

Colorado Oral Health Surveillance System Plan

1

2011–2015

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Acronym List

Acronym	
ACF	Administration for Children and Families
ACS	American Communities Survey (U.S. Census)
AHRQ	Agency for Healthcare Research and Quality
ASTDD	Association of State and Territorial Dental Directors
BRFSS	Behavioral Risk Factor Surveillance System
BSS	Basic Screening Survey
CCCR	Central Cancer Registry
CDC	Centers for Disease Control and Prevention
CDPHE	Colorado Department of Public Health and Environment
CHFC	Center for Healthy Families and Communities at CDPHE
CHLCDP	Center for Healthy Living and Chronic Disease Prevention at CDPHE
CHS	Colorado's Child Health Survey
COHSS	Colorado Oral Health Surveillance System
CRCSN	Colorado Responds to Children with Special Needs (birth defects registry)
EPE	Epidemiology, Planning, and Evaluation Branch at CDPHE
FPL	Federal poverty level
FRL	Free and reduced lunch
HCPF	Colorado's Department of Health Care Policy and Finance
HPSA	Health Professional Shortage Areas
HSS	Health Statistics Section at CDPHE
MCH	Maternal and Child Health
MEPS	Medical Expenditure Panel Survey
NCCDPHP	National Center for Chronic Disease Prevention and Health Promotion at CDC
NHANES	National Health and Nutrition Examination Survey
NOHSS	National Oral Health Surveillance System
OHAC!	Oral Health Awareness Colorado! (oral health coalition)
OHU	Oral Health Unit at CDPHE
PRAMS	Pregnancy Risk Assessment Monitoring System
PSD	Prevention Services Division at CDPHE
SEALS	Sealant Efficiency Assessment for Locals and States
TABS	Colorado's Tobacco Attitudes and Behaviors Survey (adolescent and adult)
WFRS	Water Fluoridation Reporting System
YRBS	Youth Risk Behavior Survey

Introduction

The U.S. Surgeon General's framework for action to promote oral health forms the basis of the Colorado Oral Health Surveillance System (COHSS). The Colorado Department of Public Health and Environment (CDPHE) has had this surveillance system since 2003. The surveillance system focuses on data collection, timely dissemination of findings, and putting data to action. Data are used for program planning and implementation, evaluating program effectiveness, and guiding policy planning and advocacy.

In the past several years, COHSS has expanded to include a number of state indicators beyond the nine indicators monitored nationally through the National Oral Health Surveillance System (NOHSS). COHSS has also expanded to include additional data sources: kindergarten and third grade BSS data, Head Start data, and Colorado Child Health Survey (CHS) data. The chronic disease epidemiologist has attended the Medical Expenditure Panel Survey (MEPS) user training, and MEPS data will be evaluated for future inclusion in the surveillance system.

Data have been disseminated through a variety of mechanisms. For example: 1) data on the incidence of cancer of the oral cavity and pharynx are displayed in Colorado's regional health profiles [<http://www.cdphe.state.co.us/hs/regionaldata/regionaldata.html>]; 2) data on caries experience, dental sealants, Medicaid dental services, and untreated decay have been included in Colorado's maternal and child health county data sets annually [<http://www.cdphe.state.co.us/hs/mchdata/mchdata.html>]; and 3) five oral health indicators have been included in the Colorado CHS select indicators report annually [<http://www.cdphe.state.co.us/hs/mchdata/CHS2009PUB.pdf>]. In 2011, local and state data on eight COHSS oral health indicators will be disseminated to local health agencies in Colorado as part of Colorado's Public Health Improvement Plan community health assessment and public health planning process.

COHSS is funded by a cooperative agreement with the Centers for Disease Control and Prevention (CDC). CDPHE has a separate cooperative agreement with CDC for a demonstration project to integrate chronic disease prevention and health promotion programs. The ultimate aim of this demonstration project is to increase synergy, reach, and desired health outcomes in categorical programs funded by CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP). In Colorado, oral health is included in the work plan to integrate chronic disease prevention and health promotion programs. This integration project has helped to increase awareness of common risk factors, awareness of the availability of additional data, and collaboration and resource sharing among programs within CDPHE's Prevention Services Division (PSD), and it will help to enhance COHSS. One of the projects in the integrated chronic disease work plan is the creation of a chronic disease surveillance system, which includes oral health surveillance.

As most of the formative stage of creating the oral health surveillance system (COHSS) is complete, the resulting purpose, goals, and objectives of COHSS (described on page 6) guided the development of this COHSS Plan for 2011-2015. This plan represents the implementation and maintenance phase of surveillance.

COHSS and the 10 Essential Public Health Services of Oral Health Programs

This COHSS Plan was developed in the context of the ten essential public health services as applied to oral health programs. In particular, this list of ten essential roles provided the context within which to select data indicators, develop the logic model, and to create the data analysis, data dissemination, and surveillance activities plans for 2011–2015.

10 Essential Roles that State Oral Health Programs Play in Promoting Oral Health in the United States

Assessment

1. Assess oral health status and implement an oral health surveillance system to track it
2. Analyze determinants of oral health and respond to health hazards in the community
3. Assess public perceptions about oral health issues and educate/empower them to achieve and maintain optimal oral health

Policy Development

4. Mobilize community partners to leverage resources and advocate for/act on oral health issues
5. Develop and implement policies and systematic plans that support state and community oral health efforts

Assurance

6. Review, educate about and enforce laws and regulations that promote oral health and ensure safe oral health practices
7. Reduce barriers to care and assure utilization of personal and population-based oral health services
8. Assure an adequate and competent public and private oral health workforce
9. Evaluate effectiveness, accessibility and quality of personal and population-based oral health promotion activities and oral health services
10. Conduct and review research for new insights and innovative solutions to oral health problems.

COHSS most clearly is used in the three assessment roles of the Colorado Oral Health Program. COHSS is used to monitor the oral health burden in Colorado, to determine factors associated with increased burden, and to assess public perceptions. COHSS also provides data for use in policy development roles and assurance roles (reduce barriers to care and assure utilization of personal and population-based oral health services; evaluate effectiveness, accessibility and quality of personal and population-based oral health promotion activities and oral health services).

Purpose, Goals, and Objectives

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PURPOSE:

Provide an integrated, state-specific surveillance system to aid in the prevention and control of oral diseases and risk factors in Colorado by using the data to plan, implement, and evaluate public health practice.

GOALS:

- Create an ongoing, efficient system that provides relevant and reliable data for Colorado.
- Collect, enter, analyze, and disseminate data to stakeholders in a timely and useful manner.
- Use data on oral disease and risk factors to plan, implement, and evaluate the oral health program.

OBJECTIVES:

Use Colorado oral health surveillance system data to:

- Monitor oral diseases and risk factors.
- Monitor oral diseases and risk factors by demographic groups.
- Identify emerging oral health issues.
- Detect changes in oral health-related practices and access to services.
- Develop meaningful information (data interpretation) to inform and support stakeholders.
- Plan, implement, and evaluate oral health programs.
- Develop more effective oral health programs that target populations at high risk and with high need.

COHSS Logic Model and Data Flow Chart Description



[Figure 1](#) presents the logic model for COHSS. The logic model reflects the Plan, Do, Study, Act cycle for change. Intermediate outcomes of the oral health surveillance system will be achieved throughout the duration of the Cooperative Agreement (2008-2013). Progress toward the long-term outcomes will continue beyond 2013. In addition to the oral health surveillance system, many oral health programs and initiatives that fall under other Cooperative Agreement recipient activities contribute toward these long-term outcomes.

[Figure 2](#) presents the COHSS data flow chart. This chart shows the agency/unit responsible for data collection/management and data analysis and estimated availability of new data for each data source. Data sources for [other \(not oral health specific\) indicators](#) and [population description indicators](#) are not included here because it is not the responsibility of the CDPHE Oral Health Unit to gather data on these indicators; they are part of the larger, integrated chronic disease surveillance system.

Notes on Colorado's Oral Health Unit:

- CDPHE has a centralized Epidemiology, Planning, and Evaluation Branch and a centralized Health Statistics Section that serve the Oral Health Unit's needs related to COHSS. Data collection and data entry personnel, who work with such data sources as BSS, WRFS, and SEALS, and other program personnel also contribute to COHSS.
- Stakeholders are those persons, programs, and agencies who can contribute surveillance data, support the surveillance system, or benefit from surveillance information.
- The key function of the Surveillance Advisory Committee will be to make recommendations for data dissemination in terms of content, methods (including responsible party), and timeline.
- Colorado is participating in CDC's chronic disease integration pilot project. As part of this project, the oral health work plan and indicators are incorporated in the integrated work plan and surveillance system for chronic disease.

Figure 1: Colorado Oral Health Surveillance System (COHSS) logic model, 2011-2015

