Midcourse Review

HEALTHY PEOPLE 2010

Oral Health 21

Co-Lead Agencies:

Centers for Disease Control and Prevention
Health Resources and Services Administration
Indian Health Service
National Institutes of Health

Contents

Goal: Prevent and control oral and craniofacial diseases, conditions, and injuries and improve access to related services.

Introduction*

The health of the mouth and surrounding craniofacial structures is integral to an individual's total health throughout his or her life. Oral and craniofacial diseases and conditions include dental caries, periodontal diseases, cleft lip and palate, oral and facial pain, and oral and pharyngeal cancers.

The improvement of America's oral health over the past 50 years is a public health success story: Most of the gains have resulted from application of effective prevention and control measures.[1] The burden of oral diseases falls hardest on those persons who have the least access to prevention and treatment. Access to care is associated with socioeconomic factors such as race and ethnicity, education level, and income.[2] Profound disparities exist in some oral disease levels and in receipt of care among various populations in the United States.

Meeting objectives in this focus area presents a range of public health challenges, which encompass increasing oral health awareness, improving overall quality of life, and decreasing oral health disparities. These objectives provide direction and tracking opportunities for implementing a National Call to Action to Promote Oral Health, an initiative of public-private organizations to promote oral health, prevent diseases, and reduce oral health disparities. The initiative emanates from *Oral Health in America: A Report of the Surgeon General*.[1, 2]

Modifications to Objectives and Subobjectives

The following discussion highlights the modifications, including changes, additions, and deletions, to this focus area's objectives and subobjectives as a result of the midcourse review.

Two developmental objectives, school-based health centers with an oral health component (21-13) and health agency dental programs (21-17), became measurable. The data source for school-based health centers with an oral health component (21-13) changed to the National Assembly on School-Based Health Care. The data source for health agency dental programs (21-17) is now survey data from the Association of State and Territorial Dental Directors and the Indian Health Service's (IHS's) Division of Oral Health. Subobjectives were established for school-based health centers with an oral health component (21-13a and b) and for State and local health agencies (including the District of Columbia) (21-17a) and for Tribal health programs (21-17b). The objective for health centers with oral health service components (21-14) was changed to incorporate expert opinion as a new target setting method.

---

* Unless otherwise noted, data referenced in this focus area come from Healthy People 2010 and can be located at http://wonder.cdc.gov/data2010. See the section on DATA2010 in the Technical Appendix for more information.

Progress Toward Healthy People 2010 Targets

The following discussion highlights objectives that met or exceeded their 2010 targets; moved toward the targets, demonstrated no change, or moved away from the targets; and those that lacked data to assess progress. Progress is illustrated in the Progress Quotient bar chart (see Figure 21-1), which displays the percent of targeted change achieved for objectives and subobjectives with sufficient data to assess progress.

Objectives that met or exceeded their targets. No objectives in the Oral Health focus area met or exceeded their targets.

Objectives that moved toward their targets. Limited progress was made toward reaching the dental caries objectives (21-1 and 21-2). Exceptions occurred primarily among the adolescent population. Between 1988–94 and 1999–2002, the proportion of 15-year-olds with dental caries (21-1c) declined from 61 percent to 57 percent, achieving 40 percent of the targeted change for this objective. This reduction in caries was likely due to increased use of dental sealants.[3] During the same period, the proportion of 15-year-olds with untreated tooth decay (21-2c) dropped from 20 percent to 18 percent, achieving 40 percent of the targeted change.

Smaller gains were noted for children aged 6 to 8 years. Between 1988–94 and 1999–2002, children aged 6 to 8 years achieved 10 percent of the targeted change for dental caries experience (21-1b) and 14 percent of the targeted change for untreated dental decay (21-2b). During the same period, 8 percent of the targeted change in untreated dental decay among persons aged 35 to 44 years (21-2d) was achieved.

The proportion of persons aged 35 to 44 years with no permanent tooth loss (21-3) increased from 30 percent in 1988–94 to 38 percent in 1999–2002, achieving 80 percent of the targeted change. During the same period, 71 percent of the targeted change was achieved for complete tooth loss among persons aged 65 to 74 years (21-4). Destructive periodontal disease in persons aged 35 to 44 years (21-5b) decreased from 22 percent of this population in 1988–94 to 20 percent in 1999–2000, attaining 25 percent of the targeted change for this objective.

The proportion of children who have received dental sealants on their molar teeth (21-8) increased between 1988–94 and 1999–2002. During that period, 30 percent of the targeted change for 8-year-olds (21-8a) was achieved, as was 14 percent of the targeted change for 14-year-olds (21-8b).

Between 1992 and 2002, the proportion of the U.S. population served by community water fluoridation (21-9) increased from 62 percent to 67 percent, moving toward the target of 75 percent. This result represented a 38 percent achievement of the targeted change.

The proportion of low-income persons under 19 years of age receiving preventive dental services in the past year (21-12) increased from 25 percent in 1996 to 29 percent in 2002. This movement toward the target of 66 percent was 10 percent of the targeted change. Finally, the proportion of community health centers with an oral health component (21-14) increased from 52 percent in 1997 to 64 percent in 2003, achieving 52 percent of the targeted change.

Objectives that demonstrated no change. Between 1996 and 2002, the proportion of persons aged 2 years and older who visit the dentist annually (21-10) remained constant at 44 percent.

Objectives that moved away from their targets. The proportion of children aged 2 to 4 years with dental caries (21-1a) increased from 18 percent in 1988–94 to 22 percent in 1999–2002, moving away from the target of 11 percent. During this period, the proportion of untreated dental decay in this population (21-2a) also increased from 16 percent to 17 percent, moving away from the target of 9 percent. The proportion of oral and pharyngeal cancers detected at an early stage (21-6) moved away from its target between 1990–95 and 1996–2000. Finally, although the target for the number of IHS and Tribal dental programs (21-17b) had been achieved at baseline (2003), the number of programs declined between 2003 and 2004, moving this objective away from its target.

