

OKLAHOMA COUNTY VITAL SIGNS

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PROMOTE ROUTINE PREVENTIVE CARE.
MAINTAIN HEALTHY ORAL HYGIENE HABITS.
ENCOURAGE PROPER NUTRITION AND
INFLUENCE THE CONDITION OF ALL.

HEALTHY CITIZENS
EDITION

THIS ISSUE OF VITAL SIGNS FOCUSES ON THE DENTAL HEALTH CHALLENGES FACED BY INDIVIDUALS IN OUR COMMUNITY, REGARDLESS OF AGE, GENDER, ETHNICITY, OR INCOME LEVEL.

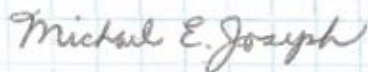
On July 9, I visited the Remote Area Medical (RAM) clinic which was set up in the Travel and Transportation Building at the Oklahoma State Fair Park. The makeshift medical/dental clinic, organized and operated by a nonprofit organization and staffed by volunteer personnel, was truly impressive in terms of its service capabilities. In the center of the building, volunteer dentists and hygienists performed cleanings, extractions, and fillings. Patients received dental care without any expectation of privacy from non-medical volunteers, passersby, and other patients on either side of them. Individuals who patiently waited to receive care filled rows of chairs in an open waiting area. While the sponsoring organization had established fixed hours of operation for the clinic, the availability of local medical volunteers determined how long care and treatment would be available for patients. The RAM volunteer coordinator said that the clinics always need additional volunteer dentists and hygienists because of the overwhelming need for dental care in every city RAM visits.

While touring the clinic, I noticed a large jar on a table filled with extracted teeth. The clinic had been open less than eight hours, and the dentists had already extracted enough teeth to fill a quart-size Mason jar. I was informed that one patient had every tooth in his mouth extracted earlier in the day.

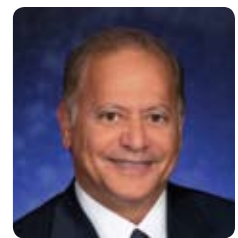
The consequences of poor dental health can affect one's overall health, ability to work or attend school, and finances. The sheer number of individuals who received dental care at the three-day RAM clinic demonstrates how deep and far-reaching the issue of poor dental health extends in our community. As a result of the RAM clinic, hundreds of Oklahoma City-area residents were able to access needed care without the added concern of high medical costs.

This issue addresses the dental health crisis in Oklahoma by highlighting several major health concerns and the options that are available to individuals in need of dental care. We hope this information is both informative and helpful to you. If you have any comments, please call the United Way staff at 523-3594 or send an email to vitalsigns@unitedwayokc.org.

Best Regards,
Michael E. Joseph



Chair, United Way Research and Community Initiatives Advisory Committee
Partner, McAfee & Taft



DIAGNOSIS: OKLAHOMANS ARE NEGLECTING THEIR ORAL AND DENTAL HEALTH NEEDS.

During a time when many people find themselves out of work, experiencing financial hardship, or without general medical insurance, Oklahomans of all ages are living without routine dental care. While this might not seem alarming to some, regular dental hygiene visits can be the first step in preventive treatment of future health issues and complications throughout the entire body. Evidence-based research indicates that poor oral health can lead to other health problems beyond the mouth.¹ The American Academy of Periodontology reports that people with gum disease are twice as likely to suffer from coronary artery disease.² Possible explanations cite oral bacteria in the bloodstream leading to clot formation, as well as inflammation leading to plaque build-up and swelling in the arteries.² Scientists have also linked oral bacteria and respiratory disease, stating that bacteria can be aspirated into the lungs and cause infections such as pneumonia.³



OKLAHOMA RANKED 50TH IN THE NATION OF ADULTS WITH A DENTAL VISIT WITHIN THE PAST YEAR.¹

1. State of the State's Health 2008. <<http://www.ok.gov/health/pub/boh/state/index.html>>.
2. American Academy of Periodontology. <<http://www.perio.org/consumer/mbc.heart.html>>.
3. American Academy of Periodontology. <<http://www.perio.org/consumer/mbc.respiratory.html>>.