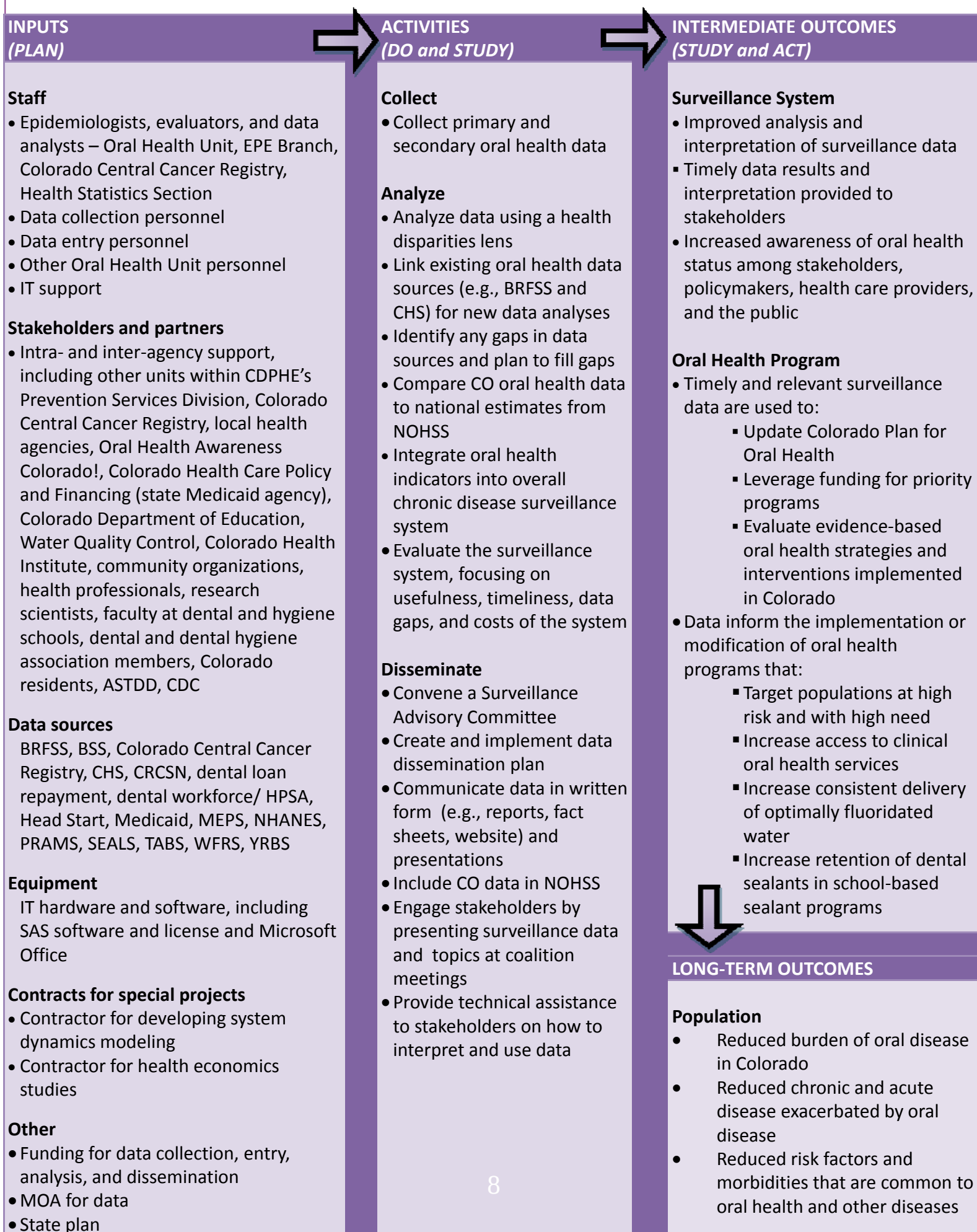
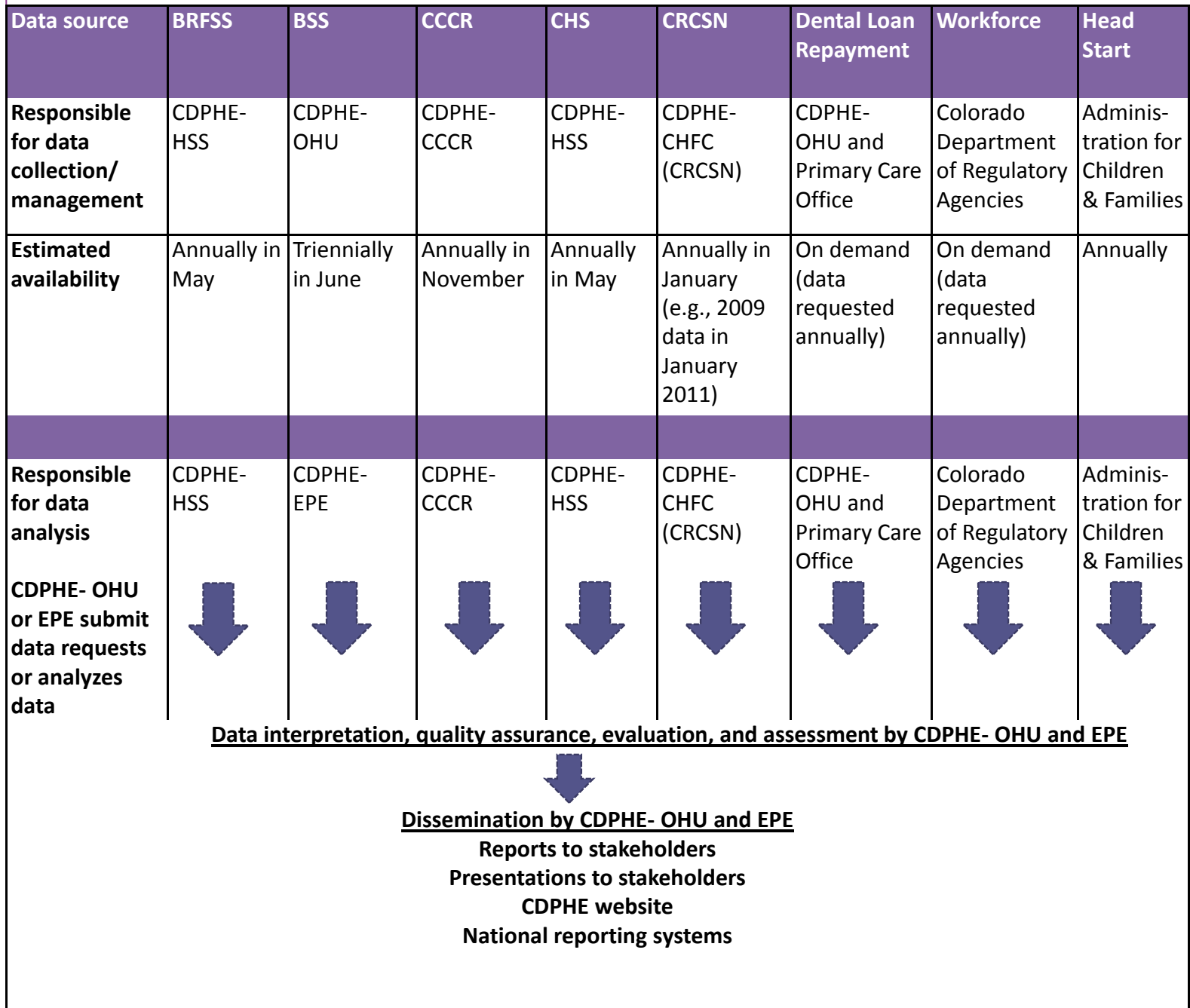


Figure 2: Colorado Oral Health Surveillance System (COHSS) Data Flow Chart

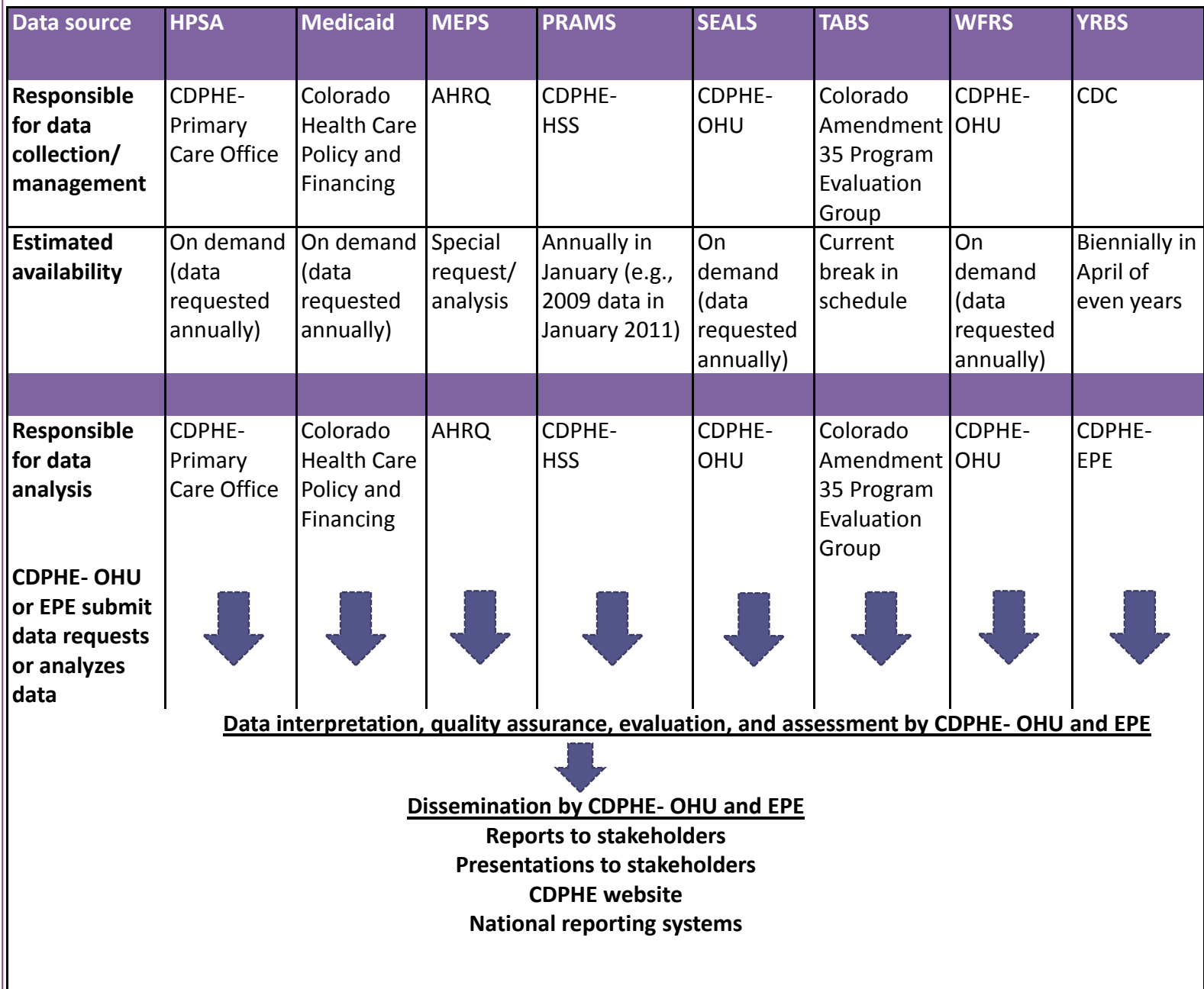
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[Acronyms List](#)

Figure 2: Colorado Oral Health Surveillance System (COHSS) Data Flow Chart

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[Acronyms List](#)

COHSS Indicators and Data Sources

COHSS is modeled after the NOHSS and includes nine indicators monitored nationally. A tenth indicator currently in NOHSS, percent of adults aged 18+ years who have had their teeth cleaned in the past year, was deleted from COHSS because the corresponding question has been deleted from the rotating core BRFSS questionnaire starting in 2012. Many additional indicators have been added to COHSS.

The complete indicator list includes metadata (i.e., a data dictionary) with information on data source, numerator, denominator, years of data available, future years of data collection planned, desired crosstabulations with other indicators, demographic groups represented, significance/reason for including in surveillance system, limitations of indicator, data resources and their limitations, related Healthy People 2020 objectives, and stakeholders. A subset of this large spreadsheet of information is presented in this document.

All indicators met the following selection criteria:

1. Periodicity – data are collected routinely
2. Comparability – data can be compared to national or sub-state estimates
3. Trusted source – data come from a trusted data source (new data sources are evaluated)
4. Related to public health action or context – data are actionable or contextual
5. No redundancy – two indicators do not measure the same thing in different ways

Additionally, in choosing indicators, the following guiding principles were used, if possible:

1. Standardized metric or survey question
2. Valid
3. Reliable
4. Include risk and protective factors; morbidity, mortality, and quality of life measures; primary, secondary, and tertiary prevention measures; and indicators that cover the life course
5. Able to measure racial/ethnic, socioeconomic, and geographic disparities with the given data source
6. Simple/easy to understand and interpret
7. Able to get the raw data or data results from the primary source

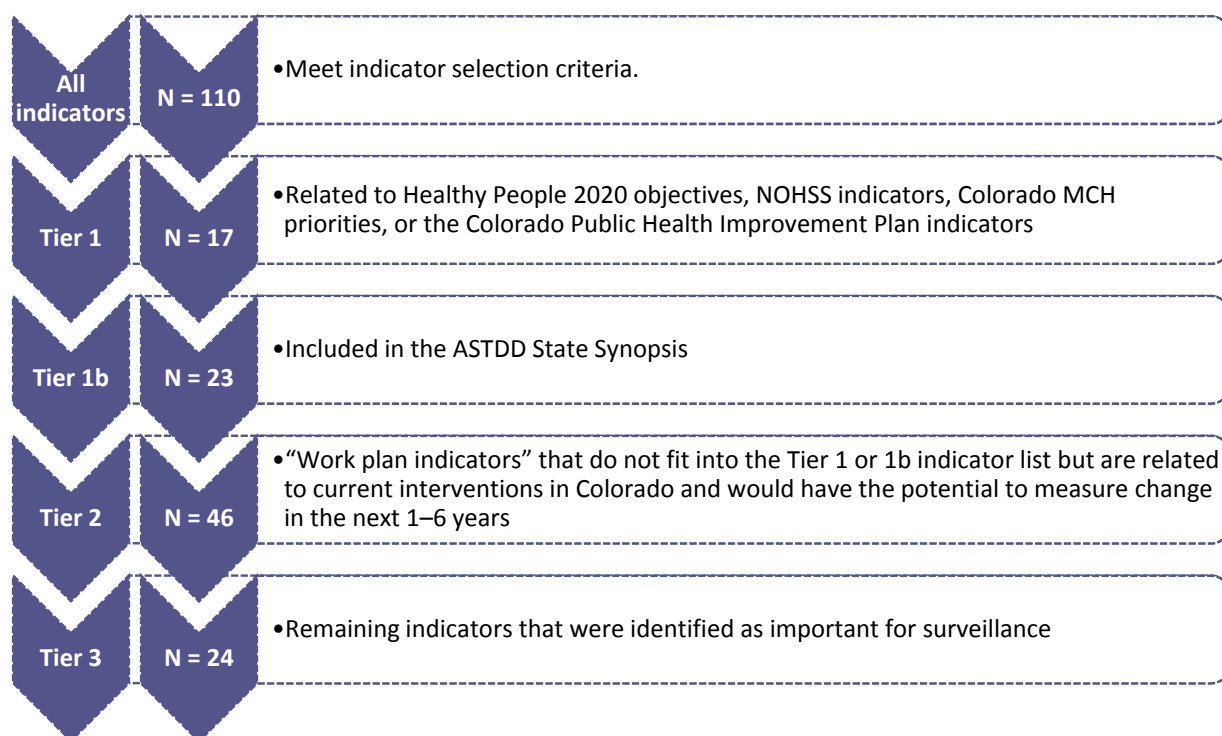
Data collection protocols

COHSS collects primary and secondary data. Primary data collection requires a study-specific protocol and adherence to IRB/HIPAA rules. CDPHE staff enter data, keep hard copies of forms in locked cabinets, and monitor data quality with frequent checks at the time of data entry. Detailed data collection protocols can be found in the data source-specific manuals available on the Oral Health Unit computer network or the CDC or ASTDD websites.

