



NATIONAL  
QUALITY FORUM

## How are measures used in hospitals and health systems?

### *Featuring:*

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### *Moderated by:*

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Director, Member Education, National Quality Forum

January 23, 2017

WELCOME  
TO NATIONAL QUALITY FORUM  
Over 425 Members Strong

## Today's Objectives

By the end of this session, members will be able to:

- Identify key players who use performance measures,
- Describe how performance measures are utilized in team based clinical care, and
- Discuss the use of measures in risk management.

## How Are Measures Used in Hospitals and Health Systems?

*A Presentation for NQF Members*

**Jonathan Gleason, MD**  
**Jason Hoffman, PharmD**  
**January 23, 2017**



## Disclosures

- Jonathan Gleason: none
- Jason Hoffman: none



## CARILION CLINIC



- 7 Hospitals
- Largest private employer west of Richmond, VA serving 1/3 of the state
- Virginia Tech Carilion School of Medicine and Research Institute located on Carilion campus
- 246 practices locations
- 1,133 employed providers by headcount
- Over 52 percent market share in competitive PSA (twice that of nearest competitor)
- Significant financial resources
  - \$1.6bn in annual net revenue
  - Over \$2.0bn in assets
  - Unrestricted cash & investments approaching \$1.0bn



# CARILION CLINIC



# CARILION CLINIC

- **Mission:** Improve the health of the communities we serve
- **Vision:** We are committed to a common purpose of better patient care, better community health, and lower cost
- **Values:**



## Numerous Awards and Recognitions

- Highlights emphasis on quality and providing a positive patient experience



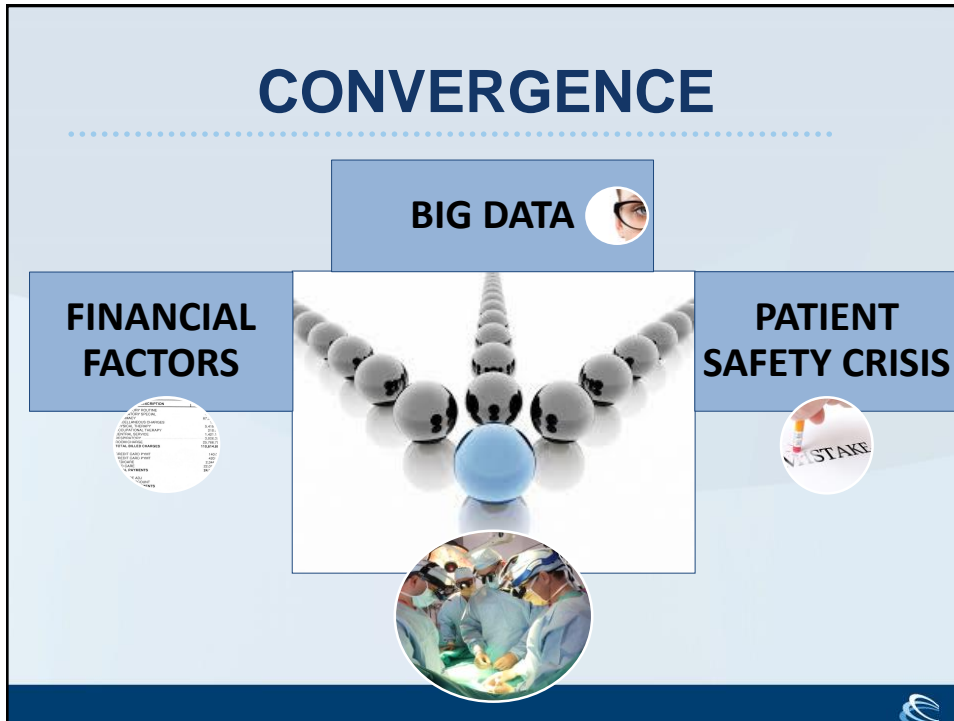
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## What does Quality “feel” like for a health system in 2016???



