



# **Michigan Urological Surgery Improvement Collaborative**

## **Making Michigan #1 in Prostate Cancer Care**

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**February 10, 2015**



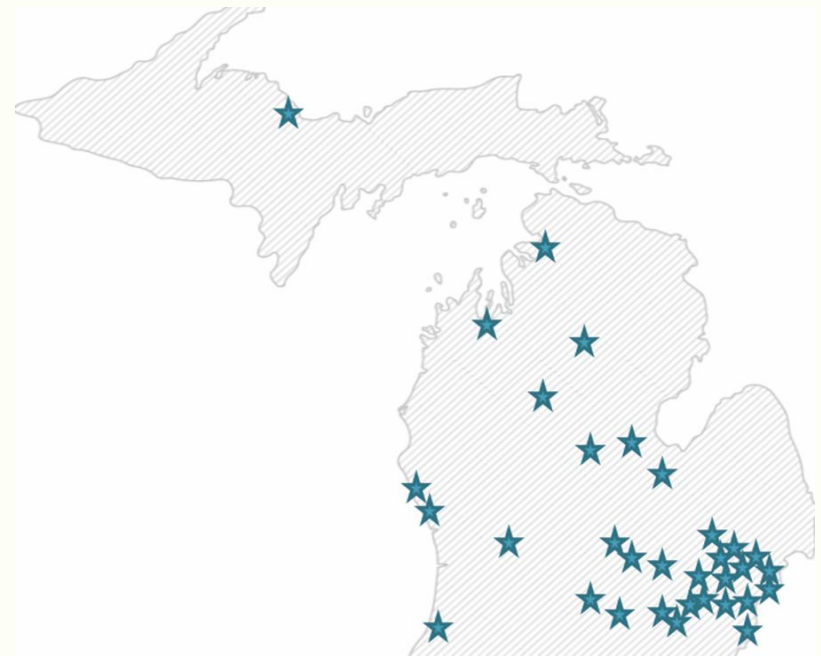
# Vital statistics

## ● MUSIC Participants:

- 42 practices
- 235 urologists (~90% of urologists in state)
- 4 patient advocates

## ● Data Collection:

- 36 practices
- More than 15,000 cases in the registry
  - > 13,500 biopsies and 2,800 radical prostatectomies





# Current QI Activities

1. **Appropriate imaging**
1. **Safer prostate biopsy**
2. **Improve radical prostatectomy perioperative and functional outcomes**
3. **Appropriate treatment**