While oral health issues can affect anyone at anytime, disparities exist for low-income individuals. Children whose families' income falls below the federal poverty level are twice as likely to suffer tooth decay as children of higher incomes.⁴ Low-income children are also more likely to suffer severe cases of tooth decay and are less likely to obtain dental treatment, experiencing 12 times as many restricted activity days due to dental complications as children in higher-income families.⁴

A recent study published in the Journal of Dental Research found that mothers with untreated tooth decay were more likely to have children with the same condition.⁵ The study involved 179 mothers and their 387 children.^{*5} Study researchers found that 46 percent of mothers and 27 percent of children had untreated tooth decay.⁵ Researchers concluded that untreated cavities** in the mothers doubled the odds of untreated cavities in their children and significantly increased the severity of the children's cavities.⁶

** The researchers considered outside factors that can affect rates of tooth decay, including the children's age, gender and their family's income and education levels, the existence of a family dental insurance plan, the age when children began brushing their teeth, and the rate of dental visits with fluoride treatments.⁶*

**** FOR THE PURPOSES OF THIS VITAL SIGNS, THE WORD "CAVITIES" IS BEING USED IN PLACE OF "CARIES." DENTAL CARIES IS A DISEASE IN WHICH ACIDS COMBINE WITH BACTERIA AND FOOD PARTICLES TO FORM PLAQUE. PLAQUE ACIDS DISSOLVE TOOTH ENAMEL AND CREATE HOLES IN TEETH (CAVITIES), CAUSING PAIN, INFECTION, AND TOOTH LOSS.⁹**



4. The Henry J Kaiser Family Foundation. <<http://www.kff.org/medicaid/upload/7681-03.pdf>>.
5. Journal of Dental Research. <<http://jdr.sagepub.com/content/89/9/954.abstract>>.
6. Nancy Volkers, IntelHealth News Service. <<http://www.simplestepsdental.com/>>.

In 2003, the Oklahoma State Department of Health and the University of Oklahoma Schools of Dentistry and Public Health conducted an oral health needs assessment of 495 third grade students in 36 schools across Oklahoma.⁷ The study revealed that approximately 70 percent of the students had experienced cavities and approximately 40 percent had untreated tooth decay.⁷ Compared with the results of similar assessments conducted in Maine, Maryland, Nevada, New Hampshire, New Mexico, Oregon, Utah and Vermont, Oklahoma had the highest prevalence of cavities and untreated tooth decay among third grade students.⁷ According to the Oklahoma State Department of Education, 48,592 students are enrolled in the third grade in Oklahoma public schools.⁸ If the results of the oral health needs assessment were applied to the current third grade population in Oklahoma, an estimated 33,723 students would be expected to experience cavities and 19,534 would have untreated tooth decay.

**NEARLY ALL TOOTH DECAY
CAN BE PREVENTED**
WHEN FLUORIDATION IS COMBINED WITH
DENTAL SEALANTS AND OTHER FLUORIDE PRODUCTS,
SUCH AS TOOTHPASTE.²⁰



7. Oklahoma Dental Foundation. Tooth Decay Research. <<http://www.okdf.org/>>.
8. Oklahoma State Department of Education. Public Schools State Totals as of July 2010. Personal Communication.
9. National Institute of Health. U.S. National Library of Medicine. Dental Cavities. <<http://www.nlm.nih.gov/>>.

Hospital emergency rooms occasionally serve as a last resort for dental care, especially for individuals without dental insurance. While a trip to the emergency room can resolve the urgent dental need, it does not address the underlying need for treatment. By not addressing the source of dental pain, individuals remain at risk for return visits to the emergency room and ever-increasing out-of-pocket expenses.