# CONVERGENCE



## FINANCIAL FACTORS

- **MACRA**
- **Value-Based Purchasing**
- **Accountable Care Organizations**

DESCRIPTION	AMOUNT
LABORATORY ROUTINE	2,083.19
LABORATORY SPECIAL	4,521.68
PHARMACY	67,367.40
MISCELLANEOUS CHARGES	18.34
PHYSICAL THERAPY	5,419.94
OCCUPATIONAL THERAPY	210.08
CENTRAL SERVICE	1,421.18
RESPIRATORY	3,906.29
ROOM CHARGE	25,766.79
<b>TOTAL BILLED CHARGES</b>	<b>110,614.88</b>
CREDIT CARD PYMT	140.00-
CREDIT CARD PYMT	420.00-
MEDICARE	2,344.63-
MGD CARE	22,074.00-
<b>TOTAL PAYMENTS</b>	<b>24,978.63-</b>
MEDICARE ADJ	69,561.49-
PATIENT DISCOUNT	5,626.16-
<b>TOTAL ADJUSTMENTS</b>	<b>75,187.65-</b>

## BIG DATA - TRANSPARENCY

- Leap-frog
- Hospital Compare
- US News & World Reports



## To Err is Human (1999)

- 1999 IOM Report
- 2015 NPSF Update







# CARILION CLINICAL ADVANCEMENT

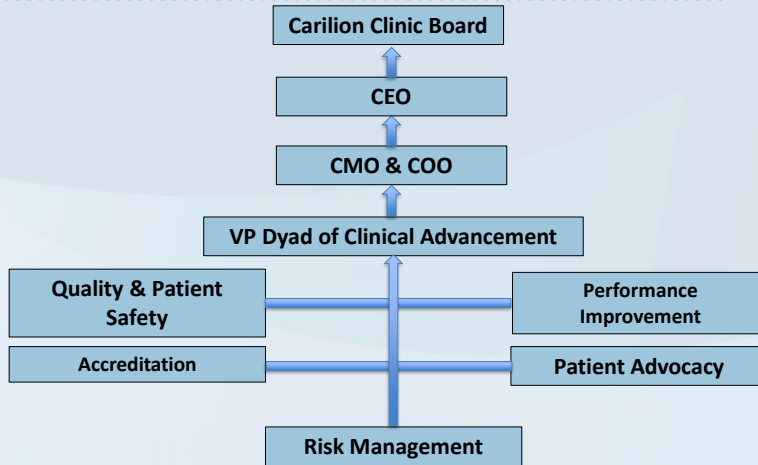
## CARILION QUALITY VISION

To be recognized as a global leader of quality and continuous improvement in health care in the next five years





