ARKANSAS ORAL HEALTH SURVEILLANCE SYSTEM PLAN 2021-2026

ARKANSAS DEPARTMENT OF HEALTH

OFFICE OF ORAL HEALTH

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Acronyms

AAPHD	American Association of Public Health Dentistry
ACCR	Arkansas Central Cancer Registry
ACH	Arkansas Children's Hospital
ADA	American Dental Association
ADE	Arkansas Department of Education
ADH	Arkansas Department of Health
AOHC	Arkansas Oral Health Coalition
AOHSS	Arkansas Oral Health Surveillance System
ArBSS	Arkansas Basic Screening Survey
ARHMS	Arkansas Reproductive Health Monitoring System
ASBDE	Arkansas State Board of Dental Examiners
ASTDD	Association of State and Territorial Dental Directors
BRFSS	Behavioral Risk Factor Surveillance System
CDC	Centers for Disease Control and Prevention
CMS	Centers for Medicare and Medicaid Services
CWF	Community Water Fluoridation
DDAF	Delta Dental of Arkansas Foundation
DMP	Data Management Plan
EPSDT	Early and Periodic Screening, Diagnostic, and Treatment
ER	Emergency Room
FARM	Free and Reduced Meals
FTE	Full Time Equivalent
HDDS	Hospital Discharge Database System
HIPAA	Health Insurance Portability and Accountability Act
HP2030	Healthy People 2030
HPSA	Health Professional Shortage Area
HRSA	Health Resources and Services Administration
IRB	Institutional Review Board
KII	Key Informant Interviews
MCHB	Maternal and Child Health Bureau
NIH	National Institute of Health
NOFO	Notification of Funding Opportunity
NSCH	National Survey of Children's Health
OHP	Oral Health Professional
OOH	Office of Oral Health
PHI	Protected Health Information
PHR	Public Health Region
PII	Personal Identifiable Information
PRAMS	Pregnancy Risk Assessment Monitoring System
PWS	Public Water System
SAC	Science Advisory Council
SBHC	School-Based Health Clinic
SBSP	School Based Sealant Program
SY	School Year
UALR	University of Arkansas, Little Rock
UAMS	University of Arkansas for Medical Sciences
US	United States
WFRS	Water Fluoridation Reporting System

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Acknowledgements

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Purpose

Public health surveillance is an ongoing systematic collection, analysis, and interpretation of health-related data essential for planning, implementation, and evaluation of program activities, integrated with timely dissemination of data to those responsible for prevention and control. The overarching purpose of public health surveillance is to provide actionable health information to guide public health policy and programs[1]. Since the public health and healthcare impact of oral health status is far reaching, it is imperative to have a diverse and inclusive surveillance system to monitor oral health indicators at state and local levels.

The Association of State and Territorial Dental Directors (ASTDD) recommends that a state oral health surveillance system should consist of the following components[2].

1) Oral health surveillance plan
2) Clear purpose and objectives to use surveillance data
3) Core set of measures/indicators to assess oral health outcomes
4) Ability to analyze trends
5) Ability to communicate data to policy makers
6) Strive to use the data to improve oral health of state residents

The Office of Oral Health (OOH), Arkansas Department of Health (ADH) incorporated ASTDD recommendations within the five-year Arkansas Oral Health Surveillance System (AOHSS) Plan.

While the purpose of the AOHSS is to establish practical objectives and activities throughout the 2021–2026 plan cycle, it continues to be a living document that may be changed or modified as program priorities change.

I. INTRODUCTION

Program Brief History

The OOH was established within the ADH in 2001 with a vision to attain optimum oral health for every citizen of Arkansas. To that end, it provides resources and support to professional groups, communities, and schools to address oral health needs and disparities through three predominant oral health routes: School Based Sealant Programs, Community Water Fluoridation, and Oral Health Surveillance. Programs within are designed to foster oral health education, disease prevention and intervention, and access to care. They benefit children, adults, elderly, and those with special needs throughout the state of Arkansas.

School Based Sealant Program (SBSP)

Delivering sealants to children in schools is an evidence-based preventive intervention to deliver sealants to children who are less likely to receive private dental care. Programs that deliver sealants to children at high risk for dental caries, commonly known as cavities, also save money. The percent of children ages 5-19 in the United States (US) with untreated caries, is two times higher for low-income households compared to children from high-income households[3]. This can lead to pain and infections, and ultimately problems with speech and eating difficulties. Timely delivery of dental sealants on permanent molars can prevent over 80 percent of cavities[4]. In Arkansas, SBSPs consists of funded and non-funded partners with a joint mission to expand SBSPs. The goal of SBSPs in Arkansas is to increase the number of eligible schools with dental sealant programs within Arkansas from 82 to 99 by August 31, 2023, was reached during the third year of the CDC-1810 grant cycle. Working with our vendors, further expansion is hopeful all while addressing limitations that may be imposed by the ongoing pandemic issues.

Community Water Fluoridation (CWF)

Water fluoridation is beneficial across the life span for reducing and controlling dental caries, or tooth decay. Evidence shows that water fluoridation prevents tooth decay by providing frequent and consistent low levels of fluoride to the tooth surface, ultimately reducing tooth decay by 25% in children and adults[5–7]. By preventing caries, CWF has been shown to save money both for families and for the health care system. Furthermore, CWF is one of the ten great public health achievements of the 20th century[8]. Arkansas' first public water system (PWS) to initiate fluoridation started in 1950, serving a population of 11,236. By the 1980s, 64% of Arkansans received optimal fluoridation through CWF. In 2011, the Arkansas General Assembly passed Act 197 requiring PWSs serving more than 5,000 persons to optimally fluoridate the drinking water. This mandate directly affected 35 non-fluoridating PWSs of this size across the state. To date, 33 of these systems have initiated water fluoridation which led to 86% of Arkansans benefiting from optimally fluoridated drinking water[9]. By August of 2023, the OOH aims to increase the percentage from 86% to 86.7%, which should be achievable once the remaining two PWSs meet the mandate to begin optimal fluoridation.

Arkansas Oral Health Surveillance System (AOHSS)

The AOHSS was established within the OOH in 2007 and published the first AOHSS plan in 2013[10]. In 2018, the program restored full surveillance activities through the CDC 1810 cooperative agreement. The OOH epidemiologist prepared a new AOHSS plan in 2019, which continues to be revised based on the programmatic changes and funder needs. The surveillance plan represents a joint effort of OOH resources utilized from epidemiology, health statistics, and other state and national sources.

The surveillance system is designed to collect data on oral health indicators based on available sources and surveillance capacity. It plays a significant role in assessing the burden of oral diseases, use of oral health care delivery system, and status of CWF. Burden of disease is typically determined by comparing baseline and follow-up data and by assessing disease prevalence and trends. Surveillance data can also be effectively used in prioritizing

