AHRQ Quality Indicators Software for Windows and SAS Version 4.4

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AHRQuality Indicators

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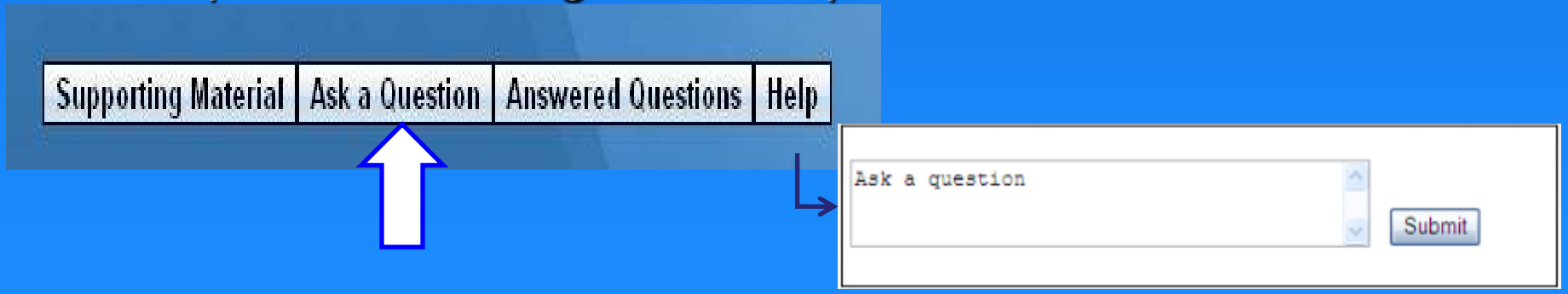

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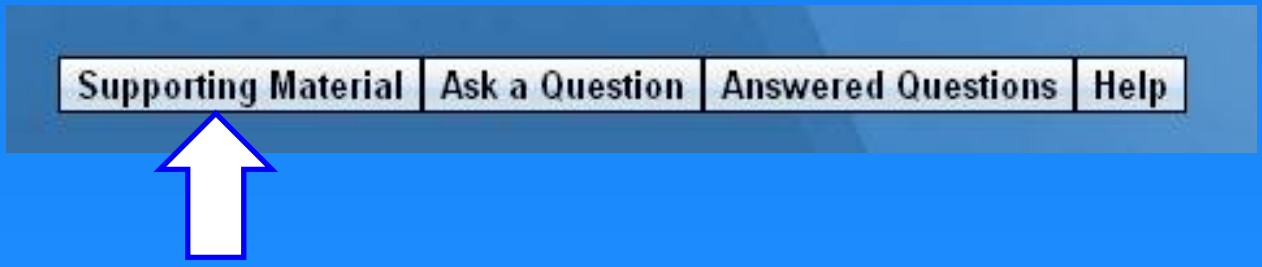
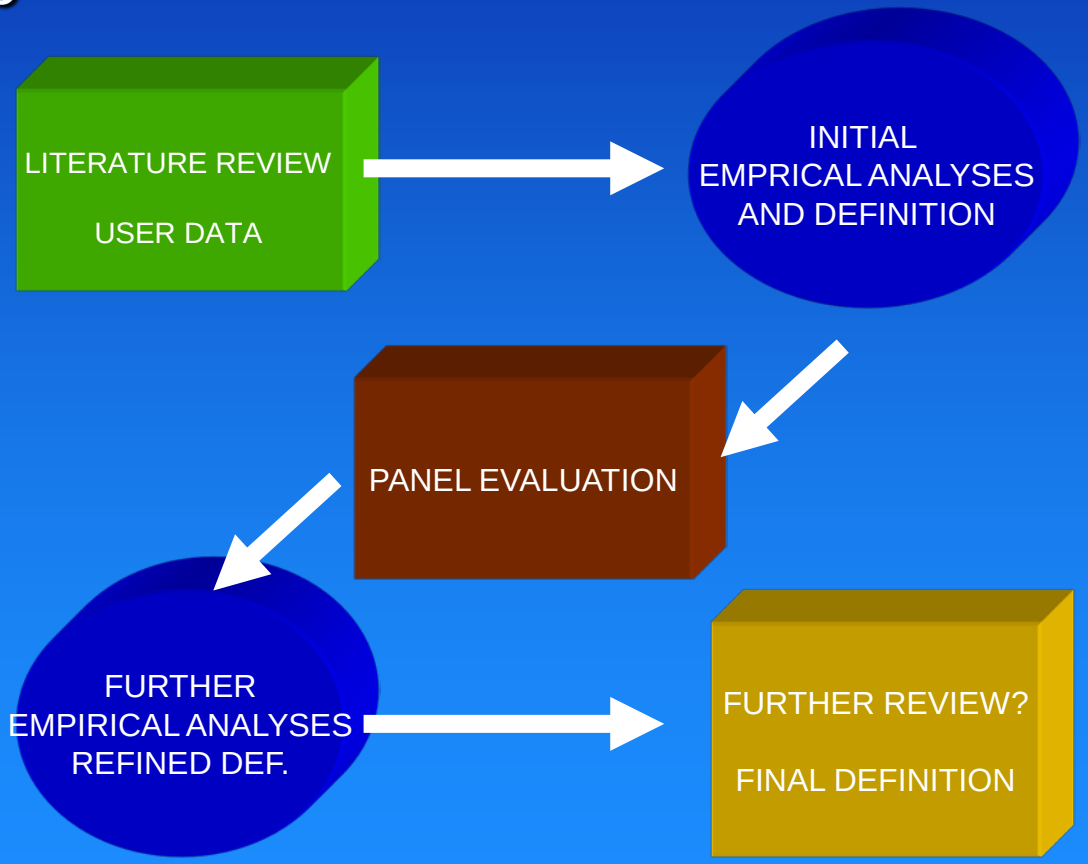


