

# 2016 CLINICAL INFORMATICS SYMPOSIUM

- CONNECTING CARE THROUGH TECHNOLOGY -

## eCQM Implementation process: *Getting to valid data and building the infrastructure for Success*

---

SUSAN MCBRIDE, PHD, RN-BC, CPHIMS, FAAN

PROFESSOR TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER



## Texas Health Resources University

Texas Health Resources University is an approved provider of continuing nursing education by the Texas Nurses Association – Approver, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation.

### **DISCLOSURE TO PARTICIPANTS** **2016 CLINICAL INFORMATICS SYMPOSIUM**

#### **REQUIREMENTS FOR SUCCESSFUL COMPLETION**

##### **Learning Outcome:**

Attendees will gain knowledge and skills to assist them in the practice of nursing informatics in the clinical setting. Attendees will learn from presenter experiences with the ability to take content and ideas back to their respective health systems to make actionable changes. This knowledge will help drive patient care through the use of informatics.

**To receive contact hours for this education activity, the participant must:**

- Sign in on the roster
  - Attend the entire program
  - Complete the evaluation form



## Disclosures (Continued)

Once successful completion has been verified, a “Certificate of Successful Completion” will be awarded for 1 contact hour.

*The planning committee members and faculty/content specialists of this CNE activity have disclosed no relevant professional, personal or financial relationships related to the planning or implementation of this CNE activity.*

*Approved provider status of Texas Health Resources University (THRU) refers only to the continuing nursing education activity and does not imply a real or implied endorsement by THRU, the American Nurses Credentialing Center (ANCC) or the Texas Nurses Association (TNA) of any commercial product, service, or company referred to or displayed in conjunction with this activity, nor any company subsidizing costs related to this activity.*

*Information regarding registration and/or completion of CNE records including names of participants for activities provided by THRU may be accessed by authorized MyTalent Administrators which may include management at THR hospitals and facilities. This information may also be archived in other THR databases which are accessible by authorized THR personnel.*

*Reporting of Perceived Bias:*

*Bias is defined by the American Nurses Credentialing Center’s Commission on Accreditation (ANCC COA) as preferential influence that causes a distortion of opinion or of facts. Commercial bias may occur when a CNE activity promotes one or more product(s) (drugs, devices, services, software, hardware, etc.). This definition is not all inclusive and participants may use their own interpretation in deciding if a presentation is biased.*

*The ANCC COA is interested in the opinions and perceptions of participants at approved CNE activities, especially in the presence of actual or perceived bias in continuing education. Therefore, ANCC invites participants to access their “ANCC Accreditation Feedback Line” to report any noted bias or conflict of interest in the educational activity.*

*The toll free number is 1 (866) 262-9730.*

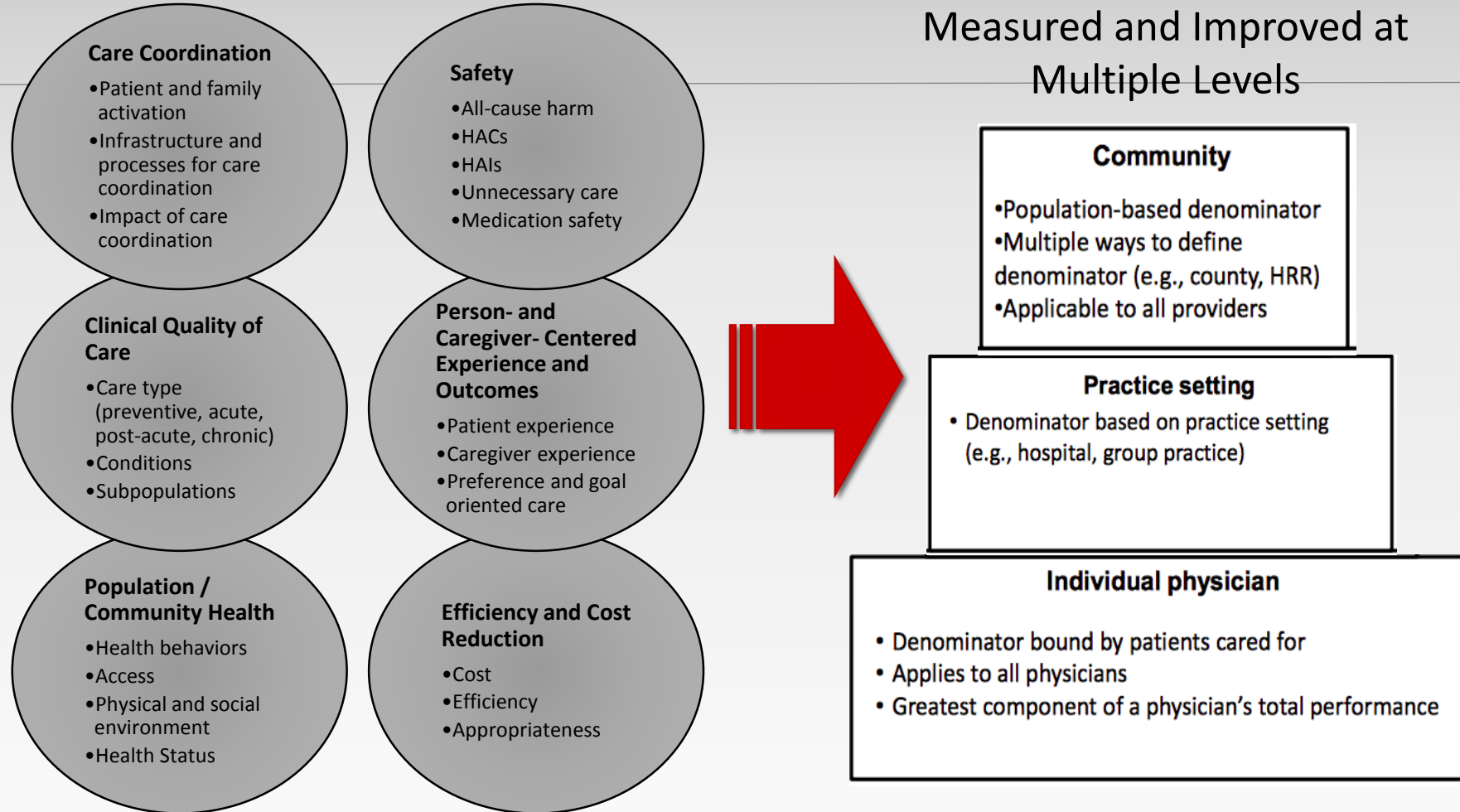


# LEARNING OBJECTIVES

---

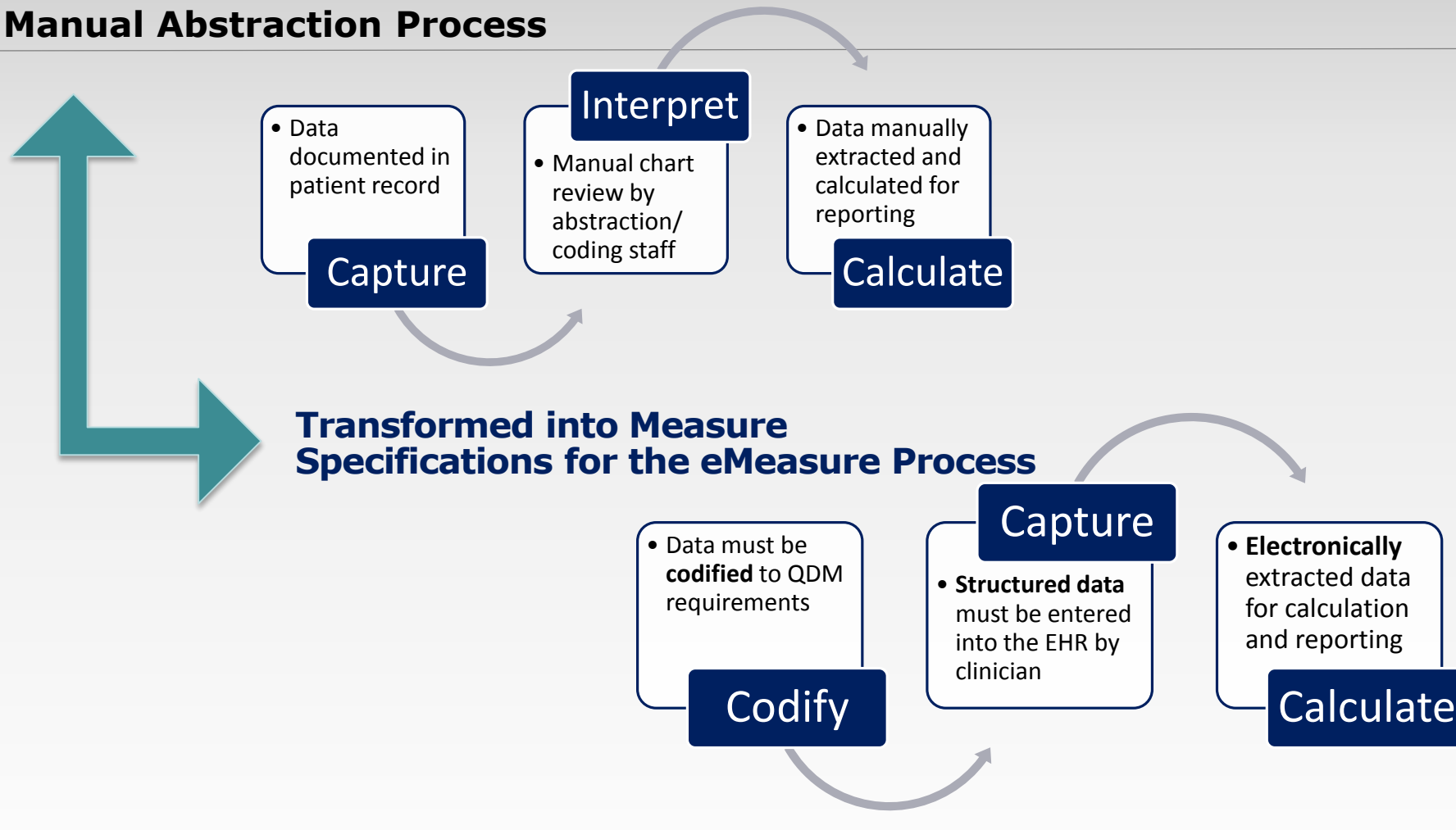
1. Describe differences between eCQM and abstracted quality measure reporting
2. Outline a process and strategy for eCQMs relevant to your organization
3. Discuss challenges with valid and reliable eCQM data
4. Discuss strategies and process to address challenges with eCQMs
5. Examine statewide EHR study and discuss implications for eCQMs
6. Discuss possible statewide interventions for improvement to improve the ability for organizations in Texas to collect valid, reliable eCQM data and nursing's role in the team process.

