Colorado 9to25 framework.

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

State and local MCH program personnel have created strong partnerships among federal, state, and local service providers that will continue to strengthen the adolescent health infrastructure both at the state and local levels.

MCH staff working on this priority have dedicated time focused on ensuring the work of Colorado 9to25 is effective in addressing the long-term health outcomes. The lead on this priority has the capacity for, and is seen as the expert of youth development and youth engagement. MCH has youth advisors with the capacity for partnering to help lead the continued development of Colorado 9to25. The Healthy Youth Team has expanded beyond PSD and is now department and cross-agency wide. It is focused on coordinating resources, trainings, and evaluation efforts, as well as committing to integrating a positive youth development approach and spending staff time where appropriate on Colorado 9to25 activities.

In addition, the Colorado legislature passed HB13-1239 requiring the state to develop a statewide youth development plan. This plan which utilized Colorado 9to25's infrastructure and action plan was developed and will be implemented in partnership with other agencies and partners.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

Systems development in public health has been used to create a unifying framework that explains the various components of the system that interact (or should interact), for measuring public health systems performance, and for establishing the science base for future work.[vii] Over the last four years the Colorado Department of Public Health and Environment has been the convener of this effort. However, funding a backbone organization has allowed MCH staff to maintain a leadership role, while also being able to come to the table as a dedicated "health" partner. Colorado's state and local MCH programs also play essential leadership roles in the development and implementation of a comprehensive integrated system for youth by involving and coordinating multiple programs and agencies through infrastructure building and implementation of best practices. Additionally, there are numerous (over 1,000) state, local and community agencies, as well as parent and youth partners who participate as leaders and partners in this work. Specifically, the Colorado Department of Human Services is charged with implementation of the above-mentioned HB13-1239 plan.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

At the beginning of this MCH 5-year cycle, staff emailed all LPHAs to determine interest in addressing "youth systems." Despite the 8-10 agencies who were interested, staff felt they needed to develop the statewide framework and system infrastructure first. Therefore, no local action plan was created.

However, just this past year, **Denver Public Health** began piloting a local youth systems-building action plan. They have been focused on creating linkages within internal youth-serving staff and have staff represented on the Colorado 9to25 Leadership Team and various action teams.

Boulder Public Health has received and continues to request trainings on positive youth development to ensure that

they are utilizing the most effective approach in their work with and on behalf of youth and young adults. They are currently in the process of hiring Youth Advisors and replicating CDPHE's Youth Advisor model.

Leadville has recently developed and began implementing their "Youth Master Plan" which is modeled after the Colorado 9to25 framework. They have requested numerous trainings on positive youth development and are integrating young people into leadership opportunities including on the school and community development boards.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

State: For years, staff have heard from partners across the state that there is an interest in having the state develop a system that allows them to connect with resources and opportunities in a coordinated way. Now that Colorado's youth system (Colorado 9to25) has been transitioned to a neutral backbone organization, (Civic Canopy) interest and participation continues to grow as it is seen as a "grass roots" effort with "grass tops" support, structure and influence. In addition to MCH funding, the Civic Canopy receives funding for this work from Kaiser Permanente and a handful of other foundations and local donors. In addition, as mentioned above, the Colorado Department of Human Services is charged with ensuring the success of Colorado 9to25 through the implementation of the statewide youth development plan.

Federal: The innovation, collaboration and practical application of Colorado 9to25 has garnered interest and excitement from national partners including the Office of Adolescent Health's Think Act Grow initiative, CityMatch, and AMCHP, as well as being highlighted most recently in the Institute of Medicine's Report of Young Adults. Additionally, other states including Wisconsin, Ohio, Florida, Minnesota, Puerto Rico, California among others have requested technical assistance and consultation on youth systems building from Colorado.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

A comprehensive systems approach is an innovative way to bridge investment across the life cycle, increase collaboration within and among agencies to strengthen programs and reduce fragmentation, and provide Colorado with a model for effectively and efficiently addressing the needs of young people. Systems-building creates the infrastructure for all population related issue-specific priorities to be addressed in a coordinated and comprehensive manner. It ensures that issue-specific priorities utilize common language, shared practices (such as PYD), and have existing mechanisms in place to identify opportunities for shared funding and resources.

We must protect and leverage the current investment in early childhood by continuing this support into adolescence. If we can agree that early investments to improve the health and well-being of the early childhood population begins the process of ensuring future potential, then we can also agree that investments in the adolescent population are a necessary capitalization on those earlier investments along the life cycle continuum, which will help ensure a sound and healthy workforce, increased civic engagement, and strong leadership among youth.[viii,ix]

The bottom line: We have gained a lot of traction on youth-systems building over the past 4 years. Much of this has been due to support from MCH, as well as the buy-in and will of our federal, state, local, and community partners, including young people. The partnerships nurtured, trainings provided and innovative framework have laid the ground for continued momentum. Youth-systems building should absolutely be identified as one of the upcoming MCH priorities as to allow for this momentum to continue and innovative work to influence the long-term health outcomes of youth and young adults to be experienced.

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[iv] Dahl, Ronald (2004). *Adolescent Brain Development: A Period of Vulnerabilities and Opportunities.* Keynote Address

[v] Association of Maternal and Child Health Programs White Paper, *Making the Case: A Comprehensive Systems Approach for Adolescent Health & Well-Being.* March 2010.

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[vii] Handler, I, & Turnock, A. (2001). Conceptual Framework to Measure Performance of the Public Health System*. American Journal of Public Health*, Vol. 91, No. 8.

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[ix] Cunha F. & Heckman JJ. (2007). *The Technology of Skill Formation*. Discussion Paper No. 2550. Bonn, Germany: Institute for the Study of Labor.

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Youth Sexual Health

1. Issue under consideration
Sexual health is a public health issue. The Colorado Department of Public Health and Environment (CDPHE) considers sexual health an integral component of overall health and wellness across the lifespan. The department respects the choices of all Coloradans and promotes inclusive educational programs, recommends policies, and provides information and services so that all people can make informed sexual health decisions. Sexual health is the integration of the physical, emotional, intellectual and social aspects of sexual well-being in ways that are positively enriching and that enhance personality, communication and love. Sexual health includes not only the physical aspects of sexual development and reproductive health, but also valuing one's own body, developing interpersonal skills to achieve meaningful relationships, interacting with others in a manner that reflects respect and equality and expressing love and intimacy, free of coercion, discrimination and violence. Sexual health encompasses the following areas of prevention: teen pregnancy prevention, STI/HIV prevention, healthy relationships and sexual violence prevention, disparities related to the lesbian, gay, bisexual, transgender and questioning (LGBTQ) populations.
2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.
There were 1.2 million youth (ages 9-25) in Colorado in 2013. That means there are over a million young people needing access to comprehensive service and information and the adults in their lives also need resources and supports to raise sexually healthy youth. *See data sheet compiled for MCH Steering Committee for more sexual health data***.**
3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.
Research suggests that youth sexual health has a wide variety of influences including factors related to teens' biology and personality, their families, partners, friends and communities. *Therefore, meaningful strategies need to be community-wide, coherent and comprehensive.* Components to create a "comprehensive" approach to reducing teen pregnancy and STIs include comprehensive sexual health education, access to contraception, educational supports, job training and employment counseling, self-esteem building activities, recreational activities and a wide range of social supports. In addition, research continues to demonstrate that positive youth development can provide the motivation needed for youth to apply the skills and knowledge learned in sex education programs. For example, connectedness to adults, schools and communities can be a protective factor for youth sexual health outcomes, and efforts to strengthen young people's pro-social relationships are a promising target for approaches to promote youth sexual health.[i] **Therefore, by combining a positive youth development approach with the provision of accurate, age-appropriate, and evidence-based sexual health education, as well as access to clinical reproductive health services, Colorado is far more likely to achieve and sustain a high degree of sexual and reproductive health among its youth.[ii]** Considering the above statements, we recommend three options using MCH funds to impact a comprehensive approach in communities: 1. Provide funding and technical assistance to three communities to use the Call to Action in planning for local strategies and approaches, which must include advancing comprehensive sexuality education, increasing access to services, and improving parent-child connectedness. This strategy would include evaluation to measure the impact of comprehensive strategies in the three communities. (Note: although this strategy is the most effective, it also proves to be the most costly. CDPHE staff will pursue additional funding for this and approach local foundations and perhaps federal sources to secure funding.) 2. Conduct/implement parent-child connectedness trainings across Colorado. This strategy would include training local community facilitators, providing in-depth technical assistance, connecting

trained facilitators to each other and conducting an evaluation. Examples of evidence-based programs include Parent Child Connectedness, Parents Matter, Guiding Good Choices, Positive Action, and Saving Sex for Later.

3. Implement a broader "Askable Adult" training and education campaign. This would include targeting other adults (in addition to parents) such as teachers, coaches, providers, neighbors, etc. The trainings for adults would be cross cutting and include scenarios related to a variety of relevant topics. We would partner with other prevention campaigns (such as CDHS's Speak Now campaign or CDPHE's marijuana youth prevention campaign) to promote creating Askable Adults and provide trainings and resources at different levels throughout communities.

Both #2 and #3 have been shown to positively affect youth sexual health <u>and other</u> behaviors in youth, such as alcohol, tobacco and other drug use, bullying and violence.

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

Youth Sexual Health in Colorado: A Call to Action categorizes the strategies by the social determinants of health so that communities understand the importance of these linkages. The above strategies create communities where parents and other adults are able to talk to youth about their sexual health, directly addressing the SDoH of "social support." Family and social supports, coupled with accurate information, allows young people of all communities to make healthy decisions. Getting parents and communities engaged in sexual health increases their capacity to support youth and can remove the social stigma.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

We would need up to $650K (including currently funded MCH staff) in order to fund three communities to plan and begin implementing comprehensive, community-driven youth sexual health strategies. This would include a tapering funding structure for communities over three years, staff time at CDPHE, technical assistance by content experts and CDPHE staff, and travel for TA and in-person learning opportunities. We propose seeking additional funding from foundations and federal sources and using MCH funds as a match at the state level.

In order to implement parent-child connectedness trainings or Askable Adult trainings, costs could range from $50K-$100K per fiscal year. This is on top of current staff and fiscal staff, and the varying costs depend on the curriculum chosen.

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

We propose using the Child Health Survey to measure impact with parent-child communication and connectedness if we fund parent-child communication or connectedness trainings. The estimated impact in two years would be an increase in the frequency of conversations parents have with their children about sex by 2% and a decrease the age at which the conversations start. In 5 years, we hope to increase the frequency by 5%.In 10 years, we hope to increase the frequency by 15%.

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

Surveillance systems for population-based sexual health measures include:
The Child Health Survey

- Percent of parents talking to their children about basic facts of sexual reproduction
- Age of children when parents talk to them about sexual reproduction
- Frequency of conversations between parents and children about sexual reproduction

If funding goes to communities to implement the CTA, then the following could be used:
The Healthy Kids Colorado Survey

- Students who have ever had sexual intercourse
- Students who have had sexual intercourse during the previous 3 months
- Birth control use amongst male and female students

- Teen dating violence

CDPHE's Health Statistics

- Teen birth rates (overall rate, as well as by race/ethnicity)

CDPHE's Sexually Transmitted Infection/Human Immunodeficiency Virus Surveillance Programs

- STI/HIV rates

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

State and local MCH capacity consists of:

- ✓ Connections with national, state and local experts in the field
- ✓ A network of youth leaders across the state, including 200+ youth advisory boards
- ✓ For FY 16, over $84 million will be available to address this issue via the federal Office of Adolescent Health
- ✓ The Youth Sexual Health Team, consisting of four state agencies (CDPHE, the Colorado Department of Education, Health Care Policy and Finance and the Colorado Department of Human Services)
- ✓ Internal support at CDPHE to frame sexual health as a holistic issue

Local capacity includes:

- ✓ Eleven LPHAs have chosen to focus on this work
- ✓ .5 FTE in Southeast Colorado to work on improving youth sexual health at the regional level
- ✓ Implementation of evidence-based programming occurring in isolated pockets throughout the state, including three CDHS-funded Personal Responsibility Education Program (PREP) grantees
- ✓ Family Leadership Training Institute graduates and leaders located throughout Colorado

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

In order to impact youth sexual health as described above, it is essential to utilize public health strategies (e.g. community assessment, collaborative planning and program implementation, education, evaluation and policy development) to support communities to take action, build capacity and strengthen public health infrastructure. As identified in the "Capacity" section above, Colorado has many resources that could be built upon in order to successfully impact youth sexual health, yet our state continues to need strong leadership in framing the issue and working together. A specific MCH role is to seek large scale funding to implement community-driven work across diverse communities in the state. This funding would support the implementation of evidenced-based implementation strategies in local communities using the Call to Action as a guide. CDPHE convenes the YSHT, partnering with the C Departments of Education, Human Services and Health Policy and Financing. The team, now in state statute, works to align their work and coordinate efforts related to sexual health and CDPHE is seen as a state agency leader for this work.
MCH also offers in-person technical assistance to LPHAs to advance work in their communities.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

As stated above, eleven LPHAs have selected youth sexual health as a priority. There is interest within these LPHAs to implement new strategies and to engage youth in their work. As evidenced by the attendance at the summer 2014 in-person learning opportunities, agencies are looking for more in-depth technical assistance and resources for advancing their work. The interest is high amongst these agencies and intent to use a PYD approach. However, LPHAs need more training, technical assistance and funding in order to realize their goals.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

States across the country are doing cutting edge work around addressing youth sexual health holistically, engaging youth in programming and implementing relevant programming for their communities. For example, Boston Public Health has developed a TV series by young people and for young people. The show focuses on masculinity, identity, relationships and trauma. The federal government is investing funding in this topic, although funding goals are not always in line with CDPHE's approach to the work. For example, abstinence-only funding continues to come into the state and explicitly states that youth cannot be taught about birth control methods, STI/HIV transmission prevention and the funding requires strict messaging for youth about the alleged risks of sexual activity. This health topic in particular becomes a political issue and there is stigma around talking about sexual health, specifically when it comes to youth. Colorado was one of a handful of states chosen to share our work rated to youth sexual health at a national meeting. Implementation of youth

sexual health plans across the nation has proven to be a cross cutting strategy due to the need for comprehensive, community-driven approaches.
12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?
Communities across Colorado are interested in and invested in this topic. Because the strategies used to address the issue are cross cutting and will likely improve other health outcomes for youth, focusing on parent-child connectedness or Askable Adults will have widespread benefits for Colorado's youth. Parent-child connectedness has been proven to protect again 33 negative youth outcomes such as pregnancy, STI/HIV, violence and depression[iii].
13. Additional comments
Although this priority didn't get as much traction during the last MCH round, the resources were spread too thin across a variety of strategy areas. After much deliberation, research and stakeholder input, we recommend focusing MCH funds to fund parent-child connectedness and communication. By continuing to silo the topic into comprehensive sex education or birth control, we believe we are doing Colorado youth a disservice. It is the role of public health to help communities see how the topic is related to other aspects of a young person's life, including the adults in their lives. Lastly, I want to underscore that youth sexual health is not just about teen pregnancy prevention and that, again, the absence of a pregnancy does not mean youth are sexually healthy.

[i] Competence as a Predictor of Sexual and Reproductive Health Outcomes for Youth: A Systematic Review Lawrence Duane House, M.A.a,*, Jessica Bates, M.P.H.a, Christine M. Markham, Ph.D.b, and Catherine Lesesne Journal of Adolescent Health 46 (2010) S1–S6
[ii] Journal of Adolescent Health 46 (2010) S1–S6
[iii] Lezin, N., Rolleri, L., Bean, S. & Taylor, J. (2004). Parent-Child Connectedness: Implications for Research, Interventions and Positive Impacts on Adolescent Health. Scotts Valley, CA: ETR Associates, p. ix. www.etr.org/recapp/

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Instructions: Given the limited amount of time to complete this template, please respond to each area below to the best of your ability. Please limit your response to 2-3 pages, if an issue brief already exists and up to 4 pages if you need to include data.

1. Issue under consideration
Medical home for children and youth with special health care needs (CYSHCN)
2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.
See draft CYSHCN Issue Brief (12/2014) included in resource notebook and the Medical Home among Colorado Children Health Watch (11/2012) available online at: http://www.chd.dphe.state.co.us/Resources/briefs/MedicalHome2.pdf.
3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.
The medical home model of care is a partnership approach where care is both coordinated and family-centered. Several studies have shown that medical home activities improve access to health care, health-related outcomes, and family functioning for children and youth with and without special health care needs.[i] Many children and youth with special health care needs have chronic conditions that require more frequent encounters with the health care systems and additional support services. These encounters can be better coordinated through a medical home approach resulting in improved health. With the implementation of health care reform in Colorado, it continues to be important to assure that children and youth with special needs are receiving coordinated care. Likewise, it is also important to assure that, as Colorado's health care delivery system evolves, new and existing resources are maximized to both effectively and efficiently to meet the needs of the CYSHCN population. Both state and federal funds are currently used to support care coordination services for the CYSHCN population through HCP, Regional Care Collaborative Organizations (RCCOs) and EPSDT/Healthy Communities. The proposed strategy to increase the proportion of CYSHCN who experience coordinated care through a medical home approach is to support the facilitation of health systems policy change at both the state and regional levels.
4. How do the potential strategies address and/or impact the social determinants of health or health inequities?
Disparities in medical home exist among children and youth based on race/ethnicity, health insurance type, CYSHCN status, and region of residence (see Figure 1 on p. 3 of the Medical Home among Children Health Watch, 11/2012). The medical home policy/systems change strategy is specifically focused on the CYSHCN population enrolled in Medicaid in order to decrease health inequities that exist between this target population and the overall population of children and youth.
5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?
The main cost to implement the proposed strategies includes state and local public health FTE. State staff position costs are estimated at approximately $116,000 based on FY15 budget. This includes: CYSHCN Medical Home Policy Coordinator: 1.0 FTE HCP Section Manager: 0.1 FTE CYSHCN Director: 0.1 FTE

Local implementation costs currently range from $13,000 - $283,118 in FY15.
San Juan Basin: $29,268 (.37 FTE)
Tri-County: $283,118 (2.3 FTE)
Weld: $13,000 (.1 FTE)
Mesa: $31,285 (.42 FTE)

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

The anticipated impact in two years includes:

- greater capacity of local staff to engage in and lead a medical home policy/systems change process
- increased collaboration and better coordination between LPHAs and RCCOs (ie complementary services v. duplicative services)

In five years, more families of CYSHCN reporting that their child/youth are receiving coordinated care through a medical home approach.

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

One of the Proposed National Performance Measures for MCH 3.0 is:

Medical home - Percent of children with and without special health care needs having a medical home

The anticipated data source would be the National Survey of Children's Health which collects data on the percentage of families who report that their child/youth receives coordinated care through a medical home approach. This data is also collected at the state level through Colorado's Child Health Survey. Both the state and national data can be stratified by those children/youth who have special needs and those who do not, based on parent/caregiver responses to the CYSHCN screener questions, which are also included in both surveys.

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

Staff with appropriate policy content knowledge and expertise are currently on staff within the HCP Section (Meredith Henry, CYSHCN Medical Home Policy Coordinator). Additionally, the Health Systems Unit Manager, Barbara Martine, has content knowledge and expertise related to the identified strategies having been in the Medical Home Policy Coordinator role previously, which promotes a shared understanding of the effort and supports collaboration.

Four local public health agencies are currently implementing a "non-ABCD focused" medical home action plan. For FY16, these agencies are required to implement medical home policy/systems change strategies. The technical assistance provided by CDPHE to these agencies will follow a policy/systems change process adapted from the CDC, as well as the utilization of tools obtained through the MCH Workforce Development Center in order to build the capacity of local public health staff to identify and implement medical home policy/systems change.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

The MCH public health role is to convene the relevant partners; facilitate identification of policy/systems change solutions; and support momentum around collaborative action steps to implement the prioritized policy/systems change solutions. The key agency to partner with at the state level is the Department of Health Care Policy and Financing, specifically the Accountable Care Collaborative Program. Key community-based partners for public health to partner with are the Regional Care Collaborative Organizations.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

Four of the large local public health agencies are currently implementing a "non-ABCD focused" medical home action plan. For FY16, these agencies are required to implement policy/systems change strategies related to a community-based barrier to a medical home approach. The policy/systems change process they will be implementing has been adapted from the CDC Policy Framework and includes the following four steps: Step 1: policy/systems change identification; Step 2: policy/systems change analysis; Step 3: strategy development and implementation; Step 4: evaluation. An evaluation plan has been developed with HSEB to assess the impact of the local medical home action plans at the conclusion of FY16. One component of the evaluation plan includes determining whether local agency capacity to address policy/systems change has been enhanced.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

The MCH block grant requires that at least 30% of the funding serves the CYSHCN population. Medical home is one of two national performance measures included in the federal guidance to support the CYSHCN population, indicating a high level of investment and political will on behalf of the Maternal and Child Health Bureau. State and local partners from HCPF, RCCOs, CDPHE and LPHAs are currently actively engaged in the Team 4C pilot project, which is informing this proposed strategy.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

Selecting medical home as one of the state's MCH priorities affords Colorado the opportunity to build upon the lessons learned through the Team 4C pilot project and continue the focus on reducing gaps and duplication between publicly funded care coordination services provided through local public health agencies and the Regional Care Collaborative Organizations through replication in other communities. In selecting medical home as a priority, CDPHE also has the opportunity to leverage the resources of the CYSHCN Systems Integration Grant (SIG), which is focused on increasing the percentage of CYSHCN who experience coordinated care through a medical home approach ($300,000 annually for three years, 9/2014-8/2017). It also leverages HCP's resources and professional expertise in providing individualized, family-centered and culturally responsive care.