Objectives that could not be assessed. Reduction of gingivitis in adults (21-5a) was not assessed because of changes in the data collection protocol. Data to assess progress were not available for objectives covering school-based health centers with an oral health component (21-13a and b) or State and local dental programs (21-17a). Because of limited tracking data, four objectives could not be assessed for progress: annual examinations for oral and pharyngeal cancers (21-7), use of the oral health care system by residents in long-term care facilities (21-11), referral for cleft lip or palate (21-15), and oral and craniofacial State-based surveillance systems (21-16).

Progress Toward Elimination of Health Disparities

The following discussion highlights progress toward the elimination of health disparities. The disparities are illustrated in the Disparities Table (see Figure 21-2), which displays information about disparities among select populations for which data were available for assessment.

The white non-Hispanic population had the best rates for 11 of the 12 objectives and subobjectives with racial and ethnic disparities of at least 10 percent. The largest racial and ethnic disparity was observed in untreated dental decay among persons aged 35 to 44 years (21-2d). Among the black non-Hispanic population, the rate for decay was more than twice the rate of the white non-Hispanic population. Women had better rates than men for four of the six objectives with gender disparities of at least 10 percent. Most gender disparities were less than 50 percent.

Persons with at least some college had the best rates for 9 of the 10 objectives and subobjectives with education disparities of at least 10 percent. Children aged 2 to 4 years living in households headed by persons with less than a high school education had rates for dental caries (21-1a) and untreated dental decay (21-2a) that were more than double the rates of children living in households headed by persons with at least some college. Persons aged 35 to 44 years with high school and less than a high school education had rates for untreated dental decay (21-2d) twice that of persons with at least some college. Similarly, the rate for destructive periodontal disease (21-5b) among persons with less than a high school education was almost three times the rate of persons with at least some college.

Among many of the objectives in this focus area, the trend in disparities remained unchanged for race and ethnicity, gender, and education levels. However, there were some changes. The disparity between men and women with no permanent tooth loss (21-3) increased between 1988–94 and 1999–2002. Between 1988–94 and 1999–2000, the disparity in the proportion of persons with destructive periodontal disease (21-5b) between the Mexican American and the white non-Hispanic populations narrowed. The disparity in the proportion of persons who have annual dental visits (21-10) increased between the Hispanic and white non-Hispanic populations.

Opportunities and Challenges

Opportunities and challenges are numerous in this focus area. Challenges likely exceed the opportunities because barriers inhibiting access to dental preventive and restorative care continue to affect many select populations. Access to care generally refers to one-to-one delivery of health care, whether it is preventive or treatment by a health care provider to an individual patient. Access remains a problem, especially for residents in rural areas or inner cities (where dentists are less likely to locate), select racial and ethnic populations, children, older individuals, and persons in lower socioeconomic populations.

Since the late 1980s, the number of available dentists per 100,000 people has dropped from 57 to 48, a decrease of approximately 16 percent.[3] This trend is likely to continue in the immediate future because dental school enrollments are projected to remain steady and the large cohort of practitioners who graduated at the time of maximum class size as a result of the 1971 Health Professions Act[4] is now nearing retirement. Moreover, many private dental practitioners do not accept Medicaid payment nor do they locate their practices in rural or low-income areas.[5, 6, 7, 8, 9] However, because productivity is also influenced by use of auxiliary personnel and treatment choices, the number of dentists is not the only key determinant related to limited access to care.

Geographic isolation is another major challenge to providing readily accessible care. For example, Alaskan Tribal programs experience a 25 percent vacancy rate and a 30 percent average annual turnover rate for dentists.[10] The Alaska Dental Health Aide Program (ADHAP) is an initiative that is addressing geographic and dental access challenges. A component of the 38-year-old Community Health Aid Program (CHAP) operated by the Alaska Native Tribal Health Consortium and authorized by Federal law only in that State,[11] ADHAP sends individuals from remote villages for training to be dental health aides in six levels. These individuals are certified by CHAP to provide care either by direct or general supervision of a dentist. Other initiatives using different types of health aides or expanded duty auxiliary personnel also are under way.

The dental caries process is complex and includes diet, such as carbohydrates, especially those highly refined, as well as infectious agents and host factors. A challenge for oral health as for obesity is the amount and types of high carbohydrate foods and drinks available. Frequent consumption of such foods and beverages is associated with a higher risk of dental decay.[12] The *2005 Dietary Guidelines for Americans* includes a key recommendation to "reduce the incidence of dental caries by practicing good oral hygiene and consuming sugar- and starch-containing foods and beverages less frequently."[13] Changing eating behaviors is difficult to achieve and will require complex and multifaceted interventions. Equally challenging will be establishing policy among schools to change what is offered from vending machines and à la carte school lunches.

Healthy People 2010 serves as a framework to help the Nation understand oral health disparities. Policy development, program planning, and resource allocation and monitoring can be implemented more effectively through the use of standardized data to identify high-risk populations and to develop strategies for addressing the root causes of oral health disparities. These causes include lack of access to preventive and restorative services and poor oral health literacy.[10, 14]

Several initiatives have been launched by the U.S. Department of Health and Human Services to address dental disparities. The National Institute of Dental and Craniofacial Research (NIDCR) has supported five disparity centers that will provide new information related to disease prevention among high-risk populations. The National Institutes of Health has launched a program to fund studies on health literacy,