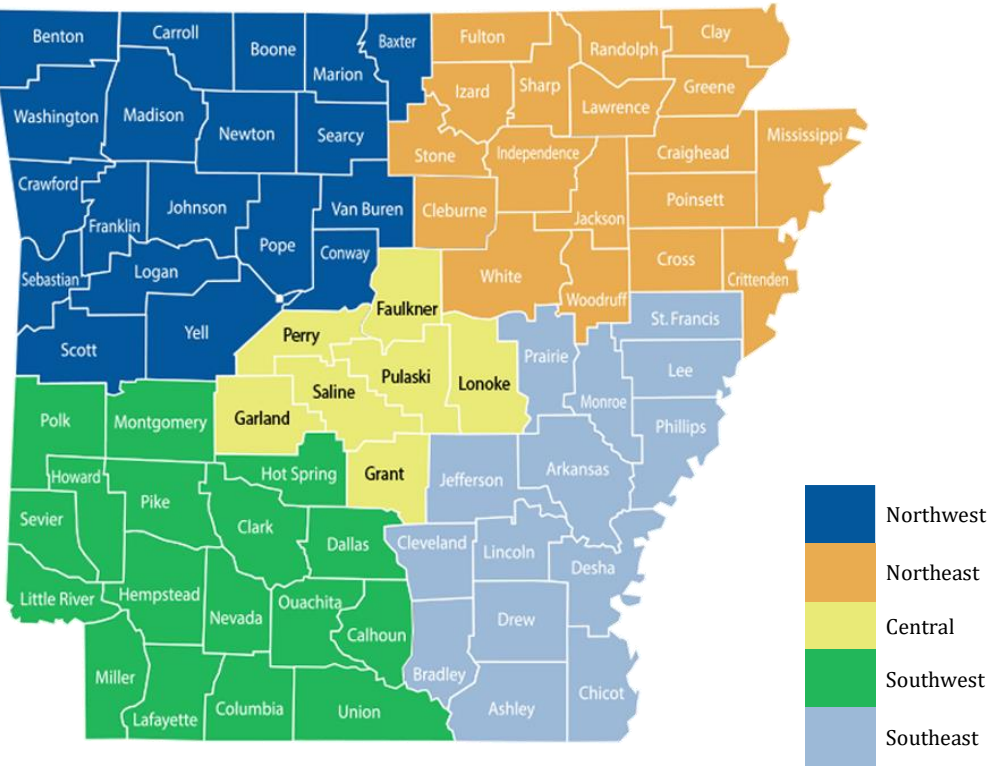
population groups for oral health interventions. In Section IV of this plan, specific oral health indicators are presented, to be examined annually to understand the status of oral health diseases, conditions, and outcomes. Most outcomes listed in Section IV are also related to Healthy People 2030 (HP2030) objectives.

Oral Health in Arkansas

Each oral health disease or condition is influenced by a variety of factors including individual risk factors, access to dental care, type of intervention, public health infrastructure, and policies. Some of the major oral health outcomes include dental caries, periodontal disease, cancers of oral cavity and pharynx, and developmental defects such as orofacial clefts.

Arkansas consists of 75 counties categorized into 5 major regions **(Figure 1)**. Compared to 14% of the US population living in rural counties in 2019, almost 41% of Arkansans reside in a rural county[11]. According to the 2020 Robert Wood Johnson Foundation's County Health report, most urban counties had a better health factor score than the rural regions in Arkansas (**Appendix 1**), with most of the rural county regions also considered a Dental Health Professional Shortage Area (HPSA) in 2021 (**Appendix 2**).

Figure 1. Public Health Regions (PHR) in Arkansas outlined by ADH Health Units, 2021



Oral Health Access

Despite projections of steady growth in the profession, the Health Resources and Services Administration (HRSA) has identified areas that have an inadequate supply of dentists to meet population needs. As stated previously, more health disparities exist in rural communities and the most significant oral health disparities are within rural communities. As of 2019, there were 7,032 licensed Oral Health Professionals (OHP) in Arkansas. This number reflects 1,328 dentists, 1,645 dental hygienists, and 4,059 dental assistants[12]. Compared to 2018, dentists decreased by 2.7% and dental hygienists decreased by 3.6%. In that same time, dental assistants increased by 18.3%. Overall, there was an 8.3% decrease of dental health providers. Furthermore, the number of dentists to population ratio (per 100,000) in Arkansas is 42 and falls well short of the US average of 61[12].

Children's Oral Health

A foundational surveillance activity for the OOH is the Arkansas Basic Screening Survey (ArBSS) of third graders, an ASTDD surveillance tool developed to assist state and local public health agencies monitor the burden of oral disease in children consistent with the HP2030 objectives[2]. The most recent ArBSS was completed during the 2019-2020 School Year (SY) and disseminated in January of 2021. Results demonstrated oral health disparities, seen in **Table 1**, among 3rd grade children by[13]:

- **Race/Ethnicity**: Information was extracted from the Arkansas Department of Education (ADE) database for participating students
- **Geographic Region:** Evaluated by the PHR if a student attended school
- **Socioeconomic Status**: Determined by utilizing eligibility for the Free and Reduced Meals (FARM), with 50% or more FARM eligibility considered low socioeconomic status as determined by the CDC 1810 grant

Table 1. Oral Health Disparities among 3rd Grade Students, SY 2019–2020

Social Determinant of Health	Group	Disparity
Race/Ethnicity	**Hispanic students**	High percent of decay experience
	African American students	High percent of untreated decay High percent of need for dental treatment Lowest percent of dental sealants
Geographic Region (PHR)	**Northeast PHR**	High percent of untreated decay High percent of need for dental treatment Highest urgent need for dental treatment Low percent for the presence of dental sealants
Socioeconomic Status (FARM)	**Low Socioeconomic Status** (Students attending schools with 50% or more FARM eligibility)	High percent of decay experience High percent of untreated decay High percent need for dental treatment

Adult's Oral Health

While best oral health hygiene practices can be indoctrinated as children, oral health practices such as flossing, brushing, and regular visits to a dental health provider continue to be important for adults[14]. In 2018, 56.1% of Arkansas adults reported visiting a dentist or dental clinic, which is lower than the US figure of 67.6% reported in the 2018 Behavioral Risk Factor Surveillance System (BRFSS). In addition, as the income threshold increases among Arkansans, the percentage of visiting a dentist or dental clinic also increases, correlating a positive association between income and dental health visits among adults. Lastly, 51% of adults in Arkansas had some permanent teeth extracted in 2018, compared to the national median of 41.1%[15].

A key to sustaining a healthy lifestyle among older adults is maintaining good oral health care to prevent common problems such as toothaches, gum disease and, most of all, tooth loss[16]. Almost 22% of Arkansas older adults (65+ years of age) had all permanent teeth extracted compared to the national median value of 13.6%[15].

Special Population's Oral Health

One method to prevent caries in young children is to start with the mother. A mother's oral health status is a strong predictor of her child's future oral health. Increasing awareness of the expectant mother that oral health needs to be part of prenatal care can help improve the mother's oral health and the oral health of their infants[17]. According to the 2018 Arkansas Pregnancy Risk Assessment Monitoring System (PRAMS), only 38.6% of Arkansas females had their teeth cleaned by a dentist or dental hygienist during their most recent pregnancy compared to 48.3% of US PRAMS 2015 participants who visited dentist during pregnancy[18].

Social and Psychological Behaviors of Oral Health

In 2015, the American Dental Association (ADA) disseminated the Oral Health and Well-Being report for each state using select data on self-reported oral health status, attitudes, and dental care utilization among adults by income level[19]. Based on the survey results, one in three low-income adults in Arkansas reported their mouth and teeth in poor condition with the top oral health problem for this group being difficulty biting and chewing (**Figure 2**). Most Arkansans reported valuing oral health, agreed regular dental visits keep them healthy, felt they needed to visit the dentist twice a year, and believed straight, bright teeth help you get ahead in life. More than half accepted losing some teeth as they age (**Figure 3**).

There are many factors for not visiting the dentist. Among Arkansans without a dental visit in the 12 months, 72% reported cost as a barrier, 19% were afraid of dentists, 18% had trouble finding a dentist, 17% reported inconvenient location or time for a dental visit, 17% did not have their original teeth, 7% perceived they did not need to visit a dentist, 6% had no reason to visit a dentist, and 5% had other reasons (**Figure 4**). Overall, in each income level, cost was the highest reason for not visiting a dentist.

