Dental Public Health Activities & Practices

Practice Number: 01001
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SECTION I: PRACTICE OVERVIEW

Name of the Practice:
The Development of an Innovative Nutrition Education Model for the Prevention of Early Childhood Caries (ECC) in Alabama WIC Children

Public Health Functions:
Assessment – Acquiring Data
Assessment – Use of Data
Policy Development – Collaboration & Partnership for Planning and Integration
Policy Development – Use of State Oral Health Plan
Assurance – Population-Based Interventions
Assurance – Oral Health Communications
Assurance – Building Linkages & Partnerships for Interventions

HP 2010 Objectives:
21-1 Reduce dental caries experience in children.
21-2 Reduce untreated dental decay in children and adults.
21-10 Increase utilization of oral health system.
21-12 Increase preventive dental services for low-income children and adolescents.

State:	**Region:**	**Key Words:**
Alabama	Southeast Region IV	Early childhood caries, ECC, WIC, prevention, nutrition, education, workforce development

Abstract:
Funding provided through a USDA Infrastructure Grant for a two-year period, provided an opportunity to develop an educational model to prevent Early Childhood Caries (ECC) in Alabama WIC children. The objectives were to prevent ECC, improve the oral health of WIC women, children and their families, emphasize the link between diet/nutrition and oral health status, and to promote utilization of the oral health system in at-risk populations. Alabama's WIC program, the University of Alabama at Birmingham School of Public Health and the Oral Health Branch (OHB) partnered to develop a culturally sensitive educational model to prevent Early Childhood Caries in WIC children. Two behavioral scientists from the University of Alabama at Birmingham (UAB) School of Public Health were contracted to plan, collect and analyze data from WIC clients and develop a culturally sensitive, low-literacy level educational model. Caries prevalence data was collected from 2-5 year old WIC children throughout the state to assess need and establish a baseline. Focus groups with mothers and caregivers from various ethnic groups were conducted to determine which cultural habits might impact the prevalence of ECC. An educational model was developed for nutritionists to utilize in WIC clinics statewide to educate women, infants, children and their families through the WIC program. The educational model for WIC nutritionists and related teaching tools will be provided to 125 WIC sites during the summer/fall of 2002.

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SECTION II: PRACTICE DESCRIPTION

History of the Practice:

Funding for this model was provided through a USDA Infrastructure Grant, with a funding period of October 1999 through September 2001. Two years were needed to collect and analyze the data, conduct focus groups with caregivers, develop the education model, and plan the implementation phase of the project.

Justification of the Practice:

Alabama experiences numerous oral health issues including a high ECC prevalence rate (27%) among WIC children. Current Medicaid data indicates that during FY2001, there were 380,000 Medicaid-eligible children, and only 27% (approximately 103,000) actually received a dental procedure. Additionally, there are many rural counties throughout the state with one or less Medicaid dental providers, and low-income families routinely travel over 100 miles to access dental services in other communities. Alabama's State Oral Health Plan recommends that oral health programs link with other professionals in a variety of settings to reach these underserved populations. One action step defined through the plan includes strengthening partnerships with WIC to implement a prevention intervention using nutritionists as educators to reach pregnant women, new mothers, infants and children.

Administration, Operations, Services, Personnel, Expertise and Resources of the Practice:

Prior to applying for the grant, dentists of the Alabama Department of Public Health, Oral Health Branch (OHB) conducted screenings on several hundred WIC children at county health department facilities and Head Start centers to assess prevalence of Early Childhood Caries. Children ages 18 months through 3 years of age were screened at WIC sites and County Health Department child health facilities to collect ECC prevalence data. Some Head Start children were also included. The Oral Health Branch dental director, a pediatric dentist from the dental school and one county health department dental director screened for ECC. Of the approximately 200 children screened, a 27% ECC prevalence rate was present among the WIC children. Hispanic WIC children had the highest prevalence rate of the various ethnic groups screened. Because there is a higher prevalence among certain populations, one of the grant objectives was to look at behavioral factors that might influence the incidence of the disease.

Once the grant funding was received to develop an Innovative Nutrition Education Model for the Prevention of Early Childhood Caries in Alabama WIC Children, a team was established to develop the model. Two behavioral scientists from the University of Alabama at Birmingham (UAB) School of Public Health were contracted to plan, collect and analyze data related to WIC clients as well as help develop a culturally sensitive, low-literacy level educational model. Other team members involved in the development of the model included the WIC Director, 2 nutritionists from the WIC central office, a pediatric dentist from the University of Alabama School of Dentistry, and a dental hygienist from the Oral Health Branch.