# CMS Framework for Measurement Maps to the Six National Quality Strategy Priorities



# Electronic Measures vs. Manual Abstraction

## Manual Abstraction Process



# Electronic Measures vs. Manual Abstraction, cont.

## Manually-Abstracted CQMs

Utilizes a human-readable narrative definition

- Manual chart review allows data collection from **any documentation**
- Inconsistent provider documentation mediated by use of abstraction/coding staff trained to **interpret** clinical process of care from patient records
- Does not require codification of data elements captured at point of care
- Does not require changes in electronic health care record system (or ancillary system) prior to CQM reporting periods

## Electronically-Extracted CQMs

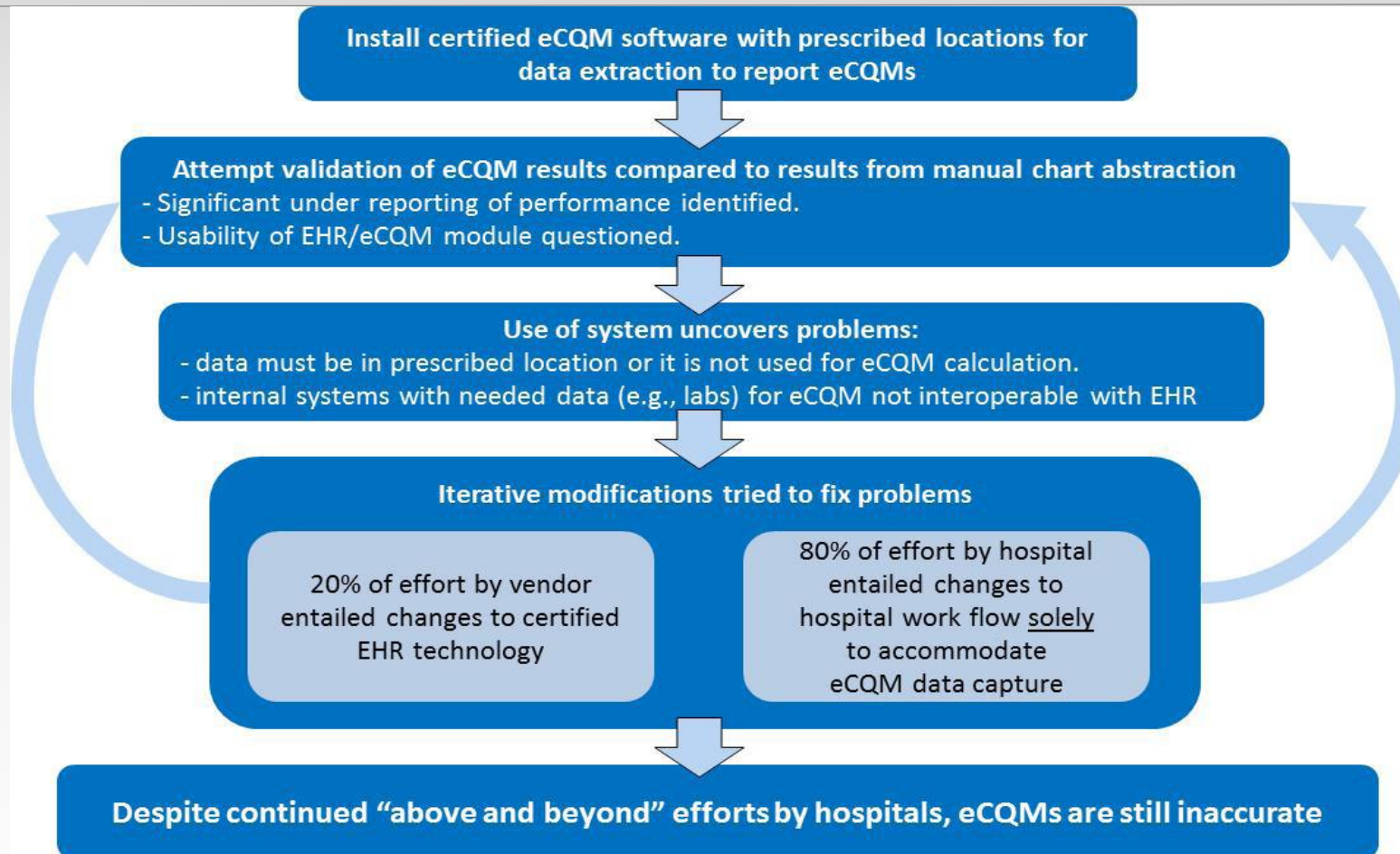
Utilizes an eMeasure specification and value sets

- For CMS programs, EHR certification requirements demand **specific data coding** in software.
- Software installation (or upgrades) required **prior to** data submission, but in time to ensure codification changes are made prior to data collection
- Consistent provider documentation is required to assure accurate analysis: workflow changes and training of staff to ensure proper data capture





# eCQM Implementation: An Iterative Experience





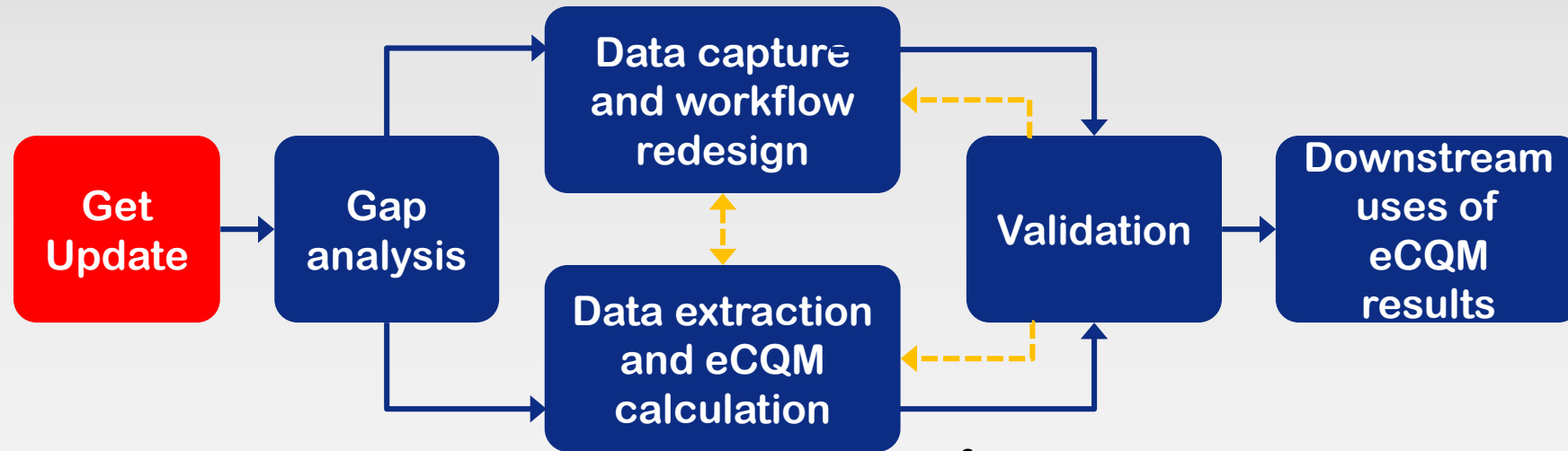
# Team Approach Required

---

Collaborate...Collaborate...Collaborate

- **Vendor:** eCQM version and measure interpretation
- **Quality leadership:** Measurement insight
- **Information technology:** Data collection and storage
- **Meaningful use team:** Measure interpretation
- **Subject matter experts:** Workflow experience i.e. Cardiovascular, Perinatal

