Providing a Dental Home for Pregnant Women: A Community Program to Address Dental Care Access – A Brief Communication

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Abstract

Objective: *This paper describes a community-based intervention to provide a dental home for women covered by Medicaid in Klamath County, Oregon. In 2001, 8.8 percent of pregnant women served by Medicaid in Oregon received care. The long-term goal of the program is to promote preventive oral care for both mothers and their new infants.* ***Methods:*** *Pregnant women received home/Women, Infant and Children visits and were assigned a dental home under a dental managed care program [Dental Care Organization (DCO)]. All initial care was provided at the Oregon Institute of Technology Dental Hygiene Clinic under the contract with the DCO. Emergency, preventive, and restorative care was provided.* ***Results:*** *Between February 2004 and January 2006, 503 pregnant women were identified; 421 women were contactable. Of these, 339 received home visits (339/421, 80.5 percent) and 235 received care (235/339, 69.3 percent). Overall, 55.8 percent of eligible women received care (235/421). Most who did not have a visit either moved or were not the caretaker of the baby. The missed appointment rate was 9 percent.* ***Conclusion:*** *A community health partnership led to a successful and sustainable model extending care to pregnant women and is being extended to promote preventive care for both new mothers and their offspring.*

Key Words: dental care/utilization, prenatal care/utilization, health maintenance organizations

Introduction

Healthy People 2010 established objectives to reduce disparities among preschool children (1). However, programs aimed at reducing disparities focusing solely on children may fail to identify the solutions that enhance access. An alternative is to focus on the association between mother and child. When low-income pregnant women and mothers with infants have regular dental visits, both mother and child should experience benefits (2).

A model of dental prevention and cure is needed that conceptualizes dental caries as an infectious process. From this perspective, dental care would focus on the reduction of pathogens as well as promote hygiene and diet protective against disease. To do so means adopting a primary focus on the mother–child dyad, rather than the child alone, and intervening before the child is born. This concept is not new, as evidence for mother to child transmission has been known since the 1970s. Nevertheless, there are no reports in the US literature describing programs to promote the use of dental care during pregnancy (3). New York State recently issued a set of comprehensive guidelines (4). Massachusetts extended Medicaid dental benefits to mothers from pregnancy to 3 years after the baby is born. This kind of change is an example of the models that are badly needed. Yet unpublished data from our research group shows that mothers of Medicaid-enrolled children in Washington State, who have a usual source of dental care themselves, are more likely to take their child to the dentist. A focus on the new mother is also developmentally appropriate, especially for the woman having her first child (5).

This paper describes the initial evaluation of a community-based intervention to provide dental services for low-income pregnant women. The goal is to stimulate discussion about how to best meet the needs of this population. The proportion of low-income Oregon pregnant women on Medicaid who saw a dentist in 2001 was 8.8 percent.

Methods

Setting. The setting is Klamath County in rural southeast Oregon. The population in 2006 was 66,438, and growth from 2000 to 2006 was 4.2 percent. The county in 2005 was 83.7 percent White (not Hispanic), 8.6 percent Hispanic, 4.0 percent American Indian or Alaska Native, and less than one percent Asian, Black, or Pacific Islander (6). Per capita income in 2005 was

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Figure 1
Oral health tool kits. Adapted with permission from Cowlitz Community Health Partners, Cowlitz County, WA. TUC, Teeth Under Construction

Prenatal tool kit	6-week tool kit	6-month tool kit	1 year tool kit
▫ Healthy Mouth for Your Baby Brochure ▫ Immunization Schedule ▫ Tooth/Gum Brushing and Flossing Chart ▫ Baby T-shirt ▫ Adult Toothbrush ▫ Adult Fluoride Toothpaste ▫ Dental Floss ▫ Rx for Good Oral Health ▫ TUC Prenatal Educational Insert	▫ Preventing Nursing Bottle Mouth Brochure ▫ Immunization Schedule ▫ Tenders (finger toothbrush) ▫ Infant/Toddler Safety Toothbrush ▫ Adult Toothbrush ▫ Dental Floss ▫ Children's Fluoride Toothpaste ▫ Rx for Good Oral Health ▫ TUC 6-week Educational Insert	▫ Preventing Nursing Bottle Mouth Brochure ▫ Immunization Schedule ▫ Mouth Mirror ▫ Sippy Cup ▫ Adult Toothbrush ▫ Child Toothbrush ▫ Children's Fluoride Toothpaste ▫ Dental Floss ▫ Rx for Good Oral Health ▫ TUC 6-month Educational Insert	▫ Preventing Nursing Bottle Mouth Brochure ▫ Immunization Schedule ▫ Kick the Bottle Habit Brochure ▫ Teddy Bear ▫ Adult Toothbrush ▫ Child Toothbrush ▫ Children's Fluoride Toothpaste ▫ Dental Floss ▫ Rx for Good Oral Health ▫ TUC 1 year Educational Insert

$25,997(6). There is no artificial fluoridation and little naturally occurring fluoride.

