

# PEDIATRIC QUALITY INDICATORS<sup>™</sup> v5.0 BENCHMARK DATA TABLES

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Agency for Healthcare Research and Quality U.S. Department of Health and Human Services 540 Gaither Road Rockville, MD 20850 http://www.qualityindicators.ahrq.gov

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#### Prepared by:



Truven Health Analytics 5425 Hollister Ave, Suite 140 Santa Barbara, CA 93111

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#### Introduction

The data presented in this document are nationwide comparative rates for the Agency for Healthcare Research and Quality (AHRQ) Quality Indicators<sup>TM</sup> QIs. The rates are based on analysis of 45 States from the 2012 AHRQ Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID)<sup>1</sup>. HCUP is a family of health care databases and related software tools and products developed through a Federal-State-industry partnership<sup>2</sup>. HCUP includes the largest collection of longitudinal hospital care data in the United States, with all-payer, encounter-level information beginning in 1988. The SID contains all-payer, encounter-level information on inpatient discharges, including clinical and resource information typically found on a billing record, such as patient demographics, up to 30 International Classification of Diseases, Ninth Revision, Clinical Modification diagnoses and procedures, length of stay, expected payer, admission and discharge dates, and discharge disposition. In 2012, the HCUP databases represented more than 95 percent of all annual discharges in the United States. The dataset analyzed to generate the tables in this document consists of the same hospital discharge records that comprise the reference population for Version the 5.0 Version of the AHRQ QI software.

With Version 5.0 of the software, the indicators are no longer calculated using a software option that models the effect of missing present on admission data. The QI observed rates for provider-level indicators are scaled to the rate per 1,000 persons at risk and the area-level indicators are per 100,000. Volume and count indicator results are listed as simple counts with no scaling at all. Rates for any cells with 1 to 10 cases are not presented.

The tables below are calculated for the overall reference population.

<sup>1</sup> The states included in the analysis are Alaska, Arkansas, Arizona, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Iowa, Illinois, Indiana, Kansas, Kentucky, Louisiana, Massachusetts, Maryland, Maine, Michigan, Minnesota, Missouri, Montana, North Carolina, Nebraska, New Jersey, New Mexico, Nevada, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Vermont, Washington, Wisconsin, West Virginia, and Wyoming.

<sup>2</sup> The AHRQ QI program would like to acknowledge the HCUP Partner organizations that participated in the HCUP SID: Alaska State Hospital and Nursing Home Association, Arizona Department of Health, Services, Arkansas Department of Health, California Office of Statewide Health Planning and Development, Colorado Hospital Association, Connecticut Hospital Association, Florida Agency for Health Care Administration, Georgia Hospital Association, Hawaii Health Information Corporation, Illinois Department of Public Health, Indiana Hospital Association, Iowa Hospital Association, Kansas Hospital Association, Kentucky Cabinet for Health and Family Services, Louisiana Department of Health and Hospitals, Maine Health Data Organization, Maryland Health Services Cost Review Commission, Massachusetts Center for Health Information and Analysis, Michigan Health & Hospital Association, Minnesota Hospital Association (provides data for Minnesota and North Dakota), Mississippi Department of Health, Missouri Hospital Industry Data Institute, Montana MHA - An Association of Montana Health Care Providers, Nebraska Hospital Association, Nevada Department of Health and Human Services, New Hampshire Department of Health & Human Services, New Jersey Department of Health, New Mexico Department of Health, New York State Department of Health, North Carolina Department of Health and Human Services, North Dakota (data provided by the Minnesota Hospital Association), Ohio Hospital Association, Oklahoma State Department of Health, Oregon Association of Hospitals and Health Systems, Oregon Health Policy and Research, Pennsylvania Health Care Cost Containment Council, Rhode Island Department of Health, South Carolina Budget & Control Board, South Dakota Association of Healthcare Organizations, Tennessee Hospital Association, Texas Department of State Health Services, Utah Department of Health, Vermont Association of Hospitals and Health Systems, Virginia Health Information, Washington State Department of Health, West Virginia Health Care Authority, Wisconsin Department of Health Services, Wyoming Hospital Association.