Prioritization of COHSS Indicators

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COHSS indicators are prioritized into Tier 1, Tier 1b, Tier 2, or Tier 3 according to the criteria below. Tier 1-2 indicators will be priority for data collection and analyses.



In addition to the 110 oral health indicators (17 tier 1 indicators , 23 tier 1b indicators, 46 tier 2 indicators, and 24 tier 3 indicators), there are 104 population description indicators. Two of the population description indicators are additional tier 1b indicators. The population description indicators are not the responsibility of the Oral Health Unit to gather data on; they are part of the larger, integrated chronic disease surveillance system.

Indicators in COHSS and NOHSS

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Data source	Indicator	Description
BRFSS	Dental Visit	Percent of adults aged 18+ years who have visited a dentist or dental clinic in the past year
BRFSS	Complete Tooth Loss	Percent of adults aged 65+ years who have lost all of their natural teeth due to tooth decay or gum disease
BRFSS	Lost 6 or More Teeth	Percent of adults aged 65+ years who have lost six or more teeth due to tooth decay or gum disease
WFRS	Fluoridation Status	Percent of people served by public water systems who receive fluoridated water
BSS	Caries Experience	Percent of third grade students with caries experience, including treated and untreated tooth decay
BSS	Untreated Tooth Decay	Percent of third grade students with untreated tooth decay
BSS	Dental Sealants	Percent of third grade students with dental sealants on at least one permanent molar tooth
CCCR	Cancer of the Oral Cavity and Pharynx	Incidence of oral and pharyngeal cancer
		Age-adjusted mortality rate for oral and pharyngeal cancer

All of the above indicators have a Tier 1 priority or top priority for data collection and analyses.

COHSS Indicators: Oral Health Status/General

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Category	<u>(Priority level)</u> Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse /age category
oral health status/general	(1) Percent of children aged 1-14 years with fair or poor condition of teeth	CHS	Collected annually 2004-2010	annually	age, r/e, poverty, regular source of dental care, type of health insurance, urban/rural, needed but did not get dental care, main problem with teeth, age first went to dentist	Early childhood, children 1-14 years
oral health status/general	(1) Percent of adults aged 18+ years who lost any teeth due to decay or periodontal disease	BRFSS	Even years 2002-2010	Even years (core BRFSS)	age, r/e, poverty (<250% FPL, 250%+ FPL), urban/rural, diabetes	Adult, older adult
oral health status/general	(1) Percent of adults aged 18+ years who lost 6+ teeth due to decay or periodontal disease	BRFSS	Even years 2002-2010	Even years (core BRFSS)	age, r/e, poverty (<250% FPL, 250%+ FPL), urban/rural, diabetes	Adult, older adult
oral health status/general	(1) Percent of adults aged 18+ years who lost all teeth due to decay or periodontal disease	BRFSS	Even years 2002-2010	Even years (core BRFSS)	age, r/e, poverty (<250% FPL, 250%+ FPL), urban/rural, diabetes	Adult, older adult

r/e = race/ethnicity; FPL = federal poverty level

COHSS Indicators: Oral Health Status/Dental Caries

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Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse /age category
oral health status/dental caries	(2) Percent of kindergarten children with caries experience (untreated decay and/or fillings)	BSS	2006/2007 and 2010/2011	every 3-4 years	age, r/e, school %FRL, county, BMI	Early childhood
oral health status/dental caries	(2) Percent of kindergarten children with untreated caries	BSS	2006/2007 and 2010/2011	every 3-4 years	age, r/e, school %FRL, county, BMI	Early childhood
oral health status/dental caries	(1) Percent of 3rd grade children with caries experience (untreated decay and/or fillings)	BSS	2003/2004, 2006/2007, 2010/2011	every 3-4 years	age, r/e, school %FRL, county, BMI	Children in 3rd grade
oral health status/dental caries	(1) Percent of 3rd grade children with untreated caries	BSS	2003/2004, 2006/2007, 2010/2011	every 3-4 years	age, r/e, school %FRL, county, BMI	Children in 3rd grade
oral health status/dental caries	(3) Percent of 3rd grade children with two or more quadrants with untreated decay	BSS	2003/2004, 2006/2007, 2010/2011	every 3-4 years	age, r/e, school %FRL, county, BMI	Children in 3rd grade
oral health status/dental caries	(2) Percent of children aged 1-14 years with pain, cavities, broken or missing fillings, teeth pulled because of cavities, or bleeding gums as main problem with teeth	CHS	Collected annually 2004-2010	annually	age, r/e, poverty, regular source of dental care, type of health insurance, urban/rural, needed but did not get dental care, condition of teeth,* age first went to dentist	Early childhood, children 1-14 years

r/e = race/ethnicity; FRL = free or reduced lunch; BMI = body mass index

*condition of teeth: excellent, very good, good, fair, or poor

COHSS Indicators: Oral Health Status/Cancer

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Category	<u>(Priority level)</u> Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse /age category
oral health status/cancer	(3) Number of diagnosed oral cavity and pharynx cancers among persons of all ages	CCCR	annually	annually	sex, age at diagnosis, r/e	Population
oral health status/cancer	(1) Age-adjusted incidence rate of oral cavity and pharynx cancer among persons of all ages	CCCR	annually	annually	sex, age at diagnosis, r/e	Population
oral health status/cancer	(1) Percent of diagnosed, staged oral cavity and pharynx cancers with detection at in-situ or localized stage	CCCR	annually	annually	sex, age at diagnosis, r/e	Population
oral health status/cancer	(3) 5-year relative survival rate by stage for oral cavity and pharynx cancer among persons of all ages	CCCR	annually	annually	sex, age at diagnosis, r/e	Population
oral health status/cancer	(3) Number of deaths of oral cavity and pharynx cancer among persons of all ages	CCCR	annually	annually	sex, age at diagnosis, r/e	Population
oral health status/cancer	(1) Age-adjusted mortality rate of oral cavity and pharynx cancer among persons of all ages	CCCR	annually	annually	sex, age at diagnosis, r/e	Population

r/e = race/ethnicity

COHSS Indicators:

Oral Health Status/Cleft Lip and Palate

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Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse/age category
oral health status/cleft lip and palate	(3) Count of cleft lip with or without cleft palate	CSHCN registry	annually	annually	county, mother's r/e, mother's age, child's sex	Early childhood
oral health status/cleft lip and palate	(3) Rate of cleft lip with or without cleft palate (per 10,000 live births)	CSHCN registry	annually	annually	county, mother's r/e, mother's age, child's sex	Early childhood
oral health status/cleft lip and palate	(3) Count of cleft palate without cleft lip	CSHCN registry	annually	annually	county, mother's r/e, mother's age, child's sex	Early childhood
oral health status/cleft lip and palate	(3) Rate of cleft palate without cleft lip (per 10,000 live births)	CSHCN registry	annually	annually	county, mother's r/e, mother's age, child's sex	Early childhood

r/e = race/ethnicity

COHSS Indicators: Risk Reduction/Fluorides

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Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse/ age category
risk reduction/fluorides	(2) Population served by public water systems	WFRS	annually	annually	county	Population
risk reduction/fluorides	(2) Population served by fluoridated water system	WFRS	annually	annually	county	Population
risk reduction/fluorides	(1) Percent of population served by public water systems that have optimally fluoridated water	WFRS	annually	annually	county	Population
risk reduction/fluorides	(2) Percent of public water systems in compliance with water fluoridation standards	WFRS	annually	annually	n/a	Population
risk reduction/fluorides	(3) Percent of adults aged 18+ years with public water as main source of home water supply	BRFSS	2009B state added Q	Not known, external funder	age, r/e, poverty (<250%, 250%+), urban/rural	Adult, older adult
risk reduction/fluorides	(1) Percent of adults aged 18+ years with well water as main source of home water supply	BRFSS	2009B state added Q	Not known, external funder	age, r/e, poverty (<250%, 250%+), urban/rural	Adult, older adult
risk reduction/fluorides	(1) Percent of adults aged 18+ years with bottled water as main source of home water supply	BRFSS	2009B state added Q	Not known, external funder	age, r/e, poverty (<250%, 250%+), urban/rural	Adult, older adult

r/e = race/ethnicity

COHSS Indicators: Risk Reduction/Sealants

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Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse/age category
risk reduction/sealants	(3) Number of schools eligible for sealant program	SEALS	annually	annually	n/a	Children
risk reduction/sealants	(2) Number of schools served by sealant program	SEALS	annually	annually	n/a	Children
risk reduction/sealants	(2) Percent of eligible schools served by sealant program	SEALS	annually	annually	n/a	Children
risk reduction/sealants	(3) Number of students eligible for sealant program	SEALS	annually	annually	n/a	Children
risk reduction/sealants	(2) Number of students served by sealant program	SEALS	annually	annually	n/a	Children
risk reduction/sealants	(2) Percent of eligible students served by sealant program	SEALS	annually	annually	n/a	Children
risk reduction/sealants	(1) Percent of 3rd grade children with one or more sealants on a permanent first molar	BSS	2003/2004, 2006/2007, 2010/2011	every 3-4 years	age, r/e, school %FRL, county, BMI	Children in 3rd grade

r/e = race/ethnicity; FRL = free or reduced lunch; BMI = body mass index

COHSS Indicators:

Dental Care Workforce/Access to Dental Care

Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse /age category
dental care workforce/access to dental care	(1b) Number of dentists with a current, active license	DORA	annually	annually	county	Population
dental care workforce/access to dental care	(1b) Number of dentists in state with a current, active license	DORA	annually	annually	county	Population
dental care workforce/access to dental care	(1b) Number of dental hygienists with a current, active license	DORA	annually	annually	county	Population
dental care workforce/access to dental care	(1b) Number of dental hygienists in state with a current, active license	DORA	annually	annually	county	Population
dental care workforce/access to dental care	(1b) Number of counties without a dentist	DORA	annually	annually	county	Population
dental care workforce/access to dental care	(1b) Total county population without a dentist	DORA	annually	annually	county	Population
dental care workforce/access to dental care	(2) Number of dental healthcare professional shortage areas (HPSA)	Bureau of Primary Healthcare	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Number of county dental healthcare professional shortage areas (HPSA)	Bureau of Primary Healthcare	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Number of facility dental healthcare professional shortage areas (HPSA)	Bureau of Primary Healthcare	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Number of other (non-county, non-facility) dental healthcare professional shortage areas (HPSA)	Bureau of Primary Healthcare	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Number of dentists actively enrolled as Medicaid providers	Medicaid	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Number of active, Medicaid-enrolled dentists with at least one paid claim	Medicaid	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Percent of dentists enrolled in Medicaid	DORA	annually	annually	county	Population

COHSS Indicators:

