



AHRQ QI Rate Comparison Between v4.5 and v5.0

Prepared for:

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>

Contract No. HHSA290201200001C

Prepared by:



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

March 2015

Introduction

The data presented in this document are comparisons of nationwide observed rates for all Quality Indicators™ (QIs) by module, comparing Agency for Healthcare Research and Quality (AHRQ) QI SAS® Software Version 5.0 to Version 4.5. The rates for v5.0 of the software are based on analysis States from AHRQ's 2012 Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID). The rates for v4.5 are based on published benchmark results using the 2010 HCUP SID.

AHRQ Quality Indicators™

Comparison of Observed Rates v4.5 and v5.0

Indicator Type	Indicator	Title	Changes from v4.5a to v5.0	Ratio of V5.0 Statistic Over V4.5a Statistic						V4.5						V5.0					
				Numerator	Denominator	Observed Rate	Expected Rate	Risk Adj Rate	Smoothed Rate	Numerator	Denominator	Observed Rate	Expected Rate	Risk Adj Rate	Smoothed Rate	Numerator	Denominator	Observed Rate	Expected Rate	Risk Adj Rate	Smoothed Rate
PROVIDER	NQ01	Neonatal Iatrogenic Pneumothorax Rate	B	3.29	5.19	0.63	0.90	0.66	0.69	23	98877	0.000232612	0.000181682	0.000232695	0.000232695	7	19,053	0.000367	0.000201	0.000351	0.000338
PROVIDER	NQ02	Neonatal Mortality Rate	A, B	5.20	4.59	1.13	1.08	1.14	1.14	3721	1559068	0.002386682	0.002373305	0.002343149	0.002343149	716	339,427	0.002109	0.002199	0.002054	0.002054
PROVIDER	NQ03	Neonatal Blood Stream Infection Rate	B	5.55	5.63	0.99	1.02	1.05	1.06	883	34030	0.025947693	0.025368241	0.025847153	0.025847153	159	6,045	0.026303	0.024863	0.024501	0.024487
PROVIDER	PD01	Accidental Puncture or Laceration Rate	A, B, D*	3.86	4.97	0.78	0.81	0.90	0.90	629	1231722	0.000510667	0.000512682	0.000498309	0.000498309	163	248,025	0.000657	0.000635	0.000554	0.000553
PROVIDER	PD02	Pressure Ulcer Rate	B*	6.17	5.32	1.16	1.51	1.65	1.67	37	126440	0.000292629	0.000289089	0.000289542	0.000289542	6	23,787	0.000252	0.000192	0.000175	0.000174
PROVIDER	PD03	Retained Surgical Item or Unretrieved Device Fragment Count	D	0.92						12						13					
PROVIDER	PD05	Iatrogenic Pneumothorax Rate	B	7.00	4.97	1.41	0.90	1.44	1.41	154	1109642	0.000138784	0.000127388	0.000138037	0.000138037	22	223,390	0.000098	0.000142	0.000096	0.000098
PROVIDER	PD06	RACHS-1 Pediatric Heart Surgery Mortality Rate	B	4.29	4.67	0.92	0.84	0.93	0.93	279	8615	0.032385374	0.031653833	0.032841827	0.032841825	65	1,845	0.035230	0.037611	0.035323	0.035457