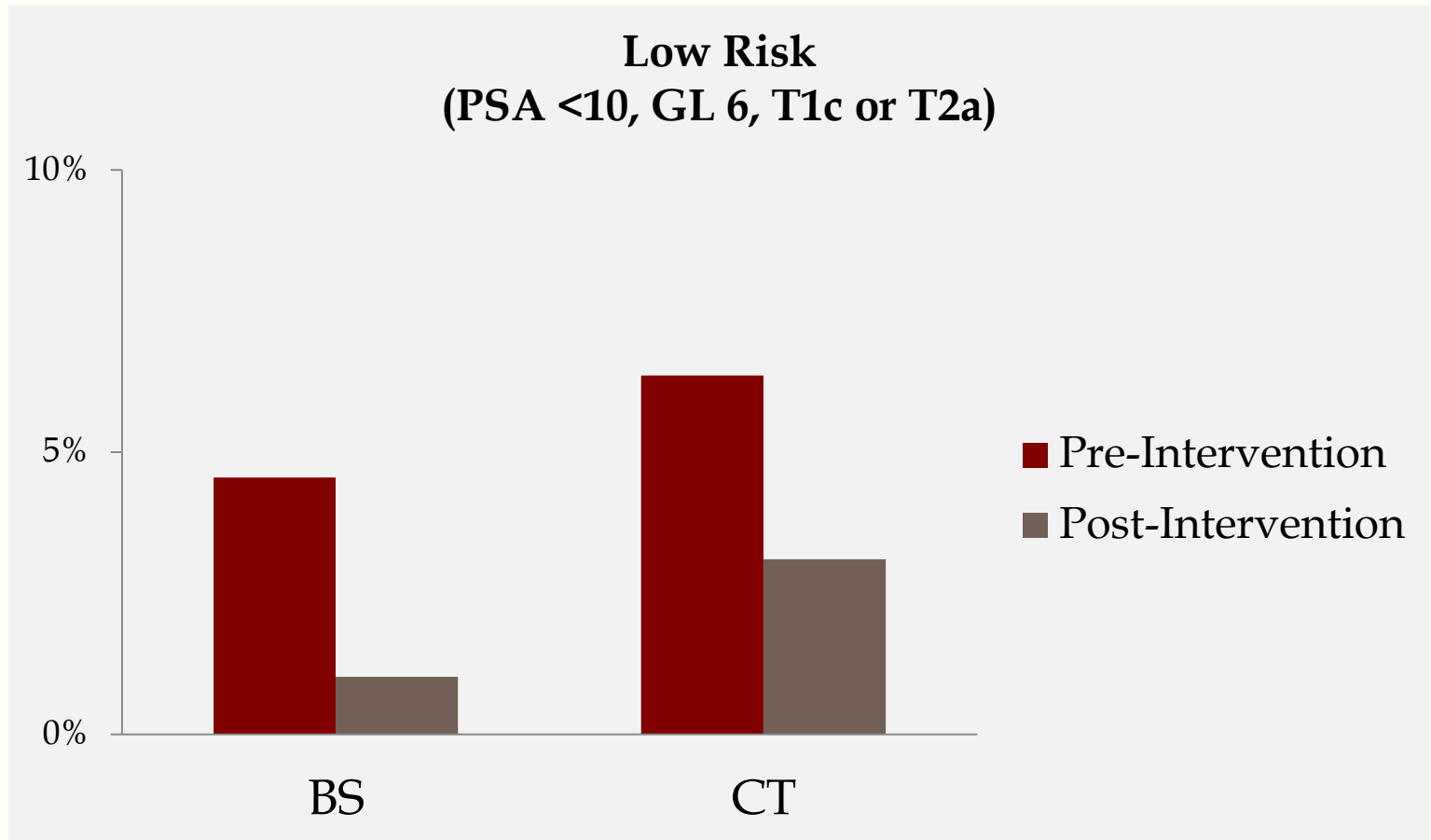


# 1. Appropriate Imaging

**Rationale: Focus of AUA  
Choosing Wisely Campaign**



# Imaging





# Imaging

- MUSIC data demonstrated a + Bone Scan or CT Scan for intermediate risk patients was *rare* (<1%)
- Developed imaging *appropriateness criteria* based on literature review, guidelines, and MUSIC data with collaborators from UM Industrial Engineering



# MUSIC Imaging Appropriateness Criteria

- Order a Bone Scan if:
  - » Gleason Score  $\geq 8$
  - or
  - » PSA  $>20$
- Order a CT Scan if:
  - » Gleason Score  $\geq 8$
  - or
  - » PSA  $>20$
  - or
  - » Clinical T Stage  $\geq T3$

**“Do when you should,  
don’t when you shouldn’t”**



# MUSIC Imaging Appropriateness Criteria

## Imaging Goals

**Perform Imaging in  
 $\geq 95\%$  of patients  
meeting criteria**

**Perform imaging in  
 $< 10\%$  of patients  
NOT meeting criteria**

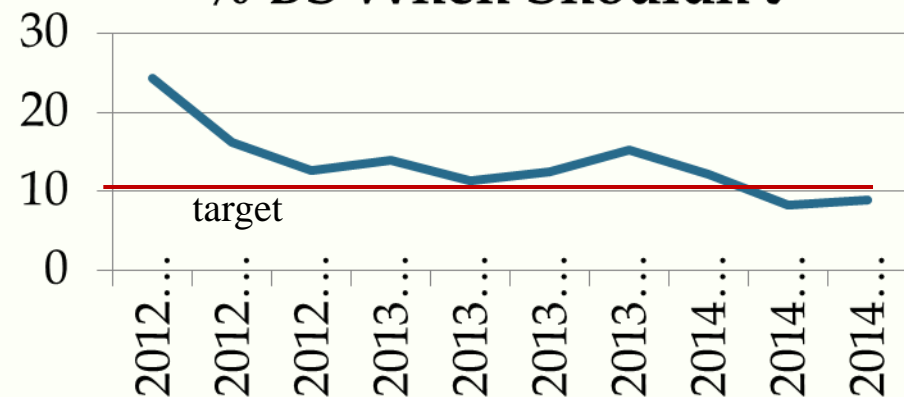
**“Do when you should,  
don’t when you shouldn’t”**



