

ALASKA STATE ORAL HEALTH SURVEILLANCE SYSTEM

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**ORAL HEALTH PROGRAM
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Division of Public Health
Department of Health and Social Services**

November 1, 2013

**Supported by a cooperative agreement with the U.S. Centers for Disease
Control and Prevention**

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INTRODUCTION

The U.S. Centers for Disease Control and Prevention defines public health surveillance as the ongoing, systematic collection, analysis, interpretation, and timely dissemination of health data essential for public health action, program planning and implementation, the monitoring of health trends and disparities, and for the evaluation of public health practices.

One of the priority areas for oral health identified in *Healthy Alaskans 2010* and the *Alaska Oral Health Plan* is to maintain and enhance the existing oral health surveillance system (OHSS). The OHSS purpose is to measure key indicators of oral health, identify disparities and at-risk populations for oral disease, monitor trends in oral disease and assist with evaluation of interventions in terms of changes in oral disease. Plans for the OHSS include developing data collection methods to expand the system to address data gaps and to evaluate the OHSS in terms of providing relevant information to stakeholders to monitor disease and injuries and policy development to address the oral disease burden in Alaska.

The OHSS is designed to address two *Healthy People 2010* focus areas: Objective 21-16 calls for an oral and cranio-facial health surveillance system in each state and Objective 21-17 calls for an effective public dental health (oral health) program in each state, Tribal or local jurisdiction of 250,000 persons or more.

The OHSS will provide oral health data gathered and/or generated for development of program initiatives and interventions. The information is aimed at guiding the structuring of policy recommendations and ongoing surveillance activities, rather than for research. The OHSS will also serve the needs of regional and local health care organizations for planning and policy development related to oral health. The OHSS data is also used to assess progress toward objectives outlined in *Healthy People* national health objectives and the Maternal and Child Health Block Grant.

BACKGROUND¹

Tooth decay is the most common chronic childhood disease. Tooth decay impacts eating, growth, speaking, and learning. Oral diseases may jeopardize a child's physical growth, self-esteem and capacity to socialize. It is estimated that U.S. children lose over 51 million school hours annually because of dental problems and dental visits. A national report designed to monitor improvements in health status cited multiple unmet goals, especially in children's oral health, and substantiated the continued high prevalence of oral diseases in children.

Adults and seniors also experience tooth decay. Medications, cancer treatment and other factors can decrease saliva flow. Dietary changes may increase risk for tooth decay and receding gums expose new tooth surfaces that may be susceptible to caries (tooth decay). Periodontal disease risk, infections affecting supporting tissues of teeth, increase with age - especially among tobacco

users and individuals with diabetes. Tooth loss is the ultimate impact of dental caries and periodontal diseases.

Cleft lip and cleft palate are among the more common birth defects. It is estimated that these congenital birth defects occur in about 1 of every 1,000 live births. Alaska has a system to monitor these conditions, provide early intervention, and arrange for needed services.

Oral and pharyngeal cancers are the fourth most frequently diagnosed cancer among black males and seventh most frequently diagnosed cancer among white males. The risk factors for oral cancer are tobacco use, excessive alcohol consumption, and exposure to sunlight.

ORAL HEALTH SURVEILLANCE SYSTEM

History

Prior to the establishment of the Oral Health Program in July 2002, Alaska had participated in state-added oral health questions in the Behavioral Risk Factor Surveillance System (BRFSS) in the 1990's. These questions on dental access and tooth loss later were supported by U.S. Centers for Disease Control and Prevention (CDC) and became part of the rotating core of BRFSS questions. The State Drinking Water Program maintained a list of fluoridated community water systems but did not monitor the level of fluoride in these systems except as related to EPA guidelines. Information was available on deaths from oral and pharyngeal cancer. Beyond this information, the only oral health information available in the 1990's was from periodic dental assessments by the Indian Health Service (1991 & 1999) and specific studies (e.g., a 1989 study of dental decay in Head Start children). Information on oral clefts later became available with the Division of Public Health implementation of the Alaska Birth Defects Registry.

With funding from CDC, the Alaska Oral Health Program was implemented in July 2002. Early activities of the Oral Health Program included development an oral health surveillance outline of indicators and potential data sources and securing funding to utilize the Basic Screening Survey (BSS) protocol to conduct dental assessments. The program also outlined future opportunities to include oral health questions and dental assessments as part of other department surveillance activities. With completion of the BSS dental assessments (2004-3rd grade; 2005-kindergarten and Head Start; and 2007-3rd grade and kindergarten) the oral health surveillance system was largely implemented. Further surveillance data on the dental needs and dental access for pregnant women from the Pregnancy Risk Assessment Monitoring System was added in 2004; an oral cancer exam question was added to BRFSS in 2008; and the program is currently supporting dental assessments of seniors as part of a grant from the National Association of Chronic Disease Directors (NACDD). The Alaska Dental Action Coalition has discussed entering into a dialog with the Alaska State Hospital and Nursing Home Association to get information on dental-related emergency-room visits. The program is continuing to assess the feasibility of expanding oral health surveillance activities as opportunities arise.

Goal

The Alaska OHSS will provide specific population based oral disease burden data for Alaska, provide trend information on oral disease, monitor demographics and trends in dental workforce and monitor and report on community water fluoridation (population serviced and quality measures).

Objectives

1. By 2012, expand the oral health component of the existing surveillance system to provide more comprehensive and timely data (e.g., periodontal disease and hospital-based data).
2. By 2012, enhance the surveillance system to assess the oral health needs in special populations.
3. By 2012, develop a system to assess the distribution of the dental workforce and the characteristics of dental practitioners (e.g., dental provider survey).
4. By 2012, implement a surveillance system to monitor oral-facial injuries.
5. By 2012, ensure data are available to the public in a timely manner.
6. By 2012, encourage stakeholders to participate in surveillance activities and make use of the data that are obtained.
7. By 2014, implement a surveillance system to monitor dental caries in one to four-year-old children.

