State Oral Health Plan

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State Oral Health Plan

Executive Summary

South Carolina has made huge strides in improving oral health through fluoridation of community water systems, increased state Medicaid fee reimbursement rates for dentists, school-based dental prevention programs, and oral health promotional campaigns. However, oral disease remains pervasive in our state among families with lower incomes or less education, the frail elderly, those with disabilities, those who are under-insured, and minority groups. Preventable oral diseases account for a great deal of tooth loss and can act as a focus of infection that impacts outcomes of serious general health problems such as coronary heart disease, diabetes, pre-term low birth weight, and others.

This State Oral Health Plan will present the reader with an understanding of the burden of oral disease in South Carolina, the collaborative process utilized in developing a comprehensive plan for action, a vision statement with action plan, and methods to evaluate plan outcomes. The heart of the document is the plan for action, which includes five priorities with specific strategies and action steps for each priority. Also included in the plan for action are objectives from Healthy People 2010. This prevention agenda for the Nation presents national health objectives designed to identify the most significant preventable threats to health and then establishes national goals to reduce these threats. The Healthy People 2010 objectives will serve as additional benchmarks for success in evaluating the outcomes of the planned strategies and action steps.

Listed below are the five major priority areas and strategy statements for the plan for action, which was approved by the South Carolina Oral Health Advisory Council in December 2003:

Priority 1 – Policy & Advocacy
- Strategy 1: Establish a South Carolina Oral Health Advisory Council to serve as an advisory group to DHEC’s Oral Health Division.
- Strategy 2: Expand the South Carolina Oral Health Coalition to address oral health issues over the lifespan.

Priority 2 – Prevention & Education
- Strategy 1: Increase public awareness of oral health benefits.
- Strategy 2: Increase knowledge of non-dental providers.
- Strategy 3: Assure access to optimally fluoridated water.
- Strategy 4: Establish statewide oral cancer education program.

Priority 3 – Dental Public Health Infrastructure
- Strategy 1: Obtain the resources for a sustainable Dental Public Health Program.
- Strategy 2: Participate in Association of State and Territorial Dental Directors Program Review.
• Strategy 3: Create a state oral health surveillance system.
• Strategy 4: Expand Dental Safety Net.
• Strategy 5: Expand and maintain state dental public health infrastructure in DHEC.

**Priority 4 – Dental Workforce Development**
• Strategy 1: Obtain outside technical assistance.
• Strategy 2: Expand system capacity.
• Strategy 3: Advocate for the creation of a licensure by credentials program to increase access to dental care for underserved populations.
• Strategy 4: Pursue provider incentive programs for underserved populations.

**Priority 5 – Access to Oral Health**
• Strategy 1: Expand and sustain community-based dental partnerships.
• Strategy 2: Expand and sustain school-based dental programs targeting services based on economic indicators.
• Strategy 3: Establish early childhood dental prevention programs.
• Strategy 4: Continue to improve state Medicaid and Children’s Health Insurance Program including appropriate fee reimbursement rates, streamlining procedures, provider and client education, and improved primary care enhancement services.
• Strategy 5: Expand outreach efforts to enroll “potentially eligible” children into both Medicaid and Children’s Health Insurance Program.
• Strategy 6: Expand the pilot community-based periodontal disease screening and treatment project to include pregnant women in an effort to reduce the risk of pre-term/low birth-weight babies.

The collaborative process used to develop the State Oral Health Plan will again be needed to successfully implement, monitor, evaluate and modify the plan for action. The South Carolina Oral Health Advisory Council will take a leadership role in this collaborative process by working with members of the South Carolina Oral Health Coalition and other key stakeholders to improve the oral health of all South Carolina citizens.
State Oral Health Plan

Burden of Oral Disease in South Carolina

The U.S. Surgeon General’s Report: Oral Health in America, released in May of 2000, provided a wake-up call to America concerning the “silent epidemic of oral disease affecting our most vulnerable citizens.” Currently in South Carolina we have a population of about 4 million with approximately 68% white, 30% non-white and 2% other (mostly Hispanics). The per capita income is approximately $14,000 with nearly 50 percent of all children receiving free or reduced-cost school lunches. The major challenge for our state is to ensure oral health for families with lower incomes or less education, the frail elderly, those with disabilities, those who are under-insured, and minority groups.

In 1999, the dentist-to-population ratio in South Carolina was 195 dentists per 100,000 people. This is lower than the national average with our state ranking 45th nationally. Forty-one of the 46 counties are designated Dental Healthcare Professional Shortage Areas (D-HPSA). The dental health workforce in South Carolina also lacks diversity. Although non-whites represent 30% of the total population, only 10% of dentists and 5% of dental hygienists in the state are non-white.

Access and utilization of dental health services remain problematic for many families in South Carolina. Insurance does not guarantee access to needed preventive and primary care services. In 1999, 83.5 percent of Medicaid eligible children received at least one primary care service and less than a quarter received at least one dental service. In 2003, 38.3% of the Medicaid eligible children received any dental services, 12.1% received a preventative dental service, and only 15.2% of the 7-9 year olds receive a dental sealant on one of their permanent molar. The Oral Health Disease Prevention in School-Aged Children Project reported that in selected elementary schools, 19 percent of students screened were referred with oral health problems, but only 3 percent of all students reportedly completed care. The Preschool Health Appraisal Project data for 1997 also revealed that only 13 percent of pre-school aged children received any preventive dental service.

The oral health status data for adults and older adults is lacking in our state but according to the Surgeon General’s Report “Those with incomes at or above the poverty level are twice as likely to report a dental visit in the past 12 months as those who are below the poverty level.”

In recognition of the growing need for oral health improvements in South Carolina, the Department of Health and Environmental Control provided leadership to key statewide stakeholders in building a comprehensive dental public health infrastructure for our state. One major gap in developing this infrastructure was the total lack of a system to
collect oral health surveillance information. In this regard, a major concern was the lack of current data regarding the disease burden rates in school-aged children.

The last school-based survey of this population was conducted in 1982-83. The results were published in 1983 and the survey found about 74% of the children aged 5-17 years had experienced caries (97% of 17 year old children). Fifty-four percent of white children needed dental treatment while seventy-nine percent of the non-white children required dental treatment.

The issue of the disease burden rates for school-aged children was again addressed in 2001-02 with a statewide Oral Health Needs Assessment. To standardize this assessment, the Seven-Step Model of the Association of State and Territorial Dental Directors was used and an advisory committee was established to finalize the design of the actual survey process. The following objectives were agreed upon for the needs assessment process:

1. Determine prevalence of dental caries in school-aged children (Kindergarten and Third graders) in the state of South Carolina.
2. Obtain baseline data for establishing ongoing surveillance of dental health in South Carolina’s children.
3. Provide data necessary to establish and focus prevention programs, policies, and resources.

