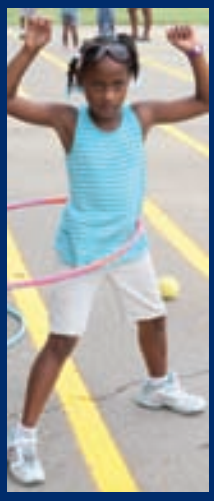






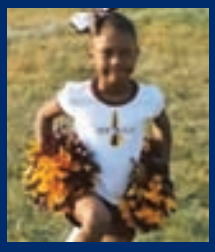
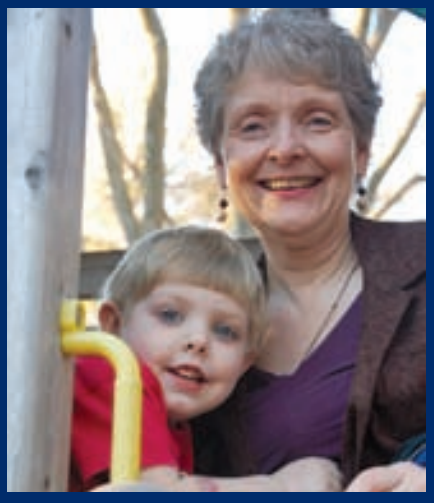




Kentucky kids count

2011 COUNTY DATA BOOK

A Project of Kentucky Youth Advocates and the Kentucky State Data Center, University of Louisville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KENTUCKY YOUTH ADVOCATES

Kentucky kids count

2011 County Data Book

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Content and research by Kentucky Youth Advocates. Data collection and processing by Michael Price and Thomas Sawyer of the Kentucky State Data Center at the University of Louisville and by Kentucky Youth Advocates.

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For additional copies, contact Kentucky Youth Advocates:
11001 Bluegrass Parkway, Suite 100 • Jeffersontown, KY 40299 • Telephone: (502) 895-8167 • Fax: (502) 895-8225 • www.kyyouth.org

THIS BOOK IS DEDICATED TO DAVID W. RICHART (1948 – 2011), founder of Kentucky Youth Advocates and Executive Director until 1997. David devoted 20 years of his life to shaping KYA into a credible and respected child advocacy organization. A lifelong advocate for Kentucky's most vulnerable youth, his first priority was always to improve the lives of children in Kentucky.

It doesn't interest me to know where you live or how much money you have, I want to know if you can get up after a night of grief and despair, weary and bruised to the bone, and do what needs to be done for the children?

– Excerpt from Oriahe Mountain Dreamer, by an Indian Elder

Acknowledgements

The 2011 Kentucky KIDS COUNT County Data Book is the 21st annual data book providing state and county-level data to measure and improve child well-being. Many individuals and organizations devote 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 Michael Price and Thomas Sawyer of the Kentucky State Data Center at the University of Louisville for their dedicated work collecting and processing the data featured in this book and the online data system. Kentucky Youth Advocates also values the contributions of Rob Gorstein for the graphic design, and Tiffanie Lamont for editing.

The following staff members of Kentucky Youth Advocates contributed to the production of this book and the accompanying online data system: Terry Brooks, Katie Carter, Paul Colwell, Tara Grieshop-Goodwin, Lacey McNary, Whitney Neal, Andrea Plummer, Nick Romanoff, Amy Swann, and Patricia Tennen.

KIDS COUNT Data Partners

The following KIDS COUNT data partners make the county-level data book possible, and Kentucky Youth Advocates is particularly grateful for their support of the project:

Administrative Office of the Courts, Division of Juvenile Services

Council on Postsecondary Education

Education Professional Standards Board

Kentucky Board of Dentistry

Kentucky Cabinet for Health and Family Services

Department for Community Based Services

- Division of Child Care
- Division of Child Support
- Division of Family Support
- Division of Protection and Permanency

Department for Medicaid Services

- Division of Provider Operations
- Division of Administration and Financial Management

Department for Public Health

- Chronic Disease Prevention and Control Branch
- Kentucky Childhood Lead Poisoning Prevention Program, Division of Adult and Child Health
- Nutrition Services Branch
- Vital Statistics Branch

Kentucky Child Care Resource and Referral Agencies

Kentucky Department of Education

Division of Early Childhood Development

Office of Assessment and Accountability

Office of Teaching and Learning

Kentucky Justice and Public Safety Cabinet, Department of Juvenile Justice

Louisville Metro, Youth Detention Services

Kentucky Youth Advocates Board of Directors

Featured Artwork

Many of the photographs featured on the cover and throughout the book were provided by residents of the Commonwealth of Kentucky to celebrate the children in their lives.

Kentucky KIDS COUNT is part of a nationwide initiative of the Annie E. Casey Foundation to track the status of children in the United States. By providing policymakers and citizens with benchmarks of child well-being, KIDS COUNT seeks to enrich local, state, and national discussions of ways to secure better futures for all children. For more information on the KIDS COUNT initiative, visit the Annie E. Casey Foundation web site at www.aecf.org.

Kentucky Counties

Table of Contents

Data Highlights and Online Availability

The Kentucky KIDS COUNT County Data Book provides data for professionals, state policymakers, and community members who work to improve the lives of children in Kentucky. The indicators for the Kentucky KIDS COUNT project represent various measurements of children's economic well-being, education, health, and safety.

This year's printed edition focuses on indicators of health, and a different set of indicators will be featured each year in print. Each indicator has the most current data for Kentucky and all 120 counties, along with text that discusses up-to-date research and recommendations for improvement. Where available, the discussion includes state-level data disaggregated by race to identify systemic bias in policies and programs that have created disparities among racial groups. Each year the book also provides data on three overarching indicators, child population, race and ethnicity, and child poverty, because where children live, their race, and their family's income each can have a significant impact on outcomes for children.

The KIDS COUNT Data Center provides easy access to data by county and school district for all of the indicators the Kentucky KIDS COUNT project tracks, including the areas of economic well-being, education and safety, and health indicators not published in the printed edition. KYA will update the Data Center with new data on an ongoing basis throughout the year. To reach Kentucky's county and district-level data, go to http://datacenter.kidscount.org/ky. The KIDS COUNT Data Center also reports data across states, including the National KIDS COUNT project's data on ten key measures of child well-being, provided by the Annie E. Casey Foundation. A How-To-Use section (http://datacenter.kidscount.org/Help.aspx) explains the many features of the Data Center with an instructional video and answers to frequently asked questions.

Data Highlights

Highlights from the 2011 Kentucky KIDS COUNT project include the following:

Economic Well-Being

- Kentucky's unemployment rate reached 10.5 percent in 2010, up from a rate of 4.2 percent in 2000.
- From 2000 to 2010, the average monthly number of children receiving food stamps in Kentucky increased 68 percent from 177,569 children to 298,499 children.
- In tax year 2008, 20.7 percent of all federal tax filers in Kentucky (379,255 filers) filed for the Earned Income Tax Credit (EITC).

Education

- The number of Kentucky children receiving childcare subsidies has increased substantially over the years, from 41,779 in fiscal year 2001 to 74,121 in fiscal year 2010.
- The number of out-of-school suspensions due to a school board violation fell from 65,487 in the 1999-2000 school year to 61,236 in the 2009-2010 school year.
- From the 2007-08 school year to the 2009-10 school year, Kentucky's high school averaged freshman graduation rate increased 3.3 percentage points to 80.5 percent.

Health

- From 1999-2001 to 2007-2009, the percent of preterm births (born before 37th week of pregnancy) increased from 11 to 12 percent.
- From 2001 to 2010, the percent of children enrolled in Medicaid or KCHIP who utilized dental services increased 19 percentage points from 38 percent to 57 percent.
- The rate of births to teenagers fell from 54 per 1,000 females ages 15-19 in 1999-2001 to 50 per 1,000 females ages 15-19 in 2007-2009.

Safety

- From 1999-2001 to 2007-2009, Kentucky's rate of child deaths per 100,000 children ages 1-14 fell slightly from 23 per 100,000 children to 22 per 100,000 children.
- The number of Kentucky youth held in secure detention facilities for status offenses rose from 998 in 2003 to 1,541 in 2010, a 54 percent increase; yet the 2010 number reflects a drop from the previous year, when 1,765 youth were detained for status offenses.
- The rate of teenage deaths dropped from 76 per 100,000 teens ages 15-19 in 1999-2001 to 68 per 100,000 teens ages 15-19 in 2007-2009.

Making Sense of the Data

There are several ways to gather meaning from the numbers presented by the Kentucky KIDS COUNT project:

- For indicators with rates, which account for differences in population size, compare the rate for your county to the rate for the state as a whole and the rates for surrounding counties.
- Many indicators include data for different time periods. See if the number has increased or decreased over time.
- If the indicator also provides rates for different time periods, see how your county has changed over time, taking into account changes in the population.
- For indicators without rates, you can estimate the extent of participation in your county. For example, for KCHIP participation, calculate the percent of all KCHIP participants who live in your county (by dividing your county's number of participants by the statewide total number of participants). Compare that percent to the percent of Kentucky children who live in your county (by dividing your county's child population by the statewide child population). The percents will be similar if your county follows the statewide trend.

Important Data Reminders

- Data are based on different time intervals (i.e., calendar year, fiscal year, school year, average monthly number, and three-year averages). Readers should check each indicator, definition, and data source to determine the reported time period.
- The book reports data from the year 2000 as a baseline whenever data for that year is available.
- Race is reported according to the categories used by the source.
- Standard mathematical formulas were used to convert data to rates or percents.
- For counties where the incidence of an indicator is too small to be considered meaningful, no rates are reported. The same is true for raw numbers for some indicators.
- Indicators may be reported as either raw data, as rates, or both.
- Reported rates may vary. Readers should review each heading definition to interpret the rates (i.e., percent, which is rate per 100; or rate per 1,000 or 100,000).
- Percentages are rounded and, therefore, may not add up to 100.

The KIDS COUNT Data Center offers the following data tools for readers to analyze and share data:

- Rank states, Kentucky counties, and Kentucky school districts, on key indicators of child well-being;
- Create a customized profile of data for a selected county that can include any or all of the indicators produced by the Kentucky KIDS COUNT project;
- Generate your own customized maps and trend lines that show how Kentucky children are faring and use them in presentations and publications;
- Feature maps and graphs on your own website or blog that are automatically updated when new data is uploaded;
- Add a "widget" to your website or blog that allows visitors to access the Annie E. Casey Foundation's data on Kentucky for the ten key indicators of child well-being without leaving your site; and

- View and share data quickly and easily anytime and anywhere with the enhanced mobile site for smart phones.

Demographics
Child Population

	2000		2010	
	Ages 0-17	Ages 0-4	Ages 0-17	Ages 0-4
Kentucky	**994,818**	**265,901**	**1,023,371**	**282,367**
Adair	4,053	1,047	4,206	1,169
Allen	4,601	1,172	4,887	1,346
Anderson	5,077	1,429	5,446	1,433
Ballard	1,911	501	1,828	431
Barren	9,210	2,432	10,216	2,756
Bath	2,678	733	2,866	820
Bell	7,329	1,826	6,229	1,589
Boone	24,644	6,849	33,579	9,019
Bourbon	4,843	1,249	4,813	1,239
Boyd	10,840	2,726	10,593	2,906
Boyle	6,276	1,545	6,158	1,519
Bracken	2,115	550	2,152	569
Breathitt	4,106	940	3,220	846
Breckinridge	4,647	1,182	4,850	1,221
Bullitt	16,640	4,439	18,783	4,647
Butler	3,288	817	2,926	799
Caldwell	2,927	716	2,885	788
Calloway	6,406	1,676	6,712	1,942
Campbell	22,717	6,128	20,600	5,783
Carlisle	1,251	318	1,154	323
Carroll	2,570	676	2,718	805
Carter	6,583	1,719	6,504	1,747
Casey	3,786	972	3,765	995
Christian	20,459	7,129	21,075	7,243
Clark	8,223	2,149	8,369	2,244
Clay	6,232	1,394	4,772	1,289
Clinton	2,184	608	2,451	652
Crittenden	2,178	509	2,110	625
Cumberland	1,689	403	1,524	438
Daviess	23,620	6,171	23,605	6,689
Edmonson	2,745	698	2,657	665
Elliott	1,712	436	1,600	444
Estill	3,697	922	3,339	856
Fayette	55,533	16,146	62,633	19,145
Fleming	3,500	918	3,506	914
Floyd	10,034	2,508	8,874	2,465
Franklin	10,776	2,899	10,665	2,983
Fulton	1,928	503	1,368	399
Gallatin	2,247	591	2,303	604
Garrard	3,602	904	3,914	1,047
Grant	6,425	1,788	6,923	1,926
Graves	9,068	2,447	9,052	2,464
Grayson	5,876	1,509	6,144	1,619
Green	2,614	620	2,549	681
Greenup	8,699	2,141	8,325	2,140
Hancock	2,241	598	2,225	556
Hardin	25,963	6,739	27,416	8,010
Harlan	8,297	2,032	6,685	1,890
Harrison	4,497	1,130	4,581	1,155
Hart	4,488	1,146	4,545	1,183
Henderson	11,043	2,866	10,870	3,114
Henry	3,820	1,017	3,823	940
Hickman	1,162	283	1,054	283
Hopkins	11,240	2,844	10,891	3,052
Jackson	3,516	893	3,182	824
Jefferson	168,271	46,600	171,807	48,634
Jessamine	10,300	2,876	12,549	3,547
Johnson	5,628	1,437	5,249	1,364
Kenton	39,899	11,085	39,946	11,568
Knott	4,319	1,053	3,536	953
Knox	8,324	2,244	7,863	2,162
LaRue	3,348	845	3,375	887
Laurel	13,401	3,738	14,311	3,824
Lawrence	3,936	913	3,681	1,070
Lee	1,797	411	1,538	370
Leslie	3,051	758	2,418	649
Letcher	5,996	1,434	5,430	1,523
Lewis	3,570	898	3,308	857
Lincoln	5,997	1,580	6,100	1,629
Livingston	2,188	515	1,953	538
Logan	6,825	1,818	6,588	1,711
Lyon	1,275	304	1,283	339
McCracken	15,315	3,984	14,706	3,921
McCreary	4,729	1,152	4,117	1,081
McLean	2,405	653	2,225	553
Madison	15,512	4,505	17,850	5,069
Magoffin	3,570	939	3,194	803
Marion	4,596	1,216	4,888	1,322
Marshall	6,560	1,532	6,540	1,668
Martin	3,539	886	2,758	733
Mason	4,053	1,065	4,265	1,197
Meade	7,839	2,299	7,805	2,194
Menifee	1,634	383	1,464	345
Mercer	5,080	1,337	5,038	1,275
Metcalfe	2,471	638	2,419	643
Monroe	2,811	738	2,546	643
Montgomery	5,615	1,579	6,500	1,804
Morgan	3,118	747	2,840	727
Muhlenberg	7,206	1,903	6,821	1,766
Nelson	10,372	2,769	11,285	2,993
Nicholas	1,608	425	1,724	450
Ohio	5,704	1,439	5,934	1,703
Oldham	12,644	3,036	16,796	3,420
Owen	2,694	641	2,663	697
Owsley	1,194	268	1,058	263
Pendleton	4,084	971	3,680	922
Perry	7,161	1,717	6,244	1,691
Pike	16,285	4,174	14,262	3,812
Powell	3,524	900	3,105	858
Pulaski	13,156	3,317	14,358	3,838
Robertson	539	124	490	140
Rockcastle	4,054	993	3,957	964
Rowan	4,475	1,204	4,562	1,353
Russell	3,675	896	3,923	1,058
Scott	8,685	2,517	12,668	3,544
Shelby	8,391	2,288	10,443	2,769
Simpson	4,305	1,228	4,268	1,157
Spencer	3,171	854	4,386	1,106
Taylor	5,365	1,387	5,465	1,558
Todd	3,183	893	3,393	984
Trigg	2,886	737	3,228	819
Trimble	2,145	548	2,210	552
Union	3,957	975	3,447	920
Warren	21,398	5,935	25,912	7,239
Washington	2,757	635	2,714	697
Wayne	5,049	1,334	4,696	1,260
Webster	3,406	851	3,189	921
Whitley	9,245	2,277	8,509	2,164
Wolfe	1,831	470	1,768	480
Woodford	5,891	1,450	6,003	1,435

For data sources and notes please see page 36.

Demographics
Child Population by Race & Ethnicity

2010

	Black	Hispanic	White	Other
Kentucky	**91,960**	**49,949**	**828,136**	**53,326**
Adair	88	125	3,878	115
Allen	39	135	4,600	113
Anderson	91	130	5,037	188
Ballard	58	35	1,662	73
Barren	387	449	8,934	446
Bath	28	69	2,701	68
Bell	134	72	5,814	209
Boone	937	1,656	28,947	2,039
Bourbon	280	543	3,765	225
Boyd	226	215	9,738	414
Boyle	450	304	4,978	426
Bracken	10	42	2,052	48
Breathitt	31	39	3,083	67
Breckinridge	83	76	4,525	166
Bullitt	157	430	17,681	515
Butler	19	98	2,762	47
Caldwell	188	55	2,527	115
Calloway	289	289	5,808	326
Campbell	618	507	18,512	963
Carlisle	8	32	1,084	30
Carroll	25	282	2,270	141
Carter	34	132	6,227	111
Casey	14	158	3,524	69
Christian	4,909	1,941	12,754	1,471
Clark	438	404	7,226	301
Clay	79	62	4,547	84
Clinton	19	89	2,293	50
Crittenden	11	11	2,045	43
Cumberland	26	29	1,409	60
Daviess	1,339	1,092	19,742	1,432
Edmonson	29	29	2,548	51
Elliott	1	22	1,567	10
Estill	12	38	3,245	44
Fayette	11,516	7,080	38,034	6,003
Fleming	41	70	3,314	81
Floyd	44	94	8,649	87
Franklin	987	527	8,336	815
Fulton	416	24	842	86
Gallatin	17	159	2,052	75
Garrard	65	164	3,588	97
Grant	49	269	6,453	152
Graves	425	880	7,286	461
Grayson	38	87	5,891	128
Green	52	75	2,337	85
Greenup	62	116	7,932	215
Hancock	6	42	2,111	66
Hardin	3,489	2,115	19,200	2,612
Harlan	157	102	6,254	172
Harrison	81	143	4,211	146
Hart	151	95	4,161	138
Henderson	935	359	8,980	596
Henry	70	214	3,409	130
Hickman	109	31	857	57
Hopkins	843	321	9,096	631
Jackson	8	32	3,112	30
Jefferson	45,295	11,107	102,074	13,331
Jessamine	455	546	10,874	674
Johnson	8	44	5,104	93
Kenton	2,330	1,655	33,582	2,379
Knott	29	44	3,433	30

2010

	Black	Hispanic	White	Other
Knox	80	134	7,477	172
LaRue	103	185	2,970	117
Laurel	123	289	13,564	335
Lawrence	14	36	3,576	55
Lee	5	11	1,501	21
Leslie	7	12	2,369	30
Letcher	29	39	5,301	61
Lewis	11	35	3,222	40
Lincoln	143	163	5,605	189
Livingston	2	54	1,850	47
Logan	481	257	5,575	275
Lyon	38	31	1,166	48
McCracken	2,161	537	11,019	989
McCreary	19	55	3,964	79
McLean	14	55	2,124	32
Madison	721	644	15,491	994
Magoffin	9	35	3,116	34
Marion	309	194	4,152	233
Marshall	5	120	6,291	124
Martin	7	18	2,712	21
Mason	285	133	3,607	240
Meade	286	397	6,707	415
Menifee	26	25	1,377	36
Mercer	171	218	4,393	256
Metcalfe	35	52	2,299	33
Monroe	53	132	2,313	48
Montgomery	129	253	5,925	193
Morgan	12	21	2,768	39
Muhlenberg	219	149	6,266	187
Nelson	617	426	9,791	451
Nicholas	11	45	1,633	35
Ohio	47	357	5,422	108
Oldham	433	848	14,669	846
Owen	13	118	2,483	49
Owsley	8	16	1,022	12
Pendleton	15	60	3,544	61
Perry	100	78	5,881	185
Pike	79	172	13,729	282
Powell	14	37	3,006	48
Pulaski	189	526	13,216	427
Robertson	0	10	476	4
Rockcastle	5	40	3,867	45
Rowan	60	80	4,268	154
Russell	19	230	3,595	79
Scott	657	806	10,569	636
Shelby	749	1,466	7,639	589
Simpson	396	147	3,522	203
Spencer	60	101	4,102	123
Taylor	232	162	4,797	274
Todd	272	221	2,812	88
Trigg	295	57	2,727	149
Trimble	4	90	2,054	62
Union	329	69	2,893	156
Warren	2,487	2,028	19,145	2,252
Washington	176	166	2,264	108
Wayne	72	256	4,240	128
Webster	92	265	2,717	115
Whitley	28	120	8,161	200
Wolfe	5	18	1,725	20
Woodford	264	665	4,810	264

For data sources and notes please see page 36.