A TRIP TO THE EMERGENCY ROOM FOR CRISIS DENTAL CARE IS THE FIRST “DENTAL VISIT” FOR **OVER 25 PERCENT** OF ALL CHILDREN SEEN IN A CHILDREN’S HOSPITAL.¹¹

Emergency Room Dental Visits, 2008

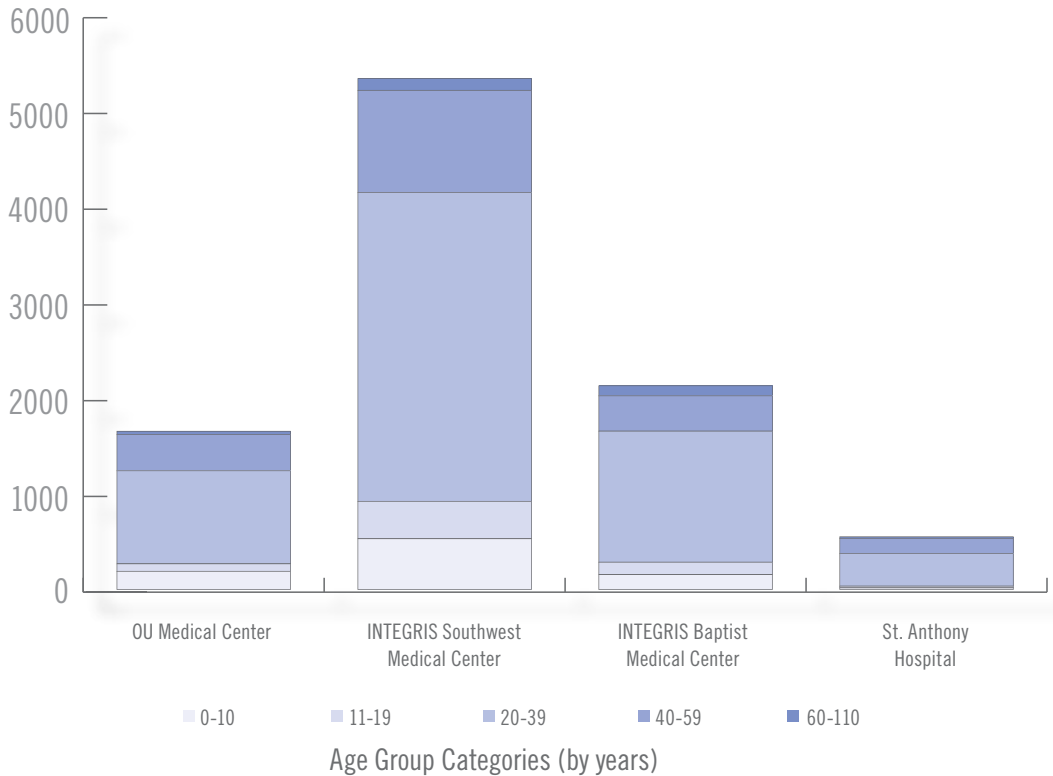


Source: Hospital Encounter Data compiled by Epidemiologists Katrina Garcia, MPH, and Annie Hui-Wan Su, MPH
Oklahoma City-County Health Department, August 2010.

10. Oklahoma City-County Health Department. Oklahoma City Hospital Encounter Data. Data file.

11. The Foundation of the American Academy of Pediatric Dentistry. 2009 Annual Report. <<http://www.aapd.org/>>.

Emergency Room Dental Visits, 2009



Source: Hospital Encounter Data compiled by Epidemiologists Katrina Garcia, MPH, and Annie Hui-Wan Su, MPH
Oklahoma City-County Health Department, August 2010.

In 2008 and 2009 over 13,000 central Oklahomans were treated in hospital emergency rooms for dental-related issues.¹⁰ The patient population was almost evenly split between males and females, with the majority of patients being Caucasian and between the ages of 20 and 49. INTEGRIS Southwest Medical Center received more than half of all dental emergency visits, reporting 6,756 patients, almost double the number of patients treated at OU Medical Center. The most common dental diagnoses reported by the hospitals included pain, swelling, inflammation, loose teeth, and dental cavities.¹⁰

EMPLOYED ADULTS LOSE MORE THAN
164 MILLION HOURS
OF WORK EACH YEAR
DUE TO DENTAL DISEASE OR DENTAL VISITS.¹²

12. U.S. Department of Health and Human Services. Oral Health in America: A Report of the Surgeon General. <<http://silk.nih.gov/>>.



