Oral health is a fundamental component of an individual’s general health and well-being. For children, a lack of comprehensive dental care can lead to oral disease such as dental caries (also known as tooth decay or the process that causes cavities). Tooth decay is one of the most common childhood diseases, but is easily preventable. Without proper care and treatment, poor oral health conditions will worsen over time, becoming more complex to treat. Additionally, the U.S. Surgeon General reports that oral diseases in America disproportionately affect our most vulnerable citizens, including children from low-income families, children from racial or ethnic minority groups, and children with special health care needs. The consequences of poor oral health are vast. Untreated dental disease can lead to eating, sleeping, speaking and learning difficulties for children. Short or long-term pain or infection caused by dental disease may additionally restrict a child's activities. Access to, and availability of, oral health care and preventive measures are essential to achieving better outcomes for Delaware’s children.

Source: 2007 National Survey of Children’s Health

“The mouth is a mirror” illustrates the linkage between oral health and overall health.

Demographically speaking, we are much less of a child centered society now than we were a decade ago. In the United States, children accounted for 40 percent of the population in 1900, but only 24 percent in 2010. The childhood population is also becoming much more diverse over time. Similar trends are evident in Delaware.
Delaware Children’s Oral Health

According to the U.S. Surgeon General, nearly every American will experience dental caries: nearly 50% by second grade and 80% by high school graduation. Caries is the process that results in dental decay.

History of Tooth Decay
Percentage of Delaware Third Graders with History of Tooth Decay, 2012

- No History of Tooth Decay: 53%
- History of Tooth Decay: 47%

Source: Delaware Oral Health Assessment of Third Grade Children, Feb 2013, Division of Public Health, State of Delaware

Delaware has experienced a significant decline since 2002 in the prevalence of untreated decay, percent of children needing dental care and the mean number of decayed teeth.

Preventive Dental Care
Percentage of Children Who Have Received Preventive Dental Care in the Past Year, Delaware, 2007

- Not Low-Income: 81%
- Low-Income: 68%
- White: 80%
- Black: 73%
- Hispanic: 63%

Source: 2007 National Survey of Children’s Health

Condition of Children’s Teeth
Percentage of Children Whose Teeth are in Excellent or Very Good Condition, Delaware, 2007

- Not Low-Income: 85%
- Low-Income: 46%
- White: 79%
- Black: 67%
- Hispanic: 50%

Source: 2007 National Survey of Children’s Health

DID YOU KNOW? The American Academy of Pediatric Dentistry, American Dental Association, American Public Health Association and the American Academy of Pediatrics recommend that all children have their first preventive dental visit by age one.

Young Children Needing Dental Treatment
Percentage of Head Start Children Who Need Dental Treatment, Delaware, 2004 and 2012

- 2004: 21%
- 2012: 28%

Source: Head Start Program Information Report (PIR) Data

KIDS COUNT in Delaware Issue Brief– Oral Health
Healthy Pregnancy, Healthy Baby

DID YOU KNOW? Pregnant women, new mothers & other caregivers who have past or current tooth decay can transmit cariogenic bacteria that cause dental caries to children.

Oral health is especially important for pregnant women. Snacking, nausea and hormonal changes, all natural parts of pregnancy, can make expectant mothers particularly vulnerable to dental disease. An oral infection during pregnancy can lead to medical problems. Left untreated, severe gum disease may be associated with preterm birth and low birth weight. An expectant mother who takes good care of her smile during pregnancy is protecting her baby’s teeth too.

DID YOU KNOW? Cleft lip/palate, one of the most common birth defects, is estimated to affect 1 out of 600 live births for whites and 1 out of 1,850 live births for blacks.

At birth, a baby has about 20 baby teeth growing under the gums. While these teeth cannot be seen, they will still need to be protected.

Tips for taking care of baby’s gums:
★ Do not dip a pacifier in anything sweet like honey or sugar.
★ Eliminate sweet drinks and soda.
★ Wipe baby’s gums gently after every feeding and before bed. Use a clean, damp washcloth to wipe germs away.
★ Put baby to bed without a bottle.