**Table 1. Pediatric Quality Provider-Level Indicators for Overall Population** 

INDICATOR	LABEL	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
	PROVIDER-LEVEL INDICATORS			
NQI #1	Neonatal latrogenic Pneumothorax Rate	33	186,270	0.18
NQI #2	Neonatal Mortality Rate	6,851	3,041,508	2.25
NQI #3	Neonatal Blood Stream Infection Rate	1,596	63,379	25.18
PDI #1	Accidental Puncture or Laceration Rate	1,067	2,297,161	0.46
PDI #2	Pressure Ulcer Rate	62	226,690	0.27
PDI #3	Retained Surgical Item or Unretrieved Device Fragment Count	29		
PDI #5	latrogenic Pneumothorax Rate	234	2,071,756	0.11
PDI #6	RACHS-1 Pediatric Heart Surgery Mortality Rate	447	14,168	31.55
PDI #7	RACHS-1 Pediatric Heart Surgery Volume	16,857		
PDI #8	Perioperative Hemorrhage or Hematoma Rate	408	78,531	5.2
PDI #9	Postoperative Respiratory Failure Rate	877	60,392	14.52
PDI #10	Postoperative Sepsis Rate	938	65,478	14.33
PDI #11	Postoperative Wound Dehiscence Rate	48	42,923	1.12
PDI #12	Central Venous Catheter-Related Blood Stream Infection Rate	1,387	1,813,113	0.76
PDI #13	Transfusion Reaction Count	****		
PSI #17	Birth Trauma Rate - Injury to Neonate	5,636	2,974,363	1.89

**Table 2. Pediatric Quality Area-Level Indicators for Overall Population** 

				OBSERVED RATE PER 100,000
INDICATOR	LABEL	NUMERATOR	DENOMINATOR	(=OBSERVED RATEx100,000)
	AREA-LEVEL INDICATORS			
PDI #14	Asthma Admission Rate	65,149	55,509,334	117.37
PDI #15	Diabetes Short-Term Complications Admission Rate	10,015	41,916,480	23.89
PDI #16	Gastroenteritis Admission Rate	29,041	61,421,305	47.28
PDI #17	Perforated Appendix Admission Rate	17,028	49,468	34422.3
PDI #18	Urinary Tract Infection Admission Rate	18,207	61,421,299	29.64
PDI #90	Pediatric Quality Overall Composite	59,427	41,916,490	141.77
PDI #91	Pediatric Quality Acute Composite	16,163	41,916,482	38.56
PDI #92	Pediatric Quality Chronic Composite	43,264	41,916,482	103.21
PQI #9	Low Birth Weight Rate	189,636	3,051,676	6214.16

#### **Provider-level Indicators**

Table 3. NQI #1 - Neonatal latrogenic Pneumothorax Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	33	186,270	0.18
Females	14	92,876	0.15
Males	19	93,394	0.2
<1 year	33	186,270	0.18
Private	21	76,968	0.27
Medicare	****	578	****
Medicaid	****	96,621	****
Other	****	7,122	****
Uninsured (self-pay/no charge)	****	4,981	****

# **Table 4. NQI #2 - Neonatal Mortality Rate**

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	6,851	3,041,508	2.25
Females	2,962	1,487,226	1.99
Males	3,889	1,554,282	2.5
<1 year	6,851	3,041,508	2.25
Private	2,389	1,414,901	1.69
Medicare	21	9,769	2.15
Medicaid	3,619	1,407,201	2.57
Other	320	94,966	3.37
Uninsured (self-pay/no charge)	502	114,671	4.38