The needs assessment survey findings revealed that 51.6% of the sampled children had caries; 32.2% suffered from untreated decay; only 20.3% of the third grade children had at least one permanent with a dental sealant; and 11.4% required immediate dental care. Further analyses of the findings showed that children who are non-white, participate in free and reduced program (Low SES), and/or live in a rural county, suffer disproportionately from oral disease as compared to white, high SES, and urban children. Consistent with national data, dental caries is still the most common chronic disease for South Carolina’s children.

The survey did not record disease experience for children with special health care needs. Anecdotal information on the lack of qualified providers for this population indicates a more severe oral health access problem exists for special needs patients.

The completed needs assessment survey findings can be found in the appendices.
Recognizing the critical need to address the growing epidemic of dental disease, a subcommittee of the National Governors Association, with the Center for Best Practices sponsored a series of Policy Academy for State Officials addressing the issue of improving oral health care for children. A South Carolina team participated in the first Oral Health Policy Academy held in Charleston in December 2000 and began work on a state oral health plan that identified broad priority areas for action. These included policy and advocacy, prevention and education, dental public health infrastructure development, dental workforce enhancement, and access to oral health services. Following the Academy, State Oral Health Summits were held in Columbia during April and November 2001 to give key stakeholders in the state the opportunity to further define potential strategies and action steps for the evolving plan.

In 2002, efforts to establish an oversight committee in accordance with the first priority of the developing plan for action were not successful. However, in April 2003 a twenty member South Carolina Oral Health Advisory Council was established with the purpose of providing overarching guidance and support in:

- Providing advice and guidance on the implementation and evaluation of the State Oral Health Plan;
- Serving as advocates for critical oral health issues in the state; and
- Working to promote greater collaboration of effort in addressing oral health issues in South Carolina.

This Council began with a complete review of the draft version of the plan. Since this document at this time only addressed children, needed revisions were made to the vision statement and priorities, strategies and action steps in the plan for action to reflect a lifespan approach to oral health. In December 2003, members of the Council approved a vision statement and plan for action to be included in the final State Oral Health Plan. Further minor revisions to strategies and action steps were made in the March 2004 meeting. During the process of reviewing the plan for action, Council members identified critical policy issues to be included in an Oral Health Policy Agenda. This Agenda will provide guidance for Council members as they advocate for needed oral health policy changes in South Carolina.

In November 2003 the South Carolina Oral Health Coalition was established in accordance with priority one of the plan for action. The purpose of this group was to develop oral health promotion and disease prevention activities at the state and community levels. The planned activities would be defined in a plan for action, address lifespan oral health problems and issues, and be consistent with the State Oral Health Plan. Coalition work groups that represent children, adolescents, adults and older adults
are currently completing work plans that will become the Coalition’s Action Plan. This Action Plan will help our state achieve many of the strategies and action steps as set forth in the State Oral Health Plan.
State Oral Health Plan

Vision

We envision a South Carolina where every person enjoys optimal oral health as part of total well-being and:

- Prevention and education are priorities;
- Treatment is available, accessible, affordable, timely, and culturally competent;
- Responsibility is shared among patients, parents, providers, employers and insurers; and
- Collaboration by government, higher education, and the private sector ensures resources, quality, and patient protection.
State Oral Health Plan

Plan for Action

1. Priority One - Policy and Advocacy

Background - It was emphasized repeatedly during the National Governor’s Association Policy Academy in 2000 and two state oral health summits held in 2001 that the most critical aspect of the state’s response to the silent epidemic of dental disease is to assemble a group of high profile stakeholders to guide the process of increasing recognition of oral health issues among policy makers and the public. As former US Surgeon General stated in his 2000 Report on Oral Health in America, we should “change perceptions regarding oral health and disease so that oral health becomes an accepted component of general health.”

1.1 Strategy: Establish a South Carolina Oral Health Advisory Council to serve as an advisory group to South Carolina Department of Health and Environmental Control’s (DHEC) Oral Health Division.

Action Steps
1.1.1 Conduct first meeting of the Council in April 2003.
1.1.2 Conduct semiannual meetings of the Council.
1.1.3 Provide annual progress report with recommendations to the Council.

1.2 Strategy: Expand the South Carolina Oral Health Coalition to address oral health issues over the lifespan.

Action Steps
1.2.1 Secure approval of the South Carolina Healthy Schools Children’s Oral Health Coalition to become a work group of the South Carolina Oral Health Coalition.
1.2.2 Secure grant funding for expansion of the Coalition through DHEC's Oral Health Division.
1.2.3 Establish the membership and work groups for the Coalition.
1.2.4 Secure non-profit support for Coalition activities.
1.2.5 Encourage the establishment of local oral health coalitions.

2. Priority Two - Prevention and Education

Background - Education of the public, policy makers, and providers are essential elements of the former US Surgeon General’s “Framework for Action” in addressing oral health needs. Especially critical is the integration of oral health into the general health
care system and recognition of oral health as part of primary health care and an emphasis on primary prevention.

2.1 **Strategy: Increase public awareness of oral health benefits.**
*Healthy People 2010, Objective 7-11*: Increase culturally appropriate and linguistically competent community health promotion and disease prevention programs.

**Action Steps**
- 2.1.1 Promote the recognition of oral disease as a health disparity.
- 2.1.2 Create a social marketing plan and implement a public awareness/education campaign on oral health.
- 2.1.3 Disseminate the campaign materials on oral health to the media.
- 2.1.4 Review, update and implement the oral health education curriculum through the South Carolina Department of Education.
- 2.1.5 Collaborate with outreach programs such as Family Support Services (FSS), Women, Infant & Children’s Services (WIC), etc to enhance other educational efforts.

2.2 **Strategy: Increase the knowledge of non-dental providers.**
*Healthy People 2010, Objective 7-11*: Increase culturally appropriate and linguistically competent community health promotion and disease prevention programs.

**Action Steps**
- 2.2.1 Partner with Area Health Education Consortium (AHEC), University of South Carolina (USC) and Medical University of South Carolina (MUSC) to develop oral health training modules for physicians and nurse practitioners.
- 2.2.2 Involve DHEC Commissioner’s Pediatric Advisory Committee and Obstetric Task Force in outreach to medical community to increase knowledge of oral health assessments and prevention.
- 2.2.3 Continue school nurse oral health assessment education.
- 2.2.4 Incorporate oral health training in all DHEC provider education programs.

2.3 **Strategy: Assure access to optimally fluoridated water.**
*Healthy People 2010, Objective 21-9*: Increase persons on public water receiving optimally fluoridated water.

**Action Steps**
- 2.3.1 Develop amendment to DHEC’s policy for monitoring of fluoride levels in drinking water by requiring daily monitoring of systems with monthly reporting and participation in the Centers for Disease Control and Prevention’s Water Fluoridation Reporting System (WFRS).
- 2.3.2 Advocate for public access to fluoridation monitoring results.
- 2.3.3 Partner with DHEC’s Bureau of Water and National Association for Public Health Statistics and Information Systems (NAPHSIS) to provide Geographic
Information Systems (GIS) mapping of community water fluoridation levels for publication in print and electronic format.

2.3.4 Secure resources to support modernization and repair of local community water fluoridation equipment through a mini-grant process.

