

# **Blue Cross Blue Shield of Michigan at 20 Years: A Health Plan Perspective on the Opportunities Associated with Statewide Initiatives Utilizing Clinical Registries**

**Presentation to:  
Council of Medical Specialty Societies**

**May 10, 2018**

**Thomas D. Leyden, MBA  
Director II, Value Partnerships**

# Disclosures and Disclaimers

- Blue Cross Blue Shield Michigan employee
- Nothing to report other than I am very passionate about this program
- CQI program is a 20+ year old program. I'm going to whip through these slides rather quickly. Copies of the slides are being made available to conference attendees
- You have my email. In case you have questions.



# Blue Cross Blue Shield Michigan

- BCBSM headquartered in Detroit, Michigan
- Non profit insurance company founded in 1939
- Largest single-state Blues plan in America;  
Serving 4.5 Million Michigan members and 1.3 million out of state members
- More than 7,000 employees state-wide
- Michigan Blues have largest network in the state
  - More than 150 hospitals
  - Nearly 30,000 physicians
- Last year, BCBSM paid \$21.2 billion in claims to doctors, hospitals, other providers



# Value Partnerships: View from 30,000 Feet

Value Partnerships programs incentivize providers to alter delivery of care by encouraging responsible and proactive physician/surgeon behavior, ultimately driving better health outcomes and financial impact

**BCBSM provides the financing, tools and support...**

**...so physicians can engage in transformative initiatives...**

**...that change the way healthcare is delivered...**

**...and drive meaningful impact for our members.**



# Value Partnerships View of the Health Plan Role

- Convene and catalyze; not engineer and control
- Assemble competitive hospitals/physicians and offer neutral ground for collaboration
- Provide resources to reward infrastructure development and process transformation – often includes provision of financial support for data gathering to participants
- Share data at facility, physician organization, physician practice and physician level
- Reward quality and cost results (improvement and optimal performance) at population level
- Leave management of individual patient care to providers
- A heavy hand prompts the provider community to do least necessary. Empowerment encourages the provider community to do “most possible”





# VALUE

*Hitting the bulls eye  
on the value equation*

**VALUE =**

(of the CQIs)

Appropriateness **×**

Patient Experience **+** Quality

**—**  
Cost



# Collaborative Quality Initiatives (CQIs)



- Statewide quality improvement initiatives, **developed and executed by Michigan physicians and hospital partners** with funding and support from BCBSM and our HMO subsidiary, Blue Care Network
- CQIs utilize comprehensive clinical registries which includes patient risk factors, processes of care, and outcomes of care
- CQIs address areas of care which are highly technical, rapidly-evolving and associated with scientific uncertainty
- Physicians, hospitals, and health systems collect data and collaborate to measure and improve the standard of care in Michigan by focusing on reduction of errors, prevention of complications, and improvement of patient outcomes

***Collaborative Quality Initiatives Transform Care Processes, Improve Outcomes, Save Money, Enhance Community Well Being and Position BCBSM as an Essential Partner to Hospitals and Physicians***



# Collaborative Quality Initiatives Model





# Michigan's Statewide CQIs

Value Partnerships currently administers 18 CQIs (both hospital and professional), covering various areas of care with high costs or high variation in treatment.

Over 3.1 Million Michigan cases currently captured!

- ASPIRE (Anesthesiology)
- BMC2 (Angioplasty/Vascular surgery)
- HMS (Hospital Medicine)
- I-MPACT (Care Transitions)
- MAQI2 (Blood Clot Prevention)
- MARCQI (Knee and Hip)
- MBSC (Bariatric Surgery)
- MEDIC (Emergency)
- MOQC (Oncology) *Practice based*
- MPTQC (Pharmacy) *Practice based*
- MROQC (Radiation Oncology)
- MSQC (General Surgery)
- MSSIC (Spine Surgery)
- MSTCVS (Cardio and Thoracic)
- MTQIP (Trauma)
- MUSIC (Prostate Cancer) *Practice based*
- MVC (Value Collaborative)
- OBI (Low-Risk Cesarean Sections)



# CQI Roles: Who Does What?

## *Blue Cross Blue Shield*



- Offers a neutral ground for competitive hospitals and physicians to collaborate
- Provides program funding and incentive payment design
- Gives clinical and administrative support

- Sets the quality initiative agenda for the program
- Serves as the data repository for participants collecting data
- Provides statistical, analytical, and quality improvement expertise
- Convenes meetings of participating facilities to share data and best practices
- Tracks and evaluates participant engagement and performance
- Increases stringency of quality improvement goals as existing targets are met



## *CQI Coordinating Centers*

- Develops and implement quality initiative efforts within the hospital/physician practice based on consortium experience
- Collects and submits data on cases to the CQI registry
- Shares consortium-produced data with key stakeholders within hospital/practice