Purpose

Maintaining and enhancing the Oral Health Surveillance System will:

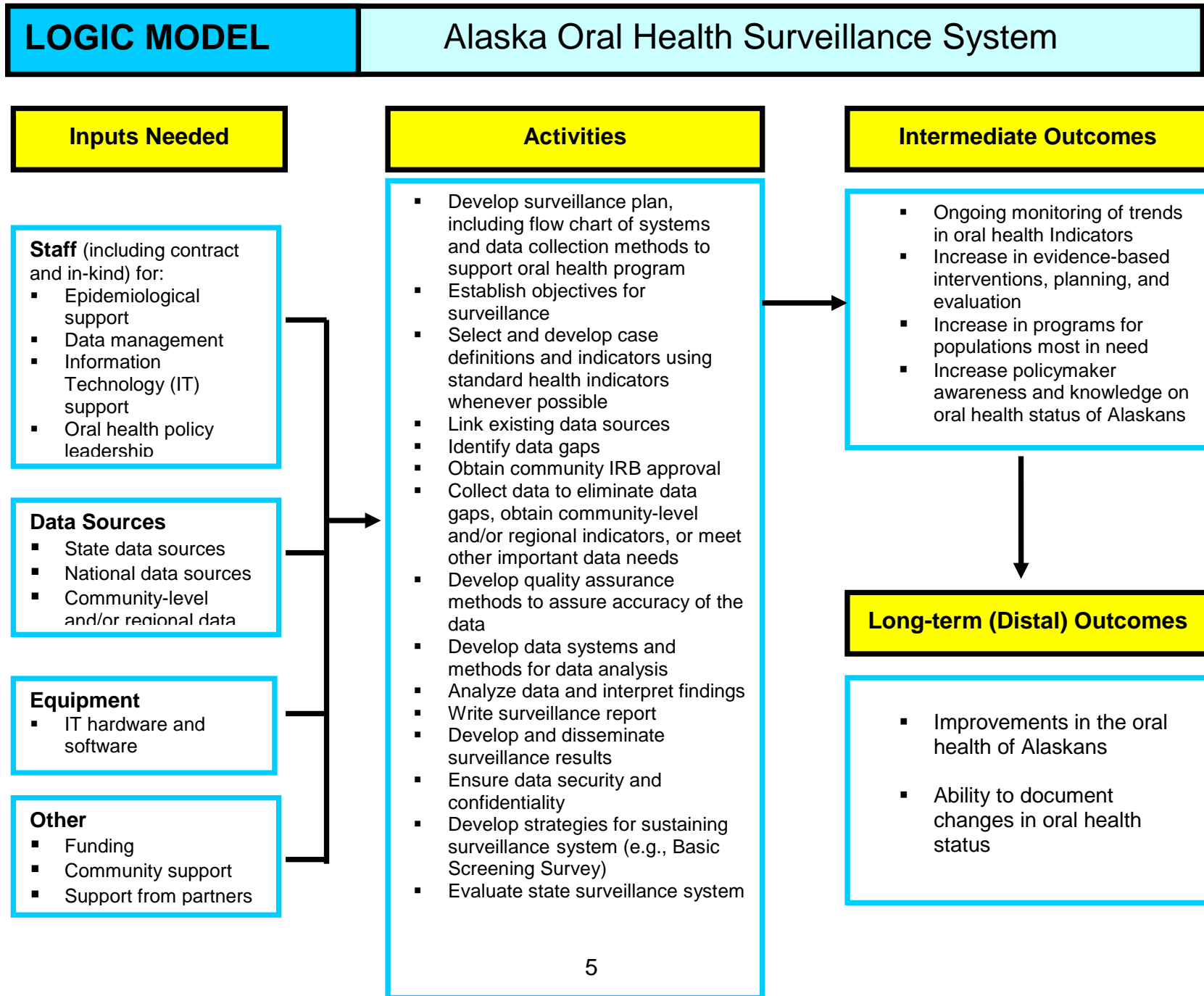
- Provide data needed for identifying problems, setting priorities and assessing progress towards goals and objectives.
- Allow policy makers to determine strategies for improving health.
- Assist managers in evaluating programs.
- Improve the planning and delivery of preventive and treatment services.
- Contribute to the national database for monitoring trends in dental health.

Data Needs

Several data sources are used to monitor oral diseases, risk factors, access to programs, utilization of dental services and the dental health workforce in Alaska. The OHSS includes data from oral health surveys of kindergarten and 3rd grade children (along with a 2005 dental assessment of children enrolled in Head Start), the Behavioral Risk Factor Surveillance System (BRFSS), the Pregnancy Risk Assessment Monitoring System (PRAMS), the Cancer Registry, the Birth Defects Registry, the Water Fluoridation Reporting System, Managed Care Performance Reports, and State Professional Licensing files.

Data are needed to identify problems, set priorities and assess progress towards goals and objectives. As part of the State Oral Health Plan development, a workgroup assessed data needs and current capacity. Recommendations made to improve surveillance activities include:

- Adding a question on oral cancer exams to BRFSS (initiated in 2008 and included in the 2010 BRFSS)
- Requesting information from BRFSS on adults with diabetes with routine dental care in the past year (teeth cleaning question). This is planned for a report with 2008-2010 combined data from BRFSS.
- Collect information on hospital emergency room visits related to dental problems (including oral injuries)
- Collect information from hospitals and ambulatory surgery centers on general anesthesia cases for treatment of early childhood caries
- As opportunities arise, collect dental assessment information on children with special health care needs and seniors (e.g., senior dental assessment used a convenience sample and was conducted in 2008-2009 under a "Healthy Aging" grant from the National Association of Chronic Disease Directors – there are no planned follow-up dental assessments on seniors at this time)
- Collect information on periodontal disease (add questions to BRFSS if CDC testing demonstrates validity and reliability of the questions)
- Identify or develop a sustainable funding source for future school Basic Screening Surveys (dental assessments) – conduct BSS at least every five years.