13. Additional comments

Selecting medical home as one of the state's MCH's priorities assures that public health is a key partner in assuring the health and wellness of women and children. In the current culture of health care reform, conversations and areas of focus are primarily focused on health care and the Triple Aim. However, we know that access to insurance does not assure positive health outcomes for women and children and our focus on policy and systems change will be crucial during this time.

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[i] Homer CJ, Klatka K, Romm D, et al. A review of the evidence for the medical home for children with special health care needs. Pediatrics. 2008; 122: e922-e937.
Cooley WC, McAllister JW, Sherrieb K, Kuhlthau K. Improved outcomes associated with medical home implementation in pediatric primary care. Pediatrics. 2009; 124: 358-364.
Long WE, Bauchner H, Sege RD, Cabral HJ, Garg A. The value of the medical home for children without special health care needs. Pediatrics. 2012; 129: 87-98.

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Transition

1. Issue under consideration

Transition from pediatric to adult care for youth with and without special healthcare needs.

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

Published studies have shown that transition planning from pediatric to adult health care is associated with improved outcomes. These include reduced medical complications, better patient-reported outcomes, greater adherence to care, improved continuity of care, positive patient experience, and lower costs.

To see list of published studies
http://www.gottransition.org/resourceGet.cfm?id=268

Data from www.gottransition.org

- 18 million U.S. adolescents, ages 18–21, are moving into adulthood and will need to transition from pediatric to adult-centered health care. — U.S. Census Bureau, Current Population Survey, 2013

- Nationally, less than half of all youth with special health care needs, ages 12 through 17, successfully transition from pediatric to adult care. In Colorado 42% of youth successfully transition. — from the 2009/2010 NS-CSHCN

- Transition planning between youth, family, and provider has been associated with improvements in satisfaction, continuity of care, and greater adherence to care.— McDanagh et al, 2007; Wojciechoski et al, 2002

- Adolescent patient education programs have been demonstrated to increase a youth's likelihood to independently manage his or her own care. — Vidal et al, 2004

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

The Six Core Elements of Health Care Transition 2.0 define the basic components of health care transition support. These components include establishing a policy, tracking progress, administering transition readiness assessments, planning for adult care, transferring, and integrating into an adult practice.

Strategies for implementation fall into 3 categories:

- Health Care Providers: strategies focus on providers implementing a QI process to ensure the six core elements of health care transition are being implemented in their practices. The elements are designed to be implemented in pediatric and specialty care settings.

- Youth and Families: strategies focus on educating youth and parents of CYSHCN on the importance of transition planning for healthcare and areas to work on with their physician. Currently HCP implements education of families on transition through the HCP model of care coordination.

- Researchers/Policy Makers: policy efforts focus on identifying and implementing policy to support systems level changes in the health care and insurance systems. Professional organizations such as the American Academy of Pediatrics, the American Academy of Family Physicians, and the American College of Physicians-American Society of Internal Medicine have adopted a consensus statement on

transition as organization policy.

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

Health care transition is the process of changing from a pediatric to an adult model of health care. The goal of transition is to optimize health and assist youth in reaching their full potential. To achieve this goal requires an organized transition process to support youth in acquiring independent health care skills, preparing for an adult model of care, and transferring to new providers without disruption in care. Youth from the foster care system and in the criminal justice system can experience interrupted access to health care particularly as they transition from youth to adult systems. Some of the disparities experienced by these youth can be addressed through transition planning.

Studies have shown that significant disparities exist in the successful transition of YSCHN. One study concluded that there is a 25% racial gap in successful transition and that white YSHCN were two times more likely to successfully transition than non white YSCHN. The factors that significantly impact successful transition include: age, sex, education, poverty, adequate insurance, metropolitan status and health condition effect. (Richmond N., 2011)

A second study concluded that "overall, 40% of YSHCN meet the national core outcome for successful transition. Several factors are associated with successful transition, including female gender; younger age; white race; non-Hispanic ethnicity; income ≥400% of poverty; little or no impact of condition on activities; having a condition other than an emotional, behavioral, or developmental condition; having a medical home; and being privately insured." (McManus M., 2013)

Transition interventions can help reduce disparities and improve a patient's access to adult care by ensuring the transition preparation is culturally appropriate, prepares the patient to advocate for their healthcare, and helps to ensure that the patient has adequate insurance.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

If we continue to implement transition work as part of the HCP care coordination services there would be no additional investment required. If we elect to move into other areas of transition work this would require additional funding and cost analysis.

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

- Reduced medical complications
- better patient-reported outcomes
- greater adherence to care
- improved continuity of care
- positive patient experience
- lower health care costs
- increased family and youth empowerment and systems navigation

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

See the document ProposedNationalPerformanceMeasures located at:

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Percent of children with and without special health care needs who received services necessary to make

transitions to adult health care.

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

Capacity to implement transition work on an individual agency level exists within the care coordination staff and this is currently being implemented. There is limited capacity at the state and local level to implement transition strategies with healthcare providers. State level expertise on transition exists within the family engagement specialist, HCP staff and numerous family leaders trained throughout the state. In addition, MCHB has identified transition as a priority, and therefore, funds a National Technical Assistance Center – www.gottransition.org Resources and guidance are abundant through this resource.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

Partner with other organizations that are supporting provider organizations to implement the 6 core elements of transition into their practice work.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

There is momentum and interest at the LPHA level to implement strategies on transition work with youth and families. This momentum in mainly through the implementation of care coordination services. This is a fairly new area of focus within the HCP program. Less momentum and capacity exists to do population based transition work.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

There is support for transition work at the federal level through the MCHB initiative GOTTRANSITION.ORG and MCHB has included transition as a national performance measure in the MCH 3.0.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

There is significant need for this work particularly in the face of health care reform. The data supports and quantifies the need in Colorado. Selecting this as a priority helps to fulfill one of the nation performance measures. Two transition questions have been added to the 2016 Child Health Survey for Colorado.

13. Additional comments

Transition is a cross-systems issue as it also involves the education, housing and employment systems for YSHCN. However, health is often overlooked as a key indicator in transition for a positive trajectory through the life course.

McManus M., P. L. (2013). Current Status of Transition Preparation Among Youth with Special Needs in the US. *Pediatrics* , 1090-1097.

Richmond N., T. T. (2011). Receipt of transition services within a medical home: do racial and geographic disparities exist? *Maternal Child Health* , 742-752.

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

1. Issue under consideration

- **Respite care for families with children with special health care needs**

2. If no MCH Issue Brief exists, provide data to support the need to address the issue (such as numbers of the MCH population affected, severity, urgency and national comparison data). Include health equity data, if available.

Impact on Colorado families:

- 149,000 Colorado children with special health care needs (CSHCN)
- More than 843,000 family caregivers in Colorado
- 20% of Colorado CSHCN reported unmet need for specific health care services, and 5% reported unmet need for family support services *(National Survey of Children with Special Health Care Needs Chartbook 2005-2006)*
- 6.5% of CSHCN do not have a usual source of care when sick (or who rely on the emergency room) *(National Survey of Children with Special Health Care Needs Chartbook 2005-2006)*
- 20.6% of CSHCN whose conditions cause family members to cut back or stop working *(National Survey of Children with Special Health Care Needs Chartbook 2005-2006)*
- Children with disabilities are 3-4 times more likely to be abused or neglected than their typically developing peers *(Disabilities Funders Network)*

Impact on caregiver:

- 72% of caregivers report not going to doctor as often as they should and 55% report skipping doctor appointments due to caregiving responsibilities *(Evercare Study of Caregivers in Decline, 2006)*
- 40% of caregivers report increased feelings of depression since becoming a caregiver *(Caring Today Magazine, 2010)*
- Family caregivers suffer a chronic condition at more than twice the rate of non-caregivers (*Caring Today Magazine, 2010)*
- Average caregiver loses $659,000 over life due to lost wages and benefits and missed promotions *(National Caregiver Library, Caregiving and the Bottom Line)*

Impact on community:

- For every $1,000 spent on respite care, there is an 8% drop in hospitalization *(National Respite Coalition)*
- Nearly 24% of families with CSHCN choose to cut back or stop working in order to care for their CSHCN *(National Survey of Children with Special Healthcare Needs, 2005/2006*)
- U.S. businesses lose up to $33 billion annually due to lost productivity of employees who are caregivers *(Met Life Caregiving Cost Study: Productivity Losses to U.S. Businesses (2006)*

3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.

Phase 1: Development of respite care provider training or selection of existing training
Phase 2: Public awareness campaign to promote need for respite care providers and provide information about resources to families with CSHCN and general community
Phase 3: Partnership with HCP, Colorado Respite Coalition, Easter Seals Colorado and other partners to offer respite care trainings statewide

Indicator: Most data points have been developed and measured nationally. We will follow national model (the National Survey of Children with Special Health Care Needs Chartbook) in collaboration with CDPHE to develop appropriate data points and indicators for the state of Colorado.

4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

Ultimately, these three phases will lead to increased access to quality, affordable respite services for families who have CYSHCN. Expansion of existing respite care models and programs is anticipated and will impact families caring for CYSHCN. Most insurance benefits plans do not cover respite, therefore, families who currently access respite programs pay for the cost out of pocket. The cost of accessing respite services is often out of reach for families with limited income or low SES.

Increased number of trained respite care providers, improving access for families- Partnering with organizations such as HCP/Local Public Health, Colorado Respite Coalition and Easter Seals Colorado (which are focused on increasing trainings to support families and new care providers) leverages and increases currently scheduled trainings. Training will be structured to address health inequities.
Reduced health-care costs due to improved physical and mental health for caregivers – Impact of respite can be measured by out of placements (1 in 4 families w/ children under 21 less likely to place child in out of home care once respite was available.—Jackson, Barbara, Munroe-Meyer Institute, University of NE Medical Center, 1.2001) Reduction of abuse and neglect (In 2003, 98% of 745 caregivers reported reduced risk of maltreatment when respite available – Illinois Dept. of Human Services).
Increased knowledge of respite care resources and supports for all families w/CSHCN-
A healthy caregiver is more able to manage stresses of caregiving. Caregivers understand the need for consistent respite and its value to developing resilient families and maintaining personal health. Education and outreach materials should be culturally relevant, i.e. rural communities, Spanish speaking communities, grandparents, foster parents, etc.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

Phase 1: Development of respite care provider training or selection of existing training
This may require between .25-.33FTE for up to six months. Given the estimated required time, the projected cost would be no more than $50,000. It may be more economically advantageous to contract with a community agency to partner with CDPHE to develop or enhance training.

Phase 2: Public awareness campaign to promote need for respite care providers and provide information about resources to families with CSHCN and general community.
The cost of the PR campaign will be governed by the size, frequency, location and depth of messaging. The anticipated cost is up to $150,000, but could be significantly less depending on the media tools and strategies selected.

Phase 3: Systems integration and partnership with HCP, Colorado Respite Coalition, Easter Seals Colorado and other partners to offer respite care trainings statewide.
If trainings are subcontracted to a community agency it is estimated that each training will cost $350 for a session of 10-20 attendees. This cost includes fee for trainer, materials and any necessary travel costs for trainer. If an annual goal (to be determined in Phase III) is to provide 60 trainings, the cost estimate is $21,000.

Ultimately, these three phases will lead to increased access to quality, affordable respite services for families who have CYSHCN. Expansion of existing respite care models and programs currently offered by Easter Seals Colorado and Community Centered Boards statewide is expected.

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

- Better health outcomes for mothers, fathers and family members of CYSHCN
- Improved social and behavioral health for CYSHCN
- More informed and competent nursing workforce supporting CYSHCN
- Increased collaboration with nursing schools and colleges
- Decrease in cases of child maltreatment
- Decrease in out-of-home placements
- Reduction in hospitalizations and emergency room visits due to increased access to emergency respite care
- Significant increase in number of qualified, trained respite care providers statewide

- Increased accessibility of respite care for all families with CSHCN
- More streamlined system for families to access respite care and providers to become trained
- Increased community knowledge of importance of respite care
- Overall improved caregiver health – physical, mental and emotional

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

See the document ProposedNationalPerformanceMeasures located at:

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There are emerging efforts nationally to measure family resilience, a sub-set of state and national efforts related to *Strengthening Families.* (C. Bethel)

8. What is the state and local capacity to implement the proposed strategies? [Capacity may include staff time, funding (current, other sources, opportunities for leverage), staff technical expertise, partnerships/collaborations, data and technology resources, etc.]

Noting the historical investment of MCH funds is useful to highlight the capacity of HCP/LPA's in developing a systemic approach to respite care for CYSHCN.
The Colorado Respite Coalition (CRC) was an outgrowth of the HCP program/offices in Alamosa, Tri-County and Denver. In 2000, the HCP Family Leader in Alamosa designed and implemented an innovative community-based respite model, and the HCP State Family Leader convened local HCP Family Leaders, and within 5 years the model was replicated in several communities statewide. The CRC was created and supported by state and local HCP staff and funding through 2010. In 2011, Colorado was awarded a three-year federal grant to build infrastructure to increase access to respite across the lifespan. As a result, formal support by HCP was ceased. The CRC and Easter Seals Colorado and JFK Partners formalized their partnership and have seen great success in implementing respite infrastructure statewide over the past four years. These partners and their networks offer staff expertise, access to partnerships, data and marketing tools to implement new trainings and increase public awareness of respite needs. The CRC website offers an online database of respite providers, and resources for families. JFK Partners has financially supported the website for several years. This, and other tools, can be leveraged to reach families as well as care providers statewide. In 2014, Colorado received a second three-year federal grant, which will support efforts to increase trainings for care providers and caregivers, increase awareness and create a more streamlined system for accessing respite care. However, the current funding is not significant to meet the need. If respite is chosen as an MCH priority, the funding and support can be leveraged to support more access, new trainings for care providers and a respite awareness campaign.

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

CDPHE/HCP has been a champion for respite care for CYSHCN for over ten years. Utilizing the HCP/LPA network to increase access to respite services using proven community-based models is a key role for MCH. In addition to working with HCP/LPHA's, CRC focuses on: 1. Increasing respite information, 2. Increasing trained respite providers, and 3. the amount of respite available statewide. Three regional respite Coalitions (Co. Springs, Grand Junction and Denver) work locally to achieve above goals. Their efforts can be leveraged and expanded to develop additional reach. There are more than 140 current member organizations in the CRC, entities include but are not limited to Community Center Boards, faith-based organizations, Adams County Dept. of Soc. Serv., HCP Pueblo, HCP Tri-Counties and the ARC's. If respite is chosen as an MCH priority, access to the proven models will be increased.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

HCP/LPHA's have consistently reported the need for respite services, in both rural and urban areas. This issue has been presented at past MCH conferences and local HCP office's receive numerous calls regarding respite from parents in need. The CRC fields multiple calls weekly from parents in need of respite, many of which come from referrals from other agencies. Colorado Dept. of Health Care Policy & Finance has been a

partner in obtaining national respite grant funding and they are working with the Colo. Dept. of Human Services on increasing the funding for respite that is provided through Medicaid waivers. Several county public health agencies have supported the progress of the CRC and its efforts to increase respite options for Colorado family caregivers. The co-founders of the CRC were employed by two different metro health departments. The Northeast Colorado Health Department has worked with the CRC to build and enhance its existing respite program. Several other county HCP staff have attended focus groups or Respite Summits or participate regularly in brainstorming ways to increase respite. All HCP staff are aware of the need for respite, and the lack of funding, and the lack of qualified respite providers. Additionally, many HCP staff are aware of the efforts of the CRC and are supporting our efforts to increase respite options.

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

The focus on family-centered care and practices continues to be a strong interest for MCHB and other federal partners. Through the implementation of health care reform, there are documented reports that CYSHCN remain a vulnerable population. Strategies that address comprehensive family health and wellbeing are also favored by MCHB as evidenced by support for siblings, fathers and grandparents raising CYSHCN. Respite services support this comprehensive strategy for whole-family health.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

- There are more than 843,000 family caregivers in Colorado, and the number is growing every day. With the rise of autism and chronic disease rates, it is crucial to develop a long-term plan to address the ever-growing needs of Colorado families with CSHCN.
- Colorado has the building blocks for creating a more streamlined system that will result in increased access to quality and affordable respite services.
- Partners like HCP, CRC, Easter Seals Colorado and JFK Partners can provide invaluable resources and supports to aid the development of trainings and a public awareness campaign, including a comprehensive website, online respite provider database and collaborative partners.

13. Additional comments

Respite services have long been overlooked as a cost effective strategy that leads to better health outcomes for families who have CYSHCN. MCH investments over 10 years ago built a solid foundation for a quality respite system in Colorado, but support and awareness has stalled in recent years.

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Prioritization Template

Oral Health

1. **Issue under consideration**
Current: Oct 2014-Sep 2015 - Prevention of dental caries in children age birth to 5. The focus is on Cavity Free at Three (CF3), including consistent oral health messaging and CF3 trainings. Recommend expanding MCH initiatives to also include: **For years 2016-2020, pregnant women and 0-17yrs -** Development of a model and toolkit for LPHA medical and dental personnel to provide preventive dental services in non-traditional venues such as HCP and vaccine clinics, and provide start up materials (sealants, fluoride varnish, educational/outreach materials) to providers for additional school sealant programs.
2. MCH Issue Brief
Children's Oral Health in Colorado – MCH Issue Brief #10
3. Describe effective strategies or possible innovations to address the issue. Include citations and level of evidence.
Current effective strategies - Cavity Free at Three (CF3) Initiative - The CF3 mission is to eliminate early childhood caries in Colorado's children, helping them to grow up free of dental disease by: 1) improving access to preventive dental care for children, especially those most at risk for dental disease, by engaging primary care physicians and public health practitioners to partner with dental providers in preventing oral disease in children; 2) enhancing knowledge about the importance of early oral health care for children and continued dental care for pregnant women, specifically focusing on the need for expanded counseling and education by PCP and dental providers; and 3) growing the Medicaid dental provider network in Colorado as a means for improving access to care. **A growing number of peer-reviewed citations support oral health interventions for pregnant women:** ● Evidence suggests that most infants and young children acquire caries-causing bacteria from their mothers. Providing pregnant women with counseling to promote healthy oral health behaviors may reduce the transmission of such bacteria from mothers to infants and young children, thereby delaying or preventing the onset of caries.[1] ● Studies show that maternal untreated caries increases the odds of children's caries experience.[2] ● Non-invasive periodontal therapy decreased medical costs for pregnancy by 73.7%.[3] **Proposed future strategies/interventions to increase access to preventive dental services thereby decreasing dental disease (contingent on additional funding over and above current level):** ● **Provide additional support to school sealant programs**- See attachment submitted to HCPF for the Targeted Rate Increase (ages 3-5 and 6-9 years). Oral Health Colorado (OHCO), the statewide dental coalition, in collaboration with CDPHE and other key partners, has developed a school-linked data collection tool to support the expansion of sealant programs throughout the state. CMS has recently issued a new, definitive guidance on the "free care" rule. The change in this rule facilitates the delivery of dental services to all children in school settings, regardless of the ability to pay. The change also facilitates billing Medicaid for eligible clients. ● **Innovative strategies - LPHA HCP and Immunization Clinics** – Design a toolkit and implement a training program for medical and dental employees of LPHAs to provide preventive dental services in non-traditional venues such as HCP and vaccine clinics. Northeast Public Health Department is currently providing fluoride varnish at its HCP clinics, and could serve as a model.
4. How do the potential strategies address and/or impact the social determinants of health or health inequities?