# eCQM Implementation Process



Source:

[A Study of the Impact of Meaningful Use Clinical Quality Measures](#), American Hospital Association (2013)

# Getting Annual Updates/Specifications

---

Annual update specifications and documents:

- Specifications
- Release Notes
- Logic Guidance and Logic Flows
- Value Sets
- Quality Reporting Data Architecture (QRDA) Implementation Guide

Medicare

Medicaid/CHIP

Medicare-Medicaid  
Coordination

Private  
Insurance

Innovation  
Center

Regulations &  
Guidance

Research, Statistics,  
Data & Systems

Outreach &  
Education

Home > Regulations and Guidance > EHR Incentive Programs > eCQM Library

## EHR Incentive Programs

[2015 Program Requirements](#)

[2016 Program Requirements](#)

[2017 Program Requirements](#)

[Educational Resources](#)

[Payment Adjustments & Hardship  
Information](#)

[Registration & Attestation](#)

[Audits and Appeals Overview](#)

[Data and Program Reports](#)

[Medicare and Medicaid EHR  
Incentive Program Basics](#)

[Clinical Quality Measures Basics](#)

## eCQM Library

[2013 Clinical Quality Measures](#)

[2014 Clinical Quality Measures](#)

[2015 CQM Reporting Options](#)

[Certified EHR Technology](#)

[Eligible Hospital Information](#)

## eCQM Library

### Annual Updates

### eCQM Electronic Specifications

These electronic specifications are fully developed and represent the electronic Clinical Quality Measures (eCQMs) that will be proposed in 2016 for the ambulatory and inpatient hospital quality reporting program. Updates to the specifications will be proposed if changes are made to the final measure requirements.

Each year, CMS makes updates to the electronic specifications of the Clinical Quality Measures (CQMs) submitted in CMS programs. CMS encourages the implementation and use of the specifications, logic corrections and clarifications. Below are Eligible Professionals (EP) and hospitals, and their measure specifications and companion resources to support implementation.

For those attesting to eCQMs to demonstrate meaningful use for the EHR Incentive Program:

- CMS will accept all versions of the eCQMs through attestation, beginning with the 2012 CMS-ONC Interim Final Rule.
- For eReporting of eCQMs to demonstrate meaningful use or for Quality Reporting, the eCQM must be identified for each program below.
- An eligible professional, eligible hospital or Critical Access Hospital must use the eCQM identified for each program below.

The vocabulary value sets used by eCQMs consist of codes and terms drawn from SNOMED CT®, RxNorm, and ICD-10-CM to represent the clinical concepts found in eCQMs (e.g., patients with diabetes, clinical visit). Providers must ensure their health information system maps to these codes in order to report eCQMs.

# CMS ECQM Library

Performance period for eligible professionals is defined as the measure data capture period of the calendar year between January 1 and December 31.

- [eCQMs for Eligible Professionals Table April 2016](#)
- [eCQM Specifications for Eligible Professionals April 2016](#)
- [eCQM Measure Logic Guidance v1.12 Update April 2016](#)
- [eCQM Technical Release Notes Update April 2016](#)

#### eCQMs for eReporting for the 2016 Reporting Period:

- [eCQMs for Eligible Professionals Table May 2015](#)
- [eCQM Specifications for Eligible Professionals Update June 2015](#)
- [eCQM Measure Logic Guidance v1.11 Update June 2015](#)
- [eCQM Technical Release Notes Update June 2015](#)
- [eCQM Measure Logic Flows for Eligible Professionals June 2015 1 of 2](#)
- [eCQM Measure Logic Flows for Eligible Professionals June 2015 2 of 2](#)

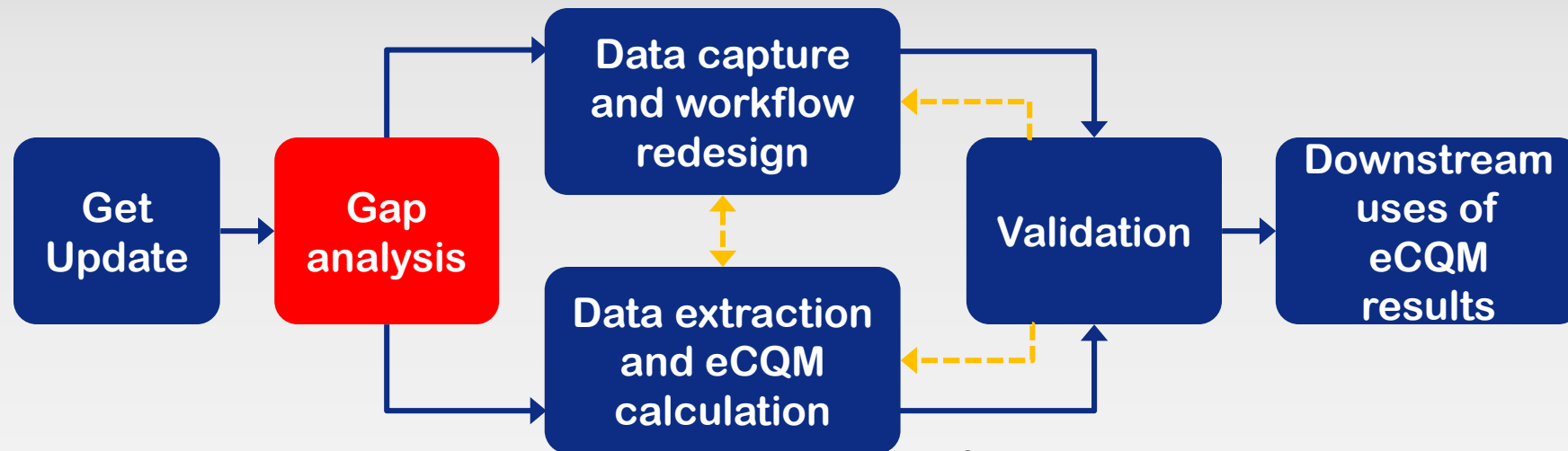
#### eCQMs for eReporting for the 2015 Reporting Period:

- [eCQMs for Eligible Professionals Table July 2014](#)
- [eCQM Specifications for Eligible Professionals Update July 2014](#)
- [eCQM Measure Logic Guidance & Release Notes v1.9 Update July 2014](#)
- [eCQM Measure Logic Flows for Eligible Professionals July 2014 1 of 2](#)
- [eCQM Measure Logic Flows for Eligible Professionals July 2014 2 of 2](#)

#### eCQMs for eReporting for the 2014 Reporting Period:

- [eCQMs for Eligible Professionals Table June 2013](#)
- [eCQM Specifications for Eligible Professionals Update June 2013](#)
- [eCQM Technical Release Notes for Eligible Professionals June 2013](#)
- [eCQM Measure Logic Guidance v1.5 Update June 2013](#)
- [eCQM Measure Logic Flows for Eligible Professionals June 2013 1 of 2](#)
- [eCQM Measure Logic Flows for Eligible Professionals June 2013 2 of 2](#)

# eCQM Implementation Process



Source:

[A Study of the Impact of Meaningful Use Clinical Quality Measures](#), American Hospital Association (2013)

# Gap Analysis: Analyzing Specifications

---

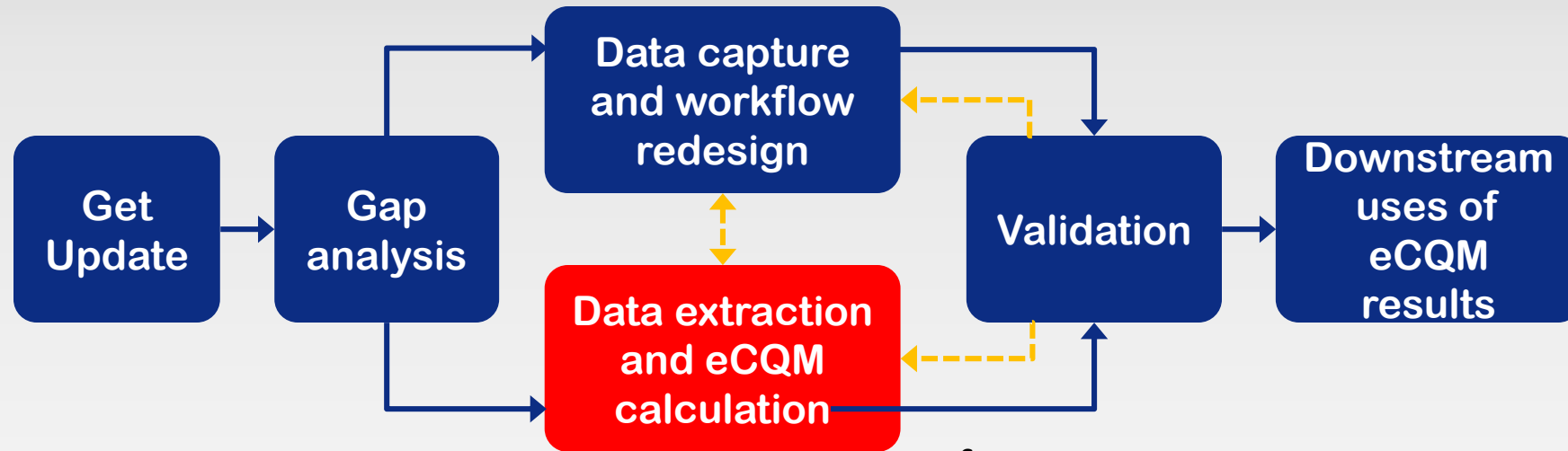
New data elements > data capture, workflow and mappings (e.g. PC-01)