Dental Care Workforce/Access to Dental Care

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Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse/ age category
dental care workforce/access to dental care	(1b) Number of dentists actively enrolled as Billing Providers with at least one paid claim	Medicaid	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of dentists actively enrolled as Rendering Providers with at least one paid claim	Medicaid	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of active, Medicaid-enrolled dentists with paid claims greater than \$10,000.00	Medicaid	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Percentage of counties in Colorado with an enrolled dentist (appearing as the billing provider) on paid claims totaling less than or equal to \$10,000.00	Medicaid	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of active, Medicaid-enrolled dentists who saw 50 or more beneficiaries age 20 and under as of September 30	Medicaid	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of counties without an enrolled billing dentist who saw 50 or more beneficiaries age 20 and under	Medicaid	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of active, Medicaid-enrolled dentists who saw 100 or more beneficiaries age 20 and under as of September 30	Medicaid	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of counties in Colorado without an actively enrolled Medicaid dental provider	Medicaid	annually	annually	list of counties	Population
dental care workforce/access to dental care	(1b) Total population of counties in Colorado without an actively enrolled Medicaid dental provider	Medicaid	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Number of non-dental providers billing for fluoride varnish by county	Medicaid	annually	annually	county	Population
dental care workforce/access to dental care	(2) Number of dental providers billing for fluoride varnish by county	Medicaid	annually	annually	county	Population
dental care workforce/access to dental care	(2) Number of all clinics billing for fluoride varnish	Medicaid	annually	annually	n/a	Population

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COHSS Indicators:

Dental Care Workforce/Access to Dental Care

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Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse /age category
dental care workforce/access to dental care	(1b) Number of community-based low-income dental clinics	OHU	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of tribal, state, or local agencies with service populations of 250,000 or more	OHU	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of tribal, state, or local agencies with service populations of 250,000 or more that have a dental program	OHU	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of local health departments that had a dental program for education services only	OHU	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of local health departments that had a dental program for preventive services only	OHU	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of local health departments that had a dental program for preventive and restorative services	OHU	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of mobile dental clinic programs that had a program for education services only	OHU	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of mobile dental clinic programs that had a program for preventive services only	OHU	annually	annually	n/a	Population
dental care workforce/access to dental care	(1b) Number of mobile dental clinic programs that had a program for preventive and restorative services	OHU	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Number of counties with current year dental loan repayment recipient	Dental Loan Repayment Program	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Number of counties with dental loan repayment recipient since 2002	Dental Loan Repayment Program	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Number of Medicaid patients served by dental loan repayment recipients in current year	Dental Loan Repayment Program	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Number of CHP patients served by dental loan repayment recipients in current year	Dental Loan Repayment Program	annually	annually	n/a	Population
dental care workforce/access to dental care	(2) Number of uninsured patients served by dental loan repayment recipients in current year	Dental Loan Repayment Program	annually	annually	n/a	Population

COHSS Indicators:

Access to Dental Care

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Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse /age category
access to dental care	(2) Percent of children enrolled in Head Start who had an ongoing source of continuous, accessible dental care (dental home) in the past 12 months	Head Start	annually	annually	r/e, language	Early childhood
access to dental care	(2) Percent of children aged 1-14 years who have a regular source of dental care	CHS	annually 2006-2010	annually	age, r/e, poverty, type of health insurance, urban/rural, needed but did not get dental care, main problem with teeth, condition of teeth, age first went to dentist	Early childhood, children 1-14 years
access to dental care	(3) Percent of adults aged 18+ years with dental care insurance	BRFSS	2006 state-added Q (bad skip pattern), 2010A state added Q	2014 (every 4 years)	age, r/e, poverty (<250% FPL, 250%+ FPL), urban/rural, diabetes	Adult, older adult

r/e = race/ethnicity; FPL = federal poverty level

COHSS Indicators:

Dental Care Needs/Dental Care Utilization

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Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse /age category
dental care needs	(2) Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, and examined in the past 12 months who need dental treatment	Head Start	annually	annually	r/e, language	Early childhood
dental care needs	(3) Percent of kindergarten children with urgent need for dental care	BSS	2006/2007 and 2010/2011	every 3-4 years	age, r/e, school %FRL, county, BMI	Early childhood
dental care needs	(2) Percent of children aged 1-14 years who needed but did not get dental care in past 12 months	CHS	Collected annually 2004-2010	annually	age, r/e, poverty, regular source of dental care, type of health insurance, urban/rural, condition of teeth, main problem with teeth, age first went to dentist	Early childhood, children 1-14 years
dental care needs	(3) Percent of 3rd grade children with urgent need for dental care	BSS	2003/2004, 2006/2007, 2010/2011	every 3-4 years	age, r/e, school %FRL, county, BMI	Children in 3rd grade
dental care needs	(3) Percent of women who gave birth who needed to see a dentist for a problem during pregnancy	PRAMS	2000-2010	annually	age, r/e, education, type of health insurance, county	Pregnant women
dental care needs/dental care utilization	(2) Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, and examined and in need dental treatment who have received or are receiving treatment	Head Start	annually	annually	r/e, language	Early childhood
dental care needs/dental care utilization	(3) Percent of women who gave birth who needed to see a dentist for a problem during pregnancy who went to a dentist during pregnancy	PRAMS	2000-2010	annually	age, r/e, education, type of health insurance, county, preterm/low birth weight	Pregnant women

r/e = race/ethnicity; FRL = free or reduced lunch; BMI = body mass index

COHSS Indicators: Dental Care Utilization

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Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse /age category
dental care utilization	(2) Number of children enrolled in Early Head Start and Migrant Programs who received professional dental examination(s) in the past 12 months	Head Start	annually	annually	r/e, language	Early childhood
dental care utilization	(2) Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, who have completed a professional dental examination in the past 12 months	Head Start	annually	annually	r/e, language	Early childhood
dental care utilization	(2) Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, and examined in the past 12 months who have received preventive dental care	Head Start	annually	annually	r/e, language	Early childhood
dental care utilization	(2) Percent of children aged 1-5 years who first went to the dentist before age 1 years	CHS	Collected annually 2006-2010	annually	age, r/e, poverty, regular source of dental care, type of health insurance, urban/rural, needed but did not get dental care, main problem with teeth, condition of teeth	Early childhood, children 1-14 years
dental care utilization	(2) Percent of children aged 2-6 years who first went to the dentist before age 2 years	CHS	Collected annually 2006-2010	annually	age, r/e, poverty, regular source of dental care, type of health insurance, urban/rural, needed but did not get dental care, main problem with teeth, condition of teeth	Early childhood, children 1-14 years
dental care utilization	(1) Percent of children aged 1-14 years who saw a dentist for preventive care at least once in the past 12 months	CHS	2010	annually	age, r/e, poverty, type of health insurance, urban/rural, regular source of dental care	Early childhood, children 1-14 years
dental care utilization	(2) Percent of children age 18 or younger on Medicaid who received dental services in the past year	Medicaid	annually	annually	age	Children 0-18 years
dental care utilization	(1) Percent of children age 18 or younger on Medicaid who had a preventive dental visit in the past year	Medicaid	annually	annually	age	Children 0-18 years
dental care utilization	(2) Percent of children age 18 or younger on Medicaid who received a dental treatment service in the past year	Medicaid	annually	annually	age	Children 0-18 years

r/e = race/ethnicity

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COHSS Indicators: Dental Care Utilization

Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse /age category
dental care utilization	(2) Number of children enrolled in Medicaid receiving fluoride varnish	Medicaid	annually	annually	age, county	Children 0-18 years
dental care utilization	(1) Percent of women who gave birth who last had teeth cleaned within the past year	PRAMS	2000-2003, 2009-2010	annually	age, r/e, education, type of health insurance, county	Pregnant women
dental care utilization	(3) Percent of women who gave birth who last had teeth cleaned within the past 2 years	PRAMS	2000-2003, 2009-2010	annually	age, r/e, education, type of health insurance, county	Pregnant women
dental care utilization	(3) Percent of women who gave birth who went to a dentist during pregnancy	PRAMS	2000-2010	annually	age, r/e, education, type of health insurance, county	Pregnant women
dental care utilization	(3) Percent of women who gave birth who last had teeth cleaned during or after pregnancy	PRAMS	2004-2010	annually	age, r/e, education, type of health insurance, county	Pregnant women
dental care utilization	(2) Percent of pregnant women served by Early Head Start who received dental examinations and/or treatment in the past 12 months	Head Start	annually	annually	r/e, language	Pregnant women
dental care utilization	(3) Percent of adults aged 18+ years who never visited the dentist for any reason	BRFSS	Even years 2002-2010	even years	age, r/e, poverty (<250% FPL, 250%+ FPL), urban/rural, diabetes, dental insurance	Adult, older adult
dental care utilization	(3) Percent of adults aged 18+ years who visited the dentist for any reason more than 5 years ago	BRFSS	Even years 2002-2010	even years	age, r/e, poverty (<250% FPL, 250%+ FPL), urban/rural, diabetes, dental insurance	Adult, older adult
dental care utilization	(1) Percent of adults aged 18+ years who visited the dentist for any reason in the past year	BRFSS	Even years 2002-2010	even years	age, r/e, poverty (<250% FPL, 250%+ FPL), urban/rural, diabetes, dental insurance	Adult, older adult

r/e = race/ethnicity; FPL = federal poverty level

COHSS Indicators:

Oral Health Promotion,

Support of Dental Care Services in Schools

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Category	(Priority level) Indicator	Data source	Years of data available	Future years of data	Crosstabs	Lifecourse /age category
oral health promotion	(2) Number of children enrolled in Early Head Start and Migrant Programs who received dental screening as part of the series of well-baby examinations	Head Start	annually	annually	r/e, language	Early childhood
oral health promotion	(2) Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider told them how to prevent cavities	CHS	2010	annually	age, r/e, poverty, type of health insurance, urban/rural, regular source of dental care	Early childhood, children 1-14 years
oral health promotion	(2) Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider applied fluoride to child's teeth	CHS	2010	annually	age, r/e, poverty, type of health insurance, urban/rural, regular source of dental care	Early childhood, children 1-14 years
oral health promotion	(2) Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider helped identify strategy to improve child's teeth	CHS	2010	annually	age, r/e, poverty, type of health insurance, urban/rural, regular source of dental care	Early childhood, children 1-14 years
oral health promotion	(2) Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider referred child to dentist	CHS	2010	annually	age, r/e, poverty, type of health insurance, urban/rural, regular source of dental care	Early childhood, children 1-14 years
oral health promotion	(3) Percent of women who gave birth who had dental or other health care worker talk with them about how to care for teeth and gums during pregnancy	PRAMS	2000-2010	annually	age, r/e, education, type of health insurance, county	Pregnant women
oral health promotion	(2) Percent of adults aged 18+ years who had their doctor or dentist check for oral cancer in past year	BRFSS	2004 state added Q	Every 6 years (2012)	age, r/e, poverty (<250%, 250%+), urban/rural, diabetes, dental insurance	Adult, older adult
support of dental care services in schools	(3) Percent of adults aged 18+ years who have children aged 1-14 years and support schools providing oral health or dental care education	CHS	Collected 2004, 2005, 2010	?	age, r/e, income, health insurance, geography	Early childhood, children 1-14 years
support of dental care services in schools	(3) Percent of adults aged 18+ years who have children aged 1-14 years and support schools providing oral health or dental care services	CHS	Collected 2007-2009	?	age, r/e, income, health insurance, geography	Early childhood, children 1-14 years