Over half (435, 52.0 percent) of the 836 births in Klamath County in 2003 were covered by the Oregon Health Plan (OHP), the Medicaid program (7). Pregnant low-income women were eligible for the OHP Plus package and paid no premium. The women were covered for the duration of their pregnancy, the month they delivered, and 2 months afterwards.

Program Description. The goal of the intervention program was to shift the focus of dental professionals and their clients from the existing paradigm of dental services to a model in which the mother was treated in order to prevent infection and disease in the child. The program consisted of outreach and anticipatory guidance to pregnant women served by Medicaid and placement with a dentist. Follow-up was included to be sure that the newborns were seen by age 1.

Program administration was in the Klamath County Health Department, and the Early Childhood Cavities Prevention Services coordinator was a health department employee. The salary of the coordinator was initially covered by a foundation grant but is sustained locally. To aid in recruitment and coordinate services, the department developed a community health partnership including the Oregon Institute of Technology (OIT); the Women, Infant and Children (WIC) program; Klamath Tribal Health Services; local safety net medical providers; the Dental Care Organizations (DCOs) and local dentists; and other community agencies working with Medicaid families. The University of Washington Northwest/Alaska Center to Reduce Oral Health Disparities provided technical assistance.

The second trimester was chosen initially as a starting point for care, mainly to avoid concerns in the dental community about treatment when the fetus was most vulnerable. Often, women in low-income families either do not know they are pregnant or do not seek prenatal care early in the pregnancy. The eligible pregnant women were identified by the OHP and referrals made from the WIC or other partners. Visits with the prevention services coordinator were scheduled at the WIC. Oral health tool kits were provided. The kits were adapted from the Community Health Partners' Teeth Under Construction (TUC) program in Washington State (for information on the program, contact Ms. Smolen). Educational material was available in Spanish and English.

Initial contact focused on participation. The focuses of subsequent home/WIC visits were on providing information on the mother seeing the dentist and preventing caries transmission. A major goal was to reduce barriers to care. To provide dental coverage, the OHP contracted with the DCOs. The DCOs serving Klamath County are the Northwest Dental Services (NWDS) and Capitol Dental. In 2004, there were 28 active dentists, most in NWDS. The DCOs contracted with the dental hygiene program at OIT. The program collected baseline oral health examination data and provided diagnostic and preventive services: assessment, radiographs, prophylaxis, topical fluoride, and chlorhexidine mouth rinse. The hygienist communicated with the treating physician. The two DCOs negotiated a flat fee of $38 with the dental hygiene program. Faculty members or volunteer hygiene students provided care when school was not in session. Once initial care was completed, a staff member picked up the client's chart and delivered it to the assigned dental office. Data in this paper on the oral health of the pregnant women were abstracted from the clinical record.

Case management focused on reducing no-shows. Follow-up contact with the mother was designed to deliver the additional tool kits (Figure 1). The DCOs' central staff reviewed many of the treatment plans to provide care appropriate to the program goals. Care included restorative, periodontal, and oral surgical services. The focus was on eliminating reservoirs of disease with the extraction of hopeless teeth and filling of open cavities. After delivery, mothers were dispensed xylitol chewing gum at the WIC for 6 months. Fluoridated toothpaste was provided in each of the oral health tool kits. The cost of the preventive agents, not normally covered in a typical Medicaid

program, was underwritten by the DCO.

Continuing Education. Because a shift in practice patterns cannot occur without confronting the changing scientific evidence, a continuing education program was offered. Sixteen dentists and nine dental hygienists attended. The students received instruction averaging to 3 hours a term as part of a public health program. A major concern was that the medical community was unaware of the need for treatment during pregnancy and that dental care was safe. Continuing medical education, offered as Grand Rounds at the local hospital, identified the goals of treatment and prevention and specified the drugs and procedures such as X-rays used by dentists and their safety. About 30 physicians participated.

Results

Between February 2004 and January 2006, 503 pregnant women were identified; 421 women were contacted. Of these, 339 women received home visits (339/421, 80.5 percent), 235 received care at either the OIT or the dentist (235/339, 69.3 percent), and 220 received care from both (220/339, 64.9 percent). Overall, 55.8 percent of eligible women received care (235/421). Most who did not have a visit either moved or were not the caretaker of the baby. The missed appointment rate was 9 percent.