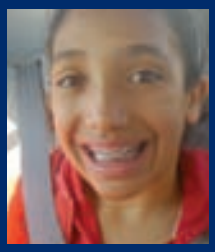
Demographics
Children Living in Poverty

	2000		2005-2009	
	Number	Percent	Number	Percent
Kentucky	**203,547**	**21**	**233,590**	**23**
Adair	1,234	31	978	25
Allen	1,089	24	1,090	24
Anderson	455	9	727	14
Ballard	375	20	318	18
Barren	1,872	21	2,980	30
Bath	794	30	1,133	40
Bell	3,057	42	2,660	40
Boone	1,637	7	2,692	9
Bourbon	917	19	1,295	27
Boyd	2,506	23	2,450	23
Boyle	983	16	1,828	29
Bracken	222	11	590	27
Breathitt	1,697	43	1,395	39
Breckinridge	756	17	1,287	28
Bullitt	1,888	12	2,085	12
Butler	604	19	629	21
Caldwell	595	21	517	19
Calloway	1,165	19	1,314	20
Campbell	2,799	12	3,044	15
Carlisle	228	19	178	15
Carroll	520	21	499	19
Carter	1,919	30	1,836	28
Casey	1,197	32	1,485	38
Christian	3,934	20	6,706	29
Clark	1,208	15	1,731	21
Clay	2,852	48	2,013	36
Clinton	691	32	919	42
Crittenden	670	31	387	19
Cumberland	507	30	541	36
Daviess	3,677	16	4,721	20
Edmonson	693	26	600	23
Elliott	521	31	819	52
Estill	1,214	33	1,207	34
Fayette	8,039	15	12,174	20
Fleming	859	25	852	24
Floyd	3,992	40	3,748	40
Franklin	1,377	13	1,987	19
Fulton	626	33	668	42
Gallatin	381	17	935	42
Garrard	707	20	715	19
Grant	964	15	1,692	24
Graves	1,986	23	2,495	27
Grayson	1,446	25	2,038	34
Green	602	24	472	19
Greenup	1,620	19	1,989	24
Hancock	402	18	444	19
Hardin	3,534	14	4,528	18
Harlan	3,336	40	3,226	44
Harrison	712	16	1,159	26
Hart	1,276	29	1,309	29
Henderson	1,921	18	2,354	22
Henry	616	16	1,001	26
Hickman	316	28	127	12
Hopkins	2,721	25	3,140	29
Jackson	1,287	37	1,132	36
Jefferson	30,604	19	35,591	21
Jessamine	1,417	14	2,169	19
Johnson	2,002	36	1,359	24
Kenton	4,877	12	6,145	16
Knott	1,717	40	1,123	31
Knox	3,466	43	3,985	49
LaRue	642	19	510	16
Laurel	3,882	29	3,361	24
Lawrence	1,580	41	1,788	46
Lee	739	42	581	39
Leslie	1,181	39	430	16
Letcher	2,147	36	1,845	35
Lewis	1,274	37	828	25
Lincoln	1,600	27	1,206	19
Livingston	244	11	304	16
Logan	1,424	21	1,261	19
Lyon	221	18	383	32
McCracken	3,318	22	3,408	23
McCreary	1,907	41	2,063	47
McLean	505	21	615	27
Madison	2,777	18	3,763	22
Magoffin	1,627	46	1,378	42
Marion	1,012	22	1,312	28
Marshall	765	12	1,091	17
Martin	1,591	45	1,579	53
Mason	949	24	1,012	25
Meade	1,087	14	1,126	16
Menifee	654	41	359	24
Mercer	884	18	800	15
Metcalfe	713	29	656	27
Monroe	767	27	1,056	38
Montgomery	1,032	19	1,332	21
Morgan	1,063	35	1,014	34
Muhlenberg	1,934	27	2,103	30
Nelson	1,607	16	1,761	16
Nicholas	230	14	624	38
Ohio	1,266	22	1,618	28
Oldham	631	5	829	6
Owen	460	17	299	11
Owsley	666	56	421	40
Pendleton	602	15	1,239	32
Perry	2,588	37	2,719	39
Pike	4,950	31	3,940	27
Powell	1,089	31	996	31
Pulaski	3,538	27	3,542	26
Robertson	167	31	108	22
Rockcastle	1,142	29	1,480	39
Rowan	928	21	1,502	34
Russell	1,123	31	1,066	28
Scott	974	11	1,846	16
Shelby	1,126	13	1,664	17
Simpson	598	14	703	17
Spencer	295	9	594	14
Taylor	1,260	24	1,610	30
Todd	702	22	793	24
Trigg	394	14	746	26
Trimble	319	15	424	19
Union	929	24	750	20
Warren	3,845	18	5,737	24
Washington	398	15	746	27
Wayne	1,743	35	1,228	25
Webster	685	20	758	23
Whitley	3,092	34	3,494	37
Wolfe	930	51	974	54
Woodford	472	8	1,004	17

For data sources and notes please see page 36.

ESSAY

KENTUCKY'S ORAL HEALTH OUTLOOK: OPPORTUNITIES ABOUND FOR NEEDED IMPROVEMENTS





Kentucky Youth Advocates thanks the Dentaquest Foundation for funding this essay but acknowledges that the findings and conclusions of the essay do not necessarily reflect the opinions of the foundation.

Kentucky's Oral Health Outlook: Opportunities Abound for Needed Improvements

> "I have seen patients ranging from pediatric to geriatric and I don't think there is a single group of people that are immune to problems of oral health."
>
> — Dr. William T. Betz, Family Physician
> *Chairman of the Department of Family Medicine*
> *at the University of Pikeville, Kentucky College of Osteopathic Medicine*

Imagine a Kentucky where all children are healthy. They have access to what they need, and decision makers place a high value on prevention. This vision is shared by many across the state who are working to improve oral health outcomes for children and adults. While Kentucky has many needs, the state also has many opportunities to move forward. The issue of poor oral health is complicated to solve, but concrete solutions exist. This report highlights the state of oral health in Kentucky, discusses current improvement initiatives, and briefly lays out recommendations for policy changes. Some twenty Kentucky-based experts were interviewed in preparation for this essay, and their expert opinions are incorporated throughout. Their thoughts reflect best practice research and build a foundation for future improvement efforts.

Current State of Oral Health in Kentucky – The Need is Still Great

While Kentucky provides fluoridated water to more than 99 percent of the state, it has the third highest rate of "toothlessness" in the country among adults 65 and older.[1, 2] A 2011 national study by the Pew Center on the States gave Kentucky a grade of C for its ability to provide oral health care to children, meaning Kentucky only met half of eight benchmarks aimed at addressing children's dental health needs.[3] The benchmarks range from state fluoridation rates to the presence of dental sealant programs in schools.[4] Kentucky's grade is especially concerning, as oral health is integral to overall health and wellness. Poor oral health is linked to diseases such as diabetes, Alzheimer's, and cardiovascular disease.[5] Additionally, children with poor oral health care experience higher rates of emergency room visits, higher absentee rates from school, and less promising job prospects as adults compared to children who receive needed oral health care.[6, 7, 8]

According to a 2007 survey, Kentucky youth ages 6-17 received a preventative dental care visit in the previous year at a much higher rate than children ages 0-5 (54 percent for ages 0-5, 91 percent for ages 6-11, and 87 percent for ages 12-17).[9] Prevention provides a vital opportunity to detect oral health problems early and keep them from becoming extremely painful and costly to treat.[10] The same survey revealed that nearly one in three Kentucky children experienced one or more oral health problems, such as cavities and bleeding gums, during the past year.[11] It also showed that children in low-income households received less preventative care and had more oral health problems than those of higher income households.[12, 13]

As with children, adults and older adults in Kentucky experience a vast range of oral health issues, which disproportionately fall on those with lower incomes. Relevant statistics include:

- A 2002 survey found that some 45 percent of the lowest income Kentucky adults reported poor or fair oral health versus only 15 percent of the highest income adults;[14]
- Only 63 percent of Kentucky adults reported visiting a dentist or dental clinic in the previous 12 months in 2010;[15]
- One in four (24.9 percent) Kentucky adults reported having oral health pain in the three months prior to being surveyed in 2002;[16]
- Also in 2002, 21 percent of Kentucky adults reported having six or more teeth extracted;[17]
- Almost one in four (23.5 percent) older adults surveyed in Kentucky in 2005 had untreated caries;[18]
- One in five (19.3 percent) Kentucky older adults reported having oral health pain in the three months prior to being surveyed in 2005;[19] and
- More than a quarter (27.4 percent) of older Kentuckians were completely toothless in 2010.[20]

Barriers to Optimum Oral Health

The oral health system is complex for all of those involved – patients, providers, and policymakers. Patients face issues including lack of access to oral health professionals near their homes, high costs of treatment, and community norms that may not place a high value on oral health. Dental professionals voice concerns about complicated billing procedures, lack of follow through with treatment plans, and high rates of absenteeism for scheduled appointments among low-income patients. Policymakers face the challenge of improving oral health for Kentucky citizens without significant burden to the state budget. A comprehensive approach is necessary in order to reverse the trend. The three barriers highlighted below reflect key issues facing Kentuckians as they seek oral health care services, with a specific emphasis on lower-income populations.

Barrier 1: Expense

"Just because someone has a job, that does not mean they have dental insurance, and a lot of times, even though you have dental insurance, you still end up paying a lot of out-of-pocket expense so people just forgo the dental care."

— Ms. Patrece Beverly, Public Health Professional in Pike County

Dental care and dental insurance are expensive for many Kentucky families and are often at the bottom of the priority list after paying for bills, food, transportation, and other necessary family expenses.[21, 22] While 56 percent of Kentucky adults (ages 18-64) reported having dental insurance in 2005, some 20 percent reported they did not seek care for a dental problem due to cost.[23] Families with private dental insurance often have yearly coverage limits and may require treatments not covered under their plan, resulting in out-of-pocket expenses.[24]

While Medicaid and the Kentucky Children's Health Insurance Program (KCHIP) have successfully provided dental coverage for low-income children, cost can still be an issue for some families on these public programs.[25, 26] These costs could include paying a required deposit to get an appointment, paying for treatments not covered by Medicaid or KCHIP, or paying totally out of pocket in order to avoid the hassles of locating a Medicaid provider.[27]

For older adults, dental care is often the largest out-of-pocket medical expense, as Medicare covers most medical and prescription costs but does not typically cover dental services.[28, 29] Older adults are less likely to have dental insurance than working-age adults, and in 2001, more than half of older adults in Kentucky had no dental insurance.[30, 31] Dental care is especially expensive if older adults want to keep their own teeth; an inexpensive set of dentures costs about one-fifth of the treatment for a diseased tooth including a root canal and a crown.[32]

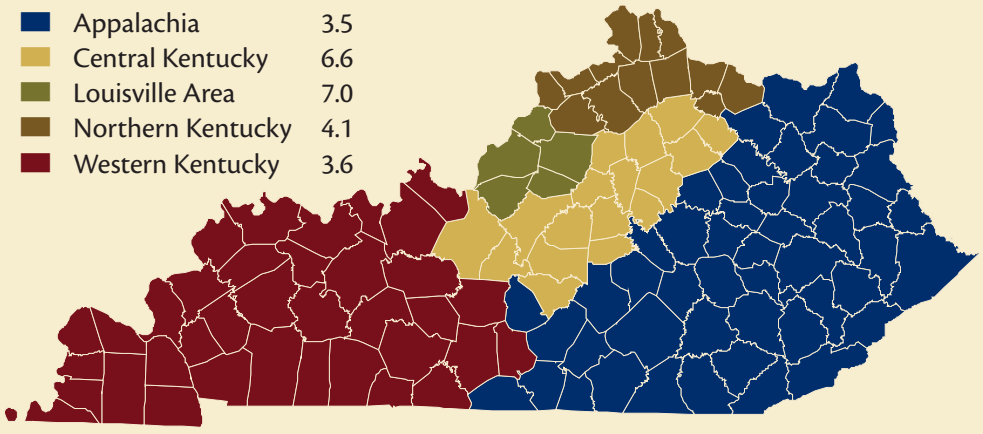
Barrier 2: Access

"I think we have begun the process, but training practitioners to work with the very young is one area where we need to work harder. It also applies to the very old. There is not much training and experience in dealing with the very old."

— Dr. Fred Howard, Dentist in Harlan County

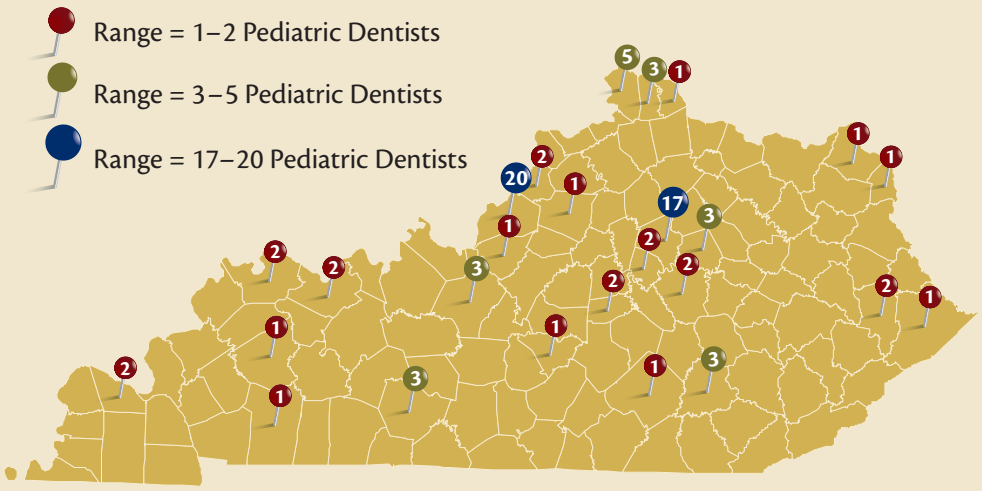
Accessibility in terms of available providers for low-income patients, location of providers, age groups that the provider will see, and quality of providers is a major hurdle the state must address to achieve large-scale improvements in health outcomes. While sheer numbers indicate that Kentucky has enough dentists to serve everyone, this does not mean there are enough dentists for specific populations in Kentucky or that people are able to easily get to a dentist. For instance, while there are 7 general and pediatric dentists per 10,000 people in the Louisville area, there are only 3.5 per 10,000 in Appalachia.[33]

Rate of General and Pediatric Dentists per 10,000 People, August 2011



Source: *The number of general and pediatric dentists for the rate calculation obtained from The Kentucky Board of Dentistry database. The population data for the rate calculation obtained from the U.S. Census Bureau, 2010 Decennial Census. Map prepared by the Kentucky State Data Center, University of Louisville.*

Location of Pediatric Dentists, August 2011



Source: *Kentucky Board of Dentistry database.*

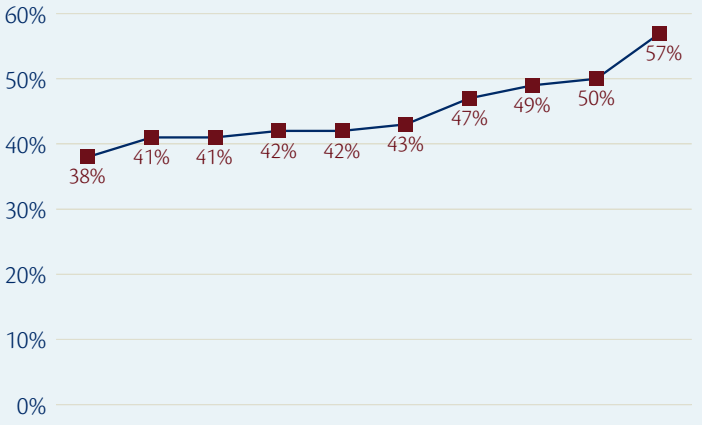
Finding dentists who treat children can be a difficult process in some parts of the state. For instance, there are only 83 pediatric dentists in Kentucky, and not all general dentists see children.[34] This could be because many dentists do not have the proper training needed to treat children, or they are not prepared for or interested in dealing with the special issues related to treating children.[35]

Low-income families face additional hardships in accessing dental care, including a lack of providers accepting the type of publicly-provided dental insurance many low-income families rely on. For example, in 2011 approximately 1,188 providers in Kentucky billed KCHIP or Medicaid for dental services provided to children, yet there were 2,505 licensed dentists in the state.[36] Such barriers impact people of color to a greater extent due to the disproportionately high rates of poverty they experience. Ultimately, this disparate access to care results in poorer oral health outcomes for these populations.[37] In Kentucky in 2010, approximately 54 percent of Black children receiving KCHIP or Medicaid utilized dental services, compared to 62 percent of enrolled White children.[38] In rural areas, the closest dentist accepting Medicaid may be more than an hour's drive away, which makes seeing the dentist regularly a challenge, especially for parents who work full-time.[39]

Despite barriers for low-income families, Kentucky has shown great improvement over the past ten years in the number of children enrolled in the KCHIP or Medicaid programs utilizing dental services. In Kentucky in 2010, 57 percent of children enrolled in KCHIP or Medicaid utilized dental services, compared to only 38 percent in 2001. Over this time period, the percent of enrolled children accessing dental services increased in all Kentucky counties. Adair, Jackson, and Menifee Counties saw the largest percentage point increases, while Boyd, Carter, Greenup, and Hickman Counties saw the smallest percentage point increases.[40]

Older adults, especially those in nursing homes and those who are homebound, also face major challenges in getting the dental care they need.[41, 42] In a 2005 survey, some 25 percent of older adults did not have a way to get to the dentist.[43] In addition, as older adults become less independent, their oral health declines.[44] Research shows that oral health is also often overlooked by health care professionals in nursing homes, and cases in Kentucky have demonstrated this.[45, 46]

Children Enrolled in Medicaid or KCHIP Who Received Dental Services



Source: *Kentucky Cabinet for Health and Family Services.*

Barrier 3: Personal Values

"A lot of people still see teeth as being a nuisance, the sooner I can get them out of the way the better off I'll be. Unfortunately that carries in to the younger generations even today."

