MAKING SMILES HAPPEN:

2016 Oral Health Study Of Kentucky's Youth

Where Are We?
What Can Be Done?
Who Can Help?

DELTA DENTAL®

Making Smiles Happen®

KYA
Kentucky Youth Advocates

OUR MISSION

Delta Dental's core purpose is the advancement of oral health care for Kentuckians through our dental benefits programs and philanthropic efforts.

Kentucky Youth Advocates is the independent voice for Kentucky's children. We work hard to ensure decision makers create policies and make investments that are good for kids. We rely on strong partnerships with organizations and leaders, credible and sound research, and effective advocacy.

ACKNOWLEDGEMENTS

The Making Smiles Happen: 2016 Oral Health Study of Kentucky's Youth provides state and regional data to measure and improve the oral health status of children in Kentucky. Many individuals and organizations devoted significant time and energy to the creation of this book, and we greatly appreciate their contributions. In particular, we would like to extend a special thanks to Delta Dental of Kentucky for funding the first statewide children's oral health surveillance since 2001.

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Instrumental Partners

The following partners made this project possible in various meaningful ways.
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FOREWORD

By Clifford Maesaka, DDS
President and CEO of Delta Dental of Kentucky

Where are we? What can be done? Who can help?

These three simple questions serve as guideposts for us at Delta Dental of Kentucky when it comes to improving children's oral health outcomes in our Commonwealth. We realize that until we can answer the first question, it's impossible to answer the next two. Unfortunately, the most recent children's oral health survey was conducted in 2001, making it very difficult to get an accurate picture of where to focus our efforts.

That's why we decided to partner with Kentucky Youth Advocates and the University of Louisville School of Dentistry through our Making Smiles Happen® initiative to conduct a new statewide survey of children's oral health. To collect data, we sent a dentist to 60 schools across five regions of the state to directly observe the mouths of 3rd and 6th graders. We also asked parents about family dental health, use of dental care, and whether they have medical or dental insurance for over 2,000 students. The result is a long overdue picture of children's oral health in our Commonwealth.

So, where are we? The data tells us we are far from our goals. The good news is that parent-reported measures of access to dental care have improved. More children are visiting the dentist regularly, more have preventive sealants on their molars, and more are covered by dental insurance.

The bad news is that children's oral health outcomes have worsened. Two out of five 3rd and 6th graders have untreated cavities. And nearly half of the children have early or urgent treatment needs. On every measure, children from low-income households fare worse than those from middle- and upper-income households.

Only planning, prevention, and collaboration can solve this problem. We must create a targeted and measurable state oral health plan to guide our efforts. We need to increase access to sealants– the most powerful prevention tool we have at our disposal – in high needs schools. We need coordinated and widespread oral health literacy campaigns to increase tap water consumption and reduce consumption of sugar-sweetened beverages. We need to build the capacity of local and regional efforts to work together, learn from each other and change the trajectory for our children.

Who can help? Everyone. No one individual, organization, or entity can do it alone. We must look past the usual suspects of dentists and hygienists. The challenge is to be bold and innovative in our partnerships, pulling in diverse sectors, including the business community, educators, health professionals, child care centers, churches, and philanthropists. Our goal is to ensure that children and adults in Kentucky are educated about oral health and have exceptional access to it. At Delta Dental of Kentucky, we believe that the well-being of our children is key to the success of families, communities, and businesses. Won't you join us?

Clifford Maesaka, DDS
President and CEO of Delta Dental of Kentucky

EXECUTIVE SUMMARY

Oral health is an integral component of healthy child development and learning, and affects job prospects later in life.[1] When teeth are healthy and pain-free, it's easier to focus and listen, play and share, learn and solve, and grow and thrive.

This is the first statewide project of its kind since a similar 2001 survey conducted by the Kentucky Department for Public Health. Twelve public schools were randomly selected in each of the regions used in the 2001 survey: Central Kentucky, Eastern Kentucky, Louisville, Northern Kentucky, and Western Kentucky. (See map of regions on Page 24).

During the 2015-16 school year, Delta Dental of Kentucky partnered with Kentucky Youth Advocates and the University of Louisville School of Dentistry to conduct a statewide oral health survey. In total, 2,109 3rd and 6th grade students in 60 public elementary and middle schools participated in the survey. The initiative followed a standardized national model, the Basic Screening Survey, developed by the Association of State and Territorial Dental Directors (ASTDD). The survey has two components: the direct observation of the mouths of 3rd and 6th graders, and a parent questionnaire requesting consent, dental and medical information, and general demographic information about the 3rd and 6th graders being screened. School personnel sent home parent questionnaires and consent forms. A dentist executed all the screenings for students whose parents gave consent.

Key Finding No. 1 – The percentage of 3rd and 6th graders in need of early or urgent dental care has increased.

- Since the 2001 study, parents report that more children have access to a dentist and more families have dental insurance. At the same time, oral screenings show that the need for treatment, both early and urgent has increased significantly.
- Oral health screenings showed the need for early or urgent care has risen from 32 percent in 2001 to 49 percent in 2016.
- Although more 3rd and 6th graders have dental insurance today than in 2001, Hispanic/Latino students are significantly less likely to have dental insurance than their peers.
- The Eastern region had the greatest need for urgent dental care. Nearly 20 percent of 3rd and 6th graders — over 5,400 children — need urgent dental care compared to 8 percent overall as a state.

Key Finding No. 2 – Two out of five 3rd and 6th graders have untreated cavities.

- During the 2015-16 school year, the dentist observed untreated cavities in 41 percent of 3rd and 6th graders.
- The rate of tooth decay was significantly greater in the Eastern region, where more than half of 3rd and 6th graders — roughly 15,100 children — had untreated cavities.

Key Finding No. 3 – More than half of 3rd and 6th graders do not have sealants.

- There was a 14 percent increase in 3rd and 6th graders with dental sealants on a permanent molar between 2001 and 2016. Yet, during the 2015-16 school year, more than 50 percent of the 3rd and 6th graders observed — around 56,800 children — did not have at least one dental sealant on a permanent molar.
- A greater percentage of screened African-American 3rd and 6th graders did not have sealants on at least one permanent molar.

Key Finding No. 4 – Socioeconomic status is a significant factor in 3rd and 6th graders' oral health.

- In the 2016 parent survey, more than half of the respondents indicated their 3rd or 6th grade child was eligible for free or reduced lunch.
- The 3rd and 6th graders eligible for free or reduced lunch were more likely to have recently experienced a toothache, have visited a dentist more than a year ago, have untreated decay, or showed signs of previously treated decay.
- The 3rd and 6th graders eligible for free or reduced lunch were three times more likely to be in need of urgent dental care.
- While more Hispanic/Latino and African-American 3rd and 6th graders are eligible for free or reduced lunch, there were no significant differences in the presence of tooth decay by race/ethnicity, giving further evidence that socioeconomic status is in the strongest determinant of a child's oral health status.

The 2016 survey found that although there has been progress, too many Kentucky children still suffer from poor oral health. The results can be summarized by

four key findings.

RECOMMENDATIONS

This survey provides important insight into the extent of the oral health problems facing Kentucky children. It documents progress since the 2001 study, as well as greater unmet need. Viable solutions exist to improve children's oral health in Kentucky. The report outlines five recommendations for further action.

DEVELOP

Develop comprehensive goals and objectives for a statewide oral health plan.

LAUNCH

Launch regional networks to develop local, data-driven solutions.

ESTABLISH

Establish school-based sealant programs in all high needs schools.

PROMOTE

Promote oral health literacy campaigns.

COLLECT

Regularly collect state and county-level oral health data.

> **Viable solutions exist to improve children's oral health in Kentucky.**

INTRODUCTION

Good oral health is an integral component of optimal childhood learning. Tooth decay is the single most common chronic disease in children.[2] According to the U.S. Centers for Disease Control and Prevention (CDC), tooth decay is a transmissible bacterial infection, of which cavities are a symptom.[3] Tooth decay is often established by the time a child enters preschool. It can be passed from parent to child, and can lead to serious, sometimes life-threatening, infections. Untreated tooth decay, gum disease, and other oral health aliments play a role in chronic conditions such as cardiovascular disease, diabetes, respiratory disease, and cancer.[4] For all these reasons, oral health is critical for overall heath.

Children free from dental pain and infection can better concentrate on school. A 2011 national study by the Pew Center on the States gave Kentucky a grade of C for its oral health efforts for children. The study found that fewer than 25 percent of high-risk schools have sealant programs, dentists' Medicaid reimbursement fees are below the national average and Kentucky meets only half of eight benchmarks addressing children's dental health needs.[5] Children with poor oral health experience higher rates of emergency room visits, higher absentee rates from school, and less promising job prospects as adults compared to children who receive appropriate oral health care.[6,7,8] A job-seeker with decayed or missing teeth will have fewer employment opportunities.

The 2016 study by the Center for Health Workforce, *Oral Health in Kentucky*, found that despite statewide initiatives to improve the state's oral health status, poor health outcomes still remain.[9]

- Kentucky ranks first in the country in the percentage of people served by fluoridated water systems, which the CDC ranks as the most important public health intervention of the last century due to its effect on oral health.
- Kentucky has the fifth highest rate of toothlessness in the country among adults 65 and older.
- In the 2014 academic year, just 51 percent of 5 or 6-year-olds entering public school had a documented dental screening or exam. Kentucky mandates a dental assessment for every child at enrollment.
- Safety net programs for oral health services for children in Kentucky have grown rapidly in recent years, but the safety net is not yet as robust as in some other states and nationally. Only 52 percent of Kentucky's Federally Qualified Health Centers offer on-site or portable oral health services compared to 77 percent nationally.

In order to improve oral health outcomes, we must monitor the status of oral health in Kentucky's population. Conducting regular statewide dental health surveys is essential for setting achievable objectives, as well as, for planning, implementing, and evaluating current oral health programs, initiatives, and policies. Before the 2015-16 statewide oral health survey conducted by Kentucky Youth Advocates, the most recent children's oral health survey in Kentucky was completed in 2001. The new study, Delta Dental of Kentucky Making Smiles Happen Children's Oral Health Surveillance Initiative, emulated the 2001 study and documents the depth of oral health issues facing Kentucky children. The study shows that despite progress, more is needed.