r/e = race/ethnicity

COHSS Indicators: Population Description

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Category	Indicator	Data source	Crosstabs
Population	Total population (number)	Census	sex, r/e, county, language
Population	Percent of population by sex	Census	r/e, county, language
Population	Percent of population by r/e	Census	r/e, county, language
Population	Percent of population by county	Census	r/e, county, language
Population	Population aged 0-4 years	Census	r/e, county, language
Population	Percent of population aged 0-4 years	Census	r/e, county, language
Population	Population aged 5-17 years	Census	r/e, county, language
Population	Percent of population aged 5-17 years	Census	r/e, county, language
Population	Population aged 18-24 years	Census	r/e, county, language
Population	Percent of population aged 18-24 years	Census	r/e, county, language
Population	Population aged 25-44 years	Census	r/e, county, language
Population	Percent of population aged 25-44 years	Census	r/e, county, language
Population	Population aged 45-64 years	Census	r/e, county, language
Population	Percent of population aged 45-64 years	Census	r/e, county, language
Population	Population aged 65+ years	Census	r/e, county, language
Population	Percent of population aged 65+ years	Census	r/e, county, language
Population	Population childbearing age females (aged 15-44 years)	Census	r/e, county, language
Population	Percent of population childbearing age females (aged 15-44 years)	Census	r/e, county, language
Population	Population change over time	Census	r/e, county, language
Income	School enrollment - number of children (public and private) enrolled in schools	CO Dept of Education	age, grade [K-12, preK, K, 2nd, 3rd]
Income	School enrollment - percent of children (public and private) enrolled in schools	CO Dept of Education	age, grade [K-12, preK, K, 2nd, 3rd]
Income	Number of children enrolled in licensed day care facility	CO Dept of Human Services, Division of Child Care	n/a
Income	Median household income (\$)	Census - ACS	r/e, county, language
Income	Percent federal poverty level (categorized)	Census - ACS	r/e, county, language
Income	Percent of households headed by a single adult	Census - ACS	r/e, county, language
Income	Percent of children <5 years old below federal poverty level	Census - ACS	r/e, county, language
Income	Percent of children 5-17 years old below federal poverty level	Census - ACS	r/e, county, language
Income	Percent of children <18 years old below federal poverty level	Census - ACS	r/e, county, language
Income	Number of children aged <18 years in families earning <125% FPL	Census - ACS	n/a
Income	Percent of children aged <18 years in families earning <125% FPL	Census - ACS	n/a
Income	Number of children under 19 at or below 200% FPL	Census - ACS	n/a
Income	Percent of children aged <19 years at or below 200% FPL	Census - ACS	n/a

r/e = race/ethnicity

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COHSS Indicators: Population Description

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Category	Indicator	Data source	Crosstabs
Income	Number of children aged <19 years at or below 200% FPL without insurance	Census - ACS	n/a
Income	Percent of children aged <19 years at or below 200% FPL without insurance	Census - ACS	n/a
Income	Number of children eligible for SCHIP	Medicaid	n/a
Income	*Number of children enrolled in Title XXI SCHIP for at least 29 days	Medicaid	n/a
Income	Number of children eligible but not enrolled in SCHIP (CHP+)	Census - ACS	n/a
Income	*Percent of children eligible but not enrolled in SCHIP (CHP+)	Census - ACS	n/a
Income	Number of children eligible for Medicaid	Medicaid	n/a
Income	Number of children enrolled in Title XIX Medicaid for at least 29 days	Medicaid	n/a
Income	Number of children eligible but not enrolled in Medicaid	Census - ACS	n/a
Income	Percent of children eligible but not enrolled in Medicaid	Census - ACS	n/a
Income	Number of working-age adults (19-64 years) eligible but not enrolled in Medicaid	Census - ACS	n/a
Income	Percent of working-age adults (19-64 years) eligible but not enrolled in Medicaid	Census - ACS	n/a
Income	Number uninsured	Census - ACS	age
Income	Percent uninsured	Census - ACS	age
Income	Percent of households with children aged <18 years on food stamps	Census - ACS	r/e, county, language
Income	Percent of households with adults aged 60+ years on food stamps	Census - ACS	r/e, county, language
Income	Receipt of food stamps in the past 12 months by poverty status in past 12 months for households	Census - ACS	r/e, county, language
Income	Percent eligible for free and reduced-cost school lunch (K-12)	Census - ACS	r/e, county, language
Income	Percent of children on free/reduced-cost school lunch program (K-12)	Census - ACS	n/a
Income	Number of children on free school lunch program (K-12)	Census - ACS	n/a
Income	Number of children on reduced school lunch program (K-12)	Census - ACS	n/a
Income	Number of children on paid school lunch program (K-12)	Census - ACS	n/a
Income	Number of children who received school lunch program (K-12)	Census - ACS	n/a
Income	Number of children enrolled in either home-based or site-based federally funded Head Start program	Census - ACS	n/a
Income	Number of home-based or site-based federally funded Head Start program facilities	Head Start	n/a
Employment	Unemployment rates	CO Bureau of Labor Statistics	age, r/e
Employment	Percent of firms owned by minorities	CO Bureau of Labor Statistics/Dept of Local Affairs	age, r/e
Employment	Percent of firms owned by women	CO Bureau of Labor Statistics/Dept of Local Affairs	age, r/e

* Priority tier 1b indicator; r/e = race/ethnicity

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COHSS Indicators: Population Description

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Category	Indicator	Data source	Crosstabs
Education	Educational attainment of adults => 25 years old	Census - ACS	r/e, county, language
Education	High school dropout rates	Colorado Department of Education	r/e, county, language
Education	High school completion rates	Colorado Department of Education	r/e, county, language
Education	Percentage of 3rd grade students proficient in reading	Colorado Department of Education	r/e, county, language
Education	Percentage of 3rd grade students proficient in math	Colorado Department of Education	r/e, county, language
Education	Percentage of 10th grade students proficient in reading	Colorado Department of Education	r/e, county, language
Education	Percentage of 10th grade students proficient in math	Colorado Department of Education	r/e, county, language
Housing	Gross rent as a percentage of household income in the past 12 months	Census - ACS	r/e, county, language
Housing	Mortgage status by selected monthly owner costs as a percentage of household income in the past 12 months	Census - ACS	r/e, county, language
Housing	Tenure (including owner-occupied and renter occupied)	Census - ACS	r/e, county, language
Housing	Median home value	Census - ACS	r/e, county, language
Housing	Number of families with only female parent in residence and children aged <18 years	Census - ACS	r/e, county, language
Housing	Group living quarters by type (nursing homes, jails, prisons, dormitories, etc.)	?	r/e, county, language
Linguistic isolation	Number of households in which no member 14 years and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well"	Census - ACS	county
Linguistic isolation	Percent of households in which no member 14 years and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well"	Census - ACS	county
Safety	Adult violent crime arrest rates	CO Bureau of Investigations	county
Safety	Juvenile violent crime arrest rates	CO Bureau of Investigations	n/a
Safety	Adult property crime arrest rates	CO Bureau of Investigations	n/a
Safety	Juvenile property crime arrest rates	CO Bureau of Investigations	n/a
Safety	Percent of parents who feel child is usually or always safe in community/neighborhood	CHS	n/a
Safety	Number of liquor stores per 10,000 people in a county (NAICS code: 445310)	US Census - Business Patterns Data	n/a

r/e = race/ethnicity

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Category	Indicator	Data source	Crosstabs
Environment	Number of homes tested for radon	CDPHE - Hazardous Material and Waste Management Division	county
Environment	Of homes tested, the percent with radon above 4 piC/L	CDPHE - Hazardous Material and Waste Management Division	county
Environment	Number and percent of houses built before 1950	US Census	county
Environment	Average annual concentration of Arsenic, Nitrates, Disinfection Byproducts (HAA5 and TTHM), Radium 226&228, Uranium, Atrazine, DEHP by number and percent of community water systems	CDPHE - Water Quality Control Division	county
Environment	Rates of potential populations exposed to regulated drinking water contaminant	CDPHE - Water Quality Control Division	county
Environment	Number of fish advisories posted for mercury	CDPHE - Water Quality Control Division	county
Environment	Average annual PM 2.5 concentration	CDPHE - Air Pollution Control Division	county
Environment	Number of days with above standard PM 2.5 concentration	CDPHE - Air Pollution Control Division	county
Environment	Percent of days with above standard PM 2.5 concentration	CDPHE - Air Pollution Control Division	county
Environment	Number of ozone days above standard	CDPHE - Air Pollution Control Division	county
Environment	Number of ozone person days above standard	CDPHE - Air Pollution Control Division	county
Social	Social support in the neighborhood	National Survey of Child Health	county
Social	Percent of adults 18+ who volunteered in the past 12 months more than 40 hours	BRFSS	county
Social	Percent of youth and adult users of public library in past 12 months	CO State Library Association	6 Colorado Cities
Social	Number of religious organizations per county population	Association of Religion Data Archives	county
Social	Number of non-profits/5013c per county population	IRS, CO Association of Non-Profit Organizations	county
Social	Percent of females in county government offices	CO Department of Local Affairs	county
Social	Percent of ethnic minorities in county government offices	CO Department of Local Affairs	county
Social	Percent of racial minorities in county government offices	CO Department of Local Affairs	county
Social	Percent of registered voters in previous election cycle	Secretary of State, Department of Regulatory Agencies	county
Social	Percent of active registered voters in previous election cycle (registered voters who voted)	Secretary of State, Department of Regulatory Agencies	county
Social	Per capita spending on public health in Colorado	US Census	county
Social	Percent of population with internet access at home	CDPHE - Emergency Preparedness	county

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COHSS Indicators:

Other Indicators and Data Gaps

OTHER INDICATORS

COHSS is part of a larger, integrated chronic disease surveillance system. As such, data on numerous other chronic diseases and risk factors are available. These indicators will be added to COHSS in 2011 and include:

- 1) cigarette smoking, cigar smoking, spit tobacco use, alcohol consumption, and sugary beverage and snack consumption among youth and adults
- 2) general health status among adults
- 3) adult prevalence of diabetes, heart attack, coronary heart disease, stroke, and cancer survivorship (which can all be analyzed by other oral health indicators in BRFSS, including lost teeth, dental insurance, dental visits, and, in the future, periodontal disease)

The data sources for these indicators listed above are BRFSS, TABS, and YRBS.

DATA GAPS

The following data gaps have already been identified. Future work with the newly formed Oral Health Surveillance Advisory Committee and the process of evaluating COHSS will help to determine additional data gaps and prioritize them.

- 1) Percent of persons aged 1+ years who have public or private dental coverage
- 2) Percent of families/households who have dental coverage for every member
- 3) Percent of persons aged 1+ years who visited the dentist at least once in past year
- 4) Average number of dental visits in past year for persons with a visit for dental care
- 5) Percent of persons aged 1+ years who had an expenditure for dental care in past year
- 6) Average total mean expense in past year for persons with visit for dental care
- 7) Average percent of dental expense paid out of pocket for persons with visit for dental care
- 8) Average out-of-pocket dental expense per person with visit for dental care
- 9) Percent of persons aged 1+ years with visit for dental care who paid \$200+ out-of-pocket expense for dental care
- 10) Percent of persons aged 1+ years with a procedure who had a preventive procedure
- 11) Percent of persons aged 1+ years with a procedure who had a periodontic procedure
- 12) Percent of persons aged 1+ years with visit for dental care who visited a general dentist
- 13) Percent of persons aged 1+ years who had at least one dental emergency department visit
- 14) Prevalence of periodontal disease by age
- 15) Screenings for oral cancer, hypertension, and blood glucose level during dental visits

List of Target Populations with Key Data Sources

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Target population	Key data sources
Colorado residents of all ages	CCCR, MEPS, WFRS
Colorado children and adolescents	BSS, CHS, CRCSN, Head Start, TABS, Medicaid, YRBS
Colorado adults and seniors	BRFSS, TABS
Colorado low income populations	Head Start, Medicaid/SCHIP
Colorado pregnant women	PRAMS
Colorado residents of rural and frontier counties	BRFSS, dental workforce, WFRS

[Acronyms List](#)

Data Analysis Plan

The objectives of the analysis of the surveillance indicator data are to monitor oral diseases and risk factors, monitor oral diseases and risk factors by demographic groups, identify emerging oral health issues, and detect changes in oral health-related practices and access to services. The indicator data will be used to determine oral health disparities or inequities for selected populations. Estimates for many of the indicators will be compared with other states' estimates and national estimates, and Colorado estimates will be used to track progress toward Healthy People 2020 objectives.

The COHSS indicators represent oral diseases, conditions, and risk factors as well as dental care access and utilization across the lifespan: pregnancy, early childhood, adolescence, adulthood, and older adulthood. COHSS supports Colorado's reporting requirements for national surveillance and performance measures, including NOHSS, ASTDD state synopsis, WFRS, and MCH needs assessment.

