

Information about the PA Oral Health Needs Assessments:

This report provides answers to the specific questions posed in the proposal for the Pennsylvania Oral Health Needs Assessment project. This information can be used to evaluate present oral health status and to develop new policies and programs to improve the oral health of schoolchildren in Pennsylvania. The oral health information included in this report comes from surveys conducted over a two-year period from July 1, 1998 to July 31, 2000. The survey information was drawn from a scientifically based sample of Pennsylvania public schoolchildren and their families which is representative at the state and health district levels. Rather than selecting children of all grade levels, index grades were chosen providing for more precise information at important stages in oral health development and to provide for evaluation related to Healthy People 2010 objectives. Results in this report generally include statewide estimates, Health Service District estimates, and estimates for grades 1,3,9, and 11. Results for Philadelphia and Pittsburgh schoolchildren are reported separately from their respective Health Service District. For comparisons to Healthy People 2000 and 2010 objectives, an appropriate subsample was used based on ages stated in the objectives.

An oral health screening was completed on 6,040 Pennsylvania schoolchildren. Children were screened for the presence of untreated dental caries, dental fillings, missing permanent teeth, pit and fissure sealants, dental fluorosis, signs of anterior tooth trauma, orthodontic needs, and other urgent and non-urgent dental care needs. Family socio-economic status, perceived need for dental care and other issues were addressed in a questionnaire survey of parents of a sub sample of examined children. General survey findings and results specifically addressing Health People 2000 and 2010 objectives for these various components of oral health are provided in the following text and tables.

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PA Oral Health Needs Assessment

National baseline data from the Surgeon Generals Report on Oral Health and the Healthy People 2010 oral health objectives PA data from the PA Oral Health Needs Assessment. In the tables from the PA Oral Health Needs Assessment (OHNA), 95% significance of results can be determined by adding and subtracting two times the standard error column to/from the mean or percent column. If that interval does not then include the comparison number interval (usually the PA total number plus or minus 2 times its standard error), then the difference is significant.

Baseline: 18 percent of children aged 2 to 4 years had dental caries experience in 1988-94. 2010 National Target = 11% (No PA data for this age).

Table 1R.

Percent of Pennsylvania 6-8 Year Olds with Dental Caries Experience				
PA Health Area	Percent	Standard Error %	National Baseline 1988-1994	2010 National Target
PA Total	47.7	1.77	52	42
Northwestern	65	4.62	52	42
Northcentral	58.14	3.72	52	42
Northeast	50.89	6.70	52	42
Southeastern	40.84	3.16	52	42
Southcentral	47.78	5.24	52	42
Southwestern	43.59	4.23	52	42
Philadelphia	45.75	3.68	52	42
Pittsburgh	47.71	5.55	52	42

In the table above concerning the younger schoolchildren, the Northcentral and especially the Northwest districts show significantly higher numbers of children with any caries experience than the rest of the state.

Table 2R.

Percent of Pennsylvania 15 Year Olds with Dental Caries Experience				
PA Health Area	Percent	Standard Error %	National Baseline 1988-1994	2010 National Target
PA Total	49.48	2.89	61	51
Northwestern	59.60	12.77	61	51
Northcentral	39.56	9.49	61	51
Northeast	46.92	9.41	61	51
Southeastern	38.70	3.59	61	51
Southcentral	48.10	9.96	61	51
Southwestern	57.96	7.59	61	51
Philadelphia	57.85	4.87	61	51
Pittsburgh	70.82	5.73	61	51

Compared to the state total, Pittsburgh seems to shows significantly higher numbers of 15 year olds with any caries experience than the rest of the state, with the Southwestern district, the Northwestern district, and Philadelphia also showing somewhat higher numbers than the rest of the districts but without statistical significance.

National baseline data from the Surgeon Generals Report on Oral Health and the Healthy People 2010 oral health objectives. PA data from the PA Oral Health Needs Assessment (See Appendix C for more raw data tables from this study).

Baseline: 16 percent of children aged 2 to 4 years had untreated dental decay in 1988-94. 2010 National Target = 9% (No PA Data for this age).

Table 3R.

Percent of Pennsylvania 6-8 Year Olds with Untreated Dental Caries				
PA Health Area	Percent	Standard Error %	National Baseline 1988-1994	2010 National Target
PA Total	27.16	1.59	29	21
Northwestern	45.90	5.05	29	21
Northcentral	35.51	4.86	29	21
Northeast	27.25	6.32	29	21
Southeastern	24.64	3.12	29	21
Southcentral	23.17	3.20	29	21
Southwestern	21.19	3.81	29	21
Philadelphia	27.18	3.24	29	21
Pittsburgh	26.70	2.86	29	21

Table 4R.