2.4 **Strategy: Establish a statewide oral cancer education program.** *(Healthy People 2010, Objective 21-7: Increase number of oral cancer examinations.)*

**Action Steps**

2.4.1 Actively participate in Oral Health America’s National Spit Tobacco Education Program.
2.4.2 Expand partnerships with South Carolina Department of Alcohol and Other Drug Abuse Services, American Cancer Society, South Carolina Tobacco Collaborative, Local Tobacco Coalitions, and DHEC’s Tobacco Prevention Program.
2.4.3 Include tobacco education in school health programs.
2.4.4 Emphasize importance of early detection to public and providers.
2.4.5 Advocate for spit tobacco to be integrated into smoke tobacco policies to form a more comprehensive anti-tobacco message.

3. **Priority Three - Dental Public Health Infrastructure Development**

**Background** - The Surgeon General’s report: *Oral Health in America*, released in the spring of 2000, recommends the building of an effective health infrastructure to meet the oral health needs of all Americans and to integrate oral health effectively into overall health. Cutbacks in state budgets have reduced staffing of state dental programs and curtailed oral health promotion and disease prevention efforts. An enhanced public health infrastructure will facilitate the development of strengthened partnerships with private practitioners, other public programs, and voluntary groups.

3.1 **Strategy: Obtain the resources for a sustainable state Dental Public Health Program.**

**Action Steps**

3.1.1 Pursue funds through the South Carolina Tobacco Settlement and/or other state resources.
3.1.2 Pursue grant funds through federal funding sources such as Centers for Disease Control (CDC) and Health Resources and Services Administration (HRSA).
3.1.3 Pursue grant funds through private funding sources such as the Robert Wood Johnson Foundation (RWJF).

3.2 **Strategy: Participate in the Association of State and Territorial Dental Directors (ASTDD) Program Review.**
Action Steps
3.2.1 Review and implement recommendations.
3.2.2 Repeat program review every 5 years.

3.3 **Strategy: Create a state oral health surveillance system.**
*Healthy People 2010, Objective 21-16: Increase number of state-based surveillance systems.*

**Action Steps**
3.3.1 Conduct a statewide oral health assessment.
3.3.2 Collaborate with South Carolina Budget & Control Board’s Office of Research and Statistics (ORS) to link data sources.
3.3.3 Publish initial and biannual surveillance reports in electronic copy.
3.3.4 Publish surveillance reports in hard copy every 5 years.
3.3.5 DHEC will conduct statewide oral health assessment every 10 years consistent with Healthy People 2010 cycle.

3.4 **Strategy: Expand Dental Safety Net.**
*Healthy People 2010, Objective 21-14: Increase the number of community health centers and local health departments with oral health component.*

**Action Steps**
3.4.1 Expand the number of community health centers with a dental component.
3.4.2 Expand school-based dental prevention programs statewide.
3.4.3 Increase the number of local health departments with an oral health component.

3.5 **Strategy: Expand and maintain state dental public health infrastructure in DHEC.**

**Action Steps**
3.5.1 Establish an oral health coordinator position in each DHEC health district.
3.5.2 Secure sustainable funding for these established oral health coordinator positions.

4. **Priority Four - Dental Workforce Development**

**Background** - The Surgeon General’s report: *Oral Health in America* states that a closer look at trends in the workforce discloses a worrisome shortfall in the numbers of men and women choosing careers in oral health. Government and private sector leaders are becoming aware of the problem and are discussing ways to increase and diversify the talent pool, including easing the financial burden of professional education, but additional incentives may be necessary.

4.1 **Strategy: Obtain Outside Technical Assistance.**

**Action Steps**
4.1.1 Convene work group to develop an action plan based on the HRSA report addressing dental workforce.
4.1.2 Address the number and distribution of providers.
4.1.3 Review and implement the recommendations of the work group in 4.1.1 and develop a dental workforce action plan.

4.2 **Strategy: Expand system capacity.**
**Healthy People 2010, Objective 21-14:** Increase number of community health centers and local health departments with oral health component.

**Action Steps**
4.2.1 Expand community health centers providing dental care.
4.2.2 Increase public-private partnerships through Medicaid and provider recruitment.
4.2.3 Integrate oral health component to local health department operation plans.

4.3 **Strategy: Advocate for the creation of a licensure by credentials program to increase access to dental care for underserved populations.**

**Action Steps**
4.3.1 DHEC, South Carolina Dental Association (SCDA), South Carolina Dental Hygienists Association (SCDHA) and South Carolina Department of Labor, Licensing and Regulation’s (LLR) Board of Dentistry review the current volunteer dental license qualifications and establish a criterion for an expanded licensure by credential program within 2 years.
4.3.2 South Carolina Oral Health Advisory Council supports legislative action by LLR for licensure by credential program.

4.4 **Strategy: Pursue provider incentive programs for underserved populations.**

**Action Steps**
4.4.1 DHEC, South Carolina Primary Health Care Association (SCPHCA), State Office of Rural Health (ORH), SCDA, SCDHA and MUSC collaborate to establish criteria and structure for provider incentive programs.
4.4.2 Stakeholders support request for funding of the programs.
4.4.3 Implement the programs.
4.4.4 Evaluate the impact of the programs.

5. **Priority Five - Access to Oral Health Services**

**Background** - The Surgeon General’s report: *Oral Health in America* presents data on access, utilization, financing, and reimbursement of oral health care. The data indicate that lack of dental insurance, private or public, is one of several impediments to obtaining oral health care and accounts in part for the generally poorer oral health of those who live at or near the poverty line. In addition, individuals whose health is
physically, mentally, and emotionally compromised need comprehensive integrated care. The Report calls for the use of public-private partnerships to improve the oral health of those who still suffer disproportionately from oral diseases.

5.1 **Strategy: Expand and sustain community-based dental partnerships.**

**Healthy People 2010, Objective 21-2:** Reduce untreated dental decay in children and adults.

**Healthy People 2010, Objective 21-8:** Increase sealants in 8 yr old children with first molars and in 14 yr old children with first and second molars.

**Action Steps**

5.1.1 Conduct community forums in priority areas to educate stakeholders and initiate planning for oral health improvements.

5.1.2 Support efforts of local communities to implement their plans for improvement.

5.2 **Strategy: Expand and sustain school-based dental programs targeting services based on economic indicators.**

**Healthy People Objective 21-12:** Increase preventive dental services for poor children.

**Action Steps**

5.2.1 Compile list of existing programs.

5.2.2 Distribute state public health guidelines for school-based programs.

5.2.3 Secure South Carolina Department of Education support for programs.

5.2.4 Establish and expand community-based school dental prevention programs.

5.2.5 Advocate for expansion of the state’s Children’s Health Insurance Program (CHIP) coverage to 200% of federal poverty level.

5.2.6 Establish and expand statewide partnerships providing dental sealants to targeted children.

5.3 **Strategy: Establish early childhood dental prevention program.**

**Healthy People 2010, Objective 21-1:** Reduce caries experience in children.

**Action Steps**

5.3.1 Expand Aiken County First Steps’ “First Smiles” and RWJF “More Smiling Faces” oral health programs for children.

5.3.2 Train and certify physician office staff on oral health assessment, education, and fluoride varnish application for children ages 0-3.