An updated estimate and 95% confidence interval, if appropriate, will be calculated or collected from the primary source for each indicator in COHSS as new data become available. See [Figure 2](#) for a chart of the data sources with primary source (agency responsible for data collection/management and analysis) and estimated availability. Trend graphs will be created and updated when possible.

The metadata for the indicators (pages [14-31](#)) includes a list of the desired crosstabulations for each indicator. Priority crosstabulations to be analyzed routinely include those for the purpose of determining disparities by age, race/ethnicity, and socioeconomic status. Maps will also be created for each indicator, as possible, to help display geographic disparities. A schedule for the analysis of other desired crosstabulations is still to be determined.

The overall estimates, estimates by important crosstabulations, trends, maps, and data interpretation will be summarized in a one-page information sheet for selected indicators. Work on these information sheets will begin in late 2011. Development will involve considerable effort, but once developed, updating these sheets will involve minimal effort.

Results of the data collection and analyses will be used to develop meaningful information (data interpretation) to inform and support stakeholders and to plan, implement, and evaluate oral health programs.

Data Dissemination Plan

A detailed dissemination plan will be developed with input from the newly formed Oral Health Surveillance Advisory Committee as part of the surveillance activities (2011–2015). In gathering input and guidance from the advisory committee, the plan will be created by people who will use the data. The plan will include any or all of the methods of dissemination listed below.

The data dissemination plan might include:

- Fact sheets
- Press releases
- Grant applications
- Media documents
- Policy documents
- Burden documents
- Published papers
- Presentations at local or national conferences
- Presentations at meetings (e.g., OHAC! meetings)
- Website
- Newsletters

Technical assistance from CDPHE Oral Health Unit staff and epidemiologists will be included as part of data dissemination to ensure that data are useful, simple to understand, and appropriately interpreted.

A comprehensive oral health burden report will be completed by July 31, 2011.

Surveillance Activities (2011-2015)

1. Define primary users of the surveillance data within the larger list of stakeholders.
2. Create an Oral Health Surveillance Advisory Committee to guide surveillance system revisions (especially the dissemination plan) and to promote use of the surveillance system by communities.
3. Finalize the oral health indicator metadata.
4. Develop a data management system for all oral health and other chronic disease indicators.
5. Determine ways to integrate oral health and other chronic disease surveillance.
6. Finalize the data analysis and data dissemination plans.
 - Analyze data related to evidence-based strategies/interventions.
 - Plan to analyze and address health disparities.
 - Link existing data sources (e.g., BRFSS and CHS) for new data analyses.
7. Determine gaps in data and plan to fill those gaps.
8. Evaluate the Colorado Oral Health Surveillance System, focusing on usefulness (if and how it is used by stakeholders and communities; if it meets the needs of the stakeholders and communities), timeliness, data quality, and data gaps. Address other attributes — simplicity, flexibility, acceptability, representativeness, stability, sensitivity, and predictive value positive — as appropriate. Use CDC's published guidelines as an outline. Answer the following questions:
 - What are the successes and deficiencies of the surveillance system?
 - Is the surveillance system meeting its public health objectives?
 - How does the surveillance both support and benefit stakeholders?
 - What measures could improve performance and productivity of the surveillance system and the programs that it supports?
9. Revise the surveillance plan, as needed.
10. Develop a strategy to sustain the surveillance system.
11. Support data collection efforts about specific prevention and intervention programs designed to reduce the burden of oral diseases.
12. Provide stakeholders with technical assistance to use data-driven decision making for program planning.
13. Provide local health agencies with technical assistance related to their community health assessments required as part of Colorado's Public Health Improvement Plan. The focus of this technical assistance will be the oral health data indicators (and other indicators of the integrated chronic disease surveillance system).

Descriptions of Data Sources

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American Community Survey (ACS) – An ongoing survey by the U.S. Census Bureau that provides data every year -- giving communities the current information they need to plan investments and services. Information from the survey generates data that help determine how federal and state funds are distributed each year. The survey asks about age, sex, race, family and relationships, income and benefits, health insurance, education, veteran status, disabilities, where you work and how you get there, and where you live and how much you pay for some essentials. For more information, visit <http://www.census.gov/acs>.

Basic Screening Survey (BSS) – A standardized set of surveys designed to collect information about the observed oral health of participants; self-reported or observed information on age, gender, race and Hispanic ethnicity; and self-reported information on access to care for preschool, school-age and adult populations. In the observed oral health survey, gross dental or oral lesions are recorded by dentists, dental hygienists, or other appropriate health-care workers in accordance with state law. The examiner records presence of untreated cavities and urgency of need for treatment for all age groups. In addition, for preschool and school-age children, caries experience (treated and untreated decay) also is recorded. School-age children also are examined for presence of sealants on permanent molars. <http://www.astdd.org/basic-screening-survey-tool/>

Behavioral Risk Factor Surveillance System (BRFSS) – The Behavioral Risk Factor Surveillance System (BRFSS) is sponsored by the Centers for Disease Control and Prevention and is the world's largest, ongoing telephone health survey system of adults 18 years of age and older. Beginning in 1984, the BRFSS purpose is to collect data on health risk behaviors, preventive health practices and health outcomes primarily related to chronic disease and injury. Using random-digit-dialing, BRFSS surveyors collect data from each state and the District of Columbia, Puerto Rico, the United States Virgin Islands and Guam. BRFSS data are used to track changes in trends, develop and evaluate prevention programs and prioritize resources. For more information on BRFSS, visit www.cdc.gov/brfss/.

Child Health Survey (CHS) – The Colorado Child Health Survey (CHS) was initiated in 2004 to fill the health data gap in Colorado that exists for children ages 1–14. The purpose of this study is to monitor health conditions and behaviors among children. Topics include, but are not limited to, access to health and dental care, behavioral health, and oral health. Parents are identified after completing the Behavioral Risk Factor Surveillance System and, if willing to participate, they are called approximately 10 days later to complete the CHS. Approximately 1,000 surveys are completed each year. For more information on CHS, visit www.cdphe.state.co.us/hs/yrbs/childhealth.html.

Colorado Central Cancer Registry (CCCR) – The Colorado Central Cancer Registry is the statewide cancer surveillance program of the Colorado Department of Public Health and Environment. The program's goal is to reduce death and illness due to cancer by informing citizens and health professionals through statistics and reports on incidence, treatment and survival, and deaths due to cancer. The Registry is mandated by Colorado law and a regulation passed by the Colorado Board of Health. Information is collected from all Colorado hospitals, pathology labs, outpatient clinics, physicians solely responsible for diagnosis and treatment, and state Vital Statistics. Pertinent data is registered on all malignant tumors, except basal and squamous cell carcinomas of the skin. All individual patient, physician, and hospital information is confidential as required by Colorado law.

Colorado Responds to Children with Special Needs (CRCNS) – CRCNS is a statewide public health program for monitoring and preventing birth defects and developmental disabilities. Information on birth defects in Colorado has been collected since 1989.

Head Start Program Information Report (PIR) – The PIR is an annual data report sent to the federal level (U.S. Department of Health and Human Services) from all local Head Start programs. This report contains a health component. Programs submit data in July and states receive data back in December.

Descriptions of Data Sources

Medicaid data – Medicaid is a state-administered program intended to provide health care and health-related services to low-income or disabled individuals. CDPHE has an annual memorandum of understanding with Colorado Department of Health Care Policy and Financing and receives data specified in the memorandum annually.

Medical Expenditures Panel Survey (MEPS) – MEPS, which began in 1996, is a set of large-scale surveys of families and individuals, their medical providers (doctors, hospitals, pharmacies, etc.), and employers across the United States. MEPS collects data on the specific health services that Americans use, how frequently they use them, the cost of these services, and how they are paid for, as well as data on the cost, scope, and breadth of health insurance held by and available to U.S. workers. There are two components to MEPS, the household component and the insurance component.

Pregnancy Risk Assessment Monitoring System (PRAMS) – The Pregnancy Risk Assessment Monitoring System (PRAMS) is a surveillance project of the Centers for Disease Control and Prevention. The goal of the PRAMS is to improve the health of mothers and infants by reducing adverse outcomes such as low birth weight, infant mortality and morbidity, and maternal morbidity. PRAMS provides state-specific data for planning and assessing health programs and for describing maternal experiences that might contribute to maternal and infant health. State-specific, population-based data are collected by mail regarding maternal attitudes and behaviors before, during and shortly after pregnancy. Women are sampled using data from each state's birth certificate file. For more information on PRAMS, visit www.cdc.gov/PRAMS/index.htm.

Sealant Efficiency Assessment for Locals and States (SEALS) – SEALS software helps states and communities evaluate the effectiveness and efficiency of their school dental sealant programs. The Excel-based software automates the capture, storage, and analysis of data on the oral health status of participating children; the types and numbers of services delivered at school events, and the costs and logistics of events, e.g., personnel, equipment, materials, and travel.

Tobacco Attitudes and Behaviors Survey (TABS) – TABS is a survey that assesses the attitudes, behaviors, and beliefs of adults related to tobacco initiation, cessation, and secondhand smoke exposure. A similar survey is administered to adolescents. Both TABS surveys are coordinated by Colorado's Amendment 35 Program Evaluation Group.

U. S. Census – The U.S. Census is the leading source of quality data about the nation's people and economy. A federal agency under the U.S. Department of Commerce, the U.S. Census Bureau conducts the decennial census of the United States.

Vital Records – A division within the Colorado Department of Public Health and Environment that provides registration and certification of the vital events that occur in Colorado. These events include births, deaths, and fetal deaths. The division also provides statistical information on a wide range of categories relating to these events.

Water Fluoridation Reporting System (WFRS) – WFRS provides state oral health program staff a tool for monitoring the quality of the water fluoridation program in their state. Data is used by state oral health program staff to recognize excellent work in water fluoridation and to identify opportunities for continuous improvement in the water fluoridation program.

Youth Risk Behavior Surveillance System (YRBS) – The Youth Risk Behavior Surveillance System (YRBSS) is a national school-based survey supported by the Centers for Disease Control and Prevention. The goal of the YRBSS is to monitor priority health-risk behaviors and health outcomes that contribute to death, disability and social problems among high school-aged adolescents. Started in 1991, the YRBSS is conducted every two years in select public and private schools across the United States. For more information on the YRBSS, visit www.cdc.gov/HealthyYouth/yrbs/index.htm.

Glossary of Terms

Association of State and Territorial Dental Directors (ASTDD) – The ASTDD membership consists of the chief dental public health officers (state dental directors) of the state health departments or equivalent agencies and the U. S. territories.

ASTDD Synopses – In 1994, the Association of State and Territorial Dental Directors (ASTDD) originated the annual *Synopses of Dental Programs* as a way to share information among dental directors and partners. The *Synopses* describe program activities and successes and the challenges that programs faced during the previous year. States and territories respond to an annual questionnaire to provide data for the *Synopses*.

Caries – Tooth decay or "cavities"

Fluoride – A mineral that helps strengthen tooth enamel making teeth less susceptible to decay. Fluoride is ingested through food or water, is available in most toothpaste, or can be applied as a gel or liquid to the surface of teeth by a health professional.

Health Insurance Portability and Accountability Act (HIPAA) – A federal law passed in 1996 to promote standardization and efficiency in the health-care industry and to enforce privacy and security of protected health information.

Healthy People 2020 – Healthy People 2020 provides a framework for prevention for the nation. It is a statement of national health objectives designed to identify the most significant preventable threats to health and to establish national goals to reduce these threats.

Hygienist – A licensed, auxiliary dental professional who is both an oral health educator and clinician who uses preventive, therapeutic and educational methods to control oral disease

Maternal and Child Health (MCH) – A term that encompasses the broad range of health issues affecting women during pregnancy and infants and children.

Metadata – Information about the data; metadata describes various attributes of the data and is used to facilitate the understanding, use, and management of data. Also referred to as a "data dictionary."