— Dr. Fred Howard, Dentist in Harlan County

"If I don't see them, I can't fix the problem. You can't go out and beat on their door and say, you've got a bad tooth, I've got to fix that right now."

— Dr. Jonathan Rich, Dentist in Grant County

Another key reason for poor oral health in Kentucky is a lack of education and importance placed on oral health for some in the population, due in part to systemic barriers that have existed for generations.[47] Some populations, especially those with lower incomes, may not have been exposed to oral health education, making it difficult to place a high priority on oral health or to recognize oral health problems in order to seek appropriate treatment.[48] In addition, toothlessness may be an accepted way of life or seen as the only alternative to alleviate pain.[49, 50] Some parents do not see the need to take their children to the dentist because they know their children's baby teeth will fall out eventually and do not realize their impact on adult teeth.[51, 52] While some children may receive oral health education through school, not all do in Kentucky, and there are even fewer opportunities to receive it as an adult.[53]

Current Improvement Efforts

Despite barriers and great needs, many positive initiatives in Kentucky aim to improve the oral health status of people across the Commonwealth. Policymakers, local leaders, dental schools, advocates, philanthropists, and health departments are all working to address the problems. The following examples illustrate some recent and current efforts in Kentucky:

- In 2008, the Kentucky state legislature passed legislation requiring children to receive a dental screening or examination prior to school entry. This legislation sought to increase awareness among parents about the need for oral health and to get children into a "dental home" if they did not have one. Despite the requirement, only 26,402 out of 58,017 (46 percent) incoming 5- and 6-year-old students were reported to have received a dental screening or examination during the 2010-2011 school year.[54] School administrators must report that the required screenings or examinations were completed. With only 46 percent documented, it is unclear if the remaining students received a screening or an examination or if some forms were not recorded by school administrators. School administrators are not currently required to report any aggregate information about the oral health problems that were recorded on the screening form, yet this data would provide valuable information about the oral health needs of this population.[55] The 2010-2011 school year was the first year for this requirement, and stakeholders are monitoring the implementation to see if the law achieves the desired effects.
- In 2009, Kentucky Governor Steve Beshear announced a three-year Healthy Smiles Kentucky initiative to improve the oral health of children in Eastern Kentucky through intensive pediatric training for dentists, establishment of local oral health coalitions, and purchasing mobile dental equipment for use in remote areas of the state. Through this initiative, the Kentucky Oral Health Program awarded small grants to over 20 communities across the state in 2010 to establish local oral health coalitions.[56] Each local coalition chose to focus on a specific oral health issue, such as reducing sugary drink consumption by preschoolers, increasing the number of children receiving fluoride varnishes, providing oral health education to children and parents, or reducing the use of smokeless tobacco.[57]
- In 2011, the Kentucky Oral Health Program held a statewide Oral Health Summit. The summit attracted people from across the state interested in improving the oral health status of Kentuckians. Attendees worked to help update Kentucky's Oral Health Strategic Plan, which will set the course for moving forward. In addition to the summit, Governor Beshear announced the "Smiling Schools" program, another component of his Healthy Smiles Kentucky initiative, which will provide fluoride varnishes to 25,000 children in Eastern Kentucky. This program is important, as varnishes are known to prevent tooth decay among children.[58] The Governor also announced an initiative aimed at training more dentists to practice in rural areas and to assist them in setting up dental practices in the eastern part of the state. This initiative is a partnership among the Appalachian Regional Commission and higher education institutions, including Morehead State University, the University of Pikeville, and the University of Kentucky.[59]
- In 2012, a new statewide Kentucky Oral Health Coalition will be launched with the support of stakeholders from across the state representing many populations and professions. A steering committee with members from various sectors, including providers, public health professionals, educators, advocates, representatives from the local oral health coalitions, and other key oral health stakeholders, has been planning the effort over the past year and will begin the coalition membership and policy development process in early 2012.

The coalition will work to increase the oral health of all ages and populations of Kentuckians through education, outreach, and advocacy.

Looking Ahead to the Future

While many efforts are underway to improve oral health in the Commonwealth, more opportunities exist. Kentucky experts and research on best practices point to the following set of recommendations as a possible path forward. The recommendations that expand oral health care in nontraditional settings such as schools and primary care offices could directly reduce disparities among low-income populations and populations of color.[60] It will take countless partners in all regions of the state and involvement from diverse professions to not only stem the tide of problems, but also position Kentucky as a national leader in improved oral health.

Recommendation 1: Expand School-Based Oral Health Services

"A lot of uninsured or underinsured are not eligible for Medicaid. That population is not being served."

—Public Health Professional in Kentucky

Schools offer a convenient venue to treat unmet oral health needs and to provide education about the importance of oral hygiene and the value of prevention. According to a recent survey, the most common dental health services offered in Kentucky schools included oral health screenings and prevention counseling.[61] Some districts also coordinate visits from mobile dental vans, which help treat immediate dental needs.[62] School dental sealant programs have proven successful at preventing tooth decay but only reach a small group of children.[63] Less than 25 percent of Kentucky's high-poverty schools have dental sealant programs.[64] Expanding sealant programs in Kentucky could greatly improve children's oral health in a cost-effective manner.[65] Also, the previously mentioned requirement for oral health screenings prior to school entry can help students with referrals to receive the treatment they need. Family Resource and Youth Services Centers and school nurses can be catalysts and champions for assisting families in taking care of their children's oral health.[66]

Recommendation 2: Improve State and County-Level Oral Health Data Collection

"I think the problem Kentucky still fights in general is the overall awareness of the importance."

— Dr. Leon Mooneyhan, Former Superintendent of Shelby County Public Schools and current CEO of Ohio Valley Educational Cooperative

While Kentucky does track some data on oral health, much of the available information is outdated. The Kentucky Department for Public Health last conducted oral health surveys of children, adults, and older adults between 2001 and 2005. While these surveys provided valuable information at the time on a range of oral health issues from dental insurance to cavities, this data now provides a baseline, and newer information is needed. The national Behavioral Risk Factor Surveillance System provides a current statewide snapshot of preventative oral health visits among adults and toothlessness rates among older adults. However, no current statewide data exists to document the oral health needs of Kentuckians, such as active caries and toothaches. While the National Survey of Children's Health provides a snapshot of children's oral health problems in Kentucky, the survey is only conducted every four years and does not provide county-level data. Frequent collection of data is critical to track all of the efforts in the state and determine if they are resulting in better outcomes. Initiating another round of statewide surveys of children, adults, and older adults is a needed step in tracking progress and needs.

Recommendation 3: Increase the Number of Dentists Accepting Medicaid

"In the rural areas you don't have as many providers and that is one of the biggest barriers."

— Ms. Linda Grace Piker, Oral Health Advocate in Fayette County

Increasing accessibility to dental professionals needs targeted focus in Kentucky. One way to increase the pool of providers who treat Medicaid recipients is to address provider concerns. Kentucky providers are only reimbursed 51.9 percent of the median retail cost for services provided to Medicaid recipients.[67] This low reimbursement rate, combined with high rates of no-shows for appointments and waiting for long periods of time to receive reimbursement checks, cause many dental providers not to serve Medicaid

recipients.[68, 69] Increasing reimbursement rates and reducing administrative burdens for dentists have successfully increased Medicaid participation among dentists in other states, and ultimately helped low-income families find accessible dental care.[70, 71]

Kentucky's changing health care landscape, with the introduction of Medicaid Managed Care, provides an opportunity to increase the number of dental providers who treat Medicaid recipients. Kentucky has selected three private companies to administer the Medicaid program. Jefferson and 15 surrounding counties have operated under the managed care company Passport for many years. Managed care aims to reduce costs by coordinating care and ensuring members have a health care home. Managed care has the potential to reduce administrative burden for providers and also provide case management to help patients keep appointments and follow treatment plans. As Kentucky moves to a managed care model across the entire state, it is vital for oral health care to be available and accessible to all in the Medicaid program. Only time will tell if this model will help increase the number of providers who see Medicaid patients.

Recommendation 4: Integrate Oral Health Care into Overall Health Care

"It's a separate coverage from health coverage. If health care included dental care, people would be more likely to have it and it might bring down the cost of dental coverage if it were an all-inclusive package."

— Marsha Deaton, Public Health Professional in Madison County

Oral health education and awareness take the commitment and effort of many stakeholders in a community. For example, primary care providers can help educate children and their parents on the importance of oral health, since families generally see their primary care providers more often than their dentists.[72] In addition, primary care providers can help reduce oral health issues among children by providing oral health screenings and referrals to dentists.[73] Curriculum continues to be developed that provides basic training to health providers, including primary care providers and nurses, about how to conduct oral health education, assessments, and referrals to help fill the gap in oral health access and education.[74] For the older adult population specifically, nurses and nursing assistants with proper training can provide basic oral health care to individuals in nursing homes and those that are homebound.[75]

Recommendation 5: Expand the Scope of Practice for Dental Professionals

"Medicaid reimbursements are low and dentists don't get a lot of support and understanding from patients. Many people are scared of the drill and don't have the same relationship with dentists that they do with their physicians. There are also turf battles among levels of providers such as the scope of practice for hygienists and assistants. As somebody looking at it from the outside, we need to let more people do more things."

— Al Cross, Director of the Institute for Rural Journalism and Community Issues

New dental workforce models may be one solution for improving access to oral health care. Kentucky took a recent step to update the state's model of care whereby dental hygienists could apply sealants for school children without the requirement of a dental exam; however, regulations are still pending.[76] Several other states are investigating new ways to provide care and help meet the oral health needs of their population. For example, in Alaska a "dental therapist" is able to provide basic care, such as fillings, for vulnerable populations.[77] While the program is still new and more research is needed to determine the impact on oral health outcomes, various field reports indicate that both the patients and supervising dentists believe the model is effective. Minnesota is deploying its first graduates of a similar program, although their model involves significantly more training and supervision of the dental therapists.[78]

The American Dental Association is piloting the Community Dental Health Coordinator (CDHC) position, which emulates the role of community health workers in the medical field.[79] The coordinators focus primarily on oral health education and disease prevention. They provide limited basic preventive care such as applying sealants and temporizing cavities until patients can see a dentist. They act as "navigators," helping patients secure appointments, and assisting with challenges such as transportation, child care, and obtaining permission to leave work. They also help patients comply with their dentists' instructions and keep follow-up appointments. While these models reflect differing philosophies of workforce expansion, all share the goal of extending dental care to currently underserved populations. ■

Oral Health Care for Low-Income Kentucky Children

	Percent of children enrolled in KCHIP/Medicaid who received dental services		Number of licensed dentists*	Minimum number of providers who billed KCHIP/Medicaid for children's dental services**
	2001	2010	2011	2011
Kentucky	**38%**	**57%**	**2,505**	**1,188**
Adair	40%	75%	4	3
Allen	31%	53%	6	3
Anderson	39%	64%	8	4
Ballard	38%	54%	1	3
Barren	37%	52%	14	13
Bath	42%	65%	1	3
Bell	53%	69%	11	20
Boone	30%	50%	89	20
Bourbon	42%	63%	13	8
Boyd	48%	55%	33	18
Boyle	42%	58%	22	17
Bracken	40%	57%	3	3
Breathitt	45%	62%	4	5
Breckinridge	38%	55%	4	3
Bullitt	36%	53%	27	3
Butler	33%	55%	2	2
Caldwell	41%	58%	5	3
Calloway	35%	61%	17	14
Campbell	36%	51%	37	14
Carlisle	47%	61%	1	2
Carroll	27%	43%	5	2
Carter	48%	56%	7	6
Casey	51%	70%	2	2
Christian	31%	45%	29	8
Clark	42%	63%	26	13
Clay	37%	61%	6	7
Clinton	47%	63%	3	4
Crittenden	39%	63%	1	3
Cumberland	47%	77%	3	5
Daviess	38%	52%	57	31
Edmonson	39%	57%	1	2
Elliott	44%	64%	3	5
Estill	46%	62%	6	7
Fayette	27%	61%	382	153
Fleming	39%	63%	3	4
Floyd	47%	65%	27	29
Franklin	36%	55%	30	21
Fulton	37%	58%	0	3
Gallatin	25%	46%	1	1
Garrard	39%	59%	4	1
Grant	35%	61%	7	9
Graves	36%	57%	11	6
Grayson	42%	54%	8	1
Green	38%	66%	4	4
Greenup	48%	55%	16	7
Hancock	34%	53%	5	4
Hardin	31%	49%	69	12
Harlan	46%	56%	7	11
Harrison	38%	59%	6	7
Hart	37%	59%	5	8
Henderson	39%	50%	17	12
Henry	32%	51%	2	0
Hickman	40%	46%	1	2
Hopkins	42%	61%	22	18
Jackson	24%	59%	3	6
Jefferson	32%	53%	717	97
Jessamine	40%	62%	18	8
Johnson	45%	58%	5	6
Kenton	29%	50%	68	21
Knott	49%	66%	4	4
Knox	49%	68%	12	10
LaRue	37%	57%	3	2
Laurel	41%	61%	25	26
Lawrence	42%	58%	4	6
Lee	42%	57%	1	6
Leslie	52%	65%	4	6
Letcher	40%	55%	5	9
Lewis	48%	64%	3	4
Lincoln	44%	63%	2	2
Livingston	37%	67%	1	1
Logan	36%	61%	8	11
Lyon	40%	66%	3	2
McCracken	33%	59%	53	16
McCreary	41%	67%	2	5
McLean	35%	64%	1	2
Madison	44%	61%	31	40
Magoffin	48%	63%	6	5
Marion	39%	50%	6	4
Marshall	38%	54%	10	3
Martin	46%	65%	2	4
Mason	38%	58%	11	11
Meade	37%	59%	6	3
Menifee	24%	62%	1	3
Mercer	36%	64%	7	5
Metcalfe	42%	60%	2	4
Monroe	47%	63%	6	11
Montgomery	43%	61%	14	19
Morgan	45%	67%	4	7
Muhlenberg	36%	53%	8	5
Nelson	36%	57%	17	5
Nicholas	44%	58%	2	2
Ohio	46%	56%	8	7
Oldham	29%	52%	32	3
Owen	27%	49%	4	3
Owsley	36%	61%	0	1
Pendleton	32%	49%	2	3
Perry	47%	58%	16	23
Pike	46%	58%	35	33
Powell	43%	60%	2	3
Pulaski	46%	62%	41	28
Robertson	36%	61%	0	1
Rockcastle	42%	59%	1	2
Rowan	39%	63%	12	17
Russell	40%	68%	5	10
Scott	41%	57%	18	13
Shelby	20%	54%	19	5
Simpson	38%	58%	9	4
Spencer	33%	58%	5	0
Taylor	35%	67%	8	6
Todd	35%	64%	1	3
Trigg	37%	66%	4	3
Trimble	41%	52%	0	1
Union	40%	52%	7	2
Warren	32%	52%	79	43
Washington	33%	61%	3	3
Wayne	50%	65%	5	7
Webster	43%	58%	2	3
Whitley	46%	66%	17	22
Wolfe	44%	61%	1	2
Woodford	36%	63%	11	2

For data sources and notes please see page 36.

* Number of licensed dentists are as of August 2011 and include: general dentists, pediatric dentists, endodontists, oral pathologists, oral radiologists, orthodontists, oral surgeons, periodontists, and prosthodontists. The statewide total include 5 licensed dentists whose county of practice was labeled "not on file".

** Minimum number of providers who billed KCHIP/Medicaid for children's dental services represents all types of providers (including non-dentists) billing at any point during the 2011 state fiscal year for youth 18 and under, excluding MCO Passport. County sum does not equal statewide total due to the county-level disaggregation of the minimum number count.

HEALTH






Adequate Prenatal Care

Definition

Adequate prenatal care is the number and percent of pregnant women who received early prenatal care (care in the first thirteen weeks of pregnancy) and regular prenatal care (10 or more prenatal care visits).