[1] National Maternal and Child Oral Health Resource. (2012) Oral Health Care During Pregnancy: A National Consensus Statement
[2] Association of State and Territorial Dental Directors. (2012) Perinatal Oral Health Policy Statement.
[3] Jeffcoat, M.K., Jeffcoat, R.L., Gladowski, P.A., Bramson, J.B., Blum, J.J. (2014) *Impact of Periodontal Therapy on General Health-Evidence from Insurance Data for Five Systemic Conditions*, Am J Prev Med 2014;47(2):166–174).

Dental caries is the most common chronic disease of childhood in the United States. In Colorado, more than 50 percent of Hispanic kindergarten children and about three out of four of Hispanic 3rd graders had experienced a cavity. Additionally, the prevalence of cavity experience and untreated decay is highest in schools with the most students eligible for free and reduced lunch (FRL).

- **CF3** primarily focuses on children most at risk for dental disease, including children with low SES status and with limited access to care. CF3 addresses these problems by integrating prevention into primary care settings and expanding the number of dentists who provide care to Medicaid enrolled children.
- **School-linked sealant programs** focus on schools with greater than 50% FRL rates, expanding better health outcomes and cost-savings to children unlikely to receive them otherwise.
- **LPHA** direct service clinics provide additional opportunities to connect at-risk communities with a dental home and preventive dental services.

5. Using your best estimation, what is the cost of implementing the strategies per year (staff and funding necessary)?

In addition to the $100,000 we received in 2014-2015 we would like to request an additional $100K to support:

- Additional .5 FTE to conduct trainings, develop toolkit to include billing to support sustainability of services, and collaborate with partners during development and implementation.
- Dental materials- sealants and fluoride varnish

6. Using your best estimation, what is the anticipated impact or change that the proposed strategies would have on the issue in two years, five years, and ten years (if sustained)?

CF3: Year one goal: Provide 50 trainings will be administered in high risk, under-served communities to a total of 750 medical and dental providers, health professional students and advocates of children's oral health;

Winnable Battles:

- By 2020, 21.9% of 6 to 9 year-old children enrolled in Medicaid will have received at least one sealant on a permanent molar. (Baseline: 19.4% in 2013 and 2016 Target: 19.9%)
- By 2020, 52.5% of children on Medicaid will receive a dental or oral health service by a medical or dental provider. (Baseline 50.0% in 2013, CMS 416 report -12g, 0-5 year olds and 2016 Target: 50.5%)
- By 2020, 52.5% of children on Medicaid will have had a dental visit by age 1 year (Baseline 7.16% in 2013, CMS 416 report - 12e)

CDC: By August 31, 2018 the percent of third grade students who have sealants on first molars will have increased from 45% to 50% as measured by the in-school Basic Screening Survey (BSS).

7. What population-based measures could be used to demonstrate the MCH impact on the issue? Please include relevant proposed national performance measures or potential state performance measures.

MCH National Performance Measure #9 - Oral Health Among Pregnant women, infants and children-
A) Percent of women who had a dental visit during pregnancy -data source is PRAMS
B) Percent of children with a dental visit- National Survey of Children's Health

MCH State performance Measures

C) Percent of (Medicaid) infants and children, ages 0-5, receiving dental diagnostic services in the last year- CMS 416 12e (as a proxy for dental home)
D) Percent of 3rd grade children who have received protective sealants on at least one permanent molar tooth. Data Source- BSS (every 3 years).

8. What is the state and local capacity to implement the proposed strategies?

- There is existing state and local capacity including the CDPHE Oral Health Program and HRSA funding for the Regional Oral Health Specialists (ROHS) to help expand CF3, school sealant programs and other oral health initiatives.
- Smart Mouths, Smart Kids initiative funded by DentaQuest through OHCO will support increase in numbers of and sustainability of statewide sealant programs.
- OHCO - The Director of Coalition Development will help expand partnership and coalition development across the state.
- CF3 partner funding for year 3 (2015-26) and award of PIOH grant are critical to fund activities and

achieve increased oral health outcomes

9. What is the MCH public health role (lead, partner, convener, etc.) in implementing the potential strategies? Do other agencies serve as a lead or partner on this issue?

- CDPHE MCH, LPHAs,ROHS and health care providers will partner on expanding both CF3 and sealant initiatives.
- CDPHE will serve as the lead with delivering consistent messaging, TA with training and billing, and serving as the convener on consistent best practices.
- LPHAs and medical providers will be the billing entity, and CDPHE/CF3 will continue to engage and train primary care providers on oral health screenings, risk assessments, and fluoride varnish applications.
- CDPHE will also collaborate with OHCO in advocating and initiating policy change. OHCO will also be a primary partner with partnership and coalition development.

10. Discuss local public health agency interest, capacity, opportunity or progress on this issue.

- Interest and understanding of OH related issues is being addressed by the following LPHAs- <$15K - Mineral, Kiowa, San Juan, Jackson, Cheyenne, Ouray, Gilpin, Lincoln, Rio Blanco, Grand, Park, Chaffee and West Central. Over $15K- Prowers, Montezuma/Delores, Broomfield, NWVNA, Jefferson, and Broomfield.
- Under $15K are in need of technical assistance to bill and staff support

11. Describe the state and federal will (interest, politics, investment) concerning this topic.

Colorado:

Winnable Battles:

- By 2020, 21.9% of 6 to 9 year-old children enrolled in Medicaid will have received at least one sealant on a permanent molar. (Baseline: 19.4% in 2013 and 2016 Target: 19.9)
- By 2020, 52.5% of children on Medicaid will receive a dental or oral health service by a medical or dental provider. (Baseline 50.0% in 2013 (CMS 416 report, 12g for 0-5 year olds) and 2016 Target: 50.5%)

2013 The State of Health report (from the Governor's office): One area of focus is to improve the oral health of Coloradans through age one dental visits and increased access to community fluoridated water systems.

The OHCOSmart Mouths, Smart Kids initiative- In collaboration with partners, OHCO has developed a website, business calculator, provider resource materials and a data collection tool to expand school-linked oral health programs and track school services However, there is no funding for sealant program planning, implementation and development.

Colorado OH Community Grants Bill- SB261-passed in 2013, with no appropriated funds. The bill, with funding, will support evidence-based interventions such as school-based/linked sealant programs, community water fluoridation and support emerging best practices.

National:

The Centers for Medicare and Medicaid is requiring state Medicaid offices to increase the number of children receiving sealants on permanent molars.

Healthy People 2020- 17 Oral Health objectives (including age 1 dental visits and sealants)

HRSA Workforce Grant is funding 5 LPHAs (Northeast, Garfield, Chaffee County, San Juan Basin and NWCOVNA) in dental HPSAs to build local dental infrastructure. The scope of work for the counties includes expanding CF3 and school sealant programs. We will be applying for a 2nd 3 year cycle this Spring.

12. When facing competing MCH priorities, why do you consider addressing this issue to be a good use of MCH resources?

- Oral health (OH) and general health are not separate. OH is a critical component of overall health and must be included as part of individual and community health programs. While dental health has been improving in the US, children have not benefited at the same rates as adults. Children with poorer OH status were more likely to experience dental pain, miss school, and perform poorly in school.[4]
- Dental caries is a common chronic disease, which is both infectious and transmissible. Early childhood caries is highly prevalent and increasing in poor and near poor US preschool children. Additionally,

[4] Jackson, SL, Vann W., Kotch, J., Pahel, B., Lee, J. (2011). Impact of Poor Oral Health on Children's School Attendance and Performance.Am J Public Health. 2011 October; 101(10): 1900–1906. doi: 10.2105/AJPH.2010.200915

early childhood caries is largely untreated in children under the age of three. Increasing access to preventive OH services for young children is critical to reversing this trend. Evidence increasingly suggests that preventive interventions within the first year of life are critical.[5]

- School-based and school-linked programs can provide preventive oral health services, and focus on schools with greater than 50% free and reduced lunch rates, which also have more at-risk students, low socio-economic status and higher Hispanic and Black populations.
- Sealants and fluoride varnish are cost effective ways to prevent dental caries. When placed on teeth before they decay, these interventions will save time and money by avoiding more expensive and extensive restorative care.

13. Additional comments

Funding will be needed for a follow up Head Start BSS. Baseline data was collected in 2013-2014 and it remains critical to have consistent trend data. Funding will also be needed for CDPHE epidemiology services, contractors (dental hygienists) and staff support.

[5] American Academy of Pediatrics (2014) Policy on Early Childhood Caries (ECC): Classifications, Consequences, and Preventive Strategies

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Scoring Matrix - TOTALS

Instructions: Rate each criteria on a scale of 1 to 5 with 1 being the least compelling and 5 being the most compelling information on each criteria.

Domain	NPM Associated?	Issue	Importance		Feasibility				Impact	TOTALS
			Incidence/Prevalence (# of people affected)	**Severity** (Health impact on individual such as quality of life, short- or long-term disability or death)	**Evidence-based/informed strategies or promising practices available**	**Policy or systems-level approach for population based impact**	**Cost of implementing strategies and can we obtain sufficient funds to make an impact**	**Capacity to implement the strategies** (State and local time, expertise, data, infrastructure)	**Efforts can ahieve measurable results in two, five, and ten years** (Structural, outcome, performance measures)	
Women/ maternal	% of women with a past year preventive visit	Well-woman care	2.80	2.04	1.92	2.54	2.50	1.67	1.75	2.17
Women/ maternal	N/A	Mental health including but not limited to pregnancy-related depression	4.25	4.08	3.67	3.92	3.79	3.71	3.88	3.90
Perinatal/ Infant	% of infants who ever breastfed and % of infants exclusive through 6 months	Breastfeeding	3.67	3.33	4.17	4.17	3.83	3.83	4.00	3.86
Perinatal/ Infant	N/A	Infant mortality among African Americans	1.96	4.79	3.42	3.00	2.88	3.08	3.08	3.17
Perinatal/ Infant	% of infants placed to sleep on their backs	Safe sleep	2.33	4.71	3.54	3.04	3.21	3.33	3.17	3.33
Children	% of childre, ages 9-71 months receiving developmental screening using a parent-completed screening tool	Developmental screening	3.92	4.13	3.92	4.33	3.63	4.08	4.17	4.02
Children	N/A	ECOP	4.25	4.29	4.00	3.75	3.38	3.79	3.71	3.88
Adolescent	% of adolescents ages 12-17, who are bullied	Bullying	3.38	3.67	3.17	3.29	3.13	2.83	3.17	3.23

Adolescent	Injury-related hospitalization for 0-19 (includes attempted suicide)	Mental health among youth including but not limited to suicide prevention	4.25	4.46	3.17	3.13	3.08	3.21	3.17	3.49
Adolescent	N/A	Substance use among youth including but not limited to marijuana	3.42	3.92	3.13	4.21	3.21	3.25	3.04	3.45
Adolescent	N/A	Youth systems	4.25	3.58	3.08	4.17	3.38	3.92	3.29	3.67
Adolescent	N/A	Youth sexual health	3.88	3.38	3.04	3.38	2.38	2.79	2.92	3.11
CYSHCN	% of children with and without SHCN having a medical home	Medical home for CYSHCN	2.83	3.13	2.36	3.77	2.95	3.45	2.86	3.05
CYSHCN	% of children with and without SHCN who received services necessary to make transitions to adult health care	Transition for CYSHCN	2.92	3.29	2.46	3.63	2.42	2.25	2.42	2.77
CYSHCN	N/A	Respite for CYSHCN	2.75	2.88	2.50	2.67	2.29	2.29	2.33	2.53
Cross-cutting	A. % of owmen who had a dental visit during pregnancy and B. % of infancts and children, 1-17, who had a preventive dental visit in the last year	Oral health pregnant women and children	3.21	3.13	3.38	2.96	2.75	2.25	2.75	2.92
Cross-cutting	A. % of women who smoke during pregnancy and B. % of children who live in households where someone smokes	Substance use by women including marijuana by pregnant women and second hand marijuana smoke among children	3.29	4.08	3.25	3.96	2.96	3.17	3.29	3.43

NOTE: We must choose 8 NPMs with at least one in each of the 6 domains. We can also choose between 3-5 SPMs.

Colorado Maternal and Child Health
2016-2020 Needs Assessment
Final Prioritization Scoring Rubric

Issue	**Incidence/Prevalence** (# of people affected)	**Severity** (Health impact on individual such as quality of life, short- or long-term disability or death)	**Evidence-based/informed strategies or promising practices available**	**Policy or systems-level approach for population based impact**	**Cost of implementing strategies and can we obtain sufficient funds to make an impact**	**Capacity to implement the strategies** (State and local time, expertise, data, infrastructure)	**Efforts can ahieve measurable results in two, five, and ten years** (Structural, outcome, performance measures)	**TOTALS**
Developmental screening	3.92	4.13	3.92	4.33	3.63	4.08	4.17	4.02
Mental health including but not limited to pregnancy-related depression	4.25	4.08	3.67	3.92	3.79	3.71	3.88	3.90
ECOP	4.25	4.29	4.00	3.75	3.38	3.79	3.71	3.88
Breastfeeding	3.67	3.33	4.17	4.17	3.83	3.83	4.00	3.86
Youth systems	4.25	3.58	3.08	4.17	3.38	3.92	3.29	3.67
Mental health among youth including but not limited to suicide prevention	4.25	4.46	3.17	3.13	3.08	3.21	3.17	3.49
Substance use among youth including but not limited to marijuana	3.42	3.92	3.13	4.21	3.21	3.25	3.04	3.45
Substance use by women including marijuana by pregnant women and second hand marijuana smoke among children	3.29	4.08	3.25	3.96	2.96	3.17	3.29	3.43
Safe sleep	2.33	4.71	3.54	3.04	3.21	3.33	3.17	3.33
Bullying	3.38	3.67	3.17	3.29	3.13	2.83	3.17	3.23

Infant mortality among African Americans	1.96	4.79	3.42	3.00	2.88	3.08	3.08	3.17
Youth sexual health	3.88	3.38	3.04	3.38	2.38	2.79	2.92	3.11
Medical home for CYSHCN	2.83	3.13	2.36	3.77	2.95	3.45	2.86	3.05
Oral health pregnant women and children	3.21	3.13	3.38	2.96	2.75	2.25	2.75	2.92
Transition for CYSHCN	2.92	3.29	2.46	3.63	2.42	2.25	2.42	2.77
Respite for CYSHCN	2.75	2.88	2.50	2.67	2.29	2.29	2.33	2.53
Well-woman care	2.80	2.04	1.92	2.54	2.50	1.67	1.75	2.17

Colorado Department of Public Health and Environment

Colorado Title V Maternal and Child Health Program Mid-Course Progress Review – 2011-2015

Background

In 2010, Colorado's Maternal and Child Health (MCH) program conducted a comprehensive statewide five-year needs assessment in alignment with federal Title V guidelines. Given the state's historical difficulty of quantifying the health impact of MCH interventions, staff was motivated to embrace a different approach to the 2010 needs assessment process to assure that programs, policies and systems building efforts would demonstrate measurable impact within five years. The needs assessment was designed with this focus in mind.

Initially, Colorado re-affirmed the vision statement for MCH – To foster Healthy People, Healthy Families…Thriving Communities. The state's mission statement was shortened to focus on optimizing the health and well-being of the MCH population by employing primary prevention and early intervention public health strategies. The overall goal of the needs assessment process focused on identifying a set of specific priorities that could be acted upon at some depth so that results, even preliminary ones, would be evident within five years. Strategies employed to achieve results were to be evidence-based/evidence-informed practices or interventions grounded in sound public health theory and consistent with the mission and scope of Colorado's MCH program. A clear MCH public health role needed to exist for an issue to be considered as a potential priority; in short, MCH must be able to make an impact. The process focused on meaningful involvement of multiple state and community stakeholders/partners to enhance collaboration, while looking for opportunities to coordinate and integrate MCH efforts both internally and externally across the MCH continuum.

Colorado's 2011-15 MCH needs assessment identified nine priorities and corresponding State MCH Performance Measures (Attachment A). Given that the needs assessment is the first step in the evidence-based public health (EBPH) process, MCH staff next focused on translating the needs assessment into an action-oriented planning process that would facilitate measurable change in the nine priorities within five years. The objectives of the planning process were to: 1) create a planning infrastructure that is based on EBPH and unifies MCH efforts; 2) develop concrete and consistent planning documents for each priority; 3) ensure synchronized strategies across MCH priorities between state and local agencies; 4) increase state and local staff capacity for public health planning and evaluation, including adoption of evidence-based public health strategies; and 5) increase accountability for a change in MCH health status.

MCH Planning Process

Between September 2011 and August 2012, the MCH team utilized the systematic Evidence-Based Public Health Planning (EBPH) planning process to ensure effective implementation of strategies for the nine MCH priorities. Colorado's MCH priorities were to be implemented at both the state and local level, via 55 local public health agencies (LPHAs). The state infrastructure was reconfigured to better support planning and implementation. The MCH Steering Committee was re-chartered to make strategic decisions, provide oversight for MCH programs and funding, and coordinate capacity-building of state and local MCH staff. An MCH implementation Team (MIT) was formed for each of

the nine priorities with each having an identified leader, a management-level sponsor, advisory group and program evaluator. Some of the MITs also include representatives of the MCH populations, such as youth and families. The nine MIT Leads met quarterly to discuss Steering Team expectations, share lessons learned and resources, and identify ongoing technical assistance and training needs. In addition, MIT Leads provided progress reports at MCH Steering Committee meetings at least bi-annually. MCH Generalist Consultants continued to provide cross-priority technical assistance and program monitoring for LPHAs.

Using standardized tools, the MITs developed a long-term state logic model and corresponding three-year action plan for each of the nine MCH Priorities. The action plan template included evaluation and monitoring at the objective and activity levels. Short-term outcomes in the logic model were made operational as objectives in the three-year action plans. Medium-term and impact outcomes on the logic model corresponded to the State MCH Performance Measure(s) previously selected for each of the nine priorities. These were reviewed and approved by MCH leadership and Steering Team, informing revisions to state strategies and the development of local strategies. As part of this review, the committee confirmed that two MCH priorities, youth systems and preconception health, would not initially have a local component.

During January and February 2012, seven of the nine MITs developed and refined local-level logic models and action plans, which were again reviewed and approved by MCH leadership. Common feedback included clarifying and optimizing the roles of state and local agencies, prioritizing population-based interventions, and assessing the known evidence-level of strategies to ensure impact on MCH performance measures.

Implementation

Full implementation required shifting state staff time and funding from work that was no longer prioritized to efforts aligned with the new priorities. This was not accomplished without some angst given the personal commitment of "MCH-ers" to their work. However, it was critical to assure the allocation of resources to implement the new approach.

In March 2012, the Colorado MCH Program hosted a three-day conference for all 55 LPHAs to present expectations for coordinated state and local planning efforts by priority. A change in Colorado's local health agency funding formula and funding expectations was required and implemented to ensure adoption of these coordinated strategies at the local level. Contract expectations for the 14 core LPHAs included implementing care coordination and medical home approaches for the children and youth with special needs (CYSN) population and focusing a portion of their funds on MCH priorities and corresponding action plans. The funding portion required for implementation of part or all of these action plans increased incrementally from 10 percent in FY 2013 to 20 percent in FY 2014 and 30 percent in FY 2015. The 41 smaller LPHAs also had the option to align their MCH work with MCH priorities and MIT-developed strategies. Although LPHAs were required to spend only 10 percent of their funds on MCH priorities, they allocated a majority of their funds to population-based strategies from the MIT-developed action plan, increasing consistency of efforts across agencies and the state.

Standardized templates, instruction sheets, trainings, consistent technical assistance from a trained evaluator and prompt application of new knowledge contributed to increased capacity among MITs. During the MIT debrief in April 2013, staff members reported that the planning process increased

their level of collaboration across priority areas because they were simultaneously going through the same process and using the same tools. They also reported that the identification of one MIT Lead per priority facilitated accountability for the planning process.

Thirty-nine staff from 14 LPHAs completed the overall evaluation of the MCH planning process. Seventy-four percent of respondents expressed that the State MCH Program had done a "good" or "excellent" job communicating a clear and strategic direction for Colorado's MCH work, including a focus on the nine MCH Priorities and population-based strategies. Eighty-four percent of respondents reported that local actions plans developed by state MITs were "very helpful" or "somewhat helpful" in developing the action plan for their agencies; and 81 percent said the action plans were "very" or "somewhat applicable" to their local communities.

Summary - Planning/Early Implementation Phases

Colorado's 2011-15 MCH needs assessment and planning blended into one seamless process with different phases, rather than distinct and disconnected processes. This collaboration helped keep MCH stakeholders across the state continuously engaged throughout the needs assessment, planning and implementation phases. Evaluation results indicate that participants were satisfied with the systematic planning process, especially the integration of state and local efforts. This process addressed many of the barriers to implementing EBPH principles in a real world setting. In addition to achieving the stated objectives, four key lessons were learned from this process.