# CLINICAL ADVANCEMENT

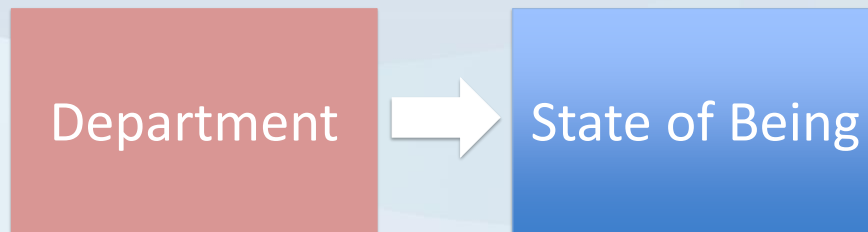


## Faces of Quality



## Structure

Evolving our understanding of QUALITY



Everyone's responsibility

## 5-Year Plan

Year 1

Establish systemic quality program infrastructure

Year 2

Accelerate the pace – more improvements quickly

Year 3

Move from reactive to proactive

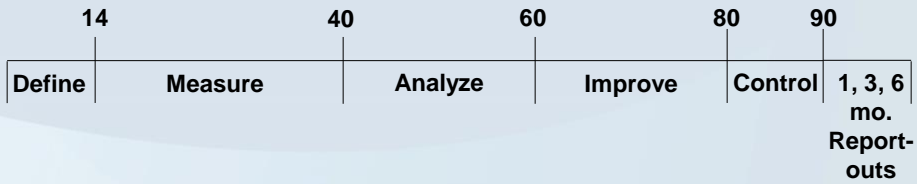
Year 4

Become an example others want to learn from

Year 5

Take strategic risks to lead in the quality space

## 90-Day Rapid Improvement Cycle



- Hip & Knee Readmission
- ED Observation Unit Utilization
- VTE Reduction

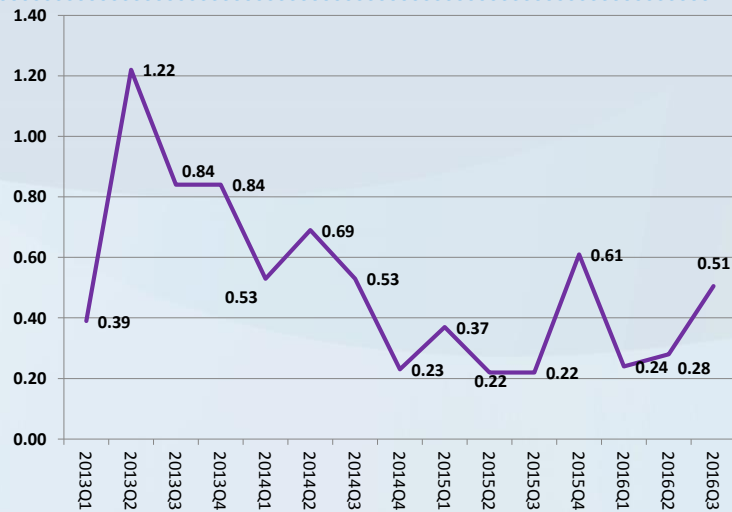
## CAUTI

2016 YTD

# Infections
63
Expected
64.10
SIR
0.98

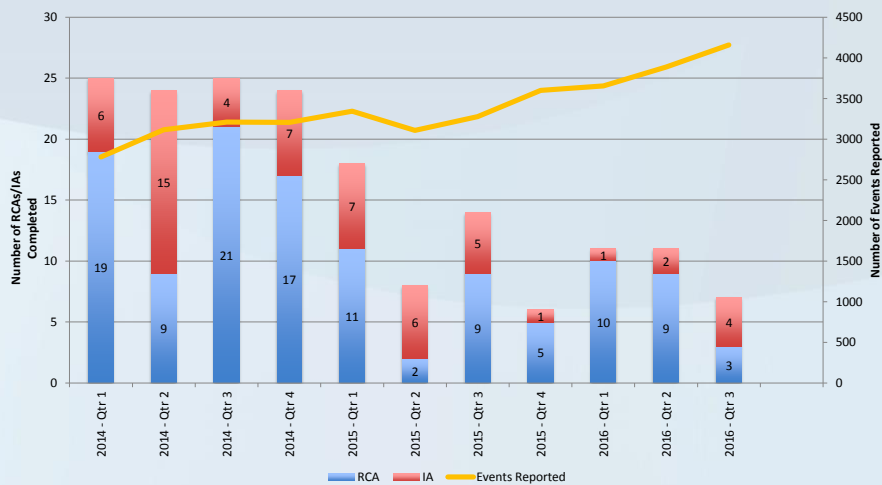


## CLABSI



## Evidence of a Safety Culture

RCA's are Decreasing - Event Reports are Increasing



# Collaborative Heparin Process

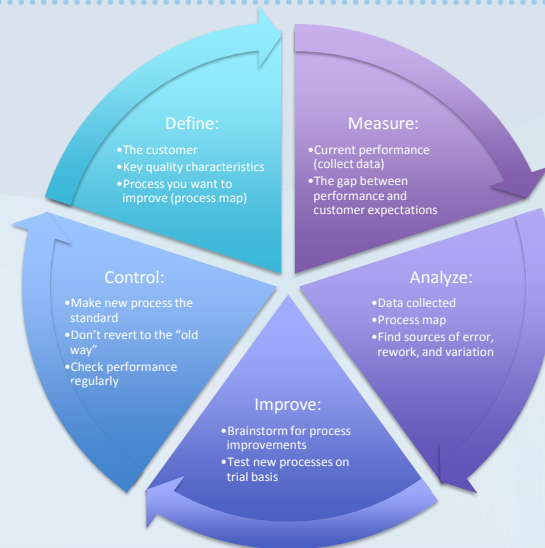


## National Perspective

- Anticoagulants: top five drug types associated with patient safety issues.
- Joint Commission Sentinel Event Database:
  - 7.2% of all errors
  - 2/3 of these from heparin
  - Errors causing harm:
    - Heparin: 3.1%
