

Expanding the Uses of AHRQ's Prevention Quality Indicators: Validity from the Clinician Perspective

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Acknowledgements

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Potentially Avoidable Hospitalizations

- Admissions for diagnoses that may have been prevented or ameliorated with currently recommended outpatient care
- Two independently developed measure sets primarily used in the literature
 - John Billings
 - Joel Weissman
- Strong independent negative correlations between self-rated access and avoidable hospitalization
- Correlations between avoidable hospitalization and:
 - household income at zip code level (neg)
 - uninsured or Medicaid enrolled (pos)
 - maternal education (neg)
 - physician to population ratio (neg)
 - Weaker associations for Medicare populations

Prevention Quality Indicators Background

- Developed in early 2000s
- Numerator: Number of admissions within a geographic area
- Denominator: Population
- Some admissions are excluded if considered relatively less preventable
- Conditions selected had adequate variation, signal ratio, and literature based evidence supporting use

Prevention Quality Indicators

- Diabetes related indicators
 - Diabetes, short-term complications (PQI 1)
 - Diabetes, long-term complications (PQI 3)
 - Lower extremity amputations among patients with diabetes (PQI 16)
- Chronic disease indicators
 - Chronic obstructive pulmonary disease (PQI 5)
 - Hypertension (PQI 7)
 - Congestive heart failure (PQI 8)
 - Angina without procedure (PQI 13)
 - Adult asthma (PQI 15)
- Acute disease indicators
 - Perforated appendicitis (PQI 2)
 - Dehydration (PQI 10)
 - Bacterial pneumonia (PQI 11)
 - Urinary infections (PQI 12)

Potential uses of PQIs

	QI	Comp Report	P4P
Area		X	
Payor		X	X
Provider	X	X	X
LTC	X	X	X

Current application

Extended applications

Extended application proposed by panel

¹ We initially assessed the internal quality improvement application for large provider groups. Following our initial rating period, panelists expressed interest in applying select indicators to the long term care setting and these applications were added to our panel questionnaire.

Scenarios of use

- **Area level** – Publish maps of rates by county. Target areas with higher rates
- **Payors (SCHIP, Medicare Advantage, private plans)**
 - CR: Publicly report payor rates to improve consumer choice
 - P4P: Medicaid agencies implementing P4P for contracted payor groups
- **Provider (large provider groups)/LTC**
 - QI: Analyze rates to identify potential intervention targets (e.g. care coordination, education)
 - CR: Publicly report provider rates to improve consumer choice
 - P4P: Payors implementing P4P programs for contracted provider groups

Methods

- Clinical Panel review using new hybrid Delphi/Nominal Group technique
- Two groups: Core and Specialist
 - Core assesses all; Specialist only applicable
- Three indicator groups: Acute, Chronic, Diabetes
- Two panels:
 - Delphi
 - Nominal Group