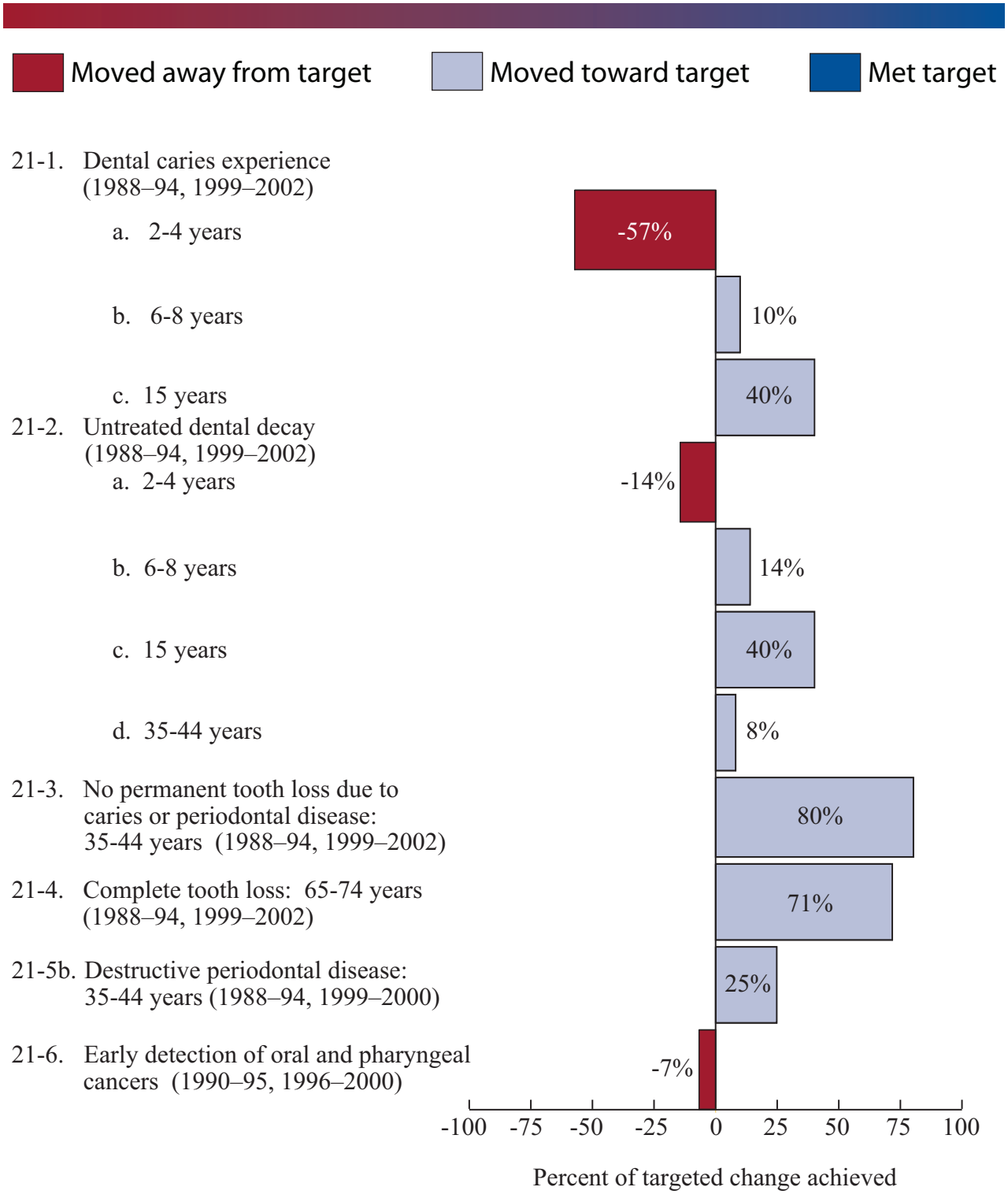
which NIDCR is supporting.[13] The Centers for Disease Control and Prevention (CDC) has continued to support preventive activities, which include expanding fluoridation programs, supporting sealant programs in school-based and school-linked settings, and developing cost-effective surveillance measures for periodontal disease.[15, 16] CDC issued a program announcement (03022) to fund States to address oral health disparities by describing the burden of oral disease and targeting populations with disparities by the expansion of sealant and fluoridation programs.

Emerging Issues

Emerging issues are likely to affect further progress in this focus area. For example, the role of health literacy on oral health outcomes is a relatively new concept to dentistry. Health literacy has been shown to have a major impact on chronic diseases such as diabetes and heart disease. To date, such studies involving oral health have not occurred, but research is beginning in this area and may prove very helpful in achieving these objectives. For example, if a parent does not understand the potential benefits of fluoride toothpaste use and does not encourage his or her child to use it, the child is at high risk for dental decay.

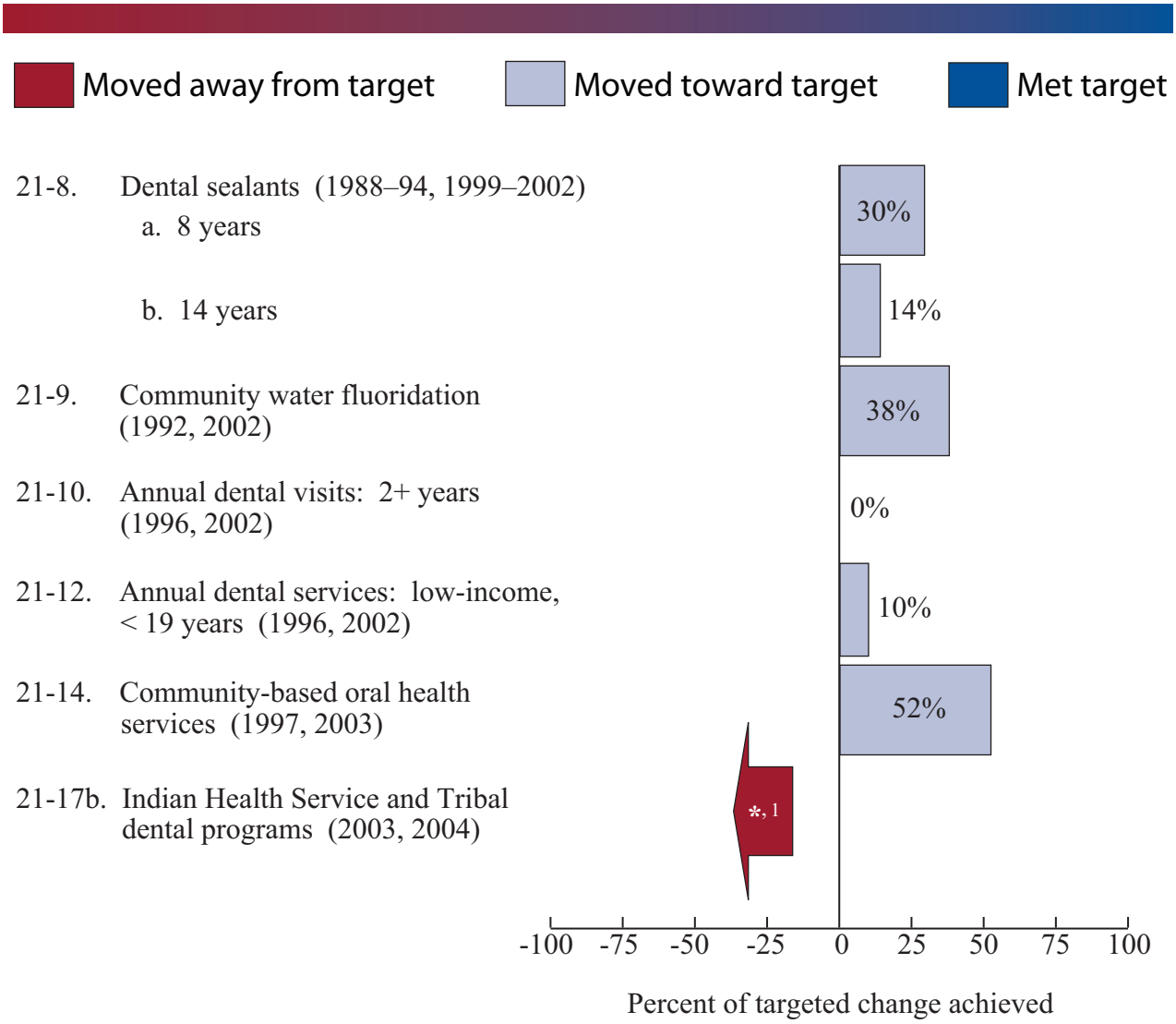
Another emerging issue is the use of fluoride varnish as a preventive measure. A recent study demonstrated that caries rates can be reduced among young children with the application of fluoride varnish by a health care provider.[17] One approach that could be effective is the application of fluoride varnish by nondental providers. Often a physician is the first health care provider to see young children at risk for dental decay. Because many poor and select racial and ethnic populations often face barriers in receiving early dental care, the time period between a child's first medical and first dental appointments can be great. Some programs, including State Medicaid programs, are encouraging physicians and members of their staff in both private practice and in community health programs to apply fluoride varnish to the teeth of their preschool patients at risk for dental decay. Use of fluoride varnish should include an educational component about the need for future applications of fluoride both in the home and at the dental clinic and the need for a dental home for themselves and their children.[18]