REMOTE AREA MEDICAL® (RAM) USA CLINIC

Remote Area Medical® (RAM) USA coordinated a free clinic at the Oklahoma State Fair Park July 9-11, 2010. Founded in 1985, RAM is a non-profit, volunteer, airborne relief corps dedicated to serving mankind by providing free health care, dental care, eye care, veterinary services, and technical and educational services to people in remote areas of the United States and the world.¹³ RAM’s volunteer dentists have provided relief to thousands of patients over the years, helping the corps evolve from offering emergency-only teeth extractions to include restorations, cleanings and fluoride treatments.¹³

At the July clinic in Oklahoma City a team of 938 local volunteers provided free dental care, general medicine, eye exams and eyewear for 1,634 Oklahoma City-area patients valued at \$416,939.00.

SUMMARY OF PATIENT CARE PROVIDED AT OKLAHOMA CITY RAM CLINIC

Number of Patients Requiring Dental Services	Children	Adults	Total
	45	868	913

Services Provided

	Children	Adults	Total
Dental Exam Only	1	58	59
Number of Teeth Extracted	4	1,338	1,342
Number of Fillings Administered	16	461	477
Number of Teeth Cleanings Performed	28	188	216

Other Medical Services Provided by RAM Clinic

	Children	Adults	Total
Mammograms	-	103	103
General Medicine	-	731	731
Eye Exam Only	3	60	63
Eye Exam with Eye Glass Prescription and Fitting	4	682	686
Total Number of Eye Glasses Distributed	-	-	494

Source: Oklahoma City Summary of Patient Care Data provided by Laura Kirschenmann, RAM Volunteer Coordinator, July 2010.

13. Remote Area Medical® (RAM) USA. <<http://www.ramusa.org/>>.

COMMUNITY WATER FLUORIDATION

Fluoride is a natural cavity fighter that can reduce the risk of tooth decay for all age groups when used in small amounts daily.¹⁴ Community fluoridation is the practice of measuring the naturally occurring fluoride levels in drinking water and adjusting them to the level recommended by the U.S. Public Health Service.¹⁵ Regardless of age, dental care access or income level, citizens are able to receive the benefits of fluoride through water fluoridation. Research over the past 60 years has proven that water fluoridation is cost-effective and safe at the U.S. Public Health Service recommended level one milligram of fluoride per liter of water. The past five National Surgeon Generals have endorsed community water fluoridation and encouraged communities to pursue water fluoridation.¹⁶

In 2005, the Oklahoma State Board of Health issued a resolution in connection with the 60th anniversary of Community Water Fluoridation. The resolution responded to the fact that not all Oklahoma public water systems were optimally fluoridated.¹⁷ In support of community fluoridation the State Board of Health cited the CDC's endorsement of community fluoridation, the endorsements and recommendations by state and national medical, dental, and public health organizations for community water fluoridation, as well as the oral health assessment of Oklahoma third grade children conducted by the OSDH and the University of Oklahoma Colleges of Dentistry and Public Health.¹⁷

FOR EVERY DOLLAR SPENT ON COMMUNITY WATER FLUORIDATION, \$38 IN DENTAL TREATMENT COSTS ARE SAVED.¹⁹

COMMUNITY WATER FLUORIDATION HAS BEEN DECLARED
ONE OF TEN GREAT PUBLIC HEALTH ACHIEVEMENTS OF THE 20TH CENTURY.¹⁴

The State Board recommended the fluoridation of all Oklahoma public water systems and urged state and local government officials to secure the cost-saving oral health benefit for their citizens.¹⁷