The scientists developed the plan for conducting the focus groups with mothers and other caregivers of WIC children. Some of the questions they asked addressed feeding habits, whether they breast fed or bottle fed, action steps taken to quiet their child during times of sickness or irritability, and whom they might trust within their family or community for guidance in dealing with their baby/toddler during stressful situations. These parents were also questioned about visits to the dentist for themselves and their families and about daily oral hygiene and other general health/oral health issues. The behavioral scientists felt that the parents would be more open and straightforward with their answers if there were no local WIC staff or dental staff members present during the focus group meetings. They were able to collect good information and the participants appeared less intimidated. Each focus group lasted approximately 30 minutes to 1 hour, and there was excellent dialogue at each session. The groups ranged in size from three to twenty people per site. The focus groups targeted parents from Caucasian, African-American, American Indian, Hispanic, and Asian backgrounds. A major finding from the focus groups was that they trusted a mature woman within the community (didn't have to be a family member) who had experienced successful child nurturing – someone they could trust and respect.

After the information was collected from the focus groups, the behavioral scientists developed the framework for the flipchart and video. The oral health staff and the WIC staff provided the dental

and nutrition information while the behavioral scientists suggested strategies for behavior modification. During the developmental stage, the team met monthly or bimonthly in person or through conference calls. The team members' expertise provided key guidance in the development of the teaching tools for the Innovative Nutrition Education Model for the Prevention of Early Childhood Caries in Alabama WIC Children.

The teaching tools include a flipchart, posters, companion cards to go home with each parent, a video to be given to each WIC family, toothbrushes/ floss/ toothpaste for WIC mothers and children (no floss or toothpaste was given to babies/toddlers), mouth models/brushes to teach oral hygiene, and training videos to educate WIC nutritionists. All of the materials, including the videos, will be produced in English and Spanish. The plan calls for each WIC nutritionist to devote approximately 10 minutes to discuss oral health/ECC with each of their WIC clients, at least once per year for a 2-year period. The grant aims to train 125 WIC nutritionists to educate their clients. Training for the nutritionists is scheduled for the summer/fall of 2002

The model was not field tested with WIC clients, but it was presented to the Public Health Area nutrition supervisors at all stages of development for evaluation and recommendations. Their suggestions for improvements were incorporated in finalizing the education model.

During the implementation phase of the model, the oral health team will conduct onsite workshops with WIC staff to prepare them to incorporate oral health into existing nutrition education programs. Flip charts, pamphlets, posters, bulletin board kits, oral hygiene supplies (toothbrushes, paste, and floss) and mouth models will be provided to 125 WIC sites. Videos and printed material will be provided in Spanish and English versions. Training sessions with nutritionists will be conducted during the summer of 2002, materials will be distributed and execution will begin in the fall of 2002. With the inclusion of oral health in the Alabama WIC Nutrition Education Plan (NEP) for the next two years, WIC nutritionists will be encouraged to implement the oral health component in conjunction with their other educational activity as they routinely counsel WIC clients.

During this two-year funded project, over 100,000 WIC children, mothers and pregnant women will annually receive education, oral hygiene supplies and other interventions that promote good oral health. They will also be encouraged to access dental care early and periodically.

For the evaluation phase, the behavioral scientists and the oral health team will collect and analyze date to measure the program's effectiveness. The behavioral scientists plan to evaluate the effectiveness of the teaching tools by following up with the nutritionists and with WIC clients. Another way that will be employed to measure success will be to evaluate the number of WIC participants who actually accessed dental service during the 2-year period for themselves and their families. Follow-up screenings will also be conducted with WIC children in the same clinics and areas of the state to determine if the prevalence rate has declined.

Budget Estimates and Formulas of the Practice:

- $ 37,028.00 – Grant to develop/print teaching tools; to purchase 12 TV/VCR components for WIC clinics without this equipment; and to cover personnel and travel expenses for Behavioral Scientists (1 day per month/1 time per year).
- $ 42,000 – Oral hygiene supplies for WIC mothers, infants, children
- $ 8,125 – Mouth models/brushes for all WIC clinics
- Staffing/travel/other expenses for dental hygienist/state nutritionists to train local WIC staff

Lessons Learned and/or Plans for Improvement:

The focus groups with various ethnic populations were beneficial; however, participation was not outstanding. Some groups had over 20 mothers attending, while some had only two. The data captured from the focus groups was not significantly new information, and this phase of the project took approximately one year. Because this phase of the project was time consuming, the implementation phase was delayed. The data captured through the focus groups was beneficial, but we learned that this type of activity should be planned differently in the future to maximize efficiency.

Available Resources - Models, Tools and Guidelines Relevant to the Practice:

- Teaching tools for WIC nutritionists (flipcharts, bulletin board kits, posters, pamphlets, post cards, videos, mouth models)
- Oral Hygiene supplies for all WIC participants (toothbrushes, floss, toothpaste)
- TV/VCR components for select WIC clinics (12 total)
- Training packets for WIC nutritionists (implementation phase)
- State Nutrition Education Plan (NEP) with guidelines for oral health inclusion

SECTION III: PRACTICE EVALUATION INFORMATION

Impact/Effectiveness

Does the practice demonstrate impact, applicability, and benefits to the oral health care and well-being of certain populations or communities (i.e., reference scientific evidence and outcomes of the practice)?