Figure 21-1. Progress Quotient Chart for Focus Area 21: Oral Health



See notes at end of chart. *(continued)*

Figure 21-1. *(continued)*



Notes: Tracking data for objectives 21-5a, 21-7, 21-11, 21-13a and b, 21-15, 21-16, and 21-17a are unavailable.

Years in parentheses represent the baseline data year and the most recent data year used to compute the percent of the Healthy People 2010 target achieved.

$$\text{Percent of targeted change achieved} = \left(\frac{\text{Most recent value} - \text{baseline value}}{\text{Year 2010 target} - \text{baseline value}}\right) \times 100$$

* Percent of target achieved cannot be calculated.
[1] The most recent value is 8; the baseline and target values are 9.

Figure 21-2. Disparities Table for Focus Area 21: Oral Health

Disparities from the best group rate for each characteristic at the most recent data point and changes in disparity from the baseline to the most recent data point.

Population-based objectives	Characteristics: Race and ethnicity: American Indian or Alaska Native	Asian	Native Hawaiian or other Pacific Islander	Two or more races	Hispanic or Latino	Black non-Hispanic	White non-Hispanic	**Summary index**	Gender: Female	Male	Education: Less than high school	High school graduate	At least some college	**Summary index**	Disability: Persons with disabilities	Persons without disabilities
21-1a. Dental caries experience: 2-4 years (1988-94, 1999-2002) *	1	1			2	B	b		B		3	3	B[3]	3		
21-1b. Dental caries experience: 6-8 years (1988-94, 1999-2002) *	1	1			2		B		B		3	3	B[3]	3		
21-1c. Dental caries experience: 15 years (1988-94, 1999-2002) *	1				B[2]					B	B[3]	3	3	3		
21-2a. Untreated dental decay: 2-4 years (1988-94, 1999-2002) *	1	1	1		2						3	3	B[3]	3		
21-2b. Untreated dental decay: 6-8 years (1988-94, 1999-2002) *	1	1			2	B	b				3	B[3]	b[3]			
21-2c. Untreated dental decay: 15 years (1988-94, 1999-2002) *	1				2						3					
21-2d. Untreated dental decay: 35-44 years (1988-94, 1999-2002) *	1				2		B		B		3	3	B[3]	3		
21-3. No permanent tooth loss: 35-44 years (1988-94, 1999-2002) *	1				2		B		↑	B			B			
21-4. Complete tooth loss: 65-74 years (1988-94, 1999-2002) *					b[2]		B									
21-5a. Periodontal diseases, gingivitis: 35-44 years (1988-94) †	1				2		B		B				B			
21-5b. Destructive periodontal disease: 35-44 years (1988-94, 1999-2000) †	1				B[4]↓	↓		↓	B		↑		B	↑		
21-6. Early detection of oral and pharyngeal cancers (1990-95, 1996-2000) †							B		B							
21-7. Annual examinations for oral and pharyngeal cancers (1998) *		5					B		B				B			
21-8a. Dental sealants: 8 years (1988-94, 1999-2002) *	1		1		2		B			B			3			
21-8b. Dental sealants: 14 years (1988-94, 1999-2002) *	1				2		B			B			3			
21-10. Annual dental visits (1996, 2002) *			b		↑		B		B				B			B
21-11. Annual use of oral health care system by residents in long-term care facilities (1997) *						B				B						
21-12. Annual dental services for low-income youth (1996, 2002) *	b		b				B			B						

(continued)

Figure 21-2. *(continued)*

Notes: Data for objectives 21-9, 21-13a and b, 21-14 through 21-16, and 21-17a and b are unavailable or not applicable.

Years in parentheses represent the baseline data year and the most recent data year (if available).

Disparity from the best group rate is defined as the percent difference between the best group rate and each of the other group rates for a characteristic (for example, race and ethnicity). The summary index is the average of these percent differences for a characteristic. Change in disparity is estimated by subtracting the disparity at baseline from the disparity at the most recent data point. Change in the summary index is estimated by subtracting the summary index at baseline from the summary index at the most recent data point. See Technical Appendix for more information.