The oral health needs of Kentucky's children require action, and we have an obligation to act. This report highlights the oral health status of 3rd and 6th grade students, briefly lays out recommendations, and provides a call to action for all residents of the Commonwealth.

"Kentucky ranks first in the country in the percentage of people served by fluoridated water systems, which the CDC ranks as the most important public health intervention of the last century due to its effect on oral health."

METHODOLOGY

The Delta Dental of Kentucky Making Smiles Happen Children's Oral Health Surveillance Initiative was a stratified, random cluster sample of 3rd and 6th graders in 60 public schools across Kentucky. The initiative uses the national standardized Basic Screening Survey model for monitoring oral disease created by the Association of State and Territorial Dental Directors (ASTDD). The model has two components: 1) a dental professional directly observing a child's mouth and 2) a two-page self-administered parent questionnaire that asks for consent, dental and medical insurance information, and other demographic information about the student. Twelve public schools in each of the five regions across the state were randomly selected using the regions defined in the 2001 survey: Central Kentucky, Eastern Kentucky, Louisville, Northern Kentucky, and Western Kentucky. (See map on Page 24). The same dentist screened all 3rd and 6th grade participants and an assistant recorded the results of the screening.

To encourage participation, rewards were offered:

- 3rd and 6th grade classroom teachers and school administrators within the targeted schools were offered a $5 gift card as an incentive to obtain completed parent questionnaires and consent forms.
- Toothbrushes were attached to every parent questionnaire and consent form.
- Participating students were entered into a drawing for a $20 gift card.

Table 1.0 Summary of Data by Region

	Central	Eastern	Louisville	Northern	Western	**TOTAL**
Parent surveys only (no consent)	62	102	167	67	127	525
Parent surveys with consent and screenings	229	318	442	199	396	1,584
Total Surveys	291	420	609	266	523	2,109

The sample size in the 2016 oral health study was large enough to provide, with 95% certainty, the accuracy of any data point, plus or minus 5%. However, regional data does not consistently meet this precision threshold. Individual regional estimates are plus or minus 7%. At the state level, results reach the 95% confidence level, plus or minus 2.5%. Confidence levels and error bounds associated with the data are detailed in Table 2. Throughout this report, significant differences are noted only when the P value is at or below .05.

A total of 2,109 parent surveys and screenings were analyzed.

See Appendix A for a summary of 3rd and 6th grade participants by gender, age, and race. Due to the under-participation of 6th grade participants, we could not look at regional differences by grade. Grade comparisons were statistically significant only for treatment urgency and treated decay. All data were manually entered into a database, reviewed for accuracy, and tabulated for analysis. Table 1.0 provides a summary of the surveys and screenings completed by region.

Table 2.0 Confidence Levels and Bounds on Sampling Error by Region

	Surveys n	Error @ 95% confidence level (+/-)	Screenings n	Error @ 95% confidence level (+/-)
TOTAL (State)	2,109	2.0	1,584	2.4
Central	291	5.7	229	6.4
Eastern	420	4.7	318	5.5
Louisville	609	3.9	442	4.6
Northern	266	6.0	199	6.9
Western	523	4.2	396	4.9

In order to account for the unequal sample sizes within the regions, the state level estimates included in the report were adjusted with weighting coefficients. Use of the coefficients assures the regions contribute equally to the state estimates. No adjustments were made to the estimates for the individual region estimates and comparisons. Table 3.0 summarizes the values of the weighting coefficients.

Table 3.0 Regional Weighting Coefficients

Regions	n	Coefficient
Central	291	1.45
Eastern	420	1.00
Louisville	610	0.69
Northern	266	1.59
Western	523	0.81
TOTAL	**2,109**	

Table 4.0 Glossary of Terms Related to the Diagnostic Criteria Outlined by ASTDD.

Basic Screening Survey Indicator	Definition
Previously Treated Decay	The presence of any type of filling, including temporary fillings. Treated decay also includes teeth that were extracted due to decay.
Untreated Decay	The presence of a cavity in which the screener can readily observe breakdown of the enamel surface. This protocol does not include early or incipient lesions as untreated decay.
Cavities Experience	This indicator is calculated from treated decay, untreated decay, or both.
Early Dental Care	3rd and 6th graders with untreated decay without accompanying pain, infection, or swelling were coded as having early treatment needs. The student was advised to see a dentist within four to six weeks.
Urgent Dental Care	3rd and 6th graders with untreated decay with accompanying pain, infection, or swelling were coded as having urgent treatment needs. Also, the dentist advised the student to see a dentist within 24 hours.
Dental Sealants	Clear plastic coating applied to the chewing surfaces of at least one permanent molar. The coating, which covers all or part of the pits and fissures in a molar, is counted even if it is partially lost.

1 KEY FINDING

THE PERCENTAGE OF 3RD AND 6TH GRADERS WHO NEED EARLY OR URGENT CARE HAS INCREASED.

Since the 2001 survey, there has been significant improvement in the parent-reported indicators such as dental visits and dental insurance. However, the need for early or urgent treatment, identified by direct observation, has increased significantly.

- The number of 3rd and 6th grade students with dental insurance has increased by 15 percent since 2001. Approximately 88 percent of 3rd and 6th graders have dental insurance that pays for some or all of their dental care in 2016, parents report.
- While more 3rd and 6th graders have dental insurance than in 2001, Hispanic/Latino students are significantly less likely to have dental insurance than their peers.
- In the 2016 parent survey, 5 percent reported there was a time when their child needed dental care but couldn't access it, compared to 23 percent in 2001.
- The need for early or urgent care observed by the survey dentist has risen from 32 percent in 2001 to 49 percent in 2016.
- There were significant regional differences in the need for early or urgent dental care. The Eastern region had the greatest need for urgent dental care, at nearly 20 percent of 3rd and 6th graders graders — over 5,400 children — compared to the state, which was 8 percent.
- The need for early or urgent care has not changed in the Northern region; the need for urgent care in the Louisville region has not changed significantly.

2 KEY FINDING

TWO OUT OF FIVE 3RD AND 6TH GRADERS HAVE UNTREATED CAVITIES.

Tooth decay remains the most prevalent chronic disease in children, and impacts too many Kentucky children.

- During the 2015-16 school year, the survey dentist observed untreated cavities in 41 percent of 3rd and 6th graders. The rate of untreated cavities was significantly greater in the Eastern region, where more than half of the 3rd and 6th graders — roughly 15,100 children — had untreated cavities. Students with untreated cavities are more likely to need urgent dental care.
- Third and 6th grade students eligible for free or reduced lunch have a significantly higher rates of untreated cavities. This group is at a greater risk of poor oral health and is less likely to receive adequate preventive care than higher-income children.

3 KEY FINDING

OVER HALF OF 3RD AND 6TH GRADERS DO NOT HAVE SEALANTS.

A dental sealant is a plastic coating applied to the chewing surface of a tooth. According to the CDC, dental sealants can reduce decay by 80 percent in the two years after placement and continue to be effective for nearly five years.[10] The American Dental Association has endorsed the use of dental sealants to prevent tooth decay.

- During the 2015-16 school year, more than half of 3rd and 6th graders — around 56,800 children — had no sealant on any permanent molar.
- The number of 3rd and 6th graders with a dental sealant on at least one permanent molar increased by 14 percent since 2001.
- 3rd and 6th graders with untreated cavities were less likely to have dental sealants.
- A greater percentage of African-American 3rd and 6th graders lacked sealants on any permanent molar compared to their White and Hispanic/Latino peers.

4 KEY FINDING

SOCIOECONOMIC STATUS (SES) IS A SIGNIFICANT FACTOR IN 3RD AND 6TH GRADERS' ORAL HEALTH.

Oral health disparities are overpowering in the United States and Kentucky. Despite major improvements, oral health disparities exist in many racial and ethnic groups, by socioeconomic status, sex, age, and geographic location. SES had the largest impact on oral health among 3rd and 6th grade students.

- In the 2016 parent survey, more than half of the respondents indicated their 3rd or 6th grader was eligible for free or reduced lunch. The 3rd and 6th graders eligible for free or reduced lunch were more likely to have recently experienced a toothache, to have not visited a dentist in more than a year, to have untreated decay, and to have presence of previous decay.
- In addition, 3rd and 6th graders eligible for free or reduced lunch are three times more likely to need urgent dental care.
- While more Hispanic/Latino and African American 3rd and 6th graders are eligible for free or reduced lunch, there were no significant differences in presence of tooth decay by race/ethnicity, showing SES is a predominant factor in kids' oral health.

Barriers to the oral health system are complex for all of those involved – patients, dental providers, and policymakers. Patient issues include the high cost of treatment, low oral health literacy, and, the inability to take time off from work for dental care. Dental professionals voice concerns about complicated billing procedures, lack of patient follow-through with treatment plans, and the high number of low-income patients who do not show up for appointments. Policymakers must face the challenge of addressing immediate oral health needs while investing in preventative efforts that will pay off in the long-term.

FULL RESULTS

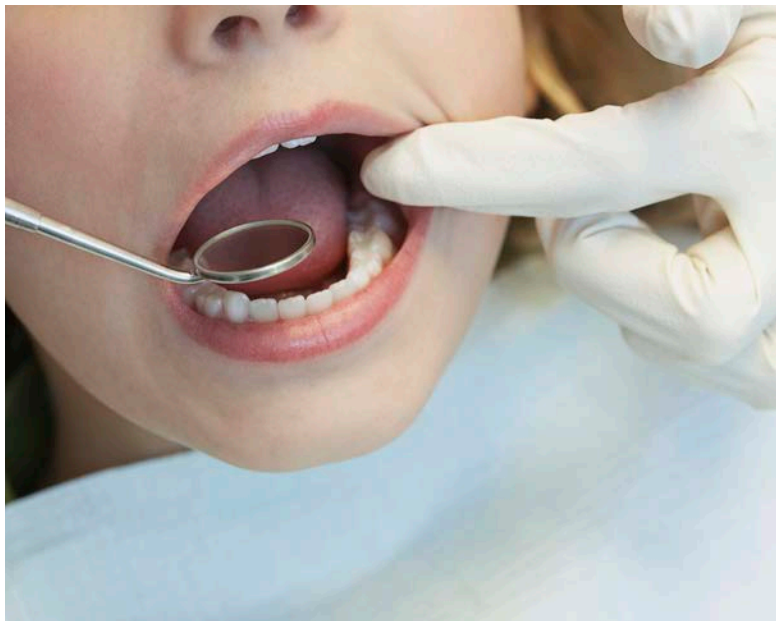
STATE AND REGIONAL COMPARISONS: 2001 AND 2016

A similar statewide oral health survey of 3rd and 6th grade students was conducted in 2001. Selected items from both the parent survey and the 2001 oral screening were replicated in the 2016 survey. Using the same regions identified in the 2001 survey allows for direct comparison of results. Findings indicate some gains in the oral health of Kentucky's 3rd and 6th grade students. However, despite significant increases in dental care access, insurance coverage, dental visits and sealant use, the need for treatment, as identified in the oral screening, still increased significantly. The need for both urgent care and early care is significantly greater in 2016 than it was in 2001 in the state and in most of the regions.

