



Connecting the Docs: Early Childhood Oral Health Programs in North Carolina

Gary Rozier, DDS, MPH

Carolina Dental Home Collaborators:

Larry P. Myers DDS, MPH, Kelly Close, RDH, MHA
William Vann, DMD, PhD, Mark Casey, DDS, MPH
Rebecca King, DDS, MPH, Leslie Zeldin
MSUP, MPH, Heather Beil, PhD

National Oral Health Conference

Pittsburgh, PA

April 12, 2011

NC Goals for Oral Health

- Increase access to preventive dental services
- Reduce the prevalence of ECC
- Reduce treatment demands on the dental care system
 - Prevention
 - Referral of those most in need



Into the Mouths of Babes

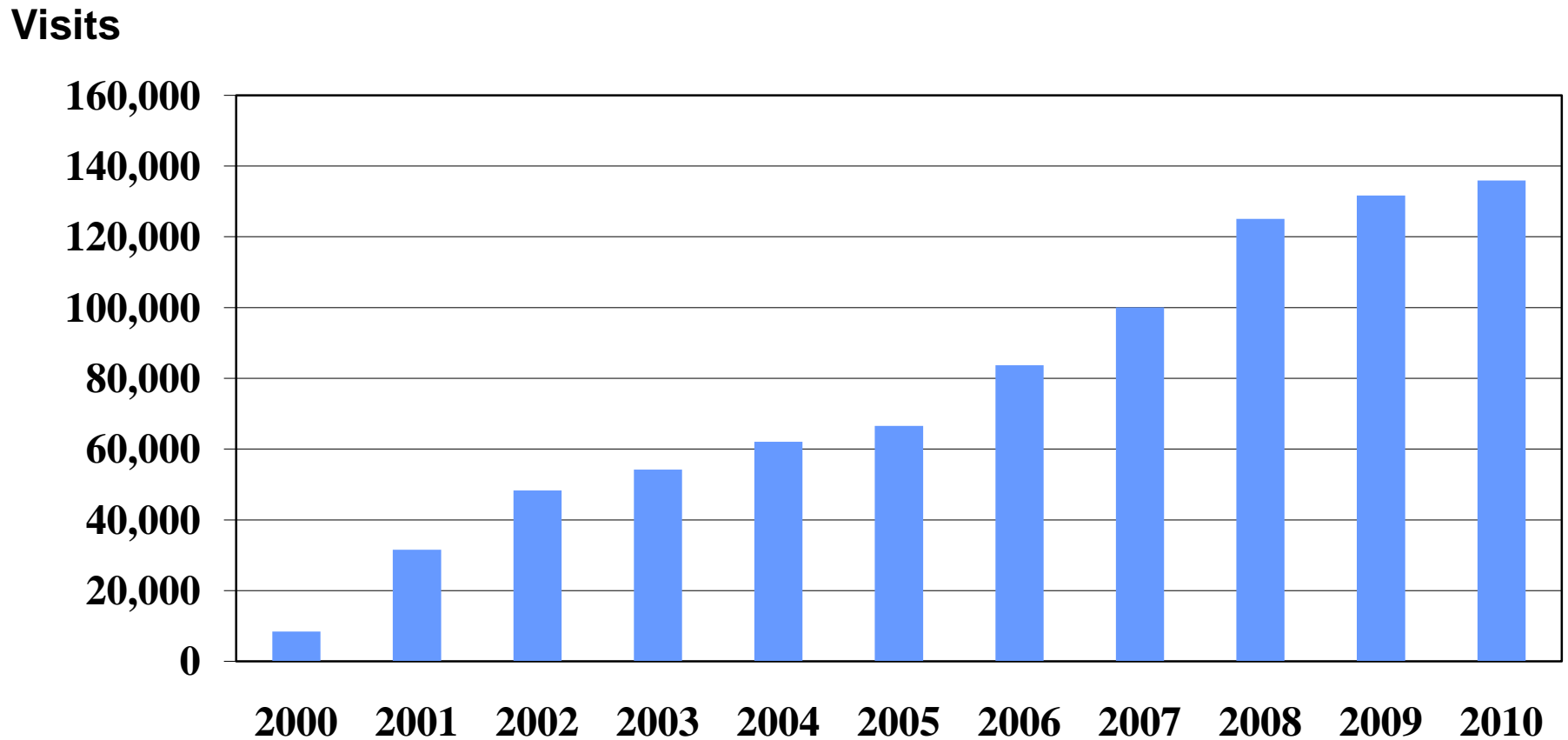
- Began in 2000 after pilot testing
- Oral Health Section trains providers in oral health
- Medicaid reimburses for up to 6 preventive visits before 3 ½ years:
 - Risk and disease assessments
 - Parental counseling
 - Fluoride varnish application for child