The **best group rate** at the most recent data point.	B The group with the best rate for specified characteristic.	b Most favorable group rate for specified characteristic, but reliability criterion not met.		Best group rate reliability criterion not met.
	Percent difference from the best group rate			
Disparity from the best group rate at the most recent data point.	Less than 10 percent or not statistically significant	10-49 percent	50-99 percent	100 percent or more
	Increase in disparity (percentage points)			
Changes in disparity over time are shown when the change is greater than or equal to 10 percentage points and statistically significant, or when the change is greater than or equal to 10 percentage points and estimates of variability were not available.	↑ 10-49	↑↑ 50-99	↑ ↑↑	100 or more
	Decrease in disparity (percentage points)			
	↓ 10-49	↓↓ 50-99	↓↓ ↓	100 or more
Availability of data.	Data not available.		Characteristic not selected for this objective.	

* The variability of best group rates was assessed, and disparities of ≥ 10% are statistically significant at the 0.05 level. Changes in disparity over time, noted with arrows, are statistically significant at the 0.05 level. See Technical Appendix.

† Measures of variability were not available. Thus, the variability of best group rates was not assessed, and the statistical significance of disparities and changes in disparity over time could not be tested. See Technical Appendix.

[1] Disparity not shown because data come from a different source for a different time period.

[2] Data are for Mexican Americans.

[3] Baseline data only.

[4] Disparity declined for Mexican Americans relative to white non-Hispanics, the group with the best rate at baseline.

[5] Data are for Asians or Pacific Islanders.

Objectives and Subobjectives for Focus Area 21: Oral Health

Goal: Prevent and control oral and craniofacial diseases, conditions, and injuries and improve access to related services.

As a result of the Healthy People 2010 Midcourse Review, changes were made to the Healthy People 2010 objectives and subobjectives. These changes are specific to the following situations:

- Changes in the wording of an objective to more accurately describe what is being measured.
- Changes to reflect a different data source or new science.
- Changes resulting from the establishment of a baseline and a target (that is, when a formerly developmental objective or subobjective became measurable).
- Deletion of an objective or subobjective that lacked a data source.
- Correction of errors and omissions in *Healthy People 2010.*

Revised baselines and targets for measurable objectives and subobjectives do not fall into any of the above categories and, thus, are not considered a midcourse review change.[1]

When changes were made to an objective, three sections are displayed:

1. In the Original Objective section, the objective as published in *Healthy People 2010* in 2000 is shown.
2. In the Objective With Revisions section, strikethrough indicates text deleted, and underlining is used to show new text.
3. In the Revised Objective section, the objective appears as revised as a result of the midcourse review.

Details of the objectives and subobjectives in this focus area, including any changes made at the midcourse, appear on the following pages.

[1] See Technical Appendix for more information on baseline and target revisions.

NO CHANGE IN OBJECTIVE

21-1. Reduce the proportion of children and adolescents who have dental caries experience in their primary or permanent teeth.

21-1a. Reduce the proportion of young children with dental caries experience in their primary teeth.

Target: 11 percent.

Baseline: 18 percent of children aged 2 to 4 years had dental caries experience in 1988–94.

Target setting method: Better than the best.

Data sources: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS; Oral Health Survey of Native Americans, 1999, IHS; California Oral Health Needs Assessment of Children, Dental Health Foundation, 1993–94.

21-1b. Reduce the proportion of children with dental caries experience in their primary and permanent teeth.

Target: 42 percent.

Baseline: 52 percent of children aged 6 to 8 years had dental caries experience in 1988–94.

Target setting method: Better than the best.

Data sources: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS; Oral Health Survey of Native Americans, 1999, IHS; California Oral Health Needs Assessment of Children, 1993–94, Dental Health Foundation; Hawai'i Children's Oral Health Assessment, 1999, State of Hawaii Department of Health.

21-1c. Reduce the proportion of adolescents with dental caries experience in their permanent teeth.

Target: 51 percent.

Baseline: 61 percent of adolescents aged 15 years had dental caries experience in 1988–94.

Target setting method: Better than the best.

Data sources: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS; Oral Health Survey of Native Americans, 1999, IHS; California Oral Health Assessment of Children, 1993–94, Dental Health Foundation.

NO CHANGE IN OBJECTIVE

21-2. Reduce the proportion of children, adolescents, and adults with untreated dental decay.

21-2a. Reduce the proportion of young children with untreated dental decay in their primary teeth.

Target: 9 percent.

Baseline: 16 percent of children aged 2 to 4 years had untreated dental decay in 1988–94.

Target setting method: Better than the best.

Data sources: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS; Oral Health Survey of Native Americans, 1999, IHS; California Oral Health Needs Assessment of Children, 1993–94, Dental Health Foundation.

21-2b. Reduce the proportion of children with untreated dental decay in primary and permanent teeth.

Target: 21 percent.

Baseline: 29 percent of children aged 6 to 8 years had untreated dental decay in 1988–94.

Target setting method: Better than the best.

Data sources: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS; Oral Health Survey of Native Americans, 1999, IHS; California Oral Health Needs Assessment of Children, 1993–94, Dental Health Foundation; Hawai'i Children's Oral Health Assessment, 1999, State of Hawaii Department of Health.

21-2c. Reduce the proportion of adolescents with untreated dental decay in their permanent teeth.

Target: 15 percent.

Baseline: 20 percent of adolescents aged 15 years had untreated dental decay in 1988–94.

Target setting method: Better than the best.

Data sources: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS; Oral Health Survey of Native Americans, 1999, IHS; California Oral Health Needs Assessment of Children, 1993–94, Dental Health Foundation.

NO CHANGE IN OBJECTIVE *(continued)*

21-2d. Reduce the proportion of adults with untreated dental decay.

Target: 15 percent.

Baseline: 27 percent of adults aged 35 to 44 years had untreated dental decay in 1988–94.

Target setting method: Better than the best.

Data sources: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS; Oral Health Survey of Native Americans, 1999, IHS.