PROVIDER	PD07	RACHS-1 Pediatric Heart Surgery Volume		1.00						10,175					10,175						
PROVIDER	PD08	Perioperative Hemorrhage or Hematoma Rate	A, B	21.00	14.00	1.50	1.10	1.63	1.48	252	47870	0.005264257	0.00553316	0.005264241	0.005264241	12	3,419	0.003510	0.005013	0.003236	0.003564
PROVIDER	PD09	Postoperative Respiratory Failure Rate	B	13.21	13.94	0.95	0.99	1.34	1.35	555	36737	0.015107385	0.014202379	0.015237462	0.015237462	42	2,635	0.015939	0.014324	0.011329	0.011251
PROVIDER	PD10	Postoperative Sepsis Rate	A, B	4.00	4.95	0.81	0.78	0.95	0.95	600	39983	0.015006378	0.014848012	0.014896824	0.014896824	150	8,085	0.018553	0.018980	0.015663	0.015671
PROVIDER	PD11	Postoperative Wound Dehiscence Rate	A, B	4.25	4.88	0.87	2.51	0.37	0.58	34	24408	0.001392986	0.001115718	0.001392361	0.00139236	8	5,006	0.001598	0.000444	0.003796	0.002386
PROVIDER	PD12	Central Venous Catheter-Related Blood Stream Infection Rate	A, B	4.29	5.25	0.82	0.59	1.69	1.69	819	970402	0.00084398	0.000817186	0.000833176	0.000833176	191	184,752	0.001034	0.001379	0.000493	0.000493
PROVIDER	PD13	Transfusion Reaction Count	D	1.00						2					2						
AREA	PD14	Asthma Admission Rate	B	1.00	1.00	1.00	0.63	1.59	1.59	78,692	65,643,121	0.001199	0.000783	0.001897	0.001897	78,692	65,643,121	0.001199	0.001246	0.001193	0.001193
AREA	PD15	Diabetes Short-Term Complications Admission Rate	B	1.00	1.00	1.00	0.98	1.03	1.03	12,828	49,571,022	0.000259	0.000256	0.000267	0.000267	12,828	49,571,022	0.000259	0.000262	0.000260	0.000260
AREA	PD16	Gastroenteritis Admission Rate	A, B	1.00	1.00	1.00	0.32	3.17	3.17	35,720	72,632,201	0.000492	0.000208	0.001555	0.001555	35,720	72,632,201	0.000492	0.000658	0.000491	0.000491
AREA	PD17	Perforated Appendix Admission Rate	B	1.00	1.00	1.00	1.12	0.89	0.89	20,201	58,414	0.345825	0.346281	0.305814	0.305815	20,201	58,414	0.345825	0.309406	0.342261	0.342198
AREA	PD18	Urinary Tract Infection Admission Rate	B	1.00	1.00	1.00	0.42	2.38	2.38	22,340	72,632,196	0.000308	0.000156	0.000734	0.000734	22,340	72,632,196	0.000308	0.000372	0.000308	0.000308
AREA	PD19	Pediatric Quality Overall Composite	B	1.00	1.00	1.00	0.93	1.08	1.08	73,090	49,571,051	0.001474	0.001495	0.001586	0.001586	73,090	49,571,051	0.001474	0.001612	0.001470	0.001470
AREA	PD191	Pediatric Quality Acute Composite	B	1.00	1.00	1.00	0.79	1.26	1.26	20,035	49,571,032	0.000404	0.000409	0.000510	0.000510	20,035	49,571,032	0.000404	0.000515	0.000405	0.000405
AREA	PD192	Pediatric Quality Chronic Composite	B	1.00	1.00	1.00	0.99	1.01	1.01	53,055	49,571,031	0.001070	0.001086	0.001076	0.001076	53,055	49,571,031	0.001070	0.001097	0.001065	0.001065