5.3.3 Partner with payers (private and public) and private physicians to implement program.

5.3.4 Establish state guidelines for child care and Head Start oral health programs based on existing standards of Head Start.

5.3.5 Advocate for Medicaid reimbursement to physicians for dental services.

5.4 **Strategy: Continue to improve state Medicaid and Children’s Health Insurance Program (CHIP) including appropriate fee reimbursement rates,**
streamlining procedures, provider and client education, and improved primary care enhancement services.

**Action Steps**

5.4.1 Pilot a case management system that links the medical home with the dental provider.

5.5 **Strategy:** Expand outreach efforts to enroll “potentially eligible” children into both Medicaid and CHIP.  
**Healthy People 2010, Objective 21-12:** Increase preventive dental services for poor children.

**Action Steps**

5.5.1 Utilize patient navigator under RWJF “More Smiling Faces” to enroll eligible children in Medicaid and CHIP.

5.6 **Strategy:** Expand the pilot community-based periodontal disease screening and treatment project to include pregnant women in an effort to reduce the risk of pre-term/low birth-weight babies.  
**Healthy People 2010, Objective 21-5b:** Reduce periodontal disease among adults.

**Action Steps**

5.6.1 Assess evaluation of the Periodontal Screening and Treatment for Childbearing Women project at Palmetto Health Richland in Columbia.

This Plan was approved and adopted by the South Carolina Oral Health Advisory Council on the 12th day of December 2003 with revised strategies and action steps approved and adopted by the Council on the 12th day of March 2004.
State Oral Health Plan

Evaluating the Plan

In July 2004, Dr. David P. Cecil with the University of South Carolina’s School of Social Work, developed a preliminary evaluation framework for the Division of Oral Health in DHEC. This initial framework was intended to measure the overall progress of oral health improvement in South Carolina and present useful planning data and information for the Division of Oral Health, South Carolina Oral Health Advisory Council, and South Carolina Oral Health Coalition. This document represented the first effort to combine the priorities, strategies and action steps of the State Oral Health Plan with the goals, objectives, activities, and responsibilities of the Division into one overarching framework.

Included with the framework are logic models. The logic model format is based on the United Way model of outcome measurement (United Way of America, Measuring Program Outcomes: A Practical Approach, 1997). The models include measurement of outputs, implementation and outcomes. The logic models directly address the State Oral Health Plan and programmatic areas within the Division currently funded through grants from the Centers for Disease Control and Prevention (CDC), Health Resources and Services Administration (HRSA), and Robert Wood Johnson Foundation (RWJF). Changes can be made to these logic models as the need arises. In general, the activities within the CDC, HRSA, and RWJF projects directly inform many of the priorities, strategies and action steps within the State Oral Health Plan, but each area is also viewed holistically. Since each project area has its own reporting requirements, the framework is designed so specific data can be extracted to satisfy different funding entities. For this reason, the framework is comprised of a series of logic models. The combination logic model demonstrates how each project area and the State Oral Health Plan come together to formulate a comprehensive approach. Each of the remaining logic models goes into significantly more detail as to how outcomes are measured for each activity.

Organizational change research suggests that changes, such as new evaluation frameworks, take 3 to 5 years for complete implementation (Brager & Holloway, 1992; United Way of America, 1997). This is especially true when organizations experience turnover. In August 2004, Dr. Cecil accepted a teaching position in Tennessee and the Division is currently looking for an evaluator to finalize his draft framework and logic models; guide efforts to identify, modify, and create data collection documents; determine how data is to be organized; and collaborate with the Council and Coalition on evaluation findings for future planning efforts. Since this evaluation effort will be dependent upon data collection, the evaluator will work in close coordination with the Division’s Surveillance Coordinator.
State Oral Health Plan

Appendices

- Surgeon General’s Report: Oral Health in America
- South Carolina Oral Health Needs Assessment 2002
- South Carolina Oral Health Advisory Council Membership
- South Carolina Oral Health Coalition Membership
Major Findings

- Oral diseases and disorders in and of themselves affect health and well being throughout life.
- Safe and effective measures exist to prevent the most common dental diseases - dental caries and periodontal diseases.
- Lifestyle behaviors that affect general health such as tobacco use, excessive alcohol use, and poor dietary choices affect oral and craniofacial health as well.
- There are profound and consequential oral health disparities within the U.S. population.
- More information is needed to improve America’s oral health and eliminate health disparities.
- The mouth reflects general health and well-being.

Framework for Action

- Change perceptions regarding oral health and disease so that oral health becomes an accepted component of general health.
- Build an effective health infrastructure that meets the oral health needs of all Americans and integrates oral health effectively into overall health.
- Remove known barriers between people and oral health services.
- Accelerate the building of the science and evidence base and apply science effectively to improve oral health.
- Use public-private partnerships to improve the oral health of those who still suffer disproportionately from oral diseases.
South Carolina Oral Health Needs Assessment 2002

Kindergarten and Third Grade Children

DHEC
PROMOTE PROTECT PROSPER
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Overview of South Carolina Oral Health Surveillance System

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References:
INTRODUCTION

The Surgeon General provided a wake up call concerning the oral health through the release in 2000 of his report, “Oral Health in America”. While his reference to the “silent epidemic” of dental disease took many individuals by surprise, it was not news to the many dedicated professionals and parents in South Carolina who have worked tirelessly to improve the health of our children. In recognition of the growing need, the SC Department of Health and Environmental Control (DHEC) partnered with the US Health Resources and Services Administration (HRSA) to provide leadership for a greatly expanded and focused dental public health program in South Carolina, starting in 2000. After this resumption of the expanded public oral health activities in South Carolina, gaps were identified in the dental health infrastructure. Similar to the national situation, there was a total lack of system of collecting oral health surveillance information. In this regard, a major concern was the lack of current data regarding disease burden rates in school-aged children. The last school-based survey of children was conducted in 1982-83. This issue was addressed in 2001-2 with the conducting of a statewide Oral Health Needs Assessment. This baseline survey served as the first step in establishing an integrated and comprehensive oral health surveillance system, funded by the Centers for Disease Control and Prevention (CDC).

A. OVERVIEW OF 1982-83 SURVEY

During the 1982-83 school year a random sample of about 6700 school children was examined. A DMFT (Decayed, Missing, and Filled Tooth) index was used to assess the status of each permanent tooth space excluding third molars (wisdom teeth). Each tooth space was the unit of measurement for the DMFT score (the sum of the disease conditions of all permanent teeth spaces in the mouth of each examined child). The D represented teeth which were decayed at the time of examination; the M represented teeth which were missing due to caries; and the F represented teeth which were previously decayed but had been filled, and had no evidence of decay remaining. A DMFT score is a cumulative measure of caries experience. Once a tooth is counted as a DMF tooth, it remains in the total score for the life of the individual.