Data in context

All children deserve a healthy start in life, which begins with their mother having access to early and frequent prenatal care. Women who receive appropriate prenatal care have healthier pregnancies and healthier babies.[1]

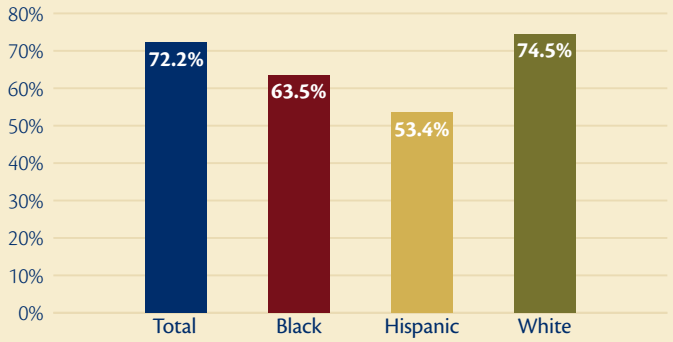
Prenatal care supervises the progress of the pregnancy and includes screening and treatment for medical conditions, tests for potential birth defects and diseases, monitoring of the fetus' development, and patient education on behaviors that jeopardize the health of the baby.[2, 3] Early prenatal care provides health care professionals an opportunity to treat health problems early, before they become a threat to the pregnancy.[4] The absence of maternal prenatal care increases a baby's risk threefold of being born at low birthweight.[5] Also, babies of mothers receiving early prenatal care are less likely to die before their first birthday than those whose mothers started prenatal care after the first trimester, and are much less likely to die as an infant than those whose mothers received no prenatal care.[6]

The public health field has expanded the recommendations on prenatal care to include preconception care for women of reproductive age. A woman's health before conception can affect her baby's health, so preconception care focuses on health education, screening, and interventions to improve a woman's overall health. Preconception care is essential since many women do not know they are pregnant until weeks after conception, and the first few weeks of pregnancy are critical to normal fetal development.[7]

Nationally, the percent of women receiving prenatal care services early in their pregnancies has stayed stagnant, after consistent improvements from 1990 to 2003. Data from comparable states indicate that in 2008, only 71 percent of women in the United States began using prenatal care during the first trimester of pregnancy and 7 percent of women began prenatal care in their third trimester or received none.[8] Among the 27 states with comparable birth certificate questions about prenatal care, Kentucky ranked 12th highest for women receiving early prenatal care, at 72.2 percent.[9]

The rate of women in Kentucky who received adequate prenatal care decreased from 67 percent in 2004-2006 to 65 percent in 2007-2009. Rates dropped by 13 percentage points or more in Butler, Lewis, Martin, Simpson, and Warren Counties. Rates in 40 counties improved between 2004-2006 and 2007-2009, with the greatest improvements seen in Knott, Leslie, and Letcher Counties. In 2007-2009 the range of women receiving adequate prenatal care varied greatly from fewer than half in Hart, Henderson, Lawrence, Lee, Martin, and Webster Counties to 85 percent in McCracken County.[10]

Percent of Births to Mothers Receiving Early Prenatal Care by Race, 2008



Source: *National Center for Health Statistics. Available at http://www.cdc.gov/nchs/data/nvsr/nvsr59/nvsr59_07_tables.pdf.*

Inequities in access to health care contribute to racial disparities in accessing early prenatal care. Mothers who do not receive prenatal care more often live in low-income families and do not have health insurance.[11] In Kentucky during 2007-2009, White women were most likely (67 percent) and Hispanic women least likely (51 percent) to receive adequate prenatal care services.[12]

To access early and frequent prenatal care, pregnant women need adequate health care coverage and options for quality care in their community. Health care providers can increase the use of prenatal care by becoming Medicaid providers for low-income mothers, becoming culturally competent in their practices, offering patient-focused care, and promoting messages about preconception health.[13] Universal health coverage for pregnant women would increase their exposure to educational materials about their pregnancy, provide access to critical prenatal care, and ensure continuity of care and a medical home.[14]

Increased focus on preconception care provides another avenue for improving maternal and child health.[15] Primary care physicians can perform risk assessments and health promotion counseling during routine visits with women of reproductive age to reduce reproductive risks and improve pregnancy outcomes. Preconception care for women whose past pregnancies resulted in poor outcomes (i.e., preterm birth, low birthweight) should provide additional intensive interventions to improve the likelihood of a healthy birth.[16]

Data Source: Kentucky Cabinet for Health and Family Services, processed by the Kentucky State Data Center.
Data Notes: Data are reported by mother's place of residence, not infant's place of birth. Data from 2007-2009 are preliminary and exclude some births to Kentucky mothers that occurred out of state. For cases where the information for this variable was missing, the case was excluded from the total number of live births. The 2007-2009 county sum does not equal the statewide total due to inclusion of data that lacked a county designation.
Rate Calculation: (number of women receiving prenatal care in the first 13 weeks of pregnancy and making 10 or more visits in 2004-2006 * 100) / (total number of live births in 2004-2006)
(number of women receiving prenatal care in the first 13 weeks of pregnancy and making 10 or more visits in 2007-2009 * 100) / (total number of live births in 2007-2009)

Births to Mothers Receiving Early and Regular Prenatal care

(number & percent of all live births)

	2004–2006		2007–2009	
	Number	Percent	Number	Percent
Kentucky	**111,175**	**67**	**107,950**	**65**
Adair	414	66	407	63
Allen	416	60	392	51
Anderson	529	70	581	70
Ballard	213	84	234	83
Barren	1,007	62	987	59
Bath	340	73	354	71
Bell	699	63	724	66
Boone	3,569	76	2,836	64
Bourbon	511	68	504	68
Boyd	1,017	57	832	52
Boyle	673	72	612	67
Bracken	251	71	204	60
Breathitt	324	59	303	56
Breckinridge	420	57	406	59
Bullitt	1,715	76	1,704	76
Butler	340	68	282	54
Caldwell	272	66	329	72
Calloway	846	80	973	82
Campbell	2,304	71	1,641	61
Carlisle	139	72	150	81
Carroll	283	64	331	63
Carter	632	59	495	51
Casey	323	58	354	61
Christian	2,233	56	3,133	70
Clark	1,001	75	1,004	75
Clay	455	56	438	54
Clinton	234	62	287	70
Crittenden	189	59	229	65
Cumberland	162	66	133	55
Daviess	2,454	62	2,555	62
Edmonson	249	69	199	57
Elliott	154	64	113	53
Estill	300	52	311	58
Fayette	8,043	70	7,974	67
Fleming	361	65	375	63
Floyd	934	56	847	53
Franklin	1,265	68	1,292	70
Fulton	151	59	163	62
Gallatin	267	63	193	53
Garrard	353	69	404	68
Grant	819	68	702	62
Graves	1,011	71	1,085	70
Grayson	679	68	684	66
Green	255	68	231	62
Greenup	755	61	592	55
Hancock	218	65	211	64
Hardin	2,604	55	2,515	53
Harlan	729	62	661	55
Harrison	480	73	500	69
Hart	392	55	355	48
Henderson	1,030	56	867	49
Henry	429	72	425	73
Hickman	95	70	100	67
Hopkins	1,122	62	1,247	68
Jackson	281	53	249	51
Jefferson	21,489	72	21,029	68
Jessamine	1,353	71	1,369	67
Johnson	584	65	515	61
Kenton	4,725	70	3,708	60
Knott	183	33	306	53
Knox	931	59	650	52
LaRue	268	53	267	55
Laurel	1,458	66	1,359	63
Lawrence	362	57	288	49
Lee	126	55	93	44
Leslie	188	46	307	63
Letcher	202	21	474	57
Lewis	394	71	202	57
Lincoln	699	67	699	69
Livingston	220	71	256	83
Logan	670	63	579	57
Lyon	141	77	161	83
McCracken	1,932	79	1,979	85
McCreary	533	75	493	77
McLean	208	58	213	63
Madison	1,966	63	1,832	61
Magoffin	318	57	281	59
Marion	541	70	533	64
Marshall	751	79	845	83
Martin	273	57	181	44
Mason	452	67	455	66
Meade	451	60	476	59
Menifee	161	76	139	70
Mercer	533	69	562	69
Metcalfe	244	61	243	61
Monroe	284	64	226	55
Montgomery	768	72	850	74
Morgan	294	64	278	60
Muhlenberg	760	66	728	73
Nelson	1,241	72	1,315	74
Nicholas	197	73	198	71
Ohio	644	61	554	57
Oldham	1,270	77	1,256	77
Owen	276	70	234	67
Owsley	73	43	83	55
Pendleton	355	68	302	58
Perry	455	39	652	54
Pike	1,377	60	1,343	61
Powell	406	70	345	68
Pulaski	1,709	75	1,874	79
Robertson	42	68	58	75
Rockcastle	370	62	334	61
Rowan	569	77	584	71
Russell	432	72	479	72
Scott	1,362	71	1,455	73
Shelby	1,028	61	1,144	66
Simpson	394	65	332	50
Spencer	419	75	479	79
Taylor	591	68	595	62
Todd	283	53	302	56
Trigg	290	68	309	69
Trimble	240	75	234	71
Union	302	55	270	52
Warren	2,751	66	2,257	53
Washington	299	75	273	72
Wayne	522	70	576	76
Webster	286	51	264	49
Whitley	807	64	828	57
Wolfe	225	67	170	56
Woodford	557	69	553	66

Smoking During Pregnancy

Definition

Smoking during pregnancy is the number and percent of births to mothers who reported smoking at any point while pregnant.

Data in context

Children fare best when they have a healthy start in life, and this opportunity begins during pregnancy. The problems associated with smoking while pregnant are well-documented, and the consequences are far-reaching. The U.S. Surgeon General found a causal relationship between cigarette smoke and fetal growth problems, low birthweight, preterm delivery, Sudden Infant Death Syndrome, and other infant problems.[1]

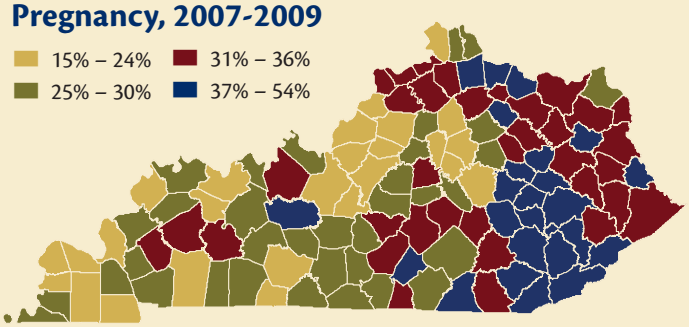
Babies whose mothers smoke during pregnancy have a 30 percent greater chance of premature birth, are born weighing an average of 200 grams less than infants born to mothers who did not smoke, and are 1.4-3.0 times more likely to die of Sudden Infant Death Syndrome (SIDS).[2] Babies born to mothers who smoke also have substantially higher rates of infant mortality than babies born to mothers who do not smoke (10.41 per 1,000 and 6.10 per 1,000, respectively, in 2007).[3] Each year from 2000-2004 an estimated 776 infant deaths were attributed to smoking during pregnancy.[4]

Smoking during pregnancy increases the risk for birth defects and other poor health outcomes throughout childhood, including cleft palate and lip, clubfoot, gastrointestinal system defects, infantile colic, abnormal blood pressure, childhood leukemia and obesity, and respiratory disorders, among others.[5, 6] Children whose mothers smoked during pregnancy also face increased risk for cognitive and behavioral disorders and problems, including mental retardation, attention deficit disorder, learning disabilities, and youth violence.[7]

When a woman quits smoking during her pregnancy, the baby's health benefits, with the greatest impact occurring when the mother quits early in the pregnancy.[8] During 2007-2009 the percentage of Kentucky females who smoked during the three months prior to pregnancy, but did not smoke during any of the three trimesters of pregnancy, was 10.5 percent.[9]

Women face many barriers to quitting smoking during pregnancy. Without health insurance, some women may not have access to smoking cessation programs and medical information about the consequences of smoking during pregnancy. Smoking is sometimes used as a way to cope with stress during pregnancy, and women with low income experience greater stress and fewer resources to obtain needed help.[10] Rates of smoking while pregnant are highest among women with less than a high school education, young women, and non-Hispanic White women.[11] Rates of smoking during pregnancy in Kentucky vary significantly by race, with 27 percent of White women reporting smoking, compared to 18 percent of Black women and 4 percent of Hispanic women during 2007-2009.[12]

Percent of Women Reporting Smoking During Pregnancy, 2007-2009



Source: *Kentucky Cabinet for Health and Family Services.*

Among the 24 states using the latest birth certificate revision, Kentucky had the highest rate in 2008 at 25 percent, which was more than twice the 24 states' combined rate of 10 percent.[13] Kentucky data show slight improvement between the 2004-2006 and 2007-2009 time periods, with rates of 26 percent and 25 percent respectively. Rates improved in 74 counties, led by Livingston and Union Counties. Rates for 2007-2009 range from a low of 15 percent in Fayette and Oldham Counties to more than half of all births in Lee County.

Reducing maternal smoking can have a profound impact, as it is the single most preventable cause of illness and death for mothers and infants.[14] Kentucky has taken recent steps towards reducing smoking during pregnancy by raising the cigarette tax to 60 cents per pack in 2009[15] and providing funding in 2010 for tobacco cessation programs for Medicaid recipients.[16] Kentucky can take a variety of other steps to end smoking during pregnancy, including:

- Promoting vigilant screening, counseling, and smoking cessation referrals by all health care providers. A 2008 survey in Kentucky showed only 60% of maternal smokers had a health care provider discuss quitting with them;[17]
- Raising the tobacco tax further, as studies have shown a 10 percent increase in the price of cigarettes yields a 7 percent reduction in smoking by pregnant women; and using that revenue to fund advertising counter to that of the tobacco industry;[18] and
- Increasing the amount of tobacco settlement fund and tobacco tax revenue dollars dedicated to prevention and treatment. Kentucky spends far less on its tobacco control program than the level recommended by the Centers for Disease Control and Prevention and ranks 39th in the nation for spending on prevention.[19]

Data Source: Kentucky Cabinet for Health and Family Services, processed by the Kentucky State Data Center.
Data Notes: Data are reported by mother's place of residence, not infant's place of birth. Data from 2007-2009 are preliminary and exclude some births to Kentucky mothers that occurred out of state. For cases where the information for this variable was missing, the case was excluded from the total number of live births. The 2007-2009 county sum does not equal the statewide total due to inclusion of data that lacked a county designation.
Rate Calculation: (number of women who reported smoking during pregnancy in 2007-2009 * 100) / (total number of live births in 2007-2009) (number of women who reported smoking during pregnancy in 2004-2006 * 100) / (total number of live births in 2004-2006)

Births to Mothers Who Reported Smoking During Pregnancy

(number & percent of all live births)

	2004-2006		2007-2009	
	Number	Percent	Number	Percent
Kentucky	**42,766**	**26**	**42,510**	**25**
Adair	205	32	218	33
Allen	229	33	195	25
Anderson	217	28	223	26
Ballard	83	33	68	24
Barren	418	26	432	26
Bath	196	41	186	35
Bell	434	39	429	38
Boone	742	17	871	19
Bourbon	217	29	220	29
Boyd	490	31	496	31
Boyle	285	30	272	29
Bracken	126	37	131	37
Breathitt	223	40	224	40
Breckinridge	254	36	212	31
Bullitt	564	25	529	23
Butler	169	34	129	25
Caldwell	140	34	149	33
Calloway	244	23	254	21
Campbell	815	29	801	28
Carlisle	46	24	40	22
Carroll	168	40	170	32
Carter	328	34	354	36
Casey	166	30	185	31
Christian	825	21	943	21
Clark	401	30	386	28
Clay	404	48	385	45
Clinton	109	29	137	32
Crittenden	91	28	104	30
Cumberland	67	27	64	26
Daviess	976	25	992	24
Edmonson	112	31	107	30
Elliott	108	46	94	43
Estill	216	37	207	37
Fayette	1,766	15	1,762	15
Fleming	192	34	189	31
Floyd	585	35	608	36
Franklin	549	29	535	29
Fulton	61	24	77	29
Gallatin	148	35	127	34
Garrard	168	32	184	30
Grant	425	36	418	36
Graves	338	24	343	22
Grayson	381	38	381	37
Green	105	28	100	27
Greenup	267	26	300	27
Hancock	76	24	87	26
Hardin	1,118	24	1,035	22
Harlan	473	42	499	41
Harrison	224	33	265	36
Hart	180	25	189	25
Henderson	413	32	466	26
Henry	196	33	184	31
Hickman	38	29	44	29
Hopkins	587	33	588	32
Jackson	238	44	207	42
Jefferson	5,392	18	5,229	17
Jessamine	487	25	510	24
Johnson	274	31	294	34
Kenton	1,678	27	1,817	28
Knott	216	39	213	35
Knox	581	37	540	40
LaRue	126	25	114	23
Laurel	779	34	779	34
Lawrence	169	34	185	31
Lee	114	49	120	54
Leslie	179	41	199	40
Letcher	374	40	313	37
Lewis	119	35	113	31
Lincoln	353	33	314	31
Livingston	96	32	65	21
Logan	293	28	289	28
Lyon	48	26	57	29
McCracken	617	25	449	19
McCreary	289	41	254	38
McLean	104	30	77	23
Madison	748	24	682	22
Magoffin	199	35	178	35
Marion	250	32	239	29
Marshall	247	26	273	27
Martin	158	37	183	42
Mason	222	33	264	38
Meade	211	29	206	25
Menifee	102	46	82	39
Mercer	249	32	261	31
Metcalfe	136	34	123	30
Monroe	121	27	122	29
Montgomery	351	32	364	31
Morgan	165	35	155	32
Muhlenberg	433	38	358	36
Nelson	477	27	420	24
Nicholas	111	39	107	37
Ohio	283	27	238	25
Oldham	249	15	244	15
Owen	126	32	125	35
Owsley	100	54	75	46
Pendleton	193	38	195	37
Perry	465	39	481	38
Pike	751	34	742	33
Powell	225	38	205	39
Pulaski	659	29	686	29
Robertson	20	31	28	35
Rockcastle	221	37	192	34
Rowan	240	32	283	33
Russell	218	36	267	39
Scott	483	25	432	21
Shelby	388	23	372	21
Simpson	174	28	156	23
Spencer	134	24	108	18
Taylor	293	34	306	32
Todd	135	25	133	25
Trigg	146	34	135	30
Trimble	105	38	119	36
Union	132	32	108	21
Warren	792	19	791	18
Washington	85	21	96	25
Wayne	225	30	223	29
Webster	125	24	144	27
Whitley	418	34	570	36
Wolfe	144	41	131	40
Woodford	173	21	171	20

Preterm Births

Definition

Preterm births is the number and percent of births before 37 weeks of pregnancy.

Data in context

All newborn babies need to start life healthy to ensure proper growth and development. The length of gestation is perhaps the most important predictor of a child's health and survival.[1] Preterm labor can happen to any pregnant woman; however, women who have had a previous preterm birth, women pregnant with multiple babies, and women with certain uterine or cervical abnormalities are at greatest risk of preterm labor and birth.[2]

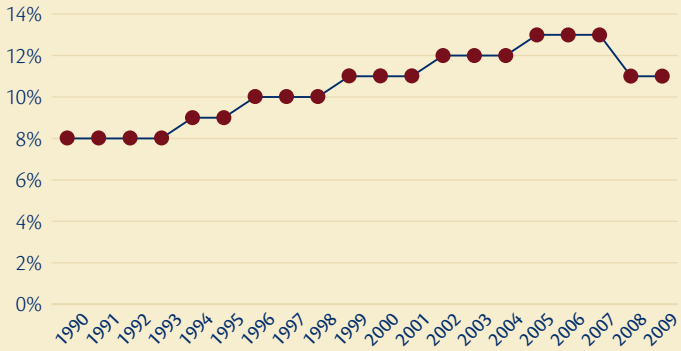
Babies born preterm face a higher risk of long-term disabilities, including intellectual and developmental disabilities, cerebral palsy, lung problems, and vision and hearing loss. Long-term health problems for babies born very prematurely can include diabetes, high blood pressure, and heart disease.[3] Infant mortality rates are higher for babies born preterm, and steadily increase the shorter the gestational age. In fact, 54 percent of all infant deaths in the U.S. in 2007 were to those born very preterm (less than 32 weeks).[4]

After decades of increasing preterm birth rates, the U.S. has experienced its first sustained decline, with 2009 the third consecutive year to see declining rates. The national rate of preterm births fell from 12.80 percent in 2006 to 12.18 percent in 2009, based on preliminary data. Nationally, Non-Hispanic Whites, Non-Hispanic Blacks, and Hispanics all experienced significant declines in preterm birth rates since 2006.[5]

Certain lifestyle factors may increase the risk of delivering preterm, including: late or no prenatal care; use of alcohol, tobacco, or drugs; maternal stress and deficient social support; and exposure to particular environmental pollutants. Also, certain medical conditions during pregnancy may increase the likelihood of experiencing preterm labor, including: uterine and vaginal infections; diabetes; high blood pressure and preeclampsia; clotting disorders; and being underweight or obese before pregnancy.[6] The use of fertility treatments is linked to preterm births, as such treatments increase incidence of multiple births.[7]

Women in disadvantaged communities face increased exposure to many of the risk factors associated with preterm labor.[8] Women with low income and African-American women are among groups identified as having increased risk of delivering preterm, due in part to psychosocial factors.[9, 10] However, genetic factors may also contribute to disparate rates for African-American women.[11] Despite a recent decline in the rate of preterm births to Black women in Kentucky, the rate remains higher than preterm births to White and Hispanic women. During the 2007-2009 time period in Kentucky, 15 percent of births to Black women were preterm, compared to 12 percent to White women and 9 percent to Hispanic women.[12]

Percent of Preterm Births in Kentucky



Source: *Kentucky Cabinet for Health and Family Services.*
Note: 2007 to 2009 data are still preliminary.

