




AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care www.ahrq.gov

Preventable Hospitalization Costs: A County-Level Mapping Tool


State Healthcare Quality Improvement Workshop:
Tools You Can Use to Make a Difference
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AHRQ Quality Indicators (QIs)


- Use existing hospital discharge data, based on readily available data elements
- Incorporate severity adjustment methods (APR-DRGs, comorbidity groupings and hierarchical modeling)
- Five modules: Inpatient, Patient Safety, Prevention, Pediatric, and Neonatal



Preventable Hospitalization Costs: A County-Level Mapping Tool


The PHC tool is a new QI software application designed to help organizations to:

- better understand geographical patterns of potentially preventable hospital admission rates for selected health problems.
- allocate resources more effectively by calculating potential cost savings if admission rates are reduced.



Main Functions of the PHC Tool


- Creation of maps that show the rates of hospital admission for selected health problems on a county-by-county basis.
- Calculation of potential cost savings that may occur if the number of hospital admissions for selected health problems in each county is reduced.
- Ability to place additional information about local populations onto maps to indicate the number of persons who are at greatest risk for those health problems in each county.



It processes all Prevention QIs...

- PQI 1 Diabetes Short-term Complications Admission Rate
- PQI 2 Perforated Appendix Admission Rate
- PQI 3 Diabetes Long-term Complications Admission Rate
- PQI 5 Chronic Obstructive Pulmonary Disease Admission Rate
- PQI 7 Hypertension Admission Rate
- PQI 8 Congestive Heart Failure Admission Rate
- PQI 9 Low Birth Weight Rate
- PQI 10 Dehydration Admission Rate
- PQI 11 Bacterial Pneumonia Admission Rate
- PQI 12 Urinary Tract Infection Admission Rate
- PQI 13 Angina without Procedure Admission Rate
- PQI 14 Uncontrolled Diabetes Admission Rate
- PQI 15 Adult Asthma Admission Rate
- PQI 16 Lower-extremity Amputation Rate among Diabetic Patients

There is no longer a PQI 4 and PQI 6.



and all area-level Pediatric QIs

- PDI 14 Asthma Admission Rate
- PDI 15 Diabetes Short-term Complications Admission Rate
- PDI 16 Gastroenteritis Admission Rate
- PDI 17 Perforated Appendix Admission Rate
- PDI 18 Urinary Tract Infection Admission Rate

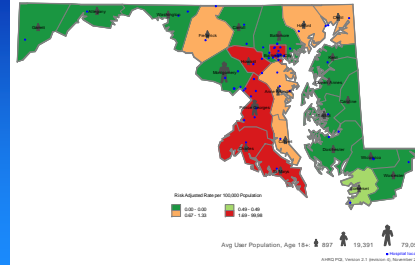


Applying the QIs

- To calculate area rates it was necessary to have access to the state and county data.
- The software produces observed and risk-adjusted rates for all PQIs and PDIs.
- Output converted to rates
 - Rates expressed either per 100 population and per 10,000 population



Uncontrolled Diabetes Admission Rate (PQI 14)



Data Source: Healthcare Cost and Utilization Project & Maryland Health Services Cost and Review Commission

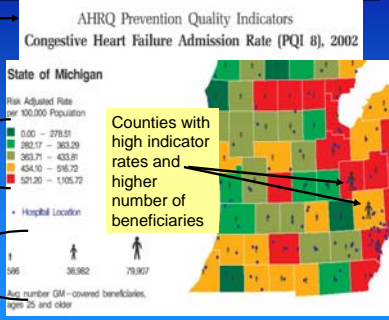


Map Interpretation - Example

Name of Indicator and Data Year in Map Title

Data quintiles. Green is the lowest 20% or the lowest rates. Red is the highest 20% or the highest rates.

Symbol indicating number of covered beneficiaries, number below is average in the group.