Changes to data elements/value sets > mappings (e.g. oral factor Xa inhibitors)

Change to logic > data capture (e.g. timing thresholds)

Other changes that impact calculation (e.g. updates to inclusion/exclusion criteria)

# eCQM Implementation Process



Source:

[A Study of the Impact of Meaningful Use Clinical Quality Measures](#), American Hospital Association (2013)



# Data Extraction and eCQM Calculation

---

If data available, move forward with data extraction and calculation

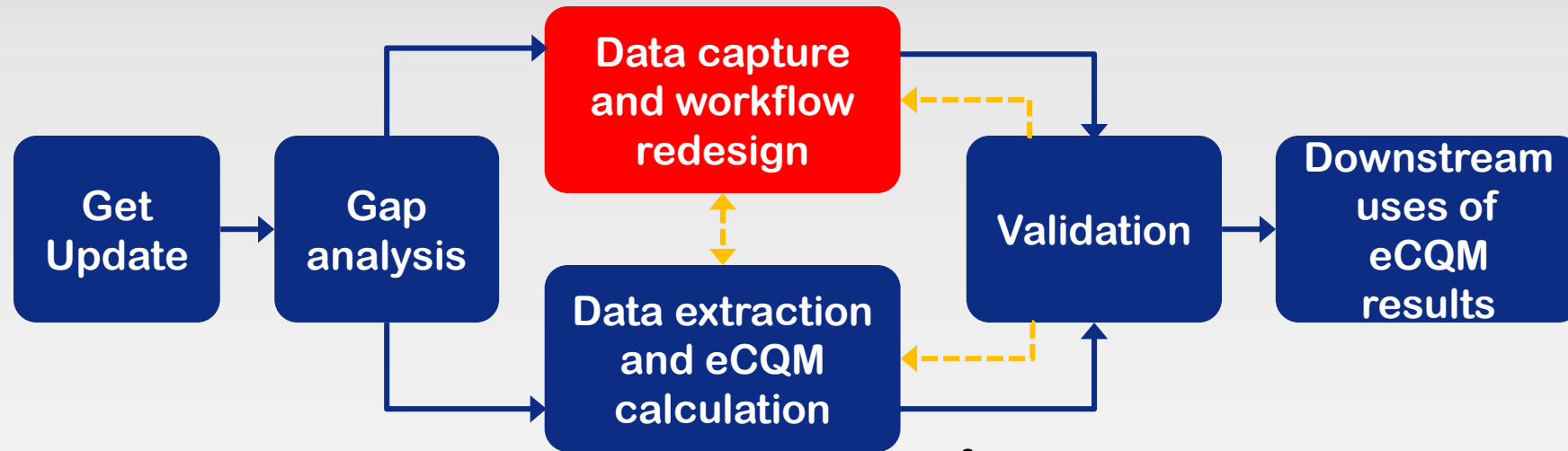
Continue iterative process of validation

Additional tweaks to data capture and/or workflow may be necessary after validation

Modify tracking documentation



# eCQM Implementation Process



Source:

[A Study of the Impact of Meaningful Use Clinical Quality Measures](#), American Hospital Association (2013)

# Data Capture and Workflow Redesign

---

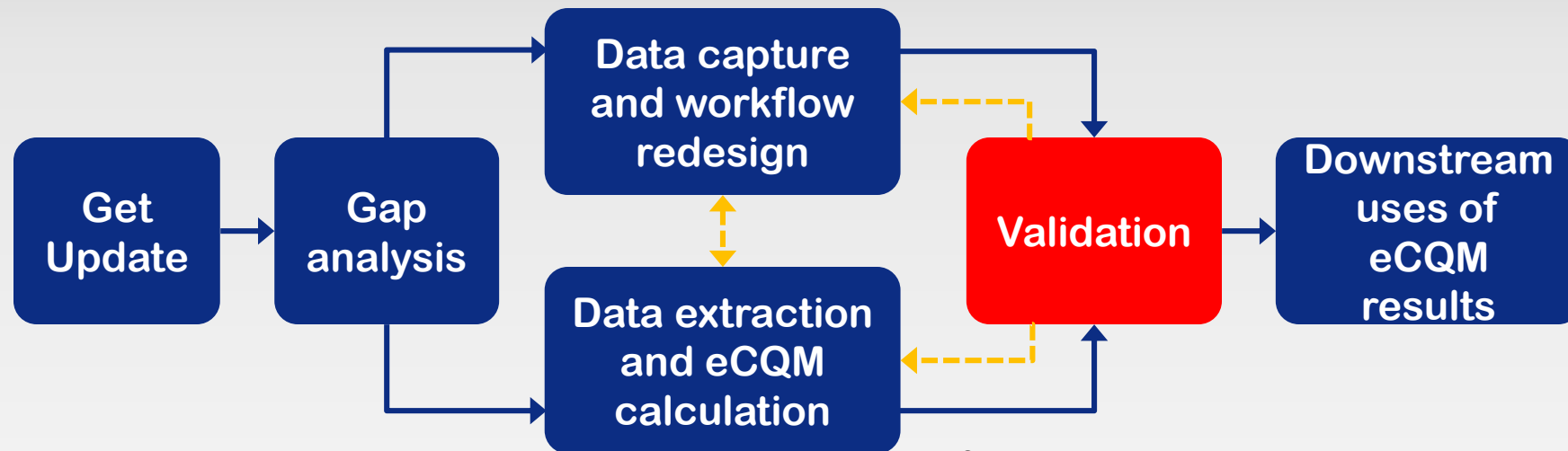
## Data Capture

- New query build
- Interface to bring data from disparate application into certified electronic health record technology (CEHRT)
- Deploy Alerts/Reminders/Order Sets judiciously

## Workflow redesign

- Work with subject matter experts to determine where/how data should be captured (e.g. Cardiovascular services)
- Evaluate aspects of care coordination or transitions of care

# eCQM Implementation Process



Source:

[A Study of the Impact of Meaningful Use Clinical Quality Measures](#), American Hospital Association (2013)

# Validation

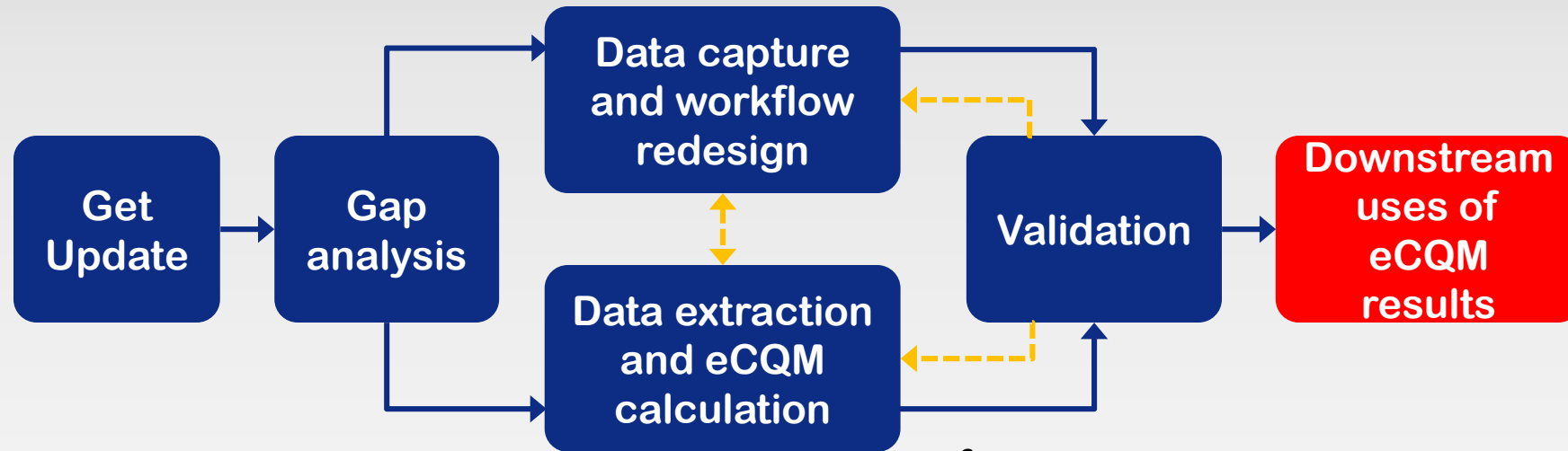
---

Utilize available data and knowledge of patient population and secondary data source to review performance

If performance not as expected, immediately engage entire collaborative team to determine:

- Data capture issue
- Mapping issue
- Measure issue
- Value-set issue
- Workflow issue

# eCQM Implementation Process



Source:

[A Study of the Impact of Meaningful Use Clinical Quality Measures](#), American Hospital Association (2013)