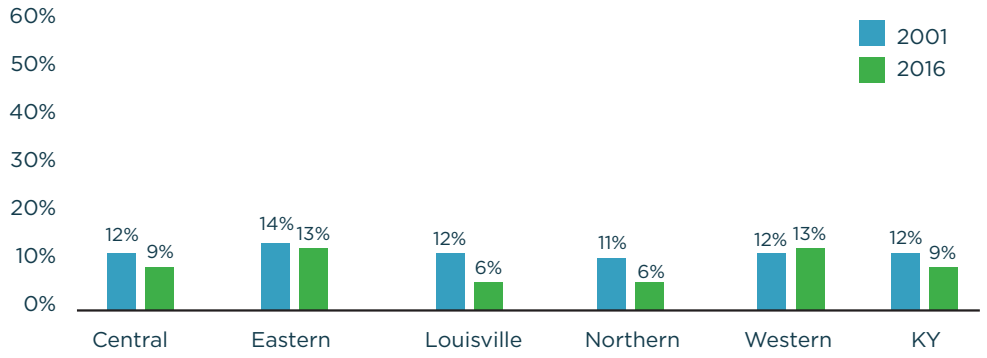
Toothaches

Tooth decay is the prime cause of toothache.[11] If not treated, tooth decay results in pain and swelling. Children with painful dental problems have trouble concentrating, sometimes miss school, and sometimes develop other, more serious, health issues.[12]

Overall the number of children reporting recent toothaches declined significantly between 2001 and 2016. The reduction was also significant in the Northern and Louisville regions.



Fewer children report having toothaches in 2016



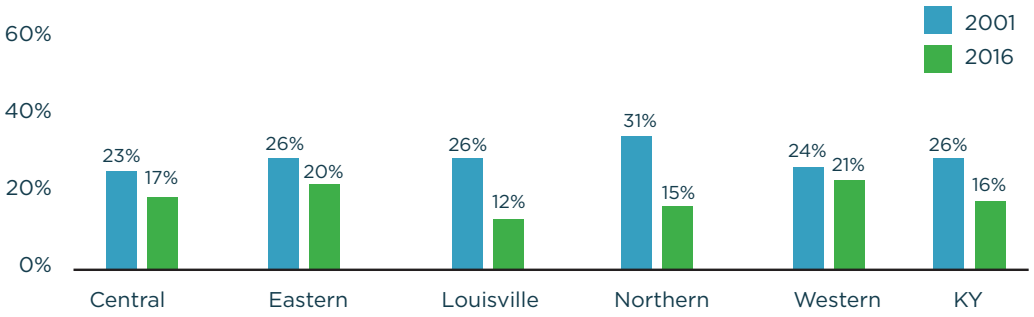
Percentage of 3rd and 6th graders reported to have a toothache in the past 6 months by region: 2001 and 2016

Time since last dental visit

To maintain optimal oral health, the American Dental Association (ADA) recommends regular dental visits, at intervals determined by a dentist.[13] Regular dental visits ensure that issues are identified early, when treatment is likely to be simpler and more affordable.

In 2001, one of four parents responding to the survey indicated their child had not been to a dentist in more than a year, and in some instances, never. In 2016, the number of parents reporting children hadn't seen a dentist in more than a year declined nearly 40 percent compared to the earlier study. An improvement was noted in all regions, but failed to reach statistical significance in the Western region.

Fewer children have not seen a dentist in the past year

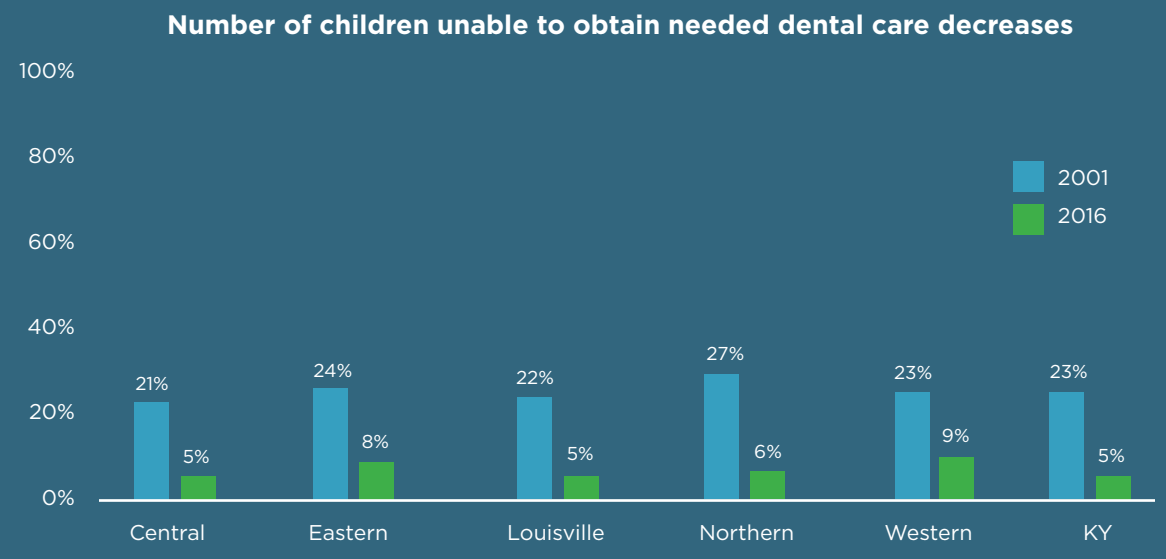


Percentage of 3rd and 6th graders whose parents reported they have not seen a dentist ever, in the past year, or don't know by region: 2001 and 2016

Access to dental care

Access to dental care determines a patient's ability to use and benefit from oral health care.

Access to dental care has increased significantly in each region of the state since 2001, according to parent surveys. The percentage of children unable to obtain needed dental care within the past 12 months dropped dramatically in all parts of the state. In 2016, the inability to obtain care when needed impacts about 1 in 20 children, compared to nearly 1 in 4 in 2001.

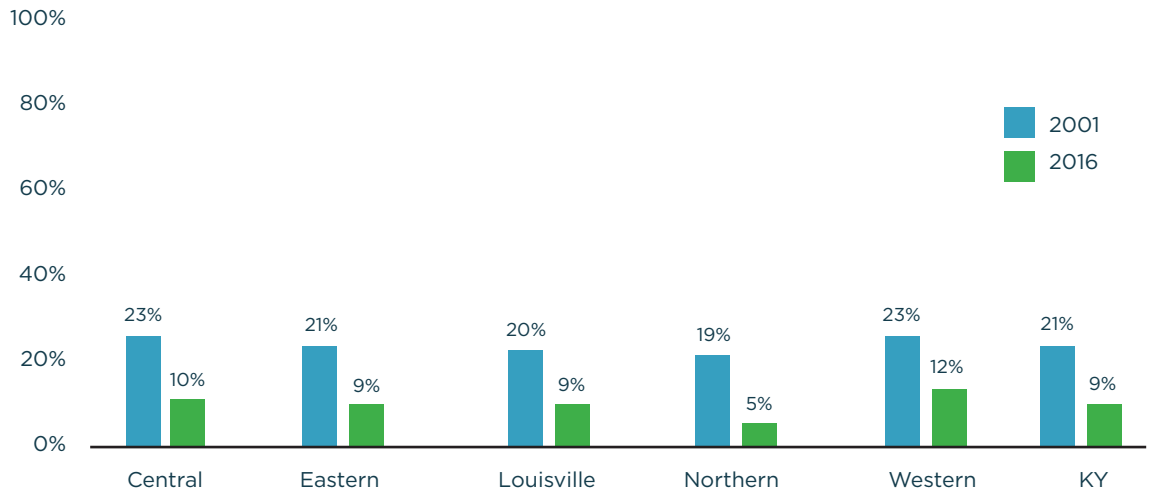


Percentage of 3rd and 6th graders whose parents report they were unable to obtain needed dental care by region: 2001 and 2016

Dental insurance

Patients with dental insurance are more likely to have better oral health habits than those who do not.[14] Dental insurance also helps alleviate financial burden for some, most, or all dental services.

Fewer parents report they lack dental insurance. That is, the number of children covered by dental insurance has increased more than 50 percent since 2001, increasing significantly in all parts of the state.

