



NC Department of Health and Human Services

To treat or Not to treat: Is that still the question?

21st Century Perinatal Oral Health Management

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About the Oral Health Section

Eliminate disparities to improve the oral health & well-being of all North Carolinians

- Monitoring the public's oral health
- Providing preventive services and education
- Increasing access to care
- Strengthening oral health workforce

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Learning Objectives

At the conclusion of this session, participants will be able to:

1) Discuss the relationships between maternal and child oral health and maternal oral health and birth outcomes.
2) Describe the provider guidance found in the *Oral Health Care During Pregnancy: NC Collaborative Practice Framework*.
3) Demonstrate a team-based approach to patient management.

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True or False

There is overwhelming evidence that periodontal disease (PD) is associated with adverse pregnancy outcomes (APO), but treatment of PD does not necessarily lower the risk of APO.

Research Says…

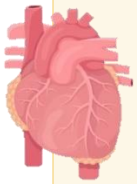
Oral-Systemic Health

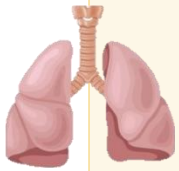
Oral Health in America: A report of the Surgeon General; Chapter 5: Linkages with general health.
(NIH 2000; p123)

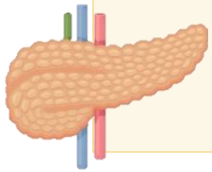
"Animal and population-based studies have demonstrated an association between periodontal diseases and diabetes, cardiovascular disease, stroke, and adverse pregnancy outcomes. Further research is needed to determine the extent to which these associations are causal or coincidental."

Oral Health in America: Advances and Challenges, Executive Summary; Section 3A: Working-age adults, ages 20-64 years.
(NIH 2021; p11)

"In adulthood, the relationship between oral health and overall health becomes much more apparent and manifests in a variety of ways. The effects of periodontal disease—a chronic disease affecting the gums, bone, and other supporting tissues around teeth—has been studied in relation to nearly 60 other adverse health conditions, including diabetes, heart disease, and Alzheimer's disease."







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Fagundes NCF, Almeida APCPSC, Vilhena KFB, Magno MB, Maia LC, Lima RR. **Periodontitis As A Risk Factor For Stroke: A Systematic Review And Meta-Analysis**. Vasc Health Risk Manag. 2019 Nov 6;15:519-532.

Carrizales-Sepúlveda EF, Ordaz-Farías A, Vera-Pineda R, Flores-Ramírez R. **Periodontal Disease, Systemic Inflammation and the Risk of Cardiovascular Disease.** Heart Lung Circ. 2018 Nov;27(11):1327-1334.

Bansal M, Khatri M, Taneja V. **Potential role of periodontal infection in respiratory diseases - a review**. J Med Life. 2013 Sep 15;6(3):244-8. Epub 2013 Sep 25.

Stöhr, J., Barbaresko, J., Neuenschwander, M. *et al.* **Bidirectional association between periodontal disease and diabetes mellitus: a systematic review and meta-analysis of cohort studies**. *Sci Rep* 11, 13686 (2021).

Credit: Getty Images, NC DHHS license, 10/12/22

Research Says…

Oral-Systemic Health

The Bottom Line

- ✓ Undeniable evidence of association between periodontal disease and several systemic conditions and diseases
- ✓ No causal relationships have been established
- ✓ Generally agreed common link is inflammation[1]
  - Periodontal bacteria → circulation → increased systemic inflammatory burden
- ✓ Evidence that periodontal treatment reduces chronic disease risks and complications is conflicting

[1]Hajishengallis G, Chavakis T. Local and systemic mechanisms linking periodontal disease and inflammatory comorbidities. Nat Rev Immunol. 2021 Jul;21(7):426-440.

Research Says…

Oral Health and Obstetrics

Positive associations between periodontal disease and adverse pregnancy outcomes

Primary Outcome	RR	95% CI	# of Studies	# of Participants
Preterm birth	1.6	1.3 – 2.0	17	6,741
Low Birth Weight (LBW)	1.7	1.3 – 2.1	10	5,693
Pre-eclampsia	2.2	1.4 – 3.4	15	5,111
Preterm LBW	3.4	1.3 – 8.8	4	2,263

Daalderop LA, Wieland BV, Tomsin K, Reyes L, Kramer BW, Vanterpool SF, Been JV. Periodontal Disease and Pregnancy Outcomes: Overview of Systematic Reviews. JDR Clin Trans Res. 2018 Jan;3(1):10-27.

Negative association between dental caries and preterm birth

Primary Outcome	RR	95% CI	# of Studies	# of Participants
Preterm birth	1.16	0.90 – 1.49	9	4,826

Wagle M, D'Antonio F, Reierth E, Basnet P, Trovik TA, Orsini G, Manzoli L, Acharya G. Dental caries and preterm birth: a systematic review and meta-analysis. BMJ Open. 2018 Mar 2;8(3):e018556.

Research Says…

Oral Health and Obstetrics

Impact of dental care on pregnancy outcomes

Polyzos et al. **Obstetric outcomes after treatment of periodontal disease during pregnancy: systematic review and meta-analysis.** BMJ. 2010 Dec 29;341:c7017.	"Among high quality studies, treatment had no significant effect on the overall rate of preterm birth…Furthermore, treatment did not reduce the rate of low birthweight infants…spontaneous abortions/stillbirths…or overall adverse pregnancy outcome…"
Offenbacher et al. Maternal Oral Therapy to Reduce Obstetric Risk (MOTOR) Investigators. **Effects of periodontal therapy on rate of preterm delivery: a randomized controlled trial.** Obstet Gynecol. 2009 Sep;114(3):551-559.	"There were no significant differences when comparing women in the treatment group with those in the control group with regard to the adverse event rate or the major obstetric and neonatal outcomes."
American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women. **Oral Health Care During Pregnancy and Through the Lifespan** (Number 569). 2013; Reaffirmed 2017 and 2022.	"Patients often need reassurance that prevention, diagnosis, and treatment of oral conditions, including dental X-rays…and local anesthesia…are safe during pregnancy. Conditions that require immediate treatment, such as extractions, root canals, and restoration…of untreated caries, may be managed at any time during pregnancy. Delaying treatment may result in more complex problems."