According to the CDC's "My Water's Fluoride" website application, the water systems in at least 13 central Oklahoma cities are not treated with fluoride, nor does the naturally occurring fluoride in the water meet the recommended levels for the prevention of cavities.¹⁸ Some of the cities listed as having non-fluoridated water cite having too many individual water wells to treat with fluoride in a cost-effective manner. Other cities are working to redirect their water to a central location in order to enhance their water treating abilities. The fluoride in the water processed at Oklahoma City's water treatment plants near Lakes Draper, Hefner and Overholser is adjusted to reach optimal fluoride levels. Together the three Oklahoma City lake water systems serve approximately 943,590 residents.¹⁸

For more information regarding the fluoride status of your drinking water please contact your local municipality or consult your water quality Consumer Confidence Report. To view the CDC's "My Water's Fluoride" application, please visit: <http://apps.nccd.cdc.gov/MWF/Index.asp>

14. American Dental Association. Stmt. Commemorating 60th Ann. of Community Water Fluoridation. <<http://www.ada.org/>>.

15. Centers for Disease Control. Community Water Fluoridation Benefits. <<http://www.cdc.gov/>>.

16. Centers for Disease Control. Community Water Fluoridation Overview. <<http://www.cdc.gov/>>.

17. Oklahoma State Department of Health. Community Water Fluoridation Program. <<http://www.ok.gov/>>.

18. Centers for Disease Control. My Water's Fluoride Application. <<http://apps.nccd.cdc.gov/MWF/>>.

19. Centers for Disease Control. Cost Savings of Community Water Fluoridation. <<http://www.cdc.gov/>>.

20. Centers for Disease Control. Water Fluoridation Fact Sheet. <<http://www.cdc.gov/>>.

INSIDER'S PERSPECTIVE

LOU CARMICHAEL
CEO & EXECUTIVE DIRECTOR, VARIETY CARE

Insider's Perspective



A few years ago there was a front page story in *The Oklahoman* about a young University of Oklahoma student who died after suffering liver failure due to an overdose of acetaminophen. The young woman was a talented musician and honors student who had taken up to nine extra strength acetaminophen tablets a day for several weeks to help relieve the pain of a toothache. While the news story focused on the dangers associated with taking too much acetaminophen, I was horrified that the reason why she had been taking an over the counter pain remedy was for a toothache. “How could this have been prevented?”

Too many people neglect their oral health and go without dental treatment, either because they cannot afford it or because they don't view it as a health priority when faced with the rest of life's necessities and financial stress. Many young adults, especially teenagers and college students as well as those entering the work force for the first time, find themselves without insurance or expendable income. Senior citizens and older adults on the verge of retirement are at-risk for neglecting routine dental check-ups for the very same reasons. When individuals can no longer tolerate oral pain, they may decide to visit a dental care professional for “emergency” treatment. In doing so they are oftentimes presented with tough choices, several hours worth of restorative treatment and an estimated bill they cannot afford to pay.

The need for free and reduced price dental care in our state and community is overwhelming and it is a need that will never diminish unless an investment is made in oral health prevention and education programs. In fact, Oklahoma remains one of the most toothless states in the nation. Proper oral hygiene, if encouraged at an early age and maintained over a lifetime, is a healthy investment that pays tremendous dividends to overall health and well being. Poor oral health is linked to diabetes, heart disease and other digestive disorders.

HELPFUL DENTAL TIPS FROM VARIETY CARE:

- If you are nervous or fearful of the dentist you are not alone. Tell the staff about your fear—most often there are ways they can help if they understand your concerns.
- SoonerCare pays for most preventive care for children.
- Carry small disposable toothbrushes loaded with a small amount of toothpaste.
- If you cannot brush—rinse—it is not as good as brushing but a good swish of plain water is much better than you think, especially if sugar has been consumed (e.g., pop, desserts, fruit juice).
- Sugarless chewing gum containing Xylitol (e.g. Trident sugarless gum, Orbit gum) has been shown to prevent the growth of the bacteria *Streptococcus Mutans* (SM) when used in conjunction with antiseptic mouth rinses. SM is one of the primary bacteria responsible for dental cavities.

