

AHRQ Quality Indicators™



PEDIATRIC QUALITY INDICATORS™ v2020 BENCHMARK DATA TABLES

Prepared for:

Agency for Healthcare Research and Quality
U.S. Department of Health and Human Services
5600 Fishers Lane
Rockville, MD 20857
<http://www.qualityindicators.ahrq.gov>

Contract No. HHSA290201800003G

Prepared by:

Mathematica
P.O. Box 2393
Princeton, NJ 08543-2393

July 2020

Contents

Introduction	1
Acknowledgments	2
Table 1. Pediatric Quality Indicators (PDI) For Overall Population: Hospital-Level Indicators	3
Table 2. Pediatric Quality Indicators (PDI) For Overall Population: Area-Level Indicators	3
Hospital-Level Indicators	4
Table 3. NQI 03 – Neonatal Blood Stream Infection Rate, per 1,000 Admissions	4
Table 4. PDI 01 – Accidental Puncture or Laceration Rate, per 1,000 Admissions	4
Table 5. PDI 05 – Iatrogenic Pneumothorax Rate, per 1,000 Admissions	5
Table 6. PDI 08 – Perioperative Hemorrhage or Hematoma Rate, per 1,000 Admissions	5
Table 7. PDI 09 – Postoperative Respiratory Failure Rate, per 1,000 Admissions	6
Table 8. PDI 10 – Postoperative Sepsis Rate, per 1,000 Admissions	6
Table 9. PDI 12 – Central Venous Catheter-Related Blood Stream Infection Rate, per 1,000 Admissions	7
Table 10. PSI 17 – Birth Trauma Rate – Injury to Neonate, per 1,000 Admissions	7
Area-Level Indicators	8
Table 11. PDI 14 – Asthma Admission Rate, per 100,000 Admissions	8
Table 12. PDI 15 – Diabetes Short-Term Complications Admission Rate, per 100,000 Admissions	8
Table 13. PDI 16 – Gastroenteritis Admission Rate, per 100,000 Admissions	8
Table 14. PDI 18 – Urinary Tract Infection Admission Rate, per 100,000 Admissions	9
Table 15. PDI 90 – Pediatric Quality Overall Composite, per 100,000 Admissions	9
Table 16. PDI 91 – Pediatric Quality Acute Composite, per 100,000 Admissions	9
Table 17. PDI 92 – Pediatric Quality Chronic Composite, per 100,000 Admissions	10

Introduction

The data presented in this document are nationwide comparative rates for Version 2020 of Agency for Healthcare Research and Quality (AHRQ) Quality Indicators™ (QI) Pediatric Quality Indicators (PDI) software. The numerators, denominators and observed rates shown in this document are based on an analysis of discharge data from the 2017 AHRQ Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID).

HCUP is a family of healthcare databases and related software tools and products developed through a Federal-State-industry partnership. 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, Tenth Revision, Clinical Modification/Procedural Classification System (ICD-10-CMS/PCS)* diagnoses and procedures, length of stay, expected payer, admission and discharge dates, and discharge disposition. In 2017, the HCUP databases represented more than 97 percent of all annual discharges in the United States.

The analytic dataset used to generate the tables in this document consists of the same hospital discharge records that comprise the reference population for Version 2020 of the AHRQ QI software. This reference population file was limited to community hospitals and also excludes rehabilitation and long-term acute care (LTAC) hospitals. Information on the type of hospital was obtained by the American Hospital Association (AHA) Annual Survey of Hospitals. AHA defines community hospitals as “all non-Federal, short-term, general, and other specialty hospitals, excluding hospital units of institutions.” Included among community hospitals are specialty hospitals such as obstetrics-gynecology, ear-nose-throat, orthopedic, and pediatric institutions. Also included are public hospitals and academic medical centers.