Overview

- Overview of the AHRQ QI
- Summary of Changes from V4.4
- AHRQ QI Uses in Practice
  - VA Boston Healthcare System
  - University HealthSystem Consortium
- Questions and Evaluation

Origins

- Developed initially at the request of HCUP partners in 1999



Current Modules

- Prevention Quality Indicators (PQI) developed in 2000
  - Area Level
  - Avoidable hospitalization/other avoidable conditions
- Inpatient Quality Indicators (IQI) developed in 2002
  - Mortality, Utilization, Volume
  - Reflect quality of care in hospitals and across geographic areas
- Patient Safety Indicators (PSI) developed in 2003
  - Provider and Area Levels
  - Complications, unexpected death
- Pediatric Quality Indicators (PDI) developed in 2006
  - Includes Neonatal QI (NQI)
  - Provider and Area Levels
  - Use indicators from other modules adapted for children and neonates

Current Modules

- Measure definitions and risk-adjusted based on a number of common data elements
  - ICD-9-CM diagnosis & procedure codes
  - Medicare Severity-Diagnosis Related Group (MS-DRG)
  - Major Diagnostic Categories (MDC)
  - Age, gender
  - Admission type
  - Discharge quarter and discharge disposition
  - Present on admission
  - Procedure dates
  - Point of origin

Current Modules

- Rates:
  - Numerator: Cases with the outcome of interest
  - Denominator: Cases in the population at risk
- Counts / Volume:
  - Outcomes correlated with procedure volume
  - Serious Reportable Events
- Calculate expected, risk adjusted, and smoothed rates
  - Allow for comparisons across hospitals
  - HCUP data instrumental for calculating these rates

Advantages

- 91 individual measures across four modules, plus 4 provider-level and 6 area-level composite measures
- A measure can be stratified by several variables
  - race, age, sex, payer, geographic region
- Include priority populations & areas, e.g.:
  - child health
  - women's health (pregnancy & child-birth)
  - patient safety
  - diabetes
  - hypertension
  - asthma
  - preventive care
- Focus on acute care, but crosses over to community & outpatient care delivery settings

Advantages

- Public Access
  - www.qualityindicators.ahrq.gov
    - Development documentation & details on each QI
    - Software available to download at no cost
  - Standardized indicator definitions
  - Can be used with any administrative data, e.g. HCUP, MEDPAR*, State data sets, payer data, hospital internal data
  - Hospitals can replicate results

* Medicare Provider Analysis & Review (Medicare administrative inpatient data)

Advantages

- Harmonization of measures
- Indicator maintenance & updates
- Tools & technical assistance
- National benchmarks:
  - Hospital Compare
  - National Healthcare Quality Report
  - National Healthcare Disparities Report
  - HCUPnet

Challenges

- Outcomes data less actionable than processes
- Limited clinical detail
- Risk adjustment challenges
- Accuracy hinges on accuracy of documentation & coding
- Data potentially subject to gaming
- Time lag of the data

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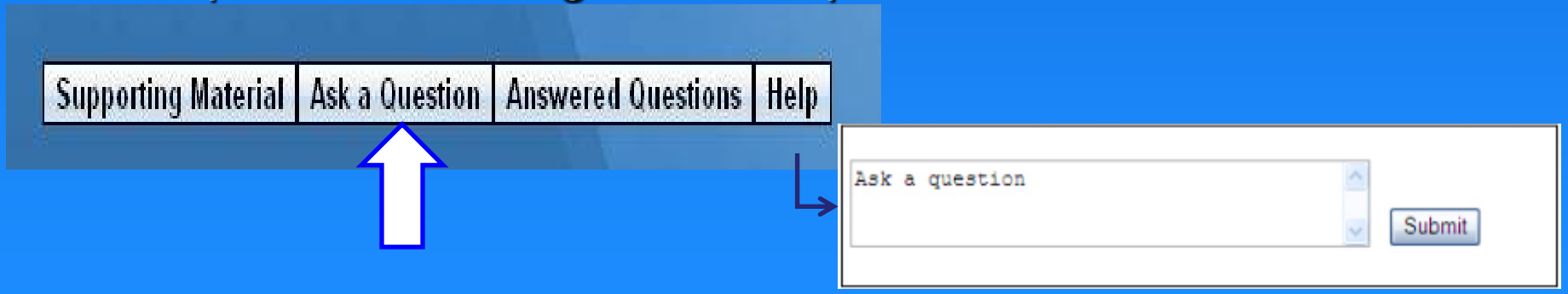


Summary of Changes in V4.4

- FY 2012 Coding Updates
  - Numerator, denominator and covariate specifications updated to incorporate ICD-9-CM and DRG codes for FY2012 (effective October 1, 2011)
    - Software is “backward compatible” for prior years’ data
- Specification Changes
  - SAS vs. WinQI coding differences were corrected for PDI 01, 02 and 03
- 3M™ APR-DRG Limited License Grouper
  - Updated from Version 28 to 29