Oral health data was collected as part of the assessment at the dental hygiene visit. The typical pregnant woman had eight decayed, missing, or filled teeth (range 0 to 24). Ninety percent had one or more untreated cavities with an average of six (range 0 to 19). Overall periodontal health was fair. The majority had gingivitis with generalized 1- to 4-mm pockets and bleeding. Fifteen percent had ≥1 teeth with pocket depths >5 mm. About 4 percent had more severe disease.

Discussion

The program is ongoing, and the children of the participants in this study are being seen and oral health data are being collected. Ameliorating the high rate of early childhood caries in the children from low-income families is vexing and seemingly impossible without changing the paradigm or treatment model that underlies the approach. The predominant approach in the United States, embodied in the EPSDT program, is to focus on the child alone. Benefits for mothers are much more limited, and practically speaking, dental care is inaccessible because of the concerns of dentists about liability and the low fees in Medicaid adult programs. Work by Kohler and Andreen in Sweden demonstrated several decades ago that treating the mother was an effective ECC prevention strategy (8). Similarly, recent data from the North Carolina Medicaid program confirmed that children who receive preventive dental care early in life have lower overall treatment costs (9). In the face of these findings, relatively simple treatment of the pregnant woman or new mother plus home visits and intensive preventive treatment of the child may result in improved health. If so, in comparison, the typical state Medicaid program is using its resources poorly.

This is a preliminary descriptive report of the program in Klamath County, Oregon. The initial 2 years of this new program were successful in addressing the philosophic change needed to eventually bring about more effective control of caries in children of low-income families and increased access for pregnant low-income women. It is too soon to know if the program has been successful in reducing child disease rates. Nevertheless, the utilization rate for the mothers exceeded the prevailing rate for Medicaid mothers throughout the state by five- to sixfold and it even exceeded the 48 percent rate for all pregnant women regardless of income. The program demonstrates the collaboration between the public (both public health and dental education) and private sector care providers (10). A community health partnership is in place to serve as the champion of this change. Dentists, dental hygienists, and physicians were trained. An outreach and case management system was put in place that identified and served pregnant women. All of the women were assigned a dentist.

The community health partnership identified sustainability as an important issue to be addressed during the early part of the grant support. Major progress has been made in that support for the outreach position is likely to be assumed by the DCOs. Also, the WIC staff, also a part of the Health Department, can assume greater responsibility for some aspects of the outreach. As long as the adult benefits in the OHP are maintained, provision of care for the pregnant women can be sustained. However, the participants are vigilant because the adult dental coverage is often viewed as elective by state legislators. Thus, if current benefits hold, this program should be sustainable.

References

1. US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2010. [cited 2007 March 27]. Available from: http://www.healthypeople.gov/
2. Milgrom P, Weinstein P. Early childhood caries: a team approach to prevention and treatment. Seattle (WA): Continuing Dental Education, University of Washington; 1999. [cited 2007 Nov 15]. Available from: http://www.dentalbehavioralresources.com
3. Ressler-Maerlender J, Krishna R, Robison V. Report from CDC. Oral health during pregnancy: current research. J Womens Health. 2005;14(10):880-2.
4. New York State Department of Health. Oral health care during pregnancy and early childhood. Practice guidelines. [updated 2006 Aug; cited 2007 March 26]. Available from: http://www.health.state.ny.us/publications/0824.pdf
5. Weinstein P, Harrison R, Benton T. Motivating parents to prevent caries in their young children: one-year findings. J Am Dent Assoc. 2004;135(6):731-8.
6. Bureau of Economic Analysis, Bureau of Labor Statistics, National Agriculture Statistics Service, National Center for Health Statistics, U.S. Census Bureau. [cited 2007 Nov. 15]. Available from: http://www.fedstats.gov/gf/states/41/41035.htm.
7. Department of Health Services, State of Oregon. Table 13. Payment of delivery by county of residence, Oregon resident births, 2003. [cited 2005 April 11].

Available from: http://egov.oregon.gov/DHS/ph/chs/data/cntydata/cdb2003/tbl13_03.pdf
8. Kohler B, Andreen I. Influence of caries – preventive measures in mothers on cariogenic bacteria and caries experience in their children. Arch Oral Biol. 1994;39 (10):907-11.
9. Savage MF, Lee JY, Kotch JB, Vann WF Jr. Early preventive dental visits: effects on subsequent utilization and costs. Pediatrics. 2004 Oct;114(4):e418-23.
10. Mouradian WE, Huebner C, DePaola D. Addressing health disparities dental-medical collaborations: leadership for the public good. J Dent Educ. 2004;68:505-12.