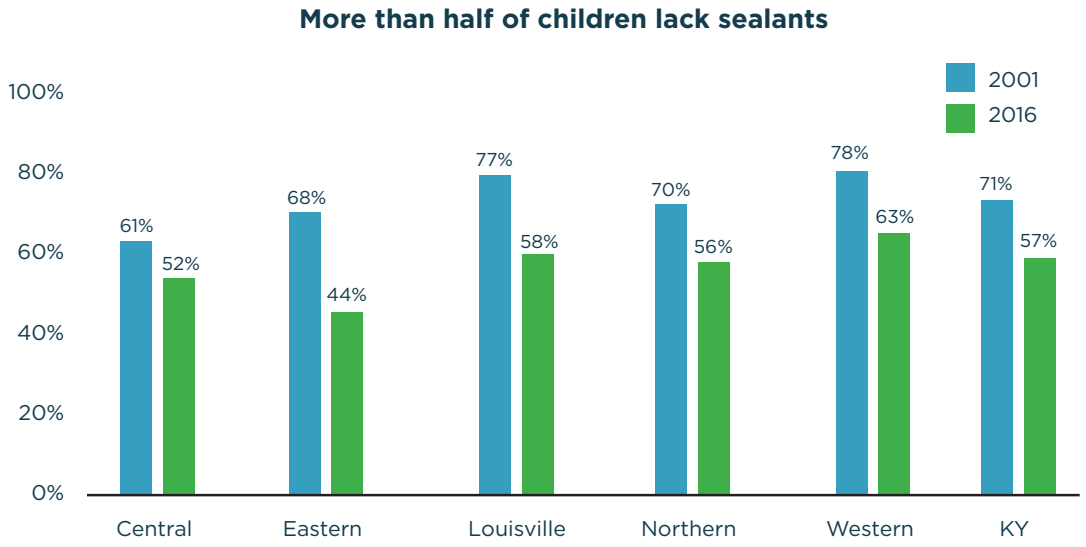


Percentage of 3rd and 6th graders whose parents report they do not have dental insurance by region: 2001 and 2016

Sealants on permanent molars

Dental sealants are a cost-effective preventive measure to delay the onset of tooth decay in children and teens.[15,16]

In all regions the percentage of kids without sealants has reduced significantly since 2001, with the largest decline in the Eastern region. The Eastern region is also the only one in which more than half of all children have sealants - substantially better than the statewide average. Despite improvement, more than half of 3rd and 6th graders still lack sealants.



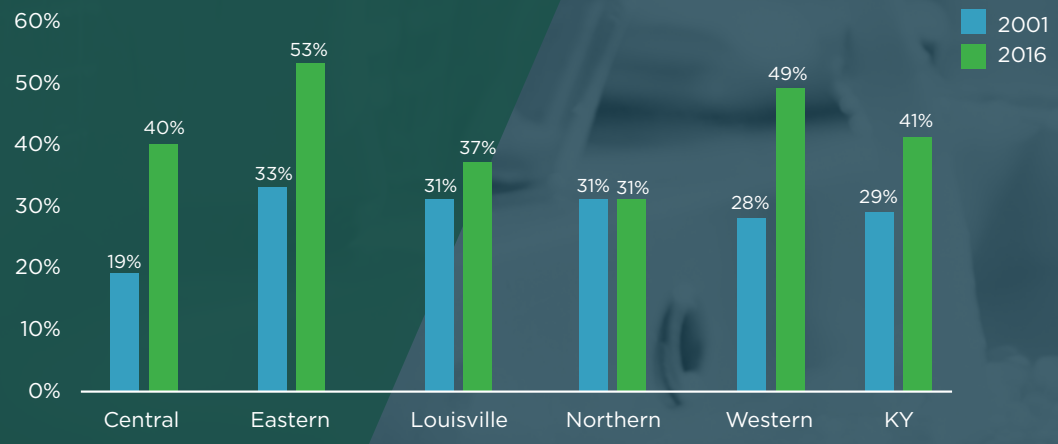
Percentage of 3rd and 6th graders without sealants on at least one permanent molar by region: 2001 and 2016

Untreated tooth decay

Untreated tooth decay is the presence of a dental cavity. It is linked to serious health problems, including low-weight and premature birth, and such chronic conditions as heart disease, diabetes, and stroke.[17]

The rate of untreated tooth decay in 3rd and 6th grade students increased by 40 percent between 2001 and 2016. Untreated tooth decay increased in all but the Northern region. In the Central region it more than doubled, increasing from 19 percent to 40 percent of students. The Eastern and Western regions have the highest rates of untreated tooth decay at 53 percent and 49 percent, respectively.

Untreated tooth decay doubled in the Central region since 2001



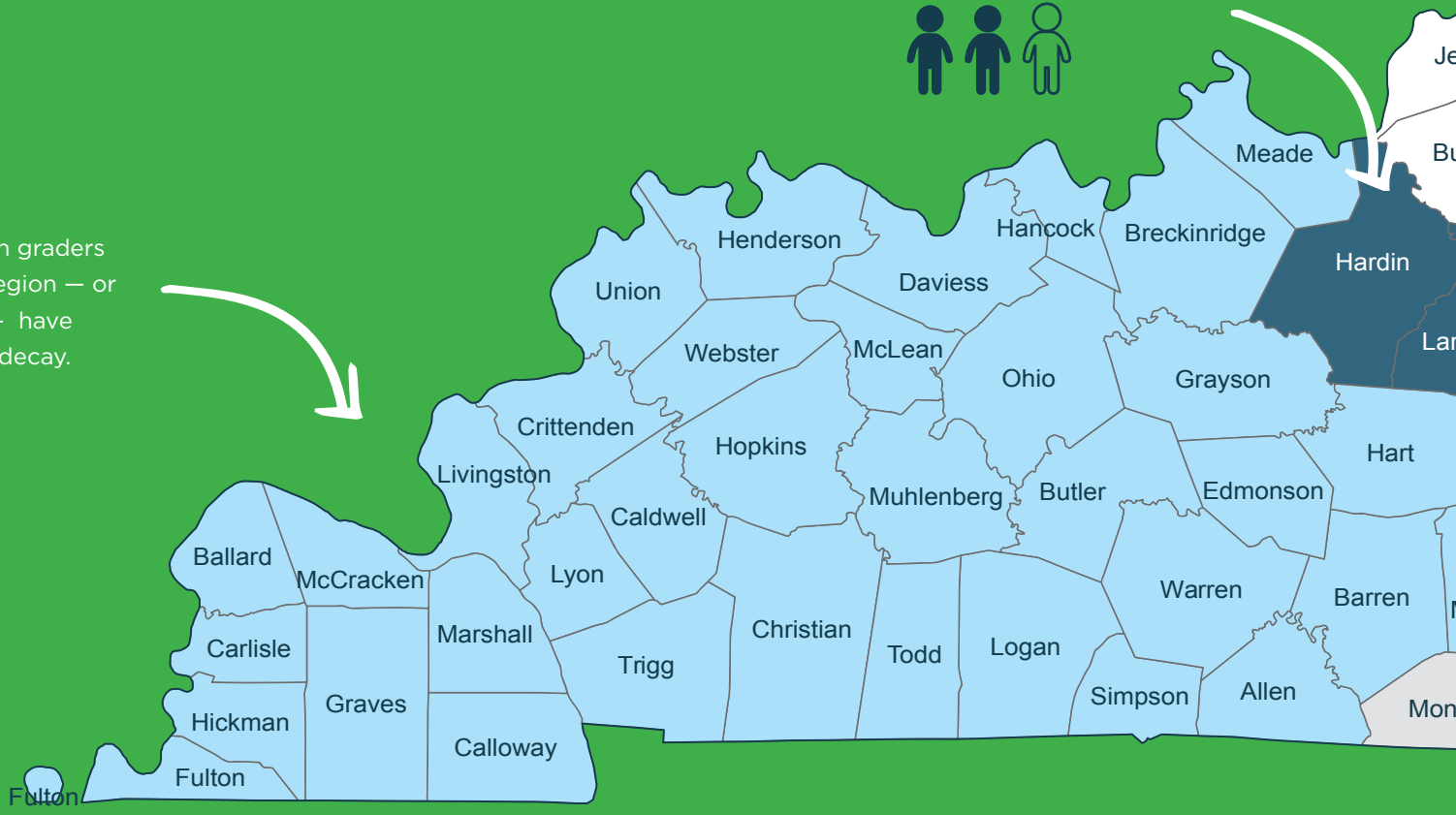
Percentage of 3rd and 6th graders with untreated tooth decay by region: 2001 and 2016

Making Smiles Happen: 2016 Oral Health Study of Kentucky's Youth Regions

1 of 3 3rd and 6th graders — around 6,600 children — in the Louisville region have previously treated decay.

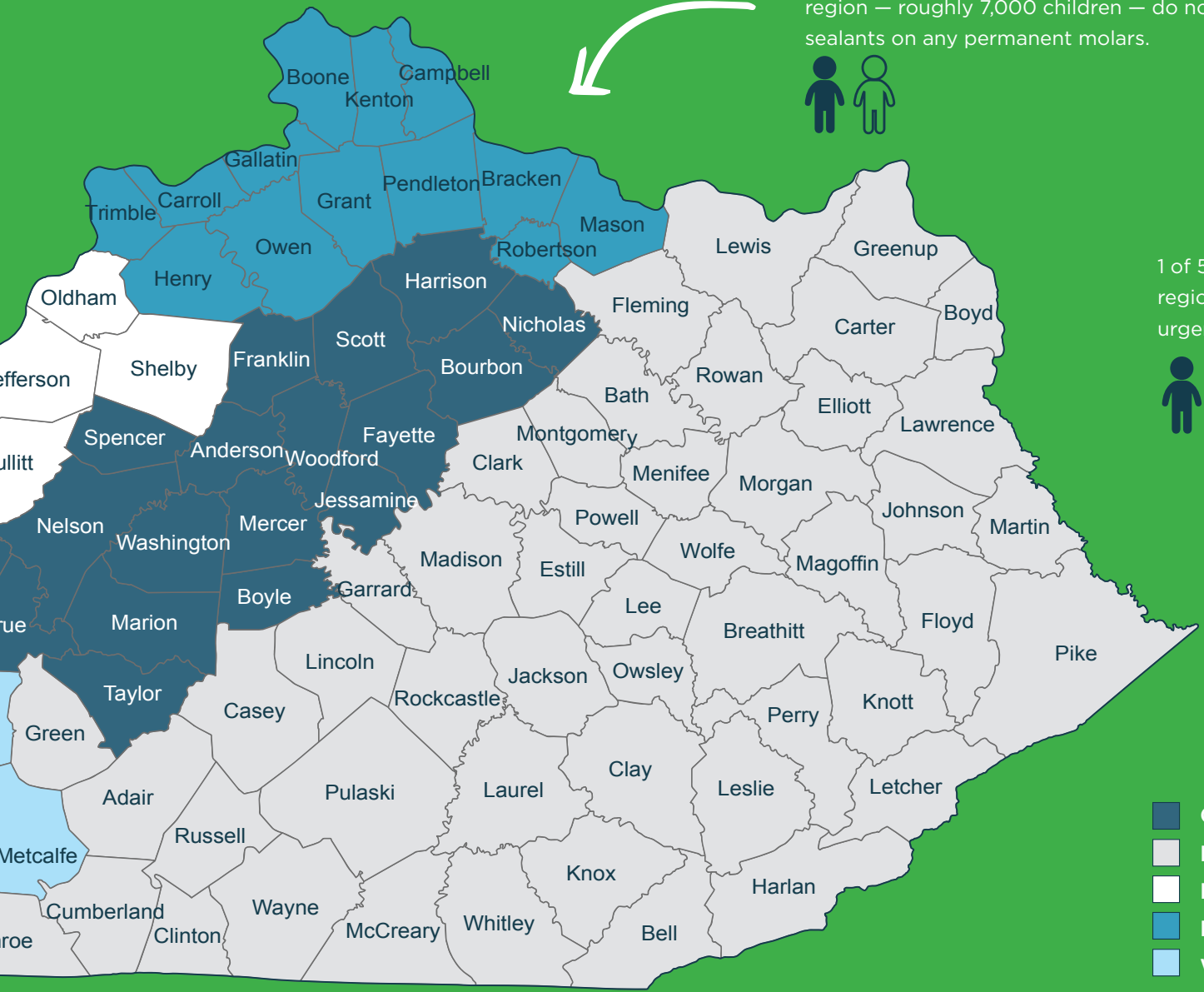
2 of 3 3rd and 6th graders — roughly 13,400 children — in the Central region have cavities experience.

