

# Oral Health

An individual's oral health plays a very important role in their overall health. Studies have shown direct links between oral infections and other conditions, such as diabetes, heart disease, stroke, and poor pregnancy outcomes. Dental caries are the most common chronic infectious disease among children; if untreated, dental caries can result in problems with speaking, playing, learning, and receiving proper nutrition. In addition, untreated oral health problems in children and adults can cause severe pain and suffering, and those who delay care often have higher treatment costs when they finally receive it.

Healthy North Carolina 2020 includes three objectives for oral health. Their rationale for inclusion is below:<sup>1</sup>

- Children of low-income families are more likely to have tooth decay. One reason is that many children with public coverage lack access to dental care. On average, fewer than half of all North Carolinians aged 1-5 years enrolled in Medicaid receive any dental care in a year.
- Dental decay in children can be measured by the number of teeth affected by decay, the number of teeth that have been extracted, or the number of teeth successfully filled. The prevalence of decayed, missing, or filled teeth in young children is higher in low-income populations and in rural communities without fluoridated water.
- Untreated tooth decay and gum disease can lead to permanent tooth loss among adults. According to the Centers for Disease Control and Prevention (CDC), nationally, one in three adults has untreated tooth decay, and one in seven adults has gum disease.

## **This chapter includes:**

- ❖ Oral health

## Chapter 10

## *Oral health*

### Overview

According to the Surgeon General's report on oral health that was published in 2000, "Oral health is essential to the general health and well-being of all Americans, and can be achieved by all Americans."<sup>2</sup> Therefore, the condition of the mouth mirrors the condition of the body as a whole, and good oral health means more than just an attractive smile. Many diseases appear first in the mouth and are thus found while patients are in the dental chair. Periodontal (gum) disease or tooth decay (cavities) are the most frequent causes of tooth loss. Poor oral health can also have negative results that affect health, social and financial circumstances. For example, dental caries (cavities) left untreated can lead to needless pain, infection, swollen faces and suffering, which in turn can lead to problems with nutrition, growth, school readiness, speech problems and diminished self-esteem, as well as other medical conditions.<sup>3</sup> People with disabilities and other health conditions like diabetes are more likely to have poor oral health.<sup>4</sup> According to the Centers for Disease Control and Prevention (CDC), nationally, 1 in 3 adults have untreated decay, and 1 in 7 adults have gum disease.<sup>5</sup>

Oral health disparities are profound in the United States.<sup>6</sup> Despite major improvements in oral health for the population as a whole, oral health disparities exist for many racial and ethnic groups, by socioeconomic status, gender, age and geographic location. The economic factors that often relate to poor oral health include lack of access to dental services and an individual's ability to attain and retain dental insurance. Children from lower-income families often do not receive timely treatment for tooth decay, so they are more likely to suffer from it.<sup>7</sup> There are also social determinants that affect oral health. In general, people with lower levels of education and income, and people from specific racial/ethnic groups, have higher rates of disease. Lack of awareness of the need for care, cost of care, and fear of dental procedures can also be deterrents to seeking dental care.<sup>8</sup> Other barriers have been observed to cause difficulty in gaining access to dental care for people who are Medicaid insured, such as finding a dental provider who accepts Medicaid and long waits for appointments.<sup>9</sup>

Dental decay (cavities) is the most common chronic disease of childhood, affecting 50% of children by middle childhood and nearly 70% by late adolescence. It is five times more prevalent than asthma and seven times more prevalent than hay fever.<sup>10</sup> Fortunately, most oral diseases can be prevented and instilling proper oral habits in children at an early age that will be continued throughout life is the best way to ensure a child does not get cavities or periodontal disease. Good self-care, such as brushing with fluoride toothpaste, daily flossing, and professional treatment, is critical for good oral health.<sup>11</sup> Health behaviors that can lead to poor oral health include: tobacco use, excessive alcohol use, and poor dietary choices.<sup>12</sup>

**Healthy NC 2020 Objective****Oral Health**

Healthy NC 2020 Objective <sup>13</sup>	Current Durham	Current NC	2020 Target
1. Increase the percentage of children ages 1-5 years enrolled in Medicaid who received any dental service during the previous 12 months.	60.4% (2010) <sup>14</sup>	51.7% (2010) <sup>15</sup>	56.4%
2. Decrease the average number of decayed, missing, or filled teeth among kindergarteners.	1.76 (2008-09) <sup>16</sup>	1.5 (2008-09) <sup>17</sup>	1.1
3. Decrease the percentage of adults who have had a permanent tooth removed due to tooth decay or gum disease.	37.8% (2010) <sup>18</sup>	46.7% (2010) <sup>19</sup>	38.4%