As soon as a baby’s first tooth appears, at about 6 months, it can develop tooth decay.

Tips for taking care of baby’s first teeth:
★ Protect baby from germs. Caregivers should not put spoons, pacifiers or toothbrushes in their mouth before putting them in baby’s mouth.
★ Give baby healthy foods.
★ Brush baby’s teeth with a soft baby toothbrush and water as soon as the first tooth appears.
★ Wean baby from bottle by age one.
★ Baby should see a dentist before age one.
★ Check with a doctor or dentist to make sure the child is getting enough fluoride each day.

Dental Care During Pregnancy
Percentage of new mothers who visited a dentist or dental clinic during recent pregnancy, Delaware, 2008

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware- all</td>
<td>32.2%</td>
</tr>
<tr>
<td>Under 20 years</td>
<td>18.9%</td>
</tr>
<tr>
<td>20-24 years</td>
<td>21.1%</td>
</tr>
<tr>
<td>25-34 years</td>
<td>36.6%</td>
</tr>
<tr>
<td>Over 34 years</td>
<td>17.5%</td>
</tr>
<tr>
<td>White non-Hispanic</td>
<td>42.1%</td>
</tr>
<tr>
<td>Black non-Hispanic</td>
<td>23.4%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>17.5%</td>
</tr>
<tr>
<td>Married</td>
<td>43.2%</td>
</tr>
<tr>
<td>Not married</td>
<td>20.8%</td>
</tr>
<tr>
<td>Previous live births</td>
<td>30.1%</td>
</tr>
<tr>
<td>No previous live births</td>
<td>35.1%</td>
</tr>
<tr>
<td>Less than 12 years education</td>
<td>16.7%</td>
</tr>
<tr>
<td>12 years education</td>
<td>25.6%</td>
</tr>
<tr>
<td>Greater than 12 years education</td>
<td>42.8%</td>
</tr>
</tbody>
</table>

Source: Delaware Health and Social Services, Division of Public Health, Delaware Pregnancy Risk Assessment Monitoring System, September 2010
Access to Oral Health Care

According to **Oral Health in America: A Report by the Surgeon General**, it is estimated there are approximately 2.6 U.S. children without dental insurance for every 1 child without health insurance.

Children with dental insurance, whether public or private, are more likely than those without dental insurance to receive comprehensive, preventive oral health care. According to the Pew Center on the States, the average cost of inpatient hospital treatment for dental problems is nearly 10 times more expensive than the cost of preventive care delivered in a dentist’s office.

According to **2008 Dentists in Delaware**, a report by the Center for Applied Demography & Survey Research at the University of Delaware, broad agreement can be found among both general dentists and specialists that there is a shortage of qualified applicants for dental staff positions (i.e. dental hygienists, dental assistants).

Mirroring a national trend, a large proportion of dentists in DE are nearing retirement age. As of 2008, 43% of DE dentists were 55 years or older (16.5% were over age 65).

In southern Delaware, demographic and economic trends combined with limited access to public transportation, geographic misdistribution of health care services and a general shortage of dentists serving low-income populations have hindered access to oral health care providers and dental care services. For more about access in Delaware, see [http://bit.ly/Oego9V](http://bit.ly/Oego9V).

---

**Access to Care**

Percentage of Delaware Third Graders Not Able to Access Dental Care Desired in Last Two Years, 2012

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Not Low-Income</th>
<th>Low-Income</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>11%</td>
<td>14%</td>
<td>11%</td>
<td>14%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Source: Delaware Oral Health Assessment of Third Grade Children, Feb 2013, Division of Public Health, State of Delaware

**Availability of Oral Health Care Providers**

Number and Ratio of Dentists in Delaware by County, 2008

- **New Castle County**: 258 Dentists (general/family dentists & pediatric dentists), FTE.FED Ratio* of 1,800
- **Kent County**: 37 Dentists (general/family dentists & pediatric dentists), FTE.FED Ratio* of 3,700
- **Sussex County**: 36 Dentists (general/family dentists & pediatric dentists), FTE.FED Ratio* of 4,200