The change must begin with parents by helping them understand the importance of a clean mouth, routine brushing and flossing of teeth, and avoidance of sugary drinks and foods before bedtime. Many women do not realize that they are at increased risk of periodontal disease while they are pregnant—for low income women this is an even greater risk. Many women raised in poverty can expect to lose a tooth with every pregnancy. From the day their child is born, parents need to take an active role in their child’s oral health and understand that dental cavities are almost 100 percent preventable and that baby teeth matter. Rather than simply introducing a child to a toothbrush and using it on occasion, parents need to brush their child’s teeth until they are fully capable of doing so—and doing it well—by themselves. To foster a positive outlook toward visiting the dentist, parents need to take their child to a dental health professional on a regular basis for check-ups, starting as young as six months, rather than reinforcing a negative, “emergencies only” response as they age. The cost of primary preventive dental care is negligible compared to the cost of restorative dental care later in life.

KNEE-TO-KNEE EXAMS FOR CHILDREN:

Although infants don’t have a full set of teeth their mouth and gums should be examined by a dentist. At about 6 months a “knee-to-knee” visit should be scheduled. This visit allows the parent or guardian to hold the baby while the dentist sits directly in front. The child can feel comfortable being held by someone familiar while the dentist examines their mouth and gums. This exam can be performed without the use of equipment and is a quick way to introduce a child to their dentist. The knee-to-knee exam is recommended by the Pediatric Dental Association and is a good way to get the infant, toddler or even small child familiar with their first few dentist visits. Starting off right goes a long way toward easing the anxiety for parent and child and reinforcing a normal dental routine.





DENTISTS FOR THE DISABLED AND ELDERLY IN NEED OF TREATMENT (D-DENT), INC.²¹

Founded in 1986, D-DENT's mission is to restore the oral health of low-income, uninsured, elderly, and developmentally disabled Oklahomans with no other means to pay for dental care by providing free comprehensive dental care through a network of volunteer dentists. In 1999 D-DENT began offering the "Preventive Dental Education" program, where a dental hygienist addresses the importance of oral health, the impact of nutrition on our oral health, oral health care instruction, and oral health tools and educational print materials. The organization received the prestigious Champion of Senior Health award from Blue Cross Blue Shield of Oklahoma in 2006.

During Fiscal Year 2008-2009, D-DENT coordinated free comprehensive dental care for 868 new patients across Oklahoma. D-DENT volunteer dentists provided 3,098 appointments in their private dental offices with a donated value of more than \$1.9 million. During FY 2009-2010, D-DENT staff managed 6,544 calls for case management, coordinated 2,682 dental appointments and provided preventive dental education for 1,907 individuals in Oklahoma County.

In June 2010 D-DENT's contract with the Oklahoma State Department of Health was terminated due to recent state revenue failure. The contract termination forced D-DENT to make a \$120,000 budget cut. In terms of program impact, D-DENT is currently unable to accept new applications and as a result the number of people on their waiting list will increase exponentially. Despite these financial hardships, D-DENT staff and Board of Directors remain steadfast in their determination to cut expenses without sacrificing the quality of work they have provided over the past 24 years.



21. Dentists for the Disabled and Elderly in Need of Treatment, Inc. (D-DENT). <<http://d-dentok.org/>>.



Action

ADDRESSING: Dental Health for Healthy Citizens

Rx

Tooth decay is the most common chronic childhood disease, five times greater than asthma and seven times greater than hay fever.¹² This explains why 51 million school hours are lost each year to dental-related illness.¹² Implementing a dental hygiene and education program in Smart Start and Head Start programs and elementary schools is one way to reach young people and encourage daily dental health routines. Curriculum ideas and tools are available through the Colgate “Bright Smiles, Bright Futures” initiative²², the Crest and Oral-B Dental Education Program,²³ and state and national health organizations such as the American Dental Association.²⁴

