9. Oral Health

Goal

To improve the health and quality of life for individuals and communities by preventing and controlling oral disease and injuries, and to improve access to oral health care for all Kentuckians.

Overview

Oral disease is a major health problem for Kentuckians. Much of this problem can be prevented through primary prevention efforts, including community water fluoridation, the application of dental sealants and fluoride varnish, oral cancer screenings and routine dental care as well as oral health education and health promotion.

In 1987, the Office of Oral Health conducted a statewide oral health survey (Kentucky Oral Health Survey - KOHS) consisting of an interview component and a clinical screening component. The findings from this survey were alarming.

Dental caries were a significant problem, with 26 percent of adult Kentuckians 18 to 64 years of age having untreated decay, compared to 6 percent on a national survey conducted by the National Institute of Dental Research in the same year. Additionally, KOHS found that 34 percent of Kentuckians had not visited a dentist within the past 12 months. This number became more disturbing when, nine years later, the 1996 Behavioral Risk Factor Surveillance System (BRFSS) reported that the measure had increased to 38 percent.

Children fared no better than adults with respect to oral health outcomes. In 1987, 30 percent of children aged 0-4 had caries. In the 5-9 age range, 58 percent of children had a decayed filled surface in a primary tooth (dfs) and 34 percent had a decayed filled surface in a permanent tooth (DFS). Twenty-eight percent of children aged 0-4 had untreated decay while this number rose to 38 percent (dfs) and 27 percent (dfs) for the 5-9 aged children.

Kentucky adolescents proved to have even worse oral health. Eighty-four percent of 14-17 year olds had one or more caries (filled or unfilled) while 67 percent had untreated cavities in primary and permanent teeth.

This information was a catalyst for additional surveys specific to three populations: children, adults, and elders, to be implemented in the current decade. Details about these three surveys are provided, as is updated information about other projects undertaken by the Oral Health Program.

Summary of Progress

Ninety percent of Kentucky's 4.1 million residents receive optimally fluoridated water. The remaining 10 percent of Kentuckians have wells, cisterns, or springs as their source of water.

The KIDS SMILE Children's Oral Screening and Fluoride Varnish application program has increased the number of children (aged 0 to 5) who have received oral health screenings. The program has also provided over 27,000 topical applications of fluoride varnish. Additionally, Kentucky has begun a sealant program in partnership with local health departments to encourage front-line public health agencies and local dental professionals to work together to combat childhood decay in permanent molars.

The oral health status of adults has also improved since the inception of this document. Data from the BRFSS indicate that the proportion of edentulous Kentuckians decreased from 42.9 percent in 1996 to 38.1 percent in 2004. Additionally, the proportion of adults using the oral health care system increased from 62 percent in 1996 to nearly 70 percent in 2004. And the proportion of oral cancer lesions detected early (in situ and local), has improved from 47 percent in 2000 to 49 percent in 2003. While this is a modest increase, it does bring Kentucky closer to the 2010 goal of 57 percent.

To meet the needs for data acquisition and analysis in the area of oral health, two surveys have been completed during this period: the Kentucky Children's Oral Health Profiles 2001 (University of Kentucky College of Dentistry) and the Kentucky Adult Oral Health Survey 2002 (University of Louisville School of Dentistry). A third survey, the Elder Oral Health Survey, is currently near completion (University of Kentucky College of Dentistry) and results will be reported by the end of 2006.

To monitor the health status of children and adults throughout the state on a continuous basis, the Children’s Oral Health Surveillance System (visual screening) and an adult surveillance program (using the BRFSS methodology) will be implemented in FY06.

Funding from the Health Resources and Services Administration and the Maternal and Child Health Bureau, has made possible the development of a statewide Oral Health Strategic Plan and a Dental Professional Workforce Study.

Progress toward Achieving Each HK 2010 Objective

9.1. Reduce the proportion of children who have had one or more dental caries in the primary and permanent teeth (filled or unfilled).