Research Says…

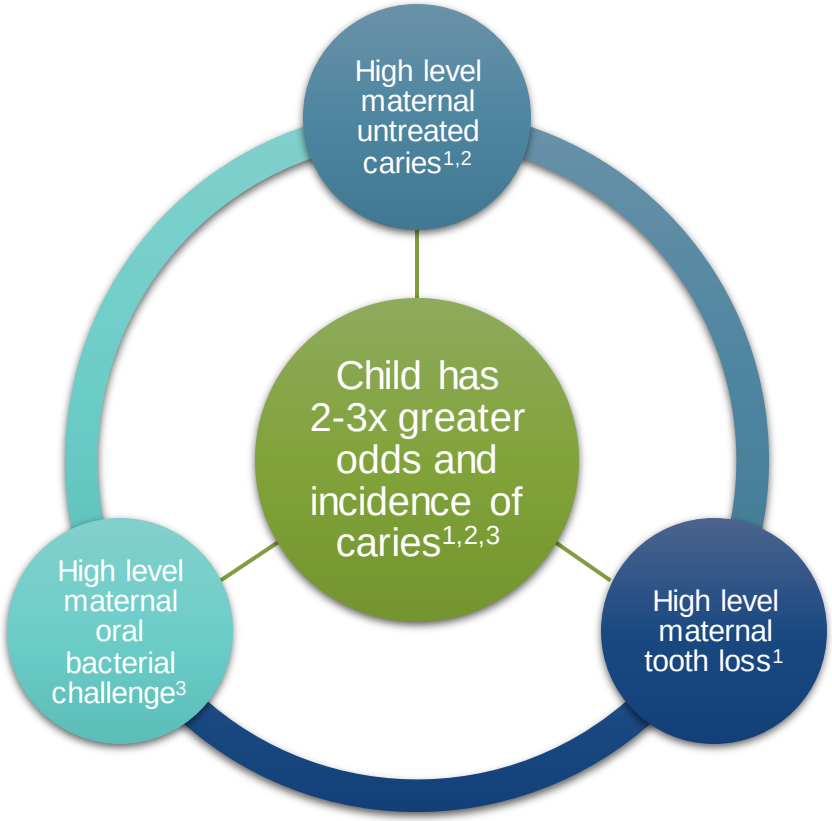
Oral Health and Obstetrics

The Bottom Line

- ✓ Undeniable evidence of association between periodontal disease and risk of adverse birth outcomes
- ✓ Evidence that periodontal treatment lowers the risk of adverse birth outcomes is inconclusive
- ✓ Evidence supporting safety of oral health care during pregnancy is robust

Research Says…

Maternal-Child Oral Health



[1] Dye BA, Vargas CM, Lee JJ, Magder L, Tinanoff N. Assessing the Relationship Between Children's Oral Health Status and That of Their Mothers. *The Journal of the American Dental Association*. 2011;142(2):173-183.
[2] Weintraub JA, Prakash P, Shain SG, Laccabue M, Gansky SA. Mothers' caries increases odds of children's caries. J Dent Res. 2010 Sep;89(9):954-8.
[3] Chaffee BW, Gansky SA, Weintraub JA, Featherstone JD, Ramos-Gomez FJ. Maternal oral bacterial levels predict early childhood caries development. J Dent Res. 2014 Mar;93(3):238-44.

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As of 2010, what percentage of NC private practice general dentists provide comprehensive dental care to pregnant patients?

a. 28%

b. 85%

c. 19%

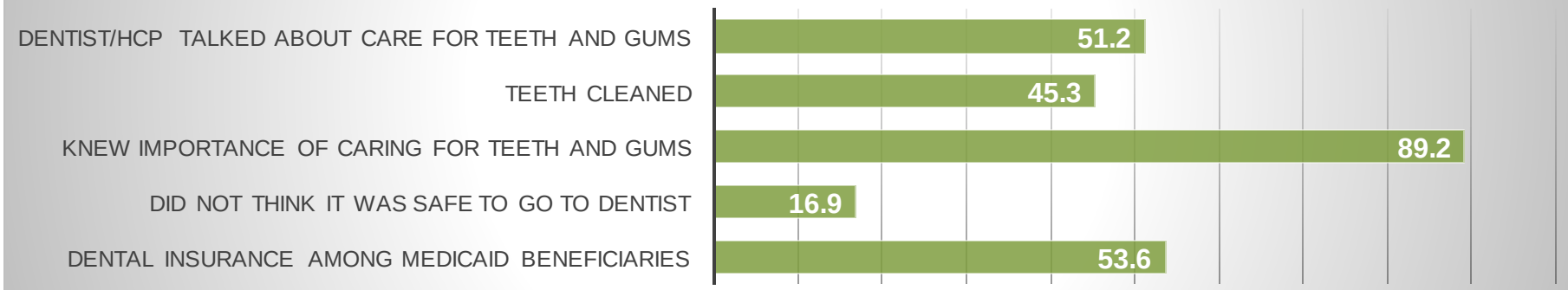
d. 48%

Reality is…

NC General Dentists, Obstetricians, NPs & Certified Nurse Midwives

- 87% dentists provide care to pregnant persons, but only 48% provide comprehensive care.[1]
- Health care professionals consider periodontal disease a risk factor for adverse birth outcomes, but dental referral practices vary: 51% ObGYNs[2], 86% NPs and CNWs[3]