Notes:

* Large differences in numerator and denominator counts for V4.5 and V5.0 are caused by the V4.5 prediction module.

Key: A=Coding updates, B=Risk-adjustment updated for 2012 reference population, C=Updates to stratification, and D=Removal of External Cause of Injury codes.

AHRQ Quality Indicators™

Comparison of Observed Rates v4.5 and v5.0

Indicator Type	Indicator	Title	Changes from v4.5a to v5.0	Ratio of V5.0 Statistic Over V4.5a Statistic						Version 5.0						Version 4.5a					
				Numerator	Denominator	Observed Rate	Expected Rate	Risk Adj Rate	Smoothed Rate	Numerator	Denominator	Observed Rate	Expected Rate	Risk Adj Rate	Smoothed Rate	Numerator	Denominator	Observed Rate	Expected Rate	Risk Adj Rate	Smoothed Rate
AREA	PQI01	Diabetes Short-Term Complications Admission Rate	B	1.00	1.00	1.00	1.07	1.00	1.00	156,819	237,818,280	0.000659	0.000661	0.000663	0.000663	156,819	237,818,280	0.000659	0.000615	0.000665	0.000665
AREA	PQI02	Perforated Appendix Admission Rate	B	1.00	1.00	1.00	1.06	1.02	1.02	56,656	173,406	0.326725	0.325852	0.323495	0.323495	56,656	173,406	0.326725	0.306387	0.317503	0.317494
AREA	PQI03	Diabetes Long-Term Complications Admission Rate	B	1.00	1.00	1.00	0.91	1.01	1.01	252,584	237,818,922	0.001062	0.001083	0.001048	0.001048	252,584	237,818,922	0.001062	0.001184	0.001040	0.001040
AREA	PQI05	Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate	A, B	1.00	1.00	1.00	0.91	1.00	1.00	761,512	147,013,506	0.005190	0.005279	0.005084	0.005084	761,512	147,013,506	0.005190	0.005827	0.005093	0.005093
AREA	PQI07	Hypertension Admission Rate	B	1.00	1.00	1.00	0.93	1.00	1.00	131,346	237,818,670	0.000552	0.000559	0.000545	0.000545	131,346	237,818,670	0.000552	0.000601	0.000543	0.000543
AREA	PQI08	Heart Failure Admission Rate	B	1.00	1.00	1.00	0.88	1.01	1.01	788,302	237,835,612	0.003314	0.003381	0.003237	0.003237	788,302	237,835,612	0.003314	0.003832	0.003210	0.003210
AREA	PQI09	Low Birth Weight Rate	B*	2.25	2.30	0.98	NA	NA	NA	225,476	3,593,664	0.062743				100,189	1,564,470	0.064040			
AREA	PQI10	Dehydration Admission Rate	A, B	1.33	1.00	1.33	1.16	1.33	1.33	336,626	237,821,842	0.001415	0.001440	0.001388	0.001388	253,686	237,820,416	0.001067	0.001240	0.001042	0.001042
AREA	PQI11	Bacterial Pneumonia Admission Rate	B	1.00	1.00	1.00	0.89	1.01	1.01	635,795	237,833,475	0.002673	0.002725	0.002618	0.002618	635,795	237,833,475	0.002673	0.003051	0.002601	0.002601
AREA	PQI12	Urinary Tract Infection Admission Rate	B	1.00	1.00	1.00	0.91	1.00	1.00	411,831	237,824,780	0.001732	0.001765	0.001700	0.001700	411,831	237,824,780	0.001732	0.001932	0.001695	0.001695
AREA	PQI13	Angina Without Procedure Admission Rate	B	1.00	1.00	1.00	0.73	1.01	1.01	32,819	237,818,271	0.000138	0.000140	0.000136	0.000136	32,819	237,818,271	0.000138	0.000193	0.000135	0.000135
AREA	PQI14	Uncontrolled Diabetes Admission Rate	B	1.00	1.00	1.00	0.85	1.00	1.00	37,732	237,818,162	0.000159	0.000161	0.000157	0.000157	37,732	237,818,162	0.000159	0.000190	0.000157	0.000157
AREA	PQI15	Asthma in Younger Adults Admission Rate	B	1.00	1.00	1.00	0.91	0.99	0.99	42,854	90,817,983	0.000472	0.000481	0.000468	0.000468	42,854	90,817,983	0.000472	0.000527	0.000471	0.000471
AREA	PQI16	Lower-Extremity Amputation among Patients With Diabetes Rate	A, B	0.93	1.00	0.93	0.98	0.94	0.94	37,195	237,818,217	0.000156	0.000159	0.000154	0.000154	40,108	237,818,220	0.000169	0.000162	0.000164	0.000164
AREA	PQI90	Prevention Quality Overall Composite	B	1.02	1.00	1.02	0.97	1.03	1.03	3,608,650	237,929,080	0.015167	0.015467	0.014867	0.014867	3,526,911	237,925,565	0.014824	0.015972	0.014442	0.014442
AREA	PQI91	Prevention Quality Acute Composite	B	1.06	1.00	1.06	0.95	1.07	1.07	1,384,252	237,855,072	0.005820	0.005934	0.005703	0.005703	1,301,312	237,852,370	0.005471	0.006226	0.005334	0.005334
AREA	PQI92	Prevention Quality Chronic Composite	B	1.00	1.00	1.00	0.98	1.01	1.01	2,224,478	237,869,636	0.009352	0.009522	0.009181	0.009181	2,225,668	237,869,661	0.009357	0.009735	0.009122	0.009122

Notes:

* The V4.5 counts are based on a 50 percent sample; the V5.0 counts are based on the 100 percent file.