Delphi vs. Nominal

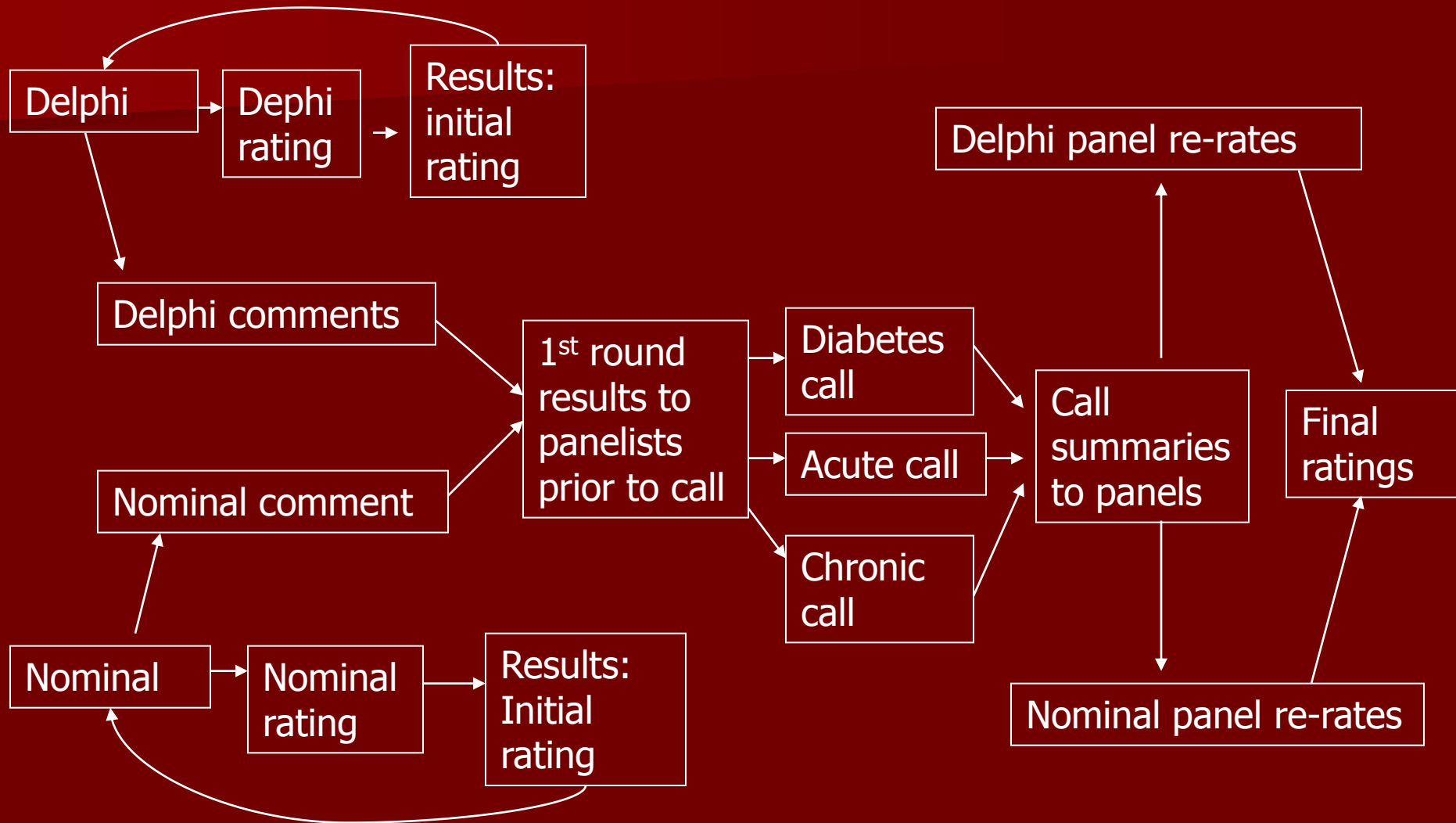
■ Delphi group

- Advantages: Better reliability, more points of view, less chance for one panelist to pull the group
- Disadvantage: Less communication and cross-pollination across panelists, less ability to discuss and refine details of indicators/evaluation

■ Nominal group

- Advantages: Can discuss details, facilitate sharing of ideas
- Disadvantages: Limited in size and therefore representation, one strong panelist can flavor group and therefore poorer reliability

Panel Process: Exchange of Information



Quality Improvement Applications

Indicator	Provider	LTC
COPD and Asthma (40 yrs +)	▲▲ +	Not evaluated
Asthma (< 39 yrs)	▲▲▲▲	Not evaluated
Hypertension	▲▲ +	Not evaluated
Angina	▲▲	Not evaluated
CHF	▲▲▲▲	Not evaluated
Perforated Appendix	▲ +	Not evaluated
Diabetes Short Term Complications	▲▲▲▲	Not evaluated
Diabetes Long-Term Complications	▲▲ +	Not evaluated
Lower Extremity Amputation	▲▲ +	Not evaluated
Bacterial Pneumonia	▲▲	▲▲ +
UTI	▲▲	▲▲▲ +
Dehydration	▲ +	▲▲▲▲