2019 NC Pregnancy Risk Assessment Monitoring System (PRAMS) https://schs.dph.ncdhhs.gov/data/prams/survey.htm



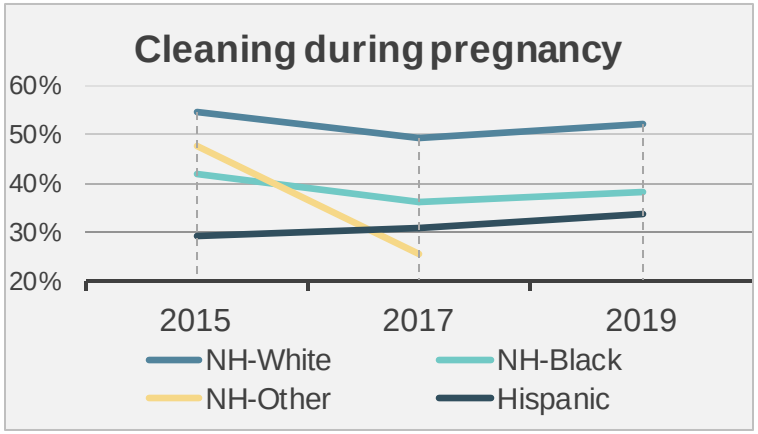
[1] Da Costa EP, Lee JY, Rozier RG, Zeldin L. Dental care for pregnant women: an assessment of North Carolina general dentists. J Am Dent Assoc. 2010 Aug;141(8):986-94.
[2] Wilder R, Robinson C, Jared HL, Lieff S, Boggess K. Obstetricians' knowledge and practice behaviors concerning periodontal health and preterm delivery and low birth weight. J Dent Hyg. 2007 Fall;81(4):81.
[3] Wooten KT, Lee J, Jared H, Boggess K, Wilder RS. Nurse practitioner's and certified nurse midwives' knowledge, opinions and practice behaviors regarding periodontal disease and adverse pregnancy outcomes. J Dent Hyg. 2011 Spring;85(2):122-31.

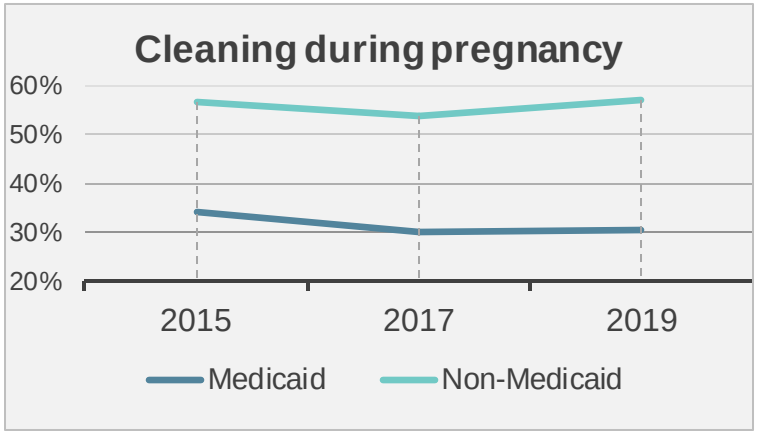
Reality is…

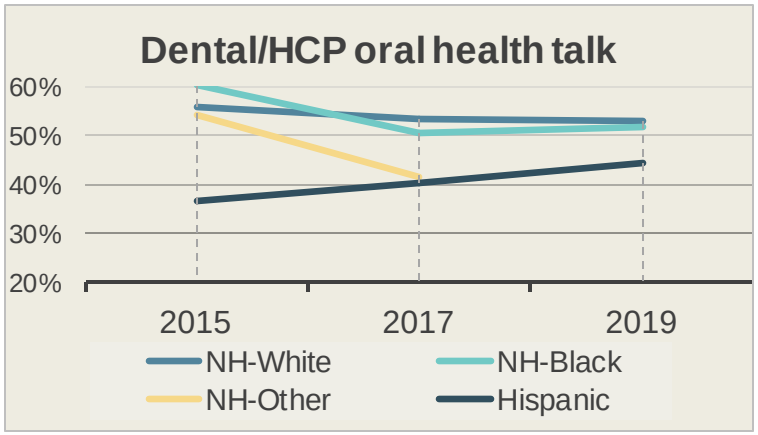
Perinatal Oral Health Trends and Disparities