Kentucky's rate of preterm births increased from 11 to 12 percent from 1999-2001 to 2007-2009. Estill and Gallatin Counties showed the greatest decrease between those time periods, with improvements of 4 percentage points. Lawrence County saw the largest percentage point increase and had the highest county rate in 2007-2009 at 26 percent.[13]

Strengthening neighborhood protective factors, including environmental quality and community resources, can help address the problem of preterm births for all women, as well as reduce disparities among racial groups. Kentucky currently has effective programs focused on reducing preterm births. The Healthy Babies Are Worth the Wait initiative, now in seven sites across the state, could be expanded to serve more women.[14] The statewide Health Access Nurturing Development Services (HANDS) program must be preserved despite dwindling funds from the Master Tobacco Settlement Agreement.[15] Health insurance coverage is also critical, since early and regular prenatal care allows healthcare providers to identify and treat problems early, thereby reducing the risk of premature birth.[16]

Proven solutions to reduce preterm births and specifically target disparities include:

- Addressing the impact of physically demanding workplaces to lessen the trauma to pregnant women;
- Employing poverty reduction strategies like the refundable earned income tax credit to allow low-income working families to keep more of their earnings and thus afford necessities like health insurance; and
- Implementing housing desegregation policies and addressing neighborhoods' proximity to environmental toxins that contribute to poor pregnancy outcomes.[17]

Data Source: Kentucky Cabinet for Health and Family Services, processed by the Kentucky State Data Center.
Data Notes: Data are reported by mother's place of residence, not infant's place of birth. Data from 2007-2009 are preliminary and exclude some births to Kentucky mothers that occurred out of state. For cases where the information for this variable was missing, the case was excluded from the total number of live births. The 2007-2009 county sum does not equal the statewide total due to inclusion of data that lacked a county designation.
Rate Calculation: (number of births with gestation under 37 weeks between 2007-2009 * 100) / (total number of live births between 2007-2009)
(number of births with gestation under 37 weeks between 2004–2006 * 100) / (total number of live births between 2004–2006)

Preterm Births

(number & percent of all live births)

	1999-2001		2007-2009	
	Number	Percent	Number	Percent
Kentucky	**18,194**	**11**	**20,069**	**12**
Adair	60	10	51	8
Allen	69	10	91	12
Anderson	76	10	90	11
Ballard	26	9	45	16
Barren	85	6	188	11
Bath	47	10	60	11
Bell	113	10	138	12
Boone	381	9	409	9
Bourbon	78	11	82	11
Boyd	190	12	248	15
Boyle	110	12	96	10
Bracken	46	14	54	15
Breathitt	66	13	65	12
Breckinridge	56	8	83	12
Bullitt	221	10	257	11
Butler	56	12	76	15
Caldwell	24	6	67	15
Calloway	86	9	118	10
Campbell	356	10	265	9
Carlisle	15	7	19	10
Carroll	46	11	58	11
Carter	126	12	128	13
Casey	49	8	59	10
Christian	572	12	581	12
Clark	164	13	216	16
Clay	128	14	106	13
Clinton	38	10	44	10
Crittenden	13	4	48	14
Cumberland	17	7	43	18
Daviess	461	12	529	13
Edmonson	41	10	53	15
Elliott	34	14	28	13
Estill	83	14	56	10
Fayette	1,280	12	1,380	11
Fleming	53	10	84	14
Floyd	164	10	270	16
Franklin	189	10	234	13
Fulton	37	13	49	18
Gallatin	38	12	30	8
Garrard	67	13	81	13
Grant	123	11	120	10
Graves	152	10	174	11
Grayson	78	8	133	13
Green	27	7	40	11
Greenup	152	13	142	13
Hancock	52	14	47	14
Hardin	510	12	496	10
Harlan	136	11	155	13
Harrison	91	13	104	14
Hart	29	4	82	11
Henderson	223	13	236	13
Henry	76	12	57	10
Hickman	18	12	20	13
Hopkins	253	14	292	16
Jackson	45	8	54	11
Jefferson	3,457	12	3,517	11
Jessamine	153	9	243	12
Johnson	110	12	156	18
Kenton	705	10	599	9
Knott	84	15	89	15
Knox	140	10	157	12
LaRue	61	12	61	12
Laurel	265	11	243	11
Lawrence	82	14	156	26
Lee	24	10	22	10
Leslie	46	10	77	15
Letcher	120	14	133	16
Lewis	60	12	41	11
Lincoln	118	12	125	12
Livingston	36	12	32	10
Logan	111	10	127	12
Lyon	13	8	19	10
McCracken	262	10	261	11
McCreary	96	14	90	13
McLean	44	11	48	14
Madison	307	11	275	9
Magoffin	70	12	91	18
Marion	86	11	86	10
Marshall	101	11	106	10
Martin	78	14	100	23
Mason	75	11	77	11
Meade	88	10	92	11
Menifee	30	13	25	12
Mercer	93	11	93	11
Metcalfe	26	7	46	11
Monroe	28	6	47	11
Montgomery	126	12	148	13
Morgan	38	8	57	12
Muhlenberg	143	12	117	12
Nelson	180	11	243	14
Nicholas	45	15	50	17
Ohio	122	14	124	13
Oldham	161	10	168	10
Owen	38	10	37	10
Owsley	15	9	20	12
Pendleton	59	10	63	12
Perry	153	13	161	13
Pike	231	10	345	15
Powell	70	13	71	13
Pulaski	238	11	270	11
Robertson	4	*	10	13
Rockcastle	68	11	55	10
Rowan	80	10	86	10
Russell	65	11	72	11
Scott	134	9	234	12
Shelby	176	12	167	9
Simpson	76	11	88	13
Spencer	53	11	67	11
Taylor	86	10	95	10
Todd	52	10	78	14
Trigg	46	11	64	14
Trimble	22	7	37	11
Union	80	13	66	13
Warren	409	11	573	13
Washington	44	11	45	12
Wayne	87	12	78	10
Webster	78	14	66	12
Whitley	171	11	207	13
Wolfe	39	12	47	15
Woodford	110	12	90	10

*Rates were not calculated for counties with fewer than 6 occurrences.

Low Birthweight Births

Definition

Low birthweight babies is the number and percent of infants born weighing less than 5 lbs. 8 oz. *Very low birthweight babies* is the number of infants weighing less than 3 lbs. 4 oz.

Data in context

Every child needs a healthy beginning to life. Children born at a low birthweight face increased risk for serious health problems as newborns, developmental and intellectual disabilities, cerebral palsy, and vision and hearing loss.[1] Children born at very low birthweight are at great risk for health problems such as bleeding in the brain, respiratory distress syndrome, and heart and intestinal problems.[2] Low birthweight babies are 25 times more likely than those born at normal weights to die within their first year, and those born with a very low birthweight are more than 100 times more likely to die as an infant.[3] Low birthweight also increases the risk in adulthood for hypertension, heart disease, diabetes, and obesity.[4]

Cigarette smoking by a mother during pregnancy is the "single most important known cause" of low birthweight.[5] Other factors include poor prenatal nutrition, infections, stress, and poverty.[6]

The two major reasons for low-weight births are prematurity and growth restriction during development, which may be due to the smaller size of parents or something that slowed the baby's growth while in the womb.[7] The causes of preterm labor are not thoroughly understood; one risk factor is being pregnant with twins, triplets, or more (multiples).[8] In 2008, compared to singleton births, multiple births in Kentucky were about 8 times more likely to be low birthweight and 10 times more likely to be very low birthweight.[9]

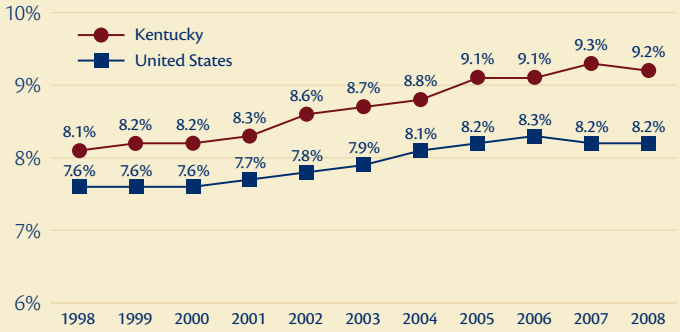
In 2009 in the U.S., the percent of infants born with a low birthweight was 8.16 percent, while 1.45 percent were born with a very low birthweight, according to preliminary data.[10] Kentucky's rate of low-weight births has remained persistently higher than the national rate for more than a decade.[11] In 2009 only nine states and the District of Columbia had low birthweight rates higher than Kentucky's rate of 8.9 percent.[12]

Low-weight birth rates reflect racial disparities in health status and receipt of care. All pregnant women need quality prenatal care to ensure healthy birth outcomes, yet women of color are more likely to face barriers to accessing quality care. From 2007-2009 in Kentucky, Black women had the highest rates of low-weight births (15 percent), followed by White women (8 percent). Hispanic women had the lowest rates (7 percent) among the major race categories, despite being least likely to access prenatal care. Rates of very low-weight births were less disparate across races during 2007-2009, with 3 percent of births to Black women to 1 percent of births to White women and Hispanic women.[13]

Kentucky's rate of low-weight births increased slightly from 8 percent in 1999-2001 to 9 percent in 2007-2009. County rates varied during 2007-2009, from a low of 6 percent in Boone, Gallatin, Henry, Hickman, Metcalfe, Robertson, and Rowan Counties to a high of 18 percent in Lawrence and Martin Counties. The majority of counties have fared worse over time in the prevalence of low-weight births, with Carlisle, Crittenden, and Robertson Counties experiencing increases greater than 100 percent. The number of very low birthweight babies fell by nearly 2 percent in Kentucky from 1999-2001 to 2007-2009.[14]

Improving access to prenatal care would help reduce racial disparities in rates of low birthweight babies.[15] Kentucky can also decrease the incidence of low-weight births with tobacco prevention programs for youth and smoking cessation programs for pregnant women.[16] For those infants born at a very low birthweight, medical providers should make extra efforts to provide breast milk, as research has shown breast milk has a significant positive impact on their neurodevelopment.[17]

Percent of Low Birthweight Babies Born in Kentucky and the U.S



Source: *KIDS COUNT Data Center. Available at http://datacenter.kidscount.org/data/acrossstates/Trend.aspx?order=a&loc=1%2c19&ind=5425&dtm=11985&tf=9%2c10%2c11%2c12%2c13%2c14%2c15%2c16%2c17%2c18%2c35.*

Data Source: Kentucky Cabinet for Health and Family Services, processed by the Kentucky State Data Center.
Data Notes: Data are reported by mother's place of residence, not infant's place of birth. Data from 2007-2009 are preliminary and exclude some births to Kentucky mothers that occurred out of state. For cases where the information for this variable was missing, the case was excluded from the total number of live births. The 2007-2009 county sum does not equal the statewide total due to inclusion of data that lacked a county designation.
Rate Calculation: (number of babies born weighing less than 5 lbs. 8 oz. between 2007–2009 * 100) / (total number of live births between 2007–2009) (number of babies born weighing less than 5 lbs. 8 oz. between 2004– 2006 * 100) / (total number of live births between 2004–2006)

Infants Weighing Less Than 5 lbs. 8 oz. at Birth and Number of Infants Weighing Less Than 3 lbs. 4 oz.

(number & percent of all live births)

	1999-2001			2007-2009		
	Low Birthweight		Very low Birthweight	Low Birthweight		Very low Birthweight
	Number	Percent	Number	Number	Percent	Number
Kentucky	**13,608**	**8**	**2,518**	**15,325**	**9**	**2,476**
Adair	61	10	11	48	7	8
Allen	59	8	11	55	7	10
Anderson	49	7	10	73	9	5
Ballard	30	11	2	37	13	11
Barren	116	8	31	139	8	24
Bath	34	7	5	58	11	9
Bell	98	9	18	110	10	16
Boone	257	6	56	296	6	32
Bourbon	62	9	12	67	9	11
Boyd	133	8	21	177	11	19
Boyle	80	9	12	70	7	9
Bracken	39	12	13	34	10	10
Breathitt	48	10	9	49	9	5
Breckinridge	46	7	7	49	7	7
Bullitt	156	7	29	197	9	29
Butler	43	9	6	55	11	10
Caldwell	24	6	1	41	9	7
Calloway	73	7	9	80	7	23
Campbell	256	7	48	189	7	17
Carlisle	8	4	2	17	9	1
Carroll	39	9	9	41	8	4
Carter	92	9	17	93	9	11
Casey	38	6	5	47	8	9
Christian	453	10	100	438	9	86
Clark	118	9	14	145	10	21
Clay	118	13	23	91	11	13
Clinton	32	8	4	38	9	1
Crittenden	10	3	3	35	10	4
Cumberland	21	9	3	33	14	2
Daviess	328	8	51	354	9	56
Edmonson	26	6	6	30	8	6
Elliott	18	7	4	27	12	5
Estill	71	12	13	57	10	9
Fayette	837	8	148	1,072	9	163
Fleming	42	8	6	55	9	4
Floyd	138	9	19	182	11	28
Franklin	151	8	37	200	11	37
Fulton	29	10	3	34	13	13
Gallatin	27	8	2	24	6	3
Garrard	52	10	4	67	11	7
Grant	86	7	8	86	7	8
Graves	112	8	13	123	8	22
Grayson	66	7	12	82	8	8
Green	22	6	3	28	7	4
Greenup	110	9	17	102	9	17
Hancock	30	8	6	30	9	5
Hardin	361	8	81	350	7	67
Harlan	111	9	22	137	11	16
Harrison	62	9	10	79	11	10
Hart	45	7	9	70	9	12
Henderson	198	11	31	213	12	34
Henry	57	9	9	37	6	7
Hickman	16	10	2	9	6	0
Hopkins	178	10	32	194	10	44
Jackson	40	7	6	55	11	9
Jefferson	2,650	9	580	2,940	9	555
Jessamine	98	6	12	171	8	28
Johnson	59	6	7	96	11	25
Kenton	505	7	78	469	7	72
Knott	54	10	5	63	10	11

	1999-2001			2007-2009		
	Low Birthweight		Very low Birthweight	Low Birthweight		Very low Birthweight
	Number	Percent	Number	Number	Percent	Number
Knox	122	9	20	121	9	13
LaRue	46	9	10	38	8	7
Laurel	225	10	36	196	9	32
Lawrence	59	10	12	107	18	10
Lee	15	6	1	26	12	6
Leslie	47	10	7	50	10	8
Letcher	86	10	13	102	12	12
Lewis	47	10	10	39	11	4
Lincoln	90	9	14	90	9	13
Livingston	26	9	4	22	7	1
Logan	83	7	15	91	9	15
Lyon	10	6	2	14	7	1
McCracken	225	9	53	205	9	36
McCreary	60	9	11	63	9	14
McLean	36	9	4	30	9	7
Madison	230	8	55	256	8	34
Magoffin	49	8	9	61	12	10
Marion	67	9	8	79	9	9
Marshall	78	8	16	78	8	10
Martin	61	11	12	79	18	5
Mason	52	8	13	63	9	12
Meade	66	7	7	72	9	10
Menifee	23	10	3	19	9	4
Mercer	61	7	10	77	9	6
Metcalfe	38	10	1	25	6	9
Monroe	26	6	7	41	10	9
Montgomery	77	8	11	106	9	18
Morgan	26	6	4	43	9	8
Muhlenberg	98	8	24	85	8	18
Nelson	121	8	11	160	9	23
Nicholas	41	14	8	33	11	7
Ohio	85	10	13	86	9	11
Oldham	109	7	22	128	8	18
Owen	33	9	8	27	8	2
Owsley	11	6	0	15	9	1
Pendleton	48	8	18	48	9	4
Perry	120	10	19	147	12	18
Pike	189	8	35	248	11	37
Powell	48	9	7	59	11	9
Pulaski	165	7	32	210	9	38
Robertson	1	*	1	5	*	2
Rockcastle	52	9	8	48	9	7
Rowan	53	7	5	55	6	3
Russell	38	7	7	61	9	12
Scott	114	7	19	165	8	29
Shelby	119	8	20	131	7	21
Simpson	61	9	12	53	8	7
Spencer	35	7	4	45	7	8
Taylor	61	7	12	78	8	17
Todd	40	7	8	55	10	13
Trigg	37	9	6	52	11	7
Trimble	15	5	1	28	8	3
Union	64	11	11	60	11	11
Warren	277	8	36	397	9	56
Washington	28	7	5	30	8	3
Wayne	57	8	9	64	8	12
Webster	61	11	19	44	8	8
Whitley	136	9	30	167	10	29
Wolfe	30	9	1	40	12	10
Woodford	58	6	12	65	8	9

*Rates were not calculated for counties with fewer than 6 occurrences.

Teen Births & Repeat Teen Births

Definition

Teen births is the number of births to teens ages 15-19 and the rate per 1,000 females ages 15-19. *Repeat births* to teens is the percent of babies born to females ages 15-19 who were already mothers.