What We've Learned

- High adoption rates among medical providers
- Increased access to preventive services
 - Wide geographic distribution
 - 43% of well-child visits
 - Physician visits 4 times greater than dentists
 - Multiple visits 20 times greater in medical offices
- Improved treatment outcomes
 - 49% reduction before 18 months
 - 18% reduction at 6 yrs with ≥ 4 visits

Number of Preventive Dental Visits in Medical Offices, by Year



Total number of visits = 847,498



What We've Learned: Screening and Referral

- Identify disease with 88% accuracy
- Referral practices
 - Overall rate = 2.8%
 - With tooth decay = 33% (vs. 0.2%)
- Referral effectiveness
 - 3-fold increase in use (36% vs. 12%)

Pierce et al. *Pediatrics* 2002;109:E82-2.

Pahel et al. 2008.

Beil & Rozier. *Pediatrics*. 2010;126:e435-41



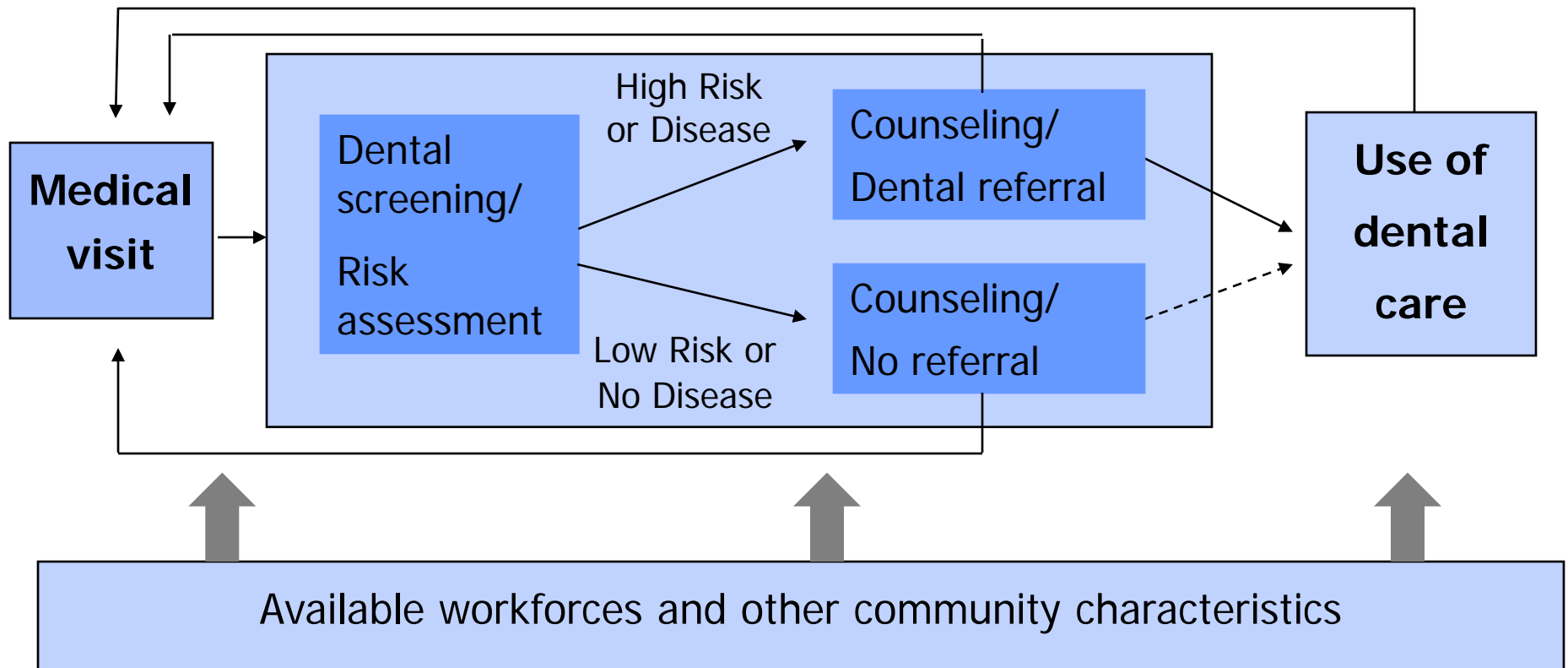
Carolina Dental Home: Goal

To increase access to dentists for 1-5 year-old children enrolled in Medicaid by improving physicians':

- referral rates
- appropriateness of referrals



Guidelines for Referrals



USPSTF. Bader et al. *Am J Prev Med.* 2004;26:315-25.
AAP. *Pediatrics.* 2008;122:1387-94.