1. *Employ a system-wide approach to capacity-building*

   Colorado MCH staff members come from a variety of clinical, social service and public health backgrounds. Responding to the varying level of experience with EBPH planning, epidemiology staff designed a supportive and applied approach to foster skill development. Standardized tools and detailed instructions established a common language and learning as a cohort facilitated peer exchange and support. As they moved through each step, MITs received timely and constructive feedback from their assigned evaluators, supervisors, and the review committee. Many people were working on the same deliverables, at the same time, in the same manner. This approach to capacity building went beyond training individuals and spurred a change in organizational culture within MCH.

2. *Exercise strong leadership and maintain oversight*

   The MCH Steering Committee provided strong leadership for this planning process. Clear expectations were communicated and, when needed, difficult decisions were made. With increased emphasis on evidence-based/informed strategies for the indentified priorities, some existing initiatives could no longer be supported. This conserved limited resources and focused LPHAs on fewer program areas, but was challenging for state and local staff members personally attached to former initiatives.

   A rigorous review process identified two priorities not ready for implementation at the local level – preconception health and youth systems building.

3. *Collaborate across public health sectors*

The planning process fostered more cohesion between the various programs funded under the MCH umbrella and was coordinated with other public health initiatives. In 2011, CDPHE identified 10 public health and environmental priorities known as Colorado Winnable Battles. Six of the nine MCH Priorities overlap with the Winnable Battles in focus areas, indicators and strategies (Table 1). A centralized committee reviewed all MCH state and local logic models and actions plans. From this vantage point, the committee was able to make connections for MITs to collaborate across their priorities or with Colorado Winnable Battles on similar interventions or target populations. Similarly, the committee was able to identify areas of duplication, gaps and common needs for technical assistance and evaluation tools. Standardized templates facilitated comparison of logic models and action plans across priorities. The review committee ensured that state and local plans were mutually supportive and working in tandem to achieve measurable outcomes. As a result, public health efforts were aligned horizontally across program silos and vertically between state and local agencies.

Roles and responsibilities were defined to maximize the expertise of individuals and accountability for results. LPHAs provided expertise in various MCH content areas and program implementation at the local level. Community involvement was assured by LPHA's engagement in MIT advisory groups, review of draft logic models and action plans, and participation in MCH Conferences. In addition, many LPHAs aligned this work with health priorities identified in their own jurisdictional public health improvement plans.

4. *Continued accountability at all levels*

As well as linking the nine priorities to performance measures, the state and local logic model for each priority identified short-term, medium-term and impact outcomes. The action plans articulated SMART objectives and developed methods to evaluate these objectives and monitor progress toward activities. Expanding the knowledge of MCH staff through trainings, in addition to partnering a program evaluator with each MIT, increased the quality and rigor of measurement and evaluation. This strong and standardized monitoring and evaluation component increased accountability to implement approved action plans. The evidence level and target population(s) for each strategy were discussed by the MCH leadership to ensure a focus on both evidence-based/evidence-informed and population-based strategies. Although not every funded strategy has the highest proven level of evidence, this process elevated the overall adoption of strategies that have a higher level of evidence.

Accountability and feedback have been maintained throughout implementation. MIT leads support LPHAs through individual technical assistance and multi-agency learning circles. MIT leads meet regularly with their sponsor, and a minimum of twice per year with the MCH Steering Committee. In addition, each MIT Lead writes an annual report on the status of his or her priority. Contracts with the 14 core LPHA are directly tied back to the nine MCH priorities, with a requirement to incrementally allocate 10-30 percent of funding to one or more MCH priority over the next three years. The MCH Generalist Consultant conducts three progress meetings per year with her assigned LPHA. Each of the 14 core LPHAs is required to write an annual report on the status of their action plans.

Review of Progress in Priority Implementation and Assessment of Outcomes

Following two years of priority implementation, the MCH Steering Committee met to assess progress in meeting the state's goal of achieving measurable impact in the MCH priority areas by the end of 2015, assessing both state and local efforts. The group acknowledged that it is difficult to observe quantitative progress in population-based indicators even within a five-year period given the time required to generate population health impact. When setting the state performance measures during the 2010 needs assessment process, intermediate measures of population-based impact were chosen in an attempt to document incremental progress within 5 years, with the logical assumption that efforts similarly employed and maintained over time should ultimately lead to impact on more distal measures. At the mid-course review, the Steering Committee decided to analyze short-term progress, given that intermediate measures were as yet unlikely to be impacted at this time.

Assessing short-term progress/"success" proved to be challenging. In an attempt to do so, the Steering Committee established criteria to guide the assessment of both quantitative and qualitative results for state level priority implementation. Quantitative criteria included progress in meeting most or all of the short-term outcomes identified in the original state-level logic model for each priority. It was assumed that progress in meeting the short-term outcomes in the logic model indicated that the plan was sound, with continued implementation leading to achievement of mid-term or intermediate outcomes. In addition, any substantive changes in the national or state performance measure assigned to the priority were considered.

The group also expressed interest in capturing qualitative data which included the observations and impressions of those involved in priority implementation at both the state and local level. It was felt that these data might provide indicators of progress which may be associated with future success if the effort "stays the course." Qualitative criteria included MIT observations or reflections on priority implementation as well as the success and momentum generated by the various collaborations that were built around the effort such as the number of participants, quality of their participation and their willingness to provide in-kind resources. Finally, the group assessed whether or not additional financial resources were garnered and/or leveraged, in addition to MCH funds, to support the effort.

In addition to the MCH Steering Team's qualitative assessment of MCH priority efforts, state staff who support and monitor LPHA MCH priority efforts also convened to discuss LPHA MCH priority efforts. Criteria were developed to assess local progress for each MCH priority. Criteria included the quality of the local MCH priority action plan template, technical assistance and MIT consultation; local staff capacity (time, skills, knowledge); and agency, community and political will. The group also identified examples of excellence and discussed future considerations for each priority area.

Quantitative Impact – State Level

At the state level, efforts making progress appear to have a well-developed logic model, with the majority of short-term outcomes being partially or fully met after two years of implementation. Data for national and state performance measures aligned with the priorities are reported in the following tables.

Priority 1	National/State Performance Measure	Baseline/ Current
Promote screening, referral and support for perinatal depression.	**SPM #3**: Percent of mothers reporting that a doctor, nurse, or other health care worker talked with them about what to do if they felt depressed during pregnancy or after delivery (PRAMS).	**SPM #3:** 2009: 72.6% 2010: 75.1% 2011: 76.6%
One state performance measure is used to monitor progress for the perinatal depression priority. The prevalence of mothers reporting that a health care worker talked with them about what to do if they felt depressed during pregnancy or after delivery (state performance measure #3) increased each year since baseline, although the 2009 (72.6%) and 2011 (76.6%) estimates are not statistically significantly different. The 2012 data is delayed, but another increase in prevalence is expected given the success of the pregnancy-related depression priority at the state level and the support for mental health initiatives at the local level.		

Priority 2	National/State Performance Measure	Baseline/ Current
Improve developmental and social emotional screening and referral rates for all children birth to 5.	**SPM #4**: Percent of parents asked by a health care provider to fill out a questionnaire about development, communication or social behavior of their child age 1 through 5. (CHS) **SPM #5:** Percentage of Early Intervention Colorado referrals coming from targeted screening sources (EI Colorado). **NPM #12**: Percent of newborns who have been screened for hearing before hospital discharge (Newborn Hearing Screening Program).	**SPM #4:** 2011: 39.8% 2012: 53.0% **SPM #5:** 2009: 34.3% 2010: 41.7% 2011: 42.5% 2012: 41.9% **NPM #12:** 2009: 97.3% 2010: 97.3% 2011: 97.8% 2012: 98.3%
Current data support some success for the developmental and social emotional screening and referral priority. Due to changes in survey methodology, there are only two years of comparable prevalence estimates for the percent of parents asked to fill out a questionnaire about development, communication, or social behavior of their child (state performance measure #4). The estimates from 2011 (39.8%) and 2012 (53.0%) do not differ significantly. The 2013 estimate should provide a better picture of how this measure is trending. The percentage of Early Intervention referrals coming from targeted screening sources (primary care providers) increased 22% from baseline, demonstrating measurable progress. The percent of newborns screened for hearing before leaving the hospital (national performance measure #12) finally exceeded the target of 98% in 2012 when the measure reached 98.3%.		

Priority 3	National/State Performance Measure	Baseline/ Current
Prevent obesity among all children ages birth to 5.	**SPM #6:** Percentage of live births where mothers gained an appropriate amount of weight during pregnancy according to pre-pregnancy BMI (birth certificate). **NPM #11:** The percent of mothers who	**SPM #6:** 2010: 33.1% 2011: 33.2% 2012: 33.7% **NPM#11:**

Priority 3	National/State Performance Measure	Baseline/ Current
	breastfeed their infants at 6 months of age (NIS). **NPM #14:** Percent of children, ages 2 to 5 years, receiving WIC services who have a BMI at or above the 85th percentile (WIC).	2009: 57.1% 2010: 52.4% 2011: 56.9% 2012: 56.5% **NPM #14:** 2009: 23.5% 2010: 23.2% 2011: 24.2% 2012: 22.9% (rev. methods)
Early childhood obesity prevention is being monitored through one state performance measure and two national performance measures. Appropriate weight gain during pregnancy is measured using the 2009 Institute of Medicine guidelines starting with 2010 births, which is why 2010 is the baseline for this measure. There has been very little change in the percent of live births where mothers gained an appropriate amount of weight during pregnancy (state performance measure #6) over the last three years. Although the prevalence of breastfeeding at six months (national performance measure #11) was mixed over the years, Colorado is still close to meeting the Healthy People 2020 target of 60.6%. In 2012, Colorado ranked #1 among all states for the percent of babies that were exclusively breastfed at six months of age. The CDC discontinued its standardized reporting of WIC data for all states after the release of the 2011 data, thus the estimate of the percent of children ages 2 to 5 years receiving WIC services who have a BMI at or above the 85th percentile (national performance measure #14) for 2012 is not comparable to previous estimates. The 2013 and 2014 estimates should provide a better picture of how this measure is trending.		

Priority 4	National/State Performance Measure	Baseline/ Current
Build a system of coordinated and integrated services, opportunities and supports for all youth ages 9-24.	**SPM#10:** The percentage of group members that invest the right amount of time in the collaborative effort to build a youth system of services and supports. (Wilder Collaborative Factor Inventory).	**SPM #10:** 2010: 20.0% 2011: 90.0% 2012: 75.0%
The youth systems priority is tracked through one state performance measure. The percentage of group members that invest the right amount of time in the collaborative effort to build a youth system of services and supports (state performance measure #10) increased from 20.0% in 2010 to 90.0% in 2011, but decreased to 75.0% in 2012. This decrease can be attributed to group turnover, as new members came into the group near administration of the Wilder survey. Limited time with the group influenced the new members' ability to properly gauge investment in the collaboration. The group working on this priority convened in 2010, which represents the baseline year for this estimate. In 2013, the collaborative group expanded to include additional members, so it is anticipated that this measure might show another change in 2013.		

Priority 5	National/State Performance Measure	Baseline/ Current
Improve sexual health among all youth ages 15-19	**SPM #8:** Percentage of sexually active high school students using an effective method of birth control to prevent pregnancy (YRBS). **NPM #8:** The rate of birth (per 1,000) for teens ages 15-17 (birth certificate).	**SPM #8:** 2009: 26.4% 2011: 29.1% **NPM #8:** 2009: 19.9/1,000 2010: 17.4/1,000

Priority 5	National/State Performance Measure	Baseline/ Current
		2011: 14.0/1,000 2012: 11.9/1,000
The youth sexual health priority is tracked with state and national performance measures. The change in the teen (15-17) birth rate (national performance measure #8) stands out in the table above. The data reveal a 40% decline between 2009 and 2012, dropping from 19.9 births per 1,000 teens to 11.9. This dramatic change is linked to the work of the Colorado Family Planning Initiative, a privately funded effort to increase the use of long-acting reversible contraception (LARC) in young women receiving services through Title X family planning clinics. LARC use more than quadrupled among patients ages 15-24 over the period, increasing from 4.5% to 19.4%. At the same time, Colorado's teen (15-19) birth rate ranking among all states improved from #29 (28 states had lower rates) in 2008 to #19 (18 states had lower rates) in 2012. The prevalence of sexually active high school students using an effective method of birth control to prevent pregnancy shows a potential increase, although the 2009 (26.4%) and 2011 (29.1%) estimates are not statistically different.		

Priority 6	National/State Performance Measure	Baseline/Current
Prevent development of dental caries in all children ages birth – 5.	**SPM #7:** Percent of parents reporting that their child (age 1 -5) first went to the dentist by 12 months of age. (CHS).	**SPM #7:** 2011: 11.2% 2012: 10.3%
The dental caries priority has one associated state performance measure (#7) which is the percent of parents that reported that their child first went to the dentist by 12 months of age. Due to changes in survey methodology, there are only two years of comparable prevalence estimates for this measure which show very little change. The 2013 and 2014 estimates will give a better picture of how this measure is moving.		

Priority 7	National/State Performance Measure	Baseline/Current
Improve motor vehicle safety among all youth ages 15-19.	**SPM #9:** Motor vehicle death rate for teens ages 15-19 (death certificate).	**SPM #9:** 2009: 12.7/100,000 2010: 12.1/100,000 2011: 10.3/100,000 2012: 11.4/100,000
The teen motor vehicle safety priority has one state performance measure which has shown improvement. The motor vehicle death rate for teens ages 15-19 years (state performance measure #9) decreased 19% from 12.7 per 100,000 teens in 2009 to 10.3 per 100,000 teens in 2011. The 2012 rate increased slightly to 11.4 per 100,000 teens, but the rate increased nationally as well. It is anticipated that the rate will decrease again in 2013.		

Priority 8	National/State Performance Measure	Baseline/Current
Reduce barriers to a medical home approach by facilitating collaboration between systems and families.	**NPM #3:** The percent of children with special health care needs age 0-18 who receives coordinated, ongoing, comprehensive care within a medical home (National CSHCN Survey). **National Outcome #2:** All children will receive comprehensive coordinated care within a medical home (CHS).	**NPM #3:** 2009: 48.2% 2010: 48.2% 2011: 43.7% 2012: 43.7% **NOM #2:** 2011: 57.8% 2012: 63.9%
The medical home priority is being measured with two national measures. The prevalence estimates for CSHCN who receive coordinated, ongoing, comprehensive care within a medical home (national performance measure #3) are not significantly different. The survey that provides data for this measure is conducted once every four years, which is why the estimates are repeated. The prevalence estimates for the percentage of all children receiving comprehensive coordinated care within a medical home (national outcome measure #2) show an increase, but are not significantly different.		

Priority 9	National/State Performance Measure	Baseline/Current
Promote preconception health among women and men of reproductive age with a focus on intended pregnancy and healthy weight.	**SPM #1:** Percentage of sexually active women and men ages 18-44 using an effective method of birth control to prevent pregnancy (BRFSS). **SPM #2:** Percentage of live births to mothers who were overweight or obese based on BMI before pregnancy (birth certificate).	**SPM #1:** 2011: 61.8% 2012: 68.3% **SPM #2:** 2010: 43.2% 2011: 43.0% 2012: 44.3%
The preconception health priority has two associated state performance measures. Due to changes in survey methodology, there are only two years of comparable prevalence estimates for the percentage of sexually active men and women using an effective method of birth control (state performance measure #1). The estimates from 2011 (61.8%) and 2012 (68.3%) do not differ significantly. The 2013 estimate should provide a better picture of how this measure is trending. Overweight or obese BMI was measured using the 2009 Institute of Medicine guidelines starting with 2010 births, which is why 2010 is the baseline for this measure. There has been very little change in the percent of live births to mothers who were overweight or obese before pregnancy (state performance measure #2) over the last three years.		

Qualitative Data/Observations – State Level

Qualitative data were collected from the MCH Steering Committee, MIT leads, MCH Generalist Consultants and LPHA partners. In addition, both state and local annual reports from the past two years were reviewed and analyzed to determine qualitative themes/trends. State and local information indicate that deliberate adherence to the action plan and timeline with real-time course corrections appears to be associated with progress. State MCH implementation team (MIT) leads report the importance of creating cohesive, quality advisory groups and partnerships to move the work forward. Advisory groups and partnerships have been particularly strong in efforts addressing pregnancy-related depression (PRD), early childhood obesity prevention (ECOP), youth systems building through CO 9-25 and developmental screening. All four of these priorities have garnered

additional resources or funding from other agencies/organizations based on the efficacy of their efforts. State staff capacity was also key. Efforts led by staff who were skilled in population health strategies and implementation enjoyed success and the quality of the technical assistance provided was key.

Qualitative Data/Observations – Local Level

General trends identified in state-level qualitative assessment efforts were echoed. For example, LPHAs seemed more successful addressing the MCH priorities when the local MCH priority action plan included specific strategies and tools. Additionally, more agencies were likely to adopt the priority and implement it effectively when the specific plan could be broken down into smaller parts, each with specific strategies and tools. LPHAs often have limited resources and capacity to address an issue in its entirety so MCH staff may implement parts of local action plans. Early Childhood Obesity Prevention (ECOP) is an example of a high quality action plan that had multiple components. Each component contained specific strategies and tools for implementation. Assuring Better Development (ABCD), pregnancy-related depression (PRD) and medical home were examples of action plans that were difficult to break down into smaller parts. Smaller agencies in rural communities chose not to implement these plans due to limited staff capacity and the inability to compartmentalize. Some small, rural agencies, whose contract expectations required them to implement the medical home action plan, experienced challenges due to a lack of staff capacity to implement the plan in its entirety with fidelity as well as a lack of community will. State staff will continue to evaluate the success of LPHAs in meeting the majority of short-term outcomes identified in the local MCH action plans, as local implementation began a year after state initiation of priority efforts.

Most of the MITs provided strong and effective consultation to LPHAs on the MCH priorities. ECOP and PRD MITs were highlighted as consistently providing excellent technical assistance to local agencies. ECOP learning circles seemed to be most engaging and effective in supporting local partners.

Local staff capacity such as time, skills and knowledge varied across agency and MCH priority area. Most of the MCH priorities require LPHA staff to apply skills in community mobilization and systems building to address MCH priorities at the population level. Many LPHA staff lack these skills though specific priority action plans and tools such as ECOP, ABCD and PRD did assist LPHA staff in acquiring these skills for plan implementation. A few agencies also hired or reassigned staff members who have the appropriate skills from other parts of their agency to implement MCH priority work. Priority action plans that were less specific such as medical home presented challenges due to staff capacity.

Finally, state MCH managers and consultants discussed agency, community and political will per MCH priority area. In many communities, obesity was identified as part of LPHAs' public health improvement plans (PHIPs). Given the stakeholder involvement in prioritizing and developing counties' PHIPs, when LPHAs chose an MCH priority that aligned with their PHIP, success was more likely to occur. Given that 34 LPHAs prioritized obesity in their counties coupled with the strength and feasibility of the ECOP action plan, many LPHAs chose ECOP to implement as their MCH priority and experienced strong community support and agency will. Mental health was also prioritized by 21 LPHAs in their PHIPs and LPHA regional partnerships, so agency and community will for pregnancy-related depression was high. Unintended pregnancy and oral health were prioritized in some communities as well. Community will around youth sexual health has been historically challenging due to the political nature of the topic.

Colorado MCH Priorities Demonstrating Short-Term Progress/Success

The mid-course assessment process indicated which priorities should continue to move forward "as is," while also identifying those in need of change and/or course correction. Considering the quantitative and qualitative data available, it appeared that four of the nine MCH priorities (listed below) showed signs of success or progress.

1. Promote screening, referral and support for perinatal depression.
2. Improve developmental and social emotional screening and referral rates for all children birth to age 5.
3. Prevent obesity among all children ages birth to 5.
4. Build a system of coordinated and integrated services, opportunities and supports for all youth ages 9-24.

Colorado MCH Priorities to be Re-Assessed/Discontinued

Priorities not currently meeting the criteria, listed below, will be re-assessed.

5. Improve sexual health among all youth ages 15-19.
6. Prevent development of dental caries in all children ages birth – 5.
7. Improve motor vehicle safety among all youth ages 15-19.
8. Reduce barriers to a medical home approach by facilitating collaboration between systems and families.
9. Preconception health was discontinued due to a lack of evidence-based population health strategies for implementation.