**Secondary Data: Major findings***Children*

The North Carolina Oral Health Section Report of elementary school oral health assessments indicates that the prevalence of kindergarteners in Durham County with decayed, missing, or filled teeth currently is 1.76;<sup>20</sup> the Healthy NC 2020 target is 1.1. This same report also indicates that the percentage of children in Durham County with cavities significantly decreased from 17% for school year 2007-08 to 11% for school year 2008-09.<sup>21</sup> Continuation of this downward trend will result in Durham County meeting the Healthy NC 2020 objective. A decrease in decayed, missing, or filled teeth has been observed to occur with dental education that makes the public more aware of the importance of good dental hygiene and the importance of taking care of primary (baby) teeth to keep them healthy by accessing dental services available in the community at an early age.<sup>22,23,24,25</sup>

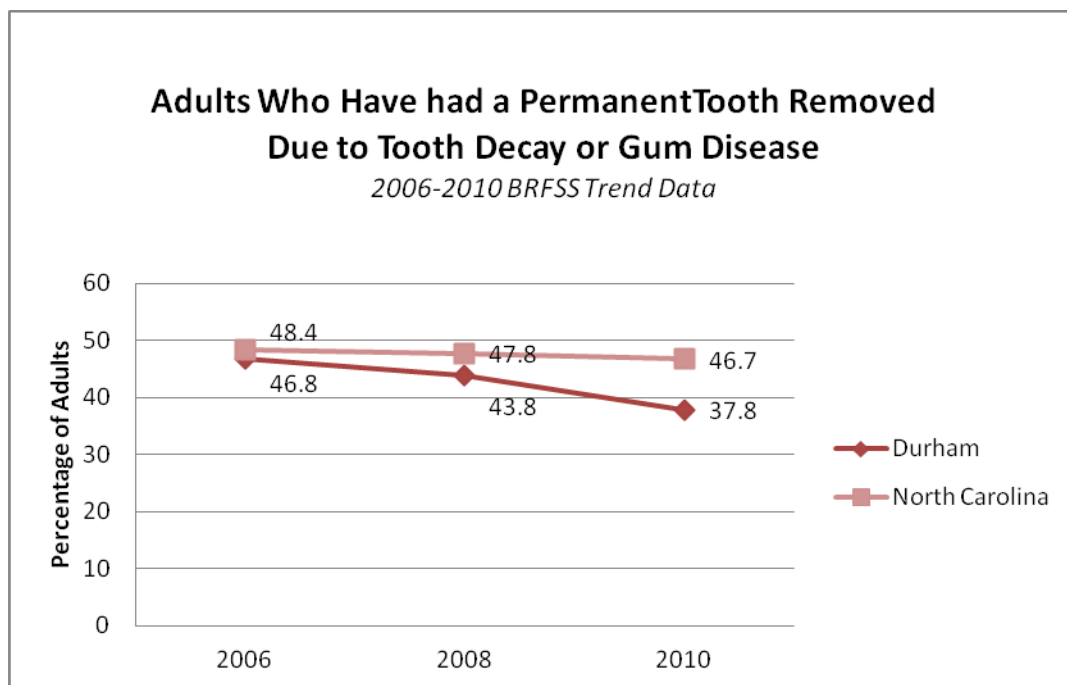
According to data from North Carolina Department of Health and Human Services, the percentage of children in Durham ages 1-5 years enrolled in Medicaid who received dental service in FY 2009 was 56.6% and increased to 60.4% in 2010,<sup>26</sup> surpassing the Healthy NC 2020 target of 56.4%. Targeted efforts towards this age group are necessary in order to maintain the percentage of children who access dental services and to further reduce the prevalence of dental decay, missing or filled; enabling Durham to meet and maintain the second Healthy NC 2020 objective listed above.<sup>27,28</sup> Dental education that continues to raise the public awareness of the importance of preventing early childhood decay and increasing access to dental care for economically disadvantaged children will help Durham County maintain if not exceed the third Healthy NC 2020 objective: to increase the percentage of children ages 1-5 years enrolled in Medicaid who have received any dental service during the previous 12 months.