1 of 2 3rd and 6th graders in the Western region — or 11,700 children — have untreated tooth decay.



Over half of 3rd and 6th graders in the Northern region — roughly 7,000 children — do not have sealants on any permanent molars.

1 of 5 3rd and 6th graders in the Eastern region — around 5,400 children — need urgent dental care.



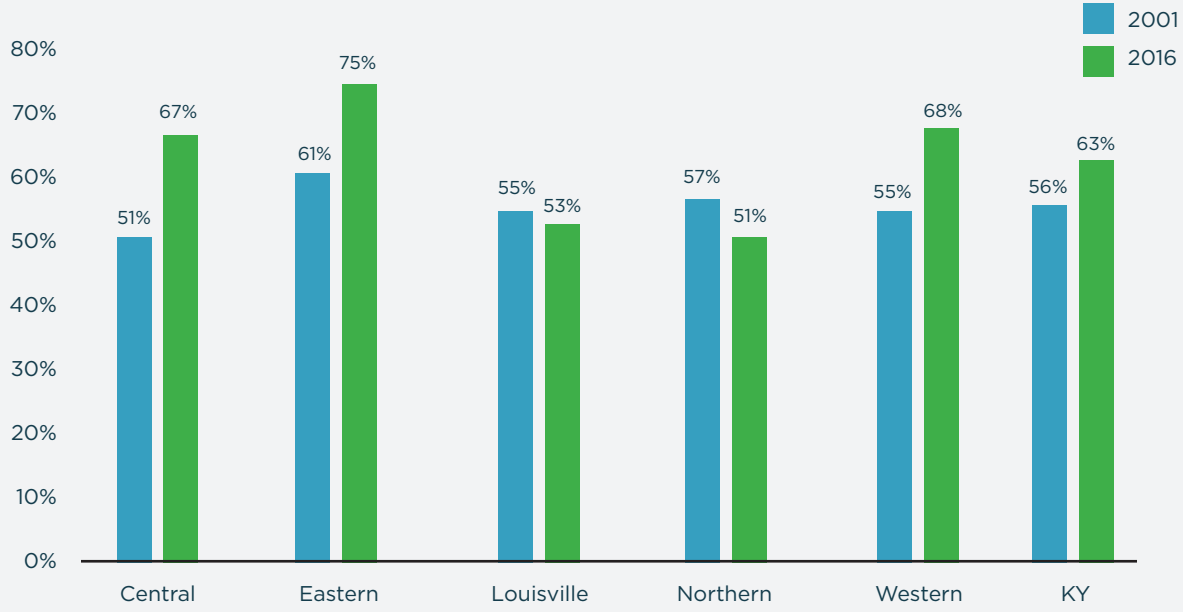
- Central
- Eastern
- Louisville
- Northern
- Western

Cavities experience

Studies indicate that cavities experience can influence future caries development.[18]

The Central, Eastern, and Western regions saw significant increases in the rate of cavities experience. Three out of four 3rd and 6th graders in the Eastern region have experienced tooth decay, a 20 percent increase since 2001. Two out of three 3rd and 6th graders in the Central region have cavities experience, a 30 percent increase since 2001.

Children with cavities experience increased statewide



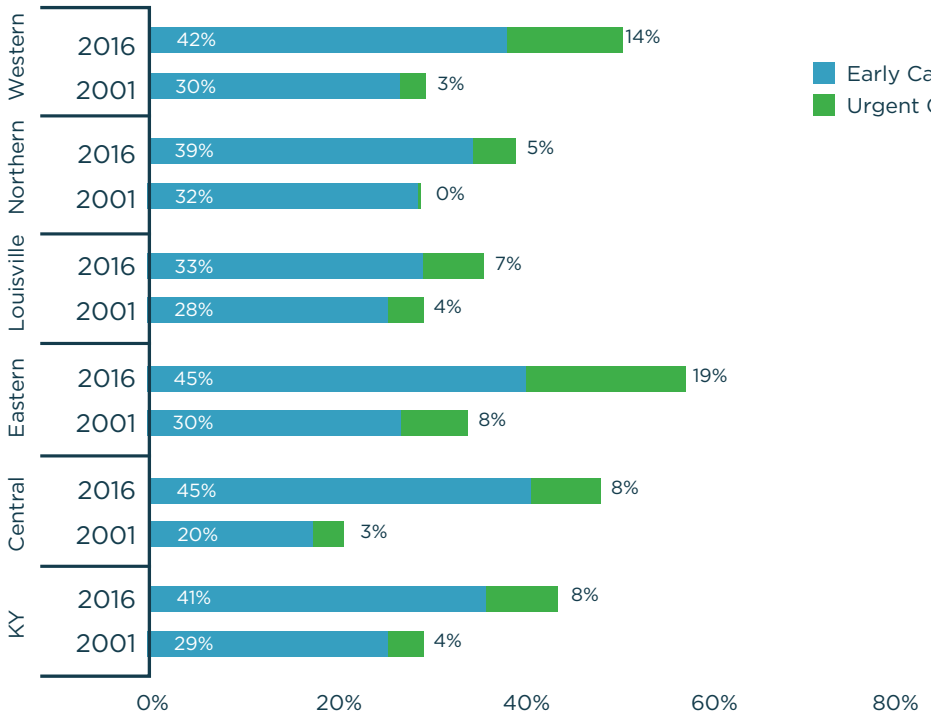
Percentage of 3rd and 6th graders who have experienced tooth decay by region: 2001 and 2016

Need for early or urgent care

If decay is not treated it can lead to serious and sometimes life-threatening infections elsewhere in the body.[19]

Despite improvements in access to dentists, dental insurance, and preventive sealants, the number of children in need of dental care is significantly greater in 2016. Exceptions are the Northern region, where the need for care has not changed since 2001, and in Louisville, where the need for urgent care has not changed significantly. Statewide, the share of children in need of early or urgent dental care has increased from 33 percent to 49 percent, a more than 53 percent increase.

The need for early or urgent dental care has increased by 53 percent since 2001



Percentage of 3rd and 6th graders in need of early or urgent dental care by region: 2001 and 2016

FULL RESULTS

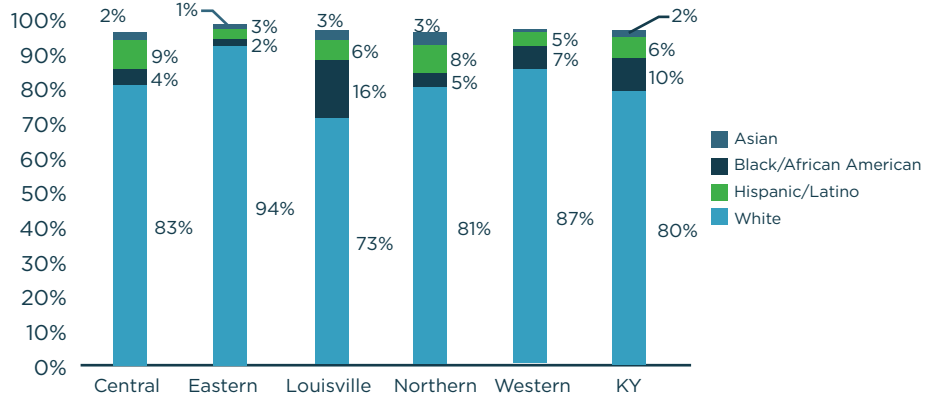
2016 PARENT SURVEY RESULTS

Some questions on the 2016 parent survey were not directly comparable to the 2001 study but elicited important information about access to dental care for Kentucky children.

Demographic Profile of Children Screened

The level of diversity within the regions aligns with US census data. The greatest percentages of non-white students were screened in the Louisville region, with the smallest percentage of children of color in the Eastern region.

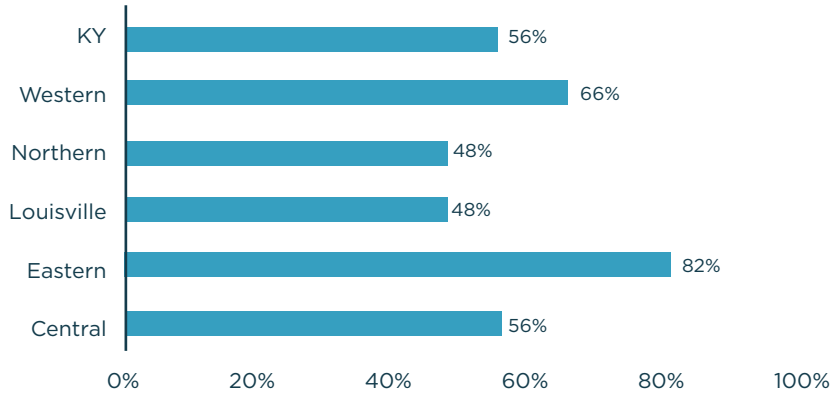
Race/Ethnicity of Children Screened



Reported race/ethnicity of children by region: 2016

Statewide, more than half of the responding parents (56 percent) report their children are eligible for free or reduced lunch. There are significant differences in eligibility rates between the regions, with the highest percentages of eligible children in the Eastern region.