#### Table 5. NQI #3 - Neonatal Blood Stream Infection Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	1,596	63,379	25.18
Females	679	28,725	23.64
Males	917	34,654	26.46
<1 year	1,596	63,379	25.18
Private	540 - 549	24,964	21.63 - 21.99
Medicare	****	146	****
Medicaid	957	34,410	27.81
Other	75	2,913	25.75
Uninsured (self-pay/no charge)	15	946	15.86

Table 6. PDI #1 - Accidental Puncture or Laceration Rate

			OBSERVED RATE PER 1,000
INDICATOR	NUMERATOR	DENOMINATOR	(=OBSERVED RATEx1,000)
Overall	1,067	2,297,161	0.46
Females	426	1,049,131	0.41
Males	641	1,248,030	0.51
<1 year	468	1,277,124	0.37
1 to 2 years	90	211,446	0.43
3 to 5 years	86	177,438	0.48
6 to 12 years	182	298,760	0.61
13 to 17 years	241	332,393	0.73
Private	465	956,184	0.49
Medicare	11	8,248	1.33
Medicaid	499	1,169,255	0.43
Other	68	96,245	0.71
Uninsured (self-pay/no charge)	24	67,229	0.36

#### Table 7. PDI #2 - Pressure Ulcer Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	62	226,690	0.27
Females	20	107,549	0.19
Males	42	119,141	0.35
<1 year	****	37,276	****
1 to 2 years	****	25,001	****
3 to 5 years	****	23,579	****
6 to 12 years	****	56,421	****
13 to 17 years	38	84,413	0.45
Private	24	88,904	0.27
Medicare	****	1,329	****
Medicaid	33	118,928	0.28
Other	****	13,515	****
Uninsured (self-pay/no charge)	****	4,014	****

#### Table 8. PDI #3 - Retained Surgical Item or Unretrieved Device Fragment Count

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	29		
Females	15		
Males	14		
<1 year	****		
1 to 2 years	****		
3 to 5 years	****		
6 to 12 years	****		
13 to 17 years	11		
Private	****		
Medicare	****		
Medicaid	15		
Other	****		
Uninsured (self-pay/no charge)			

Table 9. PDI #5 - Latrogenic Pneumothorax Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000
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			(=OBSERVED RATEx1,000)
Overall	234	2,071,756	0.11
Females	102	941,975	0.11
Males	132	1,129,781	0.12
<1 year	75	1,073,165	0.07
1 to 2 years	27	206,850	0.13
3 to 5 years	21	172,627	0.12
6 to 12 years	42	293,437	0.14
13 to 17 years	69	325,677	0.21
Private	101	863,635	0.12
Medicare	****	7,565	****
Medicaid	113	1,052,772	0.11
Other	15	86,532	0.17
Uninsured (self-pay/no charge)	****	61,252	****

## Table 10. PDI #6 – RACHS-1 Pediatric Heart Surgery Mortality Rate

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INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	447	14,168	31.55
Females	233	6,438	36.19
Males	214	7,730	27.68
<1 year	395	8,188	48.24
1 to 2 years	16	1,625	9.85
3 to 5 years	17	1,696	10.02
6 to 12 years	****	1,587	****
13 to 17 years	****	1,072	****
Private	131	5,760	22.74
Medicare	****	33	****
Medicaid	273	7,095	38.48
Other	32	1,046	30.59
Uninsured (self-pay/no charge)	****	234	****

## Table 11. PDI #7 – RACHS-1 Pediatric Heart Surgery Volume

			OBSERVED RATE PER 1,000
INDICATOR	NUMERATOR	DENOMINATOR	(=OBSERVED RATEx1,000)
Overall	16,857		
Females	7,715		
Males	9,142		
<1 year	10,685		
1 to 2 years	1,668	·	
3 to 5 years	1,726		
6 to 12 years	1,637		
13 to 17 years	1,141		
Private	6,788		
Medicare	39		
Medicaid	8,579		
Other	1,201		
Uninsured (self-pay/no charge)	250		