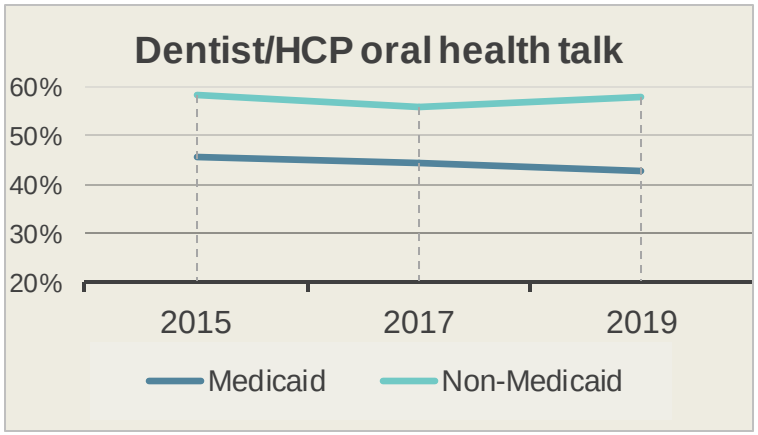
NC PRAMS

https://schs.dph.ncdhhs.gov/data/prams/survey.htm



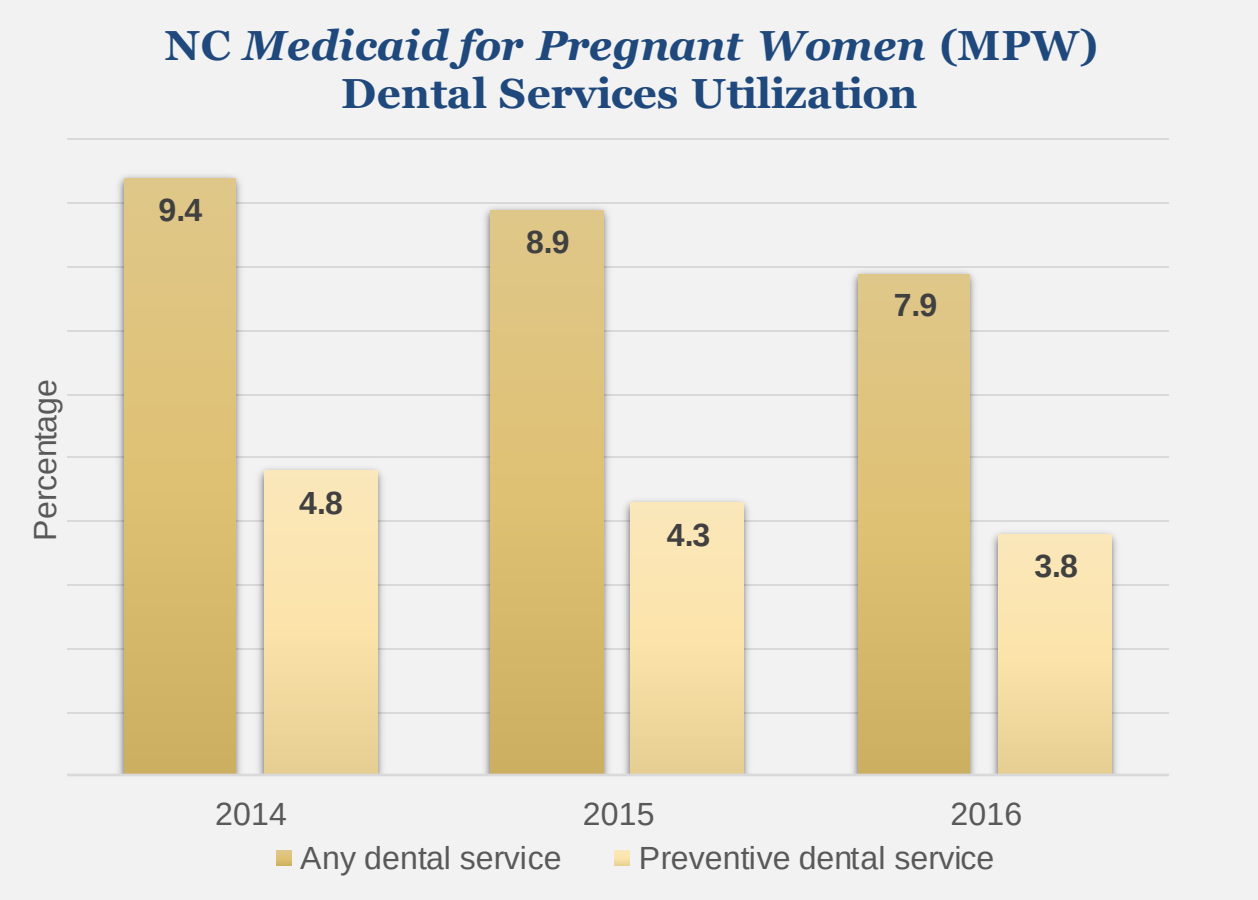






Reality is…

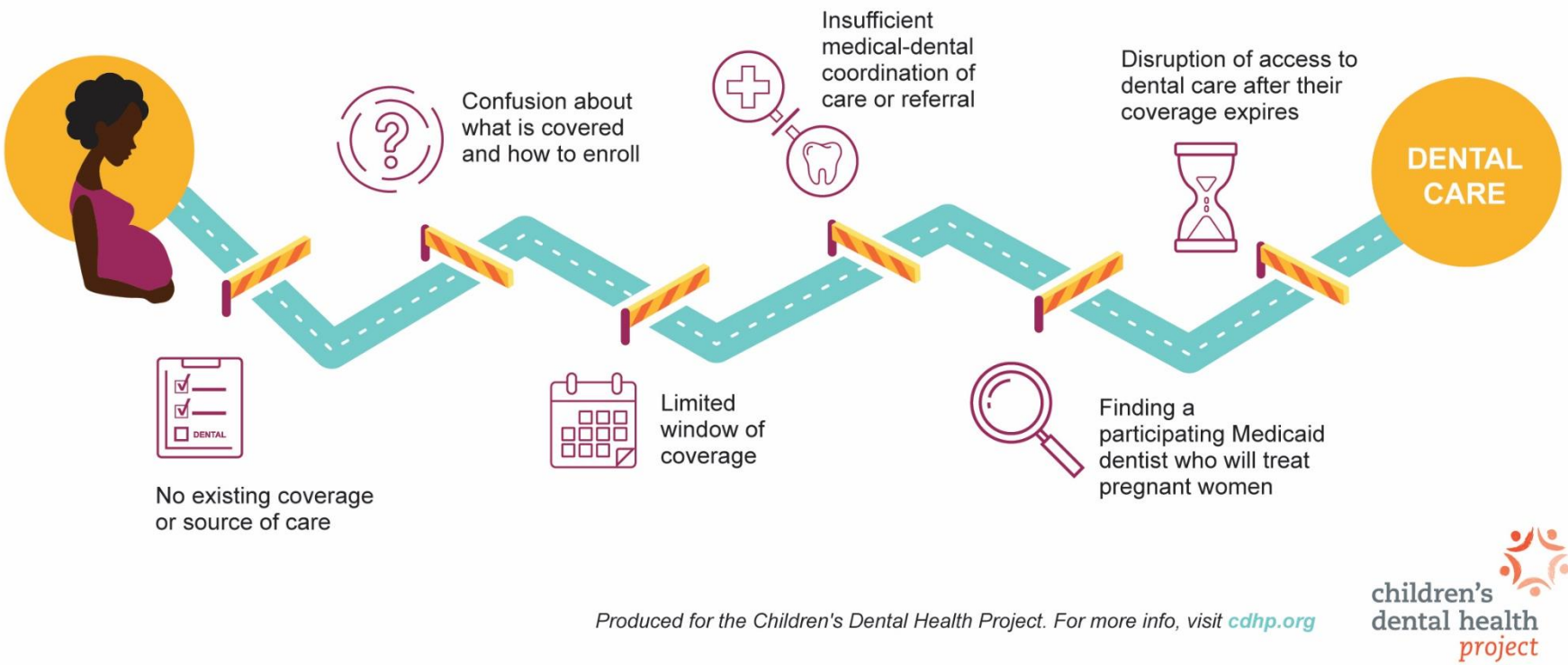
Perinatal Oral Health Trends and Disparities