Key: A=Coding updates, B=Risk-adjustment updated for 2012 reference population, C=Updates to stratification, and D=Removal of External Cause of Injury codes.

AHRQ Quality Indicators™

Comparison of Observed Rates v4.5 and v5.0

Indicator Type	Indicator	Title	Changes from v4.5a to v5.0	Ratio of V5.0 Statistic Over V4.5a Statistic								Version 5.0					Version 4.5a				
				Numerator	Denominator	Observed Rate	Expected Rate	Risk Adj Rate	Smoothed Rate	Numerator	Denominator	Observed Rate	Expected Rate	Risk Adj Rate	Smoothed Rate	Numerator	Denominator	Observed Rate	Expected Rate	Risk Adj Rate	Smoothed Rate
PROVIDER	PSI02	Death Rate in Low-Mortality Diagnosis Related Groups (DRGs)	A, B	2.08	1.28	1.62	1.15	1.63	1.63	1,266	3,584,317	0.000353	0.000328	0.000350	0.000350	609	2,799,212	0.000218	0.000286	0.000214	0.000214
PROVIDER	PSI03	Pressure Ulcer Rate	B	1.13	1.14	0.99	1.13	1.09	1.09	1,821	3,548,802	0.000513	0.000502	0.000520	0.000520	1,616	3,102,058	0.000521	0.000443	0.000477	0.000477
PROVIDER	PSI04	Death Rate among Surgical Inpatients with Serious Treatable Complications	A, B, C	1.12	1.10	1.02	1.01	1.03	1.03	14,707	122,666	0.119895	0.120148	0.119258	0.119258	13,077	111,141	0.117861	0.119511	0.115555	0.115556
PROVIDER	PSI04A	Death Rate among Surgical Inpatients with Serious Treatable Complications - Stratum A	A, C	1.11	1.11	1.00	0.94	1.13		812	17,690	0.045902	0.047769	0.046231	0.046231	731	15,959	0.045805	0.050650	0.040927	
PROVIDER	PSI04B	Death Rate among Surgical Inpatients with Serious Treatable Complications - Stratum B	C	1.13	1.10	1.02	1.02	1.04		4,088	54,676	0.074788	0.076567	0.074296	0.074296	3,629	49,549	0.073241	0.074764	0.071549	
PROVIDER	PSI04C	Death Rate among Surgical Inpatients with Serious Treatable Complications - Stratum C	C	1.09	1.10	0.99	1.01	0.95		3,681	18,522	0.198737	0.202075	0.198677	0.198677	3,369	16,886	0.199751	0.200964	0.209902	
PROVIDER	PSI04D	Death Rate among Surgical Inpatients with Serious Treatable Complications - Stratum D	A, C	1.14	1.08	1.05	0.96	1.07		5,257	14,589	0.360340	0.348491	0.356691	0.356691	4,620	13,496	0.342324	0.364903	0.333987	
PROVIDER	PSI04E	Death Rate among Surgical Inpatients with Serious Treatable Complications - Stratum E		1.19	1.13	1.06	0.97	1.53		869	17,189	0.050556	0.049046	0.050091	0.050091	728	15,271	0.047672	0.050625	0.032781	
PROVIDER	PSI05	Retained Surgical Item or Unretrieved Device Fragment Count	D	0.97						610						631					
PROVIDER	PSI06	Iatrogenic Pneumothorax Rate	B	1.14	1.18	0.97	0.85	0.88	0.88	4,219	12,423,034	0.000340	0.000334	0.000344	0.000344	3,692	10,537,369	0.000350	0.000391	0.000393	0.000393
PROVIDER	PSI07	Central Venous Catheter-Related Blood Stream Infection Rate	A, B	0.79	1.18	0.67	0.42	0.82	0.82	2,259	9,960,404	0.000227	0.000207	0.000230	0.000230	2,850	8,445,409	0.000337	0.000490	0.000282	0.000282
PROVIDER	PSI08	Postoperative Hip Fracture Rate	A, B, D	1.01	1.13	0.89	1.68	0.75	0.79	97	2,231,652	0.000043	0.000045	0.000043	0.000043	96	1,970,366	0.000049	0.000027	0.000058	0.000055