Figure 2. Overall Condition of Mouth and Teeth among Arkansans, 2015

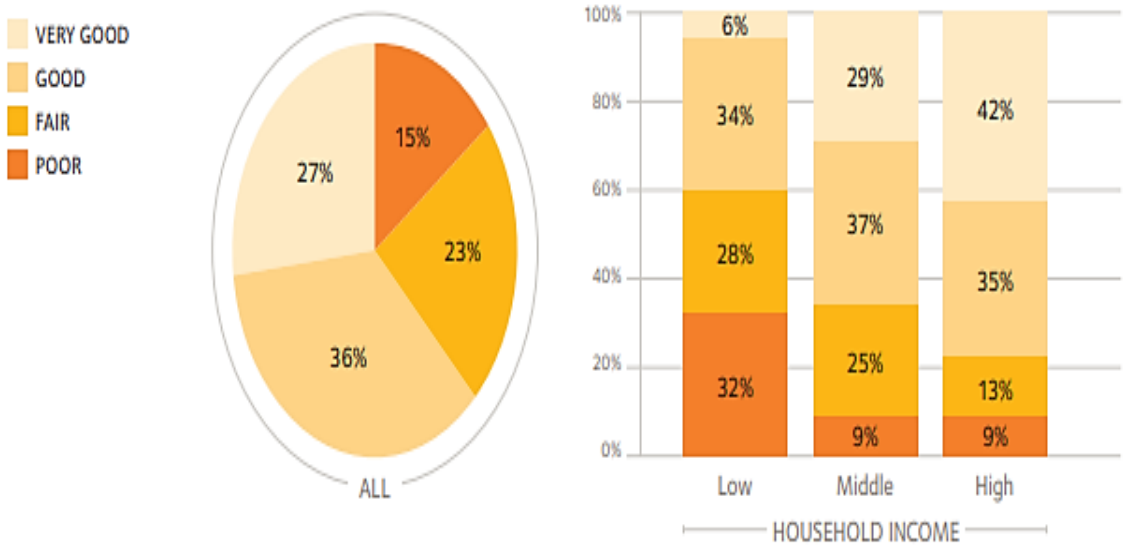


Figure 3. Attitudes Toward Oral Health and Dental Care among Arkansans, 2015

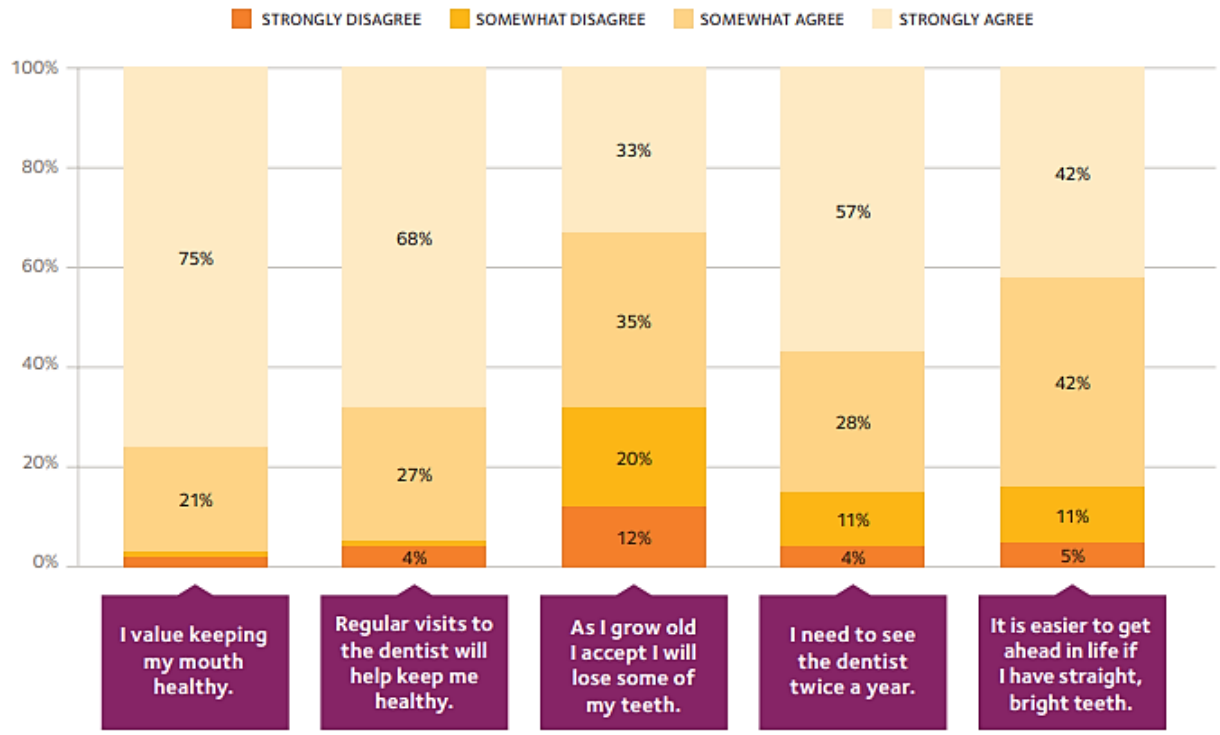
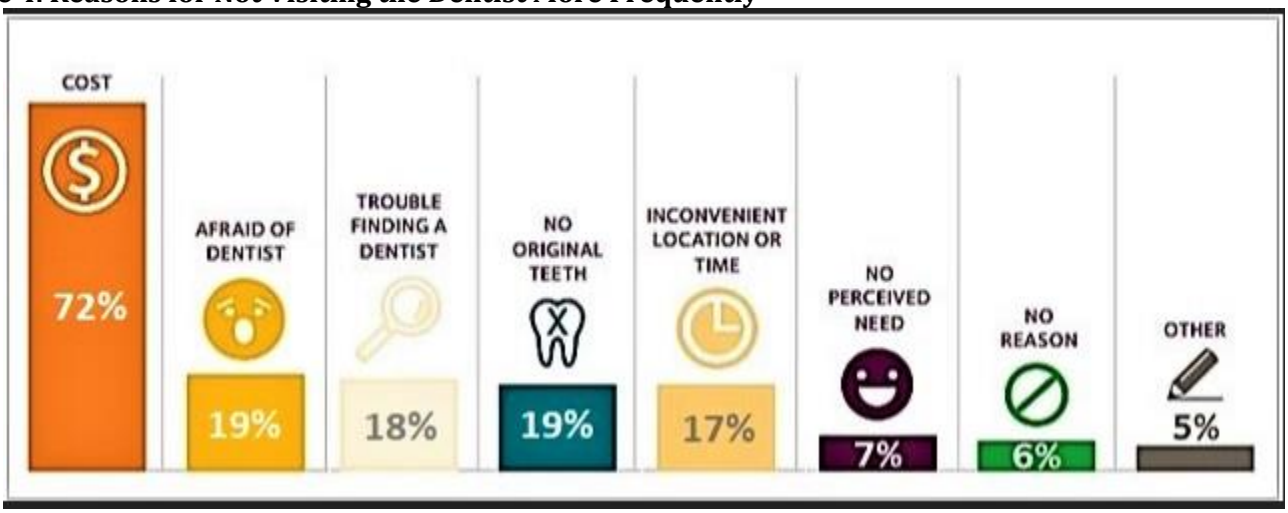


Figure 4. Reasons for Not Visiting the Dentist More Frequently



II. 2021-2026 AOHSS OBJECTIVES

Oral Health Surveillance Needs and Objectives

Based on the data provided for the population groups in Arkansas in the previous section, the OOH prioritized the following surveillance objectives to meet the unique oral health needs of Arkansas. **Table 2** outlines the surveillance objectives, the needs they fulfill, and the anticipated completion date for each objective.

Table 2. Oral Health Surveillance Needs and Objectives

Surveillance Objective	Oral Health Need(s)	Anticipated Date of Completion
Disseminate at least 5 oral health data-related reports to potential and current stakeholders at meetings/conferences	Children's Oral Health Adult's Oral Health Special Population's Oral Health Oral Health Access	August 2021 - December 2026 (one report each year)
Identify two indicators signifying oral health disparities in Arkansas to support planning and intervention	Children's Oral Health Adult's Oral Health Special Population's Oral Health	December 2021
Develop and review Oral Health Burden Report	Children's Oral Health Adult's Oral Health Special Population's Oral Health Oral Health Access	April 2022 and ongoing review
Develop and review Oral Health State Plan	Children's Oral Health Adult's Oral Health Special Population's Oral Health Oral Health Access	August 2022 and ongoing review
Analyze and create report on non-traumatic oral health related ER visits and utilization of all-payers claims database*	Special Population's Oral Health	October 2022
Publish and report Arkansas PRAMS data	Special Population's Oral Health	December 2022

Complete and review Oral Health Data Deck	Children's Oral Health Adult's Oral Health Special Population's Oral Health Oral Health Access	Ongoing
Monitor HP2030 objectives	Children's Oral Health Adult's Oral Health Special Population's Oral Health Oral Health Access	Ongoing
Complete and analyze 2024-2025 SY Basic Screening Survey	Children's Oral Health	January 2026
Create a Surveillance Data Resource Manual for stakeholders	Children's Oral Health Adult's Oral Health Special Population's Oral Health Oral Health Access	August 2023
Monitor ASTDD CWF Google Alerts**	Children's Oral Health Adult's Oral Health Special Population's Oral Health	Ongoing
Complete and analyze CWF Needs Assessment Survey Follow-up***	Children's Oral Health Adult's Oral Health Special Population's Oral Health	August 2022

* Having access to "real-time" oral health data is important to assess costs, resource use, and gaps in care. This can be explored through all-payers claim databases and non-traumatic oral-related hospital emergency room (ER) visits in Arkansas from the Hospital Discharge Database System (HDDS).