Hospital-Level Indicators

In 2017, 46 of the SID include indicators of the diagnoses being present on admission (POA) and included the PRDAY data element. Discharges from these 46 participating States are used to develop hospital-level indicators.¹ Edit checks on POA were developed during an HCUP evaluation of POA coding in the 2011 SID at hospitals that were required to report POA to CMS (<http://www.hcup-us.ahrq.gov/reports/methods/2015-06.pdf>). The edits identify general patterns of suspect reporting of POA. The edits do not evaluate whether a valid POA value (e.g., Y or N) is appropriate for the specific diagnosis. There are three hospital-level edit checks:

1. Indication that a hospital has POA reported as Y on all diagnoses on all discharges
2. Indication that a hospital has POA reported as missing on all non-Medicare discharges
3. Indication that a hospital reported POA as missing on all nonexempt diagnoses for 15 percent or more of discharges. The cut-point of 15 percent was determined by 2 times the standard deviation plus the mean of the percentage for hospitals that are required to report POA to CMS.

¹ States in the 2017 reference population for the hospital-level indicators include: AK, AR, AZ, CA, CO, CT, DE, DC, FL, GA, HI, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, and WV.

Area-Level Indicators

The 2017 HCUP SID includes information on all inpatient discharges from hospitals in participating States. Discharges from all 48 participating States are used to develop area-level indicators.²

Additional information on the reference population and the risk adjustment process may be found in Quality Indicator Empirical Methods, available on the AHRQ QI™ website (<http://www.qualityindicators.ahrq.gov/modules/Default.aspx>).

The QI observed rates for hospital-level indicators are scaled to the rate per 1,000 persons at risk and the area-level indicators are per 100,000 population. Cell sizes less than 11 are suppressed due to confidentiality; and are designated by an asterisk (*). When only one data point in a series must be suppressed due to cell sizes, another data point is provided as a range to disallow calculation of the masked variable.

Acknowledgments

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, **Alaska** Department of Health and Social Services, **Arizona** Department of Health Services, **Arkansas** Department of Health, **California** Office of Statewide Health Planning and Development, **Colorado** Hospital Association, **Connecticut** Hospital Association, **Delaware** Division of Public Health, **District of Columbia** Hospital Association, **Florida** Agency for Health Care Administration, **Georgia** Hospital Association, **Hawaii** Laulima Data Alliance, a non-profit subsidiary of the Healthcare Association of Hawaii, University of **Hawaii**, Hilo Center for Rural Health Science, **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, **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** State Department of Health, **Missouri** Hospital Industry Data Institute, **Montana** Hospital Association, **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 Authority, **Pennsylvania** Health Care Cost Containment Council, **Rhode Island** Department of Health, **South Carolina** Revenue and Fiscal Affairs Office, **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.

² States in the 2017 reference population for the area-level indicators include: AK, AR, AZ, CA, CO, CT, DE, DC, FL, GA, HI, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, WV, and WY.

Table 1. Pediatric Quality Indicators (PDI) For Overall Population: Hospital-Level Indicators

INDICATOR	LABEL	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATE*1,000)
NQI 03	Neonatal Blood Stream Infection Rate	1,443	74,285	19.43
PDI 01	Accidental Puncture or Laceration Rate	948	2,881,881	0.33
PDI 05	Iatrogenic Pneumothorax Rate	259	2,616,663	0.10
PDI 08	Perioperative Hemorrhage or Hematoma Rate	296	106,571	2.78
PDI 09	Postoperative Respiratory Failure Rate	826	77,618	10.64
PDI 10	Postoperative Sepsis Rate	1,519	187,754	8.09
PDI 12	Central Venous Catheter-Related Blood Stream Infection Rate	1,120	2,325,030	0.48
PSI 17	Birth Trauma Rate - Injury to Neonate	15,967	3,349,603	4.77

Table 2. Pediatric Quality Indicators (PDI) For Overall Population: Area-Level Indicators

INDICATOR	LABEL	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATE*100,000)
PDI 14	Asthma Admission Rate	51,577	64,016,289	80.57
PDI 15	Diabetes Short-Term Complications Admission Rate	12,143	48,404,697	25.09
PDI 16	Gastroenteritis Admission Rate	25,114	69,264,296	36.26
PDI 18	Urinary Tract Infection Admission Rate	14,237	69,264,294	20.55
PDI 90	Pediatric Quality Overall Composite	54,382	48,404,707	112.35
PDI 91	Pediatric Quality Acute Composite	14,165	48,404,699	29.26
PDI 92	Pediatric Quality Chronic Composite	40,217	48,404,704	83.08