    - Other medications: 1.5 %



## Process Improvement: DMAIC



Hosp Pediatr 2013; 3:108-17 Prog Transplant 2013; 23:350-64



## DEFINE - Problem Scope

**Cost of treating a major heparin bleed:**  
**~\$11,189 - \$17,169**

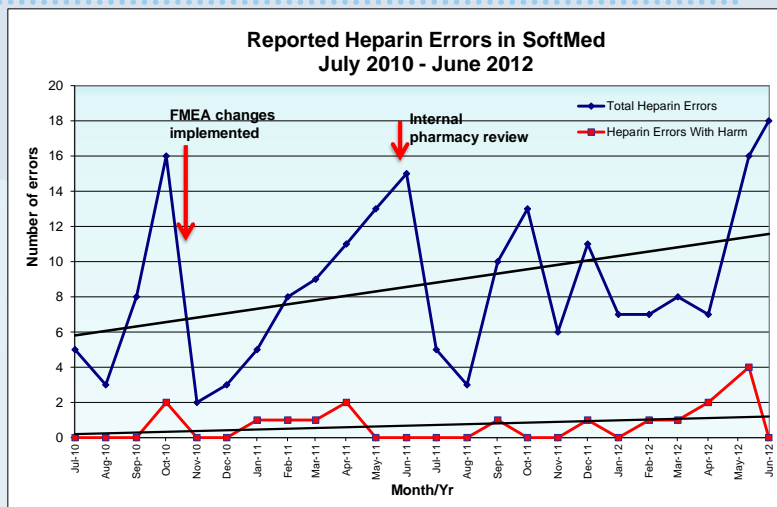
- Heparin errors with harm at CRMH:
  - 2010: FMEA conducted due to high number of errors
  - January 2011 – June 2012
    - 7.8% of heparin errors resulted in harm
    - Average of 0.94 errors with harm per month

Am J Cardiol 2004; 94:532-535





## MEASURE – Baseline Data



SoftMed = CRMH event reporting program

## MEASURE – Baseline Data

- Review:
  - 53 patients and 241 aPTT data points
- Overall:
  - 1+ observed errors: 85%
  - 2+ observed errors: 43%

Area Observed	Parameter	N	% Correct
EMR Documentation (Retrospective)	Appropriate weight	241	97.1%
	Consistent weight	239	97.5%
	<b>Appropriate dose</b>	236	<b>77.1%</b>
Pharmacy Documentation (Retrospective)	<b>aPTT documented</b>	235	<b>85.5%</b>
	<b>Appropriate assessment</b>	234	<b>83.8%</b>
Smart Pump Programming (Prospective)	Correct weight in pump	90*	96.7%
	Correct dose in pump	90*	95.6%
Laboratory aPTT draw	<b>aPTT drawn within 1h of order</b>	241	<b>72%</b>