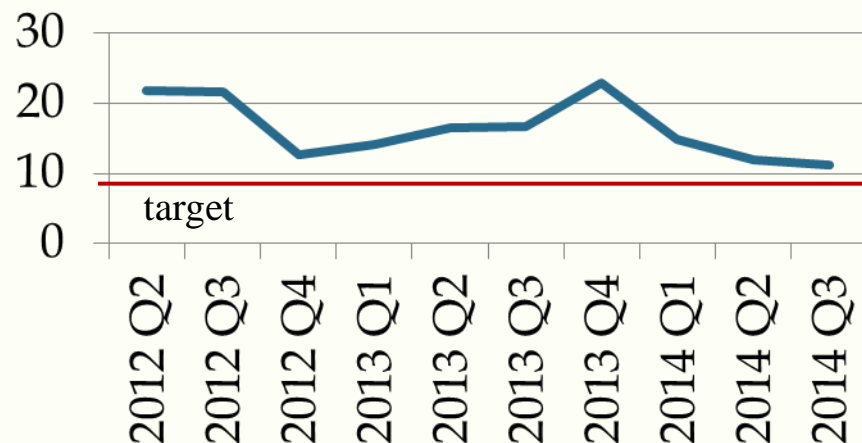


# Imaging Appropriateness: Collaborative Wide

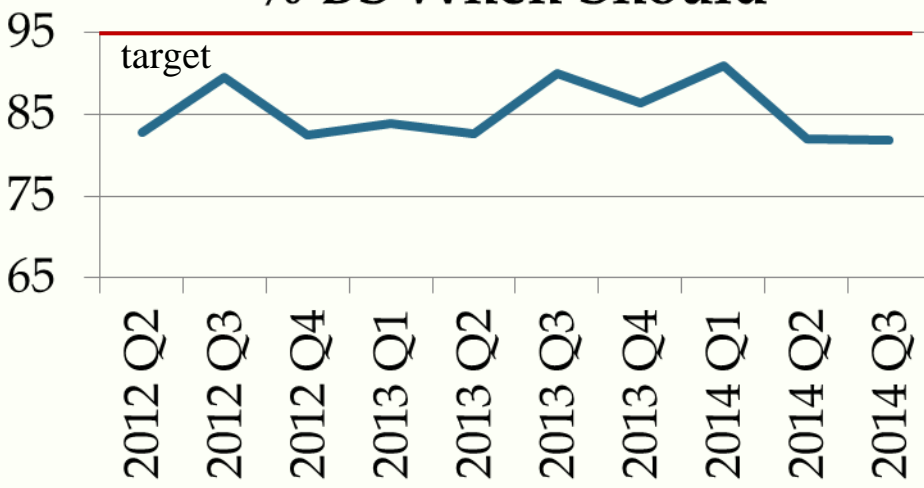
## % BS When Shouldn't



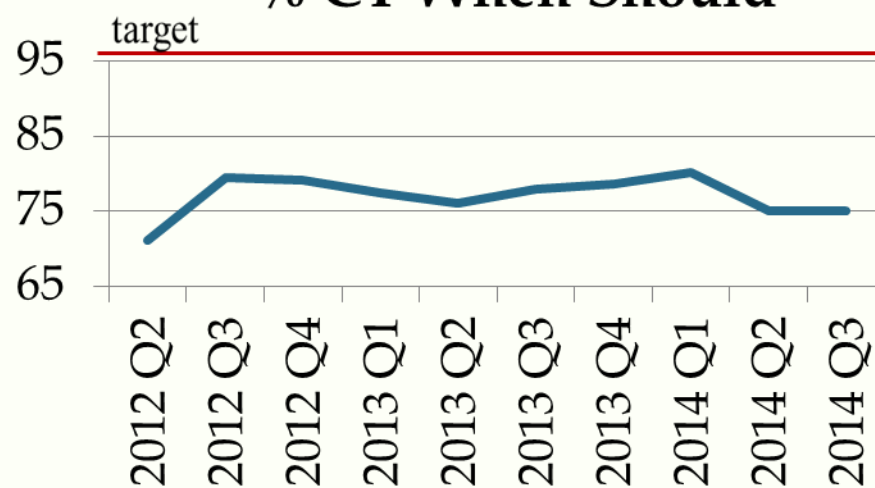
## % CT When Shouldn't



## % BS When Should



## % CT When Should





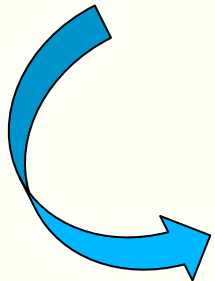
## **2. Making Prostate Biopsy Safer**

**Rationale: Increasing sepsis rate nationally to 2-4 % of biopsies**



# Reducing prostate biopsy-related hospitalizations

- Baseline prostate biopsy-related hospitalization rate of 1.26%
- 92% of hospitalizations due to infection
- 79% of cultures identified a fluoroquinolone resistant organism