▲ Major Concern Regarding Use , ▲▲ Some Concern, ▲▲▲ General Support, ▲▲▲▲ Full , + Either Delphi or Nominal Panel reported higher level of support for measure than shown

Comparative Reporting Applications

Indicator	Area	Payor	Provider	LTC
COPD	▲▲	▲▲	▲▲+	N/A
Asthma (< 39 yrs)	▲▲+	▲▲+	▲▲+	N/A
Hypertension	▲▲+	▲▲+	▲▲	N/A
Angina	▲▲	▲▲	▲	N/A
CHF	▲▲+	▲▲+	▲▲▲▲	N/A
Perforated Appendix	▲+	▲+	▲+	N/A
Diabetes Short Term	▲▲	▲▲+	▲▲+	N/A
Diabetes Long-Term	▲▲+	▲▲	▲▲	N/A
LE Amputation	▲▲▲▲	▲▲+	▲▲	N/A
Bacterial Pneumonia	▲▲	▲▲	▲▲	▲▲+
UTI	▲▲	▲▲	▲▲	▲▲▲+
Dehydration	▲▲	▲+	▲	▲▲▲▲

Pay for Performance Applications

Indicator	Payor	Provider	LTC
COPD	▲▲	▲▲+	Not evaluated
Asthma (< 39 yrs)	▲▲	▲▲+	Not evaluated
Hypertension	▲▲+	▲▲	Not evaluated
Angina	▲▲	▲+	Not evaluated
CHF	▲▲	▲▲	Not evaluated
Perforated Appendix	▲	▲+	Not evaluated
Diabetes Short Term	▲▲	▲▲	Not evaluated
Diabetes Long-Term	▲▲	▲▲	Not evaluated
Lower Extremity Amputation	▲▲	▲▲	Not evaluated
Bacterial Pneumonia	▲▲	▲▲	▲▲
UTI	▲+	▲+	▲▲+
Dehydration	▲+	▲	▲▲▲▲

Potential interventions to reduce hospitalizations

	Acute	Chronic
Area	<ul style="list-style-type: none"> • Access to primary care/urgent care 	<ul style="list-style-type: none"> • Access to care • Lifestyle modifications
Payor	<ul style="list-style-type: none"> • Coverage of medications • Coverage of auxiliary health services (e.g. at home nursing) • Access to primary care/urgent care 	<ul style="list-style-type: none"> • Coverage of medications • Coverage of comprehensive care programs • Coverage of auxiliary health services (e.g. at home nursing) • Disease management programs • Lifestyle modification incentives
Provider	<ul style="list-style-type: none"> • Quality nursing triage • Patient education • Accurate/rapid diagnosis and treatment • Appointment availability • Outpatient treatment of complications 	<ul style="list-style-type: none"> • Education, disease management • Lifestyle medication interventions • Comprehensive care programs, care coordination, auxiliary health services

So you want to adapt the PQI?

- Selecting indicators
 - Stability of denominator group improves validity for long-term complications
- Defining the numerator
 - One admission per patient per year
 - Using related principal dx with target secondary dx
 - Including first hospitalization before chronic condition dxed
- Defining the denominator
 - Identifying patients with chronic diseases (multiple dx, population rates, pharmaceutical data)
 - Requiring minimum tenure with payor or provider

Risk adjustment

- Demographics
 - Age and gender highly rated as important
 - Race depending on indicator
- Disease severity
 - Historical vs. current data
- Comorbidity
 - Highly rated as important
- Lifestyle associated risk and compliance
 - Smoking, obesity
 - Pharmacy records
 - Can interventions help reduce impact of these factors?
- Socioeconomic status
 - Highly rated as important
 - May mask true disparities in access to care
 - Panel felt benefits of inclusion outweighed problems

Policy implications

- Ensuring true quality improvement
 - Case mix shifting, coding
- Cost/burden of data collection
- Different perspectives of different stakeholders
- Does avoiding hospitalization really reflect the best
 - Quality
 - Value

Next steps

- Investigate multiple definitions
- Investigate risk adjustment approaches
- Continue to learn from user experience
- Identify interventions and link usefulness of indicators with true quality improvement