



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.



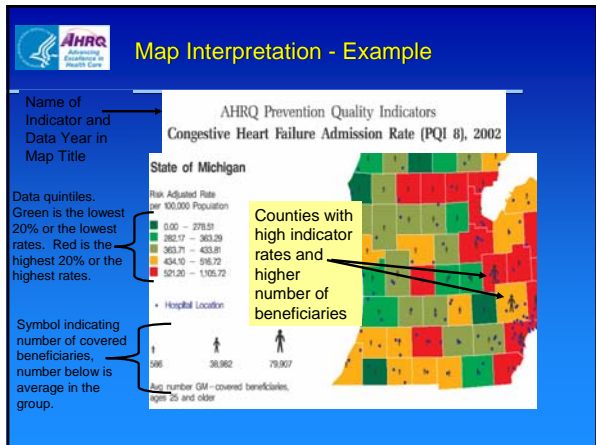
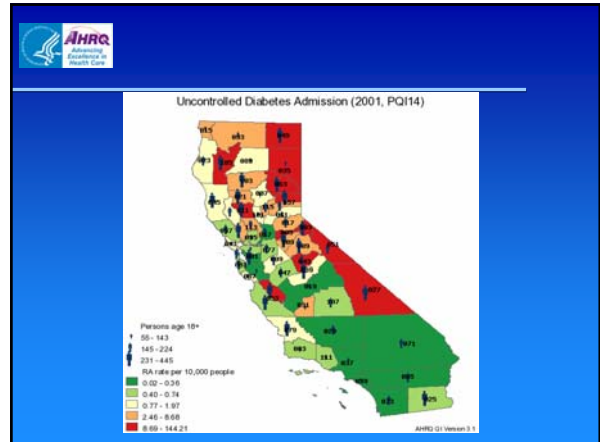
and all area-level Pediatric QIs

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

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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



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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	83.59	14.64	152.22	50.96	10.74	80.97
Alcona	0.00	0.00	36.30	36.30	0.49	481.02	482.42			7.77	40.94	48.09
Alcona	15.38	7.28	29.52	73.44	38.71	223.50	49.87	45.79	92.05	0.00	-15.17	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	4.07	42.35	136.75	180.70	463.00	74.72	109.94	109.94	20.11	-13.44	23.67
Alcona	4.75	0.00	14.58	39.17	320.73	409.94	74.72	109.94	109.94	20.11	-13.44	23.67
Alcona	28.10	10.07	66.29	0.23	321.00	321.44	13.84	109.94	109.94	0.00	-47.29	47.29
Alcona	6.51	-6.64	21.68	72.95	-133.96	279.80	74.72	109.94	109.94	31.32	12.36	50.99
Alcona	0.00	0.00	20.24	0.76	41.03	235.02	74.72	109.94	109.94	0.00	-47.29	47.29
Alcona	0.00	0.00	27.52	22.70	342.13	488.55	4.06					
Alcona	44.11	0.00	20.49	20.49	-33.74	152.71	44.30					
Alcona	0.00	0.00	39.35	180.84	288.94	315.14	74.72	109.94	109.94	0.00	-47.29	47.29
Alcona	16.61	7.02	26.69	72.77	40.91	206.45	74.72	109.94	109.94	0.00	-47.29	47.29
Cats				-20.96	-4.79	4.80				4.80	-15.19	21.32

County RA rate is significantly lower than state rate

County RA rate is significantly higher than state rate

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Cost Data Interpretation

Microsoft Excel xls 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	1,674.68	16,570.92	24,656.38	33,141.84	41,527.29
Alcona	4,200.81	9	37,807.29	3,780.72	7,561.44	11,342.16	15,122.88	18,903.64
Alcona	4,729.93	111	525,422.53	52,542.25	105,084.49	157,586.67	210,088.89	262,591.11
Alcona	3,282.76	75	399,182.40	39,918.24	79,836.48	119,754.72	159,672.96	199,591.20
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	305	1,746,905.40	174,690.54	349,381.16	524,071.74	698,762.32	873,452.90
Alcona				31,153.85	46,730.77	62,307.70	77,884.62	
Alcona				392,276.12	436,417.18	584,556.24	736,695.30	

Potential cost savings if number of admissions were reduced by specified percentage

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

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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:

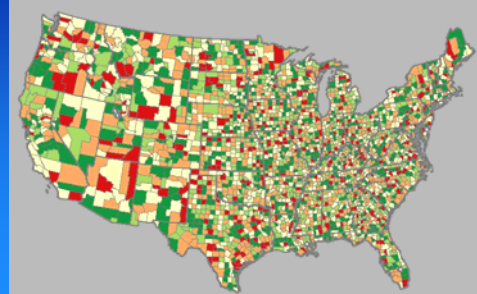
Support@qualityindicators.ahrq.gov

or

1-888-512-6090



Questions?



Contact Information

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