Hospital-Level Indicators

Table 3. NQI 03 – Neonatal Blood Stream Infection Rate, per 1,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATE*1,000)
Overall	1,443	74,285	19.43
Females	614	33,397	18.38
Males	829	40,888	20.27
<1 year	1,443	74,285	19.43
Private	498 -- 507	28,918	17.22 -- 17.53
Medicare	****	151	****
Medicaid	867	40,663	21.32
Other	55	3,041	18.09
Uninsured (self-pay/no charge)	15	1,512	9.92

**** Obscured due to small sample size

Table 4. PDI 01 – Accidental Puncture or Laceration Rate, per 1,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATE*1,000)
Overall	948	2,881,881	0.33
Females	351	1,345,511	0.26
Males	597	1,536,370	0.39
<1 year	435	1,791,749	0.24
1 to 2 years	84	211,164	0.40
3 to 5 years	70	167,704	0.42
6 to 12 years	187	323,405	0.58
13 to 17 years	172	387,859	0.44
Private	378 -- 387	1,189,460	0.32 -- 0.33
Medicare	****	7,870	****
Medicaid	482	1,487,666	0.32
Other	55	92,446	0.59
Uninsured (self-pay/no charge)	25	104,439	0.24

**** Obscured due to small sample size

Table 5. PDI 05 – Iatrogenic Pneumothorax Rate, per 1,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATE*1,000)
Overall	259	2,616,663	0.10
Females	98	1,218,321	0.08
Males	161	1,398,342	0.12
<1 year	46 -- 55	1,551,009	0.03 -- 0.04
1 to 2 years	16	205,394	0.08
3 to 5 years	*****	161,670	*****
6 to 12 years	44	316,932	0.14
13 to 17 years	145	381,658	0.38
Private	134	1,088,563	0.12
Medicare	*****	7,229	*****
Medicaid	109	1,342,728	0.08
Other	12	82,889	0.14
Uninsured (self-pay/no charge)	*****	95,254	*****

**** Obscured due to small sample size

Table 6. PDI 08 – Perioperative Hemorrhage or Hematoma Rate, per 1,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATE*1,000)
Overall	296	106,571	2.78
Females	131	51,478	2.54
Males	165	55,093	2.99
<1 year	63	18,280	3.45
1 to 2 years	39	14,636	2.66
3 to 5 years	48	13,302	3.61
6 to 12 years	72	27,556	2.61
13 to 17 years	74	32,797	2.26
Private	118	51,004	2.31
Medicare	*****	307	*****
Medicaid	155	46,624	3.32
Other	14	6,348	2.21
Uninsured (self-pay/no charge)	*****	2,288	*****

**** Obscured due to small sample size

Table 7. PDI 09 – Postoperative Respiratory Failure Rate, per 1,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATE*1,000)
Overall	826	77,618	10.64
Females	361	39,287	9.19
Males	465	38,331	12.13
<1 year	155	8,815	17.58
1 to 2 years	147	9,399	15.64
3 to 5 years	106	9,299	11.40
6 to 12 years	244	22,589	10.80
13 to 17 years	174	27,516	6.32
Private	332 -- 341	37,705	8.81 -- 9.04
Medicare	****	260	****
Medicaid	398	33,473	11.89
Other	69	4,495	15.35
Uninsured (self-pay/no charge)	17	1,685	10.09

**** Obscured due to small sample size

Table 8. PDI 10 – Postoperative Sepsis Rate, per 1,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATE*1,000)
Overall	1,519	187,754	8.09
Females	661	83,387	7.93
Males	858	104,367	8.22
<1 year	530	32,026	16.55
1 to 2 years	262	22,719	11.53
3 to 5 years	145	22,829	6.35
6 to 12 years	244	49,117	4.97
13 to 17 years	338	61,063	5.54
Private	523 -- 532	85,023	6.15 -- 6.26
Medicare	****	582	****
Medicaid	844	87,283	9.67
Other	109	10,245	10.64
Uninsured (self-pay/no charge)	35	4,621	7.57

