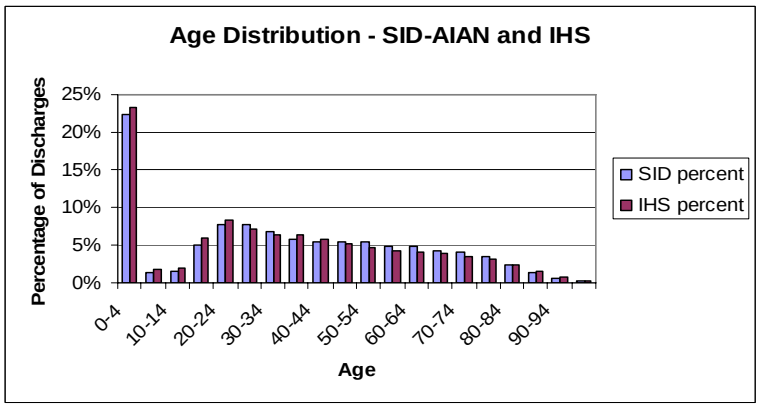
**2002 Indian Health Services Data (IHS) – AHRQ Quality Indicators (QIs**
**Used in Conjunction with the Healthcare Cost and Utilization Project (HCUP) State Inpatient**
**Databases (SID) that code American Indian/Native Alaskan (AIAN)**

**Databases**

IHS data from 14 states – 68,410 discharges
HCUP SID-AIAN data from 24 states – 97,291 discharges
Only 24 HCUP states code AIAN
Selected all AIAN discharges from the 24 states
IHS is a younger population than we see in the SID-AIAN




**AHRQ QIs**

There are two types of QIs:

**Discharge-based QIs** have inpatient discharge data for the numerator and denominator of the rate. Rates are reported per 1,000 discharges.

Rates for discharge-based QIs are calculated for IHS data alone, the HCUP SID-AIAN alone, a combined data set of IHS and SID-AIAN. Rates for the combined data set are more reliable (lower standard errors and thus fewer exclusions for RSE>30%). National estimates from the NIS are included for comparison.

**Area-based QIs** have inpatient discharge data for the numerator and population data for the denominator of the rate. Rates are reported per 100,000 people.
Rates are calculated two ways:
1) For a combined data set of IHS and SID-AIAN.
2) For the SID-AIAN data only.
In both cases, the SID-AIAN data was weighted within region to account for HCUP states that do code AIAN as a race category and states that do not participate in HCUP (see table below).

| Region | Total AIAN Population by Region | Population by Region for States with AIAN coded in HCUP Data | Percent of Population in HCUP Data | Weight for region |
|---|---|---|---|---|
| | 2,212,348 | 1,100,862 | | |
| Midwest | 383,984 | 223,815 | 58.3% | 1.7156 |
| Northeast | 122,949 | 100,385 | 81.6% | 1.2248 |
| South | 688,887 | 303,643 | 44.1% | 2.2687 |
| West | 1,016,528 | 473,019 | 46.5% | 2.1490 |

NJ was excluded from HCUP count because the percentage of discharges per population was 42.3%. Other states ranged from 2 to 20%. We could not validate the high rate of AIAN admissions in NJ.

Weights to account for the underreporting of AIAN discharges could not be determined. A study by Korenbrot, Ehlers and Crouch (Medical Care v 41, n 5, 626-636) in which they linked IHS user records with California hospital discharge data found that only 30% of the IHS users had race coded as native american on the discharge data.

**AHRQ Quality Indicators (QIs)**
**Discharge-Based QIs - Adjusted Rates for 2002**
**Data Sources:**
**Indian Health Services (IHS)**
**HCUP Nationwide Inpatient Services (NIS)**
**HCUP State Inpatient Databases - Discharges with race=AIAN across 24 states combined (SID-AIAN)**