Data Interpretation

All AHRQ PQIs by County - State of Michigan

Region Name	Diabetes Uncontrolled			Diabetes Short Term Complication			Diabetes Long Term Complication			Lower Extremity Amputation		
	RA Rate	LCI	UCI	RA Rate	LCI	UCI	RA Rate	LCI	UCI	RA Rate	LCI	UCI
Michigan	8.48			28.16			54.97			18.48		
Alcona	35.14	3.76	165.52	57.02	385.51	492.18	64.79	14.64	162.22	50.96	10.74	80.97
Alcona	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alcona	15.38	7.28	29.52	73.44	38.71	223.50	49.87	45.79	92.05	2.75	0.11	14.15
Alcona	0.00	20.24	20.24	0.53	275.96	276.92	0.00	-43.02	-43.02	0.00	-25.03	25.03
Alcona	19.14	-8.07	42.35	136.75	186.10	463.00	1.72	-11.26	10.84	20.11	-13.44	23.67
Alcona	4.75	0.00	14.16	39.17	370.73	409.94	7.1	109.34	109.34	0.00	47.29	47.29
Alcona	28.10	10.07	66.29	0.23	321.00	321.44	13.84	1.00	1.00	31.32	12.36	50.99
Alcona	6.51	-6.64	21.66	2.95	-133.96	279.80	1.00	1.00	1.00	1.00	1.00	1.00
Alcona	0.00	0.00	0.00	0.71	41.03	230.02	0.00	0.00	0.00	0.00	0.00	0.00
Alcona	0.00	0.00	0.00	22.52	22.70	342.13	488.55	4.36	4.36	4.36	4.36	4.36
Alcona	0.00	0.00	0.00	29.49	-33.74	152.71	44.30	44.30	44.30	44.30	44.30	44.30
Alcona	0.00	0.00	0.00	39.35	-180.84	288.54	5.15	5.15	5.15	5.15	5.15	5.15
Alcona	16.81	7.02	26.69	72.77	40.91	206.45	0.00	0.00	0.00	0.00	0.00	0.00
Alcona	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

County RA rate is significantly lower than state rate

County RA rate is significantly higher than state rate



Cost Data Interpretation

Microsoft Excel - pqi_cost_2002.xls

Chronic Obstructive Pulmonary Disease (PQI 5)

County Name	Mean Cost	Total Cases	Total Cost	10%	20%	30%	40%	50%
Alcona	6,373.43	13	82,854.59	7,545.46	16,570.92	24,656.38	33,141.84	41,627.29
Alcona	4,200.81	9	37,807.29	3,780.73	7,561.46	11,342.19	15,122.92	18,903.64
Alcona	4,729.93	111	525,443.13	52,544.31	105,088.62	157,632.93	210,177.24	262,721.55
Alcona	3,282.76	75	246,207.00	24,620.70	49,241.40	73,862.10	98,482.80	123,103.50
Alcona	5,117.96	24	122,831.04	12,283.10	24,566.21	36,849.31	49,132.42	61,415.52
Alcona	5,002.26	7	35,015.82	3,501.58	7,003.16	10,504.75	14,006.33	17,507.91
Alcona	3,646.28	21	76,571.88	7,657.19	15,314.38	22,971.56	30,628.75	38,285.94
Alcona	5,179.23	93	481,668.39	48,166.84	96,333.68	144,500.52	192,667.36	240,834.19
Alcona	6,373.43	306	1,950,962.40	195,096.24	390,192.48	585,288.72	773,784.96	962,281.20
Alcona	0.00	0.00	0.00	31.153.85	46,730.77	62,307.70	77,884.62	93,461.54
Alcona	0.00	0.00	0.00	392,276.12	436,417.18	584,556.24	736,695.30	888,834.36

County name (all counties listed), average cost of admission for QI specified, total number of cases, and total cost



Where to Download

Download the PHC mapping tool (SAS and Windows versions) and all technical documentation at:

<http://www.qualityindicators.ahrq.gov/mappingtool.htm>



Technical Support

If you have technical questions of any kind while using the PHC tool, contact the QI team at:

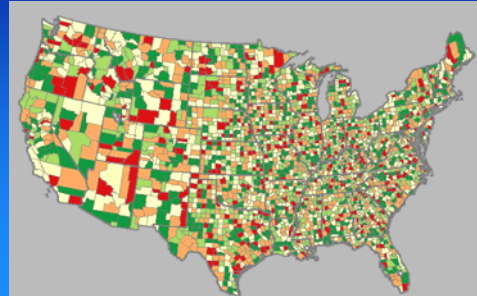
Support@qualityindicators.ahrq.gov

or

1-888-512-6090



Questions?



Contact Information

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