The survey showed that 74% of children aged 5-17 had experienced caries. Non-white children had more decayed than filled teeth, while white children had more filled than decayed teeth. 54% of white children needed dental treatment while 79% of the non-white children required dental treatment.
B. **ASTDD SEVEN-STEP MODEL**

To standardize the 2002 needs assessment; the Seven-Step Model of the Association of State and Territorial Dental Directors (ASTDD) was used. In keeping with the first step of the model, an advisory committee was identified and several meetings were held between the committee and South Carolina Department of Health and Environmental Control (SC DHEC) Oral Health Division staff to finalize the design of the actual survey process. Three objectives were agreed upon as the final goal of the needs assessment process during these meetings.

C. **OBJECTIVES OF NEEDS ASSESSMENT SURVEY.**

The goal of the project was to achieve the following objectives.

1) Determine prevalence of dental caries in school-aged children in the state of South Carolina
2) Obtain baseline data for establishing ongoing surveillance of dental health in South Carolina’s children
3) Provide data necessary to establish and focus prevention programs, policies, and resources.

D. **SAMPLING AND DATA COLLECTION**

The needs assessment was conducted in South Carolina public schools, surveying children in grades K and 3. A sample size in the vicinity of 21,000 students was selected from 143 sample schools representing all 46 counties.

Sampling Methodology:

1. Counties were ranked in order from smallest to largest based on their total enrollment of K and 3 students.
2. A maximum sample size was obtained for each county by determining the proportion each county should contribute to the state total based on their enrollment and multiplying by 150 (the minimum number required to render the study adequate statistical power). This yielded a state total of 83,000 students, which was not a practical number to survey given the resources available. This represented about 25% of the total population of K and 3rd graders in the state.
3. The sample size was then reduced to 20% to get a workable number. In each case the counties whose sample size fell below 150 were increased to 150 to maintain the minimum sample size needed in each county, but to have the larger counties proportionally represented.
4. Once the sample size was obtained, schools were randomly selected in each county from a list of all schools in the state provided by the State Department of Education. This was done by running a SAS® (Statistical Analysis System) program, which assigned a random number between 0 and 1 to each school. A proportion of schools were then chosen depending on the sample size needed in each county. This was done separately for each county.
5. Once the random sample of schools was obtained, adjustments were made to ensure that the sample of schools was representative of each county in terms of race and socioeconomic status distribution. The proportion of non-white and white children and the proportion of students enrolled in the reduced and free lunch program in the sample were compared to the proportion of non-white and white children and reduced/free lunch program participants in the total population for each county. Reduced and free lunch participation was used as a proxy measure for income. Schools were added or substituted for to make sure the selected schools were representative of the overall child population in terms of race and income.

The survey took most of 2002 to administer. The process included questions on demographics and a brief dental screening. The dental screening survey instrument used was the Basic Screening Survey, an existing instrument developed and validated by the ASTDD.

E. DATA ENTRY AND ANALYSIS

Data entry was performed using Microsoft Excel and data files were sent to the SC Budget and Control Board, where the data were de-identified and information regarding race and socio-economic status (free and reduced lunch eligibility) was added. Data editing, standardization, and analysis was performed at the Oral Health Division (SC DHEC) using EpiInfo Statistical software from the Centers for Disease Control and Prevention (CDC).

The Oral Health Division, SC DHEC acknowledges and gives thanks to Health Promotion Specialists for sharing data on several of the schools included in our sample, and to Dr. Kathy Phipps of the ASTDD for providing invaluable technical assistance to the project.

A special thank you also goes to the many volunteer dentists and dental hygienists without whose help this project would never have been completed.
**DEFINITIONS**

1. **Dental Caries:** Occurs when the balance between the process of demineralization and the protective process of remineralization shifts towards demineralization. **Precavitated caries:** Early signs of dental caries appear when the process of demineralization progresses to the degree that the color and the translucency of the tooth surface are altered. **Cavitated Caries:** If demineralization continues, the outer surface structure collapses, leading to the formation of a cavity. In the Basic Screening Survey process teeth are only considered decayed at the point in the caries process when enough enamel has been lost from the surface to create a ½ mm discontinuity or, more simply stated a “hole.”

2. **Caries experienced:** Determined by the presence of an untreated cavity, a filling (which presumably was once a cavity), or a permanent molar tooth that is missing because it was extracted as a result of caries.

3. **Untreated Decay:** Determined by the presence of an untreated cavity.

4. **Dental Sealants:** A resin coating that covers the chewing surface of the molar teeth making them more resistant to decay.

5. **Statistical significance:** A finding is described as statistically significant when it can be demonstrated that the probability of obtaining such a difference by chance is relatively low.

6. **p<0.05:** is a value of statistical significance; p represents probability—the probability of getting something more extreme than the survey result. Less than .05 means that there is less than 5 percent chance that the result was due to chance.

7. **Statistical Power:** Odds that you will observe a treatment effect when it occurs.
KEY FINDING # 1: About half (51.6% or 11008) of the children screened had experienced decay. Criteria: at least one permanent or primary tooth with both:
- A loss of at least ½ mm of tooth structure at the enamel surface (cavitation), and,
- Brown to dark-brown coloration of the walls of the cavity

KEY FINDING # 2: 32.2% (6,874) of the children screened had untreated decay. Criteria: At least one primary or permanent tooth with untreated decay.
KEY FINDING # 3: Only 20.3% (2,144) of 3rd grade children screened had at least one permanent molar with a dental sealant. The Healthy People 2010 Objective is 50%.

![Dental Sealants](image)

KEY FINDING # 4: 20.7% (4,416) of children screened required early dental care while an additional 11.4% (2,442) required urgent dental care.

![Treatment Urgency](image)

**Criteria:**
**Urgent Dental care**: Pain, swelling, infection, and soft tissue ulceration of more than two weeks duration (Next dental visit should be within 24 hours).

**Early Dental care**: Caries without accompanying signs or symptoms, individuals with spontaneous bleeding gums, suspicious white or red soft tissue areas (Next dental visit should be within several months).

**No obvious problem**: Any patient without the above mentioned problems (Next dental visit should be next regularly scheduled check up).
KEY FINDING # 5: Non-white children had a significantly higher (p<0.05) history of caries (56%) than did white children (46.4%).
KEY FINDING # 6: 37.7% of non-white children had untreated decay while only 25.7% of white children had untreated decay. Overall, white children experienced significantly less untreated caries (p<0.05) compared to non-white children.

![Untreated Decay by Race](image)

KEY FINDING # 7: Of those with caries experience Non-white children had significantly higher proportion of untreated caries (62.4%), as compared to white children (35.7%).

![Caries experienced (proportion with untreated caries stratified by race)](image)
KEY FINDING # 8: White children had a statistically significant chance (p<0.05) of having at least one dental sealant compared to Non-White children.

![At Least 1 Dental Sealant, by Race](image)

KEY FINDING # 9: The need for early or urgent dental care was significantly higher (p<0.05) in non-white children than in white children. (24% of non-white children required early dental care, while 13.5% required urgent dental care compared to 16.7% of white children required early dental care, and only 9.1% required urgent care).