Data in context

All newborns need a strong start in life, and babies fare best when their mother is healthy and has a strong social support network, sufficient financial resources, and access to education.[1] Babies of teen mothers are more likely to be born prematurely, have a low-weight birth, experience health problems and developmental delays, and die before their first birthday. These children are also more likely to struggle academically, drop out of school, experience homelessness, engage in juvenile delinquency, and become teen parents themselves as they grow older.[2, 3]

Teen pregnancy not only jeopardizes the health and well-being of newborns, it also puts enormous pressure on youth to grow up quickly. Teen pregnancy can have serious long-term social and economic consequences for a family and a community. For example, teen mothers are more likely to drop out of school and rely on public assistance.[4]

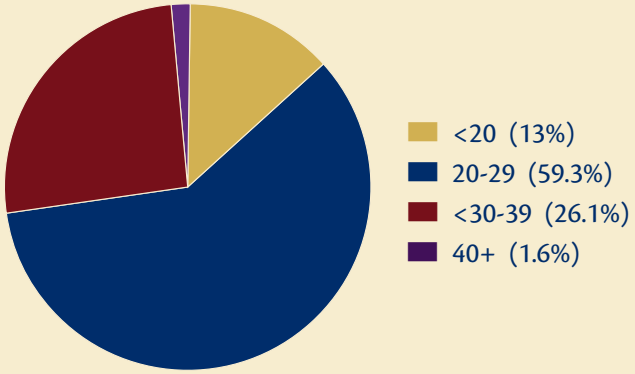
The public cost of teen births in Kentucky, including increases in public health, child welfare, and incarceration costs, and decreases in tax revenue, was estimated to be at least $177 million in 2008.[5]

In 2008, the national teen birth rate fell 2 percent to 41.5 per 1,000 births to female teens 15-19. This decline reversed the brief trend of increasing rates in 2006 and 2007, which had halted the long-term decline the nation had experienced since 1991. Nationwide, the majority (87 percent) of teen births in 2008 were to unmarried teens. Nationally and in Kentucky, older teens are much more likely to give birth than younger teens. In 2008 in Kentucky, the birth rate for teens ages 18-19 was 105.0 per 1,000 compared to 25.1 per 1,000 for teens ages 15-17.[6]

Young women are more likely to delay sex and parenting when they live in neighborhoods with protective factors, such as economic resources, quality schools, and access to quality health care. In communities of color, due to the disproportionate impact of poverty, racial inequities limit social and economic opportunities that would otherwise promote adolescent reproductive health.[7] Most teen births in Kentucky are to White females, though disparities in protective factors mean teen birth rates remain higher among Black and Hispanic teens. In 2007-2009 in Kentucky, White teens ages 15-19 had a teen birth rate of 48 per 1,000 while Black and Hispanic teens had rates of 69 and 91 per 1,000, respectively.[8]

Kentucky's teen birth rate dropped from 54 per 1,000 during 1999-2001 to 50 per 1,000 during 2007-2009. In 2007-2009, rates were less than half the state rate in Calloway and Oldham Counties and were highest (above 90 per 1,000) in Harlan and Russell Counties. Between 1999-2001 and 2007-2009, the majority of counties saw their teen birth rates decrease, while 34 counties saw rates increase by 5 percentage points or more.[9]

Percent of Live Births in Kentucky by Maternal Age, 2006-2008



Source: *March of Dimes Perinatal Data Center. Available at http://www.marchofdimes.com/peristats/level1.aspx?dv=ls&reg=21&top=2&stop=5&lev=1&slev=4&obj=3.*

The percent of subsequent births to teen mothers also decreased in Kentucky, from 21 percent during 1999-2001to 19 percent during 2007-2009. The majority of counties also saw declines in their repeat teen birth rates, while 38 counties saw rates increase. Garrard, Greenup, and Henry Counties had the lowest rates of repeat teen births in 2007-2009 at 9 percent, less than half the state rate. In contrast, Fulton and Leslie Counties had the highest repeat teen births in the state, at 30 percent.[10]

Education, promotion, and access to highly effective contraceptive methods are needed to reduce the number of unintended pregnancies among sexually active youth.[11] Communities can also reduce teen births by educating youth about sex and risky sexual behaviors, and ensuring young women have protective factors, such as strong connections with their community and school, and plans and opportunities for adulthood.[12] Keeping teen mothers engaged in school is important not only for their future economic success, but also because completing a high school education reduces their risk for another teen pregnancy.[13] These efforts are critical for young women of color, who are disproportionately impacted by housing practices that have concentrated families with limited economic resources, and by disparate treatment in the education system.[14] Better access to primary care and reproductive health services is also essential to women of color, due in part to the lack of health insurance or other resources needed to secure high-quality care.[15]

Data Source: Kentucky Cabinet for Health and Family Services, processed by the Kentucky State Data Center. Number of female teens in 2000 and 2008 from the Kentucky State Data Center.
Data Notes: Data are reported by mother's place of residence, not infant's place of birth. Data from 2007-2009 are preliminary and exclude some births to Kentucky mothers that occurred out of state. For cases where the information for this variable was missing, the case was excluded from the total number of live births. The 2007-2009 county sum does not equal the statewide total due to inclusion of data that lacked a county designation.
Rate Calculation: (average yearly number of births to teens ages 15-19 between 1999-2001 * 1,000) / (number of female teens ages 15-19 in 2000)
(average yearly number of births to teens ages 15-19 between 2007-2009 * 1,000) / (number of female teens ages 15-19 in 2008)
(number of births to teens ages 15-19 who were already mothers between 1999-2001 * 100) / (number of births to teens ages 15-19 between 1999-2001)
(number of births to teens ages 15-19 who were already mothers between 2007-2009 * 100) / (number of births to teens ages 15-19 between 2007-2009)

Births and Repeat Births to Teens 15-19

(number & rate per 1,000 females ages 15-19 & percent of all births to teens ages 15-19)

	1999-2001			2007-2009		
	Number	Rate	Percent of repeat births	Number	Rate	Percent of repeat births
Kentucky	**22,808**	**54**	**21**	**21,959**	**50**	**19**
Adair	105	53	21	99	43	27
Allen	103	52	15	109	49	16
Anderson	97	56	20	111	53	14
Ballard	34	50	24	51	68	16
Barren	215	57	16	283	71	20
Bath	74	72	22	91	87	13
Bell	212	67	26	225	78	18
Boone	337	38	15	377	34	15
Bourbon	84	46	21	116	62	10
Boyd	219	48	19	231	55	18
Boyle	135	46	21	128	41	10
Bracken	47	56	21	46	52	20
Breathitt	91	53	16	94	62	14
Breckinridge	91	48	12	79	44	11
Bullitt	275	43	18	226	30	17
Butler	95	66	15	79	69	11
Caldwell	68	54	22	80	66	20
Calloway	130	27	19	127	23	19
Campbell	453	47	22	369	38	25
Carlisle	35	62	40	13	29	*
Carroll	77	72	16	91	87	26
Carter	181	62	22	136	46	16
Casey	100	65	23	82	55	17
Christian	566	84	24	561	86	28
Clark	212	66	23	175	53	21
Clay	164	60	24	163	67	18
Clinton	68	73	12	71	74	29
Crittenden	47	49	19	39	46	26
Cumberland	44	59	*	47	62	28
Daviess	553	54	20	523	55	23
Edmonson	72	60	14	51	44	*
Elliott	42	59	21	41	62	17
Estill	111	68	18	94	71	20
Fayette	1,093	39	21	1,161	37	19
Fleming	77	56	26	70	50	11
Floyd	279	62	20	270	70	20
Franklin	241	51	23	243	48	24
Fulton	50	61	20	34	59	30
Gallatin	52	68	17	65	64	20
Garrard	61	43	21	89	54	9
Grant	180	75	17	171	64	16
Graves	202	56	20	193	54	19
Grayson	160	65	17	149	60	16
Green	55	54	22	52	48	19
Greenup	172	48	17	136	38	9
Hancock	54	65	26	46	52	*
Hardin	582	56	20	536	53	18
Harlan	245	68	22	270	92	26
Harrison	106	58	18	132	69	26
Hart	102	55	15	109	56	13
Henderson	292	62	24	278	65	27
Henry	100	68	20	85	58	9
Hickman	28	62	29	21	42	*
Hopkins	316	69	23	274	62	21
Jackson	111	74	23	86	59	20
Jefferson	3,768	57	23	3,513	50	18
Jessamine	156	36	25	240	43	16
Johnson	152	60	15	102	48	14
Kenton	796	53	22	737	49	22
Knott	95	42	18	90	48	19
Knox	288	84	26	248	74	22
LaRue	71	50	23	68	51	22
Laurel	381	70	23	363	64	20
Lawrence	93	56	17	84	53	17
Lee	41	50	*	40	57	23
Leslie	70	54	16	70	66	30
Letcher	164	60	20	117	52	15
Lewis	109	69	19	60	46	12
Lincoln	154	69	21	165	70	22
Livingston	42	44	*	51	58	20
Logan	171	61	22	173	67	20
Lyon	18	35	*	27	42	*
McCracken	339	56	25	301	51	14
McCreary	136	69	21	145	79	17
McLean	75	80	28	54	55	19
Madison	393	39	20	351	30	16
Magoffin	111	71	17	83	63	23
Marion	113	62	20	97	52	20
Marshall	137	49	13	139	49	16
Martin	98	66	17	75	65	28
Mason	86	56	17	120	69	21
Meade	158	55	20	121	40	10
Menifee	49	62	22	37	54	*
Mercer	113	61	22	122	64	16
Metcalfe	63	64	16	63	66	22
Monroe	67	54	19	64	61	19
Montgomery	145	67	20	180	72	18
Morgan	74	55	24	57	46	23
Muhlenberg	210	67	23	149	51	18
Nelson	201	52	16	205	45	15
Nicholas	47	72	19	38	55	29
Ohio	127	51	22	146	64	21
Oldham	84	18	14	90	15	17
Owen	56	52	21	64	62	17
Owsley	26	55	*	25	64	28
Pendleton	86	56	19	83	47	17
Perry	194	61	21	191	71	21
Pike	371	54	21	343	56	17
Powell	103	69	18	101	74	21
Pulaski	407	76	23	392	68	19
Robertson	14	80	*	7	27	*
Rockcastle	108	67	26	95	60	16
Rowan	106	27	23	103	26	15
Russell	96	64	19	151	96	25
Scott	182	47	21	171	36	12
Shelby	182	53	23	193	49	22
Simpson	123	79	26	106	68	20
Spencer	49	42	20	40	26	15
Taylor	139	53	19	140	51	18
Todd	69	57	22	48	38	17
Trigg	62	56	32	63	46	17
Trimble	47	57	*	42	47	22
Union	95	47	18	101	57	21
Warren	497	38	22	510	34	21
Washington	52	45	24	42	35	*
Wayne	123	64	15	162	82	20
Webster	95	63	19	96	66	21
Whitley	279	66	20	291	65	18
Wolfe	80	99	24	52	77	19
Woodford	77	30	12	83	31	19

*Rates were not calculated for counties with fewer than 6 occurrences.

Breastfeeding Initiation

Definition

Breastfeeding initiation is the number and percent of babies who began breastfeeding by time of hospital discharge.

Data in context

Breastfeeding provides the best and most natural nutrition for infants and is associated with many positive outcomes for both baby and mother.[1] Breastfed babies have fewer ear and respiratory infections, are at less risk for Sudden Infant Death Syndrome, and score higher on cognitive development tests than non-breastfed babies.[2] Breastfeeding for 9 months reduces a child's odds of becoming overweight by more than 30 percent.[3] Women who breastfeed have decreased postpartum bleeding, increased time between pregnancies, earlier return to prepregnancy weight, lower risk of osteoporosis, and decreased risk of breast cancer.[4]

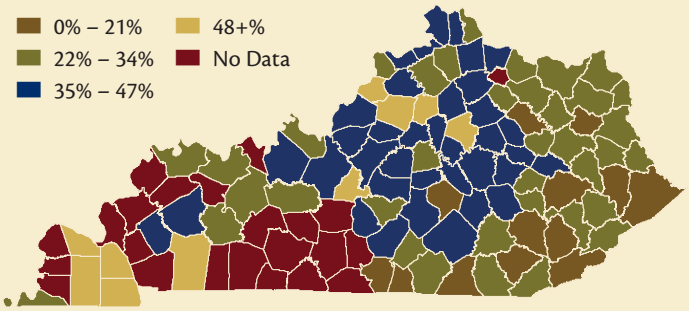
While the American Academy of Pediatrics recommends breastfeeding if possible, there are many societal and institutional barriers to both initiation and continuation of breastfeeding.[5] Health care policies, such as early hospital discharge, lack of timely routine follow-up and postpartum home visits, lack of guidance and encouragement from health care professionals, and distribution of infant formula, often create barriers. New families may also face societal obstacles including absence of suitable workplace facilities, child care settings that do not have policies for breastfeeding, and media portrayal of bottle feeding as the norm.[6, 7]

Kentucky's rate of breastfed babies continues to fall well below the national rate of 75 percent, with only 58 percent of babies born in 2008 having ever been breastfed.[8] Despite the proven health benefits of breastfeeding during the first year of life and the recommendation of the American Academy of Pediatrics to exclusively breastfeed until 6 months old, Kentucky's rate of exclusive breastfeeding at 6 months of age is less than 10 percent.[9] Kentucky has made gradual progress on the percent of babies breastfed at least once before hospital discharge, increasing from 52 percent in 2004-2006 to 55 percent in 2007-2009.[10]

Three-year averages for 2007-2009 show breastfeeding initiation rates for Kentucky counties ranged from 21 percent to 74 percent. Breastfeeding initiation was highest in Fayette, Oldham, Spencer, and Woodford Counties, where more than 70 percent of babies were breastfed before hospital discharge. The counties with the lowest rates included Clay, Harlan, Knott, and Martin Counties, where rates were less than 25 percent.[11]

A number of factors contribute to disparities in breastfeeding rates for Black mothers, including a lack of culturally relevant information and images of Black women breastfeeding, lack of social support due in part to perceptions of breastfeeding as inferior to using formula, and the fact that Black women often must return to work sooner (where support for breastfeeding is often scarce).[12] Nationally, Black infants have breastfeeding initiation rates lower than White infants, at 54 percent and 74 percent respectively.[13] In Kentucky, three-year averages for 2007-2009 show Black infants having breastfeeding initiation rates of 44 percent compared to 55 percent for White infants.[14] Further, national breastfeeding rates by ratio of income to the federal poverty level indicate that 84 percent of families above 350 percent of the poverty threshold breastfeed their infants, compared to 67 percent of families living in poverty.[15]

Percent of WIC Participant Infants Born in 2010 Who Were Ever Breastfed



Source: *2010 Pediatric Nutrition Surveillance System Annual Report. Available at http://chfs.ky.gov/dph/mch/ns/PEDNSS.htm.*

The U.S. Surgeon General recently released a "Call to Action" outlining the benefits, barriers, and facts about breastfeeding.[16] The First Lady included strategies for increasing breastfeeding in her nationwide Let's Move! campaign, given its connection to childhood obesity prevention.[17] Additionally, Kentucky's Breastfeeding Strategic Plan outlines ways to increase rates of breastfeeding initiation and duration in order to meet or exceed the Healthy People 2020 initiative's goals.[18]

All of these efforts call for changes within multiple sectors. Health care professionals should stay current on evidence-based practices related to breastfeeding and encourage mothers before and after delivery.[19] Hospitals can develop a written breastfeeding policy and ensure all staff know how to implement it, provide skilled lactation consultants, and stop the practice of handing out commercial infant formula.[20,21] Child care centers can allow and encourage mothers to breastfeed their babies by posting information about the benefits of breastfeeding and storing frozen breast milk for use at the center. Kentucky should amend child care regulations to support this practice, as current language is not optimal.[22] Establishing Breastfeeding Peer Counselor Programs throughout the state through the Special Supplemental Program for Women, Infants and Children (WIC) and increasing referrals to La Leche League would enhance available peer support for mothers.[23] Employers can create family friendly work environments that provide adequate time and places for mothers to breastfeed or pump.[24]

Data Source: Kentucky Cabinet for Health and Family Services, processed by the Kentucky State Data Center.
Data Notes: Data are reported by mother's place of residence, not infant's place of birth. Data from 2007-2009 are preliminary and exclude some births to Kentucky mothers that occurred out of state. For cases where the information for this variable was missing, the case was excluded from the total number of live births. The 2007-2009 county sum does not equal the statewide total due to inclusion of data that lacked a county designation.
Rate Calculation: (number of babies breastfed at hospital discharge in 2007-2009 * 100) / (total number of live births in 2007-2009)
(number of babies breastfed at hospital discharge in 2004-2006 * 100) / (total number of live births in 2004-2006)

Breastfeeding Initiation

(number of babies being breastfed at hospital discharge & percent of all live births)

	2004-2006		2007-2009	
	Number	Percent	Number	Percent
Kentucky	**85,006**	**52**	**93,277**	**55**
Adair	269	43	315	48
Allen	374	54	472	61
Anderson	496	64	524	62
Ballard	122	48	121	43
Barren	863	53	835	50
Bath	156	33	179	34
Bell	344	30	378	33
Boone	2,882	66	3,101	68
Bourbon	412	55	428	57
Boyd	767	49	746	46
Boyle	477	50	502	54
Bracken	128	37	138	39
Breathitt	158	28	157	28
Breckinridge	345	48	342	49
Bullitt	1,234	55	1,489	66
Butler	212	43	295	57
Caldwell	165	40	211	46
Calloway	670	63	797	67
Campbell	1,445	51	1,476	52
Carlisle	106	55	111	60
Carroll	165	39	227	43
Carter	406	42	390	40
Casey	279	50	291	49
Christian	1,630	40	1,777	38
Clark	692	51	695	50
Clay	191	23	189	22
Clinton	131	35	132	31
Crittenden	177	55	177	50
Cumberland	76	31	91	38
Daviess	2,021	52	2,198	54
Edmonson	159	44	208	58
Elliott	79	33	67	30
Estill	230	40	204	37
Fayette	8,492	72	8,949	74
Fleming	237	42	288	48
Floyd	470	28	472	28
Franklin	1,175	62	1,155	62
Fulton	91	36	95	35
Gallatin	181	43	163	44
Garrard	294	55	344	57
Grant	536	45	581	50
Graves	739	52	825	53
Grayson	422	42	475	46
Green	183	49	195	52
Greenup	503	49	496	45
Hancock	159	50	158	47
Hardin	2,660	56	2,664	56
Harlan	279	25	272	22
Harrison	359	54	385	52
Hart	380	53	423	56
Henderson	470	37	514	29
Henry	329	56	340	58
Hickman	64	47	61	41
Hopkins	833	47	929	50
Jackson	191	35	213	43
Jefferson	17,481	59	20,291	64
Jessamine	1,239	64	1,392	67
Johnson	304	34	256	29
Kenton	3,446	55	3,710	57
Knott	109	20	146	24
Knox	510	32	460	34
LaRue	310	61	287	58
Laurel	999	44	1,080	47
Lawrence	160	32	171	29
Lee	72	31	65	29
Leslie	124	29	146	29
Letcher	234	25	245	29
Lewis	118	35	139	39
Lincoln	486	46	494	48
Livingston	137	45	149	48
Logan	546	50	626	59
Lyon	91	50	102	52
McCracken	1,191	49	1,294	55
McCreary	198	28	222	33
McLean	158	45	159	47
Madison	1,803	57	1,889	62
Magoffin	153	27	150	30
Marion	350	45	377	45
Marshall	514	54	578	57
Martin	84	20	92	21
Mason	243	37	288	41
Meade	364	51	427	52
Menifee	71	32	79	38
Mercer	411	52	429	52
Metcalfe	184	46	202	50
Monroe	178	40	164	39
Montgomery	481	44	536	45
Morgan	171	36	197	41
Muhlenberg	515	45	431	43
Nelson	889	51	973	54
Nicholas	86	30	136	47
Ohio	505	49	491	51
Oldham	1,177	72	1,199	73
Owen	191	48	193	55
Owsley	46	25	49	30
Pendleton	241	47	268	51
Perry	283	24	370	29
Pike	732	33	808	35
Powell	216	37	196	37
Pulaski	1,052	46	1,209	51
Robertson	28	44	31	39
Rockcastle	254	42	263	47
Rowan	349	46	404	47
Russell	243	40	310	46
Scott	1,219	63	1,309	64
Shelby	966	57	1,162	64
Simpson	274	44	406	59
Spencer	334	60	435	71
Taylor	431	49	507	53
Todd	305	55	349	63
Trigg	240	55	234	52
Trimble	124	45	150	45
Union	153	37	150	29
Warren	2,417	58	3,005	69
Washington	221	55	231	60
Wayne	251	34	305	40
Webster	241	46	238	44
Whitley	511	40	638	40
Wolfe	107	30	96	30
Woodford	577	69	618	72

Children Enrolled in KCHIP and Medicaid

Definition

Children enrolled in Medicaid or KCHIP represents the average monthly number of children enrolled in the Kentucky Medicaid program or the Kentucky Children's Health Insurance Program (KCHIP), during the reported year.