Indicators

The Alaska OHSS indicators include National Oral Health Surveillance System indicators, Healthy People objective indicators, and State specific oral health indicators (Appendix A). The Alaska OHSS includes the following oral health indicators:

Oral Health Status in 3rd grade children

- Caries experience
- Untreated caries
- Dental sealants
- Last dental visit
- Dental coverage

Oral Health Status of kindergarten children

- Caries experience
- Untreated caries
- Caries in primary maxillary anterior teeth
- Last dental visit
- Dental coverage

Child Medicaid Performance Reports (CMS 416)

- Any dental visit
- Preventive dental visit
- Dental Treatment visit
- Dental sealant provided (FFY2011 and beyond)
- Dental services provided by a medical provider (FFY2011 and beyond)
- Dentists participating in Medicaid

Medicaid Administrative Data

- Adult dental recipients

Pregnant Women (PRAMS)

- Dental treatment need
- Teeth cleaning
- Tobacco Use

Youth Risk Behavior Survey (adolescents)

- Tobacco use

Cancer Registry (Cancer of the Oral Cavity and Pharynx)

- Incidence
- Mortality
- Proportion diagnosed in early stage

Birth Defects Registry

- Cleft & Cleft palate

Fluoridation Status (WFRS)

- Monthly fluoride level
- Optimal CWF systems
- Population served by public water systems with CWF

Behavioral Risk Factor Surveillance System (Adults)

- Dental visit (also link w/diabetes)
- Teeth Cleaning
- Loss of 6 or more teeth
- Complete Tooth Loss
- Insurance coverage
- Tobacco use
- Alcohol use
- Tobacco & alcohol use with no medical or dental visit
- Examination for oral cancer

Work Force (Professional Licensing & Dept. of Labor Workforce Reports)

- Dentists and demographics
- Dental hygienists and demographics
- Dental assistants
- Dental health aides and therapists

Basic Screening Survey

The Association of State and Territorial Dental Directors, in collaboration with the Centers for Disease Control and Prevention (CDC), produced the Basic Screening Survey (BSS). The primary purpose of the BSS is to provide a framework for obtaining oral health data that is inexpensive and easy to implement; and yet be consistent. By collecting data in a consistent manner, communities and states can compare their data with data collected by other organizations or agencies. The BSS is a standardized set of surveys designed to collect information on 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 and school age populations. The surveys are cross-sectional and descriptive. 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. For all age groups the examiner records presence of untreated cavities and urgency of need for treatment. In addition, caries experience (treated and untreated decay) is also recorded. School-age children are also examined for presence of sealants on permanent molars.

Sampling Frame/Population Under Surveillance

A stratified random sampling of Alaska elementary schools is used to select a representative sample of kindergarten and/or 3rd grade children using the regions utilized in the department's Behavioral Risk factor Surveillance System. Elementary schools are selected using probability proportional to size of the schools along with implicit stratification by percent of children eligible for the free and/or reduced price meal program. If a school refuses to participate, a replacement school within the same sampling strata is selected. If the sample school plus three replacement schools refuse to participate, no data are collected in that sampling stratum. All third grade and kindergarten children who returned a consent form are screened.

Limitations

A dental screening is not a thorough clinical examination and does not involve making a clinical diagnosis resulting in a treatment plan. A screening is intended to identify gross dental or oral lesions. The information gathered through a screening survey is at a level consistent with monitoring the national health objectives found in the United States Public Health Service's Healthy People document. The possibility of bias from selective participation needs to be considered when applying the results to all children. Direct comparisons with other areas should not be undertaken because of the differences in the underlying samples and populations and data collection methods.

Medicaid Claims

Medicaid, an entitlement program created by the federal government, is the primary public program for financing basic health and long-term care services for low-income Alaskans. The Medicaid program is administered by the Division of Health Care Services (DHCS). While DHCS is responsible for program and policy development, the Division of Public Assistance (DPA) is responsible for determining the eligibility of individuals and families in need of Medicaid benefits. The Medicaid

Claims database is an administrative database. It was designed primarily for the purposes of billing.

Population Under Surveillance

All Alaskans receiving Medicaid benefits, as determined by financial eligibility criteria and enrollment in the Medicaid program. Nearly 70,000 Alaskans receive medical benefits through the Medicaid Program.

Limitations

The Medicaid claims database was primarily created for billing purposes. Only services billed to Medicaid are available, thus an individual's complete medical activity may not be available.

Youth Risk Behavior Survey

The Youth Risk Behavior Survey (YRBS) is part of an epidemiological surveillance system that was established in 1988 by the CDC. The purpose of the Youth Risk Behavior Survey (YRBS) is to help monitor the prevalence of behaviors that put Alaskan youth at risk for the most significant health and social problems that can occur during adolescence and adulthood. Survey results assist public health professionals in planning, policy development and evaluation of prevention and intervention activities.

Population Under Surveillance

The statewide YRBS is administered to students in grades 9 through 12. In the statewide survey, approximately 2,000 students from about 45 high schools are randomly selected to participate in the YRBS every other year. Approximately 1,400-1,500 actually participate in the survey. In addition, approximately 20 school districts choose to conduct a local survey involving more students.

A random sample of eligible public high schools is computer generated. (Note: The sample does not including boarding schools, charter schools, alternative schools or correctional schools.) The probability of an eligible school being selected is based on enrollment in grades 9 through 12. One or two classes (approximately 25 to 50 students) in each grade 9 through 12 are then selected randomly to participate in each school, depending on the size of the school.

Limitations

There is a potential bias with surveys based on self-reported information – a certain type of person may be more willing to complete the survey and/or persons may answer questions related to private or illegal behavior with socially appropriate responses, rather than truthful answers. This potential for bias must be kept in mind when interpreting results. Survey response rates may also affect the potential for bias in the data.

The YRBS in Alaska requires active parental consent. The parent must sign a permission slip for the student to participate. Of all the permission slips sent out, around 25% are not returned, which lowers the overall response rate significantly.

Pregnancy Risk Assessment Monitoring System

The Alaska Pregnancy Risk Assessment Monitoring System (PRAMS) is an on-going survey of mothers of newborns. PRAMS was developed by the CDC Division of Reproductive Health and initiated in Alaska by the Division of Public Health, Section of Maternal, Child and Family Health in 1990. PRAMS was developed by the CDC as part of initiatives to reduce infant mortality and low birth weight. PRAMS collects state-specific, population-based data on maternal attitudes and experiences before, during, and after pregnancy.