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

Evidence of Effectiveness for Interventions to Change Referral

- Systematic review of 17 studies
- Ineffective educational strategies
 - Passive dissemination (2 studies)
 - Feedback of referral rates (1 study)
 - Discussion with medical advisor (1 study)
- Effective educational strategies
 - Dissemination of guidelines with structured referral sheets (4 of 5 studies)
 - Involvement of local specialists in educational activities (2 of 3 studies)

Intervention

- Develop risk based referral guidelines
 - Train physicians in their use
 - Feedback
- Train dentists in infant oral health care
 - BoHP (Baby Oral Health Program)
 - In-office training by pediatric dentist
- Develop support system
 - Referral process
 - Case workers
- Learning collaboratives



Reviewer's Name

PORRT

Priority Oral Health Risk Assessment and Referral Tool

Today's date: ___/___/___
month day year

Child's name: First MI Last

Child's date of birth: ___/___/___
month day year

Parent/guardian's relationship to child: Mom Dad Grandparent Other (specify) _____

Provider initials (circle one number): GB1 J2C MC3 MD4 SE5 G66 LK7 LAS8 MBT9 CW10

MD SA Nurse
Coastal Children's Clinic NR HV MA

A. Questions for the Parent / Guardian:

Please check the following questions with a **YES** or **NO** response: Yes No

1. Do you brush your child's teeth or clean their gums at bedtime?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. If you brush your child's teeth, do you use toothpaste with fluoride?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Does your child drink tap water most of the time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Does your child drink juice or sweetened drinks between meals?	<input type="checkbox"/>	<input type="checkbox"/>
5. Have you or anyone in your immediate family had dental problems?	<input type="checkbox"/>	<input type="checkbox"/>
6. Does your child sleep with a bottle filled with drinks other than water?	<input type="checkbox"/>	<input type="checkbox"/>

B. Questions for the Provider:

Please check the following questions with a **YES** or **NO** response: Yes No

7. Does the child have cavities? (cavitated lesions)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Does the child have white spot lesions? (non-cavitated lesions)	<input type="checkbox"/>	<input type="checkbox"/>
9. Does the child have enamel defects?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10. Does the child have visible plaque on the teeth?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. Does the child have any other oral conditions?	<input type="checkbox"/>	<input type="checkbox"/>

12. Does this child have special health care needs? Yes No

If yes, please describe: _____

13. On a scale of 1 to 10, what is this child's caries risk?
Please circle the number that indicates the level of risk.

0 1 2 3 4 5 6 7 8 9 10

Extremely Low Risk Extremely High Risk

refer

14. Does this child need to be evaluated by a dentist as a result of this assessment?

Yes No Don't know

a. If yes, how urgent is it for this child to be evaluated by a dentist?

- ___ 1 Not urgent at all
___ 2 Urgent
___ 3 Very Urgent
___ 4 Don't know

Name _____ 10/9/07

Today's date: ___/___/___ Child's MID# _____

Child's name: First MI Last

Child's date of birth: ___/___/___
month day year

Parent/guardian's relationship to child: Mom Dad Grandparent Other (specify) _____

Provider initials (circle one number): 1 2 3 4 5 6 7 8 9 10 11 12

[Practice Name] Oral Risk Assessment and Referral

A. Questions for the Parent / Guardian

	Yes	No	Referral Recommendation
1. Do you brush your child's teeth at least once a day using toothpaste with fluoride?	<input type="checkbox"/>	<input type="checkbox"/>	If 3 or more risk factors (shaded boxes) are marked, refer to a General Dentist.
2. Does your child drink fluoridated water?	<input type="checkbox"/>	<input type="checkbox"/>	
3. Does your child drink juice or sweetened drinks between meals or eat sugary snacks?	<input type="checkbox"/>	<input type="checkbox"/>	
4. Have you or anyone in your immediate family had dental problems?	<input type="checkbox"/>	<input type="checkbox"/>	
5. Does your child sleep with a bottle filled with drinks other than water?	<input type="checkbox"/>	<input type="checkbox"/>	

B. Questions for the Provider Based on Clinical Assessment

	Yes	No	If Yes, Refer to
6. Does the child have any special health care needs?	<input type="checkbox"/>	<input type="checkbox"/>	Pediatric Dentist
7. Does the child have cavities? (cavitated lesions)	<input type="checkbox"/>	<input type="checkbox"/>	Pediatric Dentist
8. Does the child have visible plaque on the teeth?	<input type="checkbox"/>	<input type="checkbox"/>	Consider other risks
9. Does the child have enamel defects?	<input type="checkbox"/>	<input type="checkbox"/>	General Dentist
10. Does the child have white spot lesions? (non-cavitated lesions)	<input type="checkbox"/>	<input type="checkbox"/>	General Dentist
11. Does the child have any other oral conditions of concern?	<input type="checkbox"/>	<input type="checkbox"/>	General Dentist