## Table 12. PDI #8 – Perioperative Hemorrhage or Hematoma Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	408	78,531	5.2
Females	208	37,612	5.53

Males	200	40,919	4.89
<1 year	121	13,941	8.68
1 to 2 years	67	10,847	6.18
3 to 5 years	61	10,281	5.93
6 to 12 years	61	19,690	3.1
13 to 17 years	98	23,772	4.12
Private	178	38,193	4.66
Medicare	****	417	****
Medicaid	190	34,682	5.48
Other	23	4,134	5.56
Uninsured (self-pay/no charge)	****	1,105	****

# Table 13. PDI #9 – Postoperative Respiratory Failure Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	877	60,392	14.52
Females	368	29,711	12.39
Males	509	30,681	16.59
<1 year	272	8,101	33.58
1 to 2 years	149	7,892	18.88
3 to 5 years	101	7,600	13.29
6 to 12 years	176	16,290	10.8
13 to 17 years	179	20,509	8.73
Private	322 - 331	29,959	10.75 - 11.05
Medicare	13	349	37.25
Medicaid	480	26,170	18.34
Other	51	3,104	16.43
Uninsured (self-pay/no charge)	****	810	****

# Table 14. PDI #10 - Postoperative Sepsis Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	938	65,478	14.33
Females	425	29,592	14.36
Males	513	35,886	14.3
<1 year	340	12,977	26.2
1 to 2 years	147	7,354	19.99
3 to 5 years	86	7,122	12.08
6 to 12 years	113	14,744	7.66
13 to 17 years	252	23,281	10.82
Private	306	28,953	10.57
Medicare	11	439	25.06
Medicaid	523	30,251	17.29
Other	84	4,634	18.13
Uninsured (self-pay/no charge)	14	1,201	11.66

## Table 15. PDI #11 – Postoperative Wound Dehiscence Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	48	42,923	1.12
Females	16	17,091	0.94
Males	32	25,832	1.24
<1 year	29	18,083	1.6
1 to 2 years	****	3,467	****

3 to 5 years	****	3,957	****
6 to 12 years	****	9,258	****
13 to 17 years	****	8,158	****
Private	19	17,367	1.09
Medicare	****	80	****
Medicaid	22	22,323	0.99
Other	****	2,189	****
Uninsured (self-pay/no charge)	****	964	****

#### Table 16. PDI #12 - Central Venous Catheter-Related Blood Stream Infection Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	1,387	1,813,113	0.76
Females	629	837,359	0.75
Males	758	975,754	0.78
<1 year	706	1,090,968	0.65
1 to 2 years	211	138,749	1.52
3 to 5 years	137	116,959	1.17
6 to 12 years	146	211,579	0.69
13 to 17 years	187	254,858	0.73
Private	480 - 489	750,674	0.64 - 0.65
Medicare	****	6,572	****
Medicaid	774	930,878	0.83
Other	107	74,841	1.43
Uninsured (self-pay/no charge)	17	50,148	0.34

#### Table 17. PDI #13 - Transfusion Reaction Count

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	****		
Females	****		
Males	****		
<1 year			
1 to 2 years			
3 to 5 years			
6 to 12 years	****		
13 to 17 years	****		
Private	****		
Medicare			
Medicaid	****		
Other	****		
Uninsured (self-pay/no charge)			

# Table 18. PSI #17 - Birth Trauma Rate - Injury to Neonate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	5,636	2,974,363	1.89
Females	2,431	1,452,770	1.67
Males	3,205	1,521,593	2.11
<1 year	5,636	2,974,363	1.89
1 to 2 years			

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3 to 5 years			
6 to 12 years			
13 to 17 years			
Private	2,670	1,388,249	1.92
Medicare	18	9,796	1.84
Medicaid	2,553	1,371,180	1.86
Other	203	91,743	2.21
Uninsured (self-pay/no charge)	192	113,395	1.69