![Need of urgent care by race](image)
KEY FINDING # 10: Caries experience, untreated caries or needs of urgent care of Hispanic children were significantly higher (p<0.05) compared to results for white non-Hispanic children.

Figure 11  Caries Experience by Ethnicity

Figure 12  Untreated Decay by Ethnicity

Figure 13  Need for Urgent Treatment by Ethnicity
KEY FINDING # 11: The Lower Savannah Public Health District had a significantly higher proportion (68.9%) of children with caries history as compared to other Public Health Districts.

KEY FINDING # 12: The Lower Savannah Public Health District also had a significantly higher proportion of children (50.4%) with untreated caries as compared to other Public Health Districts.
KEY FINDING # 13: The Trident Public Health District had the highest proportion (38%) of children with at least one dental sealant. This is significantly higher than any other Public Health District.
Key Findings - By Socioeconomic Status

Information on the proportion of students in each school surveyed who were eligible for free and/or reduced meal program was obtained from South Carolina’s Office of Research and Statistics. The schools were then stratified into the following two income categories:

- Higher Income School: Less than 50% of the students are eligible for free and/or reduced meals
- Lower Income School: More than 50% of the students are eligible for free and/or reduced meals

KEY FINDING # 14: Children from lower income schools had higher caries history (54.5%) than children who attended higher income schools (47.2%).

Similarly, lower income schools had a higher proportion of children with untreated decay (35%) than did higher income schools (28%).
KEY FINDING # 15: Children who attended lower income schools were less likely to have at least one dental sealant than children who attended higher income schools.

Lower income school children had a higher need for both early and urgent dental care as compared to children in higher income schools.
Work force analysis (Dentists, Dental Hygienists) - Rural vs. Urban counties *

*Rural and urban counties definition is based on the size of the largest town. Counties with largest town 25,000 or greater are called Urban, and counties with largest town less than 25,000 are called Rural (South Carolina State Office of Rural Health)
Dentists

KEY FINDING # 16: According to the Office of Research and Statistics (ORS) at the SC Budget and Control Board, there are only 1,722* dentists employed in South Carolina (46 counties). Of these only 364 dentists are employed in 31 rural counties. In comparison 15 urban counties have 1520 practicing dentists (see table below). This difference is statistically significant.

<table>
<thead>
<tr>
<th>Number of dentists</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Carolina</td>
<td>1,722*</td>
</tr>
<tr>
<td>Rural counties (31)</td>
<td>364</td>
</tr>
<tr>
<td>Urban counties (15)</td>
<td>1520</td>
</tr>
<tr>
<td></td>
<td>4,012,012</td>
</tr>
<tr>
<td></td>
<td>1,161,245</td>
</tr>
<tr>
<td></td>
<td>2,850,767</td>
</tr>
</tbody>
</table>

Key Finding #17: Urban counties have 53.3 dentists per 100,000 people. In comparison rural counties have only 31.3 dentists per 100,000 people.

Figure 21

Number of Dentists per 100,000 population

*Each dentist is included in his/her primary practice as well as in any county in which he/she has a secondary practice location. Each dentist is counted only once in the state total. Thus the numbers by county may not add to the state total.
**Dental Hygienists**

KEY FINDING # 17: According to ORS, there are only 1,698 dental hygienists employed in South Carolina (46 counties). Of these only 275 dental hygienists are employed in 31 rural counties. In comparison 15 urban counties have 1423 practicing dental hygienists (see table below). This difference is statistically significant.

<table>
<thead>
<tr>
<th></th>
<th>Number of dental hygienists</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Carolina</td>
<td>1,698</td>
<td>4,012,012</td>
</tr>
<tr>
<td>Rural counties (31)</td>
<td>275</td>
<td>1,161,245</td>
</tr>
<tr>
<td>Urban counties (15)</td>
<td>1423</td>
<td>2,850,767</td>
</tr>
</tbody>
</table>

Key Finding #18: Urban counties have 49.9 dental hygienists per 100,000 people. In comparison rural counties have only 23.7 dental hygienists per 100,000 people.
An Overview of South Carolina Oral Health Surveillance System

South Carolina’s oral health surveillance system will be an extension of the needs assessment process. However, in addition to the clinical variables examined during the needs assessment process, several other oral health events will be incorporated into the surveillance system. These will include data from the CDC WFRS (Water Fluoridation Reporting System), the National Oral Health Surveillance System (NOHSS), the South Carolina Central Cancer Registry, the Behavior Risk Factor Surveillance System (BRFSS), the Youth Risk Behavior Surveillance (YRBS), the Pregnancy Risk Assessment Monitoring System (PRAMS), and from Medicaid (obtained through the ORS, SC Budget and Control Board).

The surveillance system will monitor the oral health status for all age groups (early childhood population, school-aged population, young adults, adults, and the elderly). At present, we are capable of acquiring data for school-aged children through partnerships with school program providers, and early childhood screening data through Head Start and the First Steps programs. The enormity of such a task will require considerable planning and resources before the State has the capacity to monitor the oral health status of all the age groups.

Data produced from the surveillance system will be effectively disseminated to the Centers for Disease Control and stakeholders in the state in the form of written reports, electronic news letters, presentations, and the DHEC oral health website.

--------------------------------------------------------------------------
APPENDIX A

Definitions of races*

- **White** — A person having origins in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who indicate their race as “White” or report entries such as Irish, German, Italian, Lebanese, Near Easterner, Arab, or Polish.

- **Black or African American** — A person having origins in any of the black racial groups of Africa. It includes people who indicate their race as “Black, African Am., or Negro,” or provide written entries such as African American, Afro American, Kenyan, Nigerian, or Haitian.

- **American Indian and Alaska Native** — A person having origins in any of the original peoples of North and South America (including Central America), and who maintain tribal affiliation or community attachment. It includes people who classify themselves as described below.
  - **American Indian** — Includes people who indicate their race as “American Indian,” entered the name of an Indian tribe, or report such entries as Canadian Indian, French-American Indian, or Spanish-American Indian.
  - **Alaska Native** — Includes written responses of Eskimos, Aleuts, and Alaska Indians as well as entries such as Arctic Slope, Inupiat, Yupik, Alutiiq, Egegik, and Pribilovian. The Alaska tribes are the Alaskan Athabaskan, Tlingit, and Haida. The information for Census 2000 is derived from the American Indian Detailed Tribal Classification List for the 1990 census and was expanded to list the individual Alaska Native Villages when provided as a written response for race.