Re-assessment involves a variety of potential approaches/strategies, including course correction and quality improvement. Strategies for re-assessment include analyzing the logic models and action plans to assure feasibility and impact, re-assessing resource allocations to assure that the efforts planned align with the resources assigned, and analyzing other sources of funding for similar work to ascertain if MCH funding might be better leveraged or withdrawn in certain areas and re-allocated elsewhere. Staff capacity to effectively implement the action plan and to provide local level technical assistance will also be assessed for some priorities. Both oral health and medical home efforts will be focused and scoped in order to assure investment in activities most likely to lead to tangible progress. Given that evaluation funding is limited, the MCH Steering Committee plans to re-assess options for assuring incremental impact when full impact evaluation cannot be implemented for each priority. Given the lack of population-based strategies to impact preconception health, this priority was discontinued.

Summary

At the state level, logic models proved to provide a "road map" for the development of action plans and implementation strategies that progressively move teams toward outcomes. Where strategies, as operationalized in annual action plans, were well-conceived and logically related to the identified short-term outcomes, progress was observed. Conversely, where progress was lacking, chosen strategies will be re-evaluated within the context of the original logic model to determine if the approach was not well aligned with the chosen short –term outcome or if action plan lacked precision and/or was implementation rigor. Garnering additional in-kind or financial

support, appears to be key in moving efforts forward. The skill of the MIT lead and strength of the technical assistance provided also appears to serve as an important component of success.

At the local/community level, all but three local health agencies (Tri County, Boulder and Larimer) use the majority of their MCH funds (excluding the Children and Youth with Special Needs program – HCP) on the priorities. Action plans created by the larger LPHAs have consistently improved and implementation appears to be of higher quality when local priority action plan templates have been utilized. Furthermore, more success has been observed following specificity in the action plan template, especially when the MCH Implementation Team (MIT) or MCH Generalist Consultants provide technical assistance when a plan activity is unsuccessful. Re-assigning staff skilled in population health or willing to learn these skills appears to be associated with the most effective MCH priority efforts.

Many LPHAs have aligned their MCH Action Plans with the issues identified as priorities in agency-specific local public health improvement plans, an unanticipated advantage in moving the work forward. Overall, the findings from a qualitative review of LPHA efforts support the conclusions of the MCH Steering Team's assessment of state-level priority implementation. There is demonstrated short-term impact being made at the local level on some of MCH priorities, particularly ECOP, pregnancy-related depression, and ABCD. MITs working on other priorities may need to refine their strategies and tools to optimally support LPHAs in implementing MCH priority work.

In summary, Colorado's evidence-based public health planning process established a critical infrastructure for implementation of the 2011-2015 MCH priorities. The inclusion of performance management strategies within the state's planning process assured the application of a systematic, real-time monitoring approach which is key in assuring that outcomes are ultimately realized. Processes such as this mid-course review afford Colorado the opportunity to assess implementation success to assure that priority efforts "move the needle" for MCH impact.

Attachment A

Colorado MCH Priorities	MCH Priority Performance Measures*	Colorado Winnable Battles	Winnable Battles Indicators*
EARLY CHILDHOOD DENTAL CARIES: Prevent development of dental caries in all children ages birth to 5.	SPM 7: Percent of parents reporting that their child (age 1 through 5) first went to the dentist by 12 months of age (Child Health Survey)	**Oral Health**	SPM 7: Percent of parents reporting that their child (age 1 through 5) first went to the dentist by 12 months of age (Child Health Survey) *The percent of the population served by community water systems who receive optimally fluoridated water*
EARLY CHILDHOOD OBESITY PREVENTION: Prevent obesity among all children ages birth to 5.	SPM 6: Percentage of live births where mothers gained an appropriate amount of weight during pregnancy according to pre-pregnancy BMI (Birth certificate) NPM 11: The percent of mothers who breastfeed their infants at 6 months of age. NPM 14: Percent of children, ages 2 to 5 years, receiving WIC services that have a BMI at or above the 85th percentile.	**Obesity**	NPM 11: The percent of mothers who breastfeed their infants at 6 months of age. *The percent of children ages 2-14 who are overweight or obese* *The percent of adults who are obese*
EARLY CHILDHOOD SCREENING: Improve developmental and social emotional screening and referral rates for all children ages birth to 5.	SPM 4: Percent of parents asked by a health care provider to fill out a questionnaire about development, communication, or social behavior of their child ages 1 through 5 (Child Health Survey - CH169) *SPM 5: Percentage of Early Intervention Colorado referrals coming from targeted screening sources (Early Intervention Colorado)* *NPM 12: Percent of newborns who have been screened for hearing before hospital discharge*	**Mental Health & Substance Abuse**	SMP 4: Percent of parents who were asked by a health care provider to fill out a questionnaire about development, communication, or social behavior of their child ages 1 through 5 (Child Health Survey - CH169)

Colorado MCH Priorities	MCH Priority Performance Measures*	Colorado Winnable Battles	Winnable Battles Indicators*
MEDICAL HOME SYSTEMS BUILDING: Reduce barriers to a medical home approach by facilitating collaboration between systems and families.	*NPM 3: The percent of children with special health care needs age 0 to 18 who receive coordinated, ongoing, comprehensive care within a medical home. (National CSHCN Survey)* *National Outcome #2: All Children will receive comprehensive, coordinated care within a medical home.*	**Mental Health & Substance Abuse** **Oral Health**	SPM 7: Percent of parents reporting that their child (age 1 through 5) first went to the dentist by 12 months of age (Child Health Survey)
PRECONCEPTION HEALTH: Promote preconception health among women and men of reproductive age with a focus on intended pregnancy and healthy weight.	SPM 1: Percentage of sexually active women and men ages 18-44 using an effective method of birth control to prevent pregnancy (BRFSS) *SPM 2: Percentage of live births to mothers who were overweight or obese on BMI before pregnancy (Birth certificate)*	**Unintended Pregnancy** **Obesity**	SPM 1: Percentage of sexually active women and men ages 18-44 using an effective method of birth control to prevent pregnancy (BRFSS) *The percent of adults who are obese*
PREGNANCY-RELATED DEPRESSION: Improve screening, referral and support for pregnancy-related depression.	SPM 3: Percent of mothers reporting that a doctor, nurse, or other health care worker talked with them about what to do if they felt depressed during pregnancy or after delivery (PRAMS)	**Mental Health & Substance Abuse**	SPM 3: Percent of mothers reporting that a doctor, nurse, or other health care worker talked with them about what to do if they felt depressed during pregnancy or after delivery (PRAMS)
TEEN MOTOR VEHICLE SAFETY: Improve motor vehicle safety among all youth ages 15 – 19.	SPM 9: Motor vehicle death rate for teens ages 15-19 yrs old	**Injury Prevention**	SPM 9: Motor vehicle death rate for teens ages 15-19 yrs old
YOUTH SEXUAL HEALTH: Improve sexual health among all youth ages 15 -19.	SPM 8: Percentage of sexually active high school students using an effective method of birth control to prevent pregnancy (YRBS) NPM 8: The rate of birth (per 1,000) for teenagers aged 15 - 17 years (Vital statistics)	**Unintended Pregnancy** **Infectious Disease Prevention**	SPM8: Percent of sexually active high school students using an effective method of birth control to prevent pregnancy (YRBS) Fertility rates of teens ages 15-17 (Vital statistics)

Colorado MCH Priorities	MCH Priority Performance Measures*	Colorado Winnable Battles	Winnable Battles Indicators*
YOUTH SYSTEMS BUILDING: Build a system of coordinated and integrated services, opportunities and supports for all youth ages 9-24.	NPM 8: The rate of birth (per 1,000) for teenagers aged 15 -17 years NPM 16: The rate (per 100,000) of suicide deaths among youths 15-19 *SPM 10: The percentage of group members that invest the right amount of time in the collaborative effort to build a youth system of services & supports (Wilder)* *NPM 6: The percentage of youth with special health care needs who received the services necessary to make transitions to all aspects of adult life, including adult health care, work, and independence. (National CSHCN Survey)*	**Unintended Pregnancy** **Obesity** **Mental Health & Substance Abuse** **Infectious Disease Prevention** **Oral Health** **Tobacco**	NPM 8: The rate of birth (per 1,000) for teenagers aged 15 - 17 years (Vital statistics) NPM 16: The rate (per 100,000) of suicide deaths among youths 15-19 SPM8: Percent of sexually active high school students using an effective method of birth control (YRBS) *The percent of high school students who are obese (YRBS)* *The percent of 9-12th graders who attempted suicide during the 12 months (YRBS)* *The percent of 9th-12th graders who report binge drinking in the past 30 days (YRBS)* *The percent of adolescents who are current smokers* *The percent of children who live with a smoker in the home who are exposed to secondhand smoke*

Attachment B

LPHA MCH Priority Highlights:

- In 2014, Boulder County Public Health will complete the "Healthy Intended Pregnancy" (HIP initiative) "Brownson Model" community assessment to further identify and prioritize issues related to youth sexual health in their community. Boulder's work was highlighted at the FY13 MCH Conference and in the MCH program guidelines. The HIP initiative addresses both an MCH and County PHIP priority.

- Boulder County Public Health (BCPH) has successfully implemented training on early childhood obesity prevention in child care centers with documented impact on centers' physical activity and nutrition practices and policies. Twenty-four staff members representing 19 child care centers and two "tias" representing 14 Family, Friend and Neighbor (FFN) child care providers went through a 12-hour healthy eating, active living training program developed by BCPH staff using Lets Move, 5210 and I am Moving, I am Learning materials. BCPH staff provided an additional 4 hours of mentoring/coaching was provided to staff at each center and to the 2 "tias." The training curriculum covers responsive feeding, healthy sleep practices, limiting screen time, healthful menus, CACFP outreach, physical play opportunities. Improved knowledge, skills and practices was determined through 5210 self-assessment surveys. Each center demonstrated some change. Change was variable by center and by category. Each center was able to increase their score in most areas by at least one point. Program Policies and Supportive Strategies were two areas in which centers demonstrated change that will likely be sustainable.

- Jefferson County Health Department leveraged Cavity Free at Three work and has convened local dental hygienists to provide opportunities to learn about billing and setting up entrepreneurial systems to assist families will oral health needs.

- Weld conducted a baseline assessment of workplace breastfeeding accommodations followed with individualized trainings and technical assistance for meeting the policy components. Weld also providing 5210 training for child care centers.

- Northeast County Health Department has worked across 10 counties, 3 early childhood councils (ECC) and 2 BOCES to implement the ABCD initiative. They have convened and provided leadership for all 3 ECC and Early Intervention systems to implement the ABCD road map process. Their work in Morgan County has been used as a model for other agencies throughout the state.

- Tri-County Health Department has been both a pilot site and have successfully convened stakeholders, assessed their three counties related to screening for pregnancy-related depression tools used and resources available. They are presently sharing the assessment information with stakeholders through lunch and learn opportunities.

- Eagle County Public Health applied for a grant to make the clinic in Eagle more youth friendly. They developed new posters that are more attractive to teens and collaborated with the Eagle River Youth Coalition, Vail Resorts, and the schools. Youth advisors have given input in outreach approaches resulting in the use of text messages for appointments and notifications. Teen births have decreased and the number of teens seen in the clinic for FY 2013 was 67. Of these, 45 were new to the clinic.

- Eagle County has also adopted the ECOP action plan. Healthy Community has implemented the 5.2.1.0 toolkits. Private practices, the schools and the LPHA are all using the toolkit. In April, there is an upcoming event called Every Kid Week.

- In Summit County, ABCD screenings are done consistently in the child care centers with the oversight of the child care consultant. There is a salary supplement for the centers' health liaison if screenings are conducted. Right Start is a tax-funded early childhood on-line system for Ages and Stages Questionnaire.

MCH State and Local Level Priority Impact – Mid-Course Review 2011-2015

MCH Priority	State-Level Quantitative Impact	State-Level Qualitative Impact/ Impressions	TA, Consultation, Tools	Local Staff Capacity	Local Agency, Community, Political Will	Other
Prevent development of dental caries all children ages birth to 5.	Few short-term outcomes met. Separate HRSA and CDC grants, along with Cavity Free at 3 dollars also fund this effort.	Action plan needs to be better focused on the SPM. Activities around Cavity Free at 3 and messaging around brushing may be the best focus of MCH-funded efforts. Progress has been delayed by staffing shortages.	Action plan refers to tool kit which is useful particularly around Cavity Free at 3. Implementation is varied, with cavity free at 3, which is considered tangible. Some workforce development, some increasing access to care. OH Director has been accessible as a direct TA provider." No learning communities.	Capacity is highest around Cavity Free at 3. There has been state and local staff transition around this work.	Fluoridation has lower political will. Support for Cavity Free at 3 is higher.	Consider keeping this as a priority but modify to focus on Cavity Free at 3.
Prevent obesity among all children ages birth to 5.	Most of the short-term outcomes have been achieved.		Excellent action plan, very comprehensive, highly evidence based. While it's broad and comprehensive, the activities are specific, evidence-based; model plan. The plan is adoptable by agencies of all sizes as agencies can implement the plan completely or choose components. Workforce nutrition accommodation work is more of a challenge, but state TA and support around it has been strong. Effective MIT TA High quality learning circles.	Requires high level of convening partners, systems, and health promotion competencies – which is not always present. Breastfeeding workforce accommodation efforts are possibly seeing increased success when promoted by nurses in the smaller counties ("white coat effect"). Nurses feel confident and comfortable in this arena. Staff capacity is growing to do health promotion work. Some agencies have assigned staff traditionally outside of MCH whose skills align with this work	Perhaps highest of all priorities in terms of community will. Obesity is the top priority identified through local public health improvement plans. Private sector will is less for workforce accommodations. On the other hand, small counties have really latched onto this work. Allows them to have "wins" and align with existing WIC work. Healthlinks could be a resource.	

MCH State and Local Level Priority Impact – Mid-Course Review 2011-2015

MCH Priority	State-Level Quantitative Impact	State-Level Qualitative Impact/ Impressions	TA, Consultation, Tools	Local Staff Capacity	Local Agency, Community, Political Will	Other
ABCD: Improve developmental and social emotional screening & referral rates for all children ages birth to 5.	Three out of 6 short- term outcomes are being met. Missing data on # screened, results of screening, and receipt of needed services.	Is the model flexible enough to provide for local adaptation based on needs? Need more collaboration between ABCD and MCH generalist TA. How can the systems change be better measured?	The structure of the model represents a barrier to small agency adoption. Great tools Strength and effectiveness of the TA is not consistent among providers. With ABCD technical assistance providers being contractors of state MCH, they are not all aware of the state MCH Program's infrastructure, process and expectations for LPHAs. This may be an opportunity for stronger collaboration in the future.	Requires a high level of systems building and partnership cultivation. Fewer agencies might choose medical home if it were not a requirement.	Area is more complex due to political and professional turf issues. Support of Early Childhood Council an important predictor of success in jurisdictions of all sizes.	Does the inflexibility of the model cause us to miss opportunities for moving counties forward (by reducing the # of potential implementing jurisdictions)? It is difficult for small agencies to break this plan down into smaller parts to implement, and they don't have capacity to implement the entire plan. It may be helpful to recommend that agencies who choose this priority commit to implementing the entire plan, in which case it may be better suited for larger agencies and communities. Or alternatively, ABCD creates a "version" for smaller, rural counties based on some counties modifications.

MCH State and Local Level Priority Impact – Mid-Course Review 2011-2015

MCH Priority	State-Level Quantitative Impact	State-Level Qualitative Impact/ Impressions	TA, Consultation, Tools	Local Staff Capacity	Local Agency, Community, Political Will	Other
Reduce barriers to a medical home approach by facilitating collaboration between systems and families.	Two out of five short-term outcomes have been met.	Staffing challenges delayed completion of action plan activities. There are different barriers to a medical home in urban vs rural areas. Delay in creating a database to match family leaders to policy opportunities. Need to determine how family leaders are used in the work and the impact.	Would benefit from more guidance and specificity in the plan. Plan is very process-oriented so given the range of opportunities in the community or within the agency, it can be difficult for agencies to identify an area on which to work.	No small agencies have been implementing this. The time commitment may be a barrier also with smaller agencies (with only 1-5 FTE) because the work requires investment of time for what may be difficult to define to Boards of County Commissioners/Boards of Health who are focused on identifiable short term concrete outcomes. Agency staff often don't have the necessary community mobilization or engagement skills to generate sufficient interest in their medical home work to make it successful.	The community, agency will may not be strong. Also, this may not be a priority for agencies or communities but they are working on it, because it is a MCH requirement. It seems that if the staff skills are not in place, the lack of agency and community will can be a nonstarter for agencies. Agencies may not be positioned to be a leader in this realm.	It could be helpful for agencies to have a prioritization tool to identify their focus.

MCH State and Local Level Priority Impact – Mid-Course Review 2011-2015

MCH Priority	State-Level Quantitative Impact	State-Level Qualitative Impact/ Impressions	TA, Consultation, Tools	Local Staff Capacity	Local Agency, Community, Political Will	Other
Improve screening, referral, and support for pregnancy related depression.	Most of the short-term outcomes (4/6) in the logic model are being met. Active and broad advisory group.		Strong plan. Built on evidence from ABCD. Excellent MIT lead TA	Does require staff capacity to convene partners and mobilize communities. Some small agencies are beginning to adopt this. OPP is working to promote this workplan for communities that have prioritized mental health in their PHIPs.	Support for mental health initiatives is strong and growing. Among the 48 local agencies (or regional partnerships) that have prioritized health issues as part of their public health improvement process, 21 have identified mental health as one of their top priorities for the next five years (second only in frequency to obesity).	For Mandy to consider: Like ABCD is there a way to create more varied opportunities for agencies to implement this? Can an agency can take parts of it without having to address the entire system? This plan is difficult for smaller agencies to implement in rural communities though the issue is important and of interest.

MCH State and Local Level Priority Impact – Mid-Course Review 2011-2015

MCH Priority	State-Level Quantitative Impact	State-Level Qualitative Impact/ Impressions	TA, Consultation, Tools	Local Staff Capacity	Local Agency, Community, Political Will	Other
Improve motor vehicle safety among all youth ages 15-19.	Not as much progress to gain due to previous rate decrease. Separate CDC grant also funds work on this priority.		This effort has maturity and efforts have tried to move agencies towards the evidence-base. Solid TA. No learning circles.	Coalition building is happening, not much momentum, and possibly leadership has been assumed by others in the community. Child Fatality Review Committee efforts at the local level may make move this priority forward as fatality reviews in counties are required to address fatality from a prevention lens.	Not an interest area of many LPHAs though other community agencies are working on it. Some momentum has gone down, possibly due to GDL and improved rates or due to funding cuts.	Perhaps continue to promote adoption of this area in rural areas because of the importance of the issue there.
Improve sexual health among all youth ages 15-19.	Two out of five short-term outcomes have been met. Progress in moving both the teen birth control use and fertility measure, driven by the increase in use of long-acting reversible contraception.	The Call to Action lacks a package of strategies that can be easily implemented. More funding needed to fully implement.	The plan leaves flexibility for the community to customize. This is a positive in terms of accommodating political will, but potentially a drawback for those needing more guidance. Plan depends on guidance and resources in Call to Action.	Surprisingly, a lack of awareness exists for the need for youth engagement and advising. This could be a widespread theme within the school setting.	These agencies need more education and guidance and are perhaps less ready to rely on sharing. Expanded training needed for agencies in conservative communities. Political will can be challenging.	Positive youth development language and regionally shared efforts have provided a nice way to approach the work in conservative communities (e.g. SE). At the LPHA level, the link between youth systems, PYD and youth sexual health seems evident and practical. It's very dynamic in San Miguel and Delta due to presence of a champion, and a focused effort – although is primarily client based in these cases.

MCH State and Local Level Priority Impact – Mid-Course Review 2011-2015

MCH Priority	State-Level Quantitative Impact	State-Level Qualitative Impact/ Impressions	TA, Consultation, Tools	Local Staff Capacity	Local Agency, Community, Political Will	Other
Build a system of coordinated and integrated services, opportunities, and supports for all youth ages 9-24.	Five out of 8 short-term outcomes have been met. Additional funding has been garnered to support the effort.	Improvement in youth engagement – how do we know? More state agencies are coming on board as 9-25 partners. Cited by FSG as a model program in terms of collective impact.				No local component at this point in time.

MCH State and Local Level Priority Impact – Mid-Course Review 2011-2015

LPHA MCH Priority Highlights:

- In 2014, Boulder County Public Health will complete the "Healthy Intended Pregnancy" (HIP initiative) "Brownson Model" community assessment to further identify and prioritize issues related to youth sexual health in their community. Boulder's work was highlighted at the FY13 MCH Conference and in the MCH program guidelines. The HIP initiative addresses both an MCH and County PHIP priority.