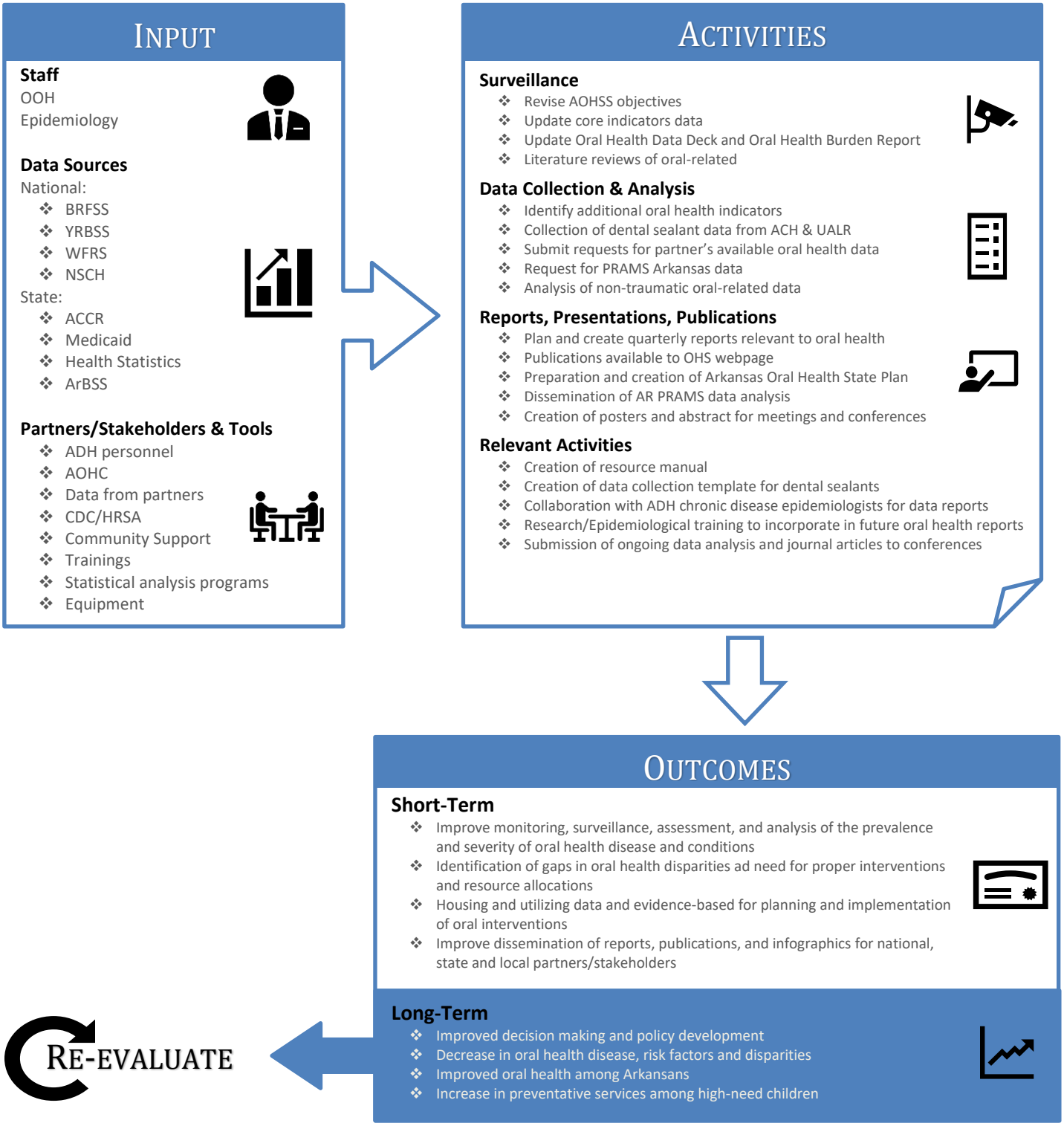
** Monitoring fluoride policies is a great strategy to keep Arkansas at the high level of CWF and remain vigilant against any anti-fluoridation messaging. For example, a newer resource that needs to be tapped is the ASTDD Fluoridation Activity Updates and Alerts notice to states. This report tracks Google alerts and public notices using data mining to find local government meeting agendas and minutes related to CWF. This allows our office to better understand water utility challenges, reasons for discontinuation, and prompt deeper investigations should Arkansas have any postings.

***In 2020, the OOH completed a CWF Needs Assessment to evaluate fluoridation equipment needs for repair and or upgrade to continue water fluoridation efforts. Approximately 50% of the contacted PWSs participated, but little information is known for those who did not participate. To better understand all water operators, the OOH epidemiologist will create a follow-up survey for those who did not originally respond.

III. AOHSS LOGIC MODEL

The plan includes the three nested evaluations of key program components within the OOH (SBSP, CWF, OHS). The plan will be a working document, with potential for modifications as activities progress over the grant period. A revised logic model for the evaluation of AOHSS is presented below in **Figure 5**.

Figure 5. AOHSS Evaluation Logic Model



IV. ORAL HEALTH INDICATORS AND DATA SOURCES

The CDC 1810 grant requires oral health surveillance on several oral health indicators as core measures for oral health programs. These core indicators align with tracking HP2030 objectives and the current oral health landscape in Arkansas. Oral health indicators, latest Arkansas figure, data source, most recent year that data are available, frequency of collection, and projected data years available through 2026 can be seen in **Table 3**. In addition, information on data sources and links are available in **Table 4**.

Table 3. CDC 1810 Required Core and Additional Oral Health Indicators in Arkansas

Oral Health Indicator	Arkansas Latest %	Data Source	Most Recent Year that Data are Available	Frequency of Collection	Projected Data Years Available Through 2026
Core Indicators					
Prevalence of caries experience, untreated tooth decay, and dental sealants among 3rd grade students (6 – 11 years old)	Decay experience–64.8% Untreated tooth decay–21.4% Dental sealants–37.2%	3rd Grade ArBSS	SY 2019–2020	Every 3–5 SY	SY 2023-2024
Permanent tooth loss among adults (18+ years old)	Adults with ANY permanent teeth extracted–51%	BRFSS	2018	Every 2 years	2020, 2022, 2024
Oral and pharyngeal cancer incidence mortality	Percentage of oral cavity & pharynx cancer incidence rate–12.0%	ACCR	2018	Annually	2019-2025
Percent of Medicaid and CHIP enrolled children who received dental services (any dental services, preventative services, or dental sealants) in the past year	Any dental service–62.0% Preventative service–58.0% Dental Sealant–5%	Medicaid Reporting According to CMS-416 Form	FY 2019	Annually	FY 2020–2025
Percent of children who had a dental visit or preventative dental visit in the past year	72.2%	National Survey of Children's Health (NSCH)	2018	Every 2–4 years	2020, 2022, 2024
Percent of adults who had a dental visit in the past year	21.6%	BRFSS	2018	Every 2 years	2020, 2022, 2024
Percent of adults with a selected chronic disease(s) or risk factor(s) who had a dental visit in the past year	Diabetes–48.1%	BRFSS	2018	Every 2 years	2020, 2022, 2024