Summary of Changes in V4.4

- Population files, Comparative Data, and Risk Adjustment Coefficient tables
  - Updated population through 2012
  - Revised Comparative data (coming soon!)
  - Risk adjustment the same as V4.3
- Improved Installation Packages
  - Streamlined Prediction Module package
- Improved SAS Area-Level Reporting
  - Denominator adjustment

Summary of Changes in V4.4

- Various Functionality Improvements
  - Must set weights for all possible individual composite indicators
  - Remain 32-bit applications developed on Windows XP
  - Incorporate state level estimates of diabetes by age
    - Applicable to PDI 15, PQI 1, 3, 14 and 16
  - Corrected various “bugs”

AHRQ QI Uses in Practice

- Hospital quality improvement efforts
  - Individual hospitals & health care systems, such as:
    - Banner Health (a multi-hospital system in AZ)
    - Norton Healthcare (a multi-hospital system in KY)
    - Baycare Health System (a multi-hospital system in FL)
    - Ministry Health Care (a multi-hospital system in WI)
  - Hospital association member based reports, such as:
    - University HealthSystem Consortium
    - Dallas - Fort Worth Hospital Council
    - Premier (note: Premier is participating in CMS pay for performance demonstration, which includes AHRQ QI)

AHRQ QI Uses in Practice

- Hospital quality reporting
  - Aggregate reporting: National, state, regional
    - National Healthcare Quality / Disparities Reports
    - Commonwealth Fund's Health Performance Initiative
  - Value based purchasing / pay for performance (P4P)
    - CMS - Premier Demo
    - Anthem of Virginia
    - The Alliance (Wisconsin)
  - Hospital level public reporting
    - Statewide public reporting
    - CMS Hospital Compare, including Veterans Affairs medical centers
  - Hospital profiling: Public reporting & P4P
    - Blue Cross / Blue Shield of Illinois

Virtual Breakthrough Series (VBTS): Preventing Postoperative Respiratory Failure

(VA collaboration of researchers at Center for Organizational Leadership and Management Research, Center for Health Quality, Outcomes and Economic Research and National Center for Patient Safety)

Supported by: VA HSRD Grant, SDR #07-002

Ann Borzecki, MD, MPH

Why did we do the Virtual Breakthrough Series (VBTS)?

To learn about two things:

1. Can Patient Safety Indicators (PSIs) be used for quality improvement?
2. Does the Virtual Breakthrough Series (VBTS) work as a quality improvement method?

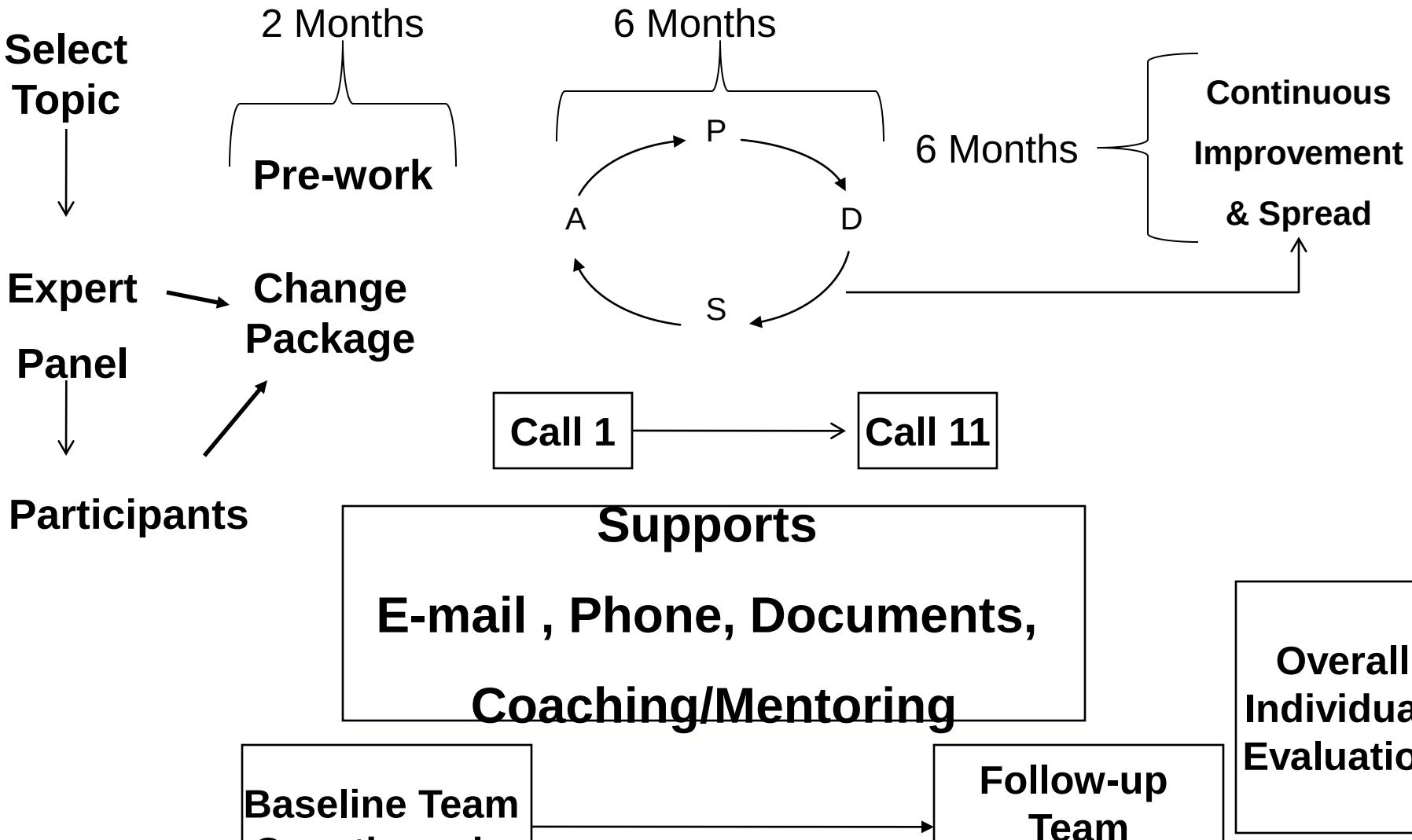
What is a Virtual Breakthrough Series (VBTS)