- Boulder County Public Health (BCPH) has successfully implemented training on early childhood obesity prevention in child care centers with documented impact on centers' physical activity and nutrition practices and policies. Twenty-four staff members representing 19 child care centers and two "tias" representing 14 Family, Friend and Neighbor (FFN) child care providers went through a 12-hour healthy eating, active living training program developed by BCPH staff using Lets Move, 5210 and I am Moving, I am Learning materials. BCPH staff provided an additional 4 hours of mentoring/coaching was provided to staff at each center and to the 2 "tias." The training curriculum covers responsive feeding, healthy sleep practices, limiting screen time, healthful menus, CACFP outreach, physical play opportunities. Improved knowledge, skills and practices was determined through 5210 self-assessment surveys. Each center demonstrated some change. Change was variable by center and by category. Each center was able to increase their score in most areas by at least one point. Program Policies and Supportive Strategies were two areas in which centers demonstrated change that will likely be sustainable.

- Jefferson County Health Department leveraged Cavity Free at Three work and has convened local dental hygienists to provide opportunities to learn about billing and setting up entrepreneurial systems to assist families will oral health needs.

- Weld conducted a baseline assessment of workplace breastfeeding accommodations followed with individualized trainings and technical assistance for meeting the policy components. Weld also providing 5210 training for child care centers.

- Northeast County Health Department has worked across 10 counties, 3 early childhood councils (ECC) and 2 BOCES to implement the ABCD initiative. They have convened and provided leadership for all 3 ECC and Early Intervention systems to implement the ABCD road map process. Their work in Morgan County has been used as a model for other agencies throughout the state.

- Tri-County Health Department has been both a pilot site and have successfully convened stakeholders, assessed their three counties related to screening for pregnancy-related depression tools used and resources available. They are presently sharing the assessment information with stakeholders through lunch and learn opportunities.

- Eagle County Public Health applied for a grant to make the clinic in Eagle more youth friendly. They developed new posters that are more attractive to teens and collaborated with the Eagle River Youth Coalition, Vail Resorts, and the schools. Youth advisors have given input in outreach approaches resulting in the use of text messages for appointments and notifications. Teen births have decreased and the number of teens seen in the clinic for FY 2013 was 67. Of these, 45 were new to the clinic.

- Eagle County has also adopted the ECOP action plan. Healthy Community has implemented the 5.2.1.0 toolkits. Private practices, the schools and the LPHA are all using the toolkit. In April, there is an upcoming event called Every Kid Week.

- In Summit County, ABCD screenings are done consistently in the child care centers with the oversight of the child care consultant. There is a salary supplement for the centers' health liaison if screenings are conducted. Right Start is a tax-funded early childhood on-line system for Ages and Stages Questionnaire.

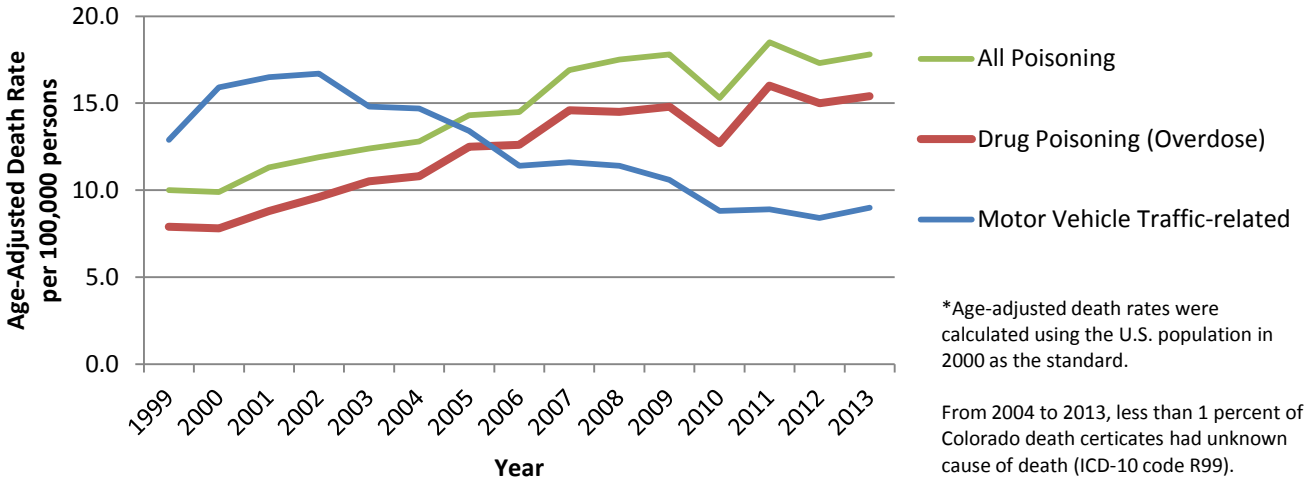
Colorado

Special Emphasis Report: Drug Overdose Deaths, 1999-2013

A Public Health Crisis Continues

Poisoning is a leading cause of injury deaths in Colorado, and drugs contributed to 9 out of 10 poisoning deaths. Drug poisoning deaths, also called overdoses, more than doubled since 2000, surpassing motor vehicle traffic-related deaths in 2005 (Figure 1). In 2013, the most recent year of data available on deaths of Colorado residents, the poisoning death rate was 17.8 deaths per 100,000 persons, and the drug overdose death rate was 15.4 deaths per 100,000 persons, compared to a motor vehicle traffic-related death rate of 9.0 deaths per 100,000 persons.

Figure 1. Drug overdose death rates compared to motor vehicle-related death rates, Colorado residents, 1999-2013



*Age-adjusted death rates were calculated using the U.S. population in 2000 as the standard.

From 2004 to 2013, less than 1 percent of Colorado death certicates had unknown cause of death (ICD-10 code R99).

Drugs Caused 9 out of 10 Poisoning Deaths

In 2013, drugs and medications (prescription drugs, illicit drugs, and over-the-counter medications) contributed to 91 percent of all poisoning deaths. Of the drug overdose deaths, 71 percent were unintentional, 23 percent were suicide and 5 percent had undetermined intent. Males and females had similar drug overdose death rates. Persons aged 25-44 years old had the highest rates of all age categories.

Table 1. Drug overdose deaths: Demographic characteristics and intent, Colorado residents, 2013

		Number	Percent	Rate per 100,000 persons
Gender	Female	377	45%	14.3
	Male	462	55%	17.5
Age (in years)*	15-24	90	11%	12.7
	25-44	319	38%	21.7
	45-54	214	26%	29.4
	55 and older	212	25%	16.2
Intent	Unintentional (also known as “accidental”)	598	71%	11.4
	Suicide	193	23%	3.7
	Undetermined	46	5%	0.9

*0-14 age group not included due to small numbers.

This publication was supported by Cooperative Agreement Number CE 11-1101 entitled, "Core Violence and Injury Prevention Program (Core VIPP)", from the Centers for Disease Control and Prevention.

Released October, 2014

COLORADO
Department of Public Health & Environment

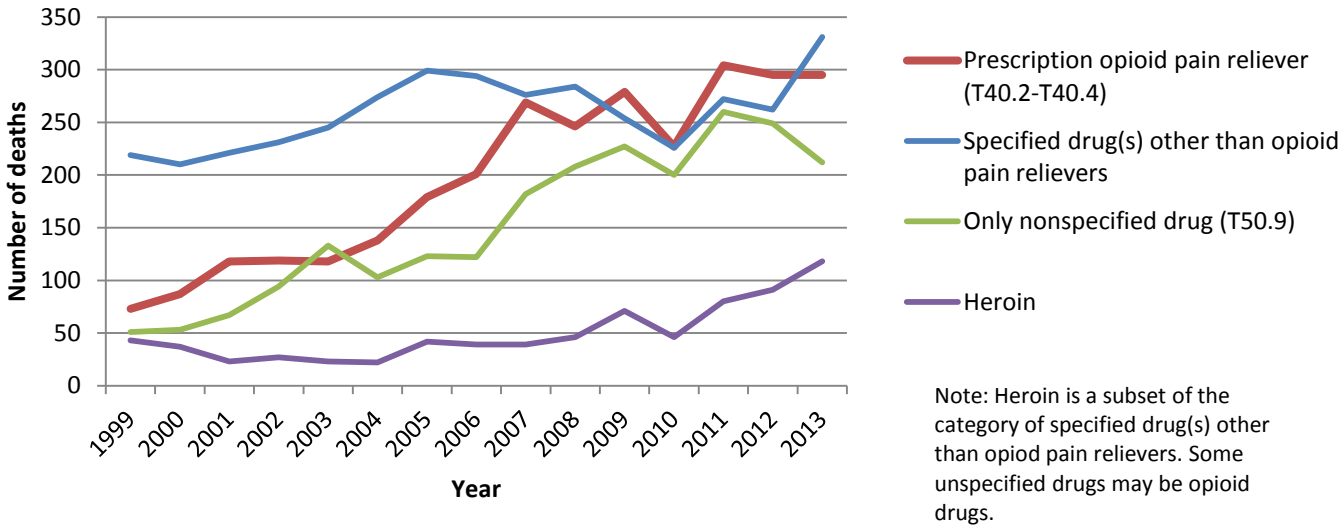
Colorado

Special Emphasis Report: Drug Overdose Deaths, 1999-2013

Opioid Pain Relievers Contributed to 35% of Drug Overdose Deaths

Opioid pain relievers, such as oxycodone or hydrocodone, contributed to 295 (35 percent) of the 839 drug overdose deaths in 2013. These results might be undercounts, because the percent of drug overdose deaths that had only unspecified drug(s) listed as contributing to the death ranged from 15 percent in 1999 to 25 percent in 2013.

Figure 2. Number of drug overdose deaths involving opioid pain relievers and other drugs, Colorado residents, 1999-2013



Note: Heroin is a subset of the category of specified drug(s) other than opiod pain relievers. Some unspecified drugs may be opioid drugs.

Addressing the Issue in Colorado

In 2013, the Governor's Office partnered with state agencies, prescribers, universities, pharmacists, and other key stakeholders to develop the *Colorado Plan to Reduce Prescription Drug Abuse*. The *Plan* aims to:

1. improve surveillance of prescription drug misuse data;
2. strengthen the Colorado prescription drug monitoring program (PDMP);
3. educate prescribers to implement effective pain management guidelines;
4. increase safe disposal to prevent diversion and protect the environment; and
5. increase public awareness through a social marketing campaign.

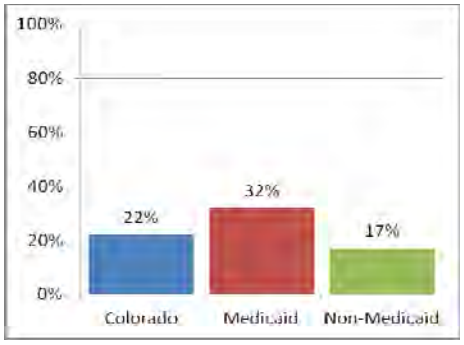
To monitor and coordinate progress toward this goal, state-level leadership created the Colorado Consortium for Prescription Drug Abuse Prevention. The Consortium provides a statewide, interagency network and serves as the strategic lead for implementing the *Plan* with active participation from the Governor's Policy Office and various state agencies. For more information, visit: www.corxconsortium.org.

During the 2014 legislative session, Colorado made significant strides in addressing prescription drug overdose by legislative enhancement of the PDMP to require provider registration, allow unsolicited reporting and delegated access. Pharmacies must now provide daily data uploads to the PDMP.

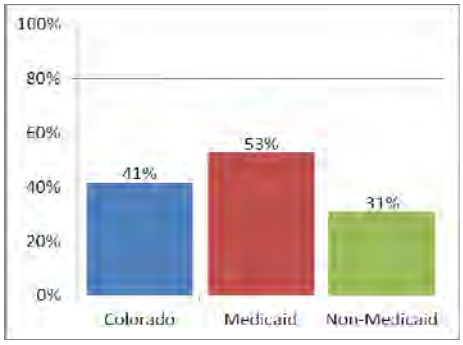
Dental Care During Pregnancy — Colorado 2011

In 2011, nearly 22 percent of pregnant women needed dental care. Of those, 41 percent did not visit a dentist during their pregnancy.

Pregnant women who needed dental care



Pregnant women who needed dental care but did not visit a dentist during pregnancy



Data Source: 2011 Colorado Pregnancy Risk Assessment Monitoring System

Women on Medicaid bear more burden and are less likely to access care.

- Nearly one in three women on Medicaid (32%) needed to see a dentist during pregnancy compared with one in six women not on Medicaid (17%).
- Women on Medicaid who needed dental care were less likely to visit the dentist (47%) than women not on Medicaid (69%).

Women on Medicaid under the age of 21 who had a dental problem were more likely to see a dentist during pregnancy (70%) than women on Medicaid ages 21 and older (41%). Medicaid dental benefits for preventive care end at age 21.

Health Risks Now and Later for Mothers and Children

Changes to a woman's body during pregnancy can lead to a problem called gingivitis (inflammation of the gums). If gingivitis is not treated, it can lead to periodontal (gum) disease, which can lead to tooth loss.

- Potential linkages between untreated gum disease and adverse birth outcomes, including preeclampsia, preterm birth, and low birth weight, are being explored with research studies.
- Women with high levels of cavity-causing bacteria have a high likelihood of infecting her child before the child is 2 years old.
- Transmission of cavity-causing bacteria from mother to child can lead to early childhood cavities, which in turn can lead to eating and sleeping dysfunctions, inappropriate use of over-the-counter pain medications, high costs of reparative care, and other issues.

Oral Health Colorado
Connecting Colorado's Oral Health Advocates
Colorado Department of Public Health and Environment

Dental Care During Pregnancy — Colorado 2011

54 percent of women do not seek dental care during pregnancy

Pregnant women should visit a dentist if the last dental visit took place more than six months ago or if any dental problems exist. Dental care, including use of radiographs, pain medication, and local anesthesia, is safe throughout pregnancy.[1]

- Fifty-four percent of women did not visit a dentist during pregnancy in 2011, a small but significant decrease since 2001.
- More than two-thirds of women on Medicaid and nearly half of women not on Medicaid did not visit a dentist during pregnancy.

Other Key Findings

Forty-five percent of women did not have their teeth cleaned 12 months before pregnancy. Of those women:

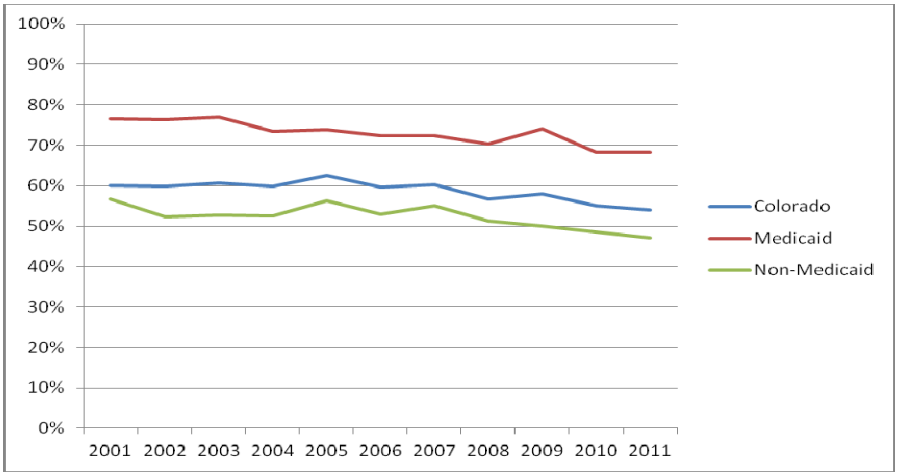
- 26% had perceived dental needs during pregnancy
- 15% went to see a dentist during pregnancy

Source: 2011 PRAMS

Parents who visited a dentist in the last two years were almost twice as likely to take their children to the dentist by the age of 3 compared with parents who visited a dentist less frequently.

Source: 2010 Colorado Child Health Survey

Percent of pregnant women who **did not visit a dentist during pregnancy** — Colorado overall and by Medicaid status, 2001–2011



Data Source: 2011 Colorado Pregnancy Risk Assessment Monitoring System

Opportunities for Health Professionals and Policymakers

- Prenatal care health professionals and oral health professionals should assess pregnant women's oral health status and advise about oral health care.[1]
- Given that prenatal care for one in three pregnant women is covered by Medicaid, women's access to dental care through Medicaid is critical to reducing risks for mother and child.
- Public policies that support comprehensive dental services for vulnerable women of childbearing age should be expanded. [2]

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Oral Health Colorado
Connecting Colorado's Oral Health Advocates
Colorado Department of Public Health and Environment

THE FUTURE OF **Children's Health Coverage** IN COLORADO

FULL REPORT

Policy Considerations for Insuring Colorado's Kids

ALL KIDS COVERED COLORADO | DECEMBER 2013

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All Kids Covered is a statewide, non-partisan coalition dedicated to increasing access to affordable, high quality health insurance coverage and health care services for all children in Colorado. Since 2006, All Kids Covered has worked together with elected officials, health care leaders, state and county agency staff and community-based organizations to improve, expand and protect health insurance options for children and families in Colorado.

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Table of Contents

Introduction 1
Benefits of Health Coverage 4
Change in Rates of Children's Insurance Coverage, 2008 to 2010 4
Medicaid and CHIP Overview 5
Access and Quality of Care in Public Coverage 5
Children's Health Insurance Program 5
Background 5
Benefit Design 6
Federal Eligibility Rules 7
Colorado's History with CHIP 7
Current Status and Benefit Design 7
Copays in Colorado's CHP+ Program 8
Eligibility 8
The Value of CHP+ 8
Key Considerations in the Context of Health Reform 9
1. Continued Attention to Children's Coverage 10
2. Future of Coverage for Children on CHP+ Today 10
3. Complexity of Family Coverage 11
4. Movement Between Different Coverage Types and Uninsurance 11
5. Affordability 12
6. Benefits 13
7. Immigrant Children 14
Conclusion 15
References 16

Introduction

Health care coverage is essential to ensuring kids grow up healthy and strong. Insured children are more likely to get the care they need to stay healthy and recover from illness or injury. Families with uninsured children report that they often do not have a usual source of care, postpone or forgo care they need because of cost and cannot afford prescription medications, putting their children's health and success at risk.

We've made tremendous progress in reducing the number of uninsured children in Colorado. This is due in large part to the fact that making sure kids have health coverage is a shared value. In a time of increasing political polarization, kids' coverage is an issue where Democrats, Republicans and Independents have common ground. Since 2008, Colorado policymakers from both political parties have approved legislative and regulatory changes that have protected and expanded access to coverage for children through public programs and in the private market.

In the midst of this progress on coverage for kids, a broader, complimentary health reform effort has gotten underway. The centerpiece of this effort, the 2010 federal Patient Protection and Affordable Care Act (Affordable Care Act or ACA), has garnered lots of attention, but Colorado has been pursuing health reform through state-level efforts predating the ACA. Colorado is continuing to capitalize on opportunities made possible through the federal framework in ways that are most appropriate for our state and our residents. For example, Colorado elected to create a state-based insurance marketplace rather than use the federal exchange, took state legislative action to ensure the continuation of child-only health insurance products in the private market and opted to streamline Medicaid eligibility for children by eliminating the so-called "stair-step" prior to the federal requirement to do so.

While children will benefit in many ways from policies in the Affordable Care Act, the focus of coverage expansion has shifted to adults, including parents and adults without dependent children, and the ACA addresses issues outside the scope of kids' coverage. This paper aims to identify the key considerations for ensuring health care coverage for children remains a priority in the coming years: **How will Colorado protect the gains made in kids' coverage and ensure continued progress toward the shared goal of ensuring all Colorado children have affordable, quality health coverage in the context of broader health reform?**

Of particular importance is the open federal policy question about the future of the Children's Health Insurance Program (CHIP). This critical piece of the health care safety net provides coverage to children and pregnant women who earn too much to qualify for Medicaid, but cannot afford private health insurance. The federal-state partnership program, which was a bi-partisan policy initiated in 1997, is funded only through 2015. Some have argued that new subsidies for private health insurance, made available through the Affordable Care Act, should negate the need for the CHIP program, allowing federal policymakers to discontinue it without significant consequences for children and pregnant women. Others, however, caution that that may not be the case and urge federal policymakers to extend funding of CHIP to allow more time and analysis of the new coverage options before ending a successful program that has provided critical care benefits to millions of American women and children. The federal policy debate over the future of CHIP is likely to start in 2014 and the outcome of that decision will have profound impacts on children's health insurance coverage nationally and in Colorado.