Fluoridation status of community water systems	86.4%	WFRS	2020	Every 2 years	2020, 2022, 2024
Data on state oral health programs, workforce, and infrastructure	Completed	State Synopsis	2021	Annually	2022–2025
Additional Indicators					
Percentage of adolescents (ages 12-17) with decayed teeth during the past 12 months	13.2%	NSCH	2018–2019	Annually	2019–2020 through 2024–2025
Percentage of adolescents (ages 12-17) with dental sealants on at least 1 permanent molar	12.6%	NSCH	2018–2019	Annually	2019–2020 through 2024–2025
Percent of adults who had a dental visit in the past year*	56.1%	BRFSS	2018	Every 2 years	2020, 2022, 2024

Table 4. State and National Data Sources Descriptions

Description of Data Source
Arkansas Center for Cancer Registry (ACCR)[20] A population-based registry, whose goal is to collect timely and complete data on all cancer cases diagnosed in the state. Link: https://www.cancer-rates.info/ar/
Arkansas Basic Screening Survey (ArBSS)[2,13] The BSS, developed by the ASTDD, is used to assess oral health status. The OOH last conducted the survey for the 2019-2020 school year to assess oral health of 3rd grade students in eligible schools. The link to latest report on methods and findings can be viewed visiting the link below. Link: https://www.healthy.arkansas.gov/programs-services/topics/oral-health-surveillance
Behavioral Risk Factor Surveillance Survey (BRFSS)[15] The BRFSS is a telephone survey of randomly selected households within the state. National data collection instruments are used to collect data on many diseases, risk factors, and preventive behaviors including oral health and tobacco use. Oral health indicators are assessed every two years. Link: http://www.cdc.gov/brfss/
Centers for Medicare and Medicaid Services (CMS) – Early and Periodic Screening, Diagnostic and Treatment (EPSDT)[21] Form CMS-416 is used to collect basic information on State Medicaid programs to assess the effectiveness of EPSDT services. These benefits provide comprehensive and preventive health care services for children under age 21 who are enrolled in Medicaid. EPSDT is key to ensuring that children and adolescents receive appropriate preventive, dental, mental health, and developmental, and specialty services. Link: https://www.medicaid.gov/medicaid/benefits/early-and-periodic-screening-diagnostic-and-treatment/index.html
National Survey of Children's Health (NSCH)[22] The National Survey of Children's Health (NSCH) provides data on mental, physical, social aspects of children's lives including oral health and access to quality health care. The NSCH is funded and directed by the HRSA and Maternal and Child Health Bureau (MCHB). Link: https://www.nschdata.org/browse/survey
Water Fluoridation Reporting System (WFRS)[9] The WFRS is an online tool that helps states manage quality of their water fluoridation programs. WFRS information is also the basis for national surveillance reports that provide percentages of U.S. population on CWSs receiving optimally fluoridated drinking water. It was developed by the CDC in partnership with ASTDD. Link: http://www.cdc.gov/fluoridation/statistics/2010stats.htm

V. DATA DISSEMINATION AND DATA USE

Data Dissemination Methods

The process of communicating information through various channels to reach target groups is an important milestone for public health programs. This can elicit public action, promote behavior change, garner support or participation, and justify program activities. Data dissemination is one of the key features of the Arkansas Oral Health Communication Plan and the Surveillance Plan. The OOH has capacity to provide access to its plans, reports, and PowerPoint slides to ADH and non-ADH stakeholders. Plans pertaining to surveillance, communication, sustainability, and evaluation would be available on the OHS webpage[22]. Reports will be made available in various formats including PowerPoint slides, electronic reports, and infographics. These products will continue to be developed and presented on the website and offered in plain language when possible.

For any scientific research on oral health approved by and published in a peer-reviewed journal, the OOH will provide a link on the OHS website for public access and reading. Scientific abstracts or posters submitted and approved for presentation at a national or state conferences will also be shared on the website. Enhancing sharing and use of data for partners, stakeholders, and local communities continues to be a priority for the OOH.

Data Use Methods

Collection, management, and analysis of oral health data, primary and secondary, followed by proper dissemination of findings among ADH leaders, key stakeholders, and the public, are the cornerstones of the AOHSS. In alignment with AOHSS objectives, the OOH's goal is to use baseline and follow-up data to monitor the progress towards meeting its goals and objectives, as presented in the CDC 1810 cooperative agreement. The data will also be used to create an updated and comprehensive Burden of Oral Health Disease Report. This report will have multi-purpose use in planning, implementation, and making policy decisions. The burden report will raise awareness of the extent of oral health burdens in Arkansas.

Use of oral health data is critical in updating the State Oral Health Plan and will help guide state oral health disease prevention and control activities. A state plan is based on true evidence of oral health distribution, disparities, and trends. It considers risk factors, disease status, and disease outcomes in the short and long term. The plan is also based on data pertaining to access to care issues. All in all, use of good data will yield a great state plan, which will lead to an effective oral health program.

VI. RESOURCES AND SUSTAINABILITY

Personnel, Partners, and their Roles

The ADH and executive personnel have been crucial in the sustainability of the OOH. This was evident in the passing of ACT 785 of the 2001 Arkansas General Assembly creating the Office of Oral Health (OOH). The OOH routinely solicits the approval of ADH's leadership team and the Science Advisory Council (SAC) for programmatic and scientific matters. In addition, the OOH works closely with the Health Statistics Branch to utilize data from Behavioral Risk Factor Surveillance System (BRFSS) and Pregnancy Risk Assessment Monitoring System (PRAMS). Other important internal personnel directly involved in oral health include the Epidemiology Branch to garner technical support and the review and approval of epidemiological reports and ADH Engineering to continue advancement in enhancing optimal drinking water in Arkansas. The OOH also collaborates with ADH Chronic Disease Branch to monitor co-morbidities associated with oral health.

Some important external state partners of OOH include Arkansas Children's Hospital (ACH), University of Arkansas for Medical Sciences (UAMS), College of Public Health, ADE, Arkansas State Board of Dental Examiners (ASBDE), Delta Dental of Arkansas Foundation (DDAF), Healthy Connections, and Arkansas Governor Asa Hutchinson. Public schools in Arkansas and the ADE are key champions who helped successfully implement the ArBSS of 3rd grade students following the guidance of the ASTDD. Arkansas Children's Hospital, along with funded and non-funded sealant partners provide clinical interventions and scientific support in the case of SBSPs. The ADH has a robust working relationship with Fay W. Boozman College of Public Health, which has provided subject matter expertise, assisted with data collection (key informant interviews and focus groups), and staff support in the form of student practicums. Additionally, the Arkansas Oral Health Coalition (AOHC) consists of numerous public and private organizations with interests in improving oral health in Arkansas and key in data dissemination. The ASBDE, Arkansas State Dental Association (ASDA), Arkansas State Dental Hygienists' Association (ASDHA), Arkansas Medical Dental and Pharmaceutical Association (AMDPA), and the UAMS Center for Dental Education are some key external partner organizations represented.

Outside of Arkansas, the OOH works closely with the CDC for funding and grant guidance along with ASTDD to receive high level technical assistance to support oral health surveillance projects such as the ArBSS and the Data Management Plan (DMP). Other national alliances include HRSA, and the American Association of Public Health Dentistry (AAPHD).

As outlined in the Communication Plan, the OOH will strengthen current relevant partners and initiate new partnerships to expand the state's SBSPs, aid existing PWSs with funding support for equipment upgrade and maintenance to provide optimally fluoridated drinking water, educate oral health care providers, and analyze oral health data. Refer to **Appendix 3** for a current list of partners and collaborators.

Comprehensive Budget

Currently, the OOH relies on the CDC 1810 cooperative agreement grant to provide the necessary funding for surveillance efforts in Arkansas. The CDC grant supports salaries of three staff members and contractors with a fiscal year budget of $369,632. The Preventive Health and Health Services Block Grant supports an additional two staff along with important program and office supplies necessary to complete oral health strategies with a fiscal year budget of $293,148. State general revenue supports two staff member salaries within the OOH to ensure a Director holding a dental license and a Section Chief for important administrative support are present.