NO CHANGE IN OBJECTIVE (Data updated and footnoted)

21-3. Increase the proportion of adults who have never had a permanent tooth extracted because of dental caries or periodontal disease.

Target: 40[1] percent.

Baseline: 30[2] percent of adults aged 35 to 44 years had never had a permanent tooth extracted because of dental caries or periodontal disease in 1988–94.

Target setting method: Better than the best.

Data sources: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS; Oral Health Survey of Native Americans, 1999, IHS.

[1] Target revised from 42 because of baseline revision after November 2000 publication.
[2] Baseline revised from 31 after November 2000 publication.

NO CHANGE IN OBJECTIVE (Data updated and footnoted)

21-4. Reduce the proportion of older adults who have had all their natural teeth extracted.

Target: 22[1] percent.

Baseline: 29[2] percent of adults aged 65 to 74 years had lost all of their natural teeth in 1997.

Target setting method: Better than the best.

Data sources: National Health and Nutrition Examination Survey (NHANES),[3] CDC, NCHS; Oral Health Survey of Native Americans, 1999, IHS.

NO CHANGE IN OBJECTIVE *(continued)*
(Data updated and footnoted)

[1] Target revised from 20 because of baseline revision after November 2000 publication.
[2] Baseline revised from 26 after November 2000 publication.
[3] Data source revised from National Health Interview Survey (NHIS) after November 2000 publication.

NO CHANGE IN OBJECTIVE

21-5. Reduce periodontal disease.

Target and baseline:

Objective	Reduction in Periodontal Disease in Adults Aged 35 to 44 Years	1988–94 Baseline	2010 Target
		Percent	
21-5a.	Gingivitis	48	41
21-5b.	Destructive periodontal disease	22	14

Target setting method: Better than the best.

Data sources: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS; Oral Health Survey of Native Americans, 1999, IHS.

NO CHANGE IN OBJECTIVE
(Data updated and footnoted)

21-6. Increase the proportion of oral and pharyngeal cancers detected at the earliest stage.

Target: 51[1] percent.

Baseline: 36[2] percent of oral and pharyngeal cancers (stage I, localized) were detected in 1990–95.

Target setting method: Better than the best.

Data source: Surveillance, Epidemiology, and End Results (SEER), NIH, NCI.

[1] Target revised from 50 because of baseline revision after November 2000 publication.
[2] Baseline revised from 35 after November 2000 publication.

NO CHANGE IN OBJECTIVE

21-7. Increase the proportion of adults who, in the past 12 months, report having had an examination to detect oral and pharyngeal cancers.

Target: 20 percent.

NO CHANGE IN OBJECTIVE *(continued)*

Baseline: 13 percent of adults aged 40 years and older reported having had an oral and pharyngeal cancer examination in 1998 (age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Health Interview Survey (NHIS), CDC, NCHS.

NO CHANGE IN OBJECTIVE (Data updated and footnoted)

21-8. Increase the proportion of children who have received dental sealants on their molar teeth.

Target and baseline:

Objective	Increase in Children Receiving Dental Sealants on Their Molar Teeth	1988–94 Baseline	2010 Target
		Percent	
21-8a.	Children aged 8 years	23	50
21-8b.	Adolescents aged 14 years	15	50

Target setting method: Better than the best.

Data sources: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS; Oral Health Survey of Native Americans, 1999, IHS; Hawai'i Children's Oral Health Assessment, 1999, State of Hawaii Department of Health.

NO CHANGE IN OBJECTIVE

21-9. Increase the proportion of the U.S. population served by community water systems with optimally fluoridated water.

Target: 75 percent.

Baseline: 62 percent of the U.S. population was served by community water systems with optimally fluoridated water in 1992.

Target setting method: 21 percent improvement.

Data source: CDC Fluoridation Census, CDC, NCCDPHP.

NO CHANGE IN OBJECTIVE

21-10. Increase the proportion of children and adults who use the oral health care system each year.

Target: 56 percent.

Baseline: 44 percent of persons aged 2 years and older in 1996 visited a dentist during the previous year (age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: Medical Expenditure Panel Survey (MEPS), AHRQ.

NO CHANGE IN OBJECTIVE

21-11. Increase the proportion of long-term care residents who use the oral health care system each year.

Target: 25 percent.

Baseline: 19 percent of all nursing home residents received dental services in the past month in 1997.

Target setting method: 32 percent improvement. (Better than the best will be used when data are available.)

Data source: National Nursing Home Survey, CDC, NCHS.

NO CHANGE IN OBJECTIVE
(Data updated and footnoted)

21-12. Increase the proportion of low-income children and adolescents who received any preventive dental service during the past year.

Target: 66[1] percent.

Baseline: 25[2] percent of children and adolescents under age 19 years at or below 200 percent of the Federal poverty level received any preventive dental service in 1996.

Target setting method: Better than the best.

Data source: Medical Expenditure Panel Survey (MEPS), AHRQ.

[1] Target revised from 57 because of baseline revision after November 2000 publication.
[2] Baseline revised from 20 after November 2000 publication.

ORIGINAL OBJECTIVE

21-13. (Developmental) Increase the proportion of school-based health centers with an oral health component.

Potential data source: School Health Policies and Programs Study (SHPPS), CDC, NCCDPHP.

OBJECTIVE WITH REVISIONS

21-13. ~~(Developmental)~~ Increase the proportion of school-based health centers with an oral health component.

Target and baseline:

Objective	Increase in the Proportion of School-Based Health Centers With an Oral Health Component	2001–02 Baseline	2010 Target
		Percent	
21-13a.	Dental sealants	12	15
21-13b.	Dental care	9	11

Target setting method: 25 percent improvement.

~~Potential d~~Data source: School ~~Health Policies and Programs Study (SHPPS), CDC, NCCDPHP~~-Based Health Care Census, National Assembly of School-Based Health Care.

REVISED OBJECTIVE

21-13. Increase the proportion of school-based health centers with an oral health component.

Target and baseline:

Objective	Increase in the Proportion of School-Based Health Centers With an Oral Health Component	2001–02 Baseline	2010 Target
		Percent	
21-13a.	Dental sealants	12	15
21-13b.	Dental care	9	11

Target setting method: 25 percent improvement.