The Alabama WIC program serves a large population of women, infants and children who are at risk for experiencing dental disease. Data collected from WIC clients confirms the need for providing oral health prevention programs (a 27% Early Childhood Caries prevalence rate for WIC children with Hispanic children having the highest incidence of the disease.), yet funds are not available to place dental hygienists /educators in such sites. Since WIC nutritionists counsel these clients routinely as they present to the clinics for periodic evaluation and re-certification for food instruments, the concept of training nutritionists to provide oral health education seemed very viable. The state and county WIC staff enthusiastically supports this initiative and have been involved in all phases of planning and development. Positive outcomes should evolve with minimal additions to the current program requirements established by USDA regulations. This model will serve as the impetus for future oral health partnerships in non-traditional settings.

The team approach in developing the model incorporated needed expertise from other professionals. Including two behavioral scientists in the team helped focus on behavioral changes needed to prevent Early Childhood Caries. The behavioral scientists felt that cultural habits most likely impacted the higher prevalence among certain populations. Therefore, they wanted to address such issues in the focus groups to determine what teaching strategies work best with different populations. Their input in the development was important. The nutritionists' participation was also very beneficial. By developing tools with a strong diet/nutrition component, we were able to link oral health education with existing nutrition education. The team helped ensured that the new teaching tools were simple, required minimal time and allowed flexibility by each instructor.

Efficiency

Does the practice demonstrate cost and resource efficiency where expenses are appropriate to benefits? Are staffing and time requirements realistic and reasonable?

By partnering with a strong, statewide program that has sites in every Alabama county, the OHB will be able to positively reach approximately 100,000 women, infants and children annually through hands-on counseling by trained WIC nutritionists. Dental health education in previous years has primarily consisted of distributing pamphlets and occasionally viewing videos in county health department settings. Minimal counseling and follow-up have been available. By adequately training WIC nutritionists, providing teaching tools and supplies in their clinic rooms, and monitoring and evaluating the program, healthy outcomes should be evident. Funds from both programs will continue to be budgeted to support the initiative in future years. Additional preventive components will be added as feasible.

The majority of the grant funding was used for salaries and travel of the behavioral scientists and for the development and printing of the flipchart. Personnel cost and travel of the WIC and dental staff were in-kind contributions.

Demonstrated Sustainability

Does the practice show sustainable benefits and/or is the practice sustainable within populations/communities and between states/territories?

WIC plans to continue the program, after the two-year grant funding, for as long as it is effective and does not present an additional burden to existing staff. Because oral health is linked to diet and nutrition, and because children with significant oral health problems meet Failure to Thrive criteria, the WIC program is committed to sustaining their partnership in addressing Alabama's critical oral health problems in the WIC population. To demonstrate the state WIC program's commitment, oral health will be added to their Nutrition Education Plan (NEP) for the next several years. Both WIC and the OHB will commit staff and funding to sustain the program.

Collaboration / Integration

Does the practice build effective partnerships/coalitions among various organizations and integrate oral health with other health projects and issues?

Partners involved in this collaboration involve the Alabama WIC program, the OHB, the School of Dentistry, the School of Public Health, county health departments, the Medicaid agency, community health centers and other agencies/entities. WIC clients will receive educational messages that promote good nutrition, the importance of regular dental care, the benefits of fluorides and sealants, the value of good oral hygiene and other preventive messages. Those without private dentists will be encouraged to seek dental care. Lists of Medicaid and CHIP dental providers as well as Community Health/Primary Care Centers with dental clinics will be available for each participant. Oral Hygiene supplies and instructions for daily oral hygiene will be provided periodically.

Objectives / Rationale

Does the practice address HP 2010 objectives, the Surgeon General's Report on Oral Health, and/or build basic infrastructure and capacity for state/territorial oral health programs?

At least four (4) Healthy People 2010 Objectives are addressed through this initiative. The objectives include reducing dental caries experience in children, reducing untreated dental decay in children and adults, increasing utilization of oral health system, and increasing preventive dental services for low-income children and adolescents. Several strategies identified in the Surgeon General's Report on Oral Health are also utilized as the state oral health program partners with a viable program in a non-traditional setting to increase awareness, provide disease-preventive measures and promote utilization of oral health systems of care.

Extent of Use Among States

Is the practice or aspects of the practice used in other states?

While many states promote oral health through WIC programs, most programs include dental professionals providing education and prevention strategies rather than using trained nutritionists as resources. This practice utilizes a nutrition education model to promote oral health as a component of good nutrition and good general health. ASTDD Synopses of state and territorial dental public health programs showed that in 2001, 27 states reported having programs for early childhood caries prevention.