| | | 2002 IHS data | | | 2002 SID-AIAN | | | 2002 IHS and SID-AIAN Data Combined | | | 2002 NIS (All races) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **QI** | **QI_Label** | **Rate[a]** | **SE** | **RSE** | **Rate[a]** | **SE** | **RSE** | **Rate[a]** | **SE** | **RSE** | **Rate[a]** | **SE** |
| IQI08 | IN-HOSP MORT ESOPHAGEAL RESECTION | <No observations> | | | 0.000 | 173.121 | > 30% | 0.000 | 173.121 | > 30% | 92.376 | 9.593 |
| IQI09 | IN-HOSP MORT PANCREATIC RESECTION | 55.939 | 123.951 | > 30% | 21.728 | 58.513 | > 30% | 27.948 | 52.927 | > 30% | 72.275 | 5.830 |
| IQI10 | IN-HOSP MORT PEDIATRIC HEART SURG | <No observations> | | | 71.919 | 18.180 | -- | 71.919 | 18.180 | -- | 43.095 | 3.151 |
| IQI11* | IN-HOSP MORT AAA REPAIR | 115.048 | 180.215 | > 30% | 231.186 | 60.089 | -- | 219.572 | 57.005 | -- | 104.872 | 3.544 |
| IQI12* | IN-HOSP MORT CABG | 20.016 | 171.557 | > 30% | 26.291 | 7.070 | -- | 26.280 | 7.064 | -- | 29.000 | 0.629 |
| IQI13 | IN-HOSP MORT CRANIOTOMY | 0.000 | 77.663 | > 30% | 93.852 | 13.929 | -- | 88.336 | 13.710 | -- | 69.885 | 1.621 |
| IQI14 | IN-HOSP MORT HIP REPLACEMENT | 0.738 | 8.639 | > 30% | 1.421 | 4.195 | > 30% | 1.291 | 3.774 | > 30% | 2.510 | 0.235 |
| IQI15** | IN-HOSP MORT AMI | 57.129 | 29.857 | > 30% | 89.470 | 7.951 | -- | 87.329 | 7.683 | -- | 93.704 | 0.721 |
| IQI16* | IN-HOSP MORT CHF | 52.382 | 7.066 | -- | 43.086 | 4.962 | -- | 46.156 | 4.060 | -- | 39.910 | 0.423 |
| IQI17 | IN-HOSP MORT STROKE | 131.612 | 19.929 | -- | 118.686 | 9.303 | -- | 120.998 | 8.430 | -- | 107.693 | 0.835 |
| IQI18 | IN-HOSP MORT GI HEMORRHAGE | 30.367 | 7.079 | -- | 30.224 | 5.240 | -- | 30.275 | 4.212 | -- | 28.307 | 0.519 |
| IQI19 | IN-HOSP MORT HIP FRACTURE | 53.434 | 13.926 | -- | 18.719 | 7.765 | > 30% | 26.952 | 6.783 | -- | 27.989 | 0.624 |
| IQI20* | IN-HOSP MORT PNEUMONIA | 96.393 | 5.366 | -- | 90.097 | 5.510 | -- | 93.328 | 3.844 | -- | 79.849 | 0.516 |
| IQI21* | CESAREAN SECTION DELIVERY | 150.036 | 4.340 | -- | 232.066 | 3.358 | -- | 201.345 | 2.656 | -- | 232.215 | 0.454 |
| IQI22* | VAG BTH AFT C-SECTION,UNCOMPL | 315.299 | 15.570 | -- | 199.601 | 10.270 | -- | 234.680 | 8.573 | -- | 181.217 | 1.391 |
| IQI23 | LAPAROSCOPIC CHOLECYSTECTOMY | 851.826 | 9.094 | -- | 781.385 | 12.411 | -- | 827.219 | 7.335 | -- | 757.035 | 1.413 |
| IQI24 | INCIDENTAL APPENDECTOMY | 31.787 | 9.539 | > 30% | 38.193 | 7.416 | -- | 35.780 | 5.855 | -- | 22.684 | 0.508 |
| IQI25 | BI-LATERAL CATHETERIZATION | 81.381 | 41.364 | > 30% | 79.183 | 5.594 | -- | 79.222 | 5.544 | -- | 72.558 | 0.521 |
| IQI30* | IN-HOSP MORT PTCA | 18.229 | 63.851 | > 30% | 13.718 | 3.100 | -- | 13.729 | 3.096 | -- | 13.377 | 0.284 |
| IQI31 | IN-HOSP MORT CAROTID ENDARTERECTMY | 7.594 | 33.271 | > 30% | 12.225 | 6.611 | > 30% | 12.049 | 6.485 | > 30% | 7.228 | 0.467 |
| IQI32 | IN-HOSP MORT AMI,w/o TRANSFERS | 67.900 | 35.679 | > 30% | 100.337 | 9.358 | -- | 98.250 | 9.052 | -- | 103.080 | 0.845 |
| IQI33 | PRIMARY CESAREAN SECTION | 84.077 | 3.824 | -- | 141.292 | 3.019 | -- | 119.326 | 2.369 | -- | 145.341 | 0.408 |
| IQI34 | VBAC, ALL | 298.735 | 14.502 | -- | 190.182 | 9.452 | -- | 222.545 | 7.919 | -- | 175.265 | 1.290 |
| | | | | | | | | | | | | |
| PQI02** | PERFORATED APPENDIX | 337.712 | 21.087 | -- | 349.144 | 17.068 | -- | 332.880 | 13.067 | -- | 302.934 | 2.092 |
| PQI09 | LOW BIRTH WEIGHT | 27.584 | 1.632 | -- | 67.550 | 2.001 | -- | 51.981 | 1.382 | -- | 59.148 | 1.067 |
| | | | | | | | | | | | | |
| PSI01* | COMPLICATIONS OF ANESTHESIA | 0.353 | 0.213 | > 30% | 0.769 | 0.150 | -- | 0.631 | 0.124 | -- | 0.922 | 0.036 |
| PSI02* | DEATH IN LOW MORTALITY DRGS | 0.649 | 0.116 | -- | 0.654 | 0.099 | -- | 0.652 | 0.076 | -- | 0.875 | 0.037 |
| PSI03* | DECUBITUS ULCER | 19.044 | 1.346 | -- | 23.623 | 0.985 | -- | 22.010 | 0.798 | -- | 23.289 | 0.155 |