Data source: School-Based Health Care Census, National Assembly of School-Based Health Care.

ORIGINAL OBJECTIVE

21-14. Increase the proportion of local health departments and community-based health centers, including community, migrant, and homeless health centers, that have an oral health component.

Target: 75 percent.

Baseline: 34 percent of local jurisdictions and health centers had oral health components in 1997.

Target setting method: 19 percent improvement.

Data source: HRSA, Bureau of Primary Health Care (BPHC).

OBJECTIVE WITH REVISIONS

21-14. Increase the proportion of local health departments and community-based health centers, including community, migrant, and homeless health centers, that have an oral health component.

Target: 75 percent.

Baseline: ~~34~~52 percent of local jurisdictions and health centers had oral health components in 1997.

Target setting method: ~~19 percent improvement~~Expert opinion.

Data source: HRSA, Bureau of Primary Health Care (BPHC).

REVISED OBJECTIVE

21-14. Increase the proportion of local health departments and community-based health centers, including community, migrant, and homeless health centers, that have an oral health component.

Target: 75 percent.

Baseline: 52 percent of local jurisdictions and health centers had oral health components in 1997.

Target setting method: Expert opinion.

Data source: HRSA, Bureau of Primary Health Care (BPHC).

NO CHANGE IN OBJECTIVE
(Data updated and footnoted)

21-15. Increase the number of States and the District of Columbia that have a system for recording and referring infants and children with cleft lips, cleft palates, and other craniofacial anomalies to craniofacial anomaly rehabilitative teams.

Target: All States and the District of Columbia.

Baseline: 16 States and the District of Columbia had systems for recording and referring children with craniofacial anomalies in 2003.[1]

Target setting method: Total coverage.

Data source: Association of State and Territorial Dental Directors.[2]

[1] Baseline revised from 23 after November 2000 publication.
[2] Data source revised from Survey of State Dental Directors, Illinois State Health Department, after November 2000 publication.

NO CHANGE IN OBJECTIVE

21-16. Increase the number of States and the District of Columbia that have an oral and craniofacial health surveillance system.

Target: All States and the District of Columbia.

Baseline: No States or the District of Columbia had oral and craniofacial health surveillance systems in 1999.

Target setting method: Total coverage.

Data source: Association of State and Territorial Dental Directors.

ORIGINAL OBJECTIVE

21-17. (Developmental) Increase the number of Tribal, State (including the District of Columbia), and local health agencies that serve jurisdictions of 250,000 or more persons that have in place an effective public dental health program directed by a dental professional with public health training.

Potential data sources: Association of State and Territorial Dental Directors; IHS.

OBJECTIVE WITH REVISIONS

21-17. ~~(Developmental)~~ Increase the number of ~~Tribal, State (including the District of Columbia), and local~~ health agencies that ~~serve jurisdictions of 250,000 or more persons that~~ have ~~in place an effective~~ a public dental health program directed by a dental professional with public health training.

OBJECTIVE WITH REVISIONS *(continued)*

Target and baseline:

Objective	Increase in the Number of Health Agencies That Have a Public Dental Health Program Directed by a Dental Professional With Public Health Training	2003 Baseline	2010 Target
		Number	
21-17a.	For State (including the District of Columbia) and local health agencies that serve jurisdictions of 250,000 or more persons (out of 191)	39	41
21-17b.	For Indian Health Service Areas and Tribal health programs that serve jurisdictions of 30,000 or more persons (out of 27)	9	9

Target setting method: 5 percent improvement.

~~Potential d~~Data sources: Association of State and Territorial Dental Directors; Division of Oral Health, IHS.

REVISED OBJECTIVE

21-17. Increase the number of health agencies that have a public dental health program directed by a dental professional with public health training.

Target and baseline:

Objective	Increase in the Number of Health Agencies That Have a Public Dental Health Program Directed by a Dental Professional With Public Health Training	2003 Baseline	2010 Target
		Number	
21-17a.	For State (including the District of Columbia) and local health agencies that serve jurisdictions of 250,000 or more persons (out of 191)	39	41
21-17b.	For Indian Health Service Areas and Tribal health programs that serve jurisdictions of 30,000 or more persons (out of 27)	9	9

Target setting method: 5 percent improvement.

Data sources: Association of State and Territorial Dental Directors; Division of Oral Health, IHS.

References

[1] U.S. Department of Health and Human Services (HHS). *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: HHS, National Institutes of Health (NIH), National Institute of Dental and Craniofacial Research (NIDCR), 2000, 155–188.

[2] HHS. *Oral Health in America: A Report of the Surgeon General.* Rockville, MD: HHS, NIH, NIDCR, 2000, 61–93.

[3] Centers for Disease Control and Prevention (CDC). Surveillance for dental caries, dental sealants, tooth retention, edentulism, and enamel fluorosis—United States, 1988–1994 and 1992–2002. In Surveillance Summaries, August 26, 2005. *Morbidity and Mortality Weekly Report* 54(SS-3):8, 10, 2005.

[4] Comprehensive Health Manpower Training Act of 1971 (Public Law 92-157, Public Law 92-158). Report No. 92-578. Comprehensive Health Manpower Training Act of 1971, October 19, 1971, Conference Report.

[5] More information available at www.ucop.edu/cprc/dentalacc.pdf; accessed October 31, 2006.

[6] More information available at www.nrharural.org/advocacy/sub/policybriefs/OralHealth3-05.pdf; accessed October 31, 2006.

[7] More information available at www.al.com/specialreport/mobileregister/index.ssf?23-a429329a.html; accessed October 31, 2006.

[8] More information available at www.kff.org/medicaid/upload/7378.pdf; accessed October 31, 2006.

[9] More information available at http://oig.hhs.gov/oei/reports/oei-09-93-00240.pdf; accessed October 31, 2006.

[10] HHS. *A National Call to Action to Promote Oral Health*. NIH Publication No. 03-5303. Rockville, MD: HHS, Public Health Service, CDC and NIH, NIDCR, May 2003, 14–15.