Data Source: 2001 Children's Oral Health Profiles

Baseline: 2001

- 46.8 percent of 2-5 year olds had caries[1]
- 56.1 percent of children ages 6 to 8[2] had caries experience
- 56.1 percent of children age 12 had caries experience.
- No data available for adolescents age 15

HK 2010 Target:
- 15 percent among children ages 2 to 4
- 40 percent among children ages 6 to 8
- 50 percent among children age 12
- 55 percent among adolescents age 15

Mid-Decade Status: Data are not yet available

Data Needs: On-going data collection is necessary and will be achieved through the Children's Oral Health Surveillance System which will begin collecting data in the fall of 2005.

Strategies to Achieve Objective:

Current Strategies:
- Implement Kentucky Children's Oral Health Surveillance System, fall of 2005
- Continue Fluoride Varnish Program and Sealant Programs, in cooperation with local health departments
- Continue funding through HRSA/MCHB the Oral Health Collaborative Systems Grant
- Participate in Seal Kentucky, providing preventive sealants to children in Dental Professional Shortage Areas
- Continue to expand base of health professionals who are working to reduce childhood decay, including physicians, nurses and other health providers
- Maintain the community fluoridation program through the Kentucky Oral Health Program

9.2. Reduce the proportion of children with untreated cavities in the primary and permanent teeth (decayed teeth not filled).

Data Source: 2001 Children's Oral Health Profiles

Baseline:
- 28.7 percent of 2-5 year olds had caries[3]

[1] Convenience Sampling (n = 572) of children, 24-59 months of age, screened by dental and non-dental professionals in pediatric, family practice, health department and dental offices.
[2] Kentucky 3rd and 6th graders (n = 5962) screened using a scientific sampling methodology (CI 95%) in public and private schools.

- 28.7 percent of children ages 6 to 8[4] had untreated tooth decay
- Children age 12 – same as above
- Adolescents age 15 – data not available

HK 2010 Target:
- 12 percent among children ages 2 to 4
- 22 percent among children ages 6 to 8
- 20 percent among children age 12
- 15 percent among adolescents age 15

Mid-Decade Status: Data are not yet available.

Data Needs: On-going data collection is necessary and will be achieved through the Children's Oral Health Surveillance System which will begin collecting data in the fall of 2005.

Strategies to Achieve Objective:

Current Strategies
- Implement Kentucky Children's Oral Health Surveillance System, fall 2005
- Continue Fluoride Varnish Program and Sealant Programs, in cooperation with local health departments
- Continue funding through HRSA/MCHB the Oral Health Collaborative Systems Grant
- Participate in Seal Kentucky, providing preventive sealants to children in Dental Professional Shortage Areas
- Continue to expand base of health professionals who are working to reduce childhood decay, including physicians, nurses and other health providers
- Maintain the community fluoridation program through the Kentucky Oral Health Program

9.3. (Developmental) **Increase to at least 80 percent the number of edentulous or partially edentulous Kentuckians who have adequate replacement of natural dentition. (DELETED)**

Reason for Deletion: There are no data to track this objective, and none is anticipated in the near future.

9.4. Reduce to no more than 23 percent the proportion of Kentuckians who have lost all of their natural teeth (edentulous).

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[3] Convenience Sampling (n = 572) of children, 24 -59 months of age, screened by dental and non-dental professionals in pediatric, family practice, health department and dental offices.
[4] Kentucky 3rd and 6th graders (n = 5962) screened using a scientific sampling methodology (CI 95%) in public and private schools.

9.4R. (REVISION) Reduce the proportion of Kentuckians aged 65 + who have lost all of their natural teeth (edentulous).

Reason for Revision: The original objective measured a total population proportion. Data are being revised to reflect the national 2010 goal from CDC WONDER Data 2010.

