BACKGROUND

Oral health is a critical health care issue confronting our nation’s children, especially the underserved. Pediatricians are positioned perfectly to partner and effectively communicate with families and other oral health professionals in helping families understand the causes of oral health disease. *Bright Futures* offers a child and family-centered approach to preventive services with oral health as an imperative component of health. Pediatricians in training have an important role in improving oral health and are an optimal group with whom to present new techniques and standards that they will then implement when they enter practice. CORNET is a venue through which multiple residency programs that provide medical care to underserved children can participate.

Study Aims:
1. Describe the confidence, knowledge and ability of the pediatric resident in the areas of oral health promotion, including risk assessment, screenings for high-risk patients and early referral for dental care.
2. Describe the confidence, knowledge and ability of the pediatric resident in the areas of *Bright Futures* and the core concepts of family-centered communication and partnership building.
3. Identify patient and family characteristics and perception of satisfaction with health encounters and physician performance as they related to *Bright Futures* family-centered practice and oral health promotion.

We hypothesize that:
1. Pediatric residents will have enhanced confidence, knowledge and ability as they relate to oral health promotion, disease prevention and *Bright Futures* and family-centered care, as a direct result of greater exposure and practice during their training.
2. An improvement in resident competencies in oral health and *Bright Futures*
3. An improvement in family satisfaction with the health encounter.

METHODS

The study design is a randomized controlled trial with randomization by residency training program. A faculty development program will be implemented to train and standardize the teaching of faculty to then train residents in *Bright Futures* oral health components, communication, partnership building strategies, and family centered care. The specific components of the *Bright Futures* Oral Health Curriculum include:

- Review modules on *Bright Futures* oral health
- Review *Bright Futures* modules on family centered care, communication and partnership building
- Experiential sessions utilizing role playing with emphasis on anticipatory guidance
- Concepts reinforced by continuity preceptor
- 4 week curriculum which will include review of internet modules during resident’s own time.

** The control sites will receive the curricular intervention at the conclusion of the study.

The inclusion criteria for each category of study participants follow:

<table>
<thead>
<tr>
<th>Faculty/site</th>
<th>Residents</th>
<th>Parents/patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 faculty per site identified</td>
<td>Pediatric categorical residents</td>
<td>Parents/legal guardian of children 6-35 months of age,</td>
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<td>Faculty teaches in continuity practice</td>
<td>PL-1 or PL-2 level</td>
<td>Legal guardian present at visit</td>
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<tr>
<td>Support from Pediatric Program Director</td>
<td></td>
<td>Primary care provider is pediatric resident seeing patient at that visit</td>
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<tr>
<td>Commitment to training by group telebriefing, conference</td>
<td></td>
<td>Child present for health</td>
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</tbody>
</table>
We propose to investigate the extent of resident competency in these areas and the factors that influenced changes in behavior. Resident competency in oral health and *Bright Futures* are the outcome variables that will be analyzed in Table 1. The key independent variables predicting or influencing resident competency in those areas are presented in Tables 2 and 3.

**Table 1. Dependent Variables for Specific Aims 1 and 2**

Pediatric Resident Confidence and Satisfaction in Oral health and *Bright Futures*

<table>
<thead>
<tr>
<th>Informant</th>
<th>Evaluation Domains</th>
<th>Sources</th>
<th>Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
<td>Perceptions of:</td>
<td>Survey, journals</td>
<td>I am confident in my skills and abilities in:</td>
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<tr>
<td></td>
<td>▪ Oral health</td>
<td></td>
<td>▪ oral health promoting strategies [in the areas of risk assessment and screenings]</td>
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<tr>
<td></td>
<td>▪ Communication</td>
<td></td>
<td>▪ Communication strategies</td>
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<tr>
<td></td>
<td>▪ Partnership</td>
<td></td>
<td>▪ Partnership building techniques</td>
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<tr>
<td></td>
<td>building</td>
<td></td>
<td>I am satisfied in my skills and abilities in:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>▪ oral health promoting strategies [in the areas of risk assessment and screenings]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>▪ Communication strategies</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>▪ Partnership building techniques</td>
</tr>
</tbody>
</table>

**Table 2. Independent variables for Specific Aims 1 and 2**

Pediatric Resident Competency in Communication, Partnership building and Oral Health