NC Division of Health Benefits

Reality is…

Hurdles to Getting Care



Children's Dental Health Project. Oral Health During Pregnancy: Oral Health's Unanswered Questions. September 2018, Washington, DC. Used with permission from Community Catalyst, 10/11/22.

Reality is…

ETHICAL MOMENT

The ethics of dental treatment during pregnancy

Thomas Raimann, DDS

Q I am working in a program to promote dental care for pregnant women. We are having a problem with some dentists refusing to see pregnant women until after they give birth. Is this ethical?

A Your question raises an ethical dilemma. Presumably, the dentists' refusal is based on a concern about the health of the mother and child. The dentists also may be concerned about liability if something happens to the pregnancy or the fetus.

Let us look at the facts. We then can discuss how the American Dental Association Principles of Ethics and Code of Professional Conduct (ADA Code)[1] might apply.

A patient seeks care, whether for emergency, preventive, or restorative treatment. The dentist refuses treatment solely because the patient is pregnant. The dentist is of the opinion that rendering dental treatment may affect the health of the pregnant woman or fetus, which may result in legal liability. The dentist is misinformed about the guidelines for the treatment of pregnant women and may be placing concerns about liability above the needs of the patient. In 2008, Michalowicz and colleagues[2] published a study in which they concluded that essential dental treatment provided during "13 to 21 weeks' gestation was not associated with an increased risk of experiencing serious medical adverse events, preterm (< 37 weeks' gestation) deliveries, spontaneous abortions or stillbirths, or fetal anomalies."

In 2012, the Oral Health Care During Pregnancy Expert Workgroup[3] released a consensus statement about oral health care during pregnancy. This consensus statement clearly said that dental treatment during pregnancy is not only safe but also a key to overall health and well-being. In a 2015 JADA article,[4] the authors clearly stated that use of local anesthetic for dental work is safe. Therefore, women should be seen during pregnancy for their health and the health of the fetus.

We can use the ADA Code to guide us in situations like this one. The first principle to apply in this case is Section 1, Patient Autonomy ("self-governance"), specifically 1.A, Patient Involvement: "The dentist should inform the patient of the proposed treatment … in a manner that allows the patient to become involved in treatment decisions." In this case, the dentist is not even engaging with the patient to find out what her needs are. There is an ethical lapse here because of the dentist's unilateral decision making.

Principle 2, Nonmaleficence ("do no harm"), is the next to apply.

> This principle expresses the concept that professionals have a duty to protect the patient from harm. Under this principle, the dentist's primary obligations include keeping knowledge and skills current…

There could be harm done to the patient by refusing to see or treat her while she is pregnant. As stated, oral health care during pregnancy is not only safe but also good for the patient and the fetus.

> At the same time, oral health is key to overall health and well-being. Preventive, diagnostic, and restorative treatment is safe throughout pregnancy and is effective in improving and maintaining oral health. … In addition to providing pregnant women with oral health care, educating them about preventing and treating dental caries is critical, both for women's own oral health and the future health of their children. Evidence suggests that most infants and young children acquire caries-causing bacteria from their mothers.[5]

The dentist refusing treatment is not keeping up with current information and thus, arguably, is not keeping his or her skills current.

Under Principle 4, Justice ("fairness"), a "dentist has a duty to treat people fairly." The ADA Code goes on to state that "the dentist's primary obligations include dealing with people justly and delivering dental care without prejudice." The ADA Code becomes even more specific in stating that "dentists shall not refuse to accept patients into their practice or deny dental service to patients because of the patient's … sex." On the basis of this principle, an argument can be made that refusing to treat a pregnant woman would be discriminating against her unjustly and thus disregarding the ADA Code.

"The dentist refusing treatment is not keeping up with current information and thus, arguably, is not keeping his or her skills current."

"The dentist refusing to see or treat a pregnant woman because of concerns about harm to the fetus during pregnancy is not being truthful with her if he or she asserts that the reason for not treating her is because of potential harm to the fetus… the scientific evidence does not support that the fetus is at risk.

A dentist…must discuss all of the risks and benefits with the patient and allow her to make an informed choice."

Raimann T. The ethics of dental treatment during pregnancy. J Am Dent Assoc. 2016 Aug;147(8):688-9.