\* Number of infusion pump observations, maximum of one per day

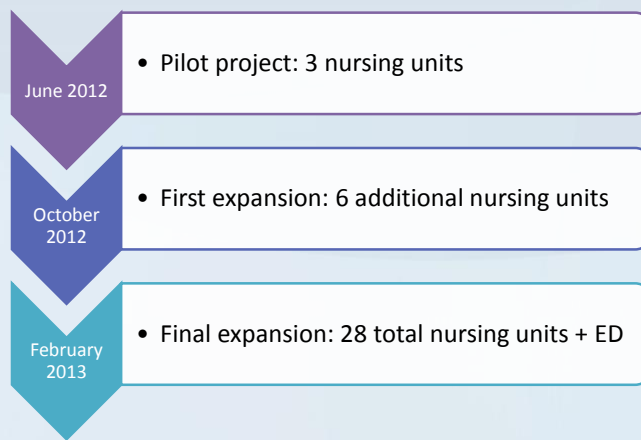
## ANALYZE - Root Causes

Location/Group	Issue Identified
<b>Interdisciplinary</b>	<ul style="list-style-type: none"> <li>• Lack of understanding of role of other departments</li> <li>• Lack of general communication when issues arose</li> </ul>
<b>Environment</b>	<ul style="list-style-type: none"> <li>• Frequency of heparin use and protocol ordered</li> </ul>
<b>Pharmacy</b>	<ul style="list-style-type: none"> <li>• Minimal involvement (no proactive involvement)</li> <li>• Lack of understanding protocols</li> </ul>
<b>Nursing</b>	<ul style="list-style-type: none"> <li>• Protocol not followed</li> <li>• Poor EMR documentation</li> </ul>
<b>Laboratory</b>	<ul style="list-style-type: none"> <li>• Duplicate orders caused confusion</li> <li>• Lack of understanding of heparin as high risk</li> </ul>



## IMPROVE - Solutions Implemented

Systematic approach:



## IMPROVE - Solutions Implemented

- Communication!
  - Phone calls
  - Progress note
  - Daily IV pump checks
- Laboratory:
  - Change in staffing schedule
  - aPTT: “Routine” to “STAT” printer



## CONTROL ELEMENTS

Control Element	Method of Monitoring
<b>Heparin education</b>	Standard for all new nursing and pharmacy employees
<b>MUE</b>	Ongoing data collection
<b>Error log books</b>	Temporary tool for more rapid feedback
<b>Error monitoring</b>	Routine review by Medication Safety Committee
<b>Pharmacy Handoff</b>	Incorporated into process already in place