| | | 2002 IHS data | | | 2002 SID-AIAN | | | 2002 IHS and SID-AIAN Data Combined | | | 2002 NIS (All races) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **QI** | **QI_Label** | **Rate[a]** | **SE** | **RSE** | **Rate[a]** | **SE** | **RSE** | **Rate[a]** | **SE** | **RSE** | **Rate[a]** | **SE** |
| PSI04* | FAILURE TO RESCUE | 99.203 | 8.595 | -- | 156.114 | 6.126 | -- | 138.710 | 5.019 | -- | 135.882 | 0.934 |
| PSI05** | FOREIGN BODY LEFT IN DURING PROC | 0.120 | 0.034 | -- | 0.098 | 0.030 | > 30% | 0.107 | 0.023 | -- | 0.091 | 0.008 |
| PSI06* | IATROGENIC PNEUMOTHORAX | 0.663 | 0.109 | -- | 0.769 | 0.105 | -- | 0.723 | 0.076 | -- | 0.886 | 0.018 |
| PSI07* | INFECTION DUE TO MEDICAL CARE | 1.233 | 0.167 | -- | 2.270 | 0.172 | -- | 1.829 | 0.123 | -- | 2.275 | 0.031 |
| PSI08* | POSTOP HIP FRACTURE-NO PRDAY | 0.107 | 0.243 | > 30% | 0.940 | 0.149 | -- | 0.630 | 0.131 | -- | 0.261 | 0.033 |
| PSI09* | POSTOP HEMOR OR HEMAT-NO PRDAY | 1.527 | 0.446 | -- | 2.375 | 0.357 | -- | 2.086 | 0.283 | -- | 1.949 | 0.075 |
| PSI10* | POSTOP PHYSIO METABO DE-NO PRDAY | <No observations> | | | 1.444 | 0.330 | -- | 1.444 | 0.330 | -- | 1.164 | 0.051 |
| PSI11* | POSTOP RESP FAILURE-NO PRDAY | <No observations> | | | 4.485 | 0.708 | -- | 4.485 | 0.708 | -- | 4.040 | 0.092 |
| PSI12* | POSTOP PE OR DVT-NO PRDAY | 4.682 | 0.736 | -- | 6.244 | 0.636 | -- | 5.709 | 0.489 | -- | 8.413 | 0.095 |
| PSI13* | POSTOPERATIVE SEPSIS | <No observations> | | | 11.486 | 2.226 | -- | 11.486 | 2.226 | -- | 11.553 | 0.304 |
| PSI14* | POSTOP WOUND DEHISCENCE-NO PRDAY | 0.894 | 0.590 | > 30% | 1.841 | 0.514 | -- | 1.470 | 0.391 | -- | 2.154 | 0.100 |
| PSI15* | ACCIDENTAL PUNCTURE/LACERATION | 3.179 | 0.185 | -- | 4.088 | 0.190 | -- | 3.701 | 0.136 | -- | 3.790 | 0.037 |
| PSI16* | TRANSFUSION REACTION | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| PSI17** | BIRTH TRAUMA -INJURY TO NEONATE | 4.399 | 0.731 | -- | 5.814 | 0.595 | -- | 5.251 | 0.463 | -- | 7.863 | 0.094 |
| PSI18* | OB TRAUMA - VAGINAL W INSTRUMENT | 226.354 | 30.985 | -- | 245.493 | 12.141 | -- | 242.980 | 11.313 | -- | 212.689 | 1.852 |
| PSI19** | OB TRAUMA - VAGINAL W/O INSTRUMENT | 75.549 | 3.273 | -- | 81.722 | 2.736 | -- | 79.176 | 2.105 | -- | 80.893 | 0.423 |
| PSI20* | OB TRAUMA - C-SECTION | 1.926 | 1.950 | > 30% | 5.227 | 1.186 | -- | 4.368 | 1.016 | -- | 5.627 | 0.189 |
| PSI27 | OB TRAUMA W 3 DEG - VAGINAL W INST | 278.374 | 32.373 | -- | 271.118 | 12.688 | -- | 272.071 | 11.823 | -- | 236.177 | 1.943 |
| PSI28 | OB TRAUMA W 3 DEG - VAGINAL WO INST | 80.921 | 3.392 | -- | 85.644 | 2.837 | -- | 83.695 | 2.182 | -- | 86.341 | 0.439 |
| PSI29 | OB TRAUMA W 3 DEG - C-SECTION | 1.908 | 2.002 | > 30% | 5.213 | 1.216 | -- | 4.352 | 1.041 | -- | 5.781 | 0.193 |