Sampling Frame

In Alaska there are approximately 10,000 - 11,000 live births per year, or about 900 live births per month. PRAMS mails out an average of 160 questionnaires per month to mothers who have had a recent live birth. Approximately one of every six mothers of newborns is selected for PRAMS. Mothers are randomly selected from birth records at the Bureau of Vital Statistics. Women from some groups are sampled at a higher rate to ensure adequate data are available in smaller but higher risk populations. Selected women are first contacted by mail approximately 2 to 6 months after delivery of their baby. If there is no response to repeated mailings, women are contacted and interviewed by telephone. Standard data collection procedures and instruments are utilized to allow comparisons between states.

Limitations

Self-reporting: Some bias is expected from any survey based on self-reported information. The potential for under-reporting as well as over-reporting bias must be kept in mind when interpreting results.

Population sampled: PRAMS samples mothers who have recently had a live birth. Alaska does not routinely collect data on abortions or stillbirths. As such, data do not represent women who became pregnant in the specified time frame. Data only represents pregnancies that resulted in a live, viable infant.

Recall bias: Some PRAMS questions ask the respondent to remember events or behaviors up to 12 months before they got pregnant. On average, the infant is four months old at the time the mother responds to the questionnaire. Mothers who respond to the survey when their infant is younger may recall events more accurately than mothers who respond when their infant is older.

Reliability: The reliability of a prevalence estimate depends on the actual, un-weighted number of respondents in a category. Interpreting and reporting weighted numbers that are based on a small, un-weighted number of respondents can be misleading. Reliability increases if the sample size is larger and decreases if the sample size is smaller.

Alaska Cancer Registry

The Alaska Cancer Registry (ACR) is a population-based cancer surveillance system. ACR collects data on all newly diagnosed cases of cancer (including benign brain) for the State of Alaska. The registry operates under several statutes and regulations required for compliance with the Cancer Registries Amendment Act, Public Law 102-515: Alaska Administrative Code 7 AAC 27.011 - Reporting of cancer and brain tumors, and Alaska Statutes Sec. 18.05.042 - Access to health care records. The ACR collects a wide variety of information to determine cancer incidence, mortality, treatment, and survival.

Population Under Surveillance

Physicians, hospitals, and other health care facilities and providers who diagnose, screen or provide treatment for a cancer patient in Alaska must report to the ACR within 6 months of the date of diagnosis, screening, or treatment.

Limitations

The ACR only has information of cancer cases that are diagnosed or treated by a healthcare provider. The ACR is a member of the North American Association of Central Cancer Registries (NAACCR) and participates in its certification process. As part of the certification process, the ACR submits data annually to be evaluated for quality, including overall completeness, percent of cases with information on key data items, prevalence of unresolved duplicates, percent of cases reported from death certificates only and the percent of cases passing inter-field data edits. The ACR received Gold level certification based on data collected for the diagnosis years 1996 through 2006.

Alaska Birth Defects Registry

Established in January 1996 under the Alaska Administrative Code (7 AAC 27.012), the Registry is a surveillance program that provides reliable, valid and timely information on the number of infants and young children with birth defects in Alaska.

Population under surveillance

The registry is a population-based surveillance system of birth defects as defined by the International Classification of Diseases, 9th ed. Guidelines for Birth Defects Reporting can be found in the Alaska "Conditions Reportable to Public Health" (<http://www.epi.alaska.gov/pubs/conditions/crWhat.htm>). Physicians, hospitals, and other health care facilities and providers must report children from birth up to six years of age who have any of the Reportable Birth Defects. Reports should be submitted within 3 months of diagnosis or treatment.

To be included in the ABDR, a child must have been born to a woman who was a resident of the State of Alaska at the time of the child's birth, and diagnosed as having an eligible condition. Children meeting these criteria are identified from computer linkage of information from vital statistics (birth and death certificates), hospitals, physicians, and other health care providers.

Limitations

The ABDR is a passive surveillance system. Thus, prevalence estimates are based on cases reported under qualifying ICD-9 codes and not verified through medical record reviews.

Data are subject to diagnostic bias because information is collected from a variety of health care providers and medical records sources. Differences between reporting sources in record keeping and reporting methods may affect results.

Water Fluoridation Reporting System

The Water Fluoridation Reporting System (WFRS) is a database developed by the CDC. The system is internet based and contains information on the distribution and fluoridation levels of community water systems. The goal of WFRS is to assist in monitoring fluoride concentration levels in community drinking water and promote optimal levels of fluoridation for preventing tooth decay. The benefits of water fluoridation in terms of reducing dental decay may not be fully realized if optimal fluoridation levels are not consistently maintained. Rates of dental fluorosis, a cosmetic condition in tooth enamel, may increase if fluoride levels in the drinking water are chronically in excess of optimal fluoride levels. The objectives of WFRS are to monitor fluoride levels in drinking water, assure the quality of the water supply in relation to fluoride levels, and provide information to the health professionals and the public about the fluoride content of their water.

WFRS maps water fluoridation by state and county. WFRS also provides fluoridation statistics, such as the percent of the population on public water systems receiving fluoridated water.

Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing statewide telephone-based surveillance system, which is designed by the CDC. BRFSS monitors modifiable risk behaviors and other factors contributing to the leading causes of morbidity and mortality in the population.

Sampling frame

The BRFSS in Alaska uses a stratified random sampling design. The Alaska sample is stratified into five regions based on common demographics. An equal number of interviews are conducted from each region, which purposely over-samples the non-urban areas of Alaska.

Each month over 200 Alaska residents age 18 and older are interviewed over the telephone regarding their health practices and day-to-day living habits, to reach an annual sample size of 2,500 (500 per region). The data are collected from January through December, for each year.

Participation is random, anonymous and confidential. Respondents are randomly selected from among the adult members of the household. Only those living in households are surveyed. Those living in institutions (i.e., nursing homes, dormitories) are not surveyed.

Limitations

The one main limitation of any telephone survey is that those people without phones cannot be reached and are not represented. In Alaska, about 97% of households have phones; about 98% of all U.S. households have phones (2000 US Census, Summary File 4). The percentage of households with a telephone varies by region in Alaska. In general, persons of low socioeconomic status are less likely than persons of higher socioeconomic status to have phones and are under-sampled. However, national BRFSS results correspond well with findings from other surveys conducted in person.