Protected Health Information (PHI) – Protected health information (PHI) under HIPAA includes any individually identifiable health information. Identifiable refers not only to data that is explicitly linked to a particular individual, but also to health information with data items that reasonably could be expected to allow individual identification.

Sealants – A thin resin that is applied to the biting surfaces of teeth to prevent decay

95% confidence interval – refers to the range of values within which the true estimate lies with a specified degree (95%) of assurance; this range is influenced by the size of the sample.

Appendix 1

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LIST OF COHSS INDICATORS BY CATEGORY

List of COHSS Indicators by Category

41

ORAL HEALTH STATUS

- Percent of children aged 1-14 years with fair or poor condition of teeth
- Percent of adults aged 18+ years who lost any teeth due to decay or periodontal disease
- Percent of adults aged 18+ years who lost 6+ teeth due to decay or periodontal disease
- Percent of adults aged 18+ years who lost all teeth due to decay or periodontal disease
- Percent of kindergarten children with caries experience (untreated decay + fillings)
- Percent of kindergarten children with untreated caries
- Percent of 3rd grade children with Caries experience (untreated decay + fillings)
- Percent of 3rd grade children with untreated caries
- Percent of 3rd grade children with two or more quadrants with untreated decay
- Percent of children aged 1-14 years with pain, cavities, broken or missing fillings, teeth pulled because of cavities, or bleeding gums as main problem with teeth
- Number of diagnosed oral cavity and pharynx cancers among persons of all ages
- Age-adjusted incidence rate of oral cavity and pharynx cancer among persons of all ages
- Percent of diagnosed, staged oral cavity and pharynx cancers with detection at in-situ or localized stage
- 5-year relative survival rate by stage for oral cavity and pharynx cancer among persons of all ages
- Number of deaths of oral cavity and pharynx cancer among persons of all ages
- Age-adjusted mortality rate of oral cavity and pharynx cancer among persons of all ages
- Count of cleft lip with or without cleft palate
- Rate of cleft lip with or without cleft palate (per 10,000 live births)
- Count of cleft palate without cleft lip
- Rate of cleft palate without cleft lip (per 10,000 live births)

RISK REDUCTION

- Population served by public water systems
- Population served by fluoridated water system
- Percent of population served by public water systems that have optimally fluoridated water
- Percent of public water systems in compliance with water fluoridation standards
- Percent of adults aged 18+ years with public water as main source of home water supply
- Percent of adults aged 18+ years with well water as main source of home water supply
- Percent of adults aged 18+ years with bottled water as main source of home water supply
- Number of schools eligible for sealant program
- Number of schools served by sealant program
- Percent of eligible schools served by sealant program
- Number of students eligible for sealant program
- Number of students served by sealant program
- Percent of eligible students served by sealant program
- Percent of 3rd grade children with one or more sealants on a permanent first molar

List of COHSS Indicators by Category

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DENTAL CARE WORKFORCE/ACCESS TO DENTAL CARE

- Number of dentists with a current, active license
- Number of dentists in state with a current, active license
- Number of dental hygienists with a current, active license
- Number of dental hygienists in state with a current, active license
- Number of counties without a dentist
- Total county population without a dentist
- Number of dental healthcare professional shortage areas (HPSA)
- Number of county dental healthcare professional shortage areas (HPSA)
- Number of facility dental healthcare professional shortage areas (HPSA)
- Number of other (non-county, non-facility) dental healthcare professional shortage areas (HPSA)
- Number of dentists actively enrolled as Medicaid providers
- Percent of dentists enrolled in Medicaid
- Number of active, Medicaid-enrolled dentists with at least one paid claim
- Number of dentists actively enrolled as Billing Providers with at least one paid claim
- Number of dentists actively enrolled as Rendering Providers with at least one paid claim
- Number of active, Medicaid-enrolled dentists with paid claims greater than \$10,000.00
- Percentage of counties in Colorado with an enrolled dentist (appearing as the billing provider) on paid claims totaling less than or equal to \$10,000.00
- Number of active, Medicaid-enrolled dentists who saw 50 or more beneficiaries age 20 and under as of September 30
- Number of counties without an enrolled billing dentist who saw 50 or more beneficiaries age 20 and under
- Number of active, Medicaid-enrolled dentists who saw 100 or more beneficiaries age 20 and under as of September 30
- Number of counties in Colorado without an actively enrolled Medicaid dental provider
- Total population of counties in Colorado without an actively enrolled Medicaid dental provider
- Number of non-dental providers by county billing for fluoride varnish
- Number of dental providers by county billing for fluoride varnish
- Number of all clinics billing for fluoride varnish
- Number of community-based low-income dental clinics
- Number of tribal, state, or local agencies with service populations of 250,000 or more
- Number of agencies with a dental program
- Number of local health departments that had a dental program for education services only
- Number of local health departments that had a dental program for preventive services only
- Number of local health departments that had a dental program for preventive and restorative services
- Number of mobile dental clinic programs that had a program for education services only
- Number of mobile dental clinic programs that had a program for preventive services only
- Number of mobile dental clinic programs that had a program for preventive and restorative services
- Number of counties with current year dental loan repayment recipient
- Number of counties with dental loan repayment recipient since 2002
- Number of Medicaid patients served by dental loan repayment recipients in current year
- Number of CHP patients served by dental loan repayment recipients in current year
- Number of uninsured patients served by dental loan repayment recipients in current year

List of COHSS Indicators by Category

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DENTAL CARE NEEDS/ACCESS/UTILIZATION

- Percent of children enrolled in Head Start who had an ongoing source of continuous, accessible dental care (dental home) in the past 12 months
- Percent of children aged 1-14 years who have a regular source of dental care
- Percent of adults aged 18+ years with dental care insurance
- Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, and examined in the past 12 months who need dental treatment
- Percent of kindergarten children with urgent need for dental care
- Percent of children aged 1-14 years who needed but did not get dental care in past 12 months
- Percent of 3rd grade children with urgent need for dental care
- Percent of women who gave birth who needed to see a dentist for a problem during pregnancy
- Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, and examined and in need dental treatment who have received or are receiving treatment
- Percent of women who gave birth who needed to see a dentist for a problem during pregnancy who went to a dentist during pregnancy
- Number of children enrolled in Early Head Start and Migrant Programs who received professional dental examination(s) in the past 12 months
- Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, who have completed a professional dental examination in the past 12 months
- Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, and examined in the past 12 months who have received preventive dental care
- Percent of children aged 1-5 years who first went to the dentist before age 1 years
- Percent of children aged 2-6 years who first went to the dentist before age 2 years
- Percent of children aged 1-14 years who saw a dentist for preventive care at least once in the past 12 months
- Percent of children age 18 or younger on Medicaid who received dental services in the past year
- Percent of children age 18 or younger on Medicaid who had a preventive dental visit in the past year
- Percent of children age 18 or younger on Medicaid who received a dental treatment service in the past year
- Number of children enrolled in Medicaid receiving fluoride varnish
- Percent of women who gave birth who last had teeth cleaned within the past 2 years
- Percent of women who gave birth who last had teeth cleaned within the past year
- Percent of women who gave birth who went to a dentist during pregnancy
- Percent of women who gave birth who last had teeth cleaned during or after pregnancy
- Percent of pregnant women served by Early Head Start who received dental examinations and/or treatment in the past 12 months
- Percent of adults aged 18+ years who never visited the dentist for any reason
- Percent of adults aged 18+ years who visited the dentist for any reason more than 5 years ago
- Percent of adults aged 18+ years who visited the dentist for any reason in the past year

List of COHSS Indicators by Category

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ORAL HEALTH PROMOTION

- Number of children enrolled in Early Head Start and Migrant Programs who received dental screening as part of the series of well-baby examinations
- Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider told them how to prevent cavities
- Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider applied fluoride to child's teeth
- Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider helped identify strategy to improve child's teeth
- Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider referred child to dentist
- Percent of women who gave birth who had dental or other HCW talk with them about how to care for teeth and gums during pregnancy
- Percent of adults aged 18+ years who had their doctor or dentist check for oral cancer in past year

SUPPORT OF DENTAL CARE SERVICES IN SCHOOLS

- Percent of adults aged 18+ years who have children aged 1-14 years and support schools providing oral health or dental care education
- Percent of adults aged 18+ years who have children aged 1-14 years and support schools providing oral health or dental care services

List of COHSS Indicators by Category

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POPULATION DESCRIPTION

- Total population (Number)
- Percent of population by sex
- Percent of population by race/ethnicity
- Percent of population by county
- Population aged 0-4 years
- Percent of population aged 0-4 years
- Population aged 5-17 years
- Percent of population aged 5-17 years
- Population aged 18-24 years
- Percent of population aged 18-24 years
- Population aged 25-44 years
- Percent of population aged 25-44 years
- Population aged 45-64 years
- Percent of population aged 45-64 years
- Population aged 65+ years
- Percent of population aged 65+ years
- Population childbearing age females (aged 15-44 years)
- Percent of population childbearing age females (aged 15-44 years)
- Population change over time
- School enrollment - number of children (public and private) enrolled in schools
- School enrollment - percent of children (public and private) enrolled in schools
- Number of children enrolled in licensed day care facility
- Median household income (\$)
- Percent federal poverty level (categorized)
- Percent of households headed by a single adult
- Percent of children <5 years old below federal poverty level
- Percent of children 5-17 years old below federal poverty level
- Percent of children <18 years old below federal poverty level
- Number of children aged <18 years in families earning <125% FPL
- Percent of children aged <18 years in families earning <125% FPL
- Number of children under 19 at or below 200% FPL
- Percent of children aged <19 years at or below 200% FPL
- Number of children aged <19 years at or below 200% FPL without insurance
- Percent of children aged <19 years at or below 200% FPL without insurance
- Number of children eligible for SCHIP
- Number of children enrolled in Title XXI SCHIP for at least 29 days
- Number of children eligible but not enrolled in SCHIP (CHP+)
- Percent of children eligible but not enrolled in SCHIP (CHP+)
- Number of children eligible for Medicaid
- Number of children enrolled in Title XIX Medicaid for at least 29 days
- Number of children eligible but not enrolled in Medicaid
- Percent of children eligible but not enrolled in Medicaid
- Number of working-age adults (19-64 years) eligible but not enrolled in Medicaid
- Percent of working-age adults (19-64 years) eligible but not enrolled in Medicaid
- Number uninsured
- Percent uninsured
- Percent with food stamps households with children <18
- Percent with food stamps households with adults 60+
- Receipt of food stamps in the past 12 months by poverty status in past 12 months for households
- Percent eligible for free and reduced-cost school lunch (K-12)
- Percent of children on free/reduced-cost school lunch program (K-12)
- Number of children on free school lunch program (K-12)
- Number of children on reduced school lunch program (K-12)

List of COHSS Indicators by Category

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POPULATION DESCRIPTION continued