The challenge is addressing fluoroquinolone resistance



# Pathways for addressing Fluoroquinolone resistance

## Culture-Specific Antibiotics (Rectal Swab Culture) \* (See IV for High-Risk patients)

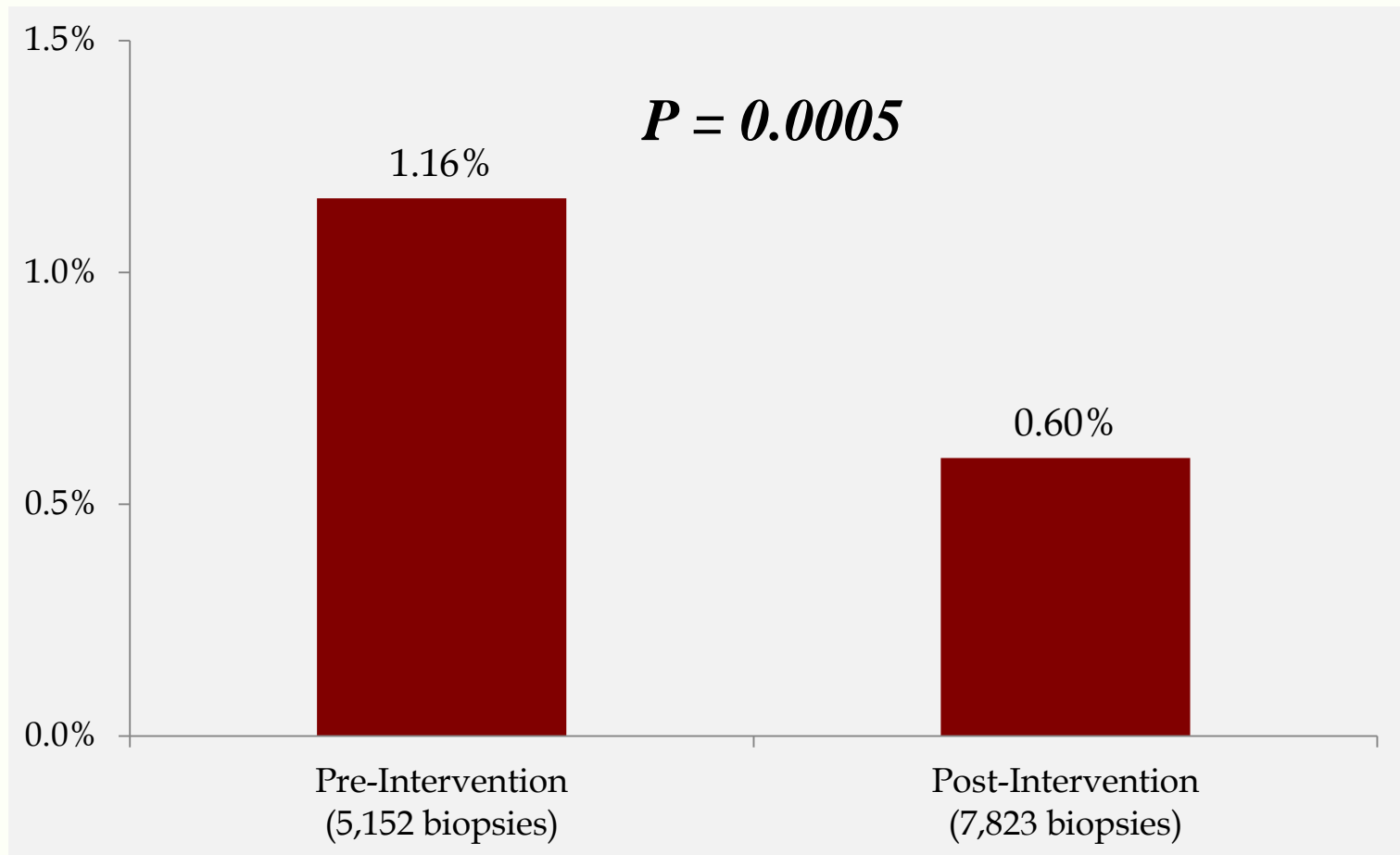
<i>Culture Sensitive to Ciprofloxacin:</i>	<i>Culture Resistant to Ciprofloxacin but sensitive to TMP/SMX or Cephalosporins:</i>	<i>Culture Resistant to Ciprofloxacin, Cephalosporins, TMP/SMX:</i>
Ciprofloxacin PO	Culture directed antibiotics: (e.g., TMP/SMX PO, Cefazolin IM, Ceftriaxone IM)	Gentamicin IM + / – Clindamycin IM

## Augmented Antibiotics (No Culture Available)

<i>Antimicrobial of Choice:</i>	<i>Alternate Antimicrobials:</i>	<i>Allergic to Penicillins, Fluoroquinolones, and Cephalosporins:</i>
Fluoroquinolone (Cipro) PO + Gentamicin IM	Fluoroquinolone (Cipro) PO + Cefazolin IM <b>or</b> Alternative based on local antibiogram (e.g., Cefuroxime, Zosyn)	Gentamicin IM + / – Clindamycin IM



# Collaborative-wide hospitalization rates





### **3. Improving perioperative and functional outcomes after radical prostatectomy**

**Rationale: Morbidity of RP major driver in early detection debate**



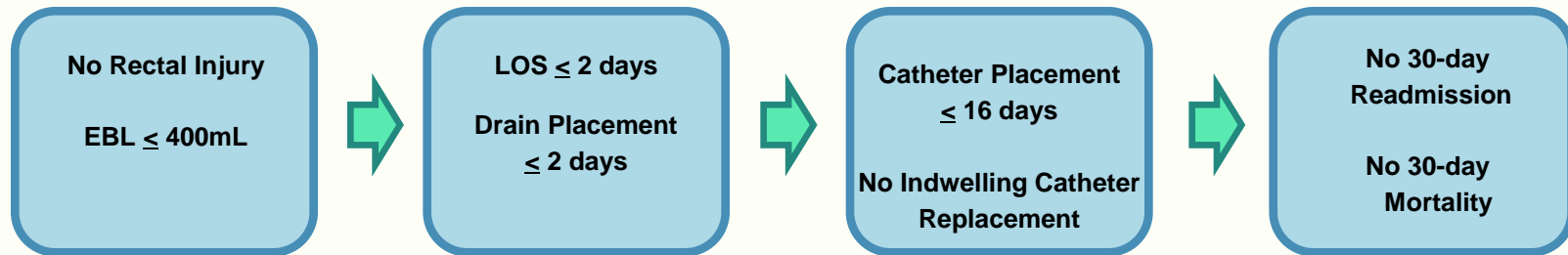
# Post Prostatectomy Perioperative Care

- At Jan 2014 MUSIC meeting, we presented data that showed our initial method of tracking complications was not reliable or actionable
- Thus, on March 20, 2014, we changed to tracking how cases followed an *“uncomplicated”* pathway of post-op recovery