Source: 2008 Dentists in Delaware, Center for Applied Demography and Survey Research, University of Delaware, available online at [http://1.usa.gov/QEDB9p](http://1.usa.gov/QEDB9p)

* FTE.FED Ratio is the number of persons served by each full-time equivalency dentist with federal productivity adjustments for age & auxiliaries (i.e. dental hygienists, dental assistants)
Preventive Measures

Fluoride is a mineral proven to prevent and reverse cavities. Community water fluoridation occurs when the amount of fluoride in a water supply is adjusted to obtain an optimal level, which according to the Centers for Disease Control and Prevention is between 0.7-1.2 milligrams per liter. Private well water is not regulated by the Environmental Protection Agency.

Fluoridated Water

<table>
<thead>
<tr>
<th>Fluoridated Water</th>
<th>No Fluoridated Water</th>
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<tbody>
<tr>
<td>Percentage of State Public Water System Population Receiving Fluoridated Water, Delaware, 2010</td>
<td></td>
</tr>
</tbody>
</table>

Fluoridated Water 86%
No Fluoridated Water 14%

Fluoridation can reduce tooth decay in children by up to 60%. Further, for every $1 invested in water fluoridation, $38 are saved in dental treatment costs.

Dental Sealant Use

Percentage of Delaware Third Graders With Dental Sealant on One or More Permanent Molars, 2012

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<tr>
<td>Not Low-Income</td>
<td>51%</td>
</tr>
<tr>
<td>Low-Income</td>
<td>57%</td>
</tr>
<tr>
<td>White</td>
<td>56%</td>
</tr>
<tr>
<td>Black</td>
<td>52%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>62%</td>
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Dental sealants are thin plastic coatings that are applied to the chewing surfaces of molars to protect them from tooth decay. Children’s first molars come in around 6 years old and their second molars appear around age 12. The CDC reports that 90% of children’s cavities occur in “pits and fissures” (i.e., on the molars).

Dental sealants can reduce tooth decay in school children by more than 70% according to the CDC.

Oral health preventive measures are beneficial because they limit adverse outcomes related to poor oral health in individuals, including but not limited to:

- Pain and infection
- Eating problems & nutritional deficiencies
- Educational issues such as school attendance, learning problems, inability to concentrate or impaired speech or cognitive development,
- Reduced self esteem, decreased mental and social well-being & poor social relationships
- Poor productivity in adulthood or decreased success in life.

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Dental sealants can reduce tooth decay in school children by more than 70% according to the CDC.
Assessing Progress: Looking Back and Moving Forward

Healthy People 2020 is a national initiative of the Department of Health and Human Services which provides science-based, national goals and objectives with 10-year targets to guide national health promotion and disease prevention using key indicators. For three decades, Healthy People has established benchmarks and monitored progress over time. Healthy People 2020 contains approximately 1,200 objectives in 42 topic areas designed to serve as this decade’s framework for improving the health of all people in the United States. Oral health is a topic area included in Healthy People. Within the topic area, there are objectives assessing early childhood caries, dental caries, dental decay, dental sealants and community water fluoridation.

- For a list of Health People 2020 oral health objectives, please visit http://1.usa.gov/OlcaX1
- To view the Healthy People 2010 report, visit http://1.usa.gov/QrFvIo

Each year, the Pew Center on the States grades all states using an A-F benchmark scale on how well they are employing eight promising policy approaches to strengthen dental health and access to care for disadvantaged children. In 2011, Delaware received a grade of “B” from Pew for efforts around child oral health.