Source: Agency for Healthcare Research and Quality, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP). Indian Health Services (IHS) National Patient Information Reporting System, HCUP Nationwide Inpatient Sample (NIS), and HCUP State Inpatient Databases (SID) for the following 24 states: AZ, CA, CO, CT, FL, GA, IA, KS, MD, MA, MI, MO, NC, NJ, NY, PA, RI, SC, SD, TN, TX, VA, VT, and WI.

Abbreviations:

SE Standarad Error

RSE Relative Standarad Error (SE/Rate)

[a] Adjustment varies across the different QIs. For IQI 8-IQI 20 and IQI 30-IQI 32, rates are adjusted by age, gender, age-gender interactions, and APR-DRG risk of mortality score. For IQI 21-IQI 22 and IQI 33-IQI 34, rates are adjusted by age. For IQI 23, rates are adjusted by age and gender. For IQI 24-IQI 25, rates are adjusted by age, gender, age-gender interactions, and APR-DRG severity score. For PQI 2 and PQI 9, rates are adjusted by age and gender using total U.S. inpatient discharges for 2000 as the standard population. For PSI 1 - PSI 15, rates are adjusted by age, gender, age-gender interactions, comorbidities, and DRG clusters. For PSI 16, no risk-adjustment is performed because outcome of interest is relatively rare event. For PSI 17, rates are adjusted by gender. For PSI 18 - PSI 20 and PSI 27 - PSI 29, rates are adjusted by age.

* Reported in the NHDR

** Reported in the NHDR as a Core Measure

**AHRQ Quality Indicators (QIs**
**Area-Based QIs - Adjusted Rates for 200**
**Data Sources:**
**Indian Health Services (IHS)**
**HCUP Nationwide Inpatient Services (NIS)**
**HCUP State Inpatient Databases - Discharges with race=AIAN across 24 states combined (SID-AIAN**