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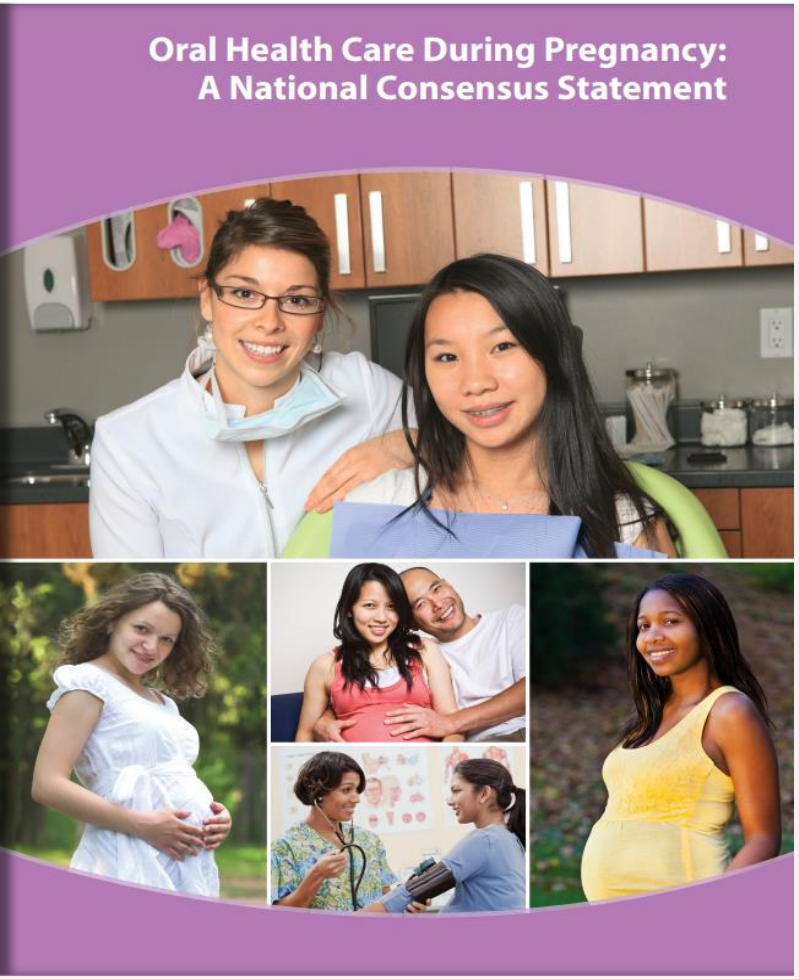
Yes or No

Were you aware of North Carolina's provider guidance for oral health care during pregnancy?

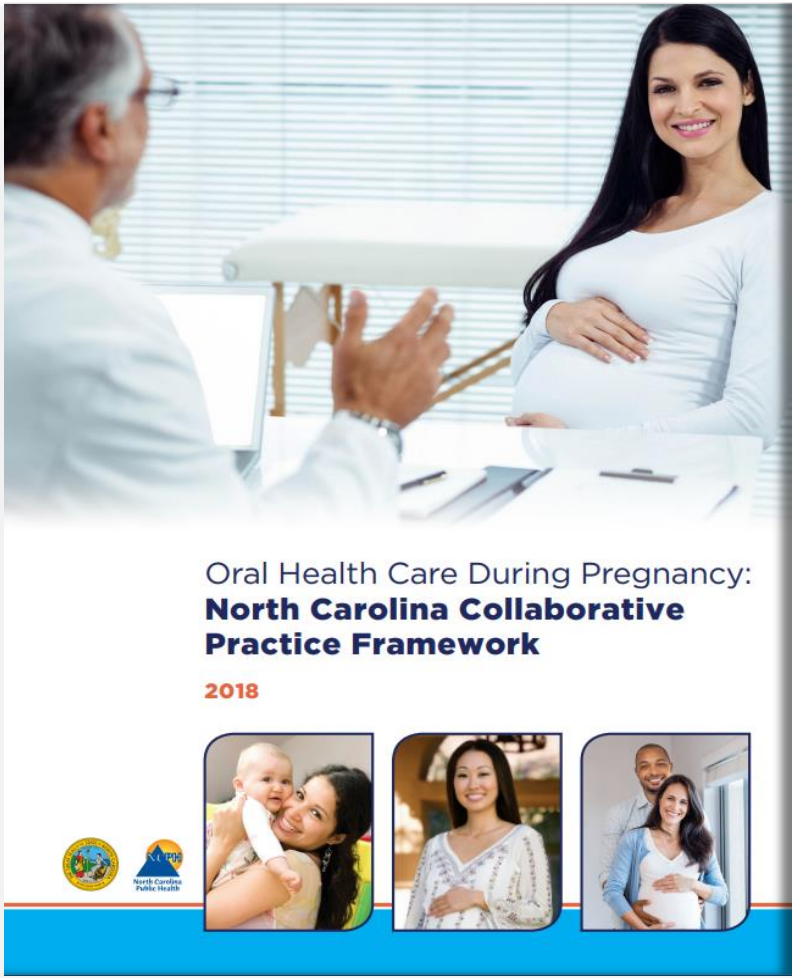
Solutions are…



HRSA Maternal and Child Health Bureau

American College of Obstetricians and Gynecologists

American Dental Association



Oral Health Care During Pregnancy Expert Workgroup. 2012. Oral Health Care During Pregnancy: A National Consensus Statement. Washington, DC: National Maternal and Child Oral Health Resource Center. *Adapted by the NC Perinatal Oral Health Taskforce with permission from Workgroup:* https://www.dph.ncdhhs.gov/oralhealth/docs/NCOH-PracticeGuidelines-Revised120618-WEB.PDF.