### Pew Report Card
#### The State of Children’s Dental Health: How Well is Delaware Responding?

<table>
<thead>
<tr>
<th>Nationally Recognized Measures for Improving Child Dental Health:</th>
<th>State Rate</th>
<th>National Benchmark</th>
<th>Met or Exceeded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of high-risk schools with sealant programs</td>
<td>25-49%</td>
<td>25%</td>
<td>★</td>
</tr>
<tr>
<td>Hygienists can place sealants without dentist’s prior exam</td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Share of residents on fluoridated community water supplies</td>
<td>76.8%</td>
<td>75%</td>
<td>★</td>
</tr>
<tr>
<td>Share of Medicaid-enrolled children getting dental care</td>
<td>41.1%</td>
<td>38.1%</td>
<td>★</td>
</tr>
<tr>
<td>Share of dentists’ median retail fees reimbursed by Medicaid</td>
<td>80.0%</td>
<td>60.5%</td>
<td>★</td>
</tr>
<tr>
<td>Medical providers paid for early preventive dental health care</td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Authorizes new primary care dental providers</td>
<td>NO</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>Tracks data on children’s dental health</td>
<td>YES</td>
<td>YES</td>
<td>★</td>
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</tbody>
</table>


Under the Patient Protection and Affordable Care Act (ACA), starting in 2014, all insurance plans must cover essential health benefits which include pediatric dental benefits. Additionally, in June 2012, the U.S. Supreme Court held that it will be optional for states to expand their Medicaid eligibility to 133% of the Federal Poverty Level. To learn more about ACA, please visit http://www.healthcare.gov/law/index.html. An analysis of the ACA including its effects on Delaware residents, conducted by the University of Delaware’s Center for Applied Demography and Survey Research can be found at: http://bit.ly/x9Sm
Improving the Oral Health of Delaware’s Children

Childhood oral health problems can largely be prevented through a combination of access to dental care services, access to fluoridated water systems, topical fluoride treatments, healthy dietary choices and daily oral hygiene practices. Recommendations for improving the oral health of Delaware’s children include the following:

- Increase the percentage of Delaware’s population on public water systems receiving fluoridated water, focusing specifically on Kent and Sussex Counties.
- Promote access to oral health care in Delaware by strengthening the state’s dental workforce: attract and retain talent, provide educational or training opportunities in underserved communities throughout the state.
- Encourage partnerships between government agencies, nonprofit organizations, private providers and schools to increase access to dental care for at-risk youth.
- Utilize dental homes to implement coordinated, comprehensive and continuously accessible oral health care for Delaware children in a family-centered manner, including a “visit by age 1” message.

As with all health promotion and disease prevention efforts, data collection is essential. Oral health assessments should occur on a regular basis, allowing measurement toward Delaware’s stated oral health goals. Based on results, additional evidenced-based policy actions may be promoted.

**DID YOU KNOW?** Delaware’s Division of Public Health concluded its statewide oral health survey of third grade children enrolled in Delaware’s public schools in January 2013. The results of this survey demonstrate a dramatic improvement in the oral health status of children as compared to the last survey, conducted in 2002. Specifically:

- Fewer children have experienced dental decay,
- Fewer have untreated decay and
- More have protective dental sealants.

Delaware has also made substantial improvements in health disparities.

**PUT DATA INTO ACTION** Delaware First Smile is an initiative developed by the Delaware Division of Public Health Bureau of Oral Health and Dental Services to improve the oral and overall health of our state’s children. The main goals of the campaign are to:

- Raise the profile of oral health issues throughout the state of Delaware;
- Decrease the prevalence of dental disease within the state, particularly among children; and
- Motivate health care providers and key influencers to place a greater value upon oral health issues and initiatives.

[www.FirstSmileDelaware.com](http://www.FirstSmileDelaware.com)

**PUT DATA INTO ACTION** The Delaware Oral Health Coalition offers resources related to promoting good oral health.
In summary, this issue brief has examined and described oral health, focusing on Delaware’s children. It concludes that to improve oral health outcomes for all children, Delaware must adopt a multi-faceted approach that includes expanded partnerships, creative services and investments. The most meaningful and effective behavior change in new and expecting parents comes from direct patient interactions with trusted healthcare providers. It is critically important that pediatricians and family physicians start the discussion with parents about cavity prevention early, including regular dental visits by a child’s first birthday. The battle against childhood dental disease is winnable!

Children are 25% of our population, but 100% of our future.