Data in context

All children need access to quality health care services to ensure healthy growth and development. Kentucky's future depends in part on children maintaining good health throughout childhood and into adulthood. However, some families do not earn enough income to afford health insurance for their children. The Medicaid program and KCHIP provide health insurance and access to health care for children from low-income households, serving as vital safety nets for these families.[1]

Medicaid provides health coverage for children under age 6 in families with income below 133 percent of the federal poverty level and to children ages 6 to 18 living at or below 100 percent of the federal poverty level.[2] KCHIP is Kentucky's Children's Health Insurance Program (CHIP), which provides health coverage for children younger than 19 in families with income at or below 200 percent of the federal poverty level.[3]

Kentucky's Medicaid program and KCHIP are jointly funded by federal and state government and overseen by the state of Kentucky. They are cost-effective programs, as the federal/state cost-sharing mechanism is an incentive for states to keep costs low.[4] By design, Medicaid responds to changes in the economy; enrollment has thus increased due to greater need since the recession. While this has led to an increase in overall spending on the program, Medicaid spending per person has grown much less than that of private health insurance premiums.[5]

Medicaid and CHIP have been instrumental in reducing the number of uninsured children over the last decade, despite a decline in employer-sponsored insurance and two recessions. As the overall number of uninsured adults increased, the proportion of U.S. children covered by CHIP and Medicaid grew by 3.5 percentage points, offsetting a 3.1 percentage point decline in employer coverage of children during the most recent recession in 2009.[6] In 2009, 90 percent of children in the U.S. had health coverage, yet eight million children were without coverage; including five million eligible for CHIP or Medicaid but not enrolled.[7] Although the recent recession increased the number of uninsured Kentuckians, the number of Kentucky children without health coverage decreased from 6.5 percent in 2008 to 6.0 percent in 2010.[8]

In 2010, an average of 400,513 Kentucky children were enrolled in Medicaid and 65,342 in KCHIP each month, compared to 386,775 and 60,778 children in 2009.[9] Statewide, Medicaid enrollment grew by 52 percent (over 136,000 children) and KCHIP enrollment by 45 percent (over 20,000 children) from 2000 to 2010.

Medicaid is particularly important to communities of color. These families, due in part to language and cultural barriers and unequal socioeconomic conditions, are more likely than Whites, compared to their representation in the population, to rely on Medicaid to access health care services.[10] Children of color are more likely to have parents with low-wage jobs that do not offer health care benefits or at small businesses that cannot afford to provide health insurance.[11] In Kentucky during the 2010 calendar year, 4.5 percent of youth receiving Medicaid were Hispanic, 14.4 percent were Black, 73.7 percent were White, 1.2 percent were of another race, and 6.2 percent of enrolled children did not have a race or ethnicity specified.[12] CHIP has been proven to reduce racial and ethnic disparities in health care coverage.[13] In 2010, 4.1 percent of KCHIP enrollees were Hispanic, 10.5 percent were Black, 83.9 percent were White, 1.3 percent were of another race, and less than 1 percent were of an unknown race or ethnicity.[14]

As managed care implementation rolls out in Kentucky, policymakers, advocates, and the managed care organizations themselves must ensure that families are not dropped from Medicaid and KCHIP; quality of care is not only upheld but advanced; and health outcomes improve for children. While the state is focused on saving money and closing the budget gap, advocates and policymakers must monitor issues that ensure children's health is prioritized throughout managed care implementation, including: utilization of school-based health services, enrollment and retention in KCHIP, quality of care, and access to providers. Improving health outcomes for all children will require thoughtful and intentional collection and analysis of data on race, ethnicity, place of residence, and language. This information would allow for identification of disparities in care and focused efforts on quality improvement.

Data Source: Kentucky Cabinet for Health and Family Services, Department for Medicaid Services.
Data Notes: Children may be counted more than once if they participated in both programs at different points during the year. County sum may not equal statewide total due to the inclusion of children under state guardianship.

The Move to Expand Medicaid Managed Care in Kentucky

To plug a $139 million gap in Kentucky's Medicaid budget for fiscal year 2011, the state House and Senate agreed to a plan to move money from the 2012 budget to 2011 and save money through implementation of managed care for the program. Managed care is a cost-savings approach to delivering health care services that aims to improve the quality and coordination of care and increase access to care. It does so by ensuring that those enrolled in the program have a primary care provider, and that patients rely mainly on preventive and primary care, rather than emergency care.[15] Managed care organizations provide a specific package of health care benefits and a specified list of approved providers. They provide financial incentives for program participants who use providers and services within the organization, and providers receive a fee for each member they serve instead of on a fee-for-service basis.[16] Previously, eligible families living in Jefferson County and 15 surrounding counties received Medicaid through Passport Health Plan – a Medicaid managed care organization established in 1997.[17] Now, three other managed care companies will be providing services to the remaining counties in Kentucky.

Children Enrolled in KCHIP and Medicaid

(average monthly number of children)

	KCHIP		Medicaid	
	2000	2010	2000	2010
Kentucky	**45,063**	**65,342**	**263,531**	**400,513**
Adair	298	454	1,407	1,884
Allen	205	367	989	1,950
Anderson	152	259	699	1,532
Ballard	99	101	464	672
Barren	389	829	2,285	4,015
Bath	196	233	1,101	1,684
Bell	650	627	3,885	4,291
Boone	342	1,008	2,176	6,529
Bourbon	168	326	989	1,873
Boyd	496	582	3,546	4,628
Boyle	239	377	1,317	2,397
Bracken	80	139	487	894
Breathitt	441	369	2,253	2,286
Breckinridge	233	441	1,269	1,936
Bullitt	472	1,017	2,668	4,955
Butler	199	256	914	1,395
Caldwell	172	239	809	1,236
Calloway	292	504	1,521	2,348
Campbell	451	710	3,262	5,485
Carlisle	57	105	281	457
Carroll	122	157	612	1,376
Carter	456	566	2,633	3,361
Casey	292	384	1,292	1,914
Christian	685	980	4,164	6,510
Clark	349	422	2,012	3,421
Clay	606	508	3,277	3,510
Clinton	305	324	1,059	1,282
Crittenden	107	143	539	667
Cumberland	141	191	628	817
Daviess	838	1,553	5,567	8,922
Edmonson	175	245	815	1,161
Elliott	154	166	867	919
Estill	242	282	1,465	2,013
Fayette	1,329	2,945	10,154	19,640
Fleming	186	320	999	1,406
Floyd	1,014	838	5,311	5,948
Franklin	330	493	1,969	3,724
Fulton	101	76	780	848
Gallatin	72	144	503	1,014
Garrard	193	271	911	1,513
Grant	248	451	1,316	3,009
Graves	410	771	2,225	3,642
Grayson	336	523	1,766	3,036
Green	161	291	748	1,077
Greenup	434	489	2,411	3,250
Hancock	90	133	409	738
Hardin	783	1,385	4,726	7,892
Harlan	951	634	4,352	4,166
Harrison	205	263	987	1,729
Hart	275	405	1,430	1,973
Henderson	390	722	2,631	4,307
Henry	136	268	793	1,386
Hickman	60	75	323	408
Hopkins	610	714	3,271	4,447
Jackson	272	348	1,481	1,785
Jefferson	5,251	8,782	38,706	65,731
Jessamine	338	715	2,140	4,089
Johnson	522	598	2,690	3,029
Kenton	774	1,513	6,701	12,455
Knott	440	356	2,222	2,158
Knox	641	824	4,314	5,412
LaRue	163	312	783	1,411
Laurel	786	1,311	5,120	6,930
Lawrence	371	342	1,833	2,083
Lee	222	194	951	1,089
Leslie	369	261	1,522	1,421
Letcher	626	492	3,037	3,057
Lewis	209	255	1,551	1,846
Lincoln	327	504	1,803	2,716
Livingston	109	146	514	744
Logan	241	435	1,528	2,398
Lyon	58	114	294	411
McCracken	508	811	4,157	5,458
McCreary	406	451	2,599	2,764
McLean	119	186	586	886
Madison	573	1,002	3,769	6,486
Magoffin	353	342	1,972	2,126
Marion	223	304	1,175	1,840
Marshall	294	517	1,277	2,159
Martin	324	242	1,942	1,874
Mason	168	295	1,120	1,934
Meade	270	425	1,260	2,040
Menifee	134	155	693	905
Mercer	194	333	1,027	1,838
Metcalfe	143	225	783	1,195
Monroe	232	288	955	1,236
Montgomery	329	516	1,792	2,699
Morgan	286	306	1,380	1,552
Muhlenberg	561	609	2,313	3,028
Nelson	363	644	2,016	3,687
Nicholas	104	124	511	906
Ohio	346	415	1,820	2,677
Oldham	186	517	801	1,964
Owen	132	199	646	1,077
Owsley	122	94	810	873
Pendleton	130	201	773	1,302
Perry	655	661	3,798	4,007
Pike	1,480	1,253	6,693	7,178
Powell	230	265	1,389	1,964
Pulaski	853	1,438	4,439	6,625
Robertson	31	42	166	240
Rockcastle	285	294	1,490	2,101
Rowan	279	351	1,481	2,146
Russell	292	415	1,535	2,127
Scott	291	518	1,620	3,568
Shelby	242	548	1,213	3,190
Simpson	131	349	812	1,638
Spencer	89	242	509	987
Taylor	340	460	1,608	2,394
Todd	177	267	785	1,260
Trigg	125	229	608	1,003
Trimble	99	153	500	832
Union	161	217	894	1,422
Warren	951	1,608	5,585	9,803
Washington	124	171	614	981
Wayne	442	585	2,081	2,542
Webster	153	171	773	1,258
Whitley	725	913	4,559	5,663
Wolfe	158	161	1,065	1,266
Woodford	114	250	680	1,525

Early Childhood Obesity

Definition

Early childhood obesity is the percentage and estimated number of children ages 2-4 participating in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) with a Body Mass Index at or above the 95th percentile.

Data in context

All children deserve the best possible health opportunities to set the stage for positive health outcomes into adulthood. Childhood obesity is an epidemic that puts thousands of Kentucky children at risk for poor health outcomes. The risks associated with childhood obesity affect not only a child's health, but have also been linked with decreased academic achievement and rates of attendance.[1] Research suggests the health risks associated with obesity are greater than those of smoking, drinking, or poverty, each of which is strongly linked with poor outcomes and early mortality.[2] A recent study posits that high obesity rates may for the first time cause children to have shorter life spans than their parents.[3]

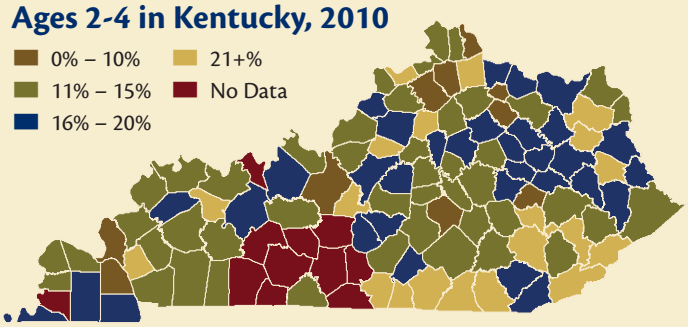
Childhood obesity rates have soared; over the past four decades the national obesity rate for children ages 6-11 more than quadrupled (from 4.0 percent to 19.6 percent) and nearly tripled for adolescents ages 12-19 (from 6.1 percent to 18.1 percent).[4] Although the prevalence of overweight and obese children ages 10-17 in Kentucky decreased slightly from 2003 to 2007, Kentucky has the 3rd highest rate in the nation at 37.1 percent.[5]

Childhood obesity affects very young children as well. Kentucky pediatric offices now see young children with diseases normally attributed to adults, including Type 2 diabetes, hypertension, heart disease, and arthritis.[6] Children who are obese in their preschool years are more likely to be obese in adolescence and adulthood.[7]

In 2009, 14.7 percent of low-income children ages 2-4 in the United States, whose families participated in federally funded maternal and child health programs, were considered obese. The obesity rate for Kentucky children 2-4 in the WIC program is still higher than the national rate, but it decreased from 16.8 percent in 2002 to 15.6 percent in 2010. Of the 109 Kentucky counties for which data were available in 2010, 61 had rates higher than the statewide rate. Elliott, Harlan, LaRue, Lyon, and Owsley Counties had child obesity rates greater than 25 percent, while Livingston, Marshall, Nicholas, and Robertson Counties had rates less than 9 percent.[8]

Neighborhood characteristics, such as limited access to fresh produce and a lack of public transportation to grocery stores, contribute to worse health outcomes for low-income youth and children of color. African-American and Hispanic neighborhoods are less likely than White neighborhoods to have supermarkets, yet studies have shown that for each supermarket in their immediate neighborhood, African-American residents increase their fruit and vegetable intake by 32 percent.[9] Further, in 2007,

Obesity Rates of WIC Participant Children Ages 2-4 in Kentucky, 2010



Source: *2010 Pediatric Nutrition Surveillance System Annual Report. Available at http://chfs.ky.gov/dph/mch/ns/PEDNSS.htm.*

among youth ages 10-17 across the nation, 41.1 percent of Black youth and 41.0 percent of Hispanic youth were overweight or obese, compared to 26.8 percent of White youth. That same survey showed Kentucky youth of color overrepresented among overweight and obese youth but with rates closer to the rate for White youth (41.7 percent of Black youth and 36.7 percent of Hispanic youth, compared to 35.7 percent of White youth).[10] Both nationally and in Kentucky, the lower the income level, the higher overweight and obesity rates are among youth.[11]

Early prevention efforts are vital for reducing childhood obesity and everyone has a role to play. Nationally, campaigns like Let's Move! and the Robert Wood Johnson Foundation's Center to Prevent Childhood Obesity are working to reverse the epidemic.[12, 13] In Kentucky, the General Assembly passed a resolution in 2011 mandating a panel to examine childhood obesity in the state; the panel is preparing policy recommendations to submit to the state by the end of November.[14] In 2009, the Partnership for a Fit Kentucky published "Shaping Kentucky's Future: Policies to Reduce Obesity," which includes 8 recommendations for lowering obesity rates:

1. Increase physical activity and physical education in schools;
2. Establish a Body Mass Index (BMI) surveillance system for youth;
3. Support breastfeeding in the workplace;
4. Require standards for nutrition and physical activity in licensed child care centers;
5. Establish complete streets policies;
6. Require menu labeling at fast food and chain restaurants;
7. Require state funded agencies to serve healthy food; and
8. Provide worksite wellness tax credits to businesses.[15]

The 2010 Affordable Care Act included requirements for menu labeling at fast food and chain restaurants. Instituting the other recommended policies in Kentucky could help reduce obesity and improve the health of children and families in the Commonwealth.

Data Source: Kentucky Cabinet for Health and Family Services, Department for Public Health, Pediatric Nutrition Surveillance System.
Data Notes: Data set excludes records with unknown data or errors. County sum does not equal the statewide total because county-level not portrayed if sample size was less than 100.

Early Childhood Obesity

(percentage and estimated number of children ages 2-4 in the WIC program with a BMI at or above the 95th percentile)

	2002		2010	
	Number	Percent	Number	Percent
Kentucky	**8,448**	**16.8**	**11,729**	**15.6**
Adair	26	11.7	55	14.9
Allen	55	19	38	15.6
Anderson	35	23.8	51	14.4
Ballard	13	10.9	15	11.3
Barren	69	17.4	*	*
Bath	41	20.5	64	18.8
Bell	140	17.1	217	20.6
Boone	151	18.3	199	13.3
Bourbon	39	21.9	74	18.9
Boyd	94	16.8	110	14
Boyle	36	18.1	64	12.9
Bracken	*	*	39	19.2
Breathitt	62	17.2	61	12.9
Breckinridge	30	13.3	66	18.9
Bullitt	72	17.6	129	14.4
Butler	50	24.5	*	*
Caldwell	29	16.3	28	14.1
Calloway	59	15.2	83	17.5
Campbell	131	23.3	100	10.3
Carlisle	25	24.5	14	14
Carroll	41	24	100	24.9
Carter	73	12.6	182	21.1
Casey	33	13	63	15.7
Christian	169	8.1	323	11.7
Clark	48	15.2	96	14.1
Clay	107	19.4	161	22.3
Clinton	34	14.2	80	21.1
Crittenden	7	6.4	17	12
Cumberland	19	13.6	54	21.7
Daviess	215	19.3	183	14.3
Edmonson	22	15.1	*	*
Elliott	20	13.2	72	25.8
Estill	49	18.4	67	16.7
Fayette	282	15.6	661	16.3
Fleming	44	16	56	13.4
Floyd	121	14.1	222	17.7
Franklin	78	21.5	145	21.3
Fulton	34	20.6	42	18.6
Gallatin	24	20.9	39	12.5
Garrard	47	18.4	75	16.2
Grant	40	7.7	87	10.4
Graves	97	18.2	143	19.8
Grayson	76	17.6	100	14.1
Green	34	24.6	53	16.9
Greenup	51	12.2	90	15.2
Hancock	18	14.2	*	*
Hardin	235	15.5	252	9.9
Harlan	163	20.1	258	26.5
Harrison	17	6.9	61	14.5
Hart	46	17	*	*
Henderson	97	22.1	59	12.3
Henry	32	22.7	45	15.6
Hickman	*	*	*	*
Hopkins	124	18.7	101	14.6
Jackson	48	15.9	62	15.9
Jefferson	887	16.3	1,239	11.9
Jessamine	79	17.6	111	11.6
Johnson	85	16.8	143	22.3
Kenton	205	23.1	236	15
Knott	51	13.8	73	15.5
Knox	148	20	198	19.8
LaRue	34	18	93	26.3
Laurel	122	19.2	170	15.8
Lawrence	55	21	85	19.5
Lee	38	21.8	23	10
Leslie	79	23	43	11.8
Letcher	81	21.3	104	24.6
Lewis	44	20.2	65	17.2
Lincoln	73	19.8	51	9.9
Livingston	*	*	6	3.6
Logan	42	16.3	*	*
Lyon	*	*	40	27.8
McCracken	137	16.8	93	11.9
McCreary	58	13.8	135	21
McLean	49	24.3	31	22.6
Madison	134	19.2	204	15.9
Magoffin	87	24	73	16.6
Marion	53	17.2	70	14.9
Marshall	26	7.1	40	7.9
Martin	67	18.5	68	16.2
Mason	34	13.4	54	16
Meade	57	18.4	52	12.3
Menifee	19	13.6	43	18.1
Mercer	47	18.9	70	14.7
Metcalfe	25	16.8	*	*
Monroe	22	11.9	*	*
Montgomery	49	12.9	137	18.3
Morgan	63	22.4	74	17.8
Muhlenberg	64	13.7	70	14.6
Nelson	65	14.6	133	17.4
Nicholas	15	11.7	14	8.1
Ohio	64	16.5	81	18.4
Oldham	40	16.6	79	17.3
Owen	19	15.4	27	10.6
Owsley	33	24.1	61	28.6
Pendleton	24	14.1	54	21.3
Perry	112	21.9	157	21.9
Pike	189	21.3	158	15.8
Powell	51	15.5	69	19.7
Pulaski	96	13	157	11.9
Robertson	*	*	7	6.3
Rockcastle	35	12.5	70	15.8
Rowan	39	13.1	86	18.3
Russell	50	20.7	84	17.5
Scott	31	12.1	86	12.8
Shelby	87	32.8	129	17.6
Simpson	30	18.2	*	*
Spencer	18	16.1	54	23
Taylor	62	17.4	98	18
Todd	18	8.8	37	15.8
Trigg	16	12.2	24	13
Trimble	10	9	24	12.6
Union	24	11.7	26	12.7
Warren	136	16.3	*	*
Washington	20	12.1	47	17.7
Wayne	86	21.4	144	22.9
Webster	30	16.9	45	20.1
Whitley	195	19.1	359	24.2
Wolfe	51	23.4	68	19.7
Woodford	24	11.7	70	16.3

*Number and percent not available for counties with a sample size of less than 100.