[11] Public Health Service. *Alaska Dental Health Aide Program Brief*. September 14, 2005. More information available at www.phs-dental.org/depac/chap/Alaska%20Dental%20Health%20Aide%20Program_white%20paper%20update91405.doc; accessed October 31, 2006.

[12] Ismail, A.I., et al. Dental caries in the second millennium. *Journal of Dental Education* 65(10):953–971, 2001.

[13] Understanding and Promoting Health Literacy. More information available at http://obssr.od.nih.gov/content; accessed October 31, 2006.

[14] HHS. *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: HHS, NIH, NIDCR, 2000, vii.

[15] Gooch, B.F., et al. The role of evidence in formulating public health programs to prevent oral disease and promote oral health in the United States. *Journal of Evidence-Based Dental Practice* 6:85–89, 2006.

[16] Eke, P.I. Public health implications of periodontal infections in adults: Conference proceedings. *Journal of Public Health Dentistry* 65(1):56, 2005.

[17] Weintraub, J.A., et al. Fluoride varnish efficacy in preventing early childhood caries. *Journal of Dental Research* 85(2):172–176, 2006.

[18] A dental home is the ongoing relationship between a dentist and a patient, inclusive of all aspects of oral health care delivered in a comprehensive, continuously accessible, coordinated, and family-centered way. Establishment of a dental home begins no later than 12 months of age and includes referral to dental specialists when appropriate. Council on Clinical Affairs, adopted 2006. More information available at www.aapd.org/media/Policies_Guidelines/D_DentalHome.pdf; accessed October 31, 2006.

Related Objectives From Other Focus Areas

1. Access to Quality Health Services

1-1. Persons with health insurance
1-3. Counseling about health behaviors
1-4. Source of ongoing care
1-7. Core competencies in health profession training
1-8. Racial and ethnic representation in health professions
1-15. Long-term care services

2. Arthritis, Osteoporosis, and Chronic Back Conditions

2-2. Activity limitations due to arthritis
2-3. Personal care limitations
2-7. Seeing a health care provider
2-8. Arthritis education

3. Cancer

3-1. Overall cancer deaths
3-6. Oropharyngeal cancer deaths
3-9. Sun exposure and skin cancer
3-10. Provider counseling about cancer prevention
3-14. Statewide cancer registries
3-15. Cancer survival

5. Diabetes

5-1. Diabetes education
5-2. New cases of diabetes
5-3. Overall cases of diagnosed diabetes
5-4. Diagnosis of diabetes
5-15. Annual dental examinations

6. Disability and Secondary Conditions

6-13. Surveillance and health promotion programs

7. Educational and Community-Based Programs

7-1. High school completion
7-2. School health education
7-3. Health-risk behavior information for college and university students
7-4. School nurse-to-student ratio
7-5. Worksite health promotion programs
7-6. Participation in employer-sponsored health promotion activities
7-10. Community health promotion programs
7-11. Culturally appropriate and linguistically competent community health promotion programs
7-12. Older adult participation in community health promotion activities

8. Environmental Health

8-5. Safe drinking water

11. Health Communication

11-1. Households with Internet access
11-2. Health literacy
11-3. Research and evaluation of communication programs
11-4. Quality of Internet health information sources
11-6. Satisfaction with health care providers' communication skills

12. Heart Disease and Stroke

12-1. Coronary heart disease (CHD) deaths

14. Immunization and Infectious Diseases

14-3. Hepatitis B in adults and high-risk groups
14-9. Hepatitis C
14-10. Identification of persons with chronic hepatitis C
14-28. Hepatitis B vaccination among high-risk groups

15. Injury and Violence Prevention

15-1. Nonfatal head injuries
15-17. Nonfatal motor vehicle injuries
15-19. Safety belts
15-20. Child restraints
15-21. Motorcycle helmet use
15-23. Bicycle helmet use
15-24. Bicycle helmet laws
15-31. Injury protection in school sports

16. Maternal, Infant, and Child Health

16-6. Prenatal care
16-8. Very low birth weight infants born at level III hospitals
16-10. Low birth weight and very low birth weight
16-11. Preterm births
16-16. Optimum folic acid levels
16-19. Breastfeeding
16-23. Service systems for children with special health care needs

17. Medical Product Safety

17-4. Receipt of useful information about prescriptions from pharmacies
17-5. Receipt of oral counseling about medications from prescribers and dispensers

18. Mental Health and Mental Disorders

18-5. Disordered eating behaviors

19. Nutrition and Overweight

19-1. Healthy weight in adults
19-2. Obesity in adults
19-3. Overweight or obesity in children and adolescents
19-5. Fruit intake
19-6. Vegetable intake
19-11. Calcium intake
19-16. Worksite promotion of nutrition education and weight management

20. Occupational Safety and Health

20-2. Work-related injuries
20-3. Overexertion or repetitive motion
20-10. Needlestick injuries

22. Physical Activity and Fitness

22-4. Muscular strength and endurance
22-5. Flexibility

23. Public Health Infrastructure

23-2. Public access to information and surveillance data
23-3. Use of geocoding in health data systems
23-4. Data for all population groups
23-6. National tracking of Healthy People 2010 objectives
23-7. Timely release of data on objectives
23-8. Competencies for public health workers
23-9. Training in essential public health services
23-10. Continuing education for public health personnel
23-11. Performance standards for essential public health services
23-12. Health improvement plans
23.13. Access to public health laboratory services
23-14. Access to epidemiology services
23-17. Population-based prevention research

25. Sexually Transmitted Diseases

25-5. Human papillomavirus infection

26. Substance Abuse

26-12. Average annual alcohol consumption

27. Tobacco Use

27-1. Adult tobacco use
27-2. Adolescent tobacco use
27-3. Initiation of tobacco use
27-4. Age at first tobacco use
27-5. Smoking cessation by adults
27-7. Smoking cessation by adolescents

27-8. Insurance coverage of cessation treatment
27-11. Smoke-free and tobacco-free schools
27-12. Worksite smoking policies
27-14. Enforcement of illegal tobacco sales to minors laws
27-15. Retail license suspension for sales to minors
27-18. Tobacco control programs
27-19. Preemptive tobacco control laws
27-20. Tobacco product regulation
27-21. Tobacco tax