- Number of children on free (paid) school lunch program (K-12)
- Number of children who received school lunch program (K-12)
- Number of children enrolled in either home-based or site-based federally funded Head Start program
- Number of home-based or site-based federally funded Head Start program facilities
- Unemployment rates
- Percent of firms owned by minorities
- Percent of firms owned by women
- Educational attainment of adults => 25 years old
- High school drop out rates
- High school completion rates
- Percentage of 3rd grade students proficient in reading
- Percentage of 3rd grade students proficient in math
- Percentage of 10th grade students proficient in reading
- Percentage of 10th grade students proficient in math
- Gross rent as a percentage of household income in the past 12 months
- Mortgage status by selected monthly owner costs as a percentage of household income in the past 12 months
- Tenure (including owner-occupied and renter occupied)
- Median home value
- Number of families with only female parent in residence and children aged <18 years
- Group living quarters by type (nursing homes, jails, prisons, dormitories, etc.)
- Number of households in which no member 14 years and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well"
- Percent of households in which no member 14 years and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well"
- Adult violent crime arrest rates
- Juvenile violent crime arrest rates
- Adult property crime arrest rates
- Juvenile property crime arrest rates
- Percent of parents who feel child is usually or always safe in community/neighborhood
- Number of liquor stores per 10,000 people in a county (NAICS code: 445310)
- Number of homes tested for radon
- Of homes tested, the percent with radon above 4 pCi/L
- Number and percent of houses built before 1950 (risk for lead-based paint exposure)
- Average annual concentration of Arsenic, Nitrates, Disinfection Byproducts (HAA5 and TTHM), Radium 226&228, Uranium, Atrazine, DEHP by number and percent of community water systems
- Rates of potential populations exposed to regulated drinking water contaminant
- Number of fish advisories posted for mercury
- Average annual PM 2.5 concentration
- Number of days with above standard PM 2.5 concentration
- Percent of days with above standard PM 2.5 concentration
- Number of ozone days above standard
- Number of ozone person days above standard
- Social support in the neighborhood
- Percent of adults 18+ who volunteered in the past 12 months more than 40 hours
- Percent of youth and adult users of public library in past 12 months
- Number of religious organizations per county population
- Number of non-profits/5013c per county population
- Percent of females in county government offices
- Percent of ethnic minorities in county government offices
- Percent of racial minorities in county government offices
- Percent of registered voters in previous election cycle
- Percent of active registered voters in previous election cycle
- Per capita spending on public health
- Percent of population with internet access at home

Appendix 2

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LIST OF COHSS INDICATORS BY AGE GROUP

List of COHSS Indicators by Age Group

Early Childhood

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Category	Indicator
oral health status/dental caries	Percent of kindergarten children with caries experience (untreated decay + fillings)
oral health status/dental caries	Percent of kindergarten children with untreated caries
oral health status/cleft lip and palate	Count of cleft lip with or without cleft palate
oral health status/cleft lip and palate	Rate of cleft lip with or without cleft palate (per 10,000 live births)
oral health status/cleft lip and palate	Count of cleft palate without cleft lip
oral health status/cleft lip and palate	Rate of cleft palate without cleft lip (per 10,000 live births)
access to dental care	Percent of children enrolled in Head Start who had an ongoing source of continuous, accessible dental care (dental home) in the past 12 months
dental care needs	Percent of kindergarten children with urgent need for dental care
dental care needs	Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, and examined in the past 12 months who need dental treatment
dental care needs/dental care utilization	Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, and examined and in need dental treatment who have received or are receiving treatment
dental care utilization	Percent of children aged 1-5 years who first went to the dentist before age 1 years
dental care utilization	Percent of children aged 2-6 years who first went to the dentist before age 2 years
dental care utilization	Number of children enrolled in Early Head Start and Migrant Programs who received professional dental examination(s) in the past 12 months
dental care utilization	Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, who have completed a professional dental examination in the past 12 months
dental care utilization	Percent of children enrolled in Head Start preschool programs, including those enrolled in Medicaid or State CHIP, and examined in the past 12 months who have received preventive dental care
dental care utilization	Percent of pregnant women served by Early Head Start who received dental examinations and/or treatment in the past 12 months
oral health promotion	Number of children enrolled in Early Head Start and Migrant Programs who received dental screening as part of the series of well-baby examinations

List of COHSS Indicators by Age Group

Children Aged 1-14 years

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Category	Indicator
oral health status/general	Percent of children aged 1-14 years with fair or poor condition of teeth
oral health status/dental caries	Percent of children aged 1-14 years with pain, cavities, broken or missing fillings, teeth pulled because of cavities, or bleeding gums as main problem with teeth
access to dental care	Percent of children aged 1-14 years who have a regular source of dental care
dental care needs	Percent of children aged 1-14 years who needed but did not get dental care in past 12 months
dental care utilization	Percent of children aged 1-14 years who saw a dentist for preventive care at least once in the past 12 months
oral health promotion	Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider told them how to prevent cavities
oral health promotion	Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider applied fluoride to child's teeth
oral health promotion	Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider helped identify strategy to improve child's teeth
oral health promotion	Percent of adults aged 18+ years who have children aged 1-14 years and whose health care provider referred child to dentist
support of dental care services	Percent of adults aged 18+ years who have children aged 1-14 years and support schools providing oral health or dental care education
support of dental care services	Percent of adults aged 18+ years who have children aged 1-14 years and support schools providing oral health or dental care services

List of COHSS Indicators by Age Group

Low-income, School-aged, and 3rd Grade Children

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Low-income Children

Category	Indicator
dental care utilization	Percent of children age 18 or younger on Medicaid who received dental services in the past year
dental care utilization	Percent of children age 18 or younger on Medicaid who had a preventive dental visit in the past year
dental care utilization	Percent of children age 18 or younger on Medicaid who received a dental treatment service in the past year
dental care utilization	Number of children enrolled in Medicaid receiving fluoride varnish

School-aged Children

Category	Indicator
risk reduction/sealants	Number of schools eligible for sealant program
risk reduction/sealants	Number of schools served by sealant program
risk reduction/sealants	Percent of eligible schools served by sealant program
risk reduction/sealants	Number of students eligible for sealant program
risk reduction/sealants	Number of students served by sealant program
risk reduction/sealants	Percent of eligible students served by sealant program

3rd Grade Children

Category	Indicator
oral health status/dental caries	Percent of 3rd grade children with Caries experience (untreated decay + fillings)
oral health status/dental caries	Percent of 3rd grade children with untreated caries
oral health status/dental caries	Percent of 3rd grade children with two or more quadrants with untreated decay
risk reduction/sealants	Percent of 3rd grade children with one or more sealants on a permanent first molar
dental care needs	Percent of 3rd grade children with urgent need for dental care

List of COHSS Indicators by Age Group

Pregnant Women

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Category	Indicator
dental care needs	Percent of women who gave birth who needed to see a dentist for a problem during pregnancy
dental care needs/dental care utilization	Percent of women who gave birth who needed to see a dentist for a problem during pregnancy who went to a dentist during pregnancy
dental care utilization	Percent of women who gave birth who last had teeth cleaned within the past 2 years
dental care utilization	Percent of women who gave birth who last had teeth cleaned within the past year
dental care utilization	Percent of women who gave birth who went to a dentist during pregnancy
dental care utilization	Percent of women who gave birth who last had teeth cleaned during or after pregnancy
oral health promotion	Percent of women who gave birth who had dental or other HCW talk with them about how to care for teeth and gums during pregnancy

List of COHSS Indicators by Age Group

Adults and Older adults

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Category	Indicator
oral health status/general	Percent of adults aged 18+ years who lost any teeth due to decay or periodontal disease
oral health status/general	Percent of adults aged 18+ years who lost 6+ teeth due to decay or periodontal disease
oral health status/general	Percent of adults aged 18+ years who lost all teeth due to decay or periodontal disease
risk reduction/fluorides	Percent of adults aged 18+ years with public water as main source of home water supply
risk reduction/fluorides	Percent of adults aged 18+ years with well water as main source of home water supply
risk reduction/fluorides	Percent of adults aged 18+ years with bottled water as main source of home water supply
access to dental care	Percent of adults aged 18+ years with dental care insurance
dental care utilization	Percent of adults aged 18+ years who never visited the dentist for any reason
dental care utilization	Percent of adults aged 18+ years who visited the dentist for any reason more than 5 years ago
dental care utilization	Percent of adults aged 18+ years who visited the dentist for any reason in the past year
oral health promotion	Percent of adults aged 18+ years who had their doctor or dentist check for oral cancer in past year

List of COHSS Indicators by Age Group Population

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Category	Indicator
oral health status/cancer	Number of diagnosed oral cavity and pharynx cancers among persons of all ages
oral health status/cancer	Age-adjusted incidence rate of oral cavity and pharynx cancer among persons of all ages
oral health status/cancer	Percent of diagnosed, staged oral cavity and pharynx cancers with detection at in-situ or localized stage
oral health status/cancer	5-year relative survival rate by stage for oral cavity and pharynx cancer among persons of all ages
oral health status/cancer	Number of deaths of oral cavity and pharynx cancer among persons of all ages
oral health status/cancer	Age-adjusted mortality rate of oral cavity and pharynx cancer among persons of all ages
risk reduction/fluorides	Population served by public water systems
risk reduction/fluorides	Population served by fluoridated water system
risk reduction/fluorides	Percent of population served by public water systems that have optimally fluoridated water
risk reduction/fluorides	Percent of public water systems in compliance with water fluoridation standards
dental care workforce/ access to dental care	Number of dental healthcare professional shortage areas (HPSA)
dental care workforce/ access to dental care	Number of county dental healthcare professional shortage areas (HPSA)
dental care workforce/ access to dental care	Number of facility dental healthcare professional shortage areas (HPSA)
dental care workforce/ access to dental care	Number of other (non-county, non-facility) dental healthcare professional shortage areas (HPSA)
dental care workforce/ access to dental care	Number of counties with current year dental loan repayment recipient
dental care workforce/ access to dental care	Number of counties with dental loan repayment recipient since 2002
dental care workforce/ access to dental care	Number of Medicaid patients served by dental loan repayment recipients in current year
dental care workforce/ access to dental care	Number of CHP patients served by dental loan repayment recipients in current year
dental care workforce/ access to dental care	Number of uninsured patients served by dental loan repayment recipients in current year
dental care workforce/ access to dental care	Number of dentists with a current, active license
dental care workforce/ access to dental care	Number of dentists in state with a current, active license
dental care workforce/ access to dental care	Number of dental hygienists with a current, active license
dental care workforce/ access to dental care	Number of dental hygienists in state with a current, active license
dental care workforce/ access to dental care	Number of counties without a dentist
dental care workforce/ access to dental care	Total county population without a dentist

List of COHSS Indicators by Age Group Population

Category	Indicator
dental care workforce/ access to dental care	Percent of dentists enrolled in Medicaid
dental care workforce/ access to dental care	Number of dentists actively enrolled as Medicaid providers
dental care workforce/ access to dental care	Number of active, Medicaid-enrolled dentists with at least one paid claim
dental care workforce/ access to dental care	Number of dentists actively enrolled as Billing Providers with at least one paid claim
dental care workforce/ access to dental care	Number of dentists actively enrolled as Rendering Providers with at least one paid claim
dental care workforce/ access to dental care	Number of active, Medicaid-enrolled dentists with paid claims greater than \$10,000.00
dental care workforce/ access to dental care	Percentage of counties in Colorado with an enrolled dentist (appearing as the billing provider) on paid claims totaling less than or equal to \$10,000.00
dental care workforce/ access to dental care	Number of active, Medicaid-enrolled dentists who saw 50 or more beneficiaries age 20 and under as of September 30
dental care workforce/ access to dental care	Number of counties without an enrolled billing dentist who saw 50 or more beneficiaries age 20 and under
dental care workforce/ access to dental care	Number of active, Medicaid-enrolled dentists who saw 100 or more beneficiaries age 20 and under as of September 30
dental care workforce/ access to dental care	Number of counties in Colorado without an actively enrolled Medicaid dental provider
dental care workforce/ access to dental care	Total population of counties in Colorado without an actively enrolled Medicaid dental provider
dental care workforce/ access to dental care	Number of non-dental providers by county billing for fluoride varnish
dental care workforce/ access to dental care	Number of dental providers by county billing for fluoride varnish
dental care workforce/ access to dental care	Number of all clinics billing for fluoride varnish
dental care workforce/ access to dental care	Number of community-based low-income dental clinics
dental care workforce/ access to dental care	Number of tribal, state, or local agencies with service populations of 250,000 or more
dental care workforce/ access to dental care	Number of agencies with a dental program
dental care workforce/ access to dental care	Number of local health departments that had a dental program for education services only
dental care workforce/ access to dental care	Number of local health departments that had a dental program for preventive services only
dental care workforce/ access to dental care	Number of local health departments that had a dental program for preventive and restorative services
dental care workforce/ access to dental care	Number of mobile dental clinic programs that had a program for education services only
dental care workforce/ access to dental care	Number of mobile dental clinic programs that had a program for preventive services only
dental care workforce/ access to dental care	Number of mobile dental clinic programs that had a program for preventive and restorative services

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