# Downstream Uses of eCQM Results

---

Improve quality of care

Decrease healthcare disparity

Inform practice

Propagate research

Quality contracting or pay for performance



# Many challenges to “clean” data

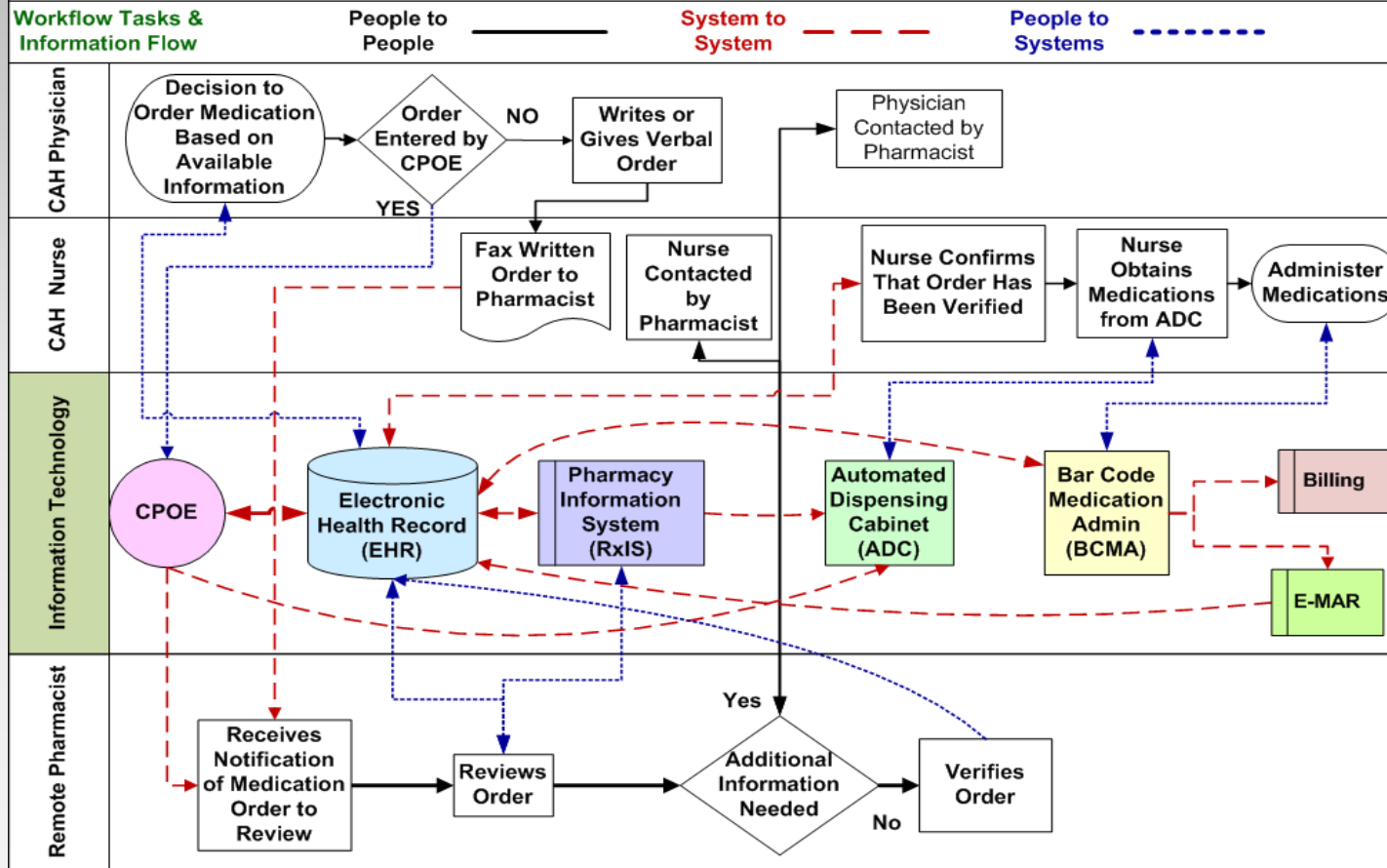
---

Compare Measures to “a source of truth”

Challenges to data identification and collection

- unstructured
- data latency
- discordant data

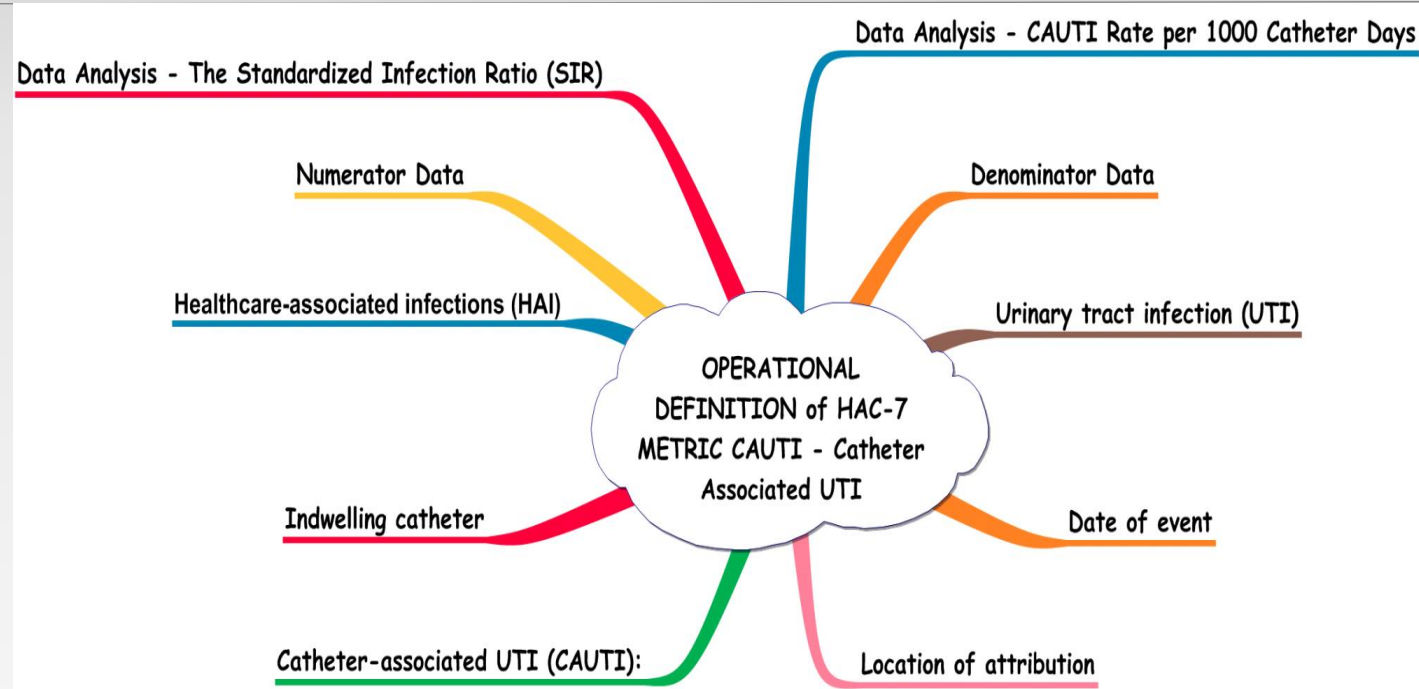
## CAH Case Study “Closed Loop” Medication Process and Information Flow