Children Eligible for Free or Reduced Lunch



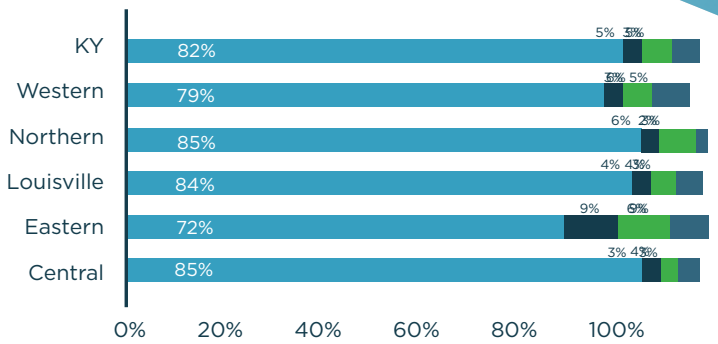
Percentage of children screened whose parents report they are eligible for free or reduced-price lunch by region: 2016

Socioeconomic factors are the strongest determinant of a child's oral health.

Regular dental visits

- Statewide, approximately four out of five kids last visited the dentist for a voluntary or scheduled check-up. Roughly 8 percent visited due to pain or to treat a previous condition.
- Parents in the Eastern region cited pain and previous conditions as the reason for the last dental visit with greater frequency than those in the other regions.
- Children who are eligible for free or reduced lunch are significantly more likely than their peers to have visited the dentist due to pain or a previous condition (17 percent) than children who are not eligible (8 percent).
- The great majority (84 percent) of 3rd and 6th graders saw a dentist within the past year, parents said. Low-income children are more likely to have longer intervals between visits, with 78 percent reporting they had visited a dentist with the past 12 months, compared to 90 percent of middle or upper-income children.
- African-American children also reported longer intervals with 73 percent reporting a dental visit in the past year, compared to 81 percent of Hispanic/Latino and 84 percent of White children.

Most dental visits are routine

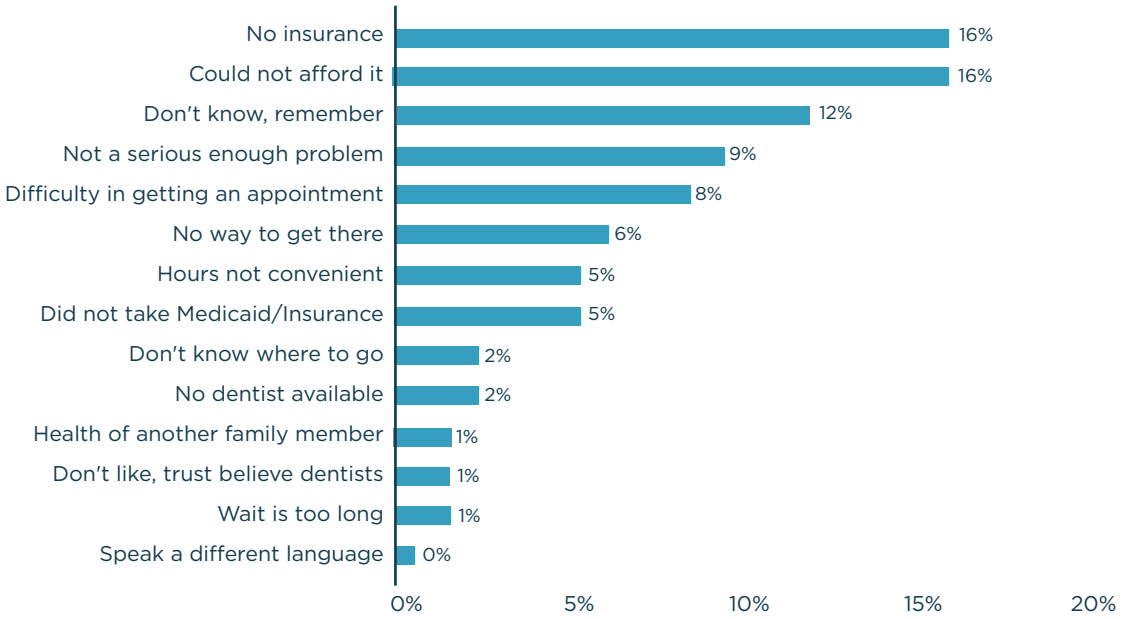


Main reason for last visiting a dentist by region: 2016

Barriers to obtaining dental care

- In 2016, parents reported 6 percent of children were unable to obtain dental care in Kentucky. Of these children, parents said lack of insurance and inability to pay for care were the most common reasons children did not receive dental care.
- Children eligible for free or reduced lunch were more likely than their peers to face barriers; 10 percent of their parents reported their children were unable to obtain needed dental care. Due to the small number of parents who reported barriers to obtaining dental care, regional estimates are not available.
- Some 88 percent of children in Kentucky are covered by public or private dental insurance, which covers some or all dental care. However, Hispanic/Latino children are somewhat less likely to have dental insurance, with 81 percent reporting coverage.
- Children without dental insurance were three times more likely to face barriers to dental care access than children with coverage.

Lack of insurance and cost most common barriers to care



Main reason 3rd and 6th graders could not get dental care when needed in Kentucky: 2016

FULL RESULTS

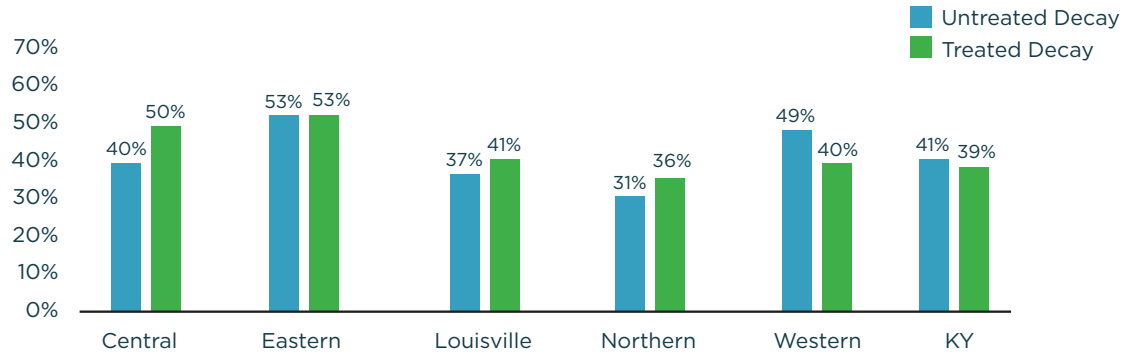
2016 ORAL SCREENING RESULTS

In total, 1,552 3rd and 6th grade students were screened at 60 schools from December 2015 to May 2016, representing a statewide sample. Despite parent reports that most children have dental insurance and have seen a dentist in the past 12 months, the screenings show that other factors are affecting children's oral health.

Rate of decay

- Statewide, 2 of every 5 children screened had untreated (41 percent) and treated (39 percent) decay.
- The occurrence of untreated decay is significantly greater in the Eastern region compared to all regions except for the Western region.
- The Eastern region also has significantly greater rates of treated decay than all regions except for the Central region.
- Of children screened who are eligible for free or reduced lunch, 48 percent have treated decay and 49 percent have untreated decay. This is significantly greater than their peers.
- Children who visited a dentist within the last year were significantly less likely to have untreated cavities.

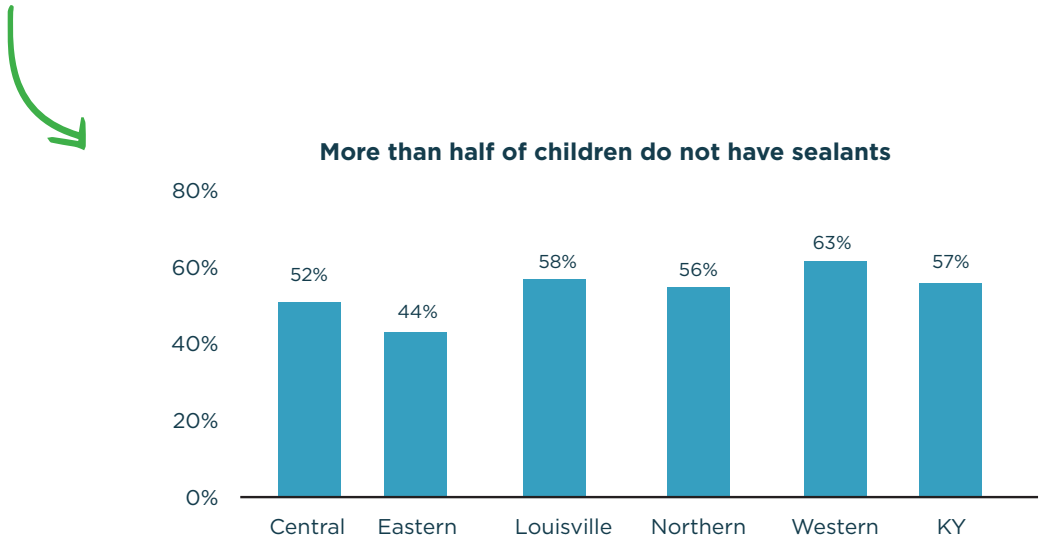
2 of 5 children have treated or untreated decay



Percentage of 3rd and 6th graders with treated and untreated decay by region: 2016

Sealants on permanent molars

- Statewide, more than half (57 percent) of 3rd and 6th graders - roughly 56,800 children - do not have dental sealants on any permanent molars. This varies by region, but the differences are relatively small.
- Of the students screened, African-American children were less likely to have dental sealants – 68 percent did not have sealants, compared to 54 percent of Hispanic/Latino and 53 percent of White children.
- Screened children who had sealants on one or more permanent molars are significantly less likely to have treated and untreated decay than children without sealants.