Positive reinforcement through sharing of ongoing successes

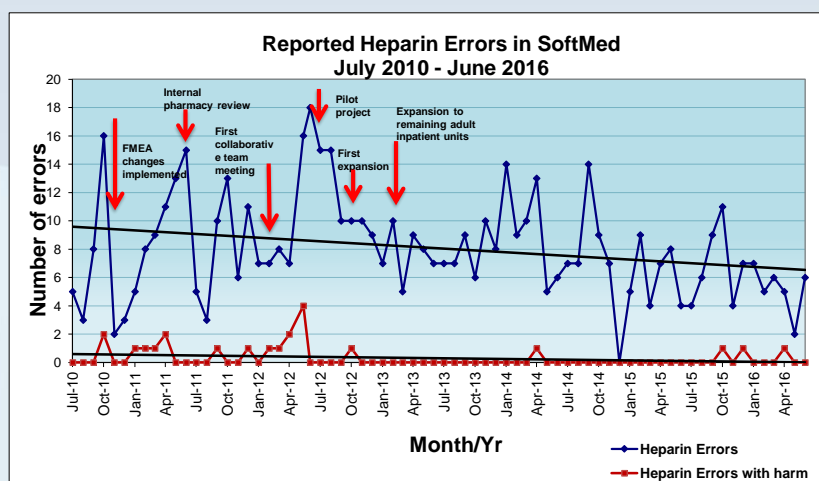


## Results

Criteria	Target Value	Baseline	Pilot	Post-Implementation
Timeframe		March 2011	June/July 2012	June 2013
Location		Hospital-wide	3 units	Hospital-wide
Patients reviewed:		53	43	57
aPTT values reviewed:		243	186	329
EMR Data				
Correct dose documented:	100%	77.1% (n=243)	94.1% (n=186)	93.9% (n=329)
Pharmacy Documentation				
aPTT documented:	100%	85.5% (n=243)	94.6% (n=186)	95.4% (n=329)
Appropriate adjustment:	100%	83.8% (n=243)	94.1% (n=186)	93.9% (n=329)
Laboratory Data				
Median time from aPTT order until drawn	≤30 min.	34 minutes	15 minutes	22 minutes



## Results - Reported Heparin Errors



# Antimicrobial Stewardship



## Antimicrobial Stewardship

Joint Commission	CMS
<p>Standard MM.09.01.01</p> <ul style="list-style-type: none"> <li>• Leadership establish as organizational priority</li> <li>• Educates staff</li> <li>• Has multi-disciplinary team</li> <li>• Includes core elements: accountability, drug expertise, action, tracking, reporting, education</li> <li>• Collects analyzes and reports data; takes action on improvement opportunities</li> <li>• Uses approved multi-disciplinary protocols</li> </ul> <p>• Implemented by January 1, 2017</p>	<p>482.42</p> <ul style="list-style-type: none"> <li>• Appointed leader of ASP</li> <li>• Active hospital-wide ASP includes:             <ul style="list-style-type: none"> <li>• Coordination among all components</li> <li>• Document evidence based use of antibiotics</li> <li>• Demonstrate improvements (sustained)</li> </ul> </li> <li>• ASP adheres to national guidelines</li> <li>• Reflects scope and complexity of hospital services</li> <li>• ASP leader:             <ul style="list-style-type: none"> <li>• Communication and collaboration with other departments</li> <li>• Competency-based training and education of hospital personnel</li> </ul> </li> </ul>



## Carilion Clinic Hospitals

Facility	Beds	ID Physicians	ID Pharmacist	24 Hour Pharmacy Services	Clinical Decision Support tool
<b>CRMH</b>	763	Yes	Yes (+ ID resident)	Yes	Yes
<b>CNRV</b>	146	Yes		Yes	Yes
<b>CFMH</b>	37				Yes
<b>CSJH</b>	25 (crit access)				Yes
<b>CGCH</b>	25 (crit access)				Yes
<b>CTCH</b>	25				Yes



## Antimicrobial Stewardship Strategy

System-wide AMS Subcommittee

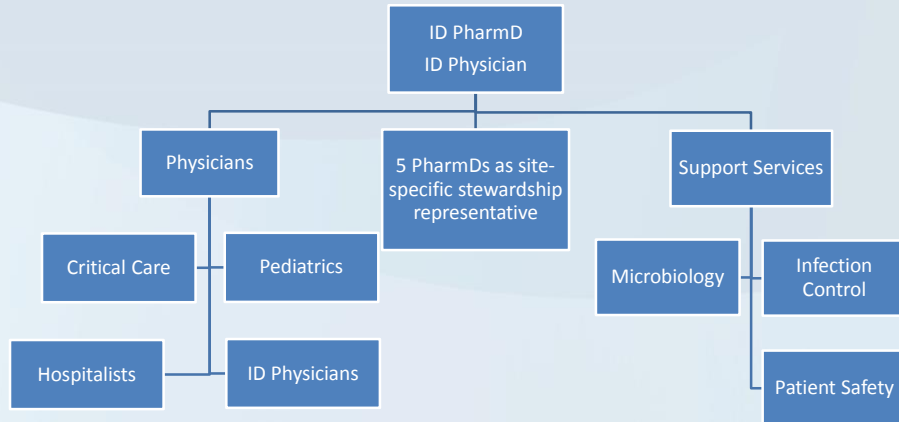
AMS Intranet Webpage

Clinical Decision Support Tool





## System-wide AMS Subcommittee



## Antimicrobial Stewardship @



Home » Antimicrobial Stewardship

### Antimicrobial Stewardship

[Antibiograms](#)