The U.S. Department of Health and Human Services’ “Oral Health in America: A Report of the Surgeon General” provides information in support of school-based and community-based sealant programs, reporting that sealants can reduce decay in school children by more than 70 percent.¹² Sealants are thin protective plastic coatings applied to the chewing surfaces of the back teeth to keep them clear of germs and pieces of food.¹² School-based sealant programs are especially efficient at reaching children from low-income families who are less likely to receive dental care.¹² Implementation of school-based sealant programs require financial, material, policy and parental support, as well as space within schools or off-site clinics to perform the procedures.

For every adult without medical insurance, there are three without dental insurance.¹² In Oklahoma, the monthly premium for basic dental plans can range in price from \$22-\$35 for individuals and \$110-\$130 for families.^{25,26} Sixty percent of baby boomers receive dental insurance through their employers and are at risk of losing their coverage at retirement.²⁷ In the absence of dental insurance, increased availability of reduced-price dental care is imperative. Additionally, concentrated efforts need to be made to eliminate transportation barriers to treatment, especially for elderly and disabled citizens, and inform citizens of local dental clinic services through a multi-media campaign that is sensitive to multiple language and literacy levels.

Oklahoma is one of four states in the nation whose adults consume the least amount of fruits and vegetables per day.²⁸ In 2009, 84 percent of adults in the Oklahoma City metropolitan area consumed fruits and vegetables less than five times per day.²⁹ Healthy eating habits and proper nutrition are essential to one’s oral health. Sugar, when combined with bacteria in the mouth, produces acid that attacks teeth and can eventually lead to tooth decay.³⁰ Improper nutrition can hinder the body’s ability to fight illnesses and make the tissues in the mouth more susceptible to infection.³⁰ Individuals can protect their oral health by maintaining a healthy, balanced diet, drinking plenty of water, avoiding sugars, and flossing and brushing twice daily.

22. Colgate-Palmolive Company. Colgate Bright Smiles, Bright Futures. <<http://www.colgate.com/app/BrightSmilesBrightFutures/>>.

23. P & G School Programs. Crest and Oral-B Dental Education Program. <<http://dentaleducation.pgschoolprograms.com/>>.

24. American Dental Association. ADA for Kids. <<http://www.ada.org/>>.

25. BlueCross BlueShield of Oklahoma. <<http://www.bcsok.com/>>.

26. Delta Dental of Oklahoma. <<http://www.deltadentalok.org/>>.

27. Office of the Surgeon General. First-Ever Surgeon General’s Report on Oral Health Finds Profound Disparities in Nation’s Population. <<http://www.surgeongeneral.gov/>>.

28. Centers for Disease Control. State Indicate Report on Fruits and Vegetables, 2009. <<http://www.cdc.gov/>>.

29. Centers for Disease Control. SMART: BRFS City and County Data. <<http://apps.nccd.cdc.gov/>>.

30. American Dental Association. Diet and Oral Health. <<http://www.ada.org/>>.

BEST IN PRACTICE

OKLAHOMA MISSION OF MERCY

The Oklahoma Mission of Mercy (OKMOM) is a free, two-day dental clinic open to people of all ages and backgrounds. It is specifically designed for people who are uninsured, underinsured, or would otherwise not be able to seek dental care. The second OKMOM, co-sponsored by the Oklahoma Dental Association, the Delta Dental of Oklahoma Charitable Foundation and the Oklahoma Dental Foundation, will be held on February 4 and 5, 2011, at the Cox Convention Center. The 2011 OKMOM event will serve an estimated 2,000 Oklahomans. For more information about the event or to learn about volunteer opportunities and donation needs please visit <http://www.okmom.org/>



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OF THE 4 MILLION CHILDREN
BORN EACH YEAR,
MORE THAN HALF
WILL HAVE CAVITIES BY THE TIME THEY REACH
SECOND GRADE.¹¹

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