Asthma Hospitalizations

Definition

Asthma hospitalizations is the number and rate of inpatient hospitalizations of children due to an asthma attack.

Data in context

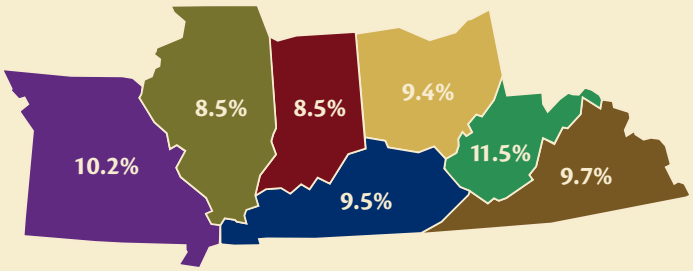
Asthma is the most common chronic illness among children and youth in the United States, having detrimental effects on a child's physical, emotional, and psychological development.[1] In 2009, 10.1 million children and youth (ages 0-17) in the United States had been diagnosed with asthma at some point in their life.[2] Asthma is the third-ranking cause of hospitalization among those younger than 15 years of age.[3] On average, about 3 children in a classroom of 30 are likely to have asthma, which is one of the leading causes of school absenteeism.[4]

Asthma is commonly described as a disease of the airways that causes wheezing, breathlessness, chest tightness, and coughing. Asthma is a complex disease that is difficult to diagnose and for which no cure exists. Steps to keep asthma under control include taking medication and avoiding contact with environmental "triggers," including cockroaches, dust mites, mold, smoke, and certain chemicals.[5] Because of its complexity, however, combating asthma requires an approach that is long-term and multifaceted. Consistent treatment and monitoring are essential, as well as education, ongoing medical care, and changing behaviors that may trigger an episode.

Families living in poverty face risk factors including poor housing, neighborhoods lacking resources, and a greater exposure to pesticides and toxins in older schools and the environment beyond.[6] Children of color are also more likely to encounter barriers to access quality health care to treat and control their asthma, such as a limited number of providers serving in poor communities.[7]

Rates of childhood asthma have increased for all groups since 1980; however, the condition disproportionately affects children of color and children from low-income families in the United States.[8] In 2009 in the United States, 22 percent of non-Hispanic Black children had ever been diagnosed with asthma, compared to 13 percent of Hispanic children and 12 percent of non-Hispanic White children.[9] In Kentucky, asthma hospitalization rates for 2008-2010 were 203 per 10,000 non-Hispanic Black children, compared to 43 per 10,000 Hispanic children and 56 per 10,000 non-Hispanic White children.[10]

Estimated Current Prevalence of Asthma in Children, 2008



Source: American Lung Association. Available at http://www.lungusa.org/finding-cures/our-research/trend-reports/asthma-trend-report.pdf.

In 2008, nearly one of every 10 children in Kentucky were reported as having asthma.[11] The rate of asthma hospitalizations dropped slightly in Kentucky from 24 per 10,000 in 2000-2002 to 23 per 10,000 in 2008-2010. Rates more than doubled in Bell, Carroll, Fulton, Jackson, Jefferson, Johnson, Rockcastle, and Simpson Counties between the two time periods. Bourbon, Clinton, Daviess, and Graves Counties showed the greatest drops in rate of hospitalizations. Despite statewide improvement, 2008-2010 rates were more than three times the state rate in Bell, Fulton, Hickman, Johnson, and Magoffin Counties.[12]

Kentucky can aim to reduce disparities in asthma care and prevent hospitalizations by providing continuous health coverage for vulnerable children, ensuring access to asthma care either at school or through a health care provider, and improving the quality of air in schools where children spend much of their day.[13] Schools can also address asthma within a coordinated school health program by establishing management and support systems; providing asthma education and appropriate mental health services for students with asthma; and coordinating school, family, and community efforts to better manage asthma symptoms and reduce school absences.[14]

Data Source: Kentucky Cabinet for Health and Family Services, Department for Public Health, Chronic Disease Prevention and Control Branch. Number of children in 2001 and 2009 from the Kentucky State Data Center.
Data Notes: Data reflect the number of hospitalizations rather than the number of children hospitalized due to asthma. Data were not released for counties with 5 or fewer occurrences. County sum does not equal statewide total due to the inclusion of data in counties with 5 or fewer occurrences.
Rate Calculation: (average number of hospitalizations due to asthma among children under 18 between 2000 and 2002 * 10,000) / (total number of children under 18 in 2001)
(average number of hospitalizations due to asthma among children under 18 between 2008 and 2010 * 10,000) / (total number of children under 18 in 2009)

Asthma Hospitalizations

(number & rate per 10,000 children ages 0-17)

	2000-2002		2008-2010	
	Number	Rate	Number	Rate
Kentucky	**7,087**	**24**	**6,965**	**23**
Adair	38	30	28	21
Allen	< 5	*	20	14
Anderson	18	12	18	11
Ballard	8	14	< 5	*
Barren	72	26	81	27
Bath	9	11	< 5	*
Bell	261	124	538	287
Boone	69	9	34	3
Bourbon	20	14	6	4
Boyd	107	34	78	25
Boyle	44	23	36	19
Bracken	9	14	< 5	*
Breathitt	46	40	35	37
Breckinridge	22	16	15	10
Bullitt	43	9	90	16
Butler	12	12	10	12
Caldwell	18	22	7	8
Calloway	51	24	34	15
Campbell	31	5	14	2
Carlisle	16	44	< 5	*
Carroll	7	9	16	20
Carter	45	23	34	17
Casey	27	24	12	11
Christian	113	18	52	8
Clark	21	9	19	8
Clay	95	53	60	41
Clinton	89	136	28	40
Crittenden	12	19	16	26
Cumberland	24	48	8	17
Daviess	302	43	105	15
Edmonson	13	16	10	12
Elliott	11	22	< 5	*
Estill	19	17	18	18
Fayette	222	13	252	13
Fleming	10	10	17	16
Floyd	188	65	154	57
Franklin	37	11	38	12
Fulton	77	133	128	303
Gallatin	9	13	< 5	*
Garrard	9	8	16	14
Grant	28	14	18	9
Graves	353	133	80	30
Grayson	49	28	37	20
Green	15	19	12	16
Greenup	50	20	36	14
Hancock	14	21	6	9
Hardin	156	20	144	19
Harlan	244	104	126	62
Harrison	8	6	16	11
Hart	35	27	18	13
Henderson	94	29	57	18
Henry	18	16	29	25
Hickman	17	49	30	97
Hopkins	76	23	42	13
Jackson	6	6	16	17
Jefferson	795	16	1,922	37
Jessamine	26	8	32	8
Johnson	124	75	257	165
Kenton	114	10	72	6
Knott	54	43	35	32
Knox	64	26	45	19
LaRue	19	19	31	31
Laurel	78	19	71	17
Lawrence	192	165	80	72
Lee	16	30	< 5	*
Leslie	33	38	47	63
Letcher	125	73	49	31
Lewis	13	12	12	12
Lincoln	28	16	23	12
Livingston	6	9	10	17
Logan	16	8	25	13
Lyon	6	15	< 5	*
McCracken	62	14	47	11
McCreary	23	17	15	12
McLean	23	33	11	16
Madison	42	8	64	11
Magoffin	53	51	97	100
Marion	25	18	19	13
Marshall	36	19	17	9
Martin	88	87	38	45
Mason	26	21	29	22
Meade	24	10	35	15
Menifee	< 5	*	< 5	*
Mercer	24	16	18	12
Metcalfe	22	30	15	21
Monroe	54	65	45	59
Montgomery	9	5	13	7
Morgan	20	22	8	9
Muhlenberg	138	65	78	38
Nelson	38	12	30	9
Nicholas	8	17	9	18
Ohio	42	25	26	15
Oldham	27	7	58	12
Owen	< 5	*	7	9
Owsley	23	67	12	39
Pendleton	8	7	< 5	*
Perry	179	86	121	64
Pike	332	71	128	30
Powell	< 5	*	< 5	*
Pulaski	91	23	66	15
Robertson	< 5	*	< 5	*
Rockcastle	14	12	33	28
Rowan	23	15	17	11
Russell	34	31	35	30
Scott	39	14	34	9
Shelby	29	11	57	18
Simpson	11	8	30	24
Spencer	10	10	21	16
Taylor	35	21	36	21
Todd	9	9	< 5	*
Trigg	11	13	10	11
Trimble	< 5	*	12	18
Union	22	19	15	14
Warren	135	20	83	10
Washington	7	8	13	16
Wayne	29	20	24	17
Webster	34	34	26	27
Whitley	63	22	43	16
Wolfe	30	58	13	24
Woodford	17	10	14	8

*Rates were not calculated for counties with fewer than 6 occurrences.

Recreational Facilities

Definition

Recreational facilities is the number of establishments primarily engaged in operating fitness and recreational sports facilities, and the rate per 100,000 county residents.

Data in context

All children need safe places to play and get exercise in their communities in order to grow and develop into healthy adults. However, some children do not have safe opportunities to engage in physical activity. Access to safe places for recreation depends heavily on neighborhood characteristics like green spaces, parks, and recreational facilities.[1] Such access has a significant impact on whether children meet nationally recommended physical activity levels or participate in physical activity at all.[2] Children with access to recreational facilities close to home are more physically active than those without access.[3] This finding is important because physical activity is a key component in achieving a healthy weight. Physical activity and maintaining a healthy weight help reduce the burden that diseases such as diabetes and heart disease can have on children's health.[4]

Physical inactivity and obesity are nationwide problems for America's children and youth.[5] In 2009, 12 percent of high school students in the United States were obese, and 63 percent did not meet nationally recommended physical activity levels.[6] Indoor recreational facilities are integral to ensuring children have opportunities to remain active throughout the seasons, yet in 2007 only 65 percent of U.S. children lived in neighborhoods with recreation centers, community centers, or Boys'/Girls' clubs.[7]

Kentucky fares even worse than the nation, with only 49 percent of children in Kentucky living in neighborhoods with recreation centers, community centers, or Boys'/Girls' Clubs, based on 2007 data.[8] Also, Kentucky has the 3rd highest rate of childhood obesity in the nation, and many children in Kentucky are not active.[9] A recent survey of Kentucky high school students revealed that 1 in 5 had not met recommended physical activity levels on any of the previous 7 days before the survey.[10]

Opportunities for physical activity in their communities are also key to helping parents maintain a healthy weight. Research shows that children with overweight parents are at a much higher risk of being overweight than children with parents who are not overweight.[11] Two-thirds of Kentucky adults are overweight or obese, and according to a recent survey, 30 percent of Kentucky adults said they did not participate in any exercise during the past month.[12, 13]

The availability of safe places for physical activity in communities is significantly associated with race, income, and geography. Lower-income communities and African-American communities typically face more barriers to physical activity, including a lack of parks, sidewalks, bike lanes, and affordable access to recreational facilities. Rates of physical activity are lowest among African Americans and Hispanics.[15] Rural areas are associated with fewer places for physical activity compared to urban and suburban areas due to higher poverty rates, limited resources, and rural areas being more spread out.[16] In 2007, 57 percent of Kentucky children living in urban areas lived in neighborhoods with recreation centers, community centers, or Boys'/Girls' Clubs, compared to only 42 percent of children living in rural areas did.[17]

In Kentucky in 2009, there were 337 recreational facilities (as defined by the data source) or 7.8 recreational facilities per 100,000 Kentuckians. Although the rate of facilities has remained relatively steady between 2000 and 2009, the number of facilities has increased by 7 percent. In 2009, 70 counties had at least one recreational facility, but only six counties had ten or more facilities – Boone, Fayette, Jefferson, Kenton, Madison, and McCracken Counties.[18]

Kentucky communities can increase access to recreational facilities by establishing joint-use agreements, which are formal agreements between two entities, typically a school and another organization such as a city government or a YMCA, to share school facilities during non-school hours. This arrangement could include spaces such as gymnasiums, tracks, and athletic fields and can improve access to recreational facilities for community members of all ages. Joint-use agreements not only provide health benefits to communities, but also offer opportunities to save money since two entities can share the costs of a single building.[19] Studies indicate that children with access to school facilities during non-school hours have higher physical activity rates and lower obesity rates than their peers without such access.[20, 21] The Centers for Disease Control and Prevention recommend joint-use agreements as a strategy for combating obesity. While issues of liability and security must be addressed in joint-use agreements, schools and community agencies can work together to ensure citizens have safe spaces to be active.

Data Source: U.S. Census Bureau, 2000 and 2009 County Business Patterns. County population data for rate calculations from the Kentucky State Data Center.
Data Notes: The North American Industry Classification System code 713940 was used to identify recreational facilities in the County Business Patterns data. This indicator replicates what the USDA Food Environment Atlas uses to measure access to recreational facilities, as the presence of recreational facilities is the best indicator of the built environment currently available for all counties nationwide. However, this indicator does not count all types of places that foster recreation, including but not limited to, golf courses, nature parks, and playgrounds.
Rate Calculation: (number of recreational facilities in 2000 * 100,000) / (total county population in 2000)
(number of recreational facilities in 2009 * 100,000) / (total county population in 2009)

Recreational Facilities

(number & rate per 100,000 residents)

	2000		2009	
	Number	Rate	Number	Rate
Kentucky	**314**	**7.8**	**337**	**7.8**
Adair	0	*	1	*
Allen	1	*	1	*
Anderson	2	*	2	*
Ballard	0	*	0	*
Barren	1	*	3	*
Bath	0	*	0	*
Bell	2	*	2	*
Boone	8	9.3	14	11.9
Bourbon	1	*	0	*
Boyd	6	12.1	4	*
Boyle	3	*	3	*
Bracken	0	*	0	*
Breathitt	0	*	0	*
Breckinridge	2	*	0	*
Bullitt	4	*	7	9.5
Butler	0	*	0	*
Caldwell	1	*	1	*
Calloway	3	*	3	*
Campbell	10	11.3	9	10.0
Carlisle	0	*	0	*
Carroll	2	*	1	*
Carter	1	*	2	*
Casey	2	*	1	*
Christian	4	*	3	*
Clark	4	*	2	*
Clay	0	*	0	*
Clinton	0	*	1	*
Crittenden	1	*	0	*
Cumberland	0	*	0	*
Daviess	9	9.8	9	9.3
Edmonson	0	*	0	*
Elliott	0	*	0	*
Estill	1	*	0	*
Fayette	39	15.0	42	14.2
Fleming	1	*	2	*
Floyd	1	*	0	*
Franklin	7	14.7	6	12.2
Fulton	2	*	0	*
Gallatin	0	*	0	*
Garrard	0	*	0	*
Grant	0	*	3	*
Graves	2	*	2	*
Grayson	0	*	1	*
Green	0	*	0	*
Greenup	5	*	1	*
Hancock	0	*	0	*
Hardin	6	6.4	8	7.9
Harlan	0	*	1	*
Harrison	1	*	2	*
Hart	0	*	1	*
Henderson	4	*	3	*
Henry	0	*	0	*
Hickman	1	*	0	*
Hopkins	3	*	3	*
Jackson	0	*	0	*
Jefferson	66	9.5	75	10.2
Jessamine	11	*	5	*
Johnson	0	*	1	*
Kenton	20	13.2	21	13.2
Knott	1	*	0	*
Knox	0	*	0	*
LaRue	2	*	2	*
Laurel	2	*	2	*
Lawrence	1	*	0	*
Lee	0	*	0	*
Leslie	0	*	0	*
Letcher	0	*	0	*
Lewis	0	*	0	*
Lincoln	1	*	1	*
Livingston	0	*	0	*
Logan	0	*	1	*
Lyon	1	*	0	*
McCracken	7	10.7	10	15.2
McCreary	0	*	0	*
McLean	0	*	0	*
Madison	4	*	11	13.4
Magoffin	0	*	0	*
Marion	0	*	1	*
Marshall	3	*	3	*
Martin	0	*	1	*
Mason	1	*	1	*
Meade	1	*	1	*
Menifee	0	*	0	*
Mercer	2	*	0	*
Metcalfe	0	*	0	*
Monroe	0	*	2	*
Montgomery	2	*	4	*
Morgan	0	*	1	*
Muhlenberg	2	*	3	*
Nelson	5	*	6	14.0
Nicholas	0	*	0	*
Ohio	0	*	1	*
Oldham	3	*	2	*
Owen	1	*	0	*
Owsley	0	*	0	*
Pendleton	0	*	1	*
Perry	1	*	0	*
Pike	2	*	3	*
Powell	0	*	0	*
Pulaski	4	*	4	*
Robertson	0	*	0	*
Rockcastle	2	*	0	*
Rowan	1	*	3	*
Russell	0	*	1	*
Scott	4	*	2	*
Shelby	2	*	2	*
Simpson	1	*	1	*
Spencer	0	*	1	*
Taylor	2	*	5	*
Todd	0	*	0	*
Trigg	1	*	1	*
Trimble	0	*	0	*
Union	3	*	2	*
Warren	7	7.6	7	6.2
Washington	0	*	1	*
Wayne	1	*	2	*
Webster	0	*	0	*
Whitley	5	*	2	*
Wolfe	0	*	0	*
Woodford	2	*	0	*

*Rates were not calculated for counties with fewer than 6 occurrences.

Endnotes & References

Data Sources and Notes

Child population

Data Source: U.S. Census Bureau, 2000 and 2010 Decennial Census, processed by the Kentucky State Data Center.

Child population by race & ethnicity

Data Source: U.S. Census Bureau, 2010 Decennial Census, processed by the Kentucky State Data Center.

Data Note: Race and ethnicity categories are mutually exclusive.

Children living in poverty

Data Source: U.S. Census Bureau, 2000 Decennial Census and 2005-2009 American Community Survey Estimates. Population data for the rate calculation for the 2005-2009 timeframe derived from the National Center for Health Statistics, processed by the Kentucky State Data Center.

Data Notes: Census 2000 data reflect income earned in the previous year, 1999. The poverty threshold for a family of four with two children in 1999 was $16,895. The American Community Survey 5-year estimates reflect data collected from 2005 to 2009. The average poverty threshold for 2005-2009 for a family of four with two children was $20,973. The poverty universe is persons for whom the U.S. Census Bureau can determine poverty status.

Rate Calculation: (number of children living in poverty in 1999 * 100) / (total number of children in the poverty universe in 2000) (average of children living in poverty in 2005-2009 * 100) / (total number of children in the poverty universe in 2005-2009

Essay

Oral Health Data on Low-Income Kentucky Children

Data Source: Kentucky Cabinet for Health and Family Services, Department for Medicaid Services and the Kentucky Board of Dentistry.

Rate Calculation: (number of children receiving KCHIP with a dental visit + number of children receiving Medicaid with a dental visit at any point in 2001) * 100 / (average monthly number of children enrolled in KCHIP and Medicaid in 2001) (number of children receiving KCHIP with a dental visit + number of children receiving Medicaid with a dental visit at any point in 2010) * 100 / (average monthly number of children enrolled in KCHIP and Medicaid in 2010)

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