[Antimicrobial Dosing](#)

[Carilion Infection Treatment Guidelines](#)

[Antimicrobial Restriction Policy](#)

[Calendar](#)

[ID Resources](#)

[Antimicrobial Stewardship Documents](#)

[Files](#)

[Feedback](#)

### Infectious Diseases Resources

#### Presentations:

- MDRO Gram Negatives: Are we out of options? (.pdf)
- Bugs and Drugs Review

#### Quick References:

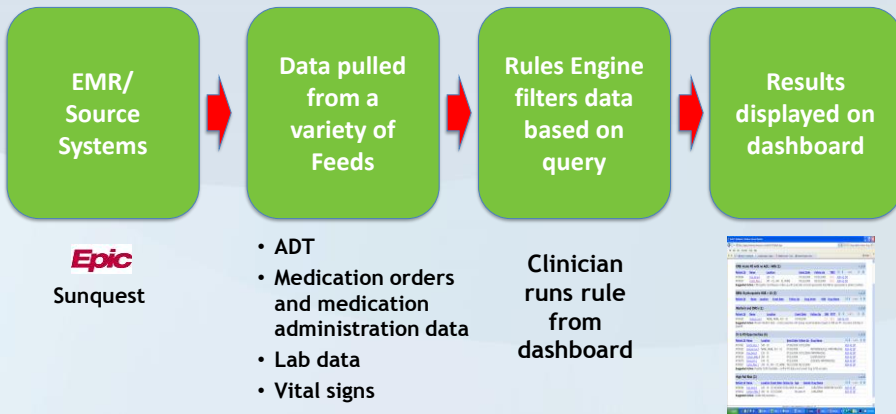
- UTI Management: Outpatient and ED (Pocketcard)
- SSTI Treatment (Pocketcard)
- Identification of Bacteria Flowchart (Pocketcard)
- Bug/Drug Coverage Chart (Pocketcard)
- *Clostridium difficile* Testing Interpretation Guide
- PrePen Criteria For Use
  - Penicillin Allergy Skin Testing Policy
  - PrePen Site (instructional video)

#### Clinical Pearls:

- Inappropriate Double Anaerobic Coverage
- Cefepime Dosing Justification

#### Carilion Resources:

## Clinical Decision Support Tool



## Clinical Decision Support Tool

- AMS visibility at all sites
- Identify previously unidentified opportunities
- Gather information about current practices
- Consistent approach at all sites



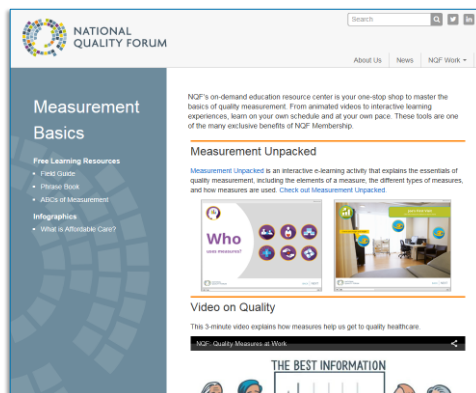
## Your Feedback

### Comments? Questions?



Please type into the chat box anytime

## Additional Resources: Member Education



Access learning tools on-demand, such as webinar recordings, videos, and infographics

[www.qualityforum.org/membership/educationondemand](http://www.qualityforum.org/membership/educationondemand)

Join us for [NQF's Annual Conference](#), April 4-5, 2017  
*Accelerating the National Agenda for Quality Measurement and Value*

## Event Evaluation

We value your feedback



Please take a moment to fill out our event evaluation here:  
<https://www.surveymonkey.com/r/SPJ3FV2>

THANK YOU