Clinical Workflow AND Data flow  
are equally important to attain  
Valid eCQMs

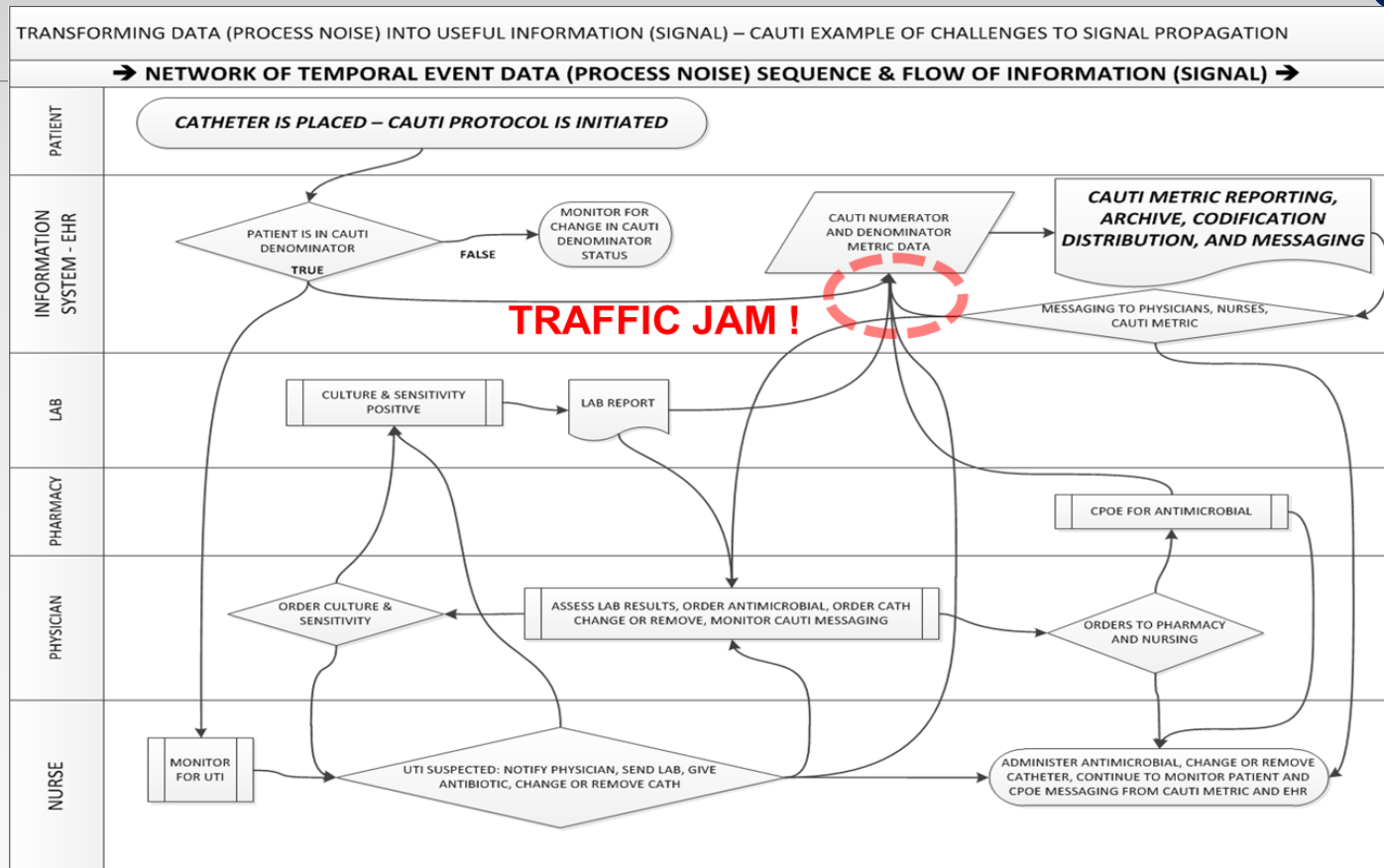
# Workflow Redesign is Critical to Success

# Mind Maps Aide Clinical Teams



Courtesy of R. Gilder from TNA-TONE HIT Committee presentation "Transforming Digital Data into Useful Information (McBride, Fenton, Valdes, and Gilder, 2013)

# Transforming Data into Useful Information and Knowledge



Traffic jam notation presents the convergence of information into the operational definition of the numerator and denominator. Courtesy of R. Gilder from TNA-TONE HIT Committee presentation “Transforming Digital Data into Useful Information (McBride, Fenton, Valdes, and Gilder, 2013)

# Creating a Work plan

Create a very detailed work plan for your organization

Assign key roles and responsibilities including data governance/data integrity checks and balances

Address work plan as your organization addressed implementation and attaining stages of Meaningful Use

## Back into the timing needed to report eCQMs by deadlines

Include key steps covered in prior presentation and the current recommendations

ID	WBS	Task Name	Duration	Start	Finish	Predecessor	% Comp.
1		<b>CORE MEASURES MU STAGE 2</b>	505 days?	Mon 5/20/13	Wed 4/29/15		96%
2	1.1	Stage 2 Goal Analysis	349 days	Thu 5/30/13	Tue 9/30/14		100%
3	1.2	Upgrade SCM to v 6.1	0 days	Mon 10/14/13	Mon 10/14/13		100%
4	1.3	Upgrade SCA to v 12.0	1 day	Fri 2/7/14	Fri 2/7/14		100%
5	1.4	SCM Freeze	38 days	Wed 5/21/14	Sun 7/13/14		100%
6	1.5	Backup all Environments prior to 14.2 Upgrade	1 day?	Sun 7/13/14	Sun 7/13/14		100%
7	1.6	Upgrade SCM to v 14.2	1 day	Sun 7/13/14	Sun 7/13/14 6SS		100%
8	1.7	CQM Rules Decisions	1 day	Wed 4/30/14	Wed 4/30/14		100%
9	1.8	Stage 1a Dashboard with KBMA included	1 day?	Sat 5/17/14	Sat 5/17/14		100%
10	1.1.1.2	Design/Build Reports/Test/Dashboard	237 days?	Thu 5/8/14	Tue 3/31/15		100%
11	1.9.1	Design Scope	1 day	Thu 5/8/14	Thu 5/8/14		100%
12	1.9.2	Stakeholder Approval of Scope	1 day?	Mon 5/12/14	Mon 5/12/14		100%
13	1.9.3	PST Approval of Scope	1 day?	Fri 5/23/14	Fri 5/23/14		100%
14	1.9.4	FIT-FAST Review	1 day?	Wed 5/28/14	Wed 5/28/14		100%
15	1.9.5	Development	219 days	Mon 6/2/14	Tue 3/31/15		100%
16	1.9.6	User Acceptance Testing	143 days	Fri 9/12/14	Tue 3/31/15		100%
17	1.9.7	Dashboard Education/Training	143 days	Fri 9/12/14	Tue 3/31/15		100%
18	1.9.8	Dashboard Available for Facilities	143 days	Fri 9/12/14	Tue 3/31/15		100%
19	1.1.1.4	Validation of Stage 2 Metrics	143 days	Fri 9/12/14	Tue 3/31/15		100%
20	1.11	Codifying as Needed	93 days?	Mon 5/20/13	Mon 9/30/13		100%
21		<b>CORE 1 CPOM (60% Med, 30% Lab, 30% Rad)</b>	1 day?	Mon 5/20/13	Mon 5/20/13		100%
22	1.1.1	Indicator for "All Medication Orders"	1 day?	Mon 5/20/13	Mon 5/20/13		100%
23	1.1.1.2	CPOE Lab Orders	1 day?	Mon 5/20/13	Mon 5/20/13		100%
24	1.1.2.3	CPOE Rad Orders	1 day?	Mon 5/20/13	Mon 5/20/13		100%
25	1.1.3	<b>CORE 2 Demographics (80%) (Complete)</b>	0 days	Mon 5/20/13	Mon 5/20/13		100%
26	1.1.3.1	Record Demographics	1 day	Mon 5/20/13	Mon 5/20/13		100%
27	1.3	<b>CORE 3 Record &amp; Chart Vital Sign Changes (80%) (Complete)</b>	40 days	Mon 2/10/14	Fri 4/4/14		100%
28	1.1.4.1	Remove Age Restrictions for Height & Weight	40 days	Mon 2/10/14	Fri 4/4/14		100%
29	1.1.4.1.1	Design/Build for Age Restrictions Height/Weight	20 days	Mon 2/10/14	Fri 3/7/14		100%
30	1.1.4.1.2	Test/Validation for Age Restrictions Height/Weight	20 days	Mon 3/10/14	Fri 4/4/14		100%

Task

Split

Milestone

Summary

Project Summary

External Tasks

External Milestone

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

External Tasks

External Milestone

Progress

Deadline

# Overview of Questions to Address and Steps to Consider in your Workplan: Stage 1

---

What is the measure Domain?

What other quality reporting programs use the measure?

Is the Vendor Certified for the measure?

Does the measure meet MU EHR Incentive Program and Hospital IQR Program requirements?

Does the vendor's recommended workflow align with your organization's existing workflow?

If not, perform an impact analysis to determine the feasibility of implementing the new recommended workflow.