- **Asian** — A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. It includes “Asian Indian,” “Chinese,” “Filipino,” “Korean,” “Japanese,” “Vietnamese,” and “Other Asian.”
  - **Asian Indian** — Includes people who indicate their race as “Asian Indian” or identify themselves as Bengalese, Bharat, Dravidian, East Indian, or Goanese.
  - **Chinese** — Includes people who indicate their race as “Chinese” or who identify themselves as Cantonese, or Chinese American. In some census tabulations, written entries of Taiwanese are included with Chinese while in others they are shown separately.
  - **Filipino** — Includes people who indicate their race as “Filipino” or who report entries such as Philipino, Philippine, or Filipino American.
  - **Japanese** — Includes people who indicate their race as “Japanese” or who report entries such as Nipponese or Japanese American.
  - **Korean** — Includes people who indicate their race as “Korean” or who provide a response of Korean American.
  - **Vietnamese** — Includes people who indicate their race as “Vietnamese” or who provide a response of Vietnamese American.
  - **Cambodian** — Includes people who provide a response such as Cambodian or Cambodia.
  - **Hmong** — Includes people who provide a response such as Hmong, Laohmong, or Mong.
  - **Laotian** — Includes people who provide a response such as Laotian, Laos, or Lao.
  - **Thai** — Includes people who provide a response such as Thai, Thailand, or Siamese.
  - **Other Asian** — Includes people who provide a response of Bangladeshi, Burmese, Indonesian, Pakistani, or Sri Lankan.

- **Native Hawaiian and Other Pacific Islander** — A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands. It includes people who indicate their race as “Native Hawaiian,” “Guamanian or Chamorro,” “Samoa,” and “Other Pacific Islander.”
  - **Native Hawaiian** — Includes people who indicate their race as “Native Hawaiian” or who identify themselves as “Part Hawaiian” or “Hawaiian.”
  - **Guamanian or Chamorro** — Includes people who indicate their race as such, including written entries of Chamorro or Guam.
  - **Samoa** — Includes people who indicate their race as “Samoa” or who identified themselves as American Samoa or Western Samoa.
  - **Other Pacific Islander** — Includes people who provided a write-in response of a Pacific Islander group such as Tahitian, Northern Mariana Islander, Palauan, Fijian, or a cultural group such as Melanesian, Micronesian, or Polynesian.

- **Hispanic or Latino** — People who identify with the terms “Hispanic” or “Latino” are those who classify themselves in one of the specific Hispanic or Latino categories listed on the questionnaire—“Mexican,” “Puerto
Rican," or "Cuban"—as well as those who indicate that they are "other Spanish, Hispanic, or Latino." Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States. People who identify their origin as Spanish, Hispanic, or Latino may be of any race.

* US CENSUS BUREAU
Appendix B

Demographics of South Carolina

General Facts

- South Carolina is predominantly a rural state.
- Total population – 4,012,012
- Total counties – 46 (31 Rural counties, 15 urban counties)
- Density per square miles – 133.2 people per square mile
  - Greenville county – most populated 479.2 people per square mile
  - Allendale county least populated 27.5 people per square mile
- Median family income - $44,227 (38th nationally)
- Median Household income - $37,082
- Per capita income - $ 18,795
- 25.2% of the population is under 18 years of age
- Total population in South Carolina Public Schools for year 2002 (K-12) – 669,701 students
- Total population in South Carolina Public Schools for year 2002 (K & 3) was 101,154 students – This is the sampling frame for the Needs Assessment project.

Race and Ethnicity

<table>
<thead>
<tr>
<th>Race</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>67.2%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>29.5%</td>
</tr>
<tr>
<td>American Indian and Alaska Native</td>
<td>0.3%</td>
</tr>
<tr>
<td>Asian</td>
<td>0.9%</td>
</tr>
<tr>
<td>Native Hawaiian and Other Pacific Islander</td>
<td>&lt;0.1%</td>
</tr>
<tr>
<td>Hispanic or Latino (of any race)</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

Children (Facts and figures)

- Total number of children under age 18 in the state – 1,009,641 (59.2% White, 40.8% African American and others)

- Poverty - Children Under Poverty in 1999 (see table below)

<table>
<thead>
<tr>
<th>Percent of Poverty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
</tr>
<tr>
<td>Under 50%</td>
<td>89,538</td>
</tr>
<tr>
<td>Under 100%</td>
<td>187,275</td>
</tr>
<tr>
<td>Under 125%</td>
<td>245,464</td>
</tr>
<tr>
<td>Under 150%</td>
<td>308,538</td>
</tr>
<tr>
<td>Under 175%</td>
<td>368,490</td>
</tr>
<tr>
<td>Under 185%</td>
<td>393,255</td>
</tr>
<tr>
<td>Under 200%</td>
<td>426,484</td>
</tr>
<tr>
<td>Total Children</td>
<td>1,009,641</td>
</tr>
</tbody>
</table>
• **Inadequate Health Care**

  - State average rate of children and youth under age 18 without health insurance in families with income under 200% of poverty in South Carolina was 16.6% and 9.9% above 200% of poverty. If the above rates are applied to the schools there are 70,893 children in the state below 200% of poverty with no health insurance, and 57,871 children above 200% poverty with no health insurance, for a total of 128,764 uninsured children in South Carolina.
  - According to the 2000 Surgeon General’s Report there are 2.6 children without dental insurance for every child without health insurance. The estimate for SC is 334,786 children without dental insurance.
  - The number lacking primary care is at least double the number lacking insurance.
  - The children lacking primary care are often dependent on health services at school.
  - There are currently 539.2 nurses working in the schools. In order to meet the nationally recommended student to nurses of 750:1, we should have 870 nurses working in the school system.

**Medicaid**

  - Of the 682,744 children in South Carolina public schools (year 2002-03), 55.8% of children were Medicaid and free and reduced lunch program eligible.
  - In June 2001, the total number of South Carolina children, birth through 18, enrolled in Medicaid was 423,146. The total can be broken into the following age and race groupings:

<table>
<thead>
<tr>
<th>Age Group</th>
<th>White</th>
<th>African American</th>
<th>Hispanic</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children Under 1</td>
<td>13,657</td>
<td>16538</td>
<td>1,340</td>
<td>1,596</td>
<td>33,131</td>
</tr>
<tr>
<td>Children 1 - 5</td>
<td>47,310</td>
<td>68,320</td>
<td>2,869</td>
<td>5,854</td>
<td>124,353</td>
</tr>
<tr>
<td>Children 6 - 14</td>
<td>66260</td>
<td>120,336</td>
<td>2,122</td>
<td>8,225</td>
<td>196,943</td>
</tr>
<tr>
<td>Children 15 - 18</td>
<td>23,605</td>
<td>43,100</td>
<td>475</td>
<td>1,539</td>
<td>68,719</td>
</tr>
<tr>
<td>Total</td>
<td>150,832</td>
<td>248,294</td>
<td>6,806</td>
<td>17,214</td>
<td>423,146</td>
</tr>
</tbody>
</table>

  - The total Medicaid expenditure in South Carolina for health services provided to children ages 0 to 18 for the state fiscal year 2002 were $991 million, at an average statewide of $2,343 per child enrolled.
APPENDIX C
RANK ORDER OF PUBLIC HEALTH DISTRICTS BY CARIES EXPERIENCED