Percent of Pennsylvania 15 Year Olds with Untreated Dental Caries				
PA Health Area	Percent	Standard Error %	National Baseline 1988-1994	2010 National Target
PA Total	14.36	2.21	20	15
Northwestern	14.17	3.75	20	15
Northcentral	6.65	3.71	20	15
Northeast	8.83	3.75	20	15
Southeastern	9.47	2.08	20	15
Southcentral	10.87	3.72	20	15
Southwestern	22.84	9.01	20	15
Philadelphia	22.54	7.26	20	15
Pittsburgh	28.57	8.72	20	15

The above tables show that dental caries remain a significant condition among Pennsylvania's children. Caries (decay) rates show a steady increase with age and significant variation among health districts (See Appendix C for data tables). Untreated dental caries remains a serious problem for many children. The percentage of Pennsylvania's 6-8 year olds with untreated decay was, on a state-wide average, significantly higher than the Healthy People 2010 objectives; however, in the Northwest District and the North Central District, this decay percentage was alarmingly higher (25% points and 15% points respectively) than the Healthy People 2010 objectives. These areas of Pennsylvania need to be especially targeted for preventive and restorative efforts. According to the data in this survey, the Healthy People 2010 objectives for untreated decay for 15 year olds was met (or close to being met considering the standard errors involved) for the state as a whole and for all districts except the South Western District, Philadelphia, and Pittsburgh, where this untreated decay percentage was higher by 8%, 8% and 14% respectively, but not at 95% statistically significant levels. While there is a fair amount of variation in the survey data over all, the trend generally would seem to be for more caries experience and untreated caries in the northern districts and the two cities, with lower rates seen in the southern districts (excluding Philadelphia and Pittsburgh). These trends suggest a gradient of disease with worse disease found in the most rural and urban areas as compared to suburban populations, and that untreated decay is more of a problem in Pennsylvania in the younger age schoolchildren than in the older ones (See Appendix C for more raw data tables from this study).

Table 5R.

Percent of Pennsylvania School Children Needing Immediate Dental Care			
PA Health Area	Percent	Stand. Error %	Dental Emergencies as a % of All Emergency Visits to School Nurses.
PA Total	4.66	0.49	
Northwestern	7.47	1.46	4.8
Northcentral	4.75	1.11	3.6
Northeast	5.16	1.98	2.3
Southeastern	3.10	1.13	1.9
Southcentral	2.86	0.47	2.2
Southwestern	2.53	0.87	2.6
Philadelphia	9.72	1.39	
Pittsburgh	4.08	2.13	

Urgent treatment needs were also significant and varied dramatically by health district. Overall, a three-fold difference in the rate of "urgent" unmet dental needs existed from the highest (Philadelphia) to the lowest (Southcentral + Southwestern) districts. Among the first graders, the Northwest District had twice the state average of urgent treatment needs (See Appendix C, p. 10). Parents were also asked in the PA Oral Health Needs Assessment⁴⁶ phone interview about such urgent dental needs with their child. From those results, it is estimated that about 14% of Pennsylvania schoolchildren in the survey had complained of dental pain or problems in the past, ranging from 9% (Southeastern district) to 22% (Philadelphia) across health districts. About 2% had missed school because of dental problems or pain in the past, but estimates ranged as high as 7.5% for the Northcentral district.

School nurses in Pennsylvania reported that they deal on average with one or two dental emergencies per week, but in certain schools, dental emergencies are a very serious problem, occurring at a rate of at least one per day. There was a 2.5 fold difference in rate of school dental emergencies out of all emergency visits to school nurses between the Northwest and Southeast Health Districts. Among all dental emergencies reported by school nurses, the most common were toothache (23%), gum pain (18%), orthodontic appliance problems (11%), and cavities (10%). Since children from economically disadvantaged families had higher rates of dental disease, a consistent finding in almost any population where this is examined, this suggests that unmet dental disease and dental emergencies are more of a problem in economically disadvantaged schools.

Table 6R.

Percent of Pennsylvania School Children Seeing the Dentist in the Previous Year ⁴⁶ .				
Within the Last Year			More than one year since last visit	
PA Health Area	Percent	Stand Error %	Percent	Standard Error %
PA Total	87.17	1.34	12.83	1.34
Northwestern	87.26	4.95	12.74	4.95
Northcentral	85.63	3.59	14.37	3.59
Northeast	88.83	3.52	11.17	3.52
Southeastern	90.53	2.84	9.47	2.84
Southcentral	91.74	2.89	8.26	2.89
Southwestern	88.46	3.06	11.54	3.06
Philadelphia	76.20	4.90	23.80	4.90
Pittsburgh	76.68	2.34	23.32	2.34

A disparity is suggested in the above table data with more than 23% of the children in Philadelphia and Pittsburgh not seeing a dentist in the previous years compared to 8 to 14% for the other health districts. However, considering the standard error involved and comparing these results to either the PA total or the lowest districts, the Pittsburgh result is likely to be true at a 95% confidence/significant level, but the Philadelphia data reflects more sample-size variance and is not reliable at the 95% significance level but at a somewhat less significant level.