Sustainability

The sustainability of the AOHSS plan is crucial to continue to assess oral health burdens and disparities in a timely and efficient manner. Surveillance data is critical in making evidence-based decisions for planning, implementation, and policy development. A few key elements of sustainability are continuous source of funding, having reliable partners and collaborators who share similar mission and vision, and availability of technical assistance and expertise.

The oral health epidemiologist leads the surveillance activities in collaboration with the OOH team. The epidemiologist collects state and national data, performs data analysis, writes oral health reports, disseminates information in the appropriate format, and communicates findings to ADH and non-ADH stakeholders. This staff person also acts as a link between the OOH and the Epidemiology Branch, Health Statistics Branch, and other relevant units within the ADH. For sustainability, the AOHSS needs to continue to focus on inexpensive, readily available oral health data as its foundation for addressing oral health burdens and disparities in Arkansas. The OOH will continue to rely on in-kind support, partner collaboration, and seeking additional funding to sustain oral health surveillance efforts.

In-Kind Support

The ADH has an entire branch dedicated to epidemiology within the Center for Public Health Practice. All staff are familiar with data analysis, collection, and reporting who may be able to assist in AOHSS objectives previously mentioned. In addition, two permanent positions of Director and Section Chief within the OOH could also continue the collection of readily available data. To further simplify the process of important oral health data collection, the AOHSS plan outlines the creation of a data manual for data and non-data minded personnel. This would make data and data sources easily accessible to the partners, help them become more aware of the oral health status in Arkansas, enhance their abilities to make informed decisions, and educate others.

Partners and Collaborators

Reaching out to current partners and stakeholders with the same mission of improving oral health in Arkansas could be another method to ensure sustainability of oral health activities. For example, Delta Dental in other states has been a great contributor for change. We have seen this demonstrated in Arkansas with CWF when DDAF provided the necessary funding to implement the water fluoridation mandate proposed by Act 197 of the 2011 Arkansas General Assembly. That legislative act prevented municipalities from using tax revenue to purchase necessary equipment for water fluoridation. DDAF stepped forward and to-date has granted over $6.6 million in aid for the PWS affected by Act 197. Other projects with DDAF have included work to increase fluoride varnish services in the state, enhancing school nurse oral health education, and recruitment for the 2016 ArBSS.

Alternate or Additional Funding

The AOHSS objectives and activities are best achievable with continued support and funding for an oral health epidemiologist. Organizations such as HRSA and National Institute of Health (NIH) are potential entities for financial resource. The Health Resources and Services Administration offers a funding opportunity to states specific to oral health, through the Bureau of Health Workforce. This grant is also on a five-year cycle and helps states develop and implement innovative programs to address dental workforce needs. The OOH plans to write a strong application to garner this support to strengthen the AOHSS.

VII. PRIVACY AND DATA CONFIDENTIALITY

Strategies to Protect Privacy and Ensure Data Confidentiality

ADH maintains internal security procedures to protect the confidentiality of Arkansas citizens which also applies to the privacy and security described in the Data Management Plan submission. For more information, visit the link: http://www.healthy.arkansas.gov/aboutADH/Pages/HIPAA.aspx

In certain circumstances, the ADH policies supersede those of the OOH. All ADH employees take Health Insurance Portability and Accountability Act (HIPAA) certification test every year and abide by following ADH policies to protect security and privacy of confidential data.

Personal Identifiable Information (PII):

Items with individual identifiers are placed face down or in envelope(s) while in office or transport. Items with individual identifiers (e.g., surveys and electronic media) are kept in a locked file cabinet when out of office or when not in current use. De-identified survey data may be stored indefinitely as opposed to individual patient data. After surveys are compiled and data are de-identified in electronic file, written copies of individual responses are shredded within 90 days. After surveys are compiled & data input on encrypted media, electronic copies of individual responses are also disposed of (CD or flash drive erased) within 90 days. When in doubt, personnel may speak to the OOH Director before shredding papers or erasing CD or flash drives.

Encryption and Password Protection:

While sending and accepting data in an electronic media (flash drive or CD), the device is encrypted, and the encryption key or password is given verbally or via a separate email message. Transference of data through email is in the form of an encrypted attachment, not in the body of the email itself. The password or encryption key are sent in a separate email message.

Memorandum of Agreements:

SBSP data are often shared among ACH, UAMS, and UALR. In such circumstances, written protocol, memorandum of understanding, or business agreements are required or considered for transference of survey responses or data.

Protection of Human Subjects:

All activities within the OOH are non-research public health practices, that do not require Institutional Review Board (IRB) reviews. Nonetheless, the OOH seeks approval from the SAC to scrutinize validity of scientific activities in the agency and protection of PII and human subjects. ADH also maintains an agreement of compliance with an IRB, served by UAMS.

VIII. EVALUATION

Evaluation Framework:

The evaluation of the AOHSS will be conducted by using CDC's "Framework for Evaluation in Public Health." The plan presented here is succinct but utilizes the essential elements of the program evaluation i.e., engaging stakeholders, describing the surveillance system, using specific evaluation design, gathering credible evidence and analyzing; sharing results to inform program and partners; and providing recommendations based on results to strengthen program activities.

Purpose of Evaluation:

The purpose of the evaluation is to examine the following broad questions. More specific topics for assessment are presented in the Evaluation Design section.

1. Did OOH maintain the capacity for data collection, analysis, and interpretation?
2. Did AOHSS efforts help improve program data quality?
3. Was oral health data collected and analyzed in a timely manner?
4. Did AOHSS track specific health outcomes in addition to process measures?
5. Did OOH share data with people who undertook prevention and control activities?
6. How did the data assist in making decisions for programs and policies?

The evaluation process will involve OOH staff and the stakeholders, not just the evaluation expert.

I. Engaging Stakeholders:

The Oral Health Evaluator will primarily consult CDC, OOH team, AOHSS epidemiologist, and some of the external stakeholders (e.g., AOHC members) for the development of the evaluation report. Utilizing CDC resources and guidance during process monitoring and outcome evaluation, the evaluator will maintain situational awareness of AOHSS performance. With this collaboration, the OOH will garner the foresight to gather appropriate data and information for each objective presented in the AOHSS plan, to ensure effective evaluation during the intermittent and the end of the evaluation cycle. The evaluator will provide guidance to the AOHSS team to utilize its collaborations with diverse partners to inform and help them use surveillance data and information for any decision-making process.

II. Describe the Surveillance System:

The AOHSS is housed within the OOH, one of the ADH branches under the administration of Center for Health Advancement. The OOH is led by the Director and Section Chief who provide oversight to a team of four staff members, three SBSP contractors, and three contracted hygienists who work in the field within their jurisdictions. The AOHSS was first established in the OOH in 2007 and published the first five-year AOHSS Plan in 2013. In 2018, the program was granted the support of CDC 1810 cooperative agreement funds. The OOH prepared and published the second AOHSS Plan in 2019. The current plan is a significant update based on the new CDC template. The AOHSS plan is designed to collect data on oral health indicators based on available sources and surveillance capacity. It plays an important role in assessing the burden of oral diseases, the use of oral health care delivery systems, and the status of CWF. Burden of disease is typically determined by comparing baseline and follow-up data and by assessing disease prevalence and trends. Surveillance data can also be effectively used in prioritizing population groups for oral health interventions. The Evaluator plans to use specific evaluation topics, referred to in the Evaluation Design Section, to assess the performance of the AOHSS. The topics will be examined at the end of the surveillance cycle.

III. Evaluation Design:

This Evaluation Design is simple and effective and constitutes the following three components.