# MUSIC-Notable Outcomes and Trackable Events after Surgery (NOTES)

## Uncomplicated Recovery Pathway

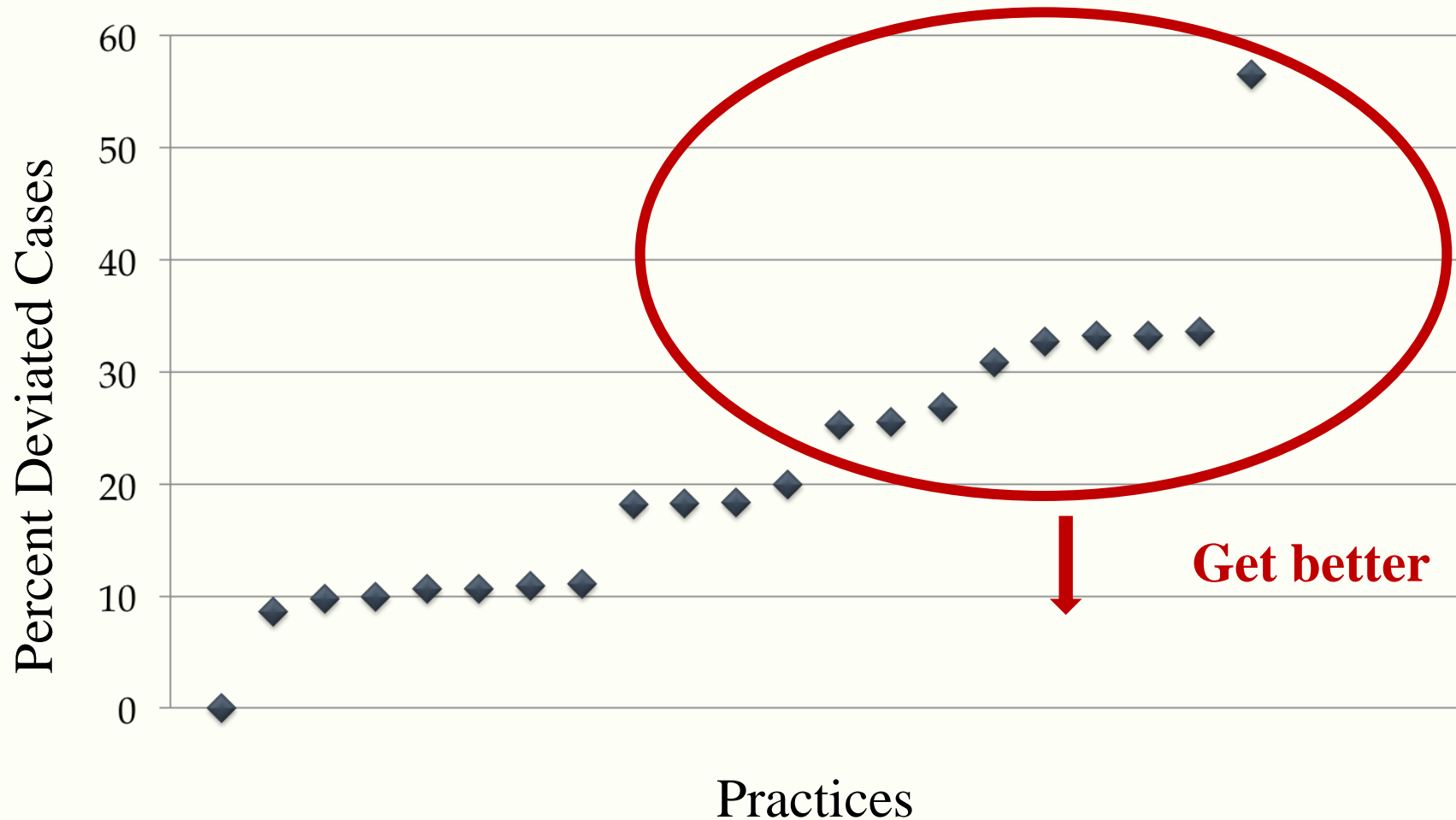


**This pathway allows us to collect objective data that can show a surgeon how perioperative care varies and represents unanticipated events (complication) that can negatively impact patient short-term recovery**





# Overall Case Deviation (at least one deviation)



# NOTES report



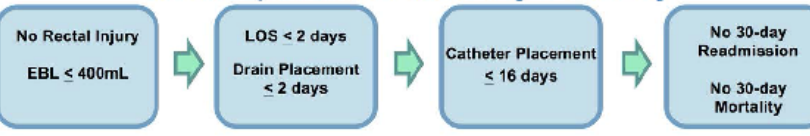
## MUSIC NOTES

NOTABLE OUTCOMES and TRACKABLE EVENTS after SURGERY

Surgeon #####

Data from 4/1/2014 to 6/30/2014

### Uncomplicated Recovery Pathway



#### Cases Deviated from Pathway:

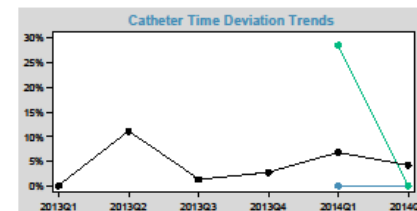
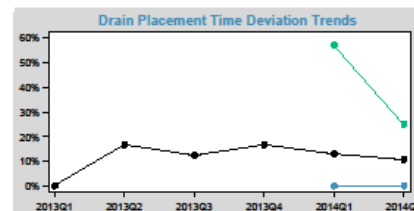
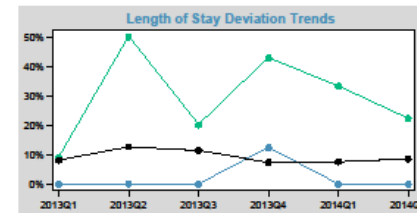
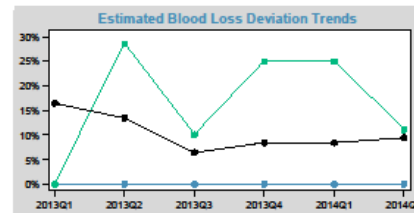
Surgeon ##### 2.9%