*Adults*

According to the North Carolina Division of Medical Assistance, only 32.2% of the 15,257 eligible adults (21+ yrs of age) in Durham County received dental services during fiscal year 2009; 30.6% of the 654,941 eligible adults in the state of North Carolina received dental services.<sup>29</sup> This report also states that the average cost per recipient of dental services in Durham County was \$916 compared to \$688 for the average cost per recipient of dental services for the state of North Carolina, which is a difference of \$228.<sup>30</sup> This difference in the average cost per person may suggest that the eligible adults in Durham have more dental needs than the eligible adults in the state. The difference also suggests that an increase in the eligible adults receiving preventive dental services in Durham would decrease the number of expensive dental services needed to repair or remove teeth, which would in turn, decrease the cost per person.

**Primary Data***Adults*

According to 2006-10 BRFSS (Behavioral Risk Factor Surveillance Survey) data, the percentage of Durham County adults who have had a permanent tooth removed due to tooth decay or gum disease is comparable to the state for years 2006 and 2008; however in 2010, this percentage takes a 5% drop, which is less than the Healthy NC 2020 objective of 38.4%.<sup>31</sup> This is shown in Figure 10.01(a) below.



*Figure 10.01(a) Percentage of Adults Who Have had Permanent Teeth Removed*

Additional BRFSS data show that the percentage of adults who have visited a dentist, dental hygienist or dental clinic in the past year for Durham County was higher than the state and two of Durham’s peer counties in 2010.<sup>32</sup> As Figure 10.01(b) illustrates, Durham is the only county amongst its peers and the state where the percentage of dental-related visits in the past year *increased* from 2008 to 2010; dental-related visits for peer counties have actually *decreased* during these same years, and at the state level, the number of visits have remained the same.<sup>33</sup>

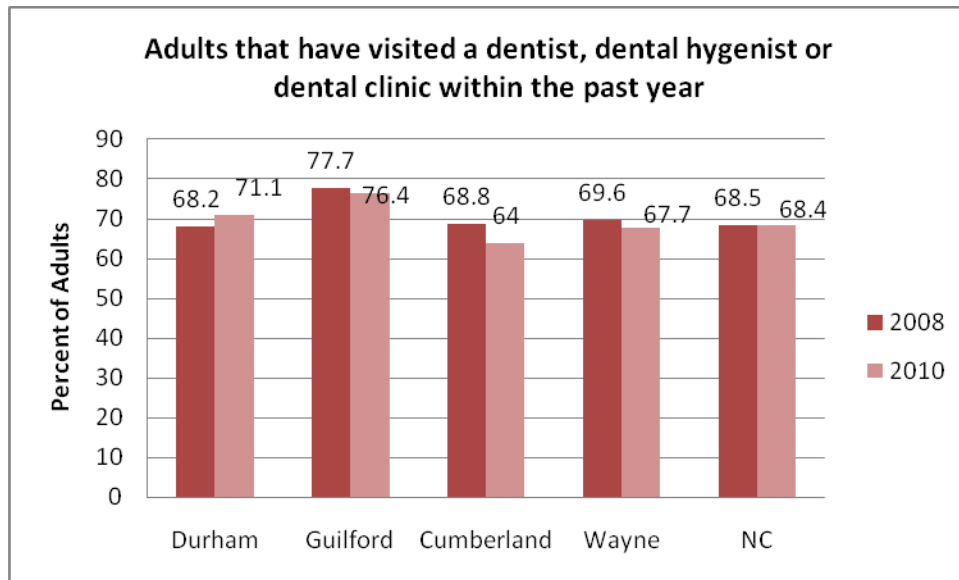


Figure 10.01(b) Percentage of Adults who Have Visited a Dentist in the Past Year

*Children*

Tables 10.01(c) and 10.01(d), below, reflect 2009 YRBS (Youth Risk Behavioral Survey) data for both Durham middle and high school students. The percentage of middle and high school students in Durham that have visited a dentist in the past 12 months is comparable to that of students in the Central Region and in North Carolina. Noticeably, racial disparities are found across the entire table in both middle and high school groups; White children were more likely to have seen a dentist in the past 12 months than their Black and Hispanic counterparts for both middle and high school age groups. Targeted efforts will need to continue in Durham towards increasing teen dental visits as well as to decrease racial disparities found amongst this age group, and ultimately all age groups.

