

NARRATIVE

SUMMARY

This research used a dentist survey and secondary data from Oregon Medicaid claims to examine the utilization of dental care provided for pregnant and non-pregnant low-income women 18-44 years old in Oregon; ascertain the attitudes and knowledge of general dentists in Oregon regarding dental care for pregnant and non-pregnant women; and determine the impact of the method of provider payment (fee-for-service v. managed care/capitation) and provider knowledge and attitudes on access, use and cost of dental services.

DESCRIPTION OF THE STUDY

Increasing recent evidence suggests that maternal oral infection is one factor in prematurity and growth restriction. At the same time, it has been known for at least two decades that untreated mothers are the source of oral infection in their children and that treating the mother greatly reduces the transmission of the disease to the child. Nevertheless, restriction of Medicaid dental benefits to pregnant women is increasing and Medicaid has failed to adapt to the “paradigm shift” that may be happening within dentistry—shifting from a focus on disease in the child to a medical model where the mother is treated to prevent problems with the offspring. Beyond these humanitarian and ethical issues, the State has an interest in this problem because low-income women and their children are more likely to have both of these conditions (caries and periodontal disease) and because low-income children are legally entitled to medical and dental care for which the State must bear a major part of the cost. Research from four states (other than Oregon) shows that even among women with reported mouth symptoms, utilization of dental is relatively low.

Using analysis of Medicaid claims and a dental provider survey, the specific aims of this study are to:

1. Describe the utilization of dental care provided for pregnant and non-pregnant low-income women 18-44 years old in Oregon (N=3400 in 2003, Medicaid covered women in Oregon saw a dentist);
2. Ascertain the attitudes and knowledge of general dentists in Oregon (N=1700) regarding dental care for pregnant and non-pregnant women;
3. Determine the impact of the method of provider payment (fee-for-service v. managed care/capitation) and provider knowledge and attitudes on access, use and cost of dental services.

This research addresses MCHB Strategic Research Issue II: MCH services and systems of care efforts to eliminate health disparities and barriers to health care access for MCH populations, and III: Services and systems to assure quality care for MCH populations.

STUDY POPULATION

All general dentists licensed in Oregon (approximately 1,700 dentists) will be invited to participate in the Provider Survey. The sample will be identified using the master file of all dentists available from the American Dental Association. The analysis of the Oregon Medicaid data will cover a 5-year period; it will include the number of Medicaid eligibility of women 18 through 44 years of age and all dental claims paid for services provided to women 18 through 44 years of age. Our data will not include client's identifiable

ACCOMPLISHMENTS

Key findings were:

1. There have been a growing number of studies and reports that indicate preventive, routine, and emergency dental procedures can be provided safely to pregnant women and should be to alleviate dental problems and promote oral health. In 2006-2007, the authors conducted a survey of 1,604 general dentists in Oregon. The survey sought dentists' attitudes, beliefs and practices regarding dental care for pregnant women. Their responses were compared with recommendations set forth in the document "Oral Health Care during Pregnancy and Early Childhood: Practice Guidelines." The response rate was 55.2 percent. Nearly all respondents (91.7 percent) agreed dental treatment should be part of prenatal care. Two-thirds were interested in attending continuing dental education (CDE) on the care of pregnant patients. Comparisons of self-reported knowledge and practice with the current guidelines revealed several points of difference; the greatest were regarding the use of full-mouth x-rays, nitrous oxide, long-acting anesthetics, and over-the-counter pain medications. Dentists need pregnancy-specific education to provide up-to-date preventive and curative care to these patients. This study identified specific skills and misinformation that could be addressed through CDE. Comprehensive dental care provided during pregnancy is needed to ensure the oral health of all women at risk for pregnancy-specific problems; for low-income women, pregnancy may be a unique point of access to dental services.

2. The purpose of the study was to understand US dentists' attitudes, knowledge, and practices regarding dental care for pregnant women and to determine the impact of recent papers on oral health and pregnancy and guidelines disseminated widely. In 2006-2007, the investigators conducted a mailed survey of all 1,604 general dentists in Oregon; 55.2% responded). Structural equation modeling was used to estimate associations between dentists' attitudes toward providing care to pregnant women, dentists' knowledge about the safety of dental

procedures, and dentists' current practice patterns. Dentist's perceived barriers have the strongest direct effect on current practice and might be the most important factor deterring dentists from providing care to pregnant patients. Five attitudes (perceived barriers) were associated with providing less dental services: time, economic, skills, dental staff resistance, and peer pressure. The final model shows a good fit with a chi-square of 38.286 ($p = .12$, $n=772$, $df = 52$) and a Bentler-Bonett Normed Fit index of .98, CFI = .993. The Root Mean Square Error of Approximation is .02. Attitudes are significant determinants of accurate knowledge and current practice. Multi-dimensional approaches are needed to increase access to dental care and protect the oral health of women during pregnancy. Despite current clinical recommendations to deliver all necessary care to pregnant patients during 1st, 2nd, and 3rd trimesters, dentists' knowledge of the appropriateness of procedures continues to lag the state of the art in dental science.