The following PA data is also from the PA Oral Health Needs Assessment⁴⁶:

Although the rates of Pennsylvania children's annual dental visits were quite high (87%), those children that did not visit the dentist had much higher rates of untreated dental disease than those children who had a dental visit in the previous 12 months (39% versus 18% respectively statewide average). Children from disadvantaged economic backgrounds had the most dental disease and the most untreated dental disease. The most troubling finding from this study was the significant economic gradient that existed for dental caries. Children from the poorest families are two times more likely to have any dental caries experience (58% vs. 27%) and three times more likely to have any untreated dental caries (33% vs. 10%) than children from the wealthiest families (see first table below). This strongly suggests that access to preventive and restorative dental care and receipt of meaningful preventive information is lacking for these poor children and their families.

The phone survey part of this study showed that 10% of parents reported difficulty at sometime in getting dental care for their child, ranging from 7% to 11% across the health districts. The ratio of population to dentists varies widely from 831:1 in Montgomery County to 5974:1 in Cameron County (See Appendix F, p. 1-3). This dental access issue may be getting much worse in the future, as the number of young dentists in the state is declining rapidly. As the large group of current dentists in the age range of 45 to 55 ages and begins to retire, dental access may well become problematic for many people, not just the poor (see Appendix F, pages 4-5).

Table 7R.

Percent of PA School Children with Any Decay Experience and Any Untreated Decay by Income Category ⁴⁶				
Family Income	% with Any Decay	Stand Error %	% with Any Untreated Decay	Stand Error %
State Total	50.89	1.68	21.82	1.54
< \$20k	57.90	3.69	32.77	4.17
\$20k to \$50k	56.01	2.54	25.23	2.62
\$50k to \$100k	45.49	2.47	14.49	2.08
> than \$100k	26.59	5.24	10.15	2.64

Table 8R.

Mean Numbers of Teeth in PA School Children with Decay Experience and Untreated Decay by Income Category ⁴⁶				
Family Income	Mean num of Teeth with Decay	SE Mean	Mean nums of teeth with Untreated Decay	SE Mean
State Total	1.84	.09	.55	.05
< \$20k	2.74	.31	1.12	.22
\$20k to \$50k	2.10	.14	.63	.08
\$50k to \$100k	1.30	.11	.28	.04
> than \$100k	.71	.17	.17	.05

National baseline data from the Surgeon Generals Report on Oral Health and the Healthy People 2010 oral health objectives. PA data from the PA Oral Health Needs Assessment (See Appendix C for more raw data tables from this study).

Table 9R.

Percent of Pennsylvania 8 Year Olds with at least one Dental Sealant				
PA Health Area	Percent	Stand Error %	Nat. Baseline % 1988-1994	2010 Nat Target
PA Total	25.21	1.59	23	50
Northwestern	20.98	3.92	23	50
Northcentral	14.56	1.13	23	50
Northeast	31.43	3.54	23	50
Southeastern	29.67	2.01	23	50
Southcentral	26.18	6.72	23	50
Southwestern	27.30	3.94	23	50
Philadelphia	8.18	5.28	23	50
Pittsburgh	29.19	4.96	23	50

Table 10R.

Percent of Pennsylvania 14 Year Olds with at least one Dental Sealant				
PA Health Area	Percent	Stand Error %	Nat. Baseline % 1988-1994	2010 Nat Target
PA Total	24.55	2.27	15	50
Northwestern	6.27	1.85	15	50
Northcentral	13.79	5.09	15	50
Northeast	21.30	4.79	15	50
Southeastern	29.83	5.94	15	50
Southcentral	29.62	5.81	15	50
Southwestern	35.58	5.31	15	50
Philadelphia	12.29	3.57	15	50
Pittsburgh	35.61	7.72	15	50

From the PA Oral Health Needs Assessment,⁴⁶ fluorosis can range from very mild to severe. Very mild and mild fluorosis are not an esthetic or health concern. No cases of fluorosis were found that were other than very mild or mild. The percentages listed in the table below indicate those children with any evidence of fluorosis and all cases were limited to very mild or mild fluorosis.

Table 13R.

Percent of Pennsylvania Children with any Fluorosis.		
PA Health Area	Percent	Stand Error %
PA Total	14.88	1.03
Northwestern	11.15	3.13
Northcentral	11.25	2.79
Northeast	6.78	1.33
Southeastern	9.93	1.31
Southcentral	13.03	2.39
Southwestern	23.16	2.74
Philadelphia	25.58	5.08
Pittsburgh	23.64	1.53