Data Source: Behavioral Risk Factor Surveillance System (BRFSS)

Baseline: 42.9 percent in 1996

HK 2010 Target: 20 percent

Mid-Decade Status: 38.1 percent in 2004

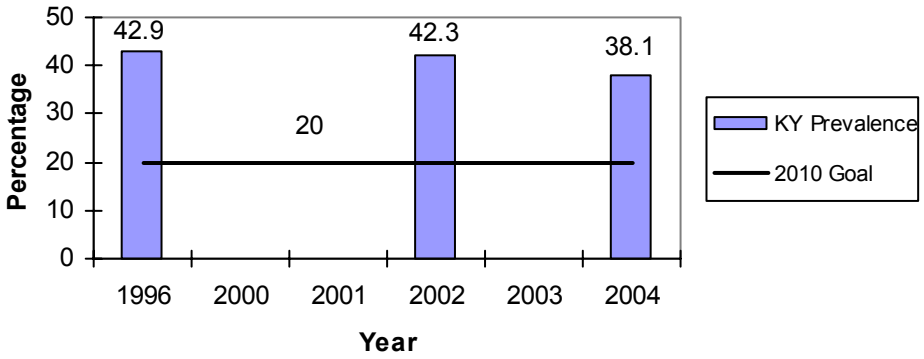

Figure 9.1 Percent of Edentulous Kentuckians Age 65 and Older, Kentucky, 1996, 2002, and 2004 (Source: BRFSS)

Strategies to Achieve Objective:

Current Strategies:

- Completion of Elder Oral Health Survey (fall of 2005)
- Develop Oral Health Strategic Plan specific to Elder population (Special Populations Workgroup)

Future Strategies:

- Increase awareness of the importance of replacement of natural dentition through oral health education
- Work with the Kentucky Dental Association and the Kentucky Dental Health Coalition to increase options for replacement of natural dentition

9.5. Increase the proportion of oropharyngeal cancer lesions detected at Stage I (local).

9.5R. (REVISION) Increase the proportion of oral cancer lesions detected at Stage 0 and I (in-situ and local).

Reason for Revision: Oropharyngeal cancer refers to a cancer that occurs in a very limited and specific anatomic site. However, program planners follow the prevalence of the broader category of oral cancers because diagnosis at either stage of 0 (in situ) or 1 (local) may improve clinical outcomes.

Data Sources: The Kentucky Cancer Registry, University of Kentucky, Lexington, Kentucky.

Baseline: 47 percent in 2000

HK 2010 Target: 57 percent

Mid-Decade Status: 49 percent in 2003

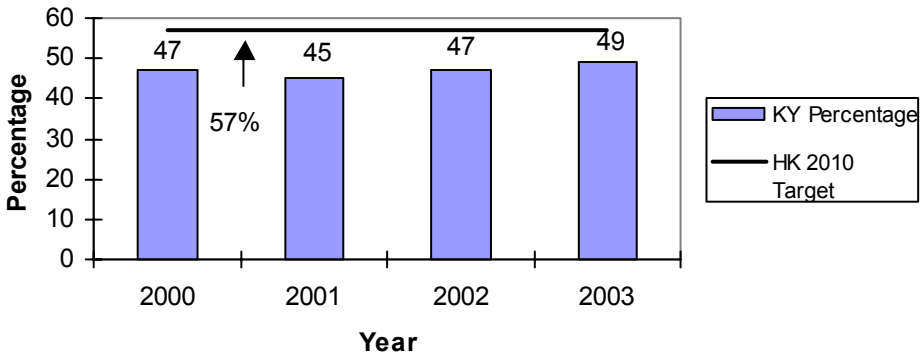

Figure 9.2 Percent of Oral Cancer Cases Diagnosed at Stage 0 (in situ) and 1 (local), Kentucky, 2000 - 2003 (Source: Kentucky Cancer Registry)

Strategies to Achieve Objective:

Current Strategies:

- Through educational efforts, promote screening of high-risk populations by dental and medical providers during regular visits
- Work with physicians and other health care providers to identify and target high-risk populations of snuff users and to develop and integrate oral cancer screenings with other screenings
- Implement Kentucky's Spit Tobacco Cessation Program in partnership with local health departments

Future Strategies:

- Develop a list of questions for screening and self-assessment for disbursement to high risk populations through health care providers

- Incorporate oral health information into school health programs

9.6. Increase the proportion of 8 year-olds, 12 year-olds and 15 year-olds who have received protective sealants in permanent molar teeth.