12. Please check procedures performed today:

- a. Oral evaluation ₁
b. Fluoride varnish ₁
c. Parent education ₁

13. Was the child referred to a dentist? Yes ₁ No ₂

If YES, please note name of dentist: _____

14. Was the child previously referred? Yes ₁ No ₂

Provider signature: _____

C. This section is to be completed by the Dental Office and faxed back to the referring physician.

1. Date of dental appointment ___/___/___
month day year

2. Did the patient show up for dental appointment? Yes ₁ No ₂

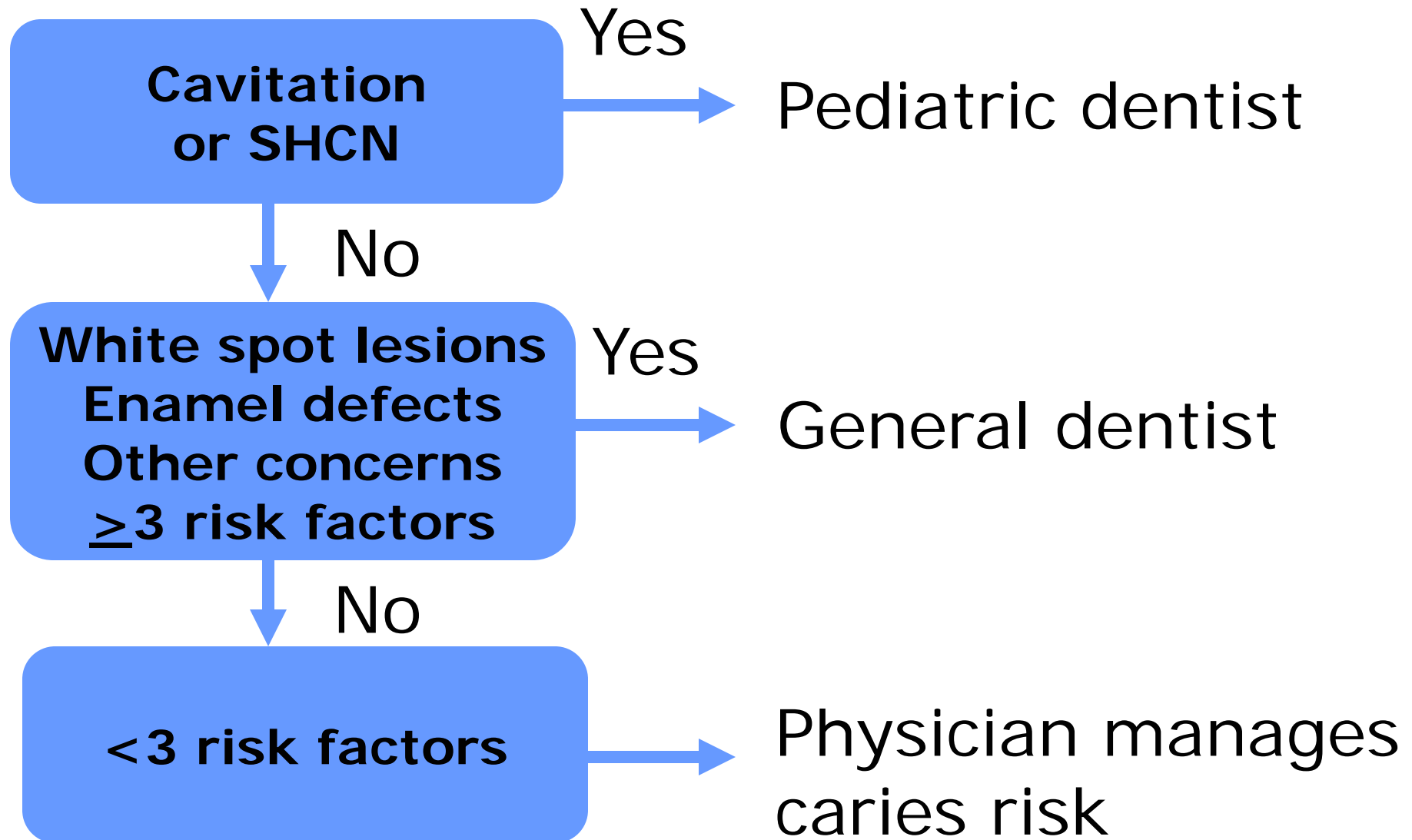
3. Did patient call to cancel the appointment? Yes ₁ No ₂