Table 10.01(c): 2009 YRBS Data for Middle School Students<sup>34</sup>

Percentage of students who last saw a dentist for a check-up, exam, teeth cleaning, or other dental work during the past 12 months						
	Durham		North Carolina		Central Region	
	%	N*	%	N*	%	N*
<b>Total</b>	65.6	453	62.9	3422	66.6	1124
Race/Ethnicity						
Black	59.7	253	48.7	597	55.2	223
Hispanic/Latino	47.9	73	48.4	450	48.1	160
White	85.9	99	71.7	1940	76.9	593
Other	76.9	26	55.3	369	...	133
Gender						
Male	63.5	219	63.2	1703	66.3	563
Female	67.7	234	62.6	1715	67.0	560

Table 10.01(d): 2009 YRBS Data for High School Students<sup>35</sup>

Percentage of students who last saw a dentist for a check-up, exam, teeth cleaning, or other dental work during the past 12 months						
	Durham		North Carolina		Central Region	
	%	N*	%	N*	%	N*
<b>Total</b>	65.5	476	68.7	5600	71.3	1851
Race/Ethnicity						
Black	60.1	276	59.4	919	63.0	424
Hispanic/Latino	64.2	53	55.0	459	52.1	192
White	82.9	129	76.4	3618	80.4	987
Other	54.2	24	58.4	514	...	216
Gender						
Male	67.1	173	69.1	2701	70.9	884
Female	64.5	324	68.4	2879	71.5	959

*Durham County Community Health Opinion Survey*

According to 2010 Durham County Community Health Opinion Survey data, 25% of Durham residents could not access dental care during the past 12 months.<sup>36</sup> Close to 60% of Durham residents cited cost and lack of dental insurance as the two greatest obstacles in obtaining dental care. These results are depicted in Figure 10.01(c) below.<sup>37</sup>

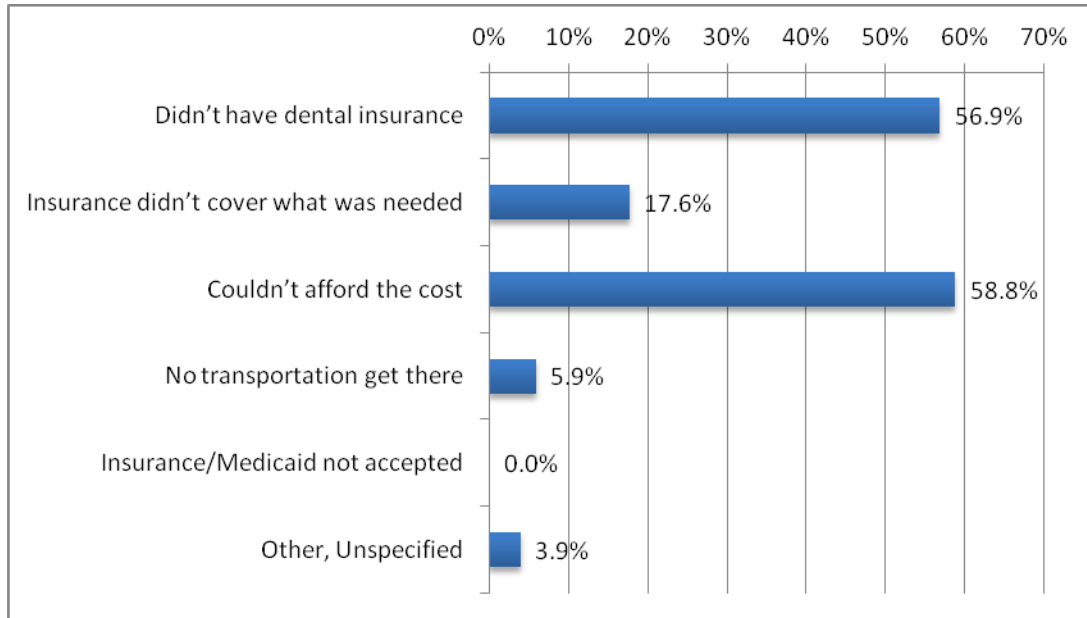


Figure 10.01(c) Results from the 2010 Durham County Community Health Opinion Survey

### **Interpretations: Disparities, gaps, emerging issues**

According to 2008 and 2010 BRFSS data, both racial and economic disparities persist in oral health. Close to 80% of whites reported that they received dental care within a 12-month period, compared to only 60.1% of all other races in the 2008 report. During this time period, 83.9% of households with an income of \$50,000 or more received dental care, compared to only 54.5% of households grossing less than \$50,000.<sup>38, 39</sup> Racial disparities are also evident in the data shown in the YRBS survey of middle and high school students.