Solutions are…

Collaborative Practice Framework:
For Prenatal Care Professionals

*ASSESS	• Take an oral history • Conduct an oral assessment during first prenatal visit
*ADVISE	• Reassure patients that prevention, diagnosis, and treatment, including dental X-rays and local anesthesia, are safe throughout pregnancy.
*COLLABORATE	• Establish relationships with local dentists and develop formal referral process, including sharing of pertinent patient information
SUPPORT	• Provide general case management (ie assistance with insurance applications or other social services, facilitate dental referrals)
IMPROVE	• Improve health services in community (ie integrate oral health into forms and prenatal classes, provide culturally and linguistically appropriate care)

Solutions are…

Collaborative Practice Framework:
For Oral Health Professionals

*ASSESS	• Review medical and dietary histories • Conduct a comprehensive oral exam
*ADVISE	• Reassure patients that prevention, diagnosis, and treatment, including dental X-rays and local anesthesia, are safe throughout pregnancy.
*COLLABORATE	• Establish relationships with local prenatal care professionals and develop formal referral process • Consult with prenatal care professionals *as needed*
*MANAGE & TREAT	• Develop, discuss and provide comprehensive care, including ER care, at any time during pregnancy • Position pregnant patients appropriately during care
SUPPORT	• Provide general case management (ie assistance with insurance applications or other social services, facilitate prenatal referrals)
IMPROVE	• Improve health services in community (ie accept patients enrolled in Medicaid, provide culturally and linguistically appropriate care)

Solutions are…

Collaborative Practice Framework: Pharmacological Considerations

PHARMACEUTICAL AGENT	INDICATIONS, CONTRAINDICATIONS, AND SPECIAL CONSIDERATIONS
ANALGESICS	
Acetaminophen	May be used during pregnancy.
Aspirin	May be used in short duration during pregnancy; 48 to 72 hours. Avoid in 1st and 3rd trimesters.
Ibuprofen	
Naproxen	
Acetaminophen with Codeine, Hydrocodone, or Oxycodone	May be used during pregnancy. If opioids are used, prescribe the lowest dose for the shortest duration (usually less than 3 days), and avoid issuing refills to reduce risk for dependency.
Codeine	
Meperidine	
Morphine	
ANTIBIOTICS	
Amoxicillin	May be used during pregnancy.
Cephalosporins	
Clindamycin	
Metronidazole	
Penicillin	
Ciprofloxacin	Avoid during pregnancy.
Clarithromycin	
Levofloxacin	
Moxifloxacin	
Tetracycline	Never use during pregnancy.
ANESTHETICS	Consult with a prenatal care health professional before using intravenous sedation or general anesthesia. Limit duration of exposure to less than 3 hours in pregnant women in the third trimester.
Local anesthetics with epinephrine (e.g., Bupivacaine, Lidocaine, Mepivacaine)	May be used during pregnancy.
Nitrous oxide (30%)	May be used during pregnancy when topical or local anesthetics are inadequate. Pregnant women require lower levels of nitrous oxide to achieve sedation; consult with prenatal care health professional.
ANTIMICROBIALS	Use alcohol-free products during pregnancy.
Cetylpyridinium chloride mouth rinse	May be used during pregnancy.
Chlorhexidine mouth rinse	
Xylitol	

Adapted with permission from: Oral Health Care During Pregnancy Expert Workgroup. 2012. Oral Health Care During Pregnancy: A National Consensus Statement. Washington, DC: National Maternal and Child Oral Health Resource Center.

Excerpt from Oral Health Care During Pregnancy: North Carolina Collaborative Practice Framework (2018).

Solutions are…

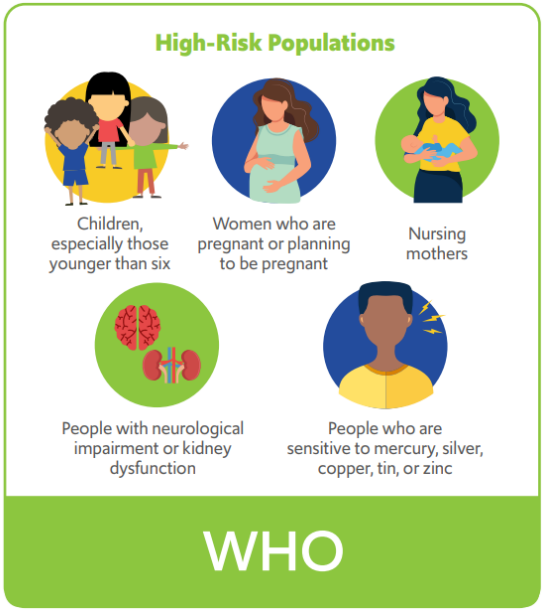
Clinical Updates

FDA and amalgam use in high-risk groups, released September 24, 2020

"…certain groups may be at greater risk for potential harmful health effects of mercury vapor released from [amalgam]…the agency is recommending certain high-risk groups **avoid getting dental amalgam whenever possible and appropriate**."

"The FDA **does not recommend anyone remove or replace existing amalgam fillings** in good condition unless it is considered medically necessary by a health care professional (for example, a documented hypersensitivity to the amalgam material)."

"At this time, the FDA **does not find the available evidence supports a complete ban** of the use of dental amalgam."



Credit: U.S. FDA, free downloadable graphic, 10/17/22

Recommendations for Dental Professionals

- Discuss risks and benefits of using dental amalgam and other restorative materials to allow patients to make informed decisions
- Avoid using term "silver filling"
- Use encapsulated amalgam, no bulk elemental mercury
- Avoid placing amalgam in direct contact with other metallic devices in mouth
- Use amalgam separators

Source: https://www.fda.gov/medical-devices/safety-communications/recommendations-about-use-dental-amalgam-certain-high-risk-populations-fda-safety-communication

Solutions are…

Clinical Updates

FDA Pregnancy and Lactation Labeling Rule (PLLR), effective June 30, 2015

Eliminated pregnancy category letters for prescription medications (A, B, C, D and X). Category letters continue to be used for OTC medications.