If yes, what reason was given? _____

4. Brief summary of dental findings: _____

5. Next dental appointment: Date: _____ Time: _____

Referral Guidelines

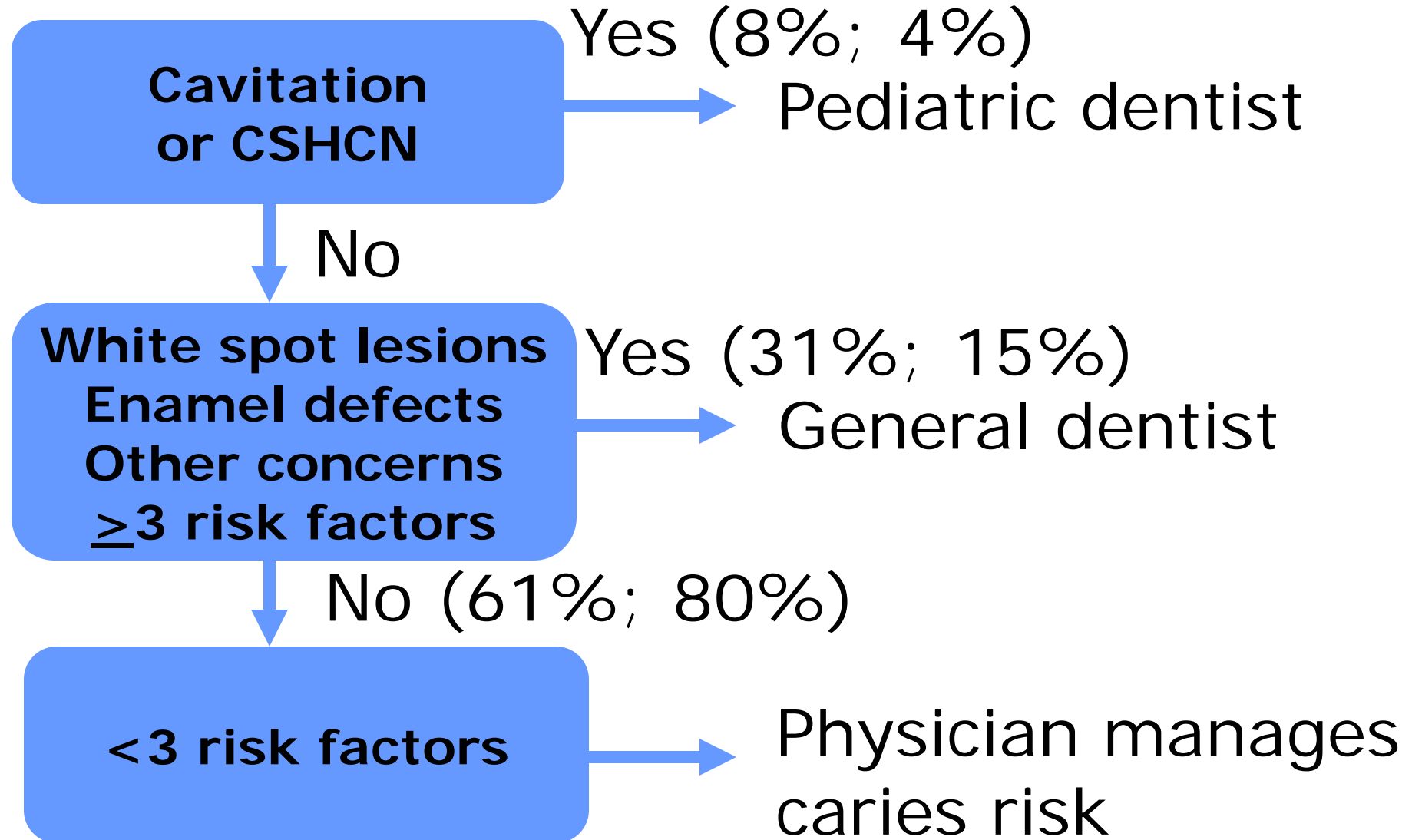


Evaluation Methods

- Three-county demonstration
- Quantitative methods
 - Pre-post single group design for referral rates and appropriateness
 - Completed PORRT forms
 - Post-intervention assessment of dentist visits using PORRT and other information
 - Interrupted time series design with comparison
 - DMA enrollment and claims data
- Qualitative methods
 - Interviews with physicians
 - Focus group with dentists