BTS: IHI developed collaborative model for improvement

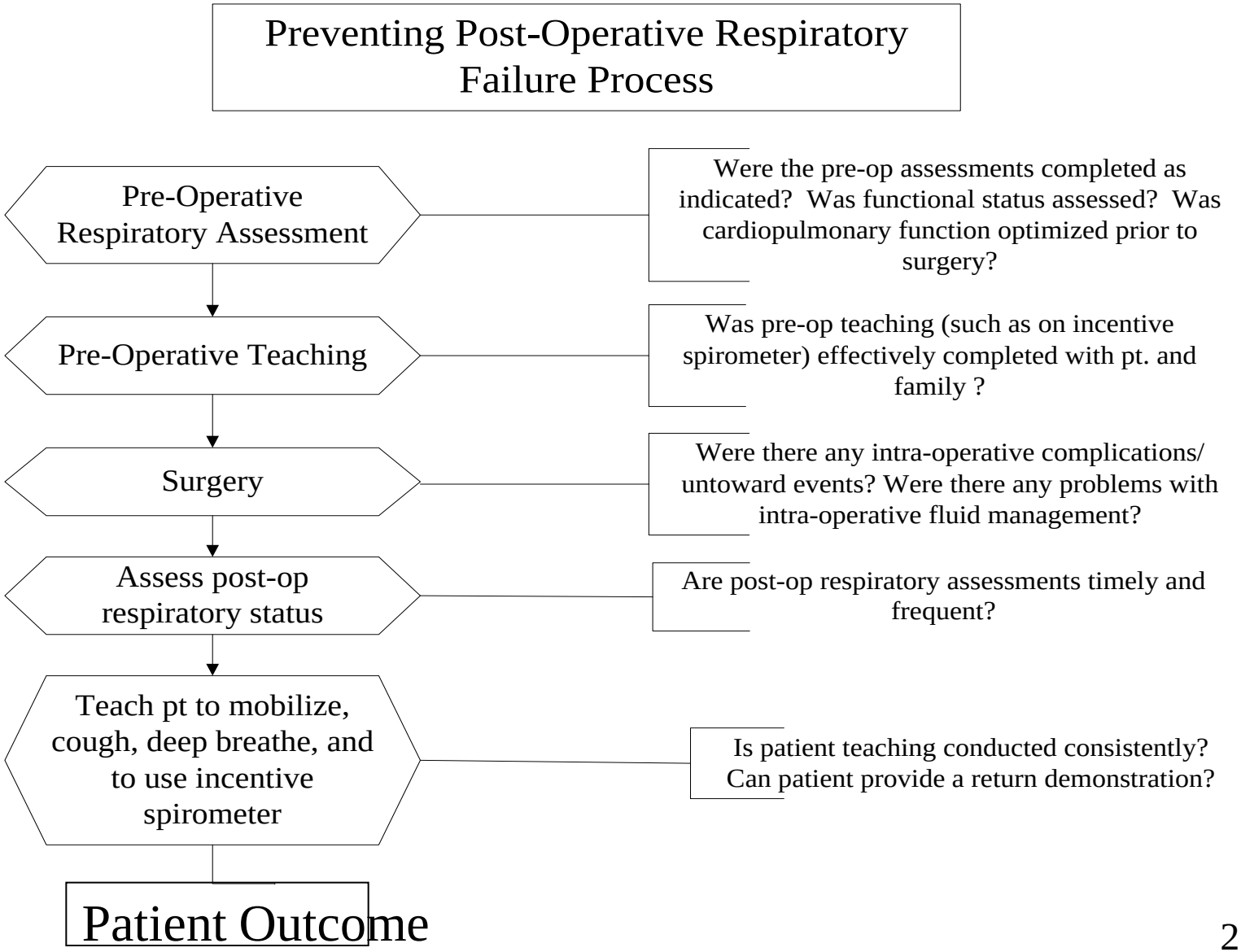
Key elements of BTS:

1. Topic selection
2. Faculty recruitment (expert panel)
3. Enrollment of participating facility teams
4. Change package development
5. *Learning sessions - traditionally face-to-face **
6. *Action periods*
7. *Model for improvement (PDSA cycle)*
8. *Summative congresses and publications (documentation of work and presentation to non-participating organizations)*
9. *Measurement and evaluation*

Virtual Breakthrough Series



Change Package – Process Map Example



Results

1. Calls

   Teams attended 76% of all calls (11 call topics, each topic offered twice)

2. Reports

   September: 12 (75%)

   October: 9 (56%)

   November: 12 (75%)

   December: 9 (56%)

   January/Final: 15 (94%)

Main Area of Focus #1: Incentive Spirometry (IS) 4 Teams

- Pre-operative teaching of Incentive Spirometry: (IS)
  - Reminder note to bring IS on day of surgery
  - Improving supply of IS
  - Standardized order set for preop IS teaching
  - Enhanced process for PACU post-op IS use
- Outcomes:
  - Better teach back of IS
  - Better patient compliance with IS
  - Decreased readmission from surgical ward to ICU for respiratory failure

Main Area of Focus #2: Pneumonia Prevention Bundle 5 teams

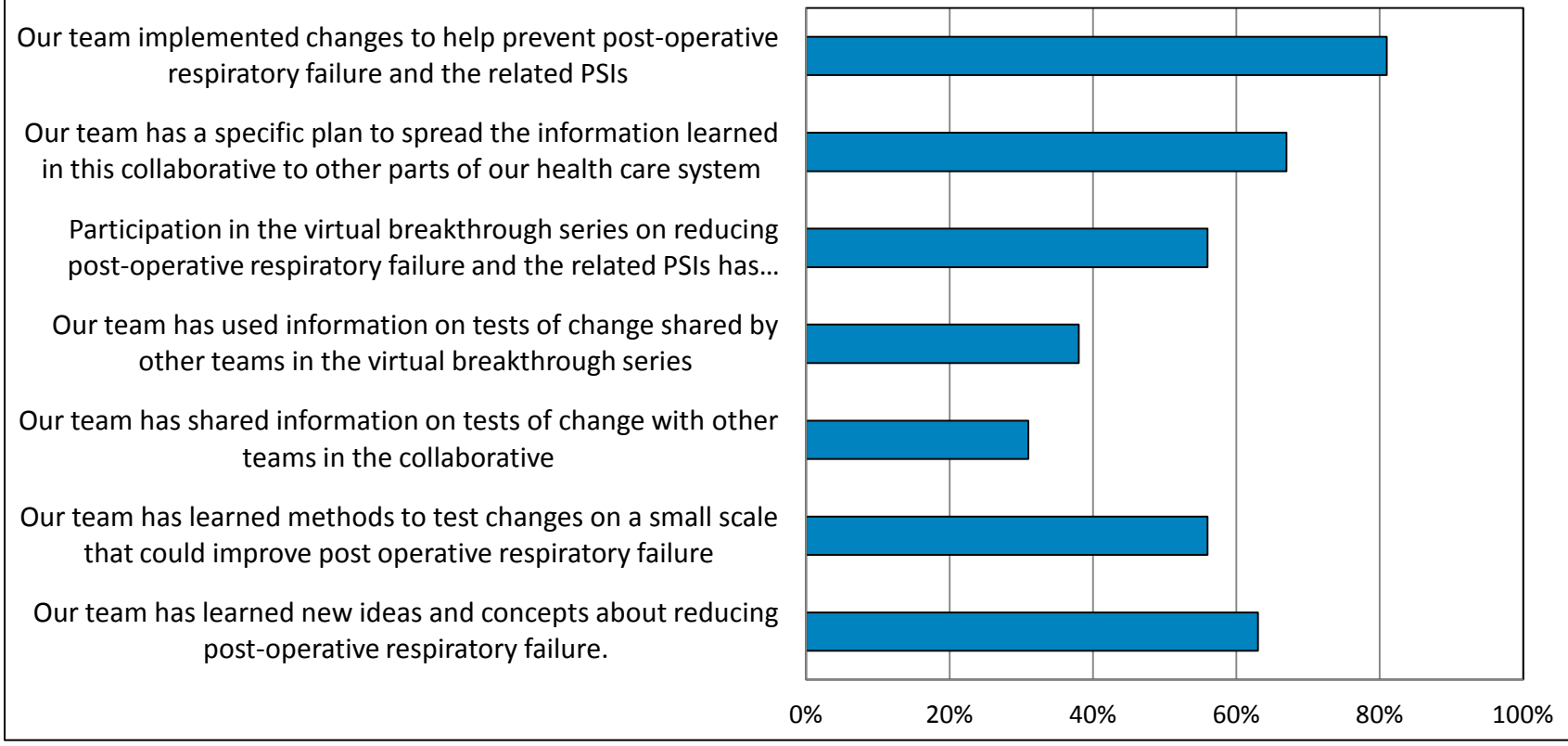
- Order sets as part of pneumonia prevention bundle (either ICU or surgical ward patients)
  - Pre-op IS teaching/post-op cough deep breathing exercises with IS, early ambulation, oral care, head of bed elevation
- Family participation in teaching
- Mark the floor- measure ambulation distance
- Outcomes:
  - Improved implementation and documentation of bundle elements
  - Before VBTS, receipt of IS was not measured; now 100% compliant
  - Before VBTS, no oral hygiene stocked on ward; now 100% compliant

Main Area of Focus #3: Multidisciplinary Rounds / Misc. 7 teams

- Formalized multidisciplinary rounds for daily goals in SICU
- Weaning protocol developed and implemented
  - Including automatic pulmonary consult if on ventilator >24 hours
- Education of ICU staff on delirium prevention and management
- Standardized handoff communication for OR/ICU/PACU nurses and for MDs
- Outcomes:
  - Decrease in VAPs
  - Decreased ventilator days
  - Increased attending-attending communication

Team VBTS Questionnaire : Follow-up

Percentage of Respondents that Agree or Strongly Agree with the Statement (N=16 Teams, Response Rate = 100%)



What Now?