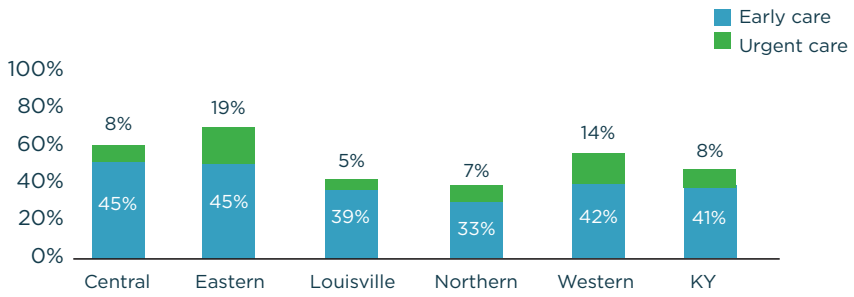


Percentage of 3rd and 6th graders without sealants on at least one permanent molar by region: 2016

Treatment urgency

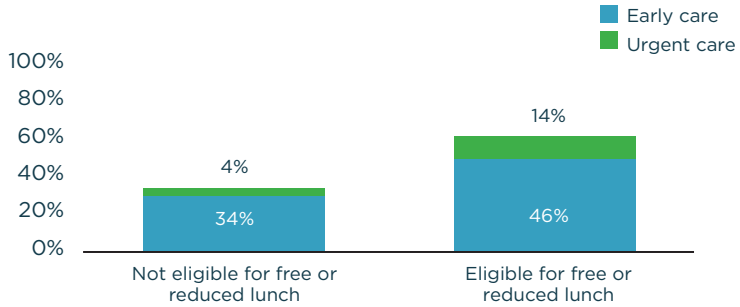
- Among the 3rd and 6th grade students screened, half were in need of either early care or urgent care.
- There were significant differences between the regions, with children in the Eastern and Western regions more likely to have urgent care needs than other parts of the state.
- The need for urgent care and early care was significantly greater among children eligible for free or reduced lunch.
- Access to dental care is a major predictor of a child's need for urgent dental care. One in three children in need of urgent care could not get treatment the last time it was needed.
- Children in need of urgent care are three times more likely to be unable to access care than other groups. Parents of children who did not get needed urgent treatment said cost and inability to get an appointment were the greatest barriers to treatment.
- The results show the importance of ensuring that more Kentucky children have dental sealants to prevent decay. Most children (70 percent) who needed urgent dental care did not have dental sealants on any permanent molars compared to children without urgent needs, half of whom had sealants.

Half of children screened needed early or urgent care



Percentage of 3rd and 6th graders needing early or urgent care by region: 2016

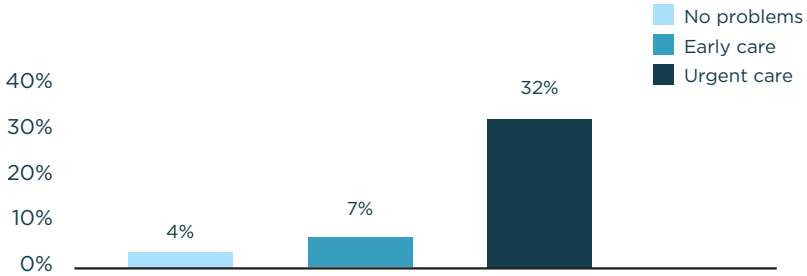
Low-income children were more likely to have treatment needs



Percentage of 3rd and 6th graders needing early or urgent dental care by free or reduced-cost lunch eligibility status: 2016

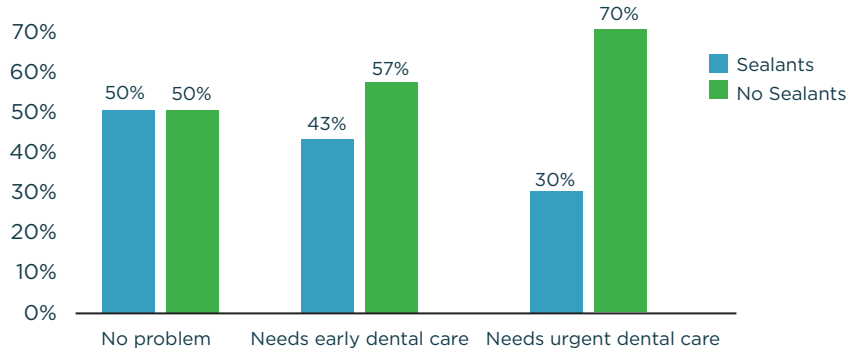
Among the 3rd and 6th grade students screened, half were in need of either early care or urgent care.

1 in 3 children who could not access dental care in recent past now need urgent dental care



Percentage of 3rd and 6th graders who were previously unable to access dental care grouped by their current need for care: 2016

Children with dental sealants require urgent care less often



Percentage of 3rd and 6th graders with treatment needs by dental sealants: 2016

RECOMMENDATIONS

The Delta Dental of Kentucky Making Smiles Happen Surveillance Initiative provides a clear picture of the oral health status of 3rd and 6th grade students in the Commonwealth. These data are essential to both understanding the barriers that contribute oral health inequities for Kentucky children, and in acting to create effective oral health programs, initiatives, and policies. Below are five recommendations developed by many experts across the state.

Develop comprehensive goals and objectives for a statewide oral health plan.

- Kentucky has not addressed oral health planning since 2006. The state oral health plan should use the Delta Dental of Kentucky Making Smiles Happen Surveillance Initiative as a catalyst for strategies to improve the oral health status, increase quality of care and access of care, address oral health disparities, and revamp data collection efforts for Kentucky children.

Launch regional networks to develop local, data-driven solutions.

- The 2016 surveillance initiative shows that 2 out of 5 Kentucky children have untreated tooth decay. More children face urgent treatment needs than 15 years ago. The solution requires a multi-sector collaboration with common goals.
- Nationally, more communities are developing local networks of business leaders, educators, and health professionals to work together to solve problems in their community. Development of regional networks will engage diverse partners to leverage resources, share data, and improve health outcomes.

Establish school-based sealant programs in all high needs schools.

- In 2015 the Pew Charitable Trusts released a report, *States Stalled on Dental Sealant Program* showing that Kentucky failed to meet four benchmarks for sealant policies, which resulted in a "D" grade.[20]
- Dental sealants are one-third the cost of a filling.[21] Using dental sealants can save money for patients, families, and states.[22]
- School-based sealant programs are an optimal way to reach children—especially low-income children who have trouble accessing dental care.[23]

Promote oral health literacy campaigns.

- Promoting and teaching the fundamentals of dental care is vital for the improvement of dental health.
- Parents, policymakers, and health care providers must take action to limit sugar-sweetened beverages and increase tap water consumption. Fluoride is a naturally occurring element commonly found in water sources, which has been proven effective in preventing or controlling dental caries, especially in children. Studies show that water fluoridation reduces the rate of dental caries by about 25 percent over a person's lifetime.[24]

Regularly collect state and county level oral health data.

- Some national surveys provide a snapshot of oral health problems in Kentucky, however the information is seldom updated, nor does it provide regional or county-level data.
- Kentucky tracks data on oral health, but much of the available information is outdated. Conducting the Delta Dental of Kentucky Children's Oral Health Surveillance Initiative was a critical step in tracking progress and oral health needs for children. Collecting data regularly is critical to better outcomes.

CONCLUSION

Kentucky experts and evidence-based research on best practices affirm our recommendations as a path forward. We recognize that the solutions for our children's dental problems are diverse and require many different approaches. Our urgent attention is required. As we've noted, poor dental health can trigger serious health issues in other parts of the body. Poor dental health can degrade school performance. And poor dental health can stall a young person's job prospects, affecting economic development of the community and state. It will take commitment from policymakers at every level, commitment from local community members, the health community, and even families to position Kentucky as a national leader in improved oral health.

APPENDIX A: RESPONSE RATES FOR ORAL SCREENINGS BY REGION

	Total Screenings (Participants)	Total Students (Eligible)	Response Rate
Statewide	1,552	7,933	19.6%
Central	229	1,288	17.8%
Eastern	254	1,153	22.0%
Louisville	521	2,804	18.6%
Northern	198	1,262	15.7%
Western	350	1,426	24.5%

APPENDIX B: MEASUREMENT INSTRUMENTS

CONSENT FORM & PARENT QUESTIONNAIRE

Please complete this form and return it to your child's teacher. Thank you.
Child's Name: _____ Child's Age: _____
_____ **Yes**, I give permission for my child to have his/her teeth checked.
_____ **No**, I do not give permission for my child to have his/her teeth checked.

_____ _____
Signature of Parent or Guardian Date

Please answer the next questions to help us learn more about access to dental care. Your answers will remain private and will not be shared. If you do not want to answer the questions, you may still give permission for your child to have his or her teeth checked.

1. During the past 6 months, did your child have a toothache more than once?

O No O Yes O Don't know/don't remember

2. About how long has it been since your child last visited a dentist? Include all types of dentists, such as orthodontists, oral surgeons, and all other dental specialists, as well as dental hygienists. (Check one)

O 6 months or less
O More than 6 months, but not more than 1 year ago
O More than 1 year ago, but not more than 3 years ago
O More than 3 years ago
O Never has been to the dentist
O Don't know/don't remember

3. What was the main reason that your child last visited a dentist? (Check one)

O Went in on own for check-up, examination or cleaning.
O Was called in by the dentist for check-up, examination or cleaning.
O Something was wrong, bothering or hurting.
O Went for treatment of a condition that dentist discovered at earlier check-up or examination.
O Other
O Don't know/don't remember

4. During the past 12 months, was there a time when your child needed dental care but could not get it?

O No (Go to Question 6) O Yes (Go to Question 5) O Don't know/don't remember (Go to Question 6)

5. The last time your child could not get the dental care he/she needed, what was the main reason he/she couldn't get care? (Check one)

O Could not afford it
O Not a serious enough problem
O Difficulty in getting appointment
O Dentist did not take Medicaid/insurance
O Don't like/trust/believe in dentists
O Didn't know where to go
O Wait is too long in clinic/office
O Health of another family member
O No insurance
O Dentist hours are not convenient
O No way to get there
O Speak a different language
O Other reasons
O No dentist available
O Don't know/don't remember

6. Do you have any kind of insurance that pays for some or all of your child's MEDICAL OR SURGICAL CARE? Include health insurance obtained through employment or purchased directly, as well as government programs like Medicaid.