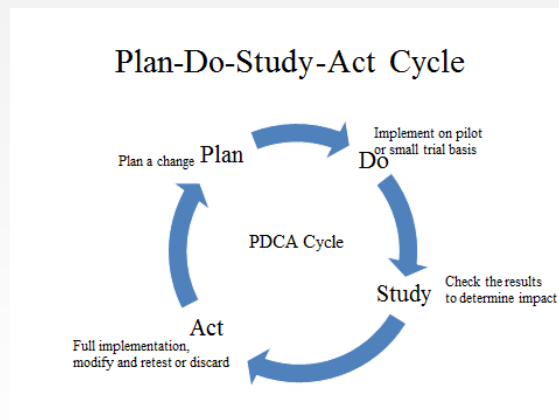
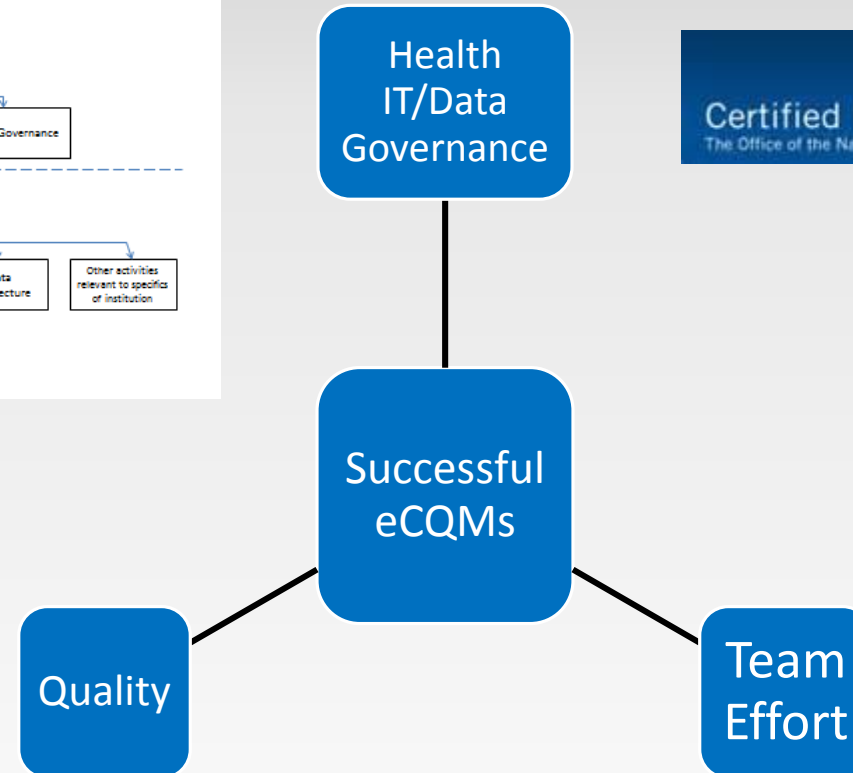
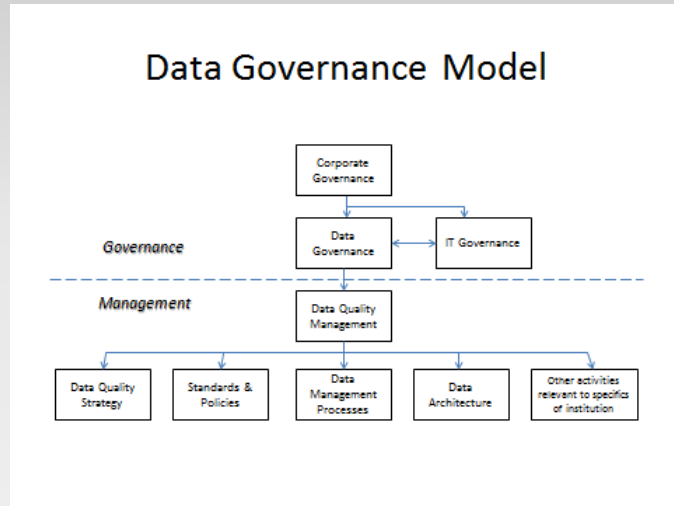
# Steps in the Work Plan for eCQMs

---

1. Select e-measures
2. Map data elements according to e-specifications per measure (significant effort)
3. Prepare Non-Production and Production QRDA Environments
4. Configure QRDA Reporting
5. Determine where QRDA output files will be stored
6. Implement QRDA in non-production environment
7. Perform testing
8. Perform validation
9. Perform training
10. Implement QRDA in production
11. Generate QRDA files
12. Submit QRDA files



# Infrastructure Needed for success



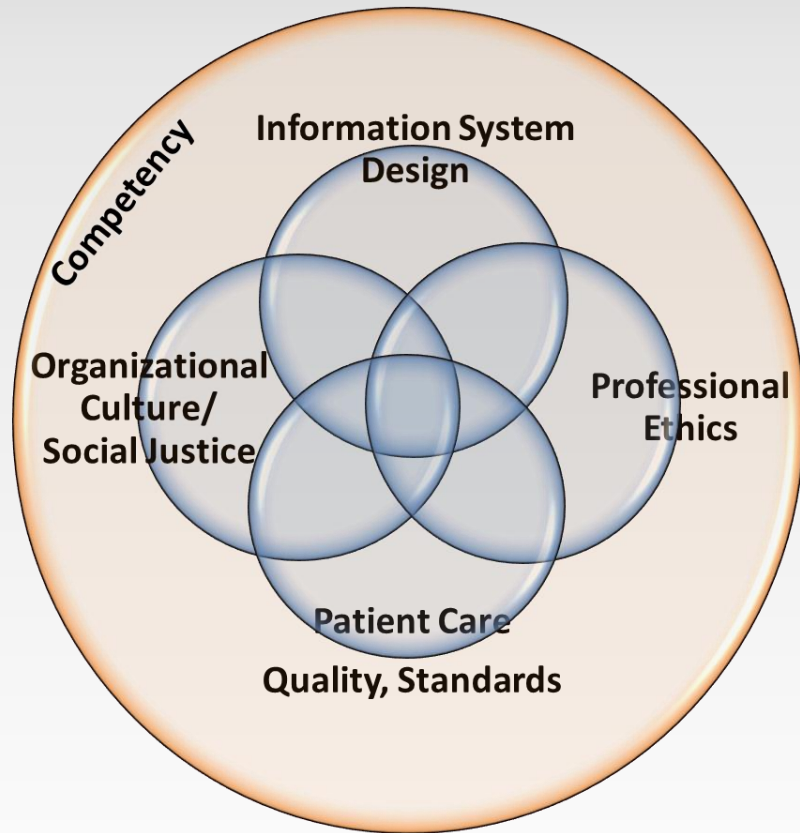
# TNA-TONE Statewide EHR Study

## Example of what nurses are telling us:

*"Yes, the documentation of "quality standards" has greatly improved, but patient care and patient safety has not. **In fact nurses have to enter false information sometimes and work around the system** (I use vendor X, Y and Z) and all have similar issues. I know first hand of 2 sentinel events caused by the systems (X and Y). Also systems audits are being used to evaluate and discipline nurses; this is a big ethical issue as nurses are charting stuff for the wrong reasons/.....creating a conflict of interest"*



# Narrative Themes Regarding Nurse Experiences with CIS/EHR



## Major and Minor Themes

System design/usability

- Interoperability

Patient safety and quality

- Documentation/legality

Time

- Ns-pt time reduced/inefficiency

Support

- IT, administrative, competency

Workflow

- Med admin, work-arounds

Distress

- Aggravation, voice not heard

Communication

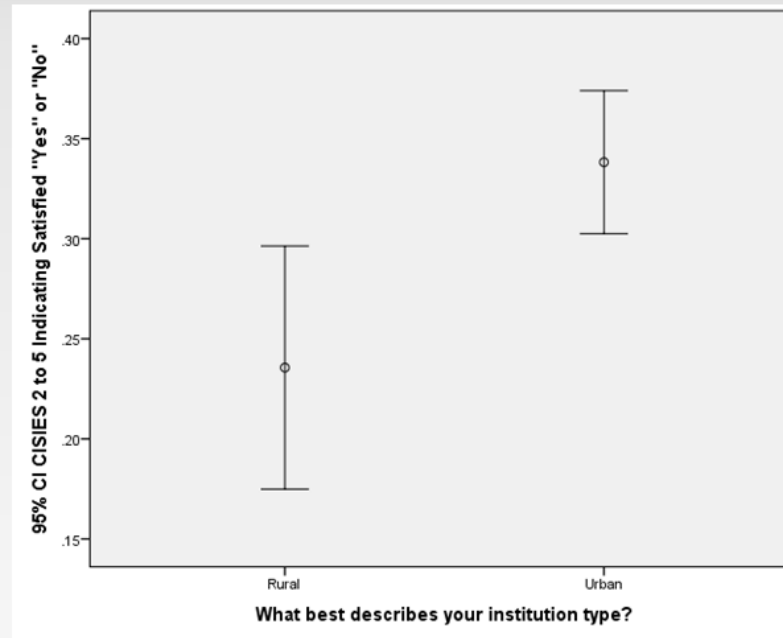
- Reduced consultation among clinicians

# Urban, Rural and Regional Differences in Nursing Satisfaction with EHRs

## Urban, Rural and Regional Differences

Region	Likelihood of Being Satisfied	Statistics
Northwest Texas	71%	OR, 0.285; 95% CI, 0.090–0.899; $P = .032$
High Plains	45%	OR, 0.552; 95% CI, 0.324–0.943; $P = .030$
Upper East Texas	81%	OR, 0.186; 95% CI, 0.069–0.503; $P = .001$
Southeast Texas	64%	OR, 0.363; 95% CI, 0.140–0.941; $P = .037$
Gulf Coast	NS	
Central Texas	56%	OR .440, 95% CI .280, .691, $P < .001$
Upper South Texas	49%	OR .506, 95% CI .285, .900, $P = .020$
West Texas	74%	OR .262, 95% CI .129, .530, $P < .001$
Lower South Texas	NS	

Regional differences may inform improvement strategies for statewide efforts.



66% higher odds of being satisfied if urban  
(OR 1.65, 95% CI 1.145,2.401)

# Next Step: Statewide Improvement Strategies

---

Questions to consider:

1. How might we implement regional improvement initiatives to improve nurses use of EHRs?
2. What do you believe constitutes best practice for nursing documentation using EHRs?
3. How might we solve the issue of unstructured versus structured data needed for EHRs?
4. What else can we do to help you do your job better in preparation for eCQMs?