## *Participating Hospitals/Physicians*



# Making Great Strides in Michigan

*The numbers really tell  
the story of great  
progress and success*

## Anticoagulation (MAQI2)

**100,000** patients did not  
receive unnecessary testing

## Bariatric Surgery (MBSC)

**778** patients were not  
readmitted to the  
hospital after surgery

## Knee and Hip Replacement (MARCQI)

**32,870** patients avoided a  
blood transfusion

## Trauma Surgery (MTQIP)

**393** patients avoided a  
serious complication or death

## VTE Prevention (HMS)

**1,268** patients avoided  
a potentially major  
bleed

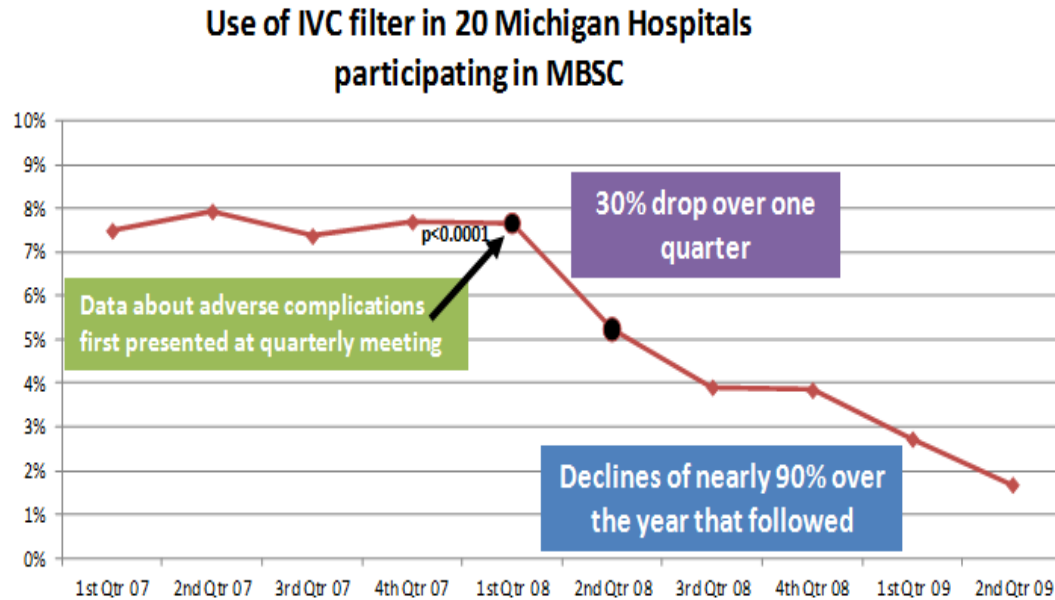
## Cardiac Surgery (MSTCVS)

**1,497** patients did not  
experience prolonged ventilation



# CQI Programs Change How Care is Delivered

Thanks to the work of the Bariatric Surgery collaborative on disseminating best practices and tracking outcomes **3,464 Michigan patients did not receive an IVC filter** (from 2008 –2015)



**Yearly, an average of 433 Michiganders** are positively impacted by this initiative. These patients avoided a preventable procedure, spent less time in the hospital, and had a reduced risk of loss of life or a dangerous event from a blood clot.

The findings have been extensively **published in peer reviewed literature**, and **changed surgical practice nationally**



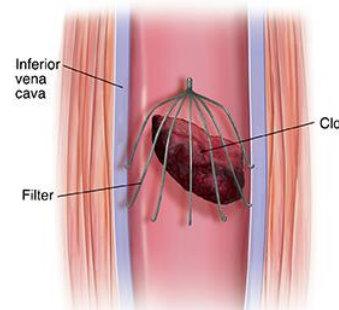
# CQI Programs Change How Care is Delivered



*The Michigan Bariatric Surgery Collaborative (MBSC) helped to change Michigan - and ultimately national - practice patterns around the use of inferior vena cava (IVC) filters following bariatric surgery*

## Background:

- After bariatric surgery, patients are at a higher risk of an artery blockage in the lungs (i.e. pulmonary embolism). This is often caused by a blood clot that moves from the legs to the lung. In many instances, an IVC filter was used by Michigan hospitals, in order to catch a blood clot that has broken off and could cause complications or even death. This IVC filter placement included additional costs associated with the cost of the filter and the additional surgeon time for the placement.



## Finding:

- In 2008, MBSC reviewed all the deaths of Michigan patients after bariatric surgery and found that some of these deaths were **due** to the IVC filter, either because the filter migrated to the heart, or the filter may actually cause blood clots to form. At a quarterly meeting of all participating hospitals, MBSC leadership showed the worse outcomes associated with patients who receive an IVC filter.



# CQI Programs Change How Care is Delivered

## Michigan Impact:

- In the first 3 months following the release of this data, IVC filter use in Michigan hospitals went down by 30%. Over the course of the first year, IVC filter use went down by nearly 90%.
  - This is an astounding adoption of best practices – **a reduction of 90% in just 12 months**
  - National literature indicates that it typically takes **15 years** for evidence based medicine to be fully put into place. In Michigan, we accomplished this in one year.
- These findings were published nationally in peer reviewed literature and were also presented on widely at state and national conferences.
- Today, the use of IVC filters in bariatric surgery in Michigan is at 0%

## National Impact:

- The use of IVC filters nationally has also gone down tremendously. National use has declined to 1%, according to the national Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP)

## Takeaway:

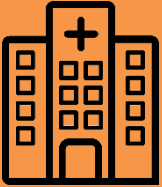
- Confidence in the data collected via the Michigan Bariatric Surgery Collaborative changed Michigan physician practice in a very quick manner.
- Peer reviewed literature and professional presentations coming out of this work led to national adoption of scientifically proven best practices developed in Michigan.
- Better care for all bariatric patients nationally. Reduced costs. Reduced complications and mortality.