O No O Yes O Don't know

7. Do you have any kind of insurance that pays for some or all of your child's DENTAL CARE? Include health insurance obtained through employment or purchased directly, as well as government programs like Medicaid.

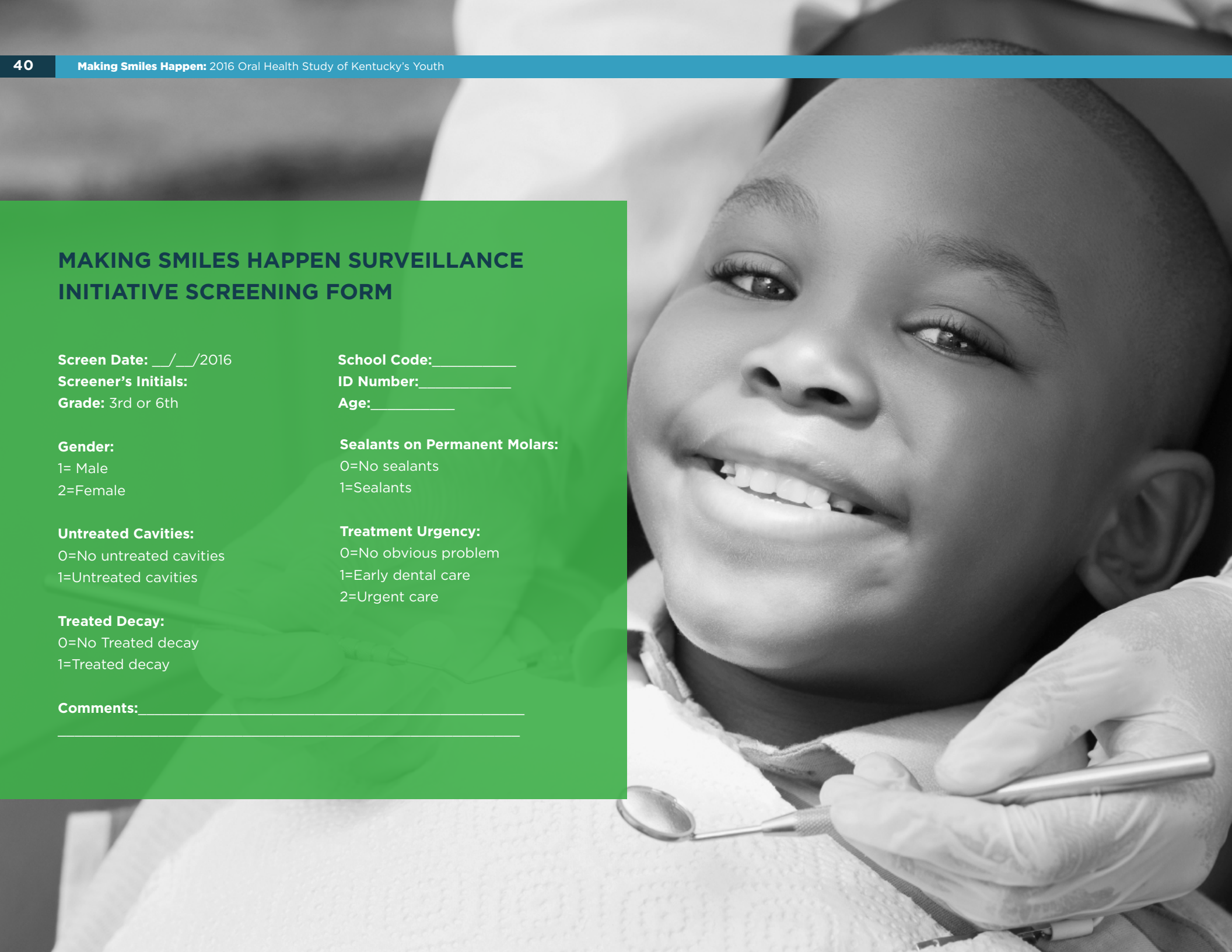
O No O Yes O Don't know

8. Which of the following best describes your child? (Check all that apply.)

O White
O Black/African American
O Hispanic/Latino
O Asian
O American Indian/Alaska Native
O Native Hawaiian/Pacific Islander
O Choose not to respond

9. Is your child eligible for the free or reduced price lunch program? O No O Yes

Thank you for participating in the Making Smiles Happen Initiative!



MAKING SMILES HAPPEN SURVEILLANCE INITIATIVE SCREENING FORM

Screen Date: __/__/2016
Screener's Initials:
Grade: 3rd or 6th

School Code:_____
ID Number:_____
Age:_____

Gender:
1= Male
2=Female

Sealants on Permanent Molars:
0=No sealants
1=Sealants

Untreated Cavities:
0=No untreated cavities
1=Untreated cavities

Treatment Urgency:
0=No obvious problem
1=Early dental care
2=Urgent care

Treated Decay:
0=No Treated decay
1=Treated decay

Comments:_____
_____

APPENDIX C: DATA TABLES

RACE/ETHNICITY, GENDER, AGE, AND FREE OR REDUCED LUNCH ELIGIBILITY STATUS OF PARTICIPATING CHILDREN (UNWEIGHTED)

Race/Ethnicity (n=1,966)	Percent
White	80
Black/African American	10
Hispanic/Latino	6
Asian	2
American Indian/Alaska Native	2
Native Hawaiian/Pacific Islander	0.3
Gender (n=1,576)	
Female	57
Male	43
Age (n=1,574)	
8 years	29
9 years	30
10 years	2
11 years	21
12 years	16
13 years	2
Eligible for Free or Reduced Lunch (n=1,749)	
No	44
Yes	56

ORAL HEALTH OF 3RD AND 6TH GRADERS BY REGION

	Central n=(229)	Eastern n=(318)	Louisville n=(437)	Northern n=(199)	Western n=(396)
Have previously treated decay (%)	50	53	32	36	40
(95% C.I.)	(44 - 56)	(48 - 59)	(28 - 36)	(29 - 43)	(35 - 45)
Have untreated decay (%)	40	53	37	31	49
(95% C.I.)	(33 - 46)	(47 - 58)	(33 - 42)	(25 - 39)	(44 - 54)
Have cavities experience (%)	67	75	53	51	68
(95% C.I)	(61 - 73)	(70 - 80)	(48 - 58)	(44 - 58)	(63 - 72)
Need early dental care (%)	45	45	39	33	42
(95% C.I)	(39 - 52)	(39 - 50)	(34 - 43)	(26 - 40)	(38 - 47)
Need urgent dental care (%)	8	19	5	7	14
(95% C.I)	(4 - 11)	(14 - 23)	(3 - 7)	(3 - 10)	(10 - 17)
Have dental sealants (%)	48	56	43	44	37
(95% C.I)	(41 - 54)	(50 - 61)	(38 - 47)	(38 - 51)	(33 - 42)

ORAL HEALTH OF 3RD AND 6TH GRADERS BY RACE/ETHNICITY

	White n=(1,177)	African American n=(126)	Hispanic/Latino n=(87)
Have previously treated decay (%)	41	46	44
(95% C.I)	(39 - 44)	(38 - 55)	(33 - 54)
Have untreated decay (%)	43	46	41
(95% C.I)	(40 - 45)	(38 - 55)	(31 - 52)
Have cavities experience (%)	63	62	67
(95% C.I.)	(60 - 66)	(54 - 71)	(57 - 77)
Need early dental care (%)	41	50	39
(95% C.I)	(38 - 43)	(41 - 59)	(29 - 49)
Need urgent dental care (%)	11	7	12
(95% C.I)	(9 - 13)	(2 - 11)	(5 - 18)
Have dental sealants (%)	47	32	46
(95% C.I)	(44 - 50)	(24 - 40)	(35 - 56)

Note: The number of children listed for each region and race category is the number of children within that region or race category that participated. Because of missing data, the number for each cell differs slightly. Sample size varies less than 10 percent. The sample of children of other races and ethnicities was too small to develop reliable estimates.

ORAL HEALTH OF 3RD AND 6TH GRADERS BY FREE OR REDUCED LUNCH ELIGIBILITY

	Eligible for Free or Reduced Lunch n=(836)	**Not Eligible for Free or Reduced Lunch n=(482)**
Have previously treated decay (%)	48	30
(95% C.I)	(45 - 51)	(26 - 35)
Have untreated decay (%)	49	31
(95% C.I)	(45 - 52)	(27 -35)
Have cavities experience (%)	70	50
(95% C.I)	(66 - 73)	(45 - 54)
Need early dental care (%)	46	34
(95% C.I)	(42 - 49)	(30 - 38)
Need urgent dental care (%)	14	4
(95% C.I)	(11 - 16)	(2 - 6)
Have dental sealants (%)	44	48
(95% C.I)	(41 - 47)	(43 - 52)

ORAL HEALTH OF 3RD AND 6TH GRADERS BY GRADE

	3rd Graders n=(1,053)	6th Graders n=(523)
Have previously treated decay (%)	43	38
(95% C.I)	(40 - 46)	(33- 42)
Have untreated decay (%)	42	44
(95% C.I)	(39 - 45)	(40 - 49)
Have cavities experience (%)	63	63
(95% C.I)	(60 - 66)	(59 - 67)
Need early dental care (%)	39	45
(95% C.I)	(37 - 42)	(41 - 49)
Need urgent dental care (%)	12	7
(95% C.I)	(10 - 14)	(4 - 9)
Have dental sealants (%)	46	43
(95% C.I)	(43 - 49)	(40 - 49)

Note: The number of children listed for each free or reduced lunch category or grade is the number of children within that category or grade that participated. Because of missing data, the number for each cell differs slightly. Sample size varies less than 10 percent.

ENDNOTES

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