The future of CHIP is a critical part of the conversation about the future of kids' health coverage, but it is not the only one. This paper identifies and explores seven key topics that policy leaders committed to children's health coverage will grapple with in the months and years to come.

1. **Continued attention to children's health coverage.** Champions for children's health care – elected officials, health care providers, community leaders and advocates – must remain vigilant about how implementation of health reform and the ACA are impacting affordability, access and quality of coverage for kids. Children live in families and communities that are stronger when adults also have coverage and are healthy, so this should not be an issue of children versus adults. However, we should also endeavor to ensure pediatric-specific needs are not ignored or lost in the shuffle of policy debate and implementation of new programs that are primarily designed to benefit adults.

2. **The future of coverage for children currently enrolled in CHP+.** An important question regarding health coverage for children is what future coverage options would be available to the approximately 70,000 Colorado kids served by CHP+ today if Congress discontinues funding for CHIP at the federal level. Tens of thousands of families in Colorado have come to depend on and trust the safety net that has been built through the CHP+ program. It is popular with families, providers, and state policymakers because it offers quality coverage at an affordable cost. If it is significantly altered or discontinued, would Colorado families be able to find comparable coverage at a similar cost elsewhere?

3. **The impact of complex coverage for families with health insurance of various types.** The Affordable Care Act, by design, creates new opportunities for and types of health coverage, which for some families will create complex coverage situations. In these "blended" families, individuals within the same family will have different sources of coverage because of the availability and cost of employer sponsored insurance, varied eligibility requirements of different publicly funded programs (Medicaid and CHP+), and differing immigration status. Research has shown that when parents have coverage, the enrollment and take-up rate of eligible children being enrolled in coverage is greater. Child advocates will need to pay attention to how successful expansions for families are implemented, particularly through newly operating health insurance marketplaces like Connect for Health Colorado. If parents have difficulties with coverage and access, children could be impacted.

4. **The movement of family members between different types of coverage and being uninsured.** Inevitably, people will move from one type of health coverage to another, or between being insured and uninsured, due to changes in income, age, marital status, disability status, or changes in public program eligibility rules. This is sometimes called "churn" or "movement". While movement from one program to another has been the reality for years, because of changes mandated by ACA, there is concern that this issue may become more problematic. Advocates and policymakers must be vigilant about details of program implementation to minimize movement and ensure that transitions between coverage types are as smooth and seamless as possible for consumers.

5. **The affordability of coverage.** Private insurance, even with premium assistance, may be more expensive for families than CHP+ or Medicaid and out of reach for working families, especially when considering co-pays and deductibles on top of premiums. Advocates and policymakers should pay close attention to this question and collect baseline information about the current premiums and out-of-pocket expenses families pay now, and compare that to what families will pay when they buy a plan in the new marketplace, including factoring in the additional subsidies for lower income families.

6. **The adequacy of benefits for children.** Under the Affordable Care Act, states are required to establish a benchmark plan that meets certain minimum benefit requirements. Colorado has chosen the Kaiser small group plan (Kaiser Ded HMO 1200D) as the Essential Health Benefits package for our state. For most children, this benefit plan will adequately meet their needs. However, for low-income and vulnerable children with disabilities, there is a lower level of confidence that a private insurance product administered by companies without experience serving children of this income range and health status will be sufficient. Benefits for children in publicly funded programs like Medicaid and CHIP have a child-centric focus, and program administrators, providers and advocates have worked long and hard to assure that children of all backgrounds get the benefits and protections they need to grow up healthy. That same level of attention will need to be paid to ensure newly covered children served by private insurance have the level of coverage needed to support their overall success.

7. **The ability of immigrant children to acquire coverage and access services.** A portion of Colorado's uninsured children are not eligible for Medicaid, CHP+ or subsidized coverage through Connect for Health Colorado due to their immigration status. There are barriers for both legally residing and undocumented children accessing publicly subsidized health care. An important question for the future is whether policymakers, providers, and advocates will be interested in supporting the safety net providers that currently serve all children regardless of their immigration status, in encouraging the state to use federal options to cover legally residing immigrants in Medicaid and CHP+, or in creating new programs or funding streams to provide health care to this population.

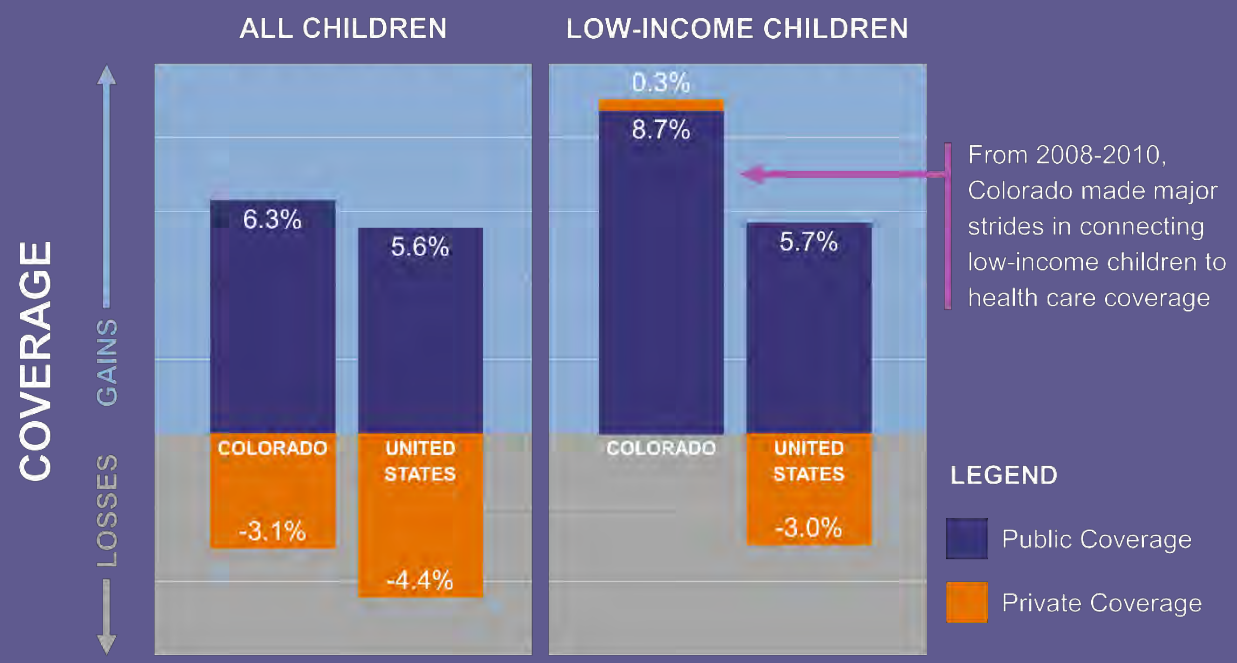
Colorado has made incredible progress in providing health care coverage to children, but the work is not done. Together we can capitalize on the opportunities presented by health reform and reach our shared goal of ensuring every Colorado child has high quality, affordable health care.

Benefits of Health Coverage

Studies have shown that children with health insurance coverage, whether public or private, have better access to care and better health outcomes than their uninsured peers. Children enrolled in CHIP have much lower rates of unmet health care needs, with one study finding that 2 percent of children enrolled in public programs have unmet health care needs, compared with 11 percent of uninsured children (Bloom and Dey 2004). As children move from being uninsured to being enrolled in CHIP, they receive more preventive care and better access to health care providers overall (Woolridge, Kenney, and Trenholm 2005). A 2007 study showed that in states in which rates of employer-based insurance declined significantly, public coverage through CHIP and Medicaid prevented children from experiencing the same coverage loss that adults did as a result of this change in employer-based insurance (Zuckerman and Cook 2006).

In the last several years, rates of coverage for children have varied as economic conditions have changed. Table 1 provides information about changes in children's coverage nationally and in Colorado, with specific information about rates of private coverage and public coverage for children in higher income and lower income families, as well as rates of uninsurance. In Colorado and nationally, we are making progress in insuring more children. In Colorado, the percent of uninsured children overall has gone down 3.1 percentage points, with the rate of uninsurance for low-income children going down dramatically, by 9.1 percentage points. Gains in insurance have come through expanded enrollment in public coverage programs, Medicaid and CHIP. In fact, employer-sponsored insurance coverage for dependents has decreased.

Change in Rates of Children's Insurance Coverage, 2008 to 2010



Source: SHADAC. August 2012. Keeping Kids Covered: Number of Children with Health Coverage Increases During Economic Downturn: A State-by-State Analysis.

Medicaid and CHIP Overview

Medicaid and CHIP serve different populations of children and often provide different benefits and cost-sharing. The lowest income children, those in families with income up to roughly 133 percent of the federal poverty level, are served by Medicaid, though some states provide Medicaid coverage to children and youth with higher family incomes. Nationally, nearly 31 million children are covered by Medicaid (Kaiser Commission 2012). Medicaid provides comprehensive benefits though the Early and Periodic Screening, Diagnosis, and Treatment Program (EPSDT), and cost sharing is prohibited for children with family incomes under 100 percent of FPL. Premiums are not allowed below 150 percent FPL. Children who do not qualify for Medicaid because their family income is too high may be eligible for CHIP. In 2012, there were 8,128,397 children and youth in the U.S. under 18 covered by CHIP (Kaiser 2013). The benefits associated with CHIP programs vary from state to state. States may also set premiums and cost-sharing amounts under an overall limit of five percent of a family's income (CMS 2008). The median eligibility threshold for children across the nation in 2012 was 235 percent FPL, while Colorado's maximum eligibility level is 250 percent FPL (Heberlein 2013).

Access and Quality of Care in Public Coverage

Two important metrics of success for public health coverage programs are access and quality of care. Generally, research suggests that both Medicaid and CHIP significantly improve access to care, especially primary and preventive care and that children enrolled in Medicaid or CHIP have nearly the same access as children on private insurance (Georgetown 2013). Most major data sets do not distinguish between the two public programs. However, there is growing concern about the ability of Medicaid to ensure adequate access to care with states shifting children's eligibility groups to Medicaid as required by the ACA, and perhaps exacerbated in states that are also expanding Medicaid to newly eligible adults, creating additional demand for services in 2014.

In terms of quality of care in CHIP programs nationally, studies suggest it is similar to quality of care for children enrolled in Medicaid, and that problems in CHIP seem to be similar to problems found in private insurance coverage (Kaye, Pernice, and Cullen 2006). Very few studies have compared health outcomes for children in CHIP versus Medicaid or private insurance, and those that have looked at health outcomes tend to focus on specific clinical conditions. For example, one study found that having coverage, whether Medicaid, CHIP or private insurance, resulted in fewer asthma-related attacks, compared to the number when the child was uninsured (Szilagyi, Dick, and Klein 2006).

Children's Health Insurance Program

Background

The Children's Health Insurance Program (formerly the State Children's Health Insurance Program or SCHIP) was created via the Balanced Budget Act of 1997, and enacted by Title XXI of the Social Security Act to help fill a gap in insurance coverage for low-income children who are not eligible for Medicaid but whose families cannot afford private insurance coverage.

Between 1997 and 2011, the percentage of low-income children and youth under age 19 who were uninsured decreased from over 25 percent to 15 percent. Among children and youth who are eligible for CHIP or Medicaid, almost 86 percent participate (Rosenbach 2007; Kaiser 2011; Kennedy 2012). Despite this, about 8 million children are still uninsured, with well over half of those eligible for Medicaid or CHIP but not enrolled (Kaiser 2012). In Colorado, it is estimated that in FY 2010, 42,288 children (12.8 percent of Medicaid eligible children) were eligible but not enrolled in Medicaid and 39,748 (37.2 percent of CHIP eligible children) were eligible but not enrolled in Colorado's CHIP program (Child Health Plan Plus or CHP+) (Colorado Health Institute 2012).

Both the states and the federal government pay for CHIP, with the state receiving a federal match for the funds they spend. On average, the federal government pays about 70 percent of the costs, with state governments paying about 30 percent. In FY 2013, the Federal Medical Assistance Percentage for CHIP in Colorado was 65 percent, with Colorado paying the remaining 35 percent (Kaiser 2013). Unlike Medicaid, there are annual limits on the amount of funding states receive for their CHIP programs. While the limits were originally based on a calculation of the number of low-income children in a state and geographic variations in costs between states, they are now based on states' past and projected levels of CHIP spending. Originally, states had to spend their entire annual federal allotment within the year and unspent funds were reallocated to other states. Beginning in 2000, the federal government began giving states extra time to spend out those allotments, essentially rolling forward unspent amounts into a subsequent year or years. This allowed states to have a cushion in years when expenditures were higher than that year's allotment. However, by 2007, 80 percent of states were spending more than their allotment, and the aggregate spend across all states was higher than the federal allotment (Lambrew 2007). In more recent years, a state's allotment has been adjusted every two years to align it to the state's actual spending on CHIP.

In 2007, Congress extended the CHIP program through March 2009. In February 2009, the Children's Health Insurance Program Reauthorization Act of 2009 (CHIPRA) was approved by Congress and signed by President Obama. In 2010, the signing of the Patient Protection and Affordable Care Act (ACA) extended funding for CHIP through September 30, 2015, and required that states maintain current eligibility levels for CHIP through September 30, 2019. Specifically, states are prohibited from implementing eligibility standards, requirements, or procedures that are more restrictive than those that were in place as of March 23, 2010, with the exception of enrollment waiting lists.

Benefit Design

Children are not small adults. They have differing health care needs and therefore need different benefits in their health coverage. Medicaid and CHIP were both designed to serve a pediatric population and include benefits important to children. While Medicaid has a nationwide standard for children's benefits in EPSDT, CHIP allows for more flexibility in benefit design, with certain minimum standards that must be met (Lambrew 2007; NCSL 2011). States can offer benchmark coverage, benchmark equivalent coverage, a Secretary-approved plan (including the state's Medicaid package, for example) or, for states that expanded this coverage prior to CHIP legislation, existing comprehensive coverage that was already in place. Allowable benchmarks include federal employee benefits, state employee benefits, and benefits from the state's largest HMO. Regardless of the benefit package, states are required to include certain

services such as well-child care, hospital and physician care, dental services, some pharmacy benefits and mental health benefits at parity with other services. Cost-sharing and premiums are limited. These requirements are intended to ensure the unique health care needs of children are met.

Federal Eligibility Rules

States may cover children in CHIP under age 19. A total of 46 states and the District of Columbia cover children up to or above 200 percent of FPL (www. medicaid.gov), and 25 states, including Colorado, and the District of Columbia cover children at or above 250 percent of the FPL (Heberlein 2013). States are required to have processes and rules in place to help target enrollment of uninsured children, while not encouraging movement of children from private coverage to CHIP (known as "crowd out"). Additionally, states must screen children for Medicaid first and enroll them in Medicaid, if they are eligible.

Colorado's History with CHIP

Prior to 1997, Colorado, like many other states, recognized the need to expand health insurance coverage to children of low-wage, working parents. In the mid-1990s there was interest in and discussion of expanding Medicaid eligibility in Colorado to higher income children, but the political support did not exist to expand an entitlement program in which the state would have little control over growth of cost and expenditures. The business community, in particular, was supportive of designing a public-private partnership that would provide coverage to children that looked more like the commercial coverage that most children have through working parents. In key informant interviews for this paper, several people remembered, and commented, that in some ways it would have been easier to implement a Medicaid expansion rather than creating a new, separate program. Some cited administrative and operational problems that still exist today because of having a separate program with separate rules, benefit design, delivery systems, and cost-sharing requirements. However, the political context of the time led to the creation of a stand-alone children's coverage program.

Colorado's CHIP program, Child Health Plan Plus (CHP+) was developed in alignment with the federal goal of helping fill a gap in insurance coverage for low-income children who are not eligible for Medicaid, but whose families are not covered through their employer plan and cannot afford private insurance coverage.

Current Status and Benefit Design

In some ways, the CHP+ program operates more like private health insurance than a public coverage program. Currently, four private health insurance companies contract with the State of Colorado to manage benefits for CHP+ clients. CHP+ benefits differ from Medicaid benefits. CHP+ also has cost sharing requirements that Medicaid does not have. For example, families with children enrolled in CHP+ with income above 150 percent FPL pay an annual enrollment fee of $25 for one child or $35 for more than one child, while families with incomes of 225 percent FPL or above pay $75 for one child or $105 for more than one child. Families also pay copays for services, ranging from $3 to $50 depending on family income and the type of service. There is an annual out-of-pocket limit, capped at 5 percent of the family's annual income, for CHP+ expenses.

Copays in Colorado's CHP+ Program

Summary of Copayment Changes Effective July 1, 2012

Family Income (% FPL)	Emergency Room	Urgent Care	Ambulance Transport	Inpatient Care	Physician at Hospital	Outpatient Care	Prescriptions	Lab & X-Ray
0-100%	$3	$1	--	--	--	--	--	--
101-150%	$3	$1	$2	$2	$2	$2	$1	--
151-200%	$30	$20	$15	$20	$5	$5	$3-10	$5
201-250%	$50	$30	$25	$50	$10	$10	$5-15	$10

Source: Health Care Policy and Financing: http://www.cchp.org/index.cfm?action=fees&language=eng; accessed July 30, 2013.

Eligibility

CHP+ provides coverage to legal resident children age 18 and under and pregnant women age 19 and older up to 250 percent FPL who are not eligible for Medicaid and who do not have other health insurance. Due to a change in state law approved with bi-partisan support in the 2013 legislative session, beginning Oct. 1, 2013, the three-month waiting period for enrollment for applicants who had been previously covered by an employer health insurance plan in which the employer paid 50 percent of more of the premium cost has been eliminated (Colorado Department of Health Care Policy and Financing).

The Value of CHP+

The greatest value of CHP+ is the successful coverage it provides to children who otherwise would not have access to Medicaid or private insurance. As stated earlier, research has shown that coverage in general leads to better access and appropriate utilization of services which, for children, is essential to their development, health and well-being. Having access to the standard, recommended set of well-child checkups, immunizations, and anticipatory guidance and parenting support is important to ensure children get off to a healthy start. The families who were interviewed as part of the stakeholder interviews noted that having CHP+ had been invaluable to them. Both noted that, without CHP+, they would have to make difficult financial choices (i.e., buying medications or buying food) or would be unable to "stay afloat". One interviewee said: "I don't know how we would survive without CHP+." For them, and other people they know whose children have been enrolled in CHP+, the program has meant financial security for the family, and has allowed them to feel safe in the knowledge that their children will be able to get the care they need if they get sick or injured, and to get medications they need.

In spite of great efforts to market and educate about children's health coverage in general, Medicaid continues to have some stigma associated with it that CHP+ does not. CHP+ is perceived as being more popular with providers and parents. CHP+ has a broader network of providers, with families getting some protections and guaranteed access from being in health plans versus having children in fee-for-service, and the benefit is better defined. Parents know

what they are going to get from their insurance plan and provider network and what is not covered. Although the Medicaid benefits are better spelled out now than they were at the time Colorado established CHP+, there is still some ambiguity about what may or may not be covered, especially under EPSDT and the requirement that Medicaid cover any service that is deemed medically necessary.

Since the inception of CHP+, there has been a debate in Colorado about the pros and cons of having separate CHIP and Medicaid programs. While some people believe there would be efficiencies to gain from having CHP+ and Medicaid be more integrated, there are political and perception advantages to maintaining separate programs. There continues to be broad support for covering children, and some think that if there were one, blended program or approach the program might be less vulnerable to "waves of political change." However, with the overlay of the Affordable Care Act and requirements of CHIPRA, the programs are less vulnerable than in the past. The more programs are integrated and seamless, the easier they can be for families and medical providers to navigate and the less vulnerable they are when there are political or economic changes.

One word of caution heard from a provider in a key informant interview was that as programs are designed, implemented, merged, or modified, policymakers should not assume that all children are the same. It is common to talk about the support for children's coverage as being widespread because children are a sympathetic population and generally do not have complex medical conditions that are difficult and expensive to manage. However, there are significant differences between the needs of children on many levels including their health care needs, the influence of geography and availability of services, and socioeconomic status. There can be marked differences between the needs of children who have lived in a family or community that has been chronically poor and uninsured or underinsured, versus a child who has experienced access to commercial insurance and continuity of care but who uses publicly financed insurance such as CHP+ episodically. Any move to blend programs must keep these differences in mind.

Key Considerations in the Context of Health Reform

Colorado policymakers have largely embraced health care reform and capitalized on opportunities in the ACA to improve health care coverage and access for Coloradans. For children's advocates, the key long-term question should be whether and how health care reform makes a difference in improving the health status of children in Colorado.