# Use of Clinical Registries + Statewide Consortium = Improved Patient Outcomes

## STUDY POPULATION

National Trauma Data Bank  
2009 - 2015



Trauma Center



ACS TQIP



MTQIP



## INTERVENTION

B  
E  
F  
O  
R  
E  
  
V  
S  
  
A  
F  
T  
E  
R



Control



+



+



Quality Improvement  
Program Enrollment in 2011



## OUTCOME

-14.6%

-11.0%

-24.1%

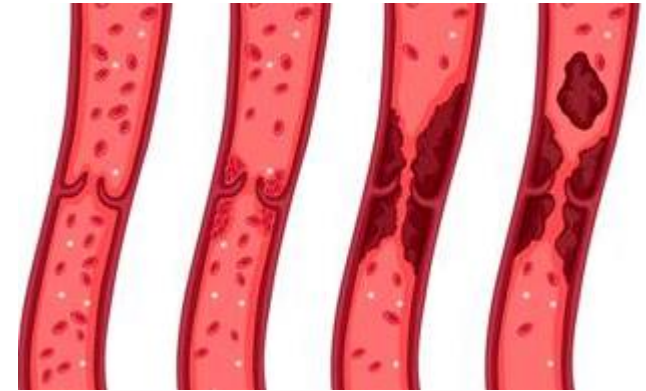
Change in Risk-Adjusted  
Major Complications  
(Percent of Patients)

Hemmila et al. *JAMA Surg.* May 2018.

# Hospital Medicine Safety Consortium:

## VTE Guidelines

- Our **Hospital Medicine Safety (HMS)** consortium has significantly impacted the practice of venous thromboembolism (VTE) prophylaxis in Michigan and across the country.
- In 2010, a goal of the collaborative was to increase anticoagulation for all hospitalized medical patients, a national recommendation by the Agency for Healthcare Research and Quality (AHRQ) .
- Data from over 30 HMS hospitals, showed that **anticoagulant prophylaxis for low VTE risk patients** is of no benefit and can lead to **more harm** due to increased bleeding risk.
- National experts referred to HMS data in recommending a change in practice<sup>1</sup> and in 2012, an updated national guideline<sup>2</sup> recommended against the use of anticoagulants for low VTE risk patients. Also, the Society of Hospital Medicine cited the HMS work as one of the top 10 practice changing articles of the year.



A Venous Thromboembolism is when a blood clot forms in a deep vein. This blood clot can then break off and travel to the lungs, becoming potentially life threatening. Surgical patients and hospitalized patients are at higher risk for blood clots.

#### References:

1. Rothberg, M. Venous Thromboembolism Prophylaxis for Medical Patients: Who Needs It? JAMA IM October 2014
2. Kahn SR, Lim W, Dunn AS, et al. Prevention of VTE in Nonsurgical Patients: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest. 2012; 141(2 Suppl):e195S-e226S





# Michigan Surgical Quality Collaborative: Identifying the Best Antibiotics to Avoid Complications



The Michigan Surgical Quality Collaborative (MSQC) wanted to find the best way to treat infections that commonly result from colon surgery

Physician leads compared infection rates and outcomes against more than 120 different treatment combinations

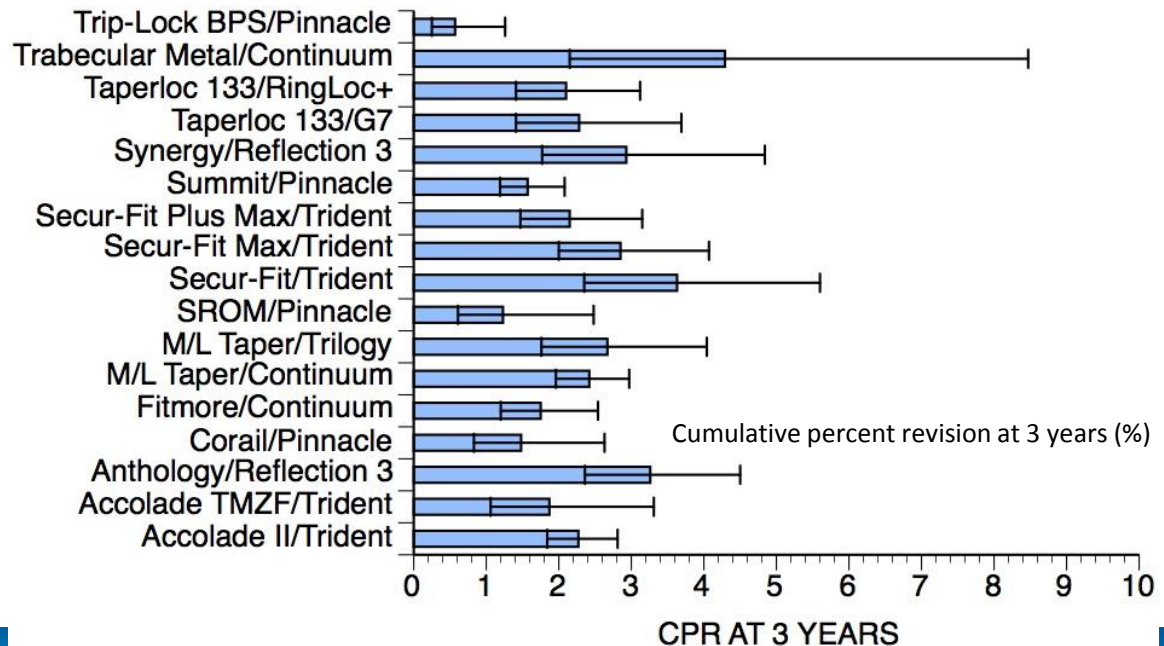
As a result, they identified three antibiotics that worked remarkably well, noting that the other 117 did not