A. Logic model for monitoring process
B. Key informant interviews for gathering credible evidence
C. Address evaluation questions and topics to examine processes and outcomes measures

A. Logic Model:

INPUT	EVALUATION ACTIVITY MEASURES	EVALUATION OUTCOME MEASURES
KEY INFORMANTS		
Director	Maintenance of surveillance capacity	Improved sustainability
Section Chief		
Epidemiologist	Monitoring core oral health indicators	Timely data collection/analysis; met funding requirements
Partners		
STAKEHOLDERS	Development of Oral Health Burden Report	Improved understanding oral health status
OOH		
AOHSS	Utilizing data to help develop the State Plan	Developed guidance for state OH activities
AOHC		
CDC	Improving SBSP data collection/reporting	Improved sealant data quality
DATA SOURCES		
OOH	Expansion of needs assessment of PWSs	PWS needs met for fluoridation capacity
SBSPs		
CWF	Data/information sharing with partners	Improved situational awareness
ArBSS		
Burden Report	Partners' feedback on the role of AOHSS	Understanding what works/what doesn't
Health Statistics		
Other		

B. Key Informant Interviews:

Key Informant Interviews (KII) are one of the most popular methods of collecting quantitative and qualitative data and information, more commonly on the input and processes or activities and sometimes on outcomes. Outcome data are commonly collected from reports and data analysis. During KII, an evaluator can gather in-depth program information using minimal resources. This method can be much cheaper and simpler than performing focus group interviews or surveys.

The evaluator will conduct KII with selected stakeholders mentioned in the "Input" column of the logic model. They may also perform interviews with the SBSP contractors, if deemed necessary. During the KII, structured questions will be used to elicit information to address specific evaluation questions and topics mentioned in the "Purpose of Evaluation" section and the "Evaluation Topics". To validate results, they may directly consult some of the data sources presented in the "Input" column of the logic model. All the information gathered on the input, process, and outcome will constitute credible evidence.

C. Evaluation topics to be assessed for the period (2021-2026)

1. The OOH will maintain the funding and expertise required to sustain AOHSS activities, primarily the epidemiologist and evaluator.
2. The AOHSS team will compare the most current available data with the baseline for the core indicators recommended by CDC, to assess oral health disease status in Arkansas in a timely manner.
3. The AOHSS team will collect/analyze data related to oral health preventive behavior, diseases and conditions, and service utilization among various demographic groups (e.g., children, adult, older adult etc.), to accurately assess the burden of oral health in Arkansas.
4. The OOH team will utilize burden of oral health and other available data to develop the Oral Health State Plan outlining oral health priorities and prevention in Arkansas.
5. The AOHSS team will improve SBSP data collection, management, and reporting by providing appropriate tools and trainings (e.g., sealant training manual) to the contractors and partners.
6. The AOHSS team will collect/analyze data related to recent CWF needs assessment where only 50% of water operators responded.
7. The AOHSS team will not only routinely share oral health data with its stakeholders but also present data to help them interpret it correctly and understand its importance in prioritizing population interventions and program evaluation.
8. Based on the previous seven measures, internal and external collaborators will decide whether the AOHSS served effectively in monitoring burdens of oral health disease (e.g., dental caries), use of oral health care and access (e.g., sealant treatment), and the status of CWF.

IV. Credible Evidence

In this evaluation design, the credible evidence will constitute KII results, data related to the evaluation questions from respective data sources, and partners' input.

V. Conclusions and Recommendations

Based on the information gathered, the evaluator will assess and infer the performance of the AOHSS and highlight the successes and challenges of the surveillance process. Based on the challenges and gaps, the evaluator will discuss solutions with the OOH team to propose an enhancement plan for future cycles.

VI. Sharing Results

The evaluation report accompanied with the surveillance progress report will be shared with the OOH team, key personnel of ADH Center for Health Advancement, and ADH senior management for review and approval. After approval, the final draft will be submitted to the CDC for further approval and technical response. The evaluator will respond to CDC's questions and meet with the OOH Director and key staff members to discuss the enhancement plan. The OOH team will share evaluation results along with the surveillance progress with other

stakeholders at its discretion.