| | | 2002 IHS and SID-AIAN Data Combined | | | 2002 SID-AIAN Data Only | | | 2002 NIS (All races) | |
|---|---|---|---|---|---|---|---|---|---|
| **QI** | **QI_Label** | **Rate[a]** | **SE** | **RSE** | **Rate[a]** | **SE** | **RSE** | **Rate[a]** | **SE** |
| IQI26* | CORONARY ARTERY BYPASS GRAFT | 146.642 | 6.756 | -- | 146.504 | 6.748 | -- | 299.099 | 19.834 |
| IQI27* | PTCA | 316.904 | 9.932 | -- | 316.574 | 9.907 | -- | 603.460 | 40.718 |
| IQI28* | HYSTERECTOMY | 289.368 | 7.504 | -- | 213.705 | 6.951 | -- | 531.837 | 16.415 |
| IQI29* | LAMINECTOMY AND/OR SPINAL FUSION | 102.258 | 3.687 | -- | 97.901 | 3.646 | -- | 262.521 | 11.838 |
| | | | | | | | | | |
| PQI01* | DIABETES SHORT TRM COMPLICATN | 52.634 | 2.291 | -- | 35.101 | 2.067 | -- | 54.552 | 1.381 |
| PQI03* | DIABETES LONG TERM COMPLICATN | 220.853 | 5.438 | -- | 142.058 | 4.830 | -- | 121.209 | 2.676 |
| PQI04** | PEDIATRIC ASTHMA | 216.850 | 6.577 | -- | 134.698 | 5.786 | -- | 187.597 | 14.190 |
| PQI05* | COPD | 191.704 | 5.705 | -- | 139.597 | 5.256 | -- | 273.025 | 6.215 |
| PQI06** | PEDIATRIC GASTROENTERITIS | 91.982 | 4.170 | -- | 54.089 | 3.584 | -- | 91.977 | 6.652 |
| PQI07* | HYPERTENSION | 35.476 | 2.338 | -- | 24.886 | 2.125 | -- | 48.744 | 1.468 |
| PQI08 | CONGESTIVE HEART FAILURE | 352.275 | 7.891 | -- | 269.591 | 7.340 | -- | 498.247 | 10.999 |
| PQI10 | DEHYDRATION | 113.109 | 3.515 | -- | 76.856 | 3.172 | -- | 149.043 | 3.666 |
| PQI11 | BACTERIAL PNEUMONIA | 432.132 | 6.586 | -- | 247.775 | 5.656 | -- | 376.755 | 6.936 |
| PQI12* | URINARY INFECTION | 175.932 | 4.250 | -- | 101.855 | 3.705 | -- | 148.204 | 3.096 |
| PQI13 | ANGINA | 56.636 | 2.799 | -- | 39.129 | 2.508 | -- | 62.488 | 2.122 |
| PQI14* | DIABETES UNCONTROLLED | 39.247 | 2.106 | -- | 20.723 | 1.786 | -- | 25.379 | 0.878 |
| PQI15* | ADULT ASTHMA | 105.576 | 3.597 | -- | 71.853 | 3.241 | -- | 120.001 | 3.357 |
| PQI15B* | ELDERLY ASTHMA (Age 65+) | 215.307 | 15.214 | -- | 142.788 | 13.630 | -- | 204.043 | 6.160 |
| PQI16 | LOWER EXTREMITY AMPUTATION | 64.891 | 3.031 | -- | 48.438 | 2.817 | -- | 39.777 | 1.176 |
| PQI17 | IMMUN-PREV PNEUMOCOCCAL PNEUMONIA | 120.170 | 11.325 | -- | 61.413 | 9.322 | -- | 76.892 | 2.352 |
| PQI18* | IMMUNIZATION-PREVENTABLE INFLUENZA | 36.944 | 6.242 | -- | 23.237 | 5.415 | -- | 38.185 | 2.561 |
| | | | | | | | | | |
| PSI21* | FOREIGN BODY LEFT IN DURING PROC | 0.958 | 0.254 | -- | 0.725 | 0.235 | > 30% | 1.202 | 0.061 |
| PSI22* | IATROGENIC PNEUMOTHORAX | 5.029 | 0.748 | -- | 3.967 | 0.699 | -- | 8.892 | 0.299 |
| PSI23* | INFECTION DUE TO MEDICAL CARE | 53.489 | 2.346 | -- | 50.055 | 2.305 | -- | 44.226 | 1.531 |
| PSI24* | POSTOPERATIVE WOUND DEHISCENCE | 1.633 | 0.394 | -- | 1.213 | 0.368 | > 30% | 2.419 | 0.096 |
| PSI25* | ACCIDENTAL PUNCTURE/LACERATION | 23.538 | 1.554 | -- | 19.670 | 1.487 | -- | 38.438 | 1.415 |
| PSI26* | TRANSFUSION REACTION | 0.043 | 0.043 | > 30% | 0.000 | 0.000 | > 30% | 0.058 | 0.010 |

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[a] Rates are adjusted by age and gender using the total U.S. population for 2000 as the standard population.

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