# Michigan Arthroplasty Registry CQI: Implant Registry

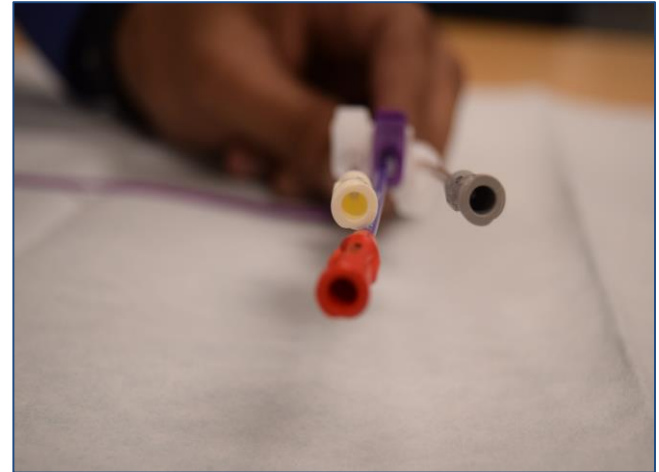
- Many different devices are used for hip and knee implants. Implants have large variation in how likely it will be for a patient to require a second surgery. Michigan Arthroplasty Registry Collaborative Quality Initiative is only registry in US reporting implant-specific revision risk for hip and knee implants
- Surgeons across the country use these data for selecting implants so that they can choose devices that help to avoid a costly second surgery
- MARCQI also works with other registries and the FDA on implant post-market surveillance
  - Through this device MARCQI tracks if a device is recalled and track the hospital that has used that part to let them know of the recall ASAP

Here is an example from MARCQI's data of the differences in revision rates. You can see that the devices vary widely in their risk.



# Hospital Medicine Safety: MAGIC Guidelines

- Our **Hospital Medicine Safety (HMS)** consortium team has revolutionized vascular access across the nation and globally.
- Historically, **limited evidence** existed for clinicians when determining appropriate **use of a PICC** or other vascular access device.
- PICC lines are costly and are associated with significant complications.
- In an effort to improve patient care, **members of HMS** convened a **panel of experts** to develop the **Michigan Appropriateness Guidelines for Intravascular Catheters (MAGIC)<sup>1</sup>**.
- Today, **hospitals and health systems** around **the world** are **adopting these guidelines** to improve patient care. Using data from over 40 Michigan Hospitals, HMS has shown a **decrease in complications related to PICC lines** since the launch of **MAGIC**.



PICC, a vascular access device, stands for peripherally inserted central catheter. It is a small, flexible intravenous (IV) tube that is inserted into a vein in your upper arm and is used to give medications, fluids, blood products, chemotherapy, or nutrition through a vein.

#### References:

1. Chopra V, Flanders S, Saint S, et al. The Michigan Appropriateness Guide for Intravenous Catheters (MAGIC): Results From a Multispecialty Panel Using the RAND/UCLA Appropriateness Method. *Ann Intern Med.* 2015;163(6\_Supplement):S1-S40.



# MPTCQ: Embedding Pharmacists into Patient Care

- The goal of Michigan Pharmacists Transforming Care and Quality (MPTCQ) is to assist physician organizations (POs) with improving patient care and outcomes through integration of clinical pharmacists in direct patient care.
- The American Medical Association (AMA) STEPSForward Modules were designed to assist physicians and other care managers in determining if embedded pharmacist would improve the quality of care of patients. These modules leveraged the work of MPTCQ.
- Six steps of integration are:
  1. Identify roles of pharmacist
  2. Decide how practice can benefit from pharmacist
  3. Find and recruit the right pharmacist
  4. Prepare expectations for care team and patients
  5. Determine needed resources and impact on workflow
  6. Measure impact

The screenshot shows the top of a webpage for the 'Embedding Pharmacists Into the Practice' module. At the top left are the logos for AMA and STEPSforward. To the right are navigation links: HOME, MODULES (with a dropdown arrow), EVENTS, and HOW IT WORKS. Below the navigation is a blue header with the text 'Collaborate with pharmacists to improve patient outcomes.' and the title 'Embedding Pharmacists Into the Practice'. To the right of the title is an illustration of three people (two women and one man) in a diamond shape. Below the title are three columns of text listing the authors: Hae Mi Choe, PharmD (University of Michigan College of Pharmacy, University of Michigan Medical Group, University of Michigan Health System); Connie Jean Standford, MD (University of Michigan Health System, University of Michigan Medical School); and Marie T. Brown, MD, FACP (Rush University, American Medical Association). Below the authors is a star icon and the text 'CME CREDITS: 0.5'. The main content area has the question 'How will this module help me to maximize the role of the pharmacist in my practice?' followed by four numbered points: 1. Details six STEPS to collaborate with a pharmacist or pharmacy technician and evaluate impact; 2. Answers commonly asked questions around integrating pharmacists into your practice; 3. Provides tools and resources to guide you through the process; 4. Outlines case studies describing different approaches to collaboration. To the right of the question are social media share icons (YouTube, LinkedIn, Twitter, Google+, Facebook) and two download buttons: 'Download module as PDF' and 'Download module PowerPoint'. At the bottom of the page are four tabs: 'Online module' (highlighted in blue), 'STEPS in practice', 'Downloadable tools', and 'Implementation support'.