Data Sources: 2001 Children's Oral Health Profiles

Baseline: 29.1 percent of Kentucky 3rd and 6th graders have dental sealants.

HK 2010 Target: 50 percent

Mid-Decade Status: Same as baseline

Data Needs: On-going data collection is necessary and will be achieved through the Children's Oral Health Surveillance System which will begin collecting data in the fall of 2005.

Strategies to Achieve Objective:

Current Strategies:
- Implement Kentucky Children's Oral Health Surveillance System, fall 2005
- Continue Fluoride Varnish Program and Sealant Programs, in cooperation with local health departments
- Continue funding through HRSA/MCHB the Oral Health Collaborative Systems Grant
- Participate in Seal Kentucky, providing preventive sealants to children in Dental Professional Shortage Areas
- Continue to expand the base of health professionals who are working to reduce childhood decay, including physicians, nurses and other health providers

9.7. Increase the proportion of the population served by community water systems with optimally fluoridated water.

Data Source: Kentucky Oral Health Program Community Fluoridation Database

Baseline: 90 percent in 1996

HK 2010 Target: 95 percent or higher

Mid-Decade Status: 90 percent in 2004

Strategies to Achieve Objective:

Current Strategies:

- The Department for Public Health will continue to install equipment, provide maintenance, provide upgrades utilizing the latest technologies, and supply technical support to community water systems.
- Encourage local governments to expand water lines
- Explore ways to enhance referral from local health departments and the WIC Program for dental screening and consideration of oral supplements, when indicated
- Urge testing of private wells for fluoride content
- Provide oral supplements as needed

9.8. (Developmental) **Increase to at least 70 percent the proportion of children ages 6, 7, 12, and 15 who have participated in an oral health screening, including those who have been referred, and those who have received the appropriate follow-up.**

Note: There is currently an effort to establish a screening and referral system for these age groups. We anticipate that the first data from this system will be available before 2010.

9.9. Increase the proportion of adults aged 18 and older using the oral health care system (those who have visited a dentist at least once each year).

Data Source: BRFSS

Baseline: 62 percent in 1996

HK 2010 Target: 70 percent or higher

Mid-Decade Status: 69.8 percent in 2004

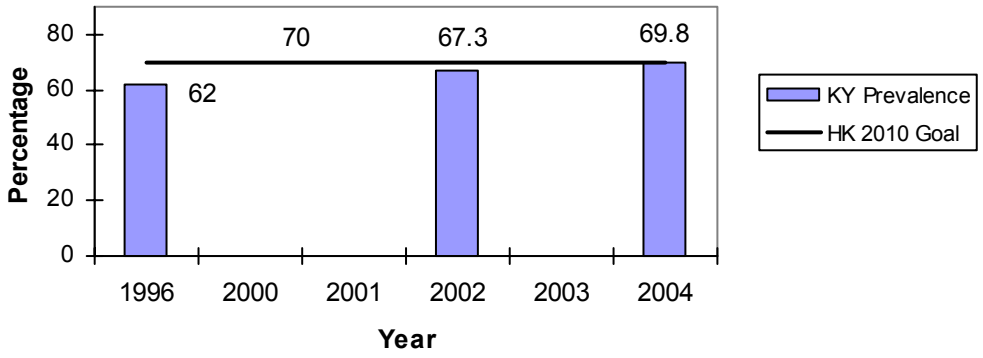

Figure 9.3 Percentage of Adult Kentuckians Who have Used the Oral Health System in the Past Year, Kentucky, 1996, 2002, and 2004 (Source: BRFSS)

Strategies to Achieve Objective:

Current Strategies:

- Collaborate with dentists, physicians and health educators to provide information to the public on the importance of keeping their teeth and the necessity of annual visits to an oral health care provider
- Collaborate with dental organizations to arrange screening opportunities (e.g. "screening days" at events such as the Kentucky State Fair, Bluegrass State Games, etc.)
- Support the expansion of regional dental clinics, mobile vans and other clinical resources to provide access to care for all of Kentucky's citizens
- Continue to expand the base of health professionals who are working to improve oral health, including physicians, nurses, and other health care providers