- Reaffirm leadership support
- Team commitment & ownership of project
- Standardize processes implemented during the VBTS
- Use documentation (templates, checklists)
- Continue data collection
- Provide feedback to leadership

Conclusions

So,

1. Can Patient Safety Indicators (PSIs) be used for quality improvement? If they are connected to a clinical process of care
2. Can the Virtual Breakthrough Series (VBTS) be used as a quality improvement method? YES

UHC and UHC Member's Focus on Improving the Patient Safety Indicators

Julie Cerese
Vice President, Performance Improvement

Leslie Prellwitz
Director, Analytics

Agenda

UHC and UHC Members Focus on Improving the Patient Safety Indicators

- Ranking Performance: Describe the Annual UHC Performance Ranking and the use of the PSI's
  - Quarterly tracking and trending using the Quality and Safety Management Report (QSMR)
- Relevant Comparisons: Focusing on documentation and coding
- Prioritizing Effort: Provide an overview of the UHC Partnership for Patients program
  - Discuss the use of the AHRQ toolkit prioritization matrix
- Improving Practice and Outcomes: Success Stories

Why do Some Organizations Succeed in Consistently Providing High-Quality Care?

2005: UHC embarked on the Quality and Accountability Study to identify structures and practices associated with high performance in quality and safety across a wide variety of patient populations.

Don't just reinforce preconceptions. Objectively determine which organizations have the best outcomes objective, and discover the organizational and cultural characteristics that make them the best.

Key Findings

- **Shared Sense of Purpose**
- **Leadership Style**
- **Accountability System for Service Quality and Safety**
- **A Focus on Results**
- **Collaboration**

What happened as a result of the 2005 study?

- Senior leaders started to think about quality differently
- Over 30 organizations have some type of event to present these findings to senior administrative and physician leaders
- Published in Academic Medicine in 2007, recognition that organizational style and characteristics drive clinical outcomes
- **Intense focus on improvement**
- Senior leaders receive an annual scorecard of their individual organizational performance on these metrics

Ranking Performance: Domains and Weighting used in Historical Q and A Ranking

Domain	2005	2006	2007	2008	2009	2010	2011
Mortality	30%	30%	35%	30%	30%	30%	25%
Safety	30%	30%	20%	25%	30%	30%	25%
Effectiveness	30%	30%	35%	30%	30%	30%	25%
Equity	10%	10%	10%	10%	5%	5%	5%
Patient Centeredness	Y	Y	Y	5%	5%	5%	10%
Efficiency	Y	Y	Y	Y	Y	Y	10%

Y= performance levels provided but no included as a component in the overall ranking

Safety Domain

Domain	Metrics	Weighting
Safety	Based on 6 Patient Safety Indicators - PSIs (Developed by the Agency for Healthcare Research and Quality –AHRQ version 4.2, 3.2 for PSI-3 only))	25%

Metric	Observed/Expected Ratio			
	Mean	Median	Minimum	Maximum
PSI-7 Central line–associated bloodstream infection	0.79	0.68	0.10	2.49
PSI-3 Pressure ulcer, all stages	1.38	1.18	0.09	4.38
PSI-6 Iatrogenic pneumothorax	1.17	1.18	0.13	3.36
PSI-9 Postoperative hemorrhage and hematoma	2.05	2.00	0.60	4.03
PSI-11 Postoperative respiratory failure	1.15	1.08	0.50	2.52
PSI-12 Postoperative pulmonary embolism or deep vein thrombosis	0.71	0.62	0.26	2.25

Change from 2010: No inclusion of the OB PSI's

Relevant Comparisons: Documentation Guideline Development Project

- Develop consensus guidelines for documenting PSIs and HACs
  - Compliant with national definitions and existing guidelines
- Provide consistent interpretation in areas of uncertainty
- Promote standardized reporting across members
- Enhance the accuracy and comparability of data

Guideline Development Process

- Literature review
  - Definitions, existing guidelines, data analysis
- Develop draft guideline
  - Monthly conference calls
  - Ongoing networking via listserver
- Members submit comments on draft guideline
- Final guideline published:
  - ICD-9 coding decision matrix
  - ICD-10 issues
- Ongoing education and training

In Support of the HHS 3 Part Aim: The CMS Partnership for Patients is Focused on 2 Goals

- **Keep patients from getting injured or sicker.** By the end of 2013, **preventable hospital-acquired conditions** will **decrease by 40%** compared to 2010.

- **Help patients heal without complication.** By the end of 2013, preventable complications during a transition from one care setting to another will be decreased so that all **hospital readmissions** would be **reduced by 20%** compared to 2010.