# Bariatric Collaborative's VTE and Complications Calculator: Weigh the Odds

**Patient Outcome**

SEX: F    AGE: 28    WEIGHT: 250    HEIGHT: 5' 7"

VTE RISK: PREDICTED

**0.42%**  
RYGB Lap

VTE Risk

**RYGB Lap**  
Predicted: 0.42%  
Risk Stratification: Low

Risk-Stratified Treatment Guidelines

**RYGB Lap**  
Peri-Operative: LMWH (P)  
Post-Operative: LMWH (P)

**VTE Guidelines**    Clear

Procedure    Demographics    Other

**Procedure \***

Lap Band

RYGB-Open

RYGB-Lap

BDP/DS

Sleeve Gastrectomy

**Demographics**

Weight \*  lbs

Height (ft) \*  ft

- Launched February 2018, this mobile application delivers healthcare providers an easy to use resource for predicting outcomes and VTE risk for bariatric surgery candidates.
- Predicted outcomes include projected weight loss, complication risk, and resolution of comorbidities for the most common bariatric surgical procedures. The VTE calculator provides risk-stratified treatment guidelines.
- Available in the Apple App Store and Google Play stores and therefore has the potential to reach a national and international audience.



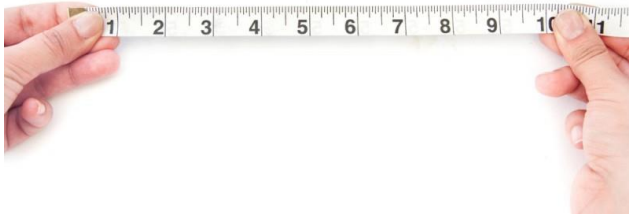
# BMC2: Calculating Angioplasty Complication & Death Risk

The BCBS Michigan Cardiovascular Consortium (BMC2) developed an online tool that allows physicians to calculate a patient's risk of death or complications prior to the procedure.

Physicians can enter in information about a patient's demographics, co-morbidities, and other risk factors and comes back with a risk score that physicians can use to come up with a safe care plan for the patient.

The risk calculator can be viewed on the next slide and accessed at [this link](#).

# RISK

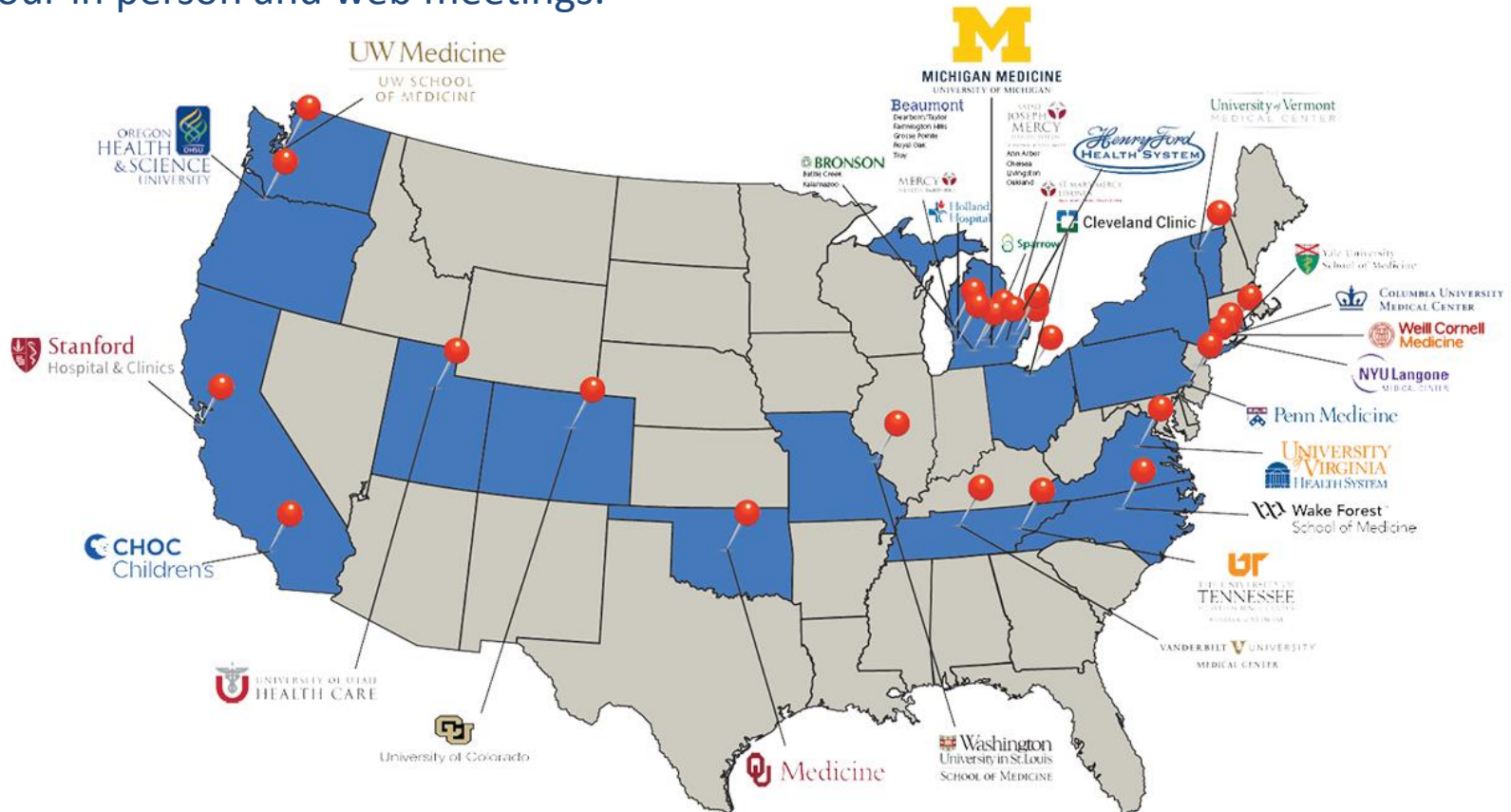


*BMC2 findings were used by the Society of Coronary Angiography and Intervention (SCAI) to develop and release a software application that is available as an online tool or downloadable phone app so physicians nationwide can use this at the point of care.*



# Out of State Sites Participating in ASPIRE CQI

- Approximately half of the sites participating in the Anesthesiology Performance Improvement and Reporting Exchange (ASPIRE) CQI are from out of state.
- These sites submit data, receive site and provider level feedback, and participate in our in person and web meetings.