Despite remarkable improvement in the nation's oral health over the years, not everyone in the U.S. has benefited equally. Oral, dental and craniofacial conditions remain among the most common health problems for low-income, disadvantaged, disabled and institutionalized individuals.<sup>40</sup> Given the diversity of the U.S. population, it is unrealistic to anticipate easy, one-size-fits-all solutions. Approaches that are tailored and targeted to individual, community and societal/environmental-level factors are needed to achieve health equality.<sup>41</sup> The NIDCR (National Institute of Dental and Craniofacial Research) funded Centers for Research to Reduce Disparities in Oral Health has demonstrated the need to partner with communities throughout the research process in order to fully understand what factors contribute to dental disease in each community, and to develop appropriate intervention strategies. For example, one Center

discovered that only 14% of the tooth decay found among children in the poorest sections of Detroit can be attributed to "classical" risk factors.<sup>42</sup> A community's cultural beliefs about preventive care, understanding of the importance of "baby" teeth, mistrust of drinking tap water, maternal health fatalism, fear of dental care and even the proximity to places of worship and grocery stores all contribute to oral health risk. Creative interventions are needed to address these factors.<sup>43</sup>

Early childhood caries (ECC) and tooth decay in young children are a national concern because of widespread and increasing prevalence in children from low-income families.<sup>44</sup> The Durham community of dental professionals must continue efforts that will result in an increase in the number of children 1 to 5 years of age that are able to access dental services. The increase in the number of children ages 1 to 5 years accessing dental services should decrease the number of children with decayed, missing, and filled teeth, thus increases the chances of Durham County to reach the Healthy NC 2020 objective. Programs in Durham County such as the “Zero Out Early (ZOE)” in Early Head Start (EHS) programs and “baby Oral Health programs (bOHP)<sup>45</sup>” in medical and dental clinics have been effective in improving access to preventive dental services for children 1 to 5 years of age and reducing childhood tooth decay in children. These programs provide training for staff at EHS centers, medical office staff, dental clinic staff, and parents.<sup>46,47</sup>

In Durham County, 37.7 % of adults in 2010 surveyed said they had a permanent tooth removed due to tooth decay or gum disease, which is higher than the 38.4% Healthy NC 2020 target. Dental professionals and the community will need to continue collaborative efforts to provide discounted or free dental care to adults who have difficulty accessing dental services because they do not have insurance and cannot afford the cost of dental treatment. Several collaborative efforts exist in Durham County providing options for its low-income citizens to access dental services such as the Lincoln Community Health dental clinic, a free dental clinic at the Good Samaritan Inn of the Durham Rescue Mission, free dental clinics held by the North Carolina Dental Society “Missions of Mercy” (NCMOM), and the NC Baptist Men’s Bus which is supported by not only volunteer dental personnel, but also by the nearby UNC-CH School of Dentistry.

**Recommended Strategies**

*Table 10.01(d) Evidence-Based and Promising Practices<sup>48</sup>*

Category	Name	Description	Website	Matching 2020 Objective
School	CDC's School-Based Dental Sealant Program	This resource defines sealants and school based programs and why they are effective. Other resources are given that can be useful when forming a school-based sealant program.	<a href="http://www.cdc.gov/OralHealth/topics/dental_sealant_programs.htm">http://www.cdc.gov/OralHealth/topics/dental_sealant_programs.htm</a>	Oral Health Objective 1 & 2
Community	1.Good Samaritan Health Center free dental clinic 2.NC Dental	1.A free volunteer dental clinic at the Durham Rescue Mission. 2.This is a NC Dental Society outreach program to provide free dental services to those in financial need with few or no other options. In this grass roots effort a	1. <a href="http://www.samaritanhealthcenter.org">http://www.samaritanhealthcenter.org</a> 2. <a href="http://www.ncdental.org/n">http://www.ncdental.org/n</a>	Oral Health Objective 3



	Society “Missions of Mercy” (NCMOM) free dental program	large amount of portable dental equipment owned by the NC Dental Society is utilized by dental professionals to provide free dental services throughout various communities in NC.	<a href="#">cde/History1.asp?</a>	
Healthcare	Hospital-Based Pediatric Clinic Increase Access to Dental Care & Improves Oral health for Low-Income Children and Children with Disabilities	<p>1. Profiles an outpatient clinic providing comprehensive dental care to uninsured and underinsured children and to children with medical, physical, or developmental disabilities. The program aims to increase access to dental care and improve oral health for underserved children in southwestern Virginia.</p> <p>2. A pediatric dental office that focuses on dental needs of medically compromised children.</p>	<p><a href="http://www.innovations.ahrq.gov/content.aspx?id=2436">http://www.innovations.ahrq.gov/content.aspx?id=2436</a></p> <p><a href="http://www.dukehealth.org/pediatricians/">http://www.dukehealth.org/pediatricians/</a></p>	Oral Health Objective 1