The combined efforts of this partnership have the potential to save 60,000 American lives and to save as much as $35 billion, including up to $10 billion in Medicare savings.

The Partnership for Patient Effort is Woven into the existing UHC Imperatives for Quality and Best Practices for Better Care Programs

Ambulatory Coordination of Care
Core Measures: Stroke, SCIP and VTE
Emergency Department Flow
HCAHPS
Heart Failure
Improving Patient Population Survival
Inpatient LOS
Labor Practices
Length of Stay/Inpatient Throughput
Medication Utilization
Mortality Review
Palliative and Hospice Care
Reducing Variation in Care
Sepsis
Supply Utilization

Adverse Medication Events
Catheter-Associated Urinary Tract Infections
Injuries From Falls and Immobility
Obstetrical Adverse Events
Pressure Ulcers
Ventilator-Associated Pneumonia
Venous Thromboembolism
Central Line–Associated Bloodstream Infections
Hospital Readmissions
Safer Surgeries and reduce surgical site infection

Prioritizing Efforts: AHRQ QI Toolkit, Tool C.1. Prioritization Matrix

What is this tool?

Will help you determine cost and potential regulatory or reputational impact, and barriers to implementation for each measure

Identify focus areas

When should the tool be used?

Following the completion of the organizational self-assessment (Tool A.3.)

Annually to determine quality and safety priorities

Who are the Target Audiences?

Executive Sponsor, senior leaders, clinical leaders, and quality improvement leaders

Who should take the lead role in using this tool?

Program Coordinator, convening Senior Staff and Quality Staff

Sections of the Prioritization Matrix

Section 1 – Blue: Own Rate and National Benchmark	• Will identify which measures are worse than benchmark set by your organization
Section 2 – Green: Estimate Annual Cost to Implement	• Will identify the cost implication of each measure for your organization
Section 3 – Purple: Rate Strategic Alignment and Regulatory Mandates	• Will assist your organization in aligning each measure with strategic initiatives, external mandates, and public perceptions of your care for each indicator
Section 4 – Orange: Barrier Assessment	• Will give your organization an idea of how likely each improvement initiative is to succeed, based on current barriers