PROVIDER	PSI09	Perioperative Hemorrhage or Hematoma Rate	A, B	1.00	1.10	0.91	0.87	0.94	0.94	18,026	3,458,207	0.005213	0.005162	0.005197	0.005197	17,957	3,135,296	0.005727	0.005937	0.005537	0.005538
PROVIDER	PSI10	Postoperative Physiologic and Metabolic Derangement Rate	A, B	1.60	1.04	1.54	1.43	1.64	1.64	1,326	1,586,350	0.000836	0.000722	0.000828	0.000828	827	1,528,516	0.000541	0.000505	0.000504	0.000503
PROVIDER	PSI11	Postoperative Respiratory Failure Rate	B	0.99	1.03	0.95	1.05	1.10	1.10	13,860	1,324,232	0.010466	0.010128	0.010425	0.010425	14,063	1,279,716	0.010989	0.009642	0.009485	0.009485
PROVIDER	PSI12	Postoperative Pulmonary Embolism or Deep Vein Thrombosis Rate	A, B	1.12	1.14	0.98	1.04	1.10	1.10	18,792	3,707,238	0.005069	0.005062	0.005059	0.005059	16,827	3,256,940	0.005167	0.004889	0.004618	0.004618
PROVIDER	PSI13	Postoperative Sepsis Rate	A, B	0.92	1.01	0.92	0.80	0.93	0.93	2,932	296,052	0.009904	0.009715	0.009756	0.009756	3,178	294,258	0.010800	0.012186	0.010462	0.010463
PROVIDER	PSI14	Postoperative Wound Dehiscence Rate	B	1.18	1.12	1.05	0.95	1.10	1.10	1,076	544,923	0.001975	0.001886	0.001943	0.001943	913	485,008	0.001882	0.001989	0.001768	0.001769
PROVIDER	PSI15	Accidental Puncture or Laceration Rate	A, B, D	1.03	1.18	0.88	0.74	1.06	1.06	24,375	12,926,094	0.001886	0.001886	0.002175	0.002175	23,616	10,970,594	0.002153	0.002540	0.002058	0.002058
PROVIDER	PSI16	Transfusion Reaction Count	D	1.33						28					21						
PROVIDER	PSI17	Birth Trauma Rate - Injury to Neonate		1.00	1.00	1.00				2,936	1,523,412	0.001927			2,936	1,523,412	0.001927				
PROVIDER	PSI18	Obstetric Trauma Rate - Vaginal Delivery With Instrument		1.18	1.21	0.97				10,969	84,917	0.129173			9,322	70,305	0.132594				
PROVIDER	PSI19	Obstetric Trauma Rate - Vaginal Delivery Without Instrument		1.19	1.22	0.97				24,048	1,175,709	0.020454			20,213	960,131	0.021052				
AREA	PSI21	Retained Surgical Item or Unretrieved Device Fragment Rate	D	0.91	1.00	0.91				2,384	239,895,380	0.000010			2,632	239,895,382	0.000011				
AREA	PSI22	Iatrogenic Pneumothorax Rate		1.00	1.00	1.00				13,970	239,895,461	0.000058			13,970	239,895,461	0.000058				
AREA	PSI23	Central Venous Catheter-Related Blood Stream Infection Rate	A	0.65	1.00	0.65				12,634	239,895,411	0.000053			19,386	239,895,430	0.000081				
AREA	PSI24	Postoperative Wound Dehiscence Rate		1.00	1.00	1.00				3,726	239,895,394	0.000016			3,726	239,895,394	0.000016				
AREA	PSI25	Accidental Puncture or Laceration Rate	A, D	0.91	1.00	0.91				59,863	239,895,749	0.000250			65,675	239,895,808	0.000274				
AREA	PSI26	Transfusion Reaction Rate	D	0.97	1.00	0.97				174	239,895,371	0.000001			180	239,895,371	0.000001				
AREA	PSI27	Perioperative Hemorrhage or Hematoma Rate	A	0.92	1.00	0.92				75,676	239,895,796	0.000315			81,899	239,895,830	0.000341				

Notes:

Key: A=Coding updates, B=Risk-adjustment updated for 2012 reference population, C=Updates to stratification, and D=Removal of External Cause of Injury codes.