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

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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 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 from 30,000 Feet**

- **Efficient Utilization of Resources**
- **Improved Quality of Care (i.e. reduced mortality, morbidity)**
- **Enhanced Member Experience**
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 (of the CQIs)

Hitting the bulls eye on the value equation

VALUE  

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

- Data reporting
- Development of best practices
- Comprehensive Clinical Registry
- Data collection
- Data analysis
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

Participating Hospitals/Physicians

- Develops and implements 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
Making Great Strides in Michigan

The numbers really tell the story of great progress and success

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

Anticoagulation (MAQI2)

100,000 patients did not receive unnecessary testing

Bariatric Surgery (MBSC)

778 patients were not readmitted to the hospital after surgery

CQI
Transforming Health Care

Blue Cross Blue Shield of Michigan and Blue Care Network are nonprofit corporations and independent licensees of the Blue Cross and Blue Shield Association.
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).

**Use of IVC filter in 20 Michigan Hospitals**

participating in MBSC

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

INTERVENTION
Control
Quality Improvement Program Enrollment in 2011

OUTCOME
Change in Risk-Adjusted Major Complications (Percent of Patients)
-14.6%
-11.0%
-24.1%

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 and in 2012, an updated national guideline 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:
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)\(^1\).

- 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:
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
Bariatric Collaborative’s VTE and Complications Calculator: Weigh the Odds

- 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.
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.

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).
CQI Efforts Improve Patient Care and Lives

- Shorter length of stay
- Reduced cost of care
- Reduced risk of death
- Reduced risk of infection

Improved care for our members

Cost Savings for BCBSM and BCN
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

- I find value in X Collaborative: 4.74
- Our hospital can only participate in X CQI with financial support from BCBSM/BCN: 4.40
- The X Coordinating Center is a valued partner: 4.67
- BCBSM/BCN has been a reliable partner in the X CQI quality effort: 4.63

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

2016 Cumulative n=16
Astounding CQI Results Contribute To Our Position As One Of The Premier Blue Plans

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)**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Baseline</th>
<th>Target</th>
<th>Status**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate use of imaging following prostate biopsy</td>
<td>27.1%</td>
<td>26.6%</td>
<td>Achieved 23.9%</td>
</tr>
<tr>
<td>Reduce infection following prostate biopsy</td>
<td>5.8%</td>
<td>Maintain at or below baseline</td>
<td>Achieved 5.8%</td>
</tr>
</tbody>
</table>

*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

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

<table>
<thead>
<tr>
<th>CQI Name</th>
<th>Inception Date</th>
<th>Participant Specialties</th>
<th>Cases in Registry</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASPIRE</td>
<td>2015</td>
<td>Anesthesiologists</td>
<td>1,578,427</td>
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<tr>
<td></td>
<td></td>
<td>Certified Registered Nurse Anesthetists</td>
<td></td>
</tr>
<tr>
<td>BMC2-PCI</td>
<td>1997 (PCI)</td>
<td>Interventional cardiologists</td>
<td>439,973 (PCI)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vascular Surgeons</td>
<td>23,765 (VS)</td>
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<td></td>
<td></td>
<td>Cardiothoracic Surgeons</td>
<td></td>
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<td></td>
<td></td>
<td>General Surgeons</td>
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<tr>
<td></td>
<td></td>
<td>Interventional Radiologists</td>
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<tr>
<td></td>
<td></td>
<td>Neurosurgeons</td>
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<tr>
<td>HMS</td>
<td>2010</td>
<td>Hospitalists</td>
<td>141,319 (VTE)</td>
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<td></td>
<td></td>
<td></td>
<td>25,673 (PICC)</td>
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<td></td>
<td></td>
<td></td>
<td>3,318 (Antimicrobial (ABX))</td>
</tr>
<tr>
<td>MAQI2</td>
<td>2009</td>
<td>Pharmacists, physicians, and other health professionals who work with patients on anticoagulation therapy</td>
<td>12,908</td>
</tr>
<tr>
<td>MARCQI</td>
<td>2012</td>
<td>Orthopedic surgeons</td>
<td>151,086</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trauma-orthopedic surgeons</td>
<td></td>
</tr>
<tr>
<td>MBSC</td>
<td>2005</td>
<td>Bariatric surgeons</td>
<td>68,184</td>
</tr>
<tr>
<td>MEDIC</td>
<td>2016</td>
<td>Emergency physicians</td>
<td>301,918 (31609 in QIs)</td>
</tr>
<tr>
<td>MOQC</td>
<td>2009</td>
<td>Medical oncologists (adult)</td>
<td>23,821</td>
</tr>
<tr>
<td>MPTCQ</td>
<td>2015</td>
<td>Physician Organizations embedding pharmacists in physician practices to be involved in the patient care model</td>
<td>9,646 Cases</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>3,962 unique patients</td>
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<th>Cases in Registry</th>
</tr>
</thead>
<tbody>
<tr>
<td>MROQC</td>
<td>2012</td>
<td>Radiation Oncologists</td>
<td>9,858</td>
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<tr>
<td>MSQC</td>
<td>2005</td>
<td>General surgeons</td>
<td>35,246</td>
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<td></td>
<td></td>
<td>Vascular surgeons</td>
<td></td>
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<td></td>
<td></td>
<td>Colorectal surgeons</td>
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<td></td>
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<td>Otolaryngologists</td>
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<td></td>
<td></td>
<td>Gynecologists</td>
<td></td>
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<tr>
<td>MSSIC</td>
<td>2013</td>
<td>Neurosurgeons</td>
<td>24,211</td>
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<tr>
<td></td>
<td></td>
<td>Orthopedic surgeons</td>
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<tr>
<td>MSTCVS</td>
<td>2005</td>
<td>Cardiac surgeons</td>
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<td></td>
<td></td>
<td>Thoracic surgeons</td>
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<td></td>
<td></td>
<td>Perfusionists</td>
<td></td>
</tr>
<tr>
<td>MTQIP</td>
<td>2011</td>
<td>Trauma surgeons</td>
<td>123,466</td>
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<td></td>
<td></td>
<td>General surgeons</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Emergency department physicians</td>
<td></td>
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<tr>
<td>MUSIC</td>
<td>2012</td>
<td>Urologists</td>
<td>36,767 (Cases)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1,499 Patients</td>
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