9.10. Increase to 100 percent the proportion of Family Resource Centers, Youth Service Centers and Family Resource/Youth Services Centers offering oral health education, screening, referral and follow-up activities. (DELETED)

Reason for Deletion: No current data source

9.11. (Developmental) **Increase the proportion of local health departments that have an oral health education component focusing on adults and children from infancy through 5 years of age.**

Data Source: Oral Health Program

Baseline: 25 percent in 1997

2010 Target: 100 percent

Mid-Decade Status: 90 percent in 2005

Strategies to Achieve Objective:

- Continue Kids Smile Screening and Fluoride Varnish Program as well as Sealant Programs, in cooperation with local health departments.
- Continued support of these programs from the state-level health educator
- Data collection from the Patient Services Reporting System (PSRS) regarding oral health education services
- Continued financial support of local health departments for oral health activities using state and federal funding sources.

9.12. (Developmental) **Design, implement and fund on-going oral health surveillance systems to include components to measure youth, adult, and elder oral health.**

Baseline: No systems exist as of 2000.

HK 2010 Target: Completion of surveys and surveillance system implementation

Mid-Decade Status:

- The Kentucky Children's Oral Health Profiles 2001 Survey (completed)
- The Kentucky Adult Oral Health Survey 2002 (completed)

Strategies to Achieve Objective:

Current Strategies:

- The Kentucky Elder Oral Health Survey to be completed in the fall of 2005
- The Children's Oral Health Surveillance System implemented in the fall of 2005
- Collaboration with the University of Louisville, the University of Kentucky and other academic health care professionals on these and other infrastructure activities
- Support for the Oral Health Program budget to include state funding as well as federal funding

Future Strategies:

- Kentucky Dental Workforce Analysis Survey to be completed in 2006
- Kentucky Adult Surveillance Program scheduled for implementation in 2006

9.13. (Developmental) **Enhance the capability of long term care facilities to provide oral examinations and initiate necessary prevention, education and oral health treatment services no later than 90 days after entry into these facilities.**

9.13R. (REVISION) Increase the proportion of long-term care residents who use the oral health care system each year.

Reason for Revision: The objective was revised to reflect the National 2010 objective.

Data Source: Kentucky Elder Oral Health Survey, 2005

Baseline: 28.3 percent in 2005

HK2010 Target: 50 percent

Mid-Decade Status: Same as baseline

Strategies to Achieve Objective:

Current Strategies:

- Collaborate with accreditation organizations to assure that facilities provide examinations and services
- Work with professional dental organizations to enhance dental access
- Collaborate with senior citizens agencies to assure nursing home residents and homebound elders have access to dental care

9.14. Ensure that Kentucky has a viable system for recording and referring infants and children up to age 5 with cleft lips, cleft palates, and other craniofacial anomalies to craniofacial anomaly rehabilitative teams.

Data Source: Kentucky Birth Surveillance Registry (KBSR)

Baseline: 18.3 (rate per 10,000) in 1998

HK 2010 Target: Statewide recording and referrals

Mid-Decade Status: 15.1 (rate per 10,000) in 2002

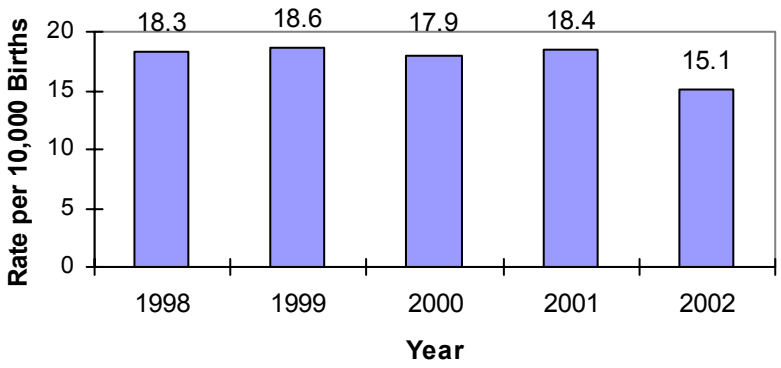

Figure 9.4 Cleft Lip/ Palate Prevalence Rates per 10,000 Births, Kentucky, (Source: KBSR and Vital Statistics Surveillance System ICD 9 Code 749-749.25)

The Kentucky Birth Surveillance Registry intends to develop referral systems starting in early 2006.