Sections and Content of New Labeling based on population-specific use		
Pregnancy (includes Labor & Delivery)	**Lactation**	**Females and Males of Reproductive Potential**
- Pregnancy Exposure Registry info - *Risk summary - Clinical considerations - Data	- *Risk summary - Clinical considerations - Data	- Pregnancy testing - Contraception - Infertility
*Required; very detailed		

Intent of PLLR

- Provide the prescriber with relevant information for critical decision-making when treating pregnant or lactating persons
- More complete statement of the known risks based on the available data
- Considerations of medical/disease factors
- Animal data put in context of human exposure
- Human data added when available
- Explicitly states when no data are available

Source: https://www.fda.gov/media/100406/download

Solutions are…

Policy Update

NC Medicaid Extended Postpartum Coverage, effective April 1, 2022

Pursuant to NC Senate Bill 105 Session Law 2021-180 Section 9D.13 and the American Rescue Plan Act of 2021 – effective through March 31, 2027

Background

- NC Medicaid has offered comprehensive adult dental benefits under most programs for many years
- Medicaid for Pregnant Women (MPW) program offered dental benefits but only through the pregnancy end date, while postpartum care was available for 60 days after the pregnancy end date

New Policy

- Postpartum coverage extended from 60 days to 12 months from pregnancy end date
- Includes continuous postpartum care and full Medicaid benefits, **including dental services**
- Eligibility: Beneficiaries, including MPW, who are pregnant or in the 60-day postpartum period on or after April 1, 2022
  - Beneficiaries will remain eligible regardless of changes in circumstances (ie change in income, family unit or categorical eligibility)

NC Division of Health Benefits, https://medicaid.ncdhhs.gov/providers/programs-and-services/extension-postpartum-coverage

Solutions are…

Quality Improvement Update

NC Perinatal Health Strategic Plan 2022-2026, released October 5, 2022

Statewide guide to improve maternal and infant health and the health of all people of reproductive age.

3 primary goals:

1) Addressing economic and social inequities,
2) Strengthening families and communities, and
3) Improving health care for all people of childbearing age.

Numerous strategies are recommended to move these goals forward, including four oral health inclusive strategies:

1) Expand Medicaid to provide affordable, comprehensive health, behavioral health, and dental insurance coverage, including mobile health and telehealth, for all.
2) Increase access to and utilization of medical and dental homes.
3) Increase utilization of dental care by Medicaid for Pregnant Women recipients.
4) Expand Medicaid for Pregnant Women (MPW) dental coverage to at least 60 days postpartum. (Accomplished!!)

NC DHHS, https://wicws.dph.ncdhhs.gov/phsp/docs/PerinatalHealthStrategicPlan-9-15-22_WEB.pdf

Up Next…..

Pregnancy Case Study

Case Study

Overview

- 37 year-old immigrant, works part-time in a local department store.
- Presents to OB for routine prenatal care visit.
  - **Chief Complaint**: Broken tooth; swollen gums with heaving bleeding while brushing. Cost of dental care is a concern.
  - **Obstetrical History**: 26 weeks gestation; prior pregnancy – pre-eclampsia w/ preterm Cesarean delivery.
  - **Medical History**: Hypertension (100mg Labetalol), type II diabetes (15000mg Metformin, Levemir), round ligament pain (acetaminophen prn per prenatal care provider) and recent upper respiratory infection; has not seen dentist in several years.
  - **Social History**: Immigrated to US from Burma 5 yrs ago; one other child but this is 1st pregnancy in US; multigenerational home; chews Betel Nut daily.
  - **Labs**: GTT was 180mg/dl and 3-hr OGTT was 115/190/135/123. All other prenatal labs WNL.

Case Study

Overview

- Prenatal care provider refers her to the dentist for her dental concerns and reassures that oral health care is safe during pregnancy.
- Presents to Dentist for evaluation.
  - **Extraoral exam**: WNL
  - **Intraoral exam**: generalized severe gingival inflammation and 1.5 x 1.5cm white lesion @ floor of mouth (does not wipe away); gross fracture LL molar, generalized caries, heavy staining on teeth.
  - Dentist shares findings with Marla – will provide deep cleaning and extraction to address acute pain, but will postpone additional treatment until after baby is born, including biopsy of lesion.
  - Cleaning and extraction are provided, although blood pressure remained high throughout procedures. Marla instructed to take 5000mg acetaminophen prn until the baby is born.

Case Study

Overview

- Returns to prenatal care provider.
  - Reports her chief complaint has been treated and feeling much better, but now experiencing pain due to other identified dental issues. Also concerned about lesion on floor of mouth.
  - Was told additional treatment need to be postponed so she has not contacted dentist about pain and concern for lesion.
  - Now confused about safety of dental care during pregnancy. Does not want to jeopardize her pregnancy, given her problems with prior pregnancy.

Case Study

Discussion Questions

1. What are Marla's primary health concerns and needs?
2. What are the oral-systemic health issues?
3. When developing the most effective patient management plan for Marla, which determinants of health and risk factors need to be considered.
4. How should a primary care (non-dental) provider address Marla's chief complaint?
5. How should a dental provider address Marla's chief complaint?
6. To address Marla's concern/confusion regarding dental care, how should the prenatal provider respond to Marla?
7. How should (or should) the prenatal provider respond to the dentist?
8. What is the importance of the interdisciplinary team in addressing the oral-systemic health needs of pregnant women? What are the potential risks of not working collaboratively to develop a comprehensive treatment plan?
9. Identify follow up actions needed from each team member to achieve effective, coordinated, whole person care for Marla.

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