With surveys based on self-reported information, the potential for bias must be kept in mind when interpreting results. Survey response rates may also affect the potential for bias in the data.

The reliability of a prevalence estimate depends on the actual, un-weighted number of respondents in a category or demographic subgroup. Interpreting and reporting weighted numbers based on a small, un-weighted number of respondents can be misleading. Reliability increases if the sample size is larger and decreases if the sample size is smaller. Prevalence estimates are not usually reported for those categories in which there were less than 50 respondents. Prevalence estimates rounded to the nearest whole percent when the denominator is less than 500.

Work Force Distribution

In the State of Alaska, dentists and dental hygienists must be licensed to practice in Alaska by the Board of Dental Examiners, Alaska Department of Commerce, Community and Economic Development. All licensees must renew their licenses with the State on a biennial basis. License data is available by the provider's listed address. The Alaska Department of Labor collects wage and hour information on dental hygienists and dental assistants and does projections on future needs for these occupations.

Limitations

While the professional licensing data provides the permanent addresses of dentists and dental hygienists, the addresses may not necessarily reflect the actual location of the practice. The information collected does not include hours of practice per week (e.g., FTE-equivalent). Professional licensing information does not necessarily include military and U.S. Public Health Service dental providers that may be exempted from having an Alaska license under the state dental practice act.

ANALYSIS AND DISSEMINATION PLAN

The oral health program relies on epidemiology and support staff within the TRBS, PRAMS, BRFSS, Medicaid, ACR and ABDR programs to collect, clean, maintain and store the data – only the summary reports are typically utilized by the Oral Health Program. In the case of BSS dental assessments the Oral Health Program has utilized a contractor (with dental epidemiology support) for collection, cleaning, entry and storage of the data. The BSS data files are maintained by the Oral Health Program for future data analysis as needed.

The respective epidemiologist analyzes the data with standard written protocols defined prior to data collection (e.g., in-kind MCH epidemiologist for PRAMS). Data dissemination is done in the form of reports, such as the Oral Health Disease Burden, presentations, and fact sheets. A state *Epidemiology Bulletin* was recently published on the state prevalence of early childhood caries: http://www.epi.hss.state.ak.us/bulletins/docs/b2010_04.pdf

The program may increase utilization of state disease bulletins in the future to increase dissemination of information to healthcare providers. Data are also used in the *State Oral Health Plan* and grant applications.

EVALUATION PLAN

To make sure that the OHSS is working efficiently and to monitor its progress, evaluation of the OHSS will be conducted. Evaluation will ensure that the surveillance system is meeting the data needs of the Oral Health Program and stakeholders. Public health professionals and stakeholders will use the information gathered from the evaluation to improve the OHSS and reporting from the system. The information may identify data gaps and information needs for national, state and local oral health policy development and initiatives. The specific purpose of evaluation activities will be modified as the OHSS focus changes from year to year. The different options for the OHSS evaluation include reviewing:

1. The OHSS itself: Data validity, integrity, completeness and timeliness of data collection
2. Dissemination of OHSS information: The reach of the information, timeliness and stakeholder awareness of OHSS information.
3. Utility of the Information: If OHSS information meeting the needs of the state, the coalition and the communities; if the OHSS planning and resources are being utilized to address priority data gaps; and if stakeholders using the OHSS information for planning and policy development.

Standards for Assessment

Standards for assessing the performance of the system will be determined with input from the coalition and key stakeholders. Potential participants in the evaluation and recommendation process include the Oral Health Program, Alaska Dental Action Coalition and related committees, agencies that share their data with the OHSS, dental organizations in the state, dental hygiene and dental assisting schools, Tribal and Community Health Center dental programs.

Evaluation Questions

The questions that will be answered by the evaluation will be dependant on the focus of the evaluation. The OHSS plans to administer a questionnaire among its partners and stakeholders every 2-3 years to evaluate the surveillance system (beginning in 2011). The content of the questionnaire will be determined by the focus of the evaluation with input from identified stakeholders that will be completing the survey and utilizing the results. Questions include:

1. Is the OHSS adequate for oral health surveillance, monitoring trends and policy development?
2. What are the significant data gaps in the OHSS?
3. What is the relative priority in addressing the data gaps? – What resources are needed to address the data gaps?
4. Are data collection methods for the OHSS adequate to ensure quality of the data?
5. Is the current frequency of data collection adequate?
6. Are stakeholders utilizing the surveillance data?
7. Is surveillance information and reporting influencing policy?
8. Are there adequate resources for the OHSS? Is the OHSS sustainable?

Reference

1. U.S. Department of Health and Human Services (USDHHS), Oral Health in America: A Report of the Surgeon General, USDHHS National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.

ORAL HEALTH INDICATORS (NOHSS INDICATORS) – Note: “blue” indicates HP objective

1. **Dental Visits:** Routine dental visits aid in the prevention, early detection and treatment of tooth decay, oral soft tissue disease, and periodontal diseases. (1)

Primary Data Source(s):

- BRFSS: For adult data (age 18+)
- YRBS: Data on middle school and high school age children
- PRAMS: Data on pregnant women

Other Data Source(s):

- Medicaid administrative data
- SLAITS
- Early Head Start/Head Start Program Data
- Basic Screening Survey: Parent survey
- Adult/Senior Basic Screening Survey (if conducted)

2. **Teeth Cleaning:** Having one’s teeth cleaned by a dentist or dental hygienist is indicative of preventive behavior. (1)

Primary Data Source(s):

- BRFSS: For adult data (age 18+)
- YRBS: Data on middle school and high school age children
- PRAMS: Data on pregnant women

Other Data Source(s):

- Medicaid administrative data
- SLAITS
- Early Head Start/Head Start Program Data
- Basic Screening Survey: Parent survey
- Adult/Senior Basic Screening Survey (if conducted)

3. **Complete Tooth Loss (HP Obj. 21-4):** Loss of all natural permanent teeth substantially reduces the quality of life, self-image, and daily functioning. (1)

Primary Data Source(s):

- BRFSS: For adult data (age 18+)

Other Data Source(s):

- Indian Health Service oral health screening data
- Adult/Senior Basic Screening Survey data (if conducted)