<table>
<thead>
<tr>
<th>Informant</th>
<th>Evaluation domains</th>
<th>Sources</th>
<th>Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
<td>Foster practice of oral health</td>
<td>Bright Futures MCQ &amp; Self Report Chart Review</td>
<td>▪ Promote oral hygiene development</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>▪ Promote healthy feeding and eating practices</td>
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<td></td>
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<td></td>
<td>▪ Discuss bottle weaning, transmission of oral bacteria, maternal oral health status</td>
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<td></td>
<td></td>
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<td>▪ Identify fluoride treatment plan</td>
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<td></td>
<td>▪ Identify tooth decay</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>▪ Establish a dental home</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>▪ Utilize Bright Futures interview questions concerning oral health development</td>
</tr>
</tbody>
</table>
| Resident Utilize effective communication | Bright Futures MCQ & Self Report | ▪ Greet family members and introduce self  
▪ Use names of family members  
▪ Demonstrate interest, empathy  
▪ Appear patient and unhurried  
▪ Acknowledge concerns, fears and feelings of child and family  
▪ Use ordinary language, not medical jargon  
▪ Use Bright Futures general and age-appropriate interview questions  
▪ Give information clearly  
▪ Query level of understanding and allow sufficient time for response  
▪ Encourage additional questions  
▪ Discuss family life, community, school |
| Utilize Bright Futures communication concept - Active listening skills: Verbal behaviors | Bright Futures MCQ & Self Report | ▪ Allow child and parents to state concerns without interruption  
▪ Encourage questions and answer them completely  
▪ Ask about feelings  
▪ Acknowledge stress or difficulties  
▪ Allow sufficient time (wait time >3 seconds) for a response  
▪ Offer supportive comments  
▪ Offer information or explanations |
| Utilize Bright Futures Communication concept - Active listening skills: Nonverbal behaviors | Bright Futures MCQ & Self Report | ▪ Sit at the level of the child/parent and make eye contact  
▪ Interact or play with the child  
▪ Show expression, attention, concern or interest  
▪ Convey understanding and empathy  
▪ Use written materials if appropriate |
| Incorporate Bright Futures Partnership-building concepts | Bright Futures MCQ & Self Report | ▪ Model and encourage open and supportive communication with child and family  
▪ Identify health issues through active listening and “fact finding”  
▪ Affirm strengths of child and family  
▪ Identify shared goals  
▪ Develop joint plan of action based on stated goals  
▪ Sustain the partnership |

Table 3. Dependent Variables for Specific Aims 1, 2, and 3
Family satisfaction with oral health promotion encounter

<table>
<thead>
<tr>
<th>Informant</th>
<th>Evaluation domain</th>
<th>Source</th>
<th>Metrics</th>
</tr>
</thead>
</table>
| Family    | Adopt healthy oral health practice | Chart, interviews & MCQ | ▪ Satisfied with information on oral health development  
▪ Understand good oral health practice  
▪ Adopt healthy feeding and eating practices  
▪ Practice oral health hygiene |
| Family | Benefit from Bright Futures practice | Chart, interviews & MCQ | - Make appointment with dentist  
- Establish a dental home |
|--------|-------------------------------------|------------------------|---------------------------------------------------------------------|
| Family | Perception of PCP performance       | MCQ                    | - Satisfied with child health encounter  
- Satisfied with use of provider communication and method for conveying oral health promotion  
- Satisfied with use of partnership building strategies to enhance patient-clinician relationship  
- I am satisfied by physician performance utilizing oral health information and Bright Futures concepts |

**IRB issues**
IRB approval obtained at each institution. CORNET staff to aid in writing of IRB proposal. Parental consent to be obtained by participating staff or residents at each program as determined by individual program. Faculty member at program to obtain consents of participating residents.

**Sample size calculation**
20 sites (10 intervention, 10 control)
10-20 residents per site (total of 250 residents)
3-5 patients per resident (total of 750 patients)

**Timeline**
October 2005 to September 2006: Development of measures and faculty development curriculum
October 2006 to June 2007: Recruitment of patients and obtainment outcome data

**Incentives**
Depending upon the number of participants at site, each site will receive a range of compensation from $1000-$3000.