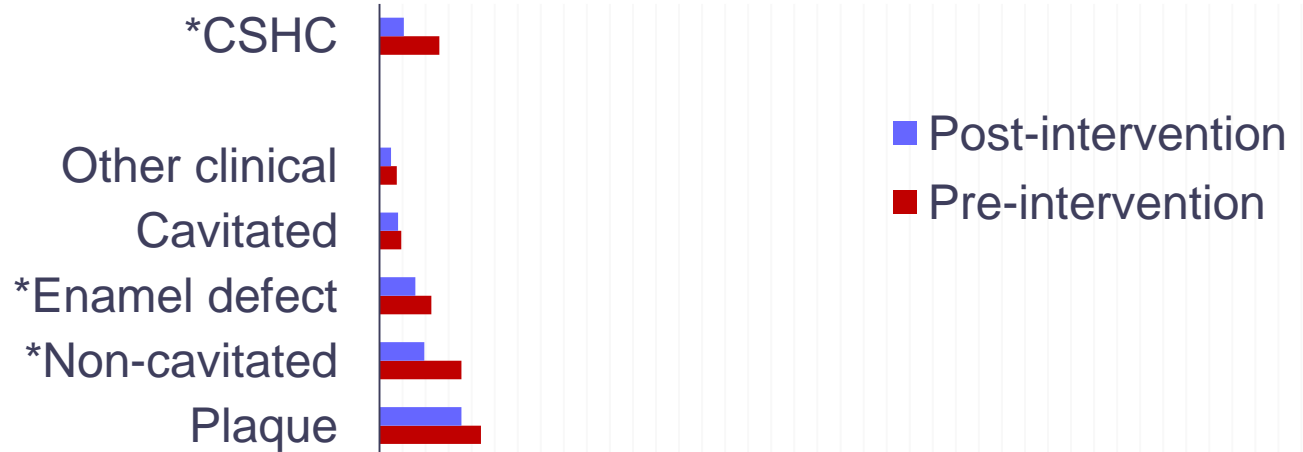


Prevalence of Risk Categories

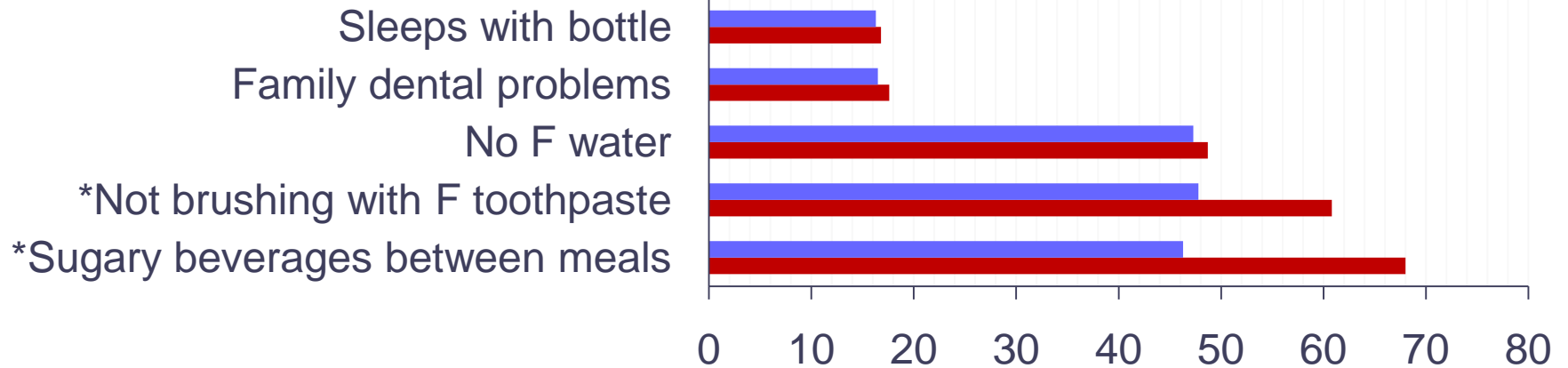


Prevalence of Risk Factors

Biological



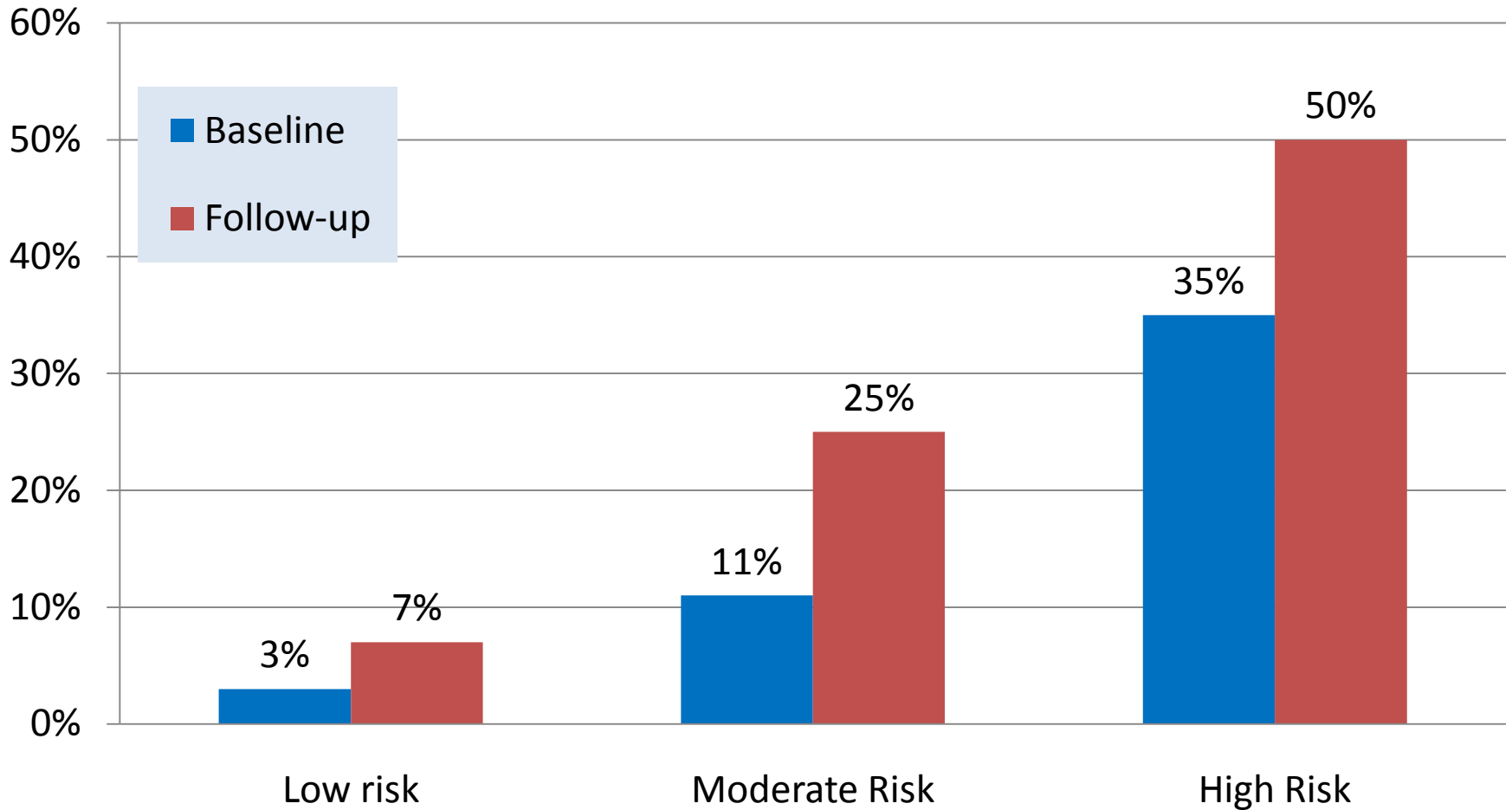
Behavioral



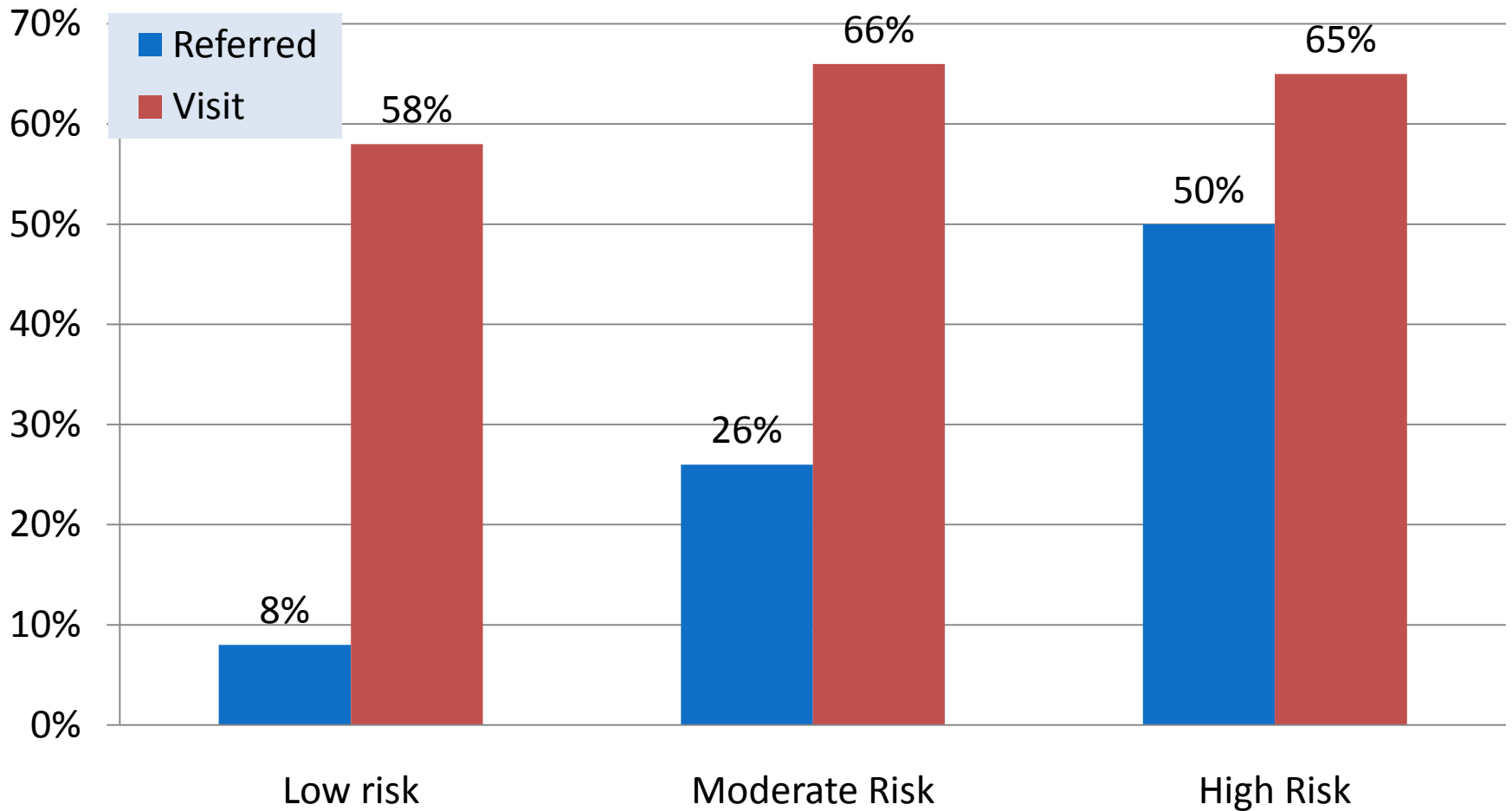
*P<0.01

Percent

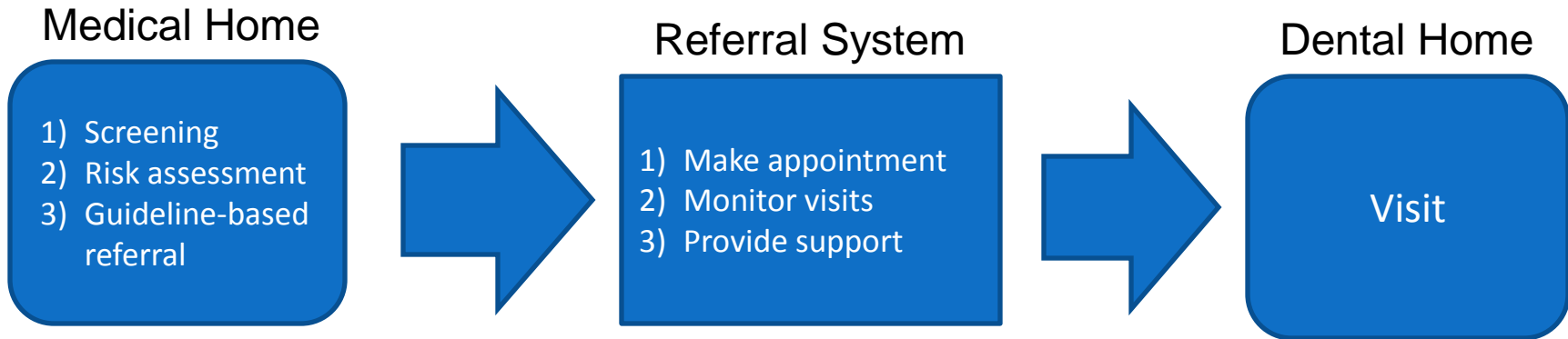
Percent of Screened Patients Referred at Baseline and Follow-up, By Risk Category



Percent of Patients Referred and Percent with Dental Visit, By Risk Category



Conclusions



1. Physicians will use structured risk assessment checklists
2. Reduction in some risk factors
3. More likely to refer for disease than behavioral risk factors
4. Under-refer patients with elevated risk
5. More likely to refer early disease after intervention
6. Hesitate to refer if anticipate lack of parental follow through
7. Difficult to engage
8. Some referrals don't get into system
9. Because number of parents needing or wanting support is unknown, impact difficult to determine
10. Once in system, referral is moderately effective
11. Dentists' willingness to see patients exceeded referral demand



Future Directions

1. Understand the referral process
2. Refine risk assessment / referral guidelines
 1. Triage?
 2. Whose at risk?
 3. Are dentists specialists?
3. Set reasonable goals for referral outcomes
4. Test interventions for effectiveness and efficiency



Acknowledgement of Funding Sources

- National Institutes of Health
- Centers for Medicare and Medicaid Services
- Health Resources and Services Administration
- Centers for Disease Control and Prevention
- Appalachian Regional Commission
- Various NC agencies