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4. **Fluoridation Status (HP Obj. 21-9):** Water fluoridation has played an important role in reducing tooth decay (especially smooth surface decay of teeth) and tooth loss. (1)

Primary Data Source(s):

- Water operator reports (as reported to the Alaska Department of Environmental Conservation, the Alaska Native Tribal Health Consortium and data input into WFRS)

5. **Caries Experience (HP Obj. 21-1):** Dental caries is the single most common chronic disease of childhood. (1)

Primary Data Source(s):

- Basic Screening Survey Data

Other Data Source(s):

- Medicaid administrative data
- Indian Health Service oral health screening data
- Adult/Senior Basic Screening Survey (if conducted)

6. **Untreated Caries (HP Obj. 21-2):** To avoid pain and discomfort, decayed teeth need to be restored. To keep as much of the natural tooth as possible, decayed teeth should be repaired promptly so that fillings may be kept small. (1)

Primary Data Source(s):

- Basic Screening Survey Data

Other Data Source(s):

- Medicaid administrative data
- Early Head Start/Head Start program data
- Indian Health Service oral health screening data
- Adult/Senior Basic Screening Survey (if conducted)

7. **Dental Sealants(HP Obj. 21-8):** Plastic coatings applied to decay-susceptible tooth surfaces (the pits and fissures) have been approved for use for many years and are recommended by professional health associations and public health agencies. (1)

Primary Data Source(s):

- Basic Screening Survey Data

Other Data Source(s):

- Medicaid administrative data
- Indian Health Service oral health screening data

8. **Cancer of the Oral Cavity & Pharynx Detection (HP Obj. 21-6 for detection and 21-7 for oral cancer exams):** Oral and pharyngeal cancer comprises a diversity of

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malignant tumors that affect the oral cavity and pharynx. Each year nationally, some 30,000 new cases of oral and pharyngeal cancer are diagnosed and 8,000 die from the disease. (1) Tobacco and alcohol use are risk factors for development of the disease. Early detection of the disease is one strategy identified to reduce mortality from the disease.

Primary Data Source(s):

- Alaska Cancer Registry (incidence and detection stage)– incidence and stage of tumor at diagnosis
- Vital Records – deaths due to oral and pharyngeal cancers
- BRFSS (possible question for adult reporting on oral cancer exams)

Other Data Source(s):

- BRFSS: Adult tobacco and alcohol use
- YRBS: Teen tobacco and alcohol use
- Alaska Tobacco Survey: Adult and youth tobacco use
- Dental Provider Survey(s): Counseling on tobacco cessation and performing oral cancer examinations
- Tobacco and Alcohol Use/Consumption: Department of Revenue excise tax information

ORAL HEALTH INDICATORS (HEALTHY PEOPLE INDICATORS):

9. Adults that have never lost a permanent tooth due to caries or periodontal disease (HP Obj. 21-3): Most persons can keep their permanent dentition for life with optimal personal, professional and population-based prevention practices. Lost teeth can affect a person's ability to chew and speech – and can result in social impairment. Dental options to replace missing teeth are relatively expensive compared to prevention costs.

Primary Data Source(s):

- BRFSS (Adult data aged 18+)

Other Data Source(s):

- Adult/Senior BSS (if conducted)

10. Periodontal Disease (HP Obj. 21-5): Periodontal disease is manifested by the loss of the connective tissue and bone that support the teeth – placing the person at risk for tooth loss. Studies have illustrated possible links between periodontal disease and birth outcomes and complications of other chronic diseases.

Primary Data Source:

- BRFSS (possible questions being developed by CDC)
- Adult/Senior Dental Assessments (unlikely at the state level)
- Indian Health Services Dental Assessment(s) – Other national dental assessments

- 11. Proportion of children and adults that use the oral health care system each year (HP Obj. 21-10):** Although appropriate home oral health care and population-based prevention are essential, professional care is also necessary to maintain optimum oral health. Individuals that do not receive regular professional care can develop oral diseases that eventually require complex restorative treatment and/or late diagnosis and treatment may result in tooth loss. This indicator is different from #1 (dental visits) as it refers to any dental care, whereas #1 refers to routine dental visits – both indicators are utilized to assess adequate access to dental care.

Primary Data Source(s):

- BRFSS (Adults aged 18+)
- YRBS (junior high and high school students)
- PRAMS (pregnant women)
- Basic Screening Survey – survey utilized with consent process

- 12. Long-term care residents that utilize the oral health care system each year (HP 21-11):** Residents of institutions face additional barriers to access oral health care and may face additional oral health complications from medications, dry-mouth and/or chronic disease. Further, poor oral health could contribute to complications of other chronic diseases.

Primary Data Source(s) – Data Sources would need to be developed:

- BSS for LTC residents (if conducted)
- Medical record reviews of LTC residents

- 13. School-based health centers with an oral health component (HP Obj. 21-13):** Increasingly schools are being viewed as an effective way to improve access to health and social support services for vulnerable populations, however in Alaska few school-based health centers have been developed.

Data Source Discussion: A national survey of school-based health centers lists two centers in Alaska (Juneau and Sitka). Juneau is reported as not having a link to dental services and Sitka is reported as having a link (through the Native health corporation in Sitka). This indicator is developmental for Alaska due to the limited number of health centers.

- 14. Proportion of health departments and community-based health centers that have an oral health component:** Local health departments and community health centers have developed to provide care to the underserved that have limited access to private providers. Many seen by these programs have marked health disparities as compared with the general population (including oral health disparities).

Data Source Discussion: Only two jurisdictions in Alaska have health powers (Anchorage and the North Slope Borough). The Anchorage health department does not have an oral health component although some funding is provided to the community

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health center in the municipality (that CHC program has dental services). The North Slope Borough does provide dental services. CHC programs provide dental through direct services, contracting or referral relationships with private providers. Additionally,

there is considerable overlap with CHC funding and Tribal dental programs in Alaska. This indicator is developmental for Alaska and will not be tracked other than outlined in indicator #22 (below).

- 15. System for recording and referring infants with oral clefts and other craniofacial anomalies to craniofacial anomaly rehabilitative services (HP Obj. 21-15):** Physicians and nurses in hospital nurseries are usually the first to examine newborns and are responsible for noting any congenital anomalies and describing them on neonatal records. Proper diagnosis and referral is important to assess treatment needs and counsel parents. States should have an effective mechanism in place to identify, record and refer infants with treatment needs.