# CQIs: Giving Michigan Patients a Voice



Several CQIs incorporate the “*voice of the patient.*”

The intent is to provide patients the opportunity to impart a deeper understanding to the physicians involved about what it’s like to share their perspective with the physicians about what it's like to be the patient.





# Incorporating the Voice of the Patient

*Helping the physicians understand what it's like to be the patient.*

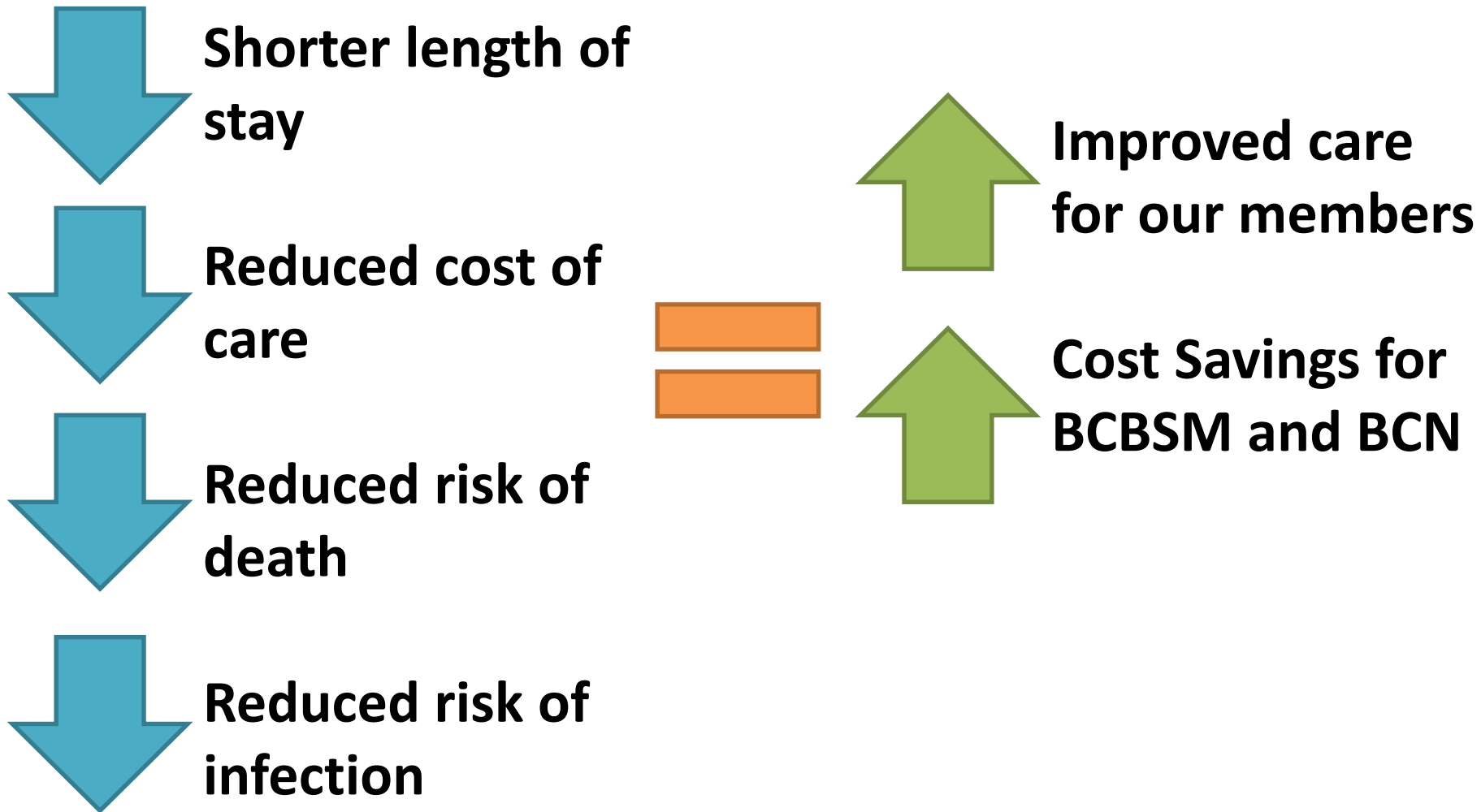
Variety of our CQIs are engaging patients in their ongoing work. Including our bariatric, emergency department, hospitalist, oncology, transitions of care and urology CQIs. Goal is to ensure the collaborative includes the patient perspective in all they do.

Urology collaborative has patient advocates who provide input and participate in all meetings. They also provide input into patient-centered decision making tools regarding active surveillance, peri-operative patient education packets, among other topics. The collaborative also collects patient reported outcomes on functional outcomes (erectile function and urinary incontinence)

MUSIC



# CQI Efforts Improve Patient Care and Lives



# CQIs have Lowered Complication and Mortality Rates for Thousands of Patients, and have Resulted in Substantial Avoided Costs

**\$413  
Million**

Total BCBSM/BCN/MA  
health care  
cost avoidance



**\$1.4  
Billion**

Total statewide  
health care  
cost avoidance

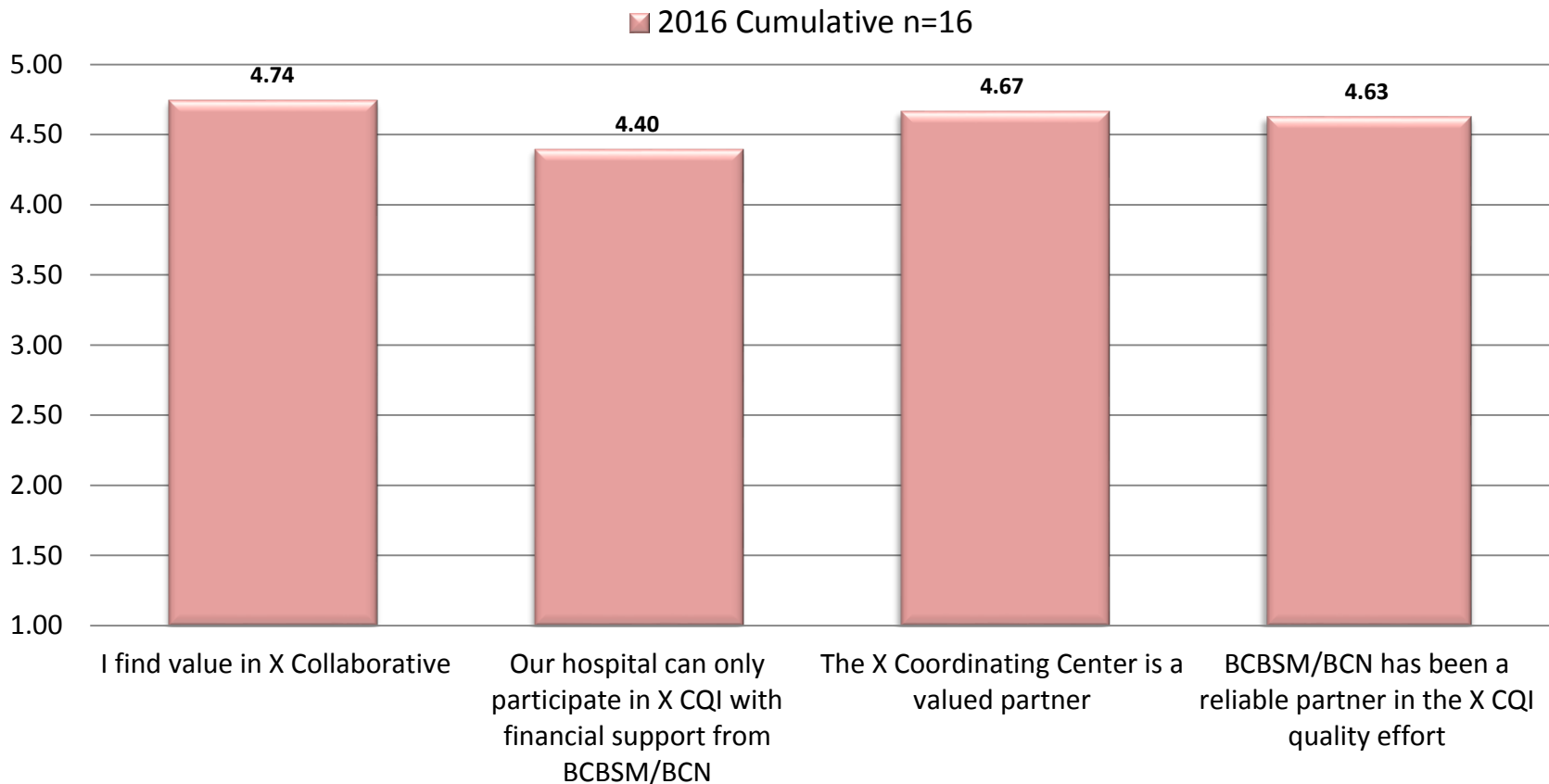
*Cost avoidance evaluations over 7 years (2008-2015)*

*Select CQI quality initiatives evaluated for cost avoidance based on that which can be measured in claims data*

*Actuary Certified*



# Positive Perspectives from the CQI Participants



Scale is 1-5 (strongly disagree- strongly agree)



# Astounding CQI Results Contribute To Our Position As One Of The Premier Blue Plans



BlueCross  
BlueShield  
Association

CQIs have won 14 state and national awards, including multiple “Best of Blues” awards, the Association’s premier award for quality improvement achievements

CQIs have been contributing to peer reviewed literature for over 15 years. CQI findings and results have been published in over 200 articles in 10 years. The International Consortium for Health Outcomes Measurement published a case study on the urology collaborative (MUSIC) and CQI program



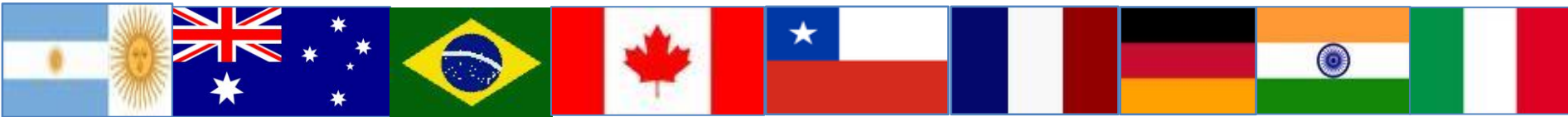
Agency for Healthcare Research and Quality (AHRQ) identified our CQI program as a national best practice that improves health care quality; they asked us to host a webinar to discuss the successes



CQI influence extends beyond Michigan and the United States. CQI results have been presented nationally and internationally more than 150 times in last four years.



# Spreading the CQI Success Story



Blue Cross Blue Shield of Michigan's Value Partnerships programs – particularly our longstanding Collaborative Quality Initiatives – program have been profiled on 5 continents including Argentina, Australia, Brazil, Canada, Chile, China, Costa Rica, France, Germany, Iceland, India, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Portugal, Qatar, Saudi Arabia, Sweden, Switzerland, and the United Kingdom.



# My Favorite CQI Testimonial

From *European Urology* journal (2014)

“The beauty of this experience is that MUSIC’s success came without mandates, financial incentives, legal threats, regulations, or influence from any nonclinical party. The Michigan urologists agreed to set a goal of measuring surveillance rates, and internal reporting and data sharing were all the “teeth” required.”

Matthew R. Cooperberg, MD, MPH, Departments of Urology and Epidemiology and Biostatistics  
University of California, San Francisco, San Francisco, CA



# Annual CQI Funding

## Participation Payment



### *Data Abstraction*

BCBSM/BCN Funds 80% of these costs, hospital participants are responsible for the other 20%

**\$36.3 M**

## Coordinating Center Funding



### *Quality Initiative Leadership*



### *Quality Initiative Infrastructure*

**\$19 M**

## P4P and Value Based Reimbursement



### *Rewarding hospitals' work on CQI related quality efforts*

*In 2017, BCBSM started rewarding physicians through VBR tied to quality efforts*

**\$76.9 M**

**Total of \$132.2 Million in 2016**





# CQI Value Based Reimbursement Opportunities for Physicians

Launched in 2012, the Michigan Urological Surgery Improvement Collaborative (MUSIC), aims to improve the quality of care provided to men with prostate cancer. Currently, 247 specialists (representing 93% of all eligible specialists in Michigan) participate.

## MUSIC CQI (2017 VBR)\*

Measure	Baseline	Target	Status**
Appropriate use of imaging following prostate biopsy	27.1%	26.6%	Achieved 23.9%
Reduce infection following prostate biopsy	5.8%	Maintain at or below baseline	Achieved 5.8%

*\*Measures will remain the same for 2018*

*\*\*No national benchmark*



# In Closing, Hospital CQIs:

## *Harnessing a Unique Asset to the State of Michigan*

- **Strong hospital and physician engagement:**
  - 90 Michigan hospitals actively participate in the CQIs
- **One of the largest collections of clinical data:**
  - More than 500,000 cases were submitted to CQI registries in 2017, equating to more than 3.1 million cases total across all registries
- Puts Michigan in the national and international focus and positions our surgeon leaders as national experts in their fields
- Making Michigan hospitals among the safest in the country
- Brings federal dollars to Michigan to pilot additional improvement efforts
- CQIs are one of the biggest contributors to improved outcomes and averted costs for our members/customers
- Keeps benefit costs low and helps Michigan businesses remain profitable



# Contact Information

Tom Leyden, MBA  
Director II, Value Partnerships Program  
Blue Cross Blue Shield of Michigan  
600 E. Lafayette Blvd., Mail Code 508B, Detroit, MI 48226-2998  
Email: [tleyden@bcbsm.com](mailto:tleyden@bcbsm.com)  
website: <http://valuepartnerships.com>



# Appendices



# CQIs: Robust Registry Data – Over 3.1 Million Cases!

CQI Name	Inception Date	Participant Specialties	Cases in Registry
ASPIRE	2015	Anesthesiologists Certified Registered Nurse Anesthetists	1,578,427
BMC2-PCI	1997 (PCI)	Interventional cardiologists Vascular Surgeons Cardiothoracic Surgeons General Surgeons Interventional Radiologists Neurosurgeons	439,973 (PCI) 23,765 (VS)
HMS	2010	Hospitalists	141,319 (VTE) 25,673 (PICC) 3,318 (Antimicrobial (ABX))
MAQI2	2009	Pharmacists, physicians, and other health professionals who work with patients on anticoagulation therapy	12,908
MARCQI	2012	Orthopedic surgeons Trauma-orthopedic surgeons	151,086
MBSC	2005	Bariatric surgeons	68,184
MEDIC	2016	Emergency physicians	301,918 (31609 in QIs)
MOQC	2009	Medical oncologists (adult)	23,821
MPTCQ	2015	Physician Organizations embedding pharmacists in physician practices to be involved in the patient care model	9,646 Cases 3,962 unique patients



# CQIs: Robust Registry Data – Over 3.1 Million Cases!

CQI Name	Inception Date	Participant Specialties	Cases in Registry
MROQC	2012	Radiation Oncologists	9,858
MSQC	2005	General surgeons Vascular surgeons Colorectal surgeons Otolaryngologists Gynecologists	35,246
MSSIC	2013	Neurosurgeons Orthopedic surgeons	24,211
MSTCVS	2005	Cardiac surgeons Thoracic surgeons Perfusionists	a) 115,364 (Adult Cardiac Surgery) 2006 - March 2016 b) 30,525 (Michigan PERForm Registry) 2010-March 2016 c) 6410 (Non Michigan PERForm Registry) 2010-March 2016 d) 10,457 (General Thoracic) 2007-2015
MTQIP	2011	Trauma surgeons General surgeons Emergency department physicians	123,466
MUSIC	2012	Urologists	36,767 (Cases) 1,499 Patients