<table>
<thead>
<tr>
<th>Public Health District</th>
<th>Percent of Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Savannah</td>
<td>68.9</td>
</tr>
<tr>
<td>Pee Dee</td>
<td>57.5</td>
</tr>
<tr>
<td>Waccamaw</td>
<td>57.3</td>
</tr>
<tr>
<td>Catawba</td>
<td>54.4</td>
</tr>
<tr>
<td>Palmetto</td>
<td>53.1</td>
</tr>
<tr>
<td>Low country</td>
<td>52.3</td>
</tr>
<tr>
<td>Wateree</td>
<td>51</td>
</tr>
<tr>
<td>SC</td>
<td>51.6</td>
</tr>
<tr>
<td>Upper Savannah</td>
<td>49.4</td>
</tr>
<tr>
<td>Appalachia3</td>
<td>48.6</td>
</tr>
<tr>
<td>Appalachia1</td>
<td>46.9</td>
</tr>
<tr>
<td>Edisto</td>
<td>42.2</td>
</tr>
<tr>
<td>Trident</td>
<td>40.9</td>
</tr>
<tr>
<td>Appalachia2</td>
<td>38.1</td>
</tr>
</tbody>
</table>
RANK ORDER OF PUBLIC HEALTH DISTRICTS BY UNTREATED CARIES

Percent of Children

- Lower Savannah: 50.4
- Pee Dee: 39
- Catawba: 38.8
- Waccamaw: 38.7
- Appalachia3: 34.4
- Palmetto: 34.1
- SC: 32.2
- Low country: 31.5
- Edisto: 30.2
- Wateree: 28.7
- Upper Savannah: 28.6
- Appalachia1: 26.8
- Trident: 19.6
- Appalachia2: 17.1
RANK ORDER OF PUBLIC HEALTH DISTRICTS BY PRESENCE OF DENTAL SEALANT ON AT LEAST 1 MOLAR

Trident
Appalachia2
Wateree
Palmetto
Lower Savannah
Waccamaw
SC
Upper Savannah
Pee Dee
Edisto
Appalachia3
Appalachia1
Catawba
Low country

Percent of Children

0 5 10 15 20 25 30 35 40

23.8
22.2
21.1
20.9
20.5
20.3
19.6
18.8
17.3
17.1
14.6
14.2
13.8
38
References

1) South Carolina Office of Research and Statistics
2) US Census Bureau
3) South Carolina Statistical Abstract 2001-02
4) South Carolina Kids count 2003
# SOUTH CAROLINA ORAL HEALTH ADVISORY COUNCIL

## Membership

<table>
<thead>
<tr>
<th></th>
<th>Member</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ms. Susan Bowling</td>
<td>SC Dept. of Health &amp; Human Services</td>
</tr>
<tr>
<td>2</td>
<td>Mr. Doug Bryant</td>
<td>The Bryant Company, Inc.</td>
</tr>
<tr>
<td>3</td>
<td>Dr. Larry Chewning - Chair</td>
<td>Dental Private Practice</td>
</tr>
<tr>
<td>4</td>
<td>Ms. Debbie Day</td>
<td>SC Dental Hygienist Association</td>
</tr>
<tr>
<td>5</td>
<td>Dr. Edwards James</td>
<td>MUSC (President Retired)</td>
</tr>
<tr>
<td>6</td>
<td>Ms. Connie Ginsberg - Vice Chair</td>
<td>Family Connections of SC, Inc.</td>
</tr>
<tr>
<td>7</td>
<td>Dr. Charles Hook</td>
<td>MUSC College of Dental Medicine</td>
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<tr>
<td>8</td>
<td>Mr. Calvin Jackson</td>
<td>SC Dept. of Education</td>
</tr>
<tr>
<td>9</td>
<td>Rev. Brenda Kneece</td>
<td>SC Christian Action Council</td>
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<tr>
<td>10</td>
<td>Dr. Rocky Napier</td>
<td>Dental Private Practice</td>
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<td>11</td>
<td>Dr. Douglas Rawls</td>
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<td>Dr. Harold Rhodes</td>
<td>Dental Private Practice</td>
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<tr>
<td>13</td>
<td>Dr. John Simkovich</td>
<td>SCDHEC - Oral Health Division/Trident Health District</td>
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<tr>
<td>14</td>
<td>Ms. Nancy Spencer</td>
<td>Delta Dental</td>
</tr>
<tr>
<td>15</td>
<td>Mr. Ken Trogdon</td>
<td>Commun-I-Care</td>
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<tr>
<td>16</td>
<td>Dr. John Uhl</td>
<td>Dentist @ SC Dept. of Juvenile Justice</td>
</tr>
<tr>
<td>17</td>
<td>Dr. Lisa Waddell</td>
<td>SCDHEC - Health Services</td>
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<tr>
<td>18</td>
<td>Dr. Rob Walker</td>
<td>Medical Private Practice</td>
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<tr>
<td>19</td>
<td>Ms. Lathram Woodward</td>
<td>SC Primary Health Care Association</td>
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<tr>
<td>20</td>
<td>Mr. Hal Zorn</td>
<td>SC Dental Association</td>
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Support Staff - Walter Waddell & Richard Demarest - SCDHEC - Oral Health Division
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<td>1</td>
<td>Mr. Phil Latham</td>
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<td>Ms. Clare VanSant</td>
<td>SC Dental Hygiene Association</td>
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<td>Ms. Karren Gordon</td>
<td>SC Dept. of Education</td>
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<td>Ms. Kelly Graham</td>
<td>Voices for South Carolina's Children</td>
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<td>Dr. Susan Reed</td>
<td>MUSC - College of Dental Medicine</td>
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<td>6</td>
<td>Ms. Shirley Carrington</td>
<td>SC Dept. of Health and Human Services - Dental Services</td>
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<tr>
<td>7</td>
<td>Ms. Cassie Barber</td>
<td>SC School Improvement Council</td>
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<td>8</td>
<td>Mr. Joel Urdang</td>
<td>SC Dept. of Alcohol and Other Drug Abuse Services</td>
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<td>SC Dept. of Social Services</td>
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<td>Dr. Mary Tepper</td>
<td>SC Dept. of Disabilities and Special Needs - Pee Dee Regional Center</td>
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<td>12</td>
<td>Ms. Sandra Hackley</td>
<td>Child Care Resource &amp; Referral Interfaith Community Services</td>
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<td>Ms. Ree Malison</td>
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<td>Palmetto Healthy Start</td>
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<td>Ms. Mary Lynne Diggs</td>
<td>SC Dept. of Health and Human Services - SC Head Start Collaboration Office</td>
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<td>Dr. Charlie Millwood, Jr.</td>
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<td>Ms. Pamela Roshell</td>
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<td>Ms. Karen Waldrop</td>
<td>March of Dimes - SC Chapter</td>
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<tr>
<td>Ms. Tamela Toney</td>
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<td>Ms. Michele James</td>
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<td>Ms. Tiffany Sullivan</td>
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<td>Ms. Ava Brumfield</td>
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<td>Ms. Beth Freeman</td>
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<tr>
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<td>Ms. Regina Creech</td>
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<tr>
<td>Ms. Sarah Cooper</td>
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