Primary Data Source(s):

- Birth Defects Registry
- MCH Program – Specialty Clinic Coordination and Outreach to Parents

- 16. State Oral Health Surveillance System (HP Obj. 21-16):** State oral health surveillance system is essential to determine baselines and trends in oral diseases, implement and evaluate interventions and identify where resources are required to improve oral health status.

Primary Data Source(s):

- OHSS Plan
- Burden Document

- 17. Jurisdictions with 250,000 or more in population with an effective dental public health program directed by a dental professional with public health training:** The ability to improve the health and quality of life for communities and individuals relies on population-based preventive programs and the public and private capacity to provide needed care. The capability to provide services depends on an adequate infrastructure at the Tribal, State and local health department level.

Data Source Discussion: The State of Alaska has a dental public health program staffed by a dental professional with public health training – the only other jurisdiction in the state with the listed population base is the Municipality of Anchorage which does not have a dental public health program. This is a national indicator and it not being utilized by the Oral Health Program other than for national reporting.

ORAL HEALTH INDICATORS (STATE INDICATORS):

- 18. Child Medicaid Dental Utilization (HP Obj. 21-12):** Low-income children are an identified high risk group for development of dental caries. Nationally, about 20% of

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children enrolled in Medicaid have a dental visit each year and fewer receive dental treatment services.

Primary Data Source(s):

- CMS 416 Reports
- Medicaid administrative claims data

19. Early Childhood Caries: Early Childhood Caries (also known as nursing caries or baby bottle tooth decay) is rampant caries in the primary teeth of infants and toddlers. It is caused by frequent and prolonged exposure of teeth to sugar and the bacteria *Streptococcus mutans*. The exposure is often the result of a child going to bed with a bottle or drinking at will from a bottle during the day. The mother/caregivers oral health status plays a role as the bacteria are usually transmitted from caregiver to child. (2)

Primary Data Source(s):

- Basic Screening Survey

Other Data Source(s):

- Early Head Start/Head Start Program data
- Medicaid administrative claims data
- Indian Health Service oral health screening data

20. Dentist Demographics: Dentists remain the primary service provider for dental services and nationally (and in Alaska) the dental labor-force is aging. Dentists also tend to establish practices in urban areas. Occupational Licensing has information on current, active dental licenses and provider demographics by location of practice, dentist age and years in practice.

Primary Data Source(s):

- Alaska Occupational Licensing Data

Other Data Source(s):

- Dental Provider Survey (if developed)

21. Dentist Medicaid Participation: Private dental practitioners have expressed dissatisfaction with aspects of the Medicaid program (e.g., low reimbursement rates). Some dentists chose not to participate in the Medicaid program or limit the number of Medicaid clients in their practices. The aging of the dental labor-force will likely further reduce Medicaid access as practitioners reduce practice hours and/or further limit the number of Medicaid clients in their practices.

Primary Data Source(s):

- Medicaid provider enrollment information
- Medicaid administrative claims data

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Other Data Source(s):

- Dental Provider Survey (if developed)

22. Community Health Center Dental Programs: Community Health Center (CHC) programs provide services to low-income and under-served populations (including Medicaid clients and uninsured individuals). In Alaska, there is significant overlap of CHC funding with Tribal dental programs. CHC dental programs, including Tribal programs, are difficult to implement and maintain due to operating costs and the recruitment/retention of dental staff.

Primary Data Source(s):

- State Primary Care Office – reported on Alaska ASTDD State Synopsis
- Alaska Primary Care Association

Other Data Source(s):

- CHC dental program data

23. Emergency Room Dental-related Visits: Lack of access to dental services may result in dental-related conditions showing up in hospital emergency room visits. The E/R dental related visits are a proxy for lack of access to primary dental care services.

Primary Data Source(s):

- Developmental - Alaska Hospital Database (if it begins collecting E/R and other ambulatory data)

Other Data Source(s):

- Medicaid administrative claims data

24. Cleft Lip with/without Cleft Palate Prevalence: Cleft lip/palate is one of the most common birth defects (estimated at 1-2 out of 1,000 births). Clefting can be seen in an inherited pattern, as a result of teratogens (environmental agents that can cause birth defects), as well as defects in essential nutrients such as folic acid. Infants with clefts have difficulty with vital functions such as feeding, breathing, speaking and swallowing and they are susceptible to repeated respiratory infections. These children must cope with the consequences of facial deformity, delayed and altered speech, frequent illness, and repeated surgeries that may persist through late adolescence. (2)

Primary Data Source(s):

- Alaska Birth Defects Registry

Other Data Source(s):

- PRAMS – maternal use of multivitamins/folic acid

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25. Dental-related Injuries: Injuries are a major public health problem and can often be reduced/prevented through avoidance of high-risk behavior(s) and use of safety equipment. Oral-facial injuries can bring disfigurement and dysfunction, greatly diminishing the quality of life. The leading causes of oral and craniofacial injuries are sports, violence, falls, motor vehicle collisions and foreign objects in food (e.g., bird-shot). (2)

Primary Data Source(s):

- Alaska Trauma Registry (if the system begins to collect emergency room and outpatient data)
- BRFSS & YRBS: Use of seatbelts in motor vehicles, mouth-guards in contact sports and helmets in bicycle/motorcycle/snowmobile/ATV use.

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References:

- (1) U.S. Centers for Disease Control and Prevention, Division of Oral Health, National Oral Health Surveillance System, <http://www.cdc.gov/nohss/>
- (2) U.S. Department of Health and Human Services, Oral Health in America: A Report of the Surgeon General, National Institute of Dental and Craniofacial Research, National Institutes of Health, 2000.