Practice ### 33.3%

Full Collaborative\* 19.8%

\* excluding this practice  
**Bold Red** indicates values significantly worse than Collaborative  
**Bold Green** indicates values significantly better than Collaborative

Deviations from Pathway	Percentage Deviated Cases		
	Surgeon (n=35)	Practice (n=69)	Collaborative (n=2093)
Rectal Injury	0.0%	0.0%	0.1%
EBL > 400mL	<b>0.0%</b>	18.2%	11.3%
LOS > 2 days	2.9%	<b>29.0%</b>	9.6%
Drain Placement > 2 days	0.0%	<b>36.8%</b>	11.6%
Catheter Placement > 16 days	0.0%	10.0%	5.0%
30-day Readmission	0.0%	0.0%	1.2%
30-day Mortality	0.0%	0.0%	0.1%



BLUE represents this Surgeon's data - GREEN represents this Practice's data - BLACK represents the Collaborative-wide data (excluding this practice)



# MUSIC Patient Reported Outcomes: so far...

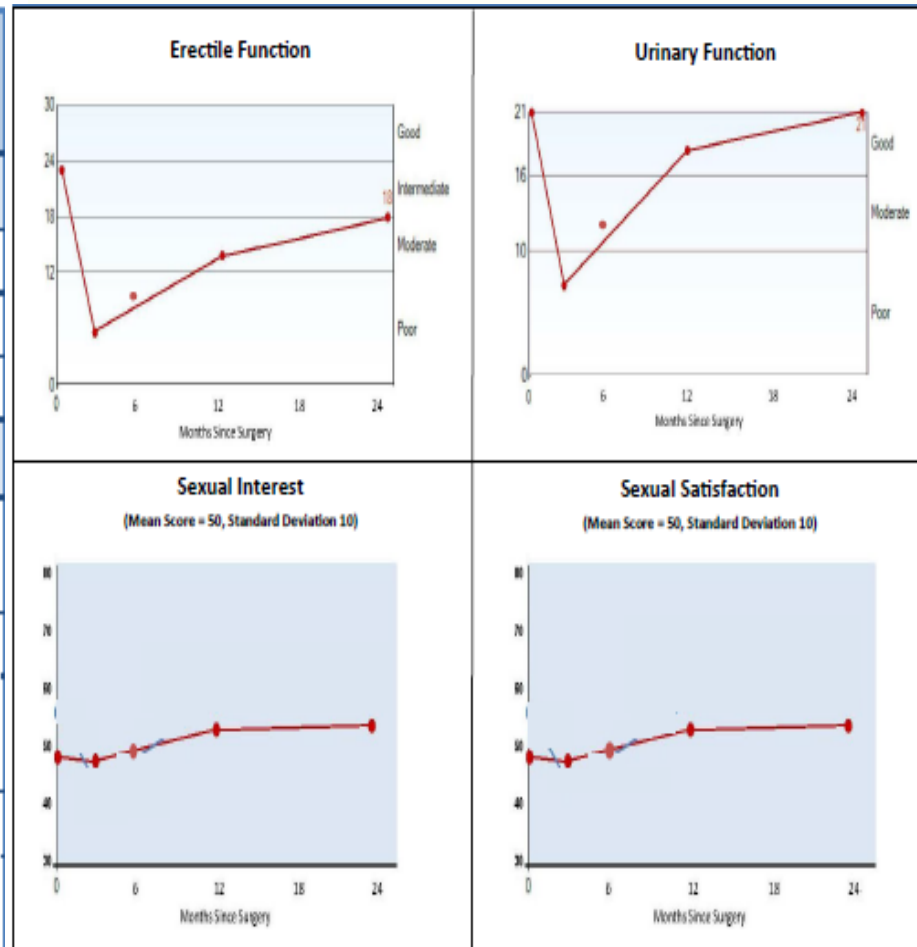
	MUSIC Goals	Baseline	3 month	6 month
Patients Enrolled	99%	86%	97%	100%
Questionnaire Completed	75%	94%	89%	97%
Paper Questionnaires	<20%	31%	29%	30%
Patient Requiring Phone Calls	TBD	24%	20%	9%

**Table Legend:** ●: >10% of MUSIC Goals    ●: <10% of MUSIC Goals    ●: Goal Met



# Patient Reported Outcomes: Trend Report

<b>JOHN DOE</b>		<b>Prostatectomy</b>
<b>DOB: 01/01/1901</b>	<b>Today's Date: 12/10/2013</b>	<b>Surgery date: 08/05/2010</b>
<b>Demographic, Lab and Pathology Data</b>		
<b>Age: 66</b>	<b>Months since surgery: 30</b>	
<b>Current PSA: &lt;.01</b>	<b>Current PSA date: 07/10/2010</b>	<b>Pre-op PSA: 5.5 ng/ml</b>
<b>Pathology Stage: T2b N0 M0</b>	<b>Pathology Gleason Score: 3 + 4</b>	<b>Margin status: Negative</b>
<b>Survey Data</b>		
<b>Survey completed:</b> 01/15/2013	<b>Quality of Life (current): 8/10</b>	<b>Bowel Function:</b> No bowel symptoms
<b>Erectile Function</b>		
<b>Baseline: 24/30</b>	<b>Current: 18/30</b>	<b>Current Erectile Aids Used:</b> Viagra—use it sometimes
<b>Urinary Function</b>		
<b>Baseline: 21/21</b>	<b>Current: 21/21</b>	<b>Current Pad Use:</b> None