#### **Area-level Indicators**

Table 19. PDI #14 - Asthma Admission Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATEx100,000)
Overall	65,149	55,509,334	117.37
Females	24,888	27,135,049	91.72
Males	40,261	28,374,285	141.89
0 to 4 years	24,951	10,134,797	246.19
5 to 9 years	25,025	17,290,303	144.73
10 to 14 years	11,556	17,440,829	66.26
15 to 17 years	3,617	10,643,405	33.98

## Table 20. PDI #15 - Diabetes Short-Term Complications Admission Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATEx100,000)
Overall	10,015	41,916,480	23.89
Females	5,453	20,485,380	26.62
Males	4,562	21,431,100	21.29
0 to 4 years			
5 to 9 years	1,501	13,832,241	10.85
10 to 14 years	4,717	17,440,831	27.05
15 to 17 years	3,797	10,643,408	35.67

Table 21. PDI #16 - Gastroenteritis Admission Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATEx100,000)
Overall	29,041	61,421,305	47.28
Females	13,578	30,027,123	45.22
Males	15,463	31,394,183	49.25
0 to 4 years	18,438	16,046,764	114.9
5 to 9 years	5,781	17,290,306	33.43
10 to 14 years	2,799	17,440,830	16.05
15 to 17 years	2,023	10,643,405	19.01

Table 22. PDI #17 - Perforated Appendix Admission Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATEx100,000)
Overall	17,028	49,468	344.22
Females	6,728	19,626	342.81
Males	10,300	29,842	345.15
0 to 4 years	1,959	2,962	661.38
5 to 9 years	5,437	13,758	395.19
10 to 14 years	6,560	19,944	328.92
15 to 17 years	3,072	12,804	239.93

Note: Denominator is based on the number of discharges with a diagnosis of appendicitis, rather than the Metro Area or county population. Rate is scaled to per 1,000 persons at risk

Table 23. PDI #18 - Urinary Tract Infection Admission Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATEx100,000)
Overall	18,207	61,421,299	29.64
Females	14,756	30,027,124	49.14
Males	3,451	31,394,175	10.99
0 to 4 years	9,963	16,046,762	62.09
5 to 9 years	3,495	17,290,302	20.21
10 to 14 years	1,796	17,440,830	10.3
15 to 17 years	2,953	10,643,405	27.74

# Table 24. PDI #90 - Pediatric Quality Overall Composite

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATEx100,000)
Overall	59,427	41,916,490	141.77
Females	29,410	20,485,386	143.57
Males	30,017	21,431,105	140.06
0 to 4 years			
5 to 9 years	26,169	13,832,249	189.19
10 to 14 years	20,868	17,440,833	119.65
15 to 17 years	12,390	10,643,408	116.41

#### Table 25. PDI #91 - Pediatric Quality Acute Composite

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATEx100,000)
Overall	16,163	41,916,482	38.56
Females	10,667	20,485,381	52.07
Males	5,496	21,431,101	25.64
0 to 4 years			
5 to 9 years	6,592	13,832,246	47.66
10 to 14 years	4,595	17,440,831	26.35
15 to 17 years	4,976	10,643,405	46.75

## Table 26. PDI #92 - Pediatric Quality Chronic Composite

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATEx100,000)
Overall	43,264	41,916,482	103.21
Females	18,743	20,485,380	91.49
Males	24,521	21,431,101	114.42
0 to 4 years			
5 to 9 years	19,577	13,832,243	141.53
10 to 14 years	16,273	17,440,831	93.3
15 to 17 years	7,414	10,643,408	69.66

# Table 27. PQI #9 - Low Birth Weight Rate

INDICATOR	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATEx1,000)
Overall	189,636	3,051,676	62.14
Females	96,878	1,491,335	64.96
Males	92,758	1,560,341	59.45
0 to 4 years	189,636	3,051,676	62.14
5 to 9 years			
10 to 14 years			
15 to 17 years			