## Current Initiatives & Activities in Durham County

### Current Programs/Activities in the Durham County Health Department Dental Division

- **“Tooth Ferry” mobile dental van**

A mobile van outfitted with dental equipment to provide complete general dental services. The dental van provides dental services at select Durham Public Elementary Schools for children with urgent dental needs who have difficulty accessing dental services.

Website: <http://www.co.durham.nc.us/departments/phth/Dental.html>

Phone Number: (919) 560-7680

- **“Healthy Smiles, Healthy Kids”**

A low-cost dental care program at Durham County Health Department (DCHD) for children aged 6 months to 21 yrs. old and pregnant women to help start babies with a healthy smile. Pregnant women, who do not have a dentist, are referred by the DCHD OB Clinic who do not have a dentist. This is an opportunity to teach good oral hygiene necessary for the moms and for their babies.

Website: <http://www.co.durham.nc.us/departments/phth/Dental.html>

Phone Number: (919) 560-7680

- **Pediatric Dental Specialists** Dental services provided in the DCHD dental clinic by dentists from the Department of Pediatric Dentistry in the School of Dentistry at UNC-CH

Website: <http://www.co.durham.nc.us/departments/phth/Dental.html>

Phone Number: (919) 560-7680

- ***Prevention of Early Childhood Caries Program*** Collaboration with the Operation BreakThrough Head Start and Durham Partnership for Children’s Early Head Start programs to provide dental education to parents and dental services to the children with dental needs

Website: <http://www.co.durham.nc.us/departments/phth/Dental.html>

Phone Number: (919) 560-7680

- ***Dental Screening***

Dental screening is provided to Kindergarten and 5<sup>th</sup> Grade children in Durham Public schools annually to monitor the status of oral health in Durham County children.

Website: <http://www.co.durham.nc.us/departments/phth/Dental.html>

Phone Number: (919) 560-7680

- ***Dental Health Education***

Presentations are provided for Durham Public School and day care classrooms as well as community health fairs as time permits.

Website: <http://www.co.durham.nc.us/departments/phth/Dental.html>

#### **Other Programs/Activities in the area**

- ***“Give Kids a Dental Home”***

A program developed by Dr. John Christensen to provide dental care in private dental offices for children from low-income families to impress upon them the importance of having a dental home for routine dental care to maintain good oral health rather than seek emergency dental care only.

Email: [contact@drjohnsoffice.com](mailto:contact@drjohnsoffice.com)

Phone Number: (919) 489-1543

- ***“Zero Out Early (ZOE)” Childhood Tooth Decay***

An Early Head Start Dental Health Initiative is a project designed to zero out early childhood decay in children enrolled in Early Head Start (EHS) programs in NC. ZOE offers trainings in oral health and motivational interviewing to all participating programs in NC. Durham County Partnership for Children is one of the participating programs.

Website: <http://www.sph.unc.edu/zoe/>

Phone Number: (919) 966-7350

- ***“baby Oral Health Program (bOHP)”***

A program designed to educate dental health care providers on the principles of infant and toddler oral health in order to equip them with the necessary tools to be comfortable and competent at providing oral health services for young children.

Website: <http://www.bohp.unc.edu/>

Phone Number: (919) 966-5723

- ***Hospital-based pediatric dental office***

A pediatric dental office that focuses on the dental needs of medically compromised children.

Website: [http://www.dukehealth.org/physicians/martha\\_ann\\_keels](http://www.dukehealth.org/physicians/martha_ann_keels)

Phone Number: (919) 220-1416

- ***Good Samaritan Dental Clinic***

A free volunteer dental clinic at the Good Samaritan Inn of the Durham Rescue Mission.

Website: <http://www.samaritanhealthcenter.org>

Phone Number: (919) 688-9641 ext.5060

- ***NC Baptist Men's Dental Bus***

NC Baptist Men offer the use of the bus to churches and service organizations within NC. Patients targeted through this ministry may include people without insurance, the impoverished, and more.

Website: <http://www.baptistsonmission.org/Projects/Type/Medical-and-Dental>

Phone Number: 1 (800) 395-5102 ext.5603

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