In the short term, these are the seven key consideration that have emerged as essential focus areas for evaluating the impact of health reform and the ACA on kids' health coverage.

1. Continued attention to children's coverage
2. The future of coverage for children currently enrolled in CHP+
3. Complexity of family coverage
4. Movement between different types of coverage and uninsurance
5. Affordability
6. Benefits
7. Coverage for immigrant children

1. Continued Attention to Children's Coverage

Directly and indirectly, there are many important components of the Affordable Care Act that benefit children and youth, including the elimination of preexisting condition exclusions, dependent coverage to age 26, new Medicaid eligibility for parents, the inclusion of pediatric services within the essential health benefits, premium tax credits to make private coverage more affordable and cost-sharing reductions. However, because there has been such success in expanding coverage and access for children in the past 20 years, children are not the primary focus of the ACA. Most new resources and initiatives under the ACA, including Medicaid eligibility expansion, demonstration projects for dual Medicare/Medicaid-eligible individuals, new approaches to managing long-term care support services, are focused on adults and adult health. While marketplaces or exchanges are intended to provide new coverage options for families and children who are not eligible for Medicaid and CHIP, they are largely being built to serve adults because that is who makes up the majority of the uninsured. Some stakeholders fear that this focus on adults will shift resources away from ongoing monitoring and research about children's coverage and children's health.

Champions for children's health care – elected officials, health care providers, community leaders and advocates – must remain vigilant about how implementation of health reform and the ACA are impacting affordability, access and quality of coverage for kids. Those concerned about children's coverage should work to ensure that attention is paid to questions such as: What is an ideal benefit for kids that would lead to better health outcomes? What are the non-health benefits kids need to thrive? What are the components of a package of services that make a difference in a child's development and well-being, and how does a state or health plan with community support fashion the benefits to meet those goals? Recognizing that children live in families and communities that are stronger when the adults also have coverage and are healthy, this should not be an issue of children versus adults, but we should also endeavor to ensure pediatric-specific needs are not ignored or lost in the shuffle of ongoing policy debate and implementation of new programs.

2. Future of Coverage for Children on CHP+ Today

An important question regarding coverage for children is what future coverage options would be available for the approximately 70,000 Colorado kids currently served by CHP+ if Congress discontinues funding for CHIP at the federal level or significantly alters the program. Thousands of families in Colorado have come to depend on and trust the safety net that has been built through the CHP+ program. It is popular with families, providers, and state policymakers. During the debate about the Affordable Care Act, Congressional champions for kids' coverage felt that until we have something as dependable and efficient to replace CHIP, Congress should appropriate funds beyond 2015, then evaluate and consider reauthorization after 2019. These same individuals felt that to build something new for children in this political environment would be very difficult, and that it would be better to continue with and build on what we have now. However, as the law stands today, no new federal CHIP funds will be available after Sept. 30, 2015, though states are required to maintain eligibility levels for children through Sept. 30, 2019. (This requirement will not be effective when states run out of federal CHIP dollars).

3. Complexity of Family Coverage

The Affordable Care Act, by design, creates new opportunities for and types of coverage, which for some families will create complex coverage situations. In these "blended" families, individuals within the same family will have different sources of coverage because of the availability and cost of employer-sponsored insurance, varied eligibility requirements of different publicly funded programs (Medicaid and CHP+), and their immigration status. One solution being adopted in many states is to conduct family-centered outreach, rather than individually focused outreach. Providing assistance to a family and helping guide them to coverage for all family members will help families navigate the system, but differences in coverage will still be complicated. Another policy option would be to allow CHIP funds to be used to purchase plans sold on health insurance exchanges for CHP+-eligible children in families that are purchasing products on the exchange for the adults. This would allow parents and children to be in the same health plan and provider network.

Having different programs for children based on age-related eligibility is also complex, and is not a seamless process for families. If a pregnant woman's delivery is covered by Medicaid, the infant is automatically Medicaid-eligible for the first year of life, and care is provided by a Medicaid provider in fee-for-service or in a Regional Care Coordination Organization (RCCO). When the child turns age one, the child may stay in Medicaid or become eligible for CHP+, so may have to switch to another plan or provider, then switch again as she or he gets older. The ACA requires states to eliminate these "stair steps" of eligibility for children in Medicaid. Colorado chose to implement that policy change prior to 2014, which should help reduce this complexity. The new policy calls for all children under 133 percent of FPL, regardless of age, to be enrolled in Medicaid.

The positive impact of having total family coverage on children is not well known. Research has shown that when parents have coverage, the enrollment and take-up rate of eligible children being enrolled into public programs is greater. Child advocates will need to pay attention to how successful expansions for families are implemented, particularly through newly operating health insurance exchanges. If parents have difficulties or bad experiences with coverage and access, children could be indirectly impacted. As one interviewee stated:

> *"Families we serve don't live in cultures that take coverage for granted like mid-to-higher income working families do; so continuity of care and access to their trusted provider is important."*

4. Movement Between Different Coverage Types and Uninsurance

Another concern is related to the issue of people moving from one type of coverage to another, or between being insured and being uninsured, due to changes in eligibility status. Often, these changes occur because of changes in income, but sometimes occur because of changes in age, marital status, disability status or changes in eligibility rules. This is sometimes called "churn" or "movement". While movement from one program to another has been the reality for years, because of changes mandated by ACA, there is concern that this issue will become more problematic. For example, as a result of changes to how income will be calculated under ACA, some children will move from one program to another. Additionally, because private insurance will be available to more families in 2014, if family income goes up some children may move to private insurance that is more costly and less comprehensive than CHP+ or Medicaid.

Some solutions to these problems that are being discussed nationally are implementation of 12-month continuous eligibility for Medicaid, ex parte and administrative renewals, and use of Express Lane Eligibility at enrollment, renewal, and for transitions between Medicaid and CHIP programs (NASHP 2013). Colorado is poised to implement 12-month continuous eligibility for children in Medicaid in 2014, thanks to the state's hospital provider fee legislation that approved this change as part of a broader Medicaid expansion effort (House Bill 09-1293). Additionally, if a state picks an essential health plan for its individual and small group markets that aligns with Medicaid's alternative benefit plan and/or CHIP's benefits, and the provider network is the same, this would mitigate some of the problems associated with churn. At a state level, one blended program for children with varying levels of subsidies that are managed in the "back room" of operations, and transparent to families, could also reduce the risk of children having disrupted access and services when their program eligibility changes (for example, from Medicaid to CHP+ or vice versa) due to changes in family income or other circumstances. One interviewee noted that, for her family, being able to see the same doctor, regardless of whether her kids were covered by Medicaid or CHP+ had made a tremendous difference in her family's ability to access care.

Several key informants interviewed for this paper expressed concern about operational issues and coordination between Connect for Health Colorado (the new insurance marketplace), Medicaid and CHP+. Much attention has been paid to the intersection between the exchange and Medicaid, primarily due to the adult populations impacted, but less attention has been given to the impact of movement between the exchange and CHP+, and children impacted when their parents are eligible to purchase subsidized products through the exchange. If children are moved from one eligibility category to another and it impacts their provider network and access to their health care home, there is a risk of interrupting continuity of care and services. Movement from one eligibility category to another also can cause disruptions in coverage. One of the family member stakeholders who was interviewed noted that a problem she has faced with CHP+ was that one of her children lost CHP+ coverage, but she was not aware of the loss until she took her daughter to a doctor's visit, and it was nine months before she could get her daughter enrolled in Medicaid. This caused a disruption in care for her daughter, and anxiety about what would happen if her daughter got sick or injured during the time of lapsed coverage.

5. Affordability

There are concerns that private insurance, even with premium assistance, may be more expensive for families than CHP+ or Medicaid. For example, families between 200 percent and 400 percent FPL will pay up to 9.5 percent of their income, on a sliding scale, for just the premiums (Kaiser, July 2012), even though total cost sharing, including premiums, in CHIP is limited to 5 percent of family income and, in Medicaid, even lower. Additionally, when families have multiple sources of coverage for different family members, premium costs can add up—meaning families might pay a CHIP enrollment fee for their children in addition to their required contribution for subsidized marketplace coverage for the adults. Another concern about affordability relates to the Family Affordability Test, commonly referred to as the "Family Glitch". Under ACA, premium tax credits are not available when a family has access to affordable employer-sponsored coverage. Coverage is determined to be affordable when the premium costs less than 9.5 percent of the family's income, but the amount that is used for comparison is the *individual* premium, not the family coverage premium. This may mean that individual

coverage through an employer could be determined affordable, and the family would be ineligible for tax credits, even if the cost of covering all of the family members in the employer plan is far in excess of 9.5 percent of the family's income. Some families otherwise affected by the Family Affordability Test will be able to enroll their children in CHP+, but those with income over 250 percent FPL will not gain a more affordable coverage option under the ACA.

The Family Affordability Test and potential impact on coverage for children is one argument for continuing a separate CHIP program, even with the ACA and coverage through exchange marketplaces. If families cannot find a product that is truly affordable, and the adults in the household go without coverage, CHP+ would still be in place for the eligible children even though some parents could remain uninsured.

There is speculation that the total out of pocket (OOP) amount a family spends now in CHP+ is probably lower than what they will likely spend when purchasing a product in an exchange marketplace. While CHP+ limits out-of-pocket spending (including premiums) to 5 percent of family income, federal rules permit maximum OOP amounts (not including premiums) of up to $6,350 for marketplace plans for families at 200 percent FPL, or more than 16 percent of a three-person family's income at that FPL (Kaiser, July 2012). While Colorado's plans may not set OOP maximums at the full level allowed by law, the potential for high OOP costs is real.

Advocates and policymakers should pay close attention to this question and collect baseline information about the current premiums and OOP expenses families pay now in CHP+, and compare that to what families will pay when they buy a plan in the exchange, including factoring in the additional subsidies for families with incomes below 250 percent FPL. Will the plans sold in the exchange be affordable or will families see an increase in premiums and OOP? What is an acceptable total cost burden for families? Is the current 5 percent test set as a maximum at the national level for CHP+ the right standard?

6. Benefits

Under the Affordable Care Act, states are required to establish a benchmark plan that meets certain minimum benefit requirements for the individual and small group private insurance plans, including those offered through marketplaces. Colorado has chosen the Kaiser small group plan (Kaiser Ded HMO 1200D) as the Essential Health Benefits package (EHB). For most children, this benefit plan will adequately meet their needs. Though there is not as much concern about the actual list of services that children will get, there is a lack of clarity about differences in amount, duration and scope of services. One known difference between the EHB benefits and Medicaid benefits is a limitation on physical therapy, occupational therapy, and services for individuals with speech, hearing and language disorders. The EHB limits these to 20 visits per year per therapy type, while CHP+ provides up to 30 visits per year per diagnosis, with no limitations for children birth to age2. Other differences include EHB limitations in coverage for mental health services, including an exclusion in the EHB for special education, counseling, therapy or care for learning deficiencies or behavioral problems. These differences can create significant challenges for children with disabilities who require such care to live a productive life.

However, for low-income and vulnerable children, there is a lower level of confidence that a private insurance product administered by companies without experience serving people in this income range will be sufficient. Benefits for children in publicly funded programs like Medicaid

and CHIP have a child-centric focus, and providers and advocates have worked long and hard to ensure that children get the benefits and protections they need to be and stay healthy. While most children are healthy, and qualified health plans purchased through the health insurance marketplace should be adequate for the majority of children, stakeholders have concerns about the kids who have higher health care needs. There is considerable concern that traditional health plans that have little or no experience serving low-income or previously uninsured populations will not have the expertise or interest in meeting the needs of children from families that are challenged to meet basic needs like housing and food. As one key informant said, "healthiness is more than medical care," and they are concerned that health plans will not understand what traditional safety net providers do understand–that parents with less education and resources need simpler ways to get care for their kids. Traditional, commercial plans may not attend to these non-medical concerns that some parents bring to the exam room.

There is also concern about what will happen when a child is identified as having special health care or developmental needs? Do private health plans and their provider networks have adequate experience serving children with special health needs and providing community support to parents? Additionally, there is skepticism that commercial plans have the relationships with community-based organizations that provide non-health services to vulnerable and high-needs families. Finally, what happens to children whose families make the "financial leap" to buying products through the exchange marketplace but struggle because benefits and OOP costs are different than what they have experienced in publicly funded programs? For instance, pharmaceutical formularies and management of pharmaceutical benefits can be very different in commercial versus public plans.

Although the ACA creates a new requirement for providing a set of standard essential health benefits for children who are covered in the marketplace, a flaw in the implementing federal regulation has created a disparity for children in terms of access to dental benefits. Pediatric dental benefits are a "mandatory offer" in the marketplace, but are a "mandatory purchase" outside the marketplace. This creates troublesome marketplace inequities and the potential for children to receive differing levels of benefits depending on how they purchase their coverage. This is a clear example of where the ACA has created a new barrier related to an issue that is critical for, and specific to, kids.

7. Immigrant Children

The question of who will speak for, and advocate for the needs of immigrant children–both legally residing and undocumented-came up repeatedly in the stakeholder interviews. It is estimated that 12.4 percent (over 15,600) of the uninsured children in Colorado are ineligible for Medicaid or CHP+ "based on documentation or citizenship status" (Colorado Health Institute 2013). Additionally, while Colorado passed House Bill 09-1353 in 2009 to allow for coverage of legally-residing immigrant children in Medicaid and CHP+ without the traditional five-year waiting period for eligibility, and could receive the enhanced CHIP match for these children enrolled in either Medicaid or CHIP, state funding to cover these children has not been made available (Colorado HB 09-1353). Important questions for the future are whether policymakers, providers, and advocates are willing to continue supporting safety net providers that currently serve this population; will advocate for the state to utilize the option to cover legally-residing immigrants; and / or interested in creating new programs or funding streams to provide health care to this population.

Conclusion

A number of issues and concerns related to kids' coverage still need to be addressed as we fully implement health care reform and the ACA. Policymakers, state officials, insurers, health care providers and advocates must work collaboratively to assess the impact of expanded coverage under the ACA on the health and well-being of Colorado's children. Key questions and issues that need on-going evaluation and reporting include:

- What is Colorado's specific and quantifiable coverage goal? Public/private partnerships will be required in order to access timely and appropriate data to monitor and analyze progress towards this goal, which includes the following objectives:
  - Reducing the number of eligible but unenrolled children.
  - Reaching coverage take up rates at the projected/anticipated rate.
  - Increasing retention of coverage from one year to the next.
- How are families accessing care for their children, and what are appropriate measures of satisfaction regarding the care of the children? Policy leaders should monitor state and federal affordability policies, using access and utilization as proxies, to ensure the new pathways to coverage and new policies are as affordable for families as CHP+.
- What does access to care for undocumented children look like? What support exists for safety net providers who serve all patients, regardless of immigration status? Have other coverage options become available?
- What is the impact of movement or churn between commercial and public coverage and uninsurance?

State leaders must work with other child health advocates across the country and with Colorado's federal delegation to explore and fully understand the impact that federal changes to the CHIP program would have on Colorado's children and develop contingency plans for how our state will support the needs of families currently served by the program, if it is significantly altered or ended.

The answers to the evaluation questions should drive an in-depth conversation about the future of coverage for children in Colorado. The underlying value for any future discussions or changes in the structure or financing of coverage for kids is that **all Colorado kids have quality, affordable coverage that is convenient and comfortable for families to access and use.**

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All Kids Covered Colorado is a statewide, non-partisan coalition dedicated to increasing access to affordable, high quality health insurance coverage and health care services for all children in Colorado. For more information, visit www.allkidscoveredcolorado.org.

Colorado Maternal and Child Health
2016-2020 Needs Assessment

Success Story Factors and Issues

Success Story Factors		
Factor	**Frequency**	**Notes**
Team work/Collaboration	105	Internal and external collaboration, partnerships with community organizations, schools, childcare centers, physicians
Funding	46	Multi-year sizable private funding, can afford paid staff and not just volunteers, "adequate funding"
Partner buy-in	44	
Population-based education	35	Youth, pregnant women, medical providers, parents/guardians
Family involvement/engagement	32	
Referrals/Access to resources	30	
Community buy-in	24	
Parent/family support	21	Providing extra and affordable/free resources for parents, helping them throught the use of services
Data (Management and Analysis)	20	Including evaluation
MCH/HCP program support	17	
Appropriate and experienced staff	17	
Evidenced-based strategies	15	
Staff training	13	
Youth involvement	13	Personal buy-in
Communication	12	Effective, increased, listening
Systems/Infrastructure (built or already in place)	12	
Champion(s)	10	
Collaborative tools	9	Tool kits
Inclusive	7	Include many sub-populations and treat them equally, culturally inclusive
Innovative thinking	5	
Strong leader	3	
Advisory committee/board	2	
Timing	2	

Success Story Issues + Top Factors		
Issue and Corresponding Factors	**Frequency**	**Notes**
Women and Infants		
Pregnancy-Related Depression	**16**	
Teamwork/Collaboration	11	Partnership with state MCH, medical providers
Parent/family support	3	
Breastfeeding	**5**	
Partner buy-in	4	
Funding	2	
Preconception Health	**5**	
Population-based education	3	
Partner buy-in	2	
Children		
Developmental Screening, Identification, Referral, Connection to Services	**29**	
Teamwork/Collaboration	15	
Community buy-in	7	
Obesity Prevention	**16**	
Teamwork/Collaboration	8	
Partner buy-in	6	e.g., Montezuma School to Farm Program and food service directors
Family involvement/engagement	4	
Oral Health	**14**	
Teamwork/Collaboration	6	
Funding	5	
Population-based education	4	
Health Care Access	**9**	
Teamwork/Collaboration	6	
Funding	3	
Partner buy-in	3	
Safety/Injury Prevention	**5**	
Funding	3	
Population-based education	2	
Teamwork/Collaboration	2	
Youth		
Sexual Health	**18**	LARC, teen pregnancy, teen dating violence

Population-based education	7	Youth, medical providers, teachers
Teamwork/Collaboration	7	
Champion(s)	4	
Youth Systems Building	**10**	Youth & adult partnership bill of rights
Youth involvement	7	Personal buy-in
Teamwork/Collaboration	5	
Funding	3	
CYSHCN		
Medical Home	**9**	
Teamwork/Collaboration	5	
Partner buy-in	3	
Parent/family support	3	
Referrals/Access to resources	3	

Children and Youth with Special Health Care Needs
2016-2020 MCH Needs Assessment
Regional Meeting Data

	Combined Insufficient + Gap Data	
Category	**#**	**%**
1. Specialty Care	**41**	**8.0%**
2. Respite	**37**	**7.2%**
2. Transportation	**37**	**7.2%**
3. School	**33**	**6.4%**
4. Mental Health	**32**	**6.2%**
5. Primary Care	**26**	**5.1%**

*** Transition is also a CYSHCN priority issue and is included in the Phase I Prioritization Data table.**

1. Specialty Care

The majority of respondents simply wrote "Specialty Care" or "Specialty Clinic" to denote that this was either insufficient or a gap in their community; many specifically indicated "Pediatric Specialty Care". Also of abundance was "Specialty Providers", indicating a need for more specialty providers in their area.

When specific specialties were mentioned, the following were captured:

- Vision - Top 3
- Autism - Top 3
- Audiology - Top 3
- Rehab
- Mental Health
- Ortho
- Neuro
- Nutrition
- Radiology

2. Respite

Nearly all comments related to Respite simply said "Respite", indicating a lack of or gap related to Respite Services available.

2. Transportation

- Medical Transportation
- Public Transportation Barriers (such as strollers on buses)
- Special Transportation
- Transportation Commodities

3. School

The majority of comments from participants fell into two categories, the first was broad and simply said "School", some indicated a type of school (pre-school, K-12, Public, Private), but didn't indicate more specifically why it was identified as insufficient or a gap. The second category was "School Nurses", indicating an insufficient number of school nurses to meet the need. Based on comments I heard at the meetings, the new method of 1 school nurse to support an entire school district or a portion of a district was was not sufficient to meet the need.

Also mentioned is a lack of availability for "Special Education" or a lack of "Appropriate Placement in Special Ed"; lack of consistency across Special Education programs from school to school.

4. Mental Health

The majority of responses indicated an overall lack of Mental Health Providers or services available; specifically mentioned were Pediatric Providers and services and those who accept Medicaid.

Also mentioned were long-wait-lists found at current providers and a lack of mental health providers/services available for non-English speaking families.

5. Primary Care

The majority of respondents indicated an overall lack of Primary Care Providers in the area. Also mentioned was a lack of availability in the following:

- Bilingual Providers
- Providers who accept Medicaid
- Quality, Consistency, Capacity
- Providers that promote a medical home approach
- Providers accepting new patients