**** Obscured due to small sample size

Table 9. PDI 12 – Central Venous Catheter-Related Blood Stream Infection Rate, per 1,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATE*1,000)
Overall	1,120	2,325,030	0.48
Females	510	1,094,471	0.47
Males	610	1,230,559	0.50
<1 year	480	1,523,024	0.32
1 to 2 years	201	140,284	1.43
3 to 5 years	132	111,876	1.18
6 to 12 years	178	236,731	0.75
13 to 17 years	129	313,115	0.41
Private	359 -- 368	959,128	0.37 -- 0.38
Medicare	****	6,659	****
Medicaid	659	1,206,279	0.55
Other	72	72,820	0.99
Uninsured (self-pay/no charge)	25	80,144	0.31

**** Obscured due to small sample size

Table 10. PSI 17 – Birth Trauma Rate – Injury to Neonate, per 1,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 1,000 (=OBSERVED RATE*1,000)
Overall	15,967	3,349,603	4.77
Females	6,996	1,634,350	4.28
Males	8,971	1,715,253	5.23
<1 year	15,967	3,349,603	4.77
Private	7,271	1,549,060	4.69
Medicare	55	9,151	6.01
Medicaid	7,398	1,539,261	4.81
Other	429	86,955	4.93
Uninsured (self-pay/no charge)	814	165,176	4.93

Area-Level Indicators

Table 11. PDI 14 – Asthma Admission Rate, per 100,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATE*100,000)
Overall	51,577	64,016,289	80.57
Females	20,627	31,320,952	65.86
Males	30,950	32,695,337	94.66
0 to 4 years	18,496	11,648,704	158.78
5 to 9 years	19,937	19,814,414	100.62
10 to 14 years	9,860	20,253,318	48.68
15 to 17 years	3,284	12,299,853	26.70

Table 12. PDI 15 – Diabetes Short-Term Complications Admission Rate, per 100,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATE*100,000)
Overall	12,143	48,404,697	25.09
Females	6,526	23,690,518	27.55
Males	5,617	24,714,179	22.73
5 to 9 years	1,892	15,851,528	11.94
10 to 14 years	5,661	20,253,318	27.95
15 to 17 years	4,590	12,299,851	37.32

Table 13. PDI 16 – Gastroenteritis Admission Rate, per 100,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATE*100,000)
Overall	25,114	69,264,296	36.26
Females	11,849	33,885,552	34.97
Males	13,265	35,378,744	37.49
0 to 4 years	16,258	18,040,922	90.12
5 to 9 years	4,620	19,376,794	23.84
10 to 14 years	2,500	19,807,038	12.62
15 to 17 years	1,736	12,039,542	14.42

Table 14. PDI 18 – Urinary Tract Infection Admission Rate, per 100,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATE*100,000)
Overall	14,237	69,264,294	20.55
Females	11,605	33,885,554	34.25
Males	2,632	35,378,740	7.44
0 to 4 years	7,198	18,040,919	39.90
5 to 9 years	2,929	19,376,793	15.12
10 to 14 years	1,701	19,807,039	8.59
15 to 17 years	2,409	12,039,543	20.01

Table 15. PDI 90 – Pediatric Quality Overall Composite, per 100,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATE*100,000)
Overall	54,382	48,404,707	112.35
Females	27,606	23,690,523	116.53
Males	26,776	24,714,184	108.34
5 to 9 years	22,506	15,851,533	141.98
10 to 14 years	19,794	20,253,319	97.73
15 to 17 years	12,082	12,299,855	98.23

^a Composite includes PDI 14, 15, 16, and 18

Table 16. PDI 91 – Pediatric Quality Acute Composite, per 100,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATE*100,000)
Overall	14,165	48,404,699	29.26
Females	9,292	23,690,519	39.22
Males	4,873	24,714,180	19.72
5 to 9 years	5,684	15,851,529	35.86
10 to 14 years	4,273	20,253,319	21.10
15 to 17 years	4,208	12,299,851	34.21

^a Composite includes PDI 16 and 18

Table 17. PDI 92 – Pediatric Quality Chronic Composite, per 100,000 Admissions

GROUP	NUMERATOR	DENOMINATOR	OBSERVED RATE PER 100,000 (=OBSERVED RATE*100,000)
Overall	40,217	48,404,704	83.08
Females	18,314	23,690,521	77.31
Males	21,903	24,714,182	88.63
5 to 9 years	16,822	15,851,532	106.12
10 to 14 years	15,521	20,253,318	76.63
15 to 17 years	7,874	12,299,854	64.02

^a Composite includes PDI 14 and 15