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| Indicator/ Cohort | Data Source | 1999 | | 2000 | | 2001 | | 2002 | | 2003 | | 2004 | | 2005 | | 2006 | | 2007 | | 2008 | | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | | | | | |
|-------------------------------|----------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|--|---|---|---|---|---|
| | | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | CY | FY- FFY | | | | | | | |
| 1. Dental Visit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Preschool Children | BSS | | | | | | | | | | | | | X | | | | | X | | | | | | | | | | | | | | | | ? | | | |
| a) Medicaid | Medicaid | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | |
| Kindergarten Children | BSS | | | | | | | | | | | | | X | | | | | X | | | | | | | | | | | | | | | | ? | | | |
| a) Medicaid | Medicaid | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | |
| 3rd Grade Children | BSS | | | | | | | | | | | X | | | | | | | X | | | | | | | | | | | | | | | | ? | | | |
| a) Medicaid | Medicaid | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | |
| Adolescents | YRBS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ? | | |
| a) Medicaid | Medicaid | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | |
| Pregnant Women | PRAMS | | | | | | | | | | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | |
| Adults | BRFSS | | | X | | | | X | | | | X | | | | X | | | | X | | | | X | | | | X | | | | | | | X | | X | |
| Seniors | BRFSS | | | X | | | | X | | | | X | | | | X | | | | X | | | | X | | | | X | | | | | | | | X | | X |
| a) Nursing Home Survey | Interviews | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Individuals with disabilities | d | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Individuals with diabetes | d; & BRFSS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | X | |
| 2. Teeth Cleaning | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Preschool Children | BSS | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | ? | | |
| a) Medicaid | Medicaid data | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X |
| Kindergarten Children | BSS | | | | | | | | | | | | | X | | | | | | | | | | | | | | | | | | | | | | | ? | |

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|-------------------------------|---------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a) Medicaid | Medicaid data | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 3rd Grade Children | BSS | | | | | | | | X | | | | | X | | | | | | | | | | ? |
| a) Medicaid | Medicaid data | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Adolescents | YRBS | | | | | | | | | | | | | | | | | | ? | | | | ? | |
| a) Medicaid | Medicaid data | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Pregnant Women | PRAMS | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Adults | BRFSS | | X | | | X | | | X | | | X | | | X | | | X | | | X | | | X |
| Seniors | BRFSS | | X | | | X | | | X | | | X | | | X | | | X | | | X | | | X |
| a) Nursing Home Survey | Interviews | | | | | | | | | | | | | | | X | | | | | | | | |
| Individuals with disabilities | d | | | | | | | | | | | | | | | | | | | | | | | |
| Individuals with diabetes | d | | | | | | | | | | | | | X | | | X | | | X | | | X | |
| 3. Complete Tooth Loss | | | | | | | | | | | | | | | | | | | | | | | | |
| Adults | BRFSS | | X | | | X | | | X | | | X | | | X | | | X | | | X | | | X |
| Seniors | BRFSS | | X | | | X | | | X | | | X | | | X | | | X | | | X | | | X |
| a) Nursing Home Survey | d | | | | | | | | | | | | | | | | | | | | | | | |
| b) Alaska Native | IHS Screening | X | | | | | | | | | | | | | | | | | | | | | | ? |
| 4. Fluoridation Status | | | | | | | | | | | | | | | | | | | | | | | | |
| State population percentage | WFRS | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| 5. Caries Experience | | | | | | | | | | | | | | | | | | | | | | | | |
| Preschool Children | BSS | | | | | | | | | | | | | | | | | | | | | | | ? |
| a) Medicaid | d-Medicaid | | | | | | | | | | | | | | | | | | | | | | | |
| b) Alaska | IHS | X | | | | | | | | | | | | | | | | | | | | | | ? |

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| 9. Child Medicaid Dental Utilization | | | | | | | | | | | | | | | | | | | | | |
|--------------------------------------|-------------------|---|---|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Medicaid Eligibles | Medicaid | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X |
| Race/Ethnic Group | d-Medicaid | | | | | | | | | | | | | | | | | | | | |
| 10. Early Childhood Caries | | | | | | | | | | | | | | | | | | | | | |
| a) Kindergarten Children | BSS | | | | | | | | | | X | | | | X | | | | | X | ? |
| b) Children - Head Start | BSS | | | | | | | | | | X | | | | X | | | | | | ? |
| c) Alaska Native | IHS Screening | X | | | | | | | | | | | | | | | | | | ? | |
| d) Medicaid | d-Medicaid | | | | | | | | | | | | | | | | | | | | |
| 11. Dental Demographics | | | | | | | | | | | | | | | | | | | | | |
| Number Licensed | Licensing Info. | | X | | X | | X | | X | | X | | X | | X | | X | | X | | X |
| Age Distribution | Licensing Info. | | | | | X | | | | | | | X | | X | | X | | X | | X |
| Years in Practice Distribution | Licensing Info. | | | | | X | | | | | | X | | X | | X | | X | | X | X |
| Urban v. Rural | d-Licensing Info. | | | | | | | | | | | | | X | | X | | X | | X | X |
| 12. Dentist Medicaid Participation | | | | | | | | | | | | | | | | | | | | | |
| Total Enrolled Dentists | Medicaid | | | | | | X | | X | | X | | X | | X | | X | | X | | X |
| Active Dentists | Medicaid | | | | | | | X | | X | | X | | X | | X | | X | | X | X |
| Significant Provider-Dentists | Medicaid | | | | | | | X | | X | | X | | X | | X | | X | | X | X |
| 13. Community Health Center Dental | Primary Care | | | | | | | | | | | | | | | | | | | | |

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|--|-----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Programs | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| a) Onsite Dental Clinics | d-Primary Care | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | |
| 14. Emergency Room Dental-Related Visits | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Any E/R Visit | d-E/R data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E/R Dental Injury Visits | d-E/R data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15. Cleft Lip with/without Cleft Palate Prevalence | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cleft Lip | Birth Defect Registry | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | |
| Cleft Palate | Birth Defect Registry | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | |
| a) Racial Ethnic Groups | Birth Defect Registry | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | |
| 16. Dental Related Injuries | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E/R Dental Injury Data | d-E/R data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17. Periodontal Disease | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Adults | d-BSS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ? | |
| a) Adults - reported | d-BRFSS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ? | |
| b) Adults w/diabetes | d-BSS link | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ? | |
| c) Adults w/diab. Reported | d- BRFSS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ? | |
| Seniors | d-BSS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ? | |
| a) Nursing Home Survey | d-BSS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ? | |
| b) Senior reported | d-BRFSS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | ? | |