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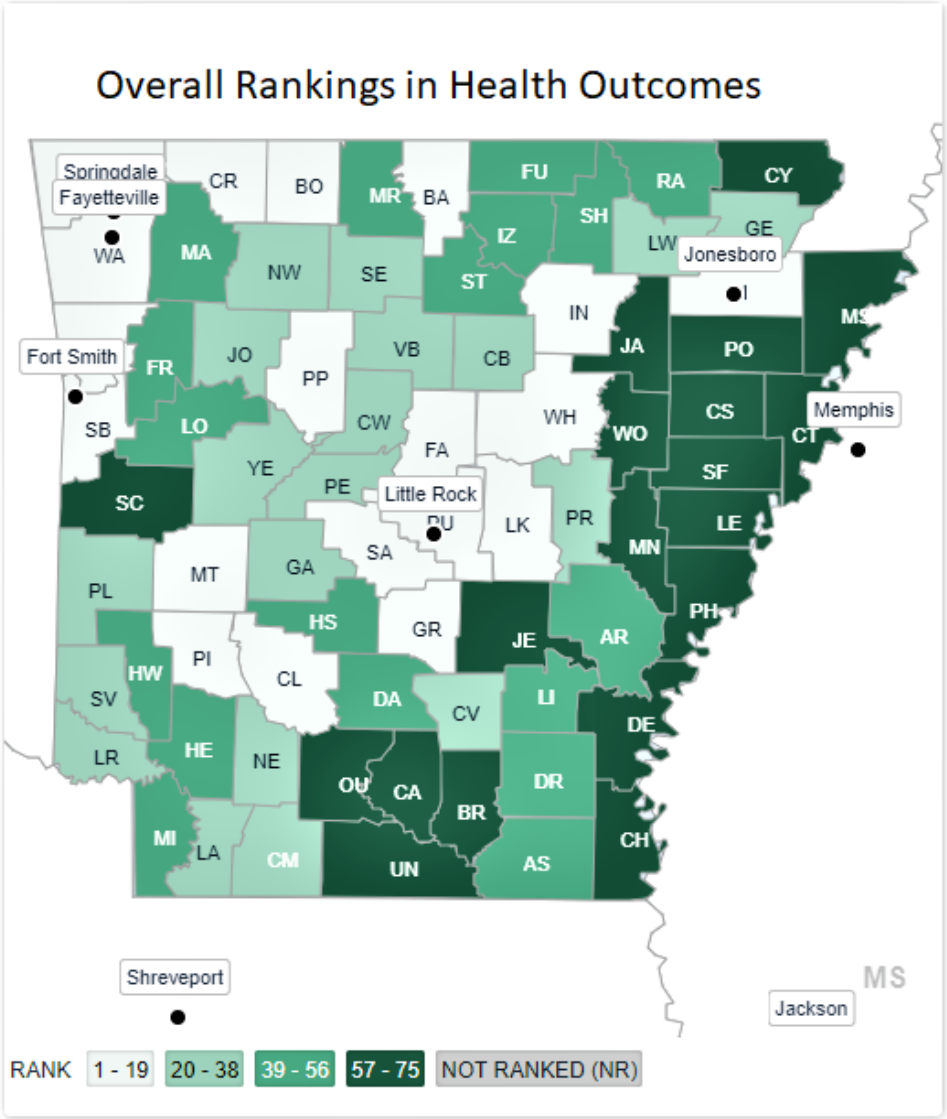
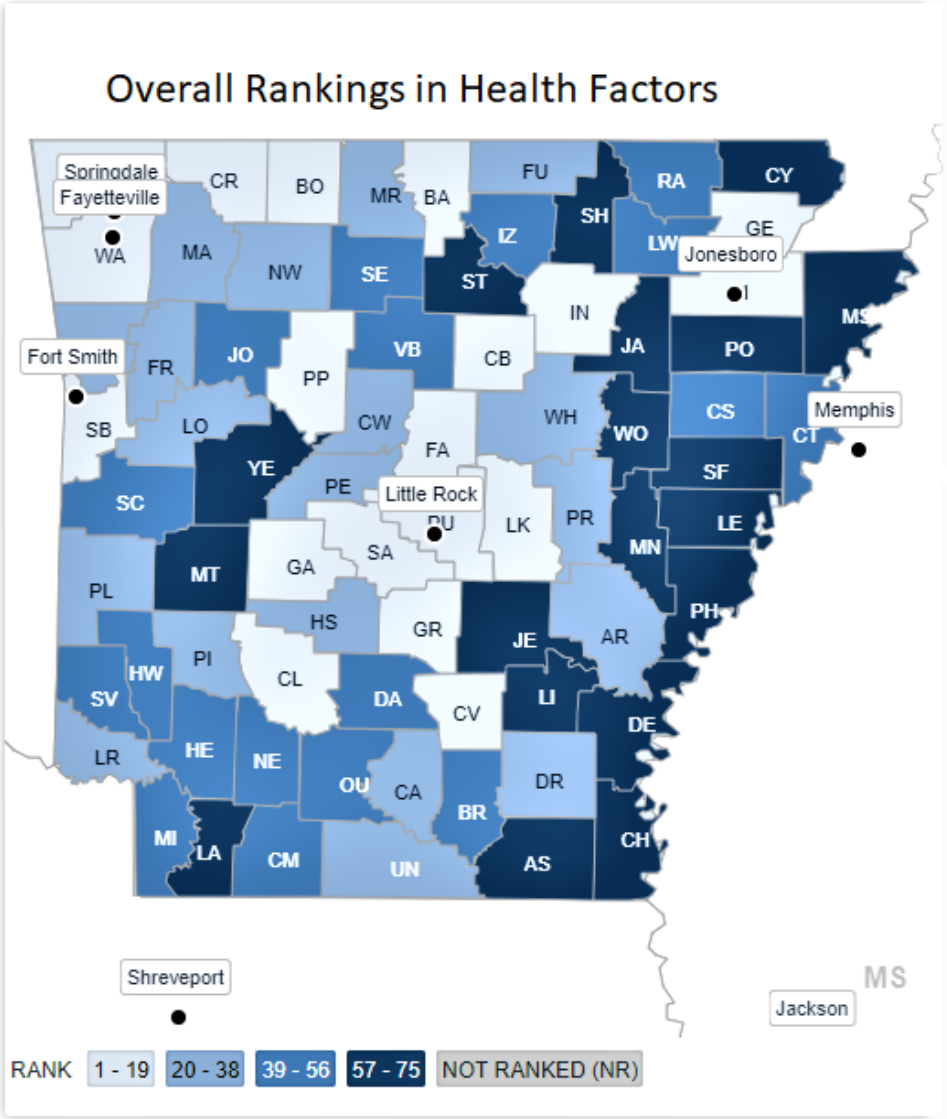
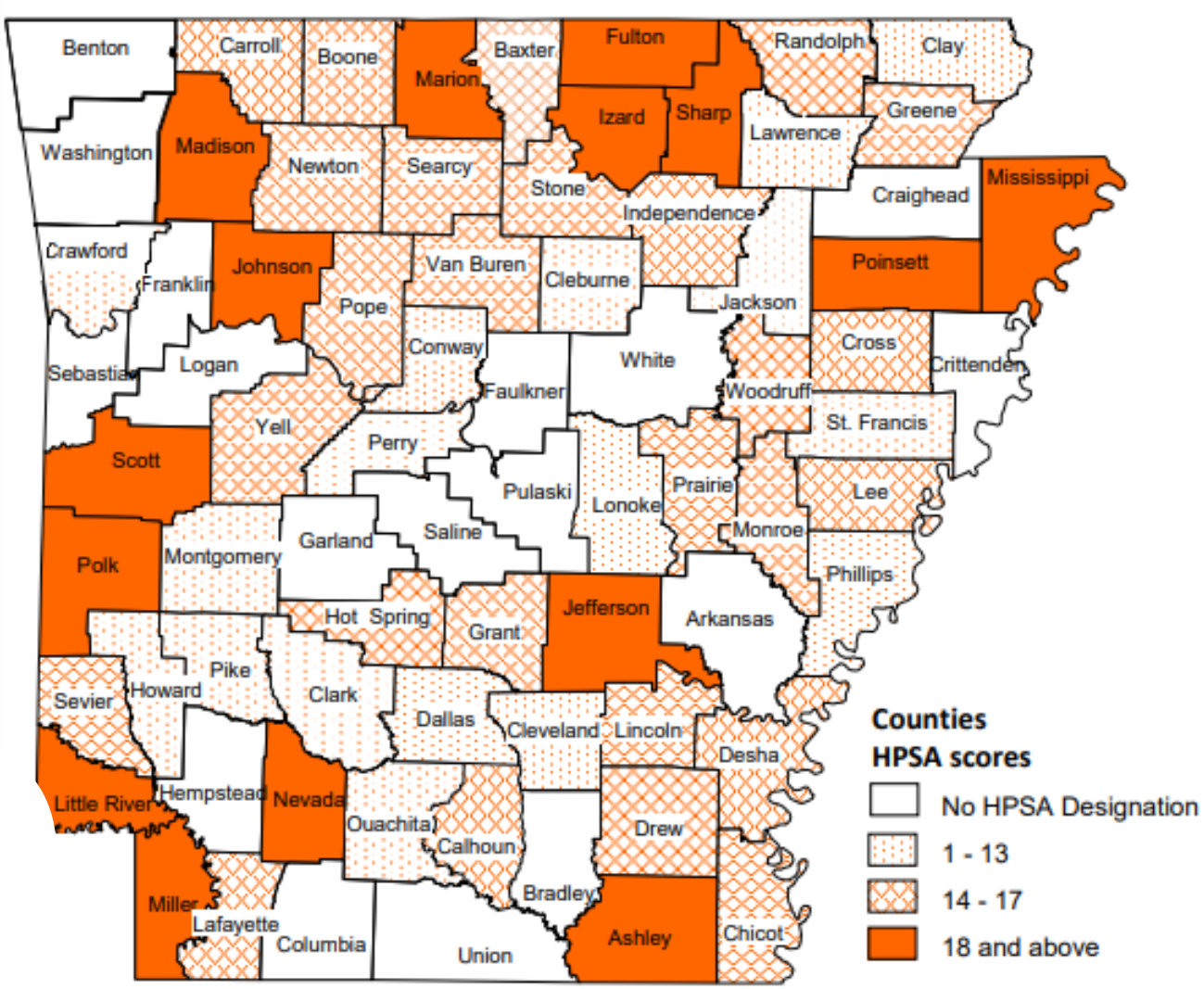
APPENDICES

Appendix 1. Arkansas's overall county health ranking, County Health Rankings & Roadmaps, 2020 Report





Appendix 2. Arkansas Dental Health Professional Shortage Areas (HPSA) provided by ADH Rural Health & Primary Care, 2021



Appendix 3. List of Partners and Collaborators, 2021

- Arkansas Cancer Coalition
- Arkansas Center for Health Improvement
- Arkansas Children's Hospital
- Arkansas Dental Assistants Association
- Arkansas Department of Health
    - ADH Engineering
    - Community Health Nurse Specialists
    - Hometown Health Improvement
    - Office of Minority Health and Health Disparities
    - Office of Rural Health and Primary Care
    - Tobacco Prevention and Cessation Program
- Arkansas Department of Education
- Arkansas Department of Human Services
    - Office of Developmental Disabilities
    - Office of Medicare and Medicaid Services
- Arkansas Head Start Association
- Arkansas Minority Health Commission
- Arkansas School Nurses Association
- Arkansas State Board of Dental Examiners
- Arkansas State Dental Hygienists' Association
- Chronic Disease Coordinating Council
- Community Health Centers of Arkansas, Inc.
- Delta Dental of Arkansas
- Delta Dental of Arkansas Foundation
- Healthy Connections, Inc.
- Managed Care of North America
- Rock Dental Brands
- Special Olympics of Arkansas
- St. Jude Children's Research Hospital
    - HPV Cancer Prevention Program
- University of Arkansas for Medical Sciences
    - Dental Hygiene Program
    - Head Start/Early Head Start
- University of Arkansas Little Rock, Children International
- University of Arkansas Pulaski Tech
    - Dental Assisting Program