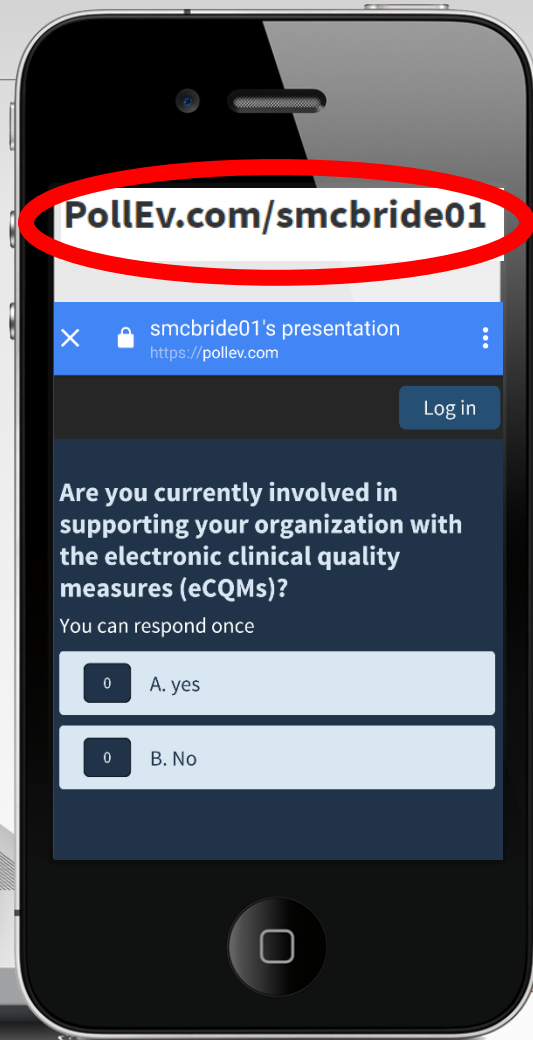
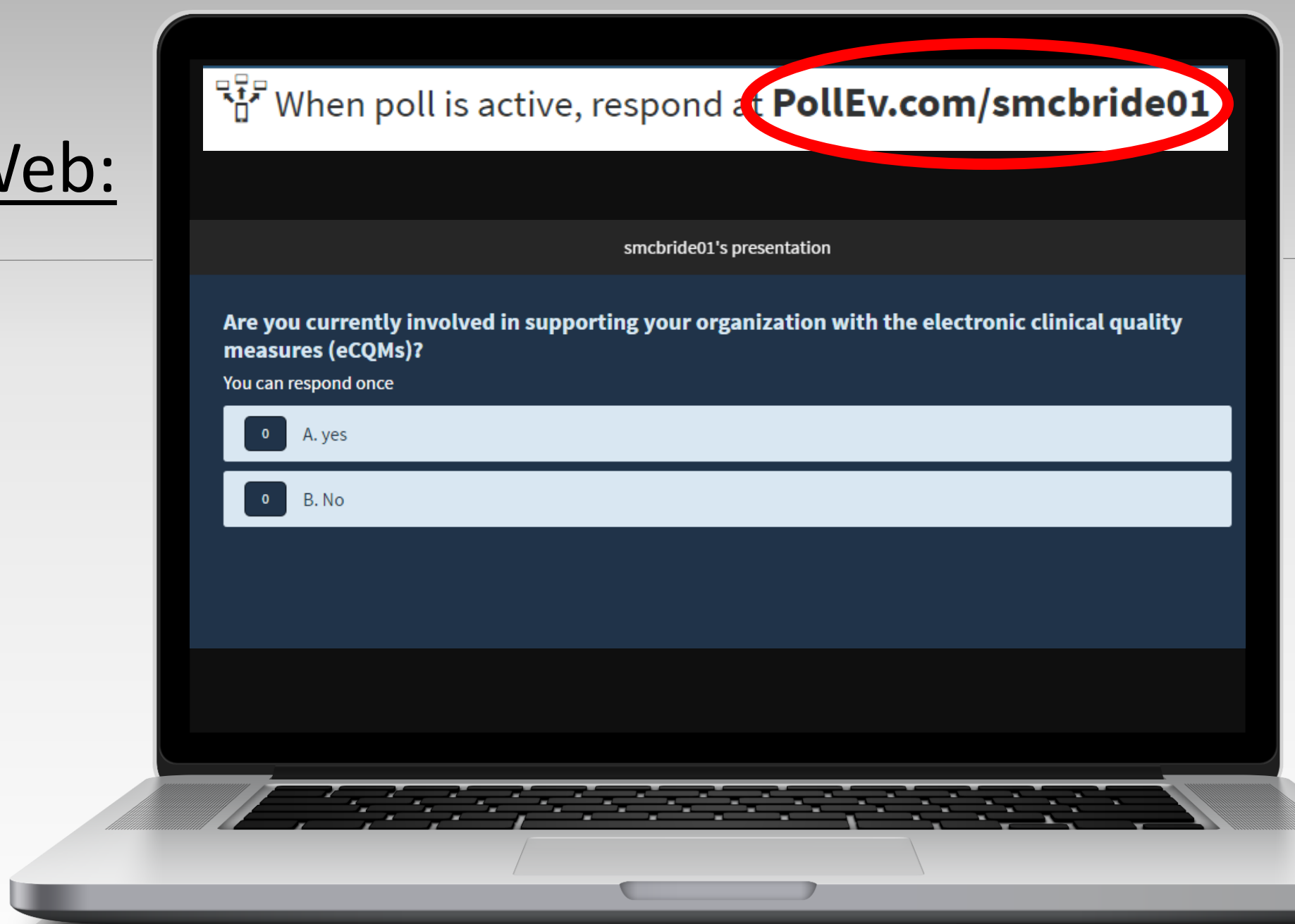
# Poll Everywhere Instructions

---

2 options for responding

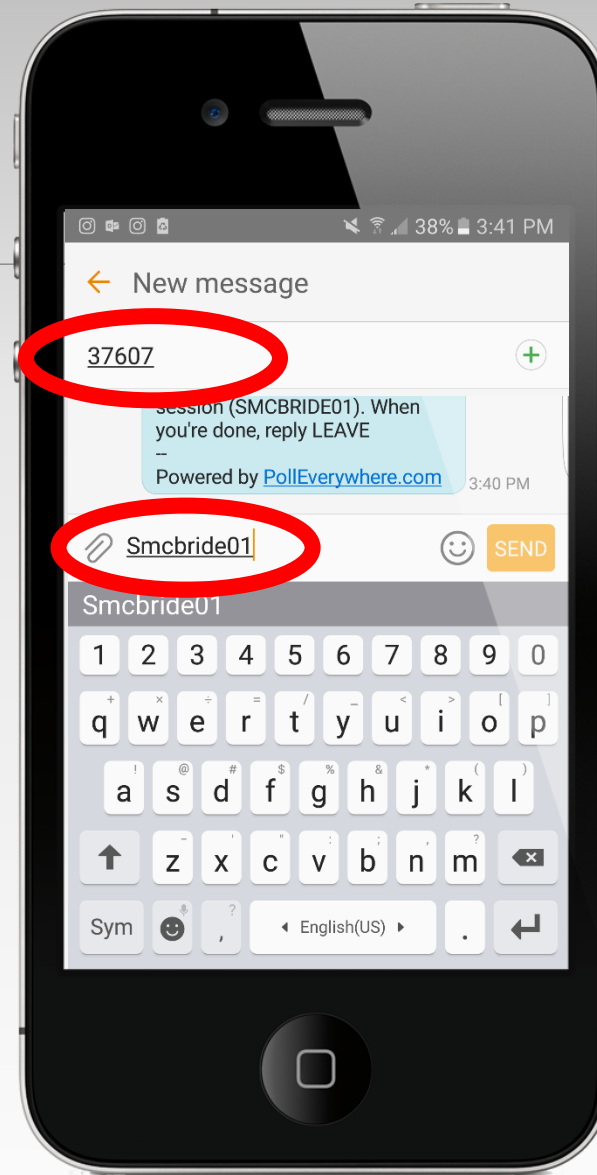
- PC
- Text message

## ■ Web:





## ■ Text Message:



# Your poll will show here

1

Install the app from  
[pollev.com/app](https://pollev.com/app)

2

Make sure you are in  
Slide Show mode

Still not working? Get help at [pollev.com/app/help](https://pollev.com/app/help)

or

[Open poll in your web browser](#)



# Your poll will show here

1

Install the app from  
[pollev.com/app](https://pollev.com/app)

2

Make sure you are in  
Slide Show mode

Still not working? Get help at [pollev.com/app/help](https://pollev.com/app/help)  
or

[Open poll in your web browser](#)



# Your poll will show here

1

Install the app from  
[pollev.com/app](https://pollev.com/app)

2

Make sure you are in  
Slide Show mode

Still not working? Get help at [pollev.com/app/help](https://pollev.com/app/help)  
or

[Open poll in your web browser](#)



# Your poll will show here

1

Install the app from  
[pollev.com/app](https://pollev.com/app)

2

Make sure you are in  
Slide Show mode

Still not working? Get help at [pollev.com/app/help](https://pollev.com/app/help)  
or

[Open poll in your web browser](#)



# PRESENTER CONTACT INFORMATION

---

Susan McBride, PhD, RN-BC, CPHIMS, FAAN  
Professor

Texas Tech University Health Sciences Center  
School of Nursing

3601 4th Street, Stop 6264

Lubbock, TX 79430-6264

Tel. (817) 319-6440

[susan.mcbride@ttuhsc.edu](mailto:susan.mcbride@ttuhsc.edu)

[www.ttuhsc.edu/son](http://www.ttuhsc.edu/son)



# QUESTIONS & DISCUSSION