Data Needs: Continued support of the Kentucky Birth Surveillance Registry.

Strategies to Achieve Objective:

- Collaborate with appropriate agencies within the Cabinet for Health and Family Services to plan and implement a system for the timely referral of infants and children up to age 5 with cleft lip, cleft palates and other craniofacial anomalies to craniofacial anomaly teams.

9.15. (Developmental) **Increase the proportion of children ages 2 through 5 who have received at least one annual fluoride varnish application and oral health screening, including adequate referral and follow-up as needed.**

Data Source: KIDS SMILE Children's Screening and Fluoride Varnish Database.

Baseline: 2005
- 11 percent of children age 2
- 9 percent of children age 3
- 11 percent of children age 4
- 7 percent of children age 5

HK 2010 Target: 50 percent for all age categories

Mid-Decade Status: Same as baseline

Strategies to Achieve Objective:

Current Strategies:

- Continue and expansion of the KIDS SMILE initiative
- Continue to expand the number of health professional partners who are educated in the competencies associated with children's oral health screenings; through the KIDS Smile Program and other public health venues
- Support the expansion of regional dental clinics, mobile vans and other clinical resources to provide access to care for all of Kentucky's children
- Continue to expand the base of health professionals who are working to reduce childhood decay, including physicians, nurses, and other health providers

Future Strategies:

- Develop and implement a school-based dental care management program initially targeted to Medicaid and KCHIP populations
- Ultimately expand the program to all children in these age groups
- Explore ways to enhance the availability of adequate referral sources and follow-up

Terminology

BRFSS: Behavioral Risk Factor Surveillance System; an adult telephone survey co-sponsored by the Centers for Disease Control and Prevention (CDC) and the Kentucky Department for Public Health--a major source of adult oral health data.

COHSS: Children's Oral Health Surveillance System

Dental Caries: Dental Cavities (decay)

Dental Sealants: Clear or opaque plastic resinous materials designed for professional application to the pit-and-fissure surfaces of teeth. This material hardens into a thin, protective coating.

Edentulous: Loss of natural teeth without replacement.

Fluoride Varnish: A viscous, resinous lacquer which, when painted onto the teeth, incorporates into the enamel, thereby strengthening the child's teeth.

HRSA: The Health Resources and Services Administration, (Washington, D.C.)

Kentucky Birth Surveillance Registry: The Kentucky Birth Surveillance Registry (KBSR) is a state mandated surveillance system designed to provide information on the incidence, prevalence, trends and possible causes of stillbirths, birth defects, and disabling conditions.

KIDS SMILE: Kentucky Children's Oral Screening and Fluoride Varnish Application Program.

KIDS NOW: Kentucky's Early Childhood Initiative, providing funding for many children's health programs including KIDS SMILE.

MCHB: Maternal and Child Health Bureau (Washington, D.C.)

Oral Cancers: Cancers occurring in all sites of the oral cavity and pharynx.

Oral Health Collaborative Systems Grant: A federal grant provided by the Health Resources and Services Administration and the Maternal and Child Health Bureau which funds many of Kentucky's Oral Health Programs.

Oral Health Screening: A visual exam by a trained, certified health professional for the purpose of oral health disease status assessment and referral (if indicated).

Oropharyngeal Cancer: Cancer occurring in the oropharynx only, which is a portion of the pharynx extending from the place of the superior surface of the soft palate to the superior surface of the hyoid bone (or the floor of the vallecula).