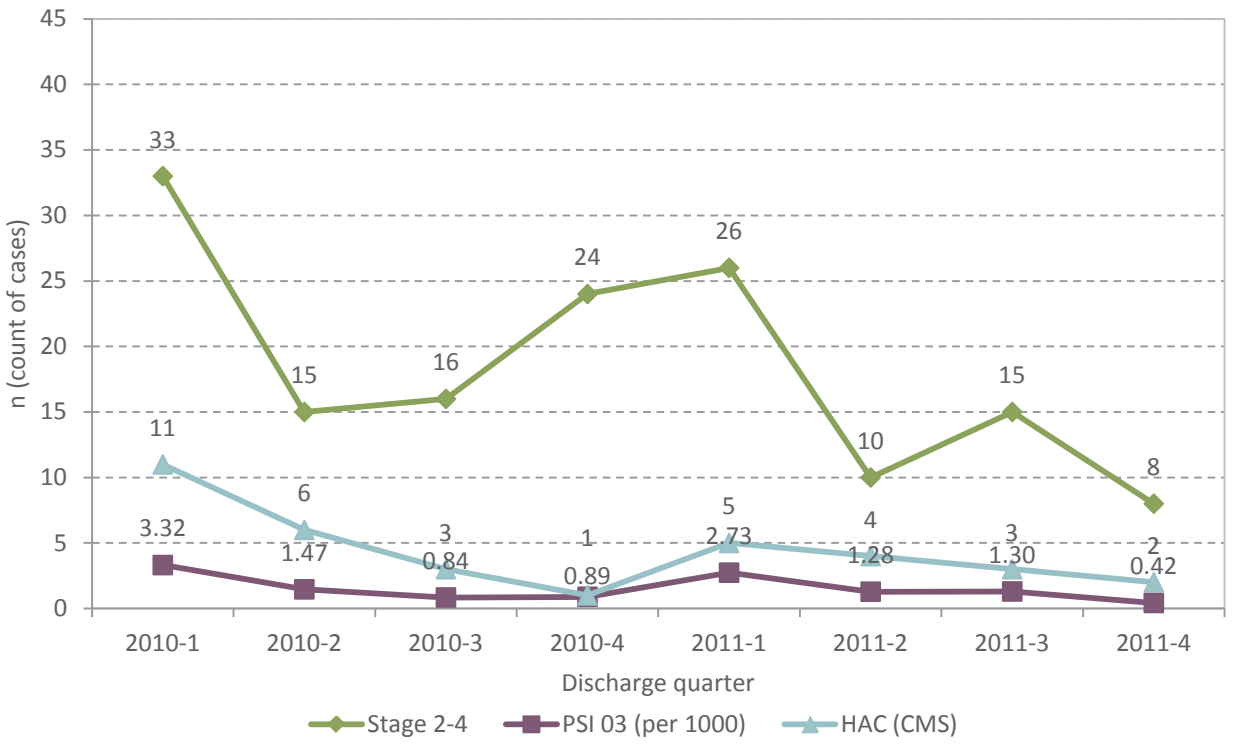
AHRQ Tool C.1. Prioritization Matrix

Adapted from the AHRQ Quality Indicators Toolkit

	UHC Partnership for Patients Prioritization Matrix																
		Section 1- Blue		Section 2-Green					Section 3-Purple			Section 4-Orange				
	Partnership for Patients Focus Areas	Own Rate and National Benchmark		Estimate Annual Cost and Cost To Implement					Rate Strategic Alignment and Regulatory Mandates Rate on scale of 10 (agree/high) to 0 (disagree/low)			Barrier Assessment (indicate Yes or No)				
				Volume of Cases at Risk	Cost of Single Event	Total Cost	Cost To Implement	Proxies for Cost	Strategic Alignment	External Mandates	Public Perception	Executive-Level Support	Staff Capability	Staff Willingness	Time and Effort	Ability To Monitor Progress
		C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	Metric definitions, rate and national benchmarks can be found on your organization's PFP Dashboard	Own Rate	National Bench-marks	Annual volume of this event	Anticipated average cost for one case with this event	The total annual cost of this event to our organization	Anticipated cost to investigate/ implement new process is less than annual cost of event	Additional information that could be used instead of or in addition to cost estimates in columns F-H	Aligned with established organizational goals and priorities	• Regulatory • Value-based purchasing • Sentinel event	• Publicly reported • Public perception • Marketing • Competitive pressure	Do we have the committed support of our senior leadership?	Do we have staff with the needed skills for this PI team?	Are affected staff willing to change?	Will the added demand on staff time and effort be reasonable?	Do we have a method to review PI progress on a regular basis?
Patient Safety	PSI 3 Pressure Ulcer															
	Pressure Ulver (HAC modified to include Stage II)															
	Central Venous Catheter-Related Bloodstream Infections (CMS HAC measure)															
	VAP (UHC defined)															
	SSI (UHC defined)															
	Falls (CMS HAC modified)															
	PSI 12 VTE															
Obstetric	PSI 18 Obstetric Trauma-Vaginal Delivery With Instrument															
	PSI 19 Obstetric Trauma-Vaginal Delivery Without Instrument															
Readmissions	30 day all cause															

Improving Outcomes: Success Stories

Pressure Ulcer Performance



Improving Outcomes: Success Stories

Pressure Ulcer Reduction
Goal: Commitment to top decile performance

Background: In 2010, UAB Hospital sought to streamline the commitment to quality through the appointment of a new Chief Quality and Safety Officer (CQSO) as well as a reorganization of the Nursing Quality Council (NQC). Both changes align with the Health Systems clearly articulated goal: to provide exceptionally safe and high quality health care as measured by national quality indicators. NEW STRUCTURE = NEW APPROACH TO QUALITY MEASUREMENT

Interventions:

1) education and increased awareness by all disciplines of causes and preventative measures
2) creation of unit based quality dashboards,
3) implementation of monthly quality variance meetings, where all HACs are discussed and action plans determined.
4) hospital wide monthly trending to identify targeted opportunities
5) identification of unit based staff nurse pressure ulcer experts,

Results: The number of hospital acquired pressure ulcers decreased from 33 in first quarter 2010 to 8 in the fourth quarter 2011.

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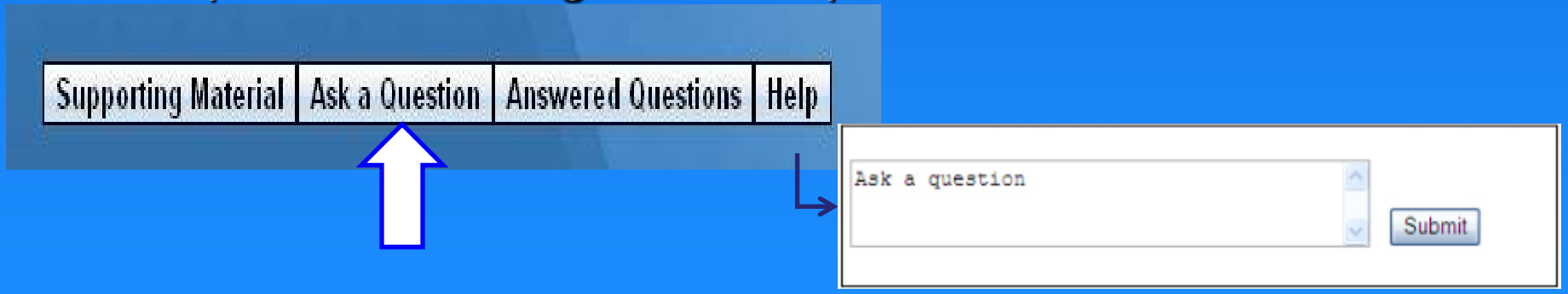

Evaluation Questions

Please click on the “Evaluation” button below the slides to answer these four questions.

- How will/do you/your organization use the AHRQ QI in practice?
- What future AHRQ QI Webinar topics would be most useful for you/your organization?
- Are there additional improvements you recommend to the QI?
- Please provide any additional feedback.

Additional Resources

- Additional Resources
- Web site: http://qualityindicators.ahrq.gov
  - QI documentation and software available
  - Sign up for AHRQ QI listserv
- Support E-mail: support@qualityindicators.ahrq.gov
- Support Phone: (888) 512-6090 (voicemail)
- Staff: Mamatha.Pancholi@ahrq.hhs.gov
  John.Bott@ahrq.hhs.gov