3. Oregon state expanded Medicaid coverage to more women from 100 percent to 185 percent of the Federal Poverty Line (FDL) to improve access to oral care during the interconception period of between, during, and post pregnancy in the 2000s. The expansion, however, came with severe limitation on copayment and enrollment eligibility. This paper investigates the effect of Medicaid policy reforms on the utilization of oral care among pregnant women, non-pregnant women with and without dependent children. Data on Medicaid eligibility and claim were pooled from 6 months eligibility and claim records. We analyzed the average length of enrollment and adjusted utilization rate per patient by Oregon Health Plan status for pre-policy and post-policy reform. The adjusted utilization rate for all Oregon Health Plan patients, irrespective of pregnancy status, declined significantly after the Medicaid policy reforms in 2004. The adjusted utilization rates fell by over 50 percent for non-pregnant women with or without dependent children, and 38 percent for pregnant women after the Medicaid policy reforms. We did not find any significant differences between women in managed care or fee for service. The reforms during 2000 to 2005 had an undesirable effect on the utilization patterns of the most vulnerable populations Medicaid is intended to serve. Dental care is important for maternal and child health. Utilization is unlikely to improve without changes in Medicaid and care delivery.

4. This study uses 2006-2007 data to update available knowledge on dentist productivity. In 2006-2007 the authors surveyed 1,604 Oregon general dentists regarding hours worked, practice size, payment and patient mix, prices, dentist visits, and dentist characteristics. About twenty-two percent (22.6%) of the respondent dentists ($N=729$) accepted capitation. The likelihood of accepting capitation payment was related to the number of dentists in the practice. Owner-dentists were no less likely than employee dentists (associates) to accept capitation. Dentist usual and customary fees were negatively associated with accepting capitation. Longer average appointment delays were related to acceptance of capitation, but the effects were very small. Productivity (output per

unit of input) is a major driver of dental service capacity. Effects of practice inputs and other independent variables on productivity were estimated by multiple regression and path analysis. The survey response rate was 55.2 percent. Dentists responding to the productivity-related questions were similar to dentists in the overall sampling frame and nationwide. Visits per week are significantly positively related to dentist hours worked, number of assistants, hygienists, and number of operatories. Dentist ownership status, years of experience, and % Medicaid patients are significantly positively related to practice output. The contributions of dentist chairside time and assistants to additional output are smaller for owners, but the number of additional dentist visits enabled by more hygienists is larger for owners. As in earlier studies of dental productivity, the key determinant of dentist output is the dentist's own chairside time. The incremental contributions of dentist time, auxiliaries, and operatories to production of dentist visits have not changed substantially over the past three decades. Future studies should focus on ultimate measures of output -- oral health -- and should develop more precise measures of the practice's actual utilization of auxiliaries, their skill and use of technology.

PROBLEMS

No problems were encountered in carrying out this research.

WORK PLANNED FOR THE NEXT PERIOD

While this grant research is completed, the investigators have sought an NIH R03 research grant for secondary analysis of the existing dataset. The focus of the proposed research is on dentist provision of anticipatory guidance regarding mother child transmission of tooth decay infections. This application has received a competitive priority score and is pending NIDCR Council action.

EVALUATION/IMPACT

MCHB PERFORMANCE MEASURES

Performance Measure 03.

PUBLICATIONS

1. Conrad DA, Lee RSY, Milgrom P, Huebner C. Determinants of the general dentist's decision to accept capitation payment: A conceptual model and empirical estimates. *Community Dent Oral Epidemiol.* 2009 Jun;37(3):189-98.
2. Huebner CE, Milgrom P, Conrad D, Lee RS. Providing dental care to pregnant patients: a survey of Oregon general dentists. *J Am Dent Assoc.* 2009 Feb;140(2):211-22.
3. Conrad DA, Lee RSY, Milgrom P, Huebner CE. Estimating determinants of dentist productivity: New evidence. *J Public Health Dent.* 2010 June 2 [Epub ahead of print]
4. Milgrom P, Lee RSY, Huebner CE, Conrad DA. Medicaid reforms in Oregon and suboptimal utilization of dental care of women of childbearing age. *J Am Dent Assoc.* 2010 Jun;141(6):688-95.

5. Lee RSY, Milgrom P, Huebner CE, Conrad DA. Dentists' perceptions of barriers to providing dental care to pregnant women. *Women's Health Issues*. Accepted for publication but not yet published.

PUBLISHED ABSTRACTS

1. Lee RSY, Milgrom P, Huebner C, Conrad D. Effects of dentist's perceived barriers and knowledge on pregnant women. Abstract 1082, American Association for Dental Research, Washington DC, March 2010.
2. Huebner CE, Milgrom P, Lee R, Conrad D. Dental care for pregnant women. Abstract 1908, IADR, Toronto, July 2008.

Performance Measure 10. Cultural competence measures elements have been incorporated fully into this work.