Surveillance: On-going systematic review and analysis of health data for the purpose of assessment and policy development.

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9. Oral Health – Summary Tables

Summary of Objectives for Oral Health	Baseline	HK 2010 Target	Mid-Decade Status	Progress	Data Source
9.1. Reduce the proportion of children who have had one or more dental caries in the primary and permanent teeth (filled or unfilled)				N/A	COHSS
Children Ages 2-5	46.8% (2001)	≤15%	46.8% (2001)		
Children Ages 6 to 8	56.1%	≤40%	56.1%		
Children Age 12	56.1%	≤50%	56.1%		
Adolescents Age 15	No Data	≤55%	No Data		
9.2. Reduce the proportion of children with untreated cavities in the primary and permanent teeth (decayed teeth not filled)				N/A	COHSS
Children Ages 2-5	28.7% (2001)	≤12%	28.7% (2001)		
Children Ages 6 to 8	28.7%	≤22%	28.7%		
Children Age 12	28.7%	≤20%	28.7%		
Adolescents Age 15	No Data	≤15%	No Data		
9.3. (DELETED)					
9.4R. Reduce the proportion of Kentuckians 65+ who have lost all of their natural teeth (edentulous)	42.9% (1996)	≤20%	38.1% (2004)	Yes	BRFSS
9.5R. Increase the proportion of oral cancer lesions detected at Stage 0 and 1 (in situ and local).	47% (2000)	≥57%	49% (2003)	Yes	KCR
9.6. Increase the proportion of 8 year olds, 12 year olds and 15 year olds who have received protective sealants in permanent molar teeth.	29.1% of Kentucky 3rd & 6th graders have dental sealants. (2001)	≥50%	29.1% of Kentucky 3rd & 6th graders have dental sealants. (2001)	N/A	COHSS
9.7. Increase proportion of the population served by community water systems with optimally fluoridated water.	90% of Kentucky's population received optimally fluoridated water in 1996.	≥95%	90% (2004)	No	Fluoridation Database
9.8. Increase the proportion of children aged 6, 8, 12 and 15 who have received an oral health screening.	TBD	≥70% of children Ages 6, 8, 12 and 15.	TBD	TBD	COHSS

Summary of Objectives for Oral Health	Baseline	HK 2010 Target	Mid-Decade Status	Progress	Data Source
9.9. Increase the proportion of adults aged 18 and older using the oral health care system each year.	62% of Kentuckian visited a dentist or dental clinic within the past 12 months. (1996)	≥70%	69.8% (2004)	Yes	BRFSS
9.10. (DELETED)					
9.11. (Developmental) Increase the proportion of local health departments that have an oral health education component focusing on adults and children from infancy though 5 years of age.	25% (1997)	100%	90% (2005)	Yes	Local Health Dept. Survey
9.12. (Developmental) Design, implement and fund on-going oral health surveillance systems to include components to measure youth, adult and elder oral health	No systems in 2000	Surveill-ance Systems in Place	Children Adult and Elder Oral Health Surveys Completed	Yes	COHSS; Adult Oral Health Survey
9.13R. Increase the proportion of long term care residents who use the oral health care system each year.	28.3% (2005)	≥50%	28.3% (2005)	N/A	Elder Oral Health Survey
9.14. Insure that Kentucky has a viable system for recording and referring all infants and children up to age 5 with cleft lip, cleft palate and other craniofacial anomalies to craniofacial anomaly rehabilitative teams.	KBSR system in place	Referral system in operation	KBSR system in place	Yes	KBSR
9.15. (Developmental) Increase the proportion of children ages 2 through 5 who have received at least one annual fluoride varnish application and oral health screening, including adequate referral and follow-up as needed.				N/A	KIDS SMILE Database
Age 2	11% (2005)	≥50%	11% (2005)		
Age 3	9%	≥50%	9%		
Age 4	11%	≥50%	11%		
Age 5	7%	≥50%	7%		

R = Revised objective
N/A = Only baseline data are available. Not able to determine progress at this time.
TBD = To be determined. No reliable data currently exist.