# The opportunity in Michigan: 12 case pilot video review assessment

**Video Review List // Video Review**

Review ID: 6, Procedure: Bladder Neck, Review Type: Radical Prostatectomy, Status: Open, Number of Reviews Completed: 2

**GEARS REVIEW**  
Please rate, where 1 is poor and 5 is good

DEPTH PERCEPTION \*  
1 2 3 4 5

BIMANUAL DEXTERITY \*  
1 2 3 4 5

EFFICIENCY \*  
1 2 3 4 5

FORCE SENSITIVITY \*  
1 2 3 4 5

AUTONOMY \*  
1 2 3 4 5

ROBOTIC CONTROL \*  
1 2 3 4 5

OVERALL RESULTS \*

COMMENTS

- Is video assessment by peers or “crowd” feasible?---YES
- Are measurable differences evident between surgeons?---YES
- Does technique/skill correlate with outcomes?---?
- Can coaching improve performance?---?



## **4. Appropriate Treatment**

**Rationale: great concern regarding overtreatment**



# Active Surveillance: favorable practice patterns in Michigan

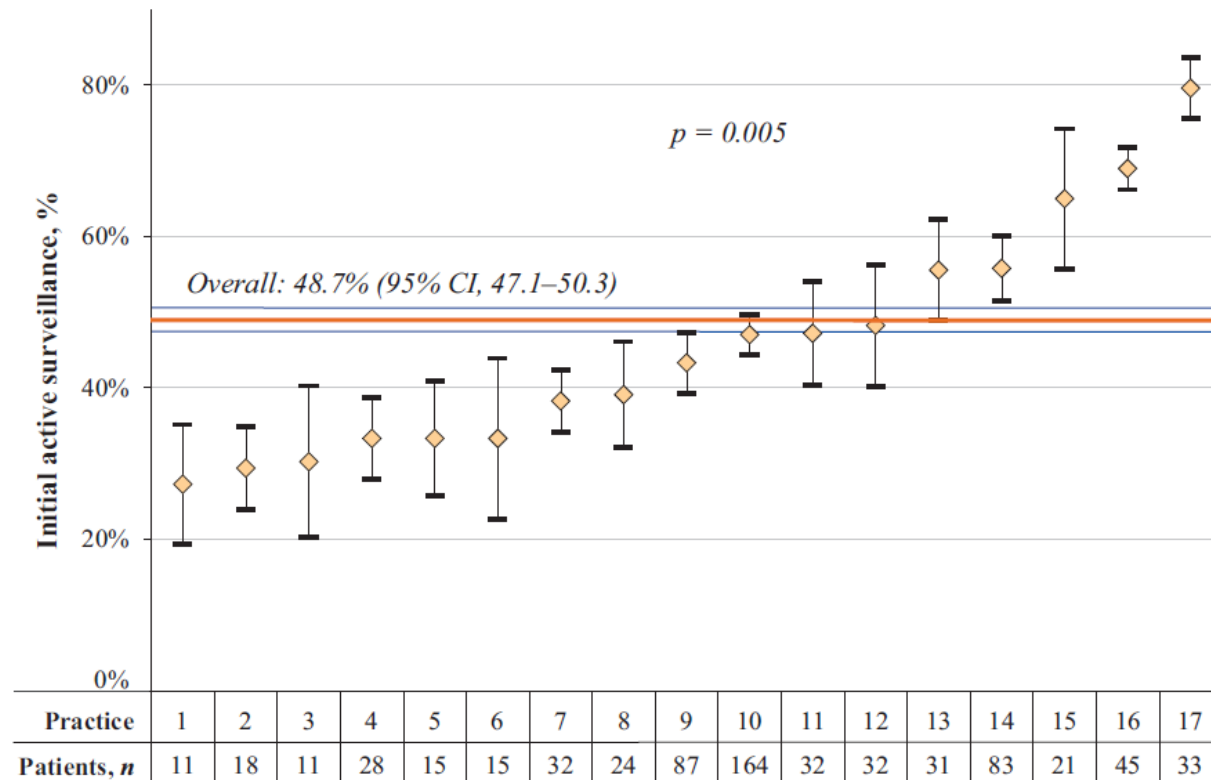
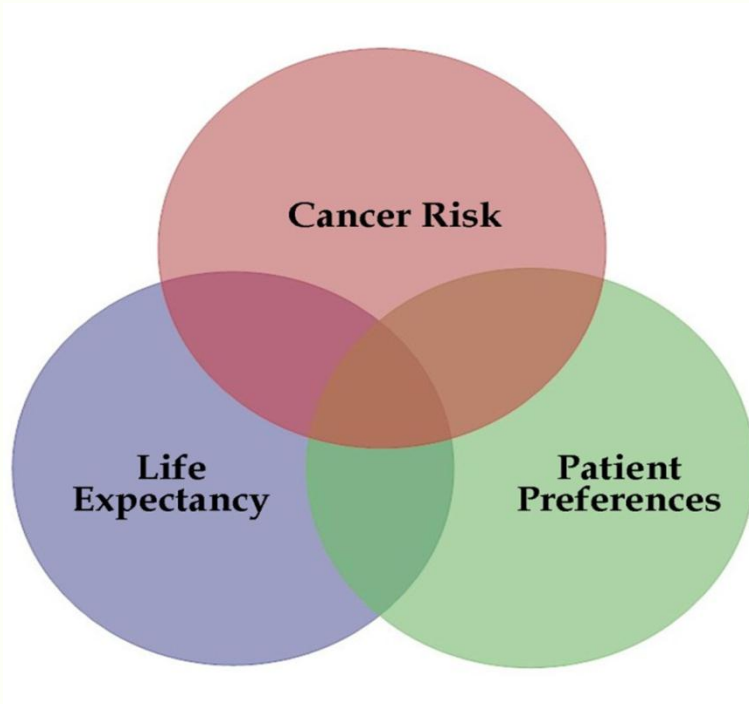


Fig. 3 – Adjusted likelihood of active surveillance for men with low-risk prostate cancer, stratified by Michigan Urological Surgery Improvement Collaborative practices. Model adjusts for age, Charlson Comorbidity Index score, number of positive cores, and primary payer. CI = confidence interval.



# Variation and Appropriate Treatment

- Variation is appropriate when it can be explained by factors that are considered relevant in treatment decisions

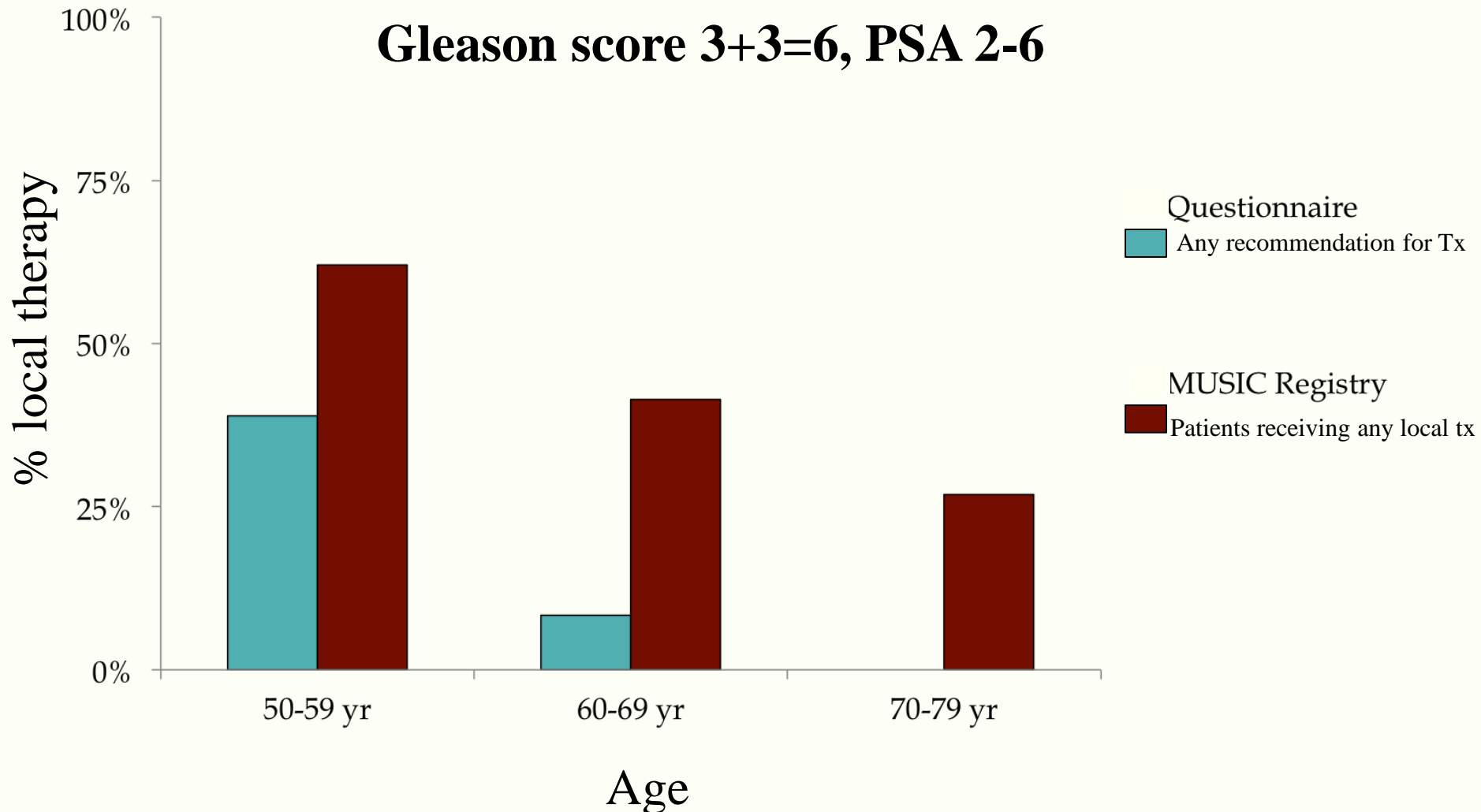


Variation is *inappropriate* when explained by insurance status, ethnicity, ancillary profit, etc.





# Treatment and Life Expectancy





# **MUSIC development of Appropriate Use Criteria**

- **Well-developed RAND/UCLA Method**
- **Panel of physicians create a series of detailed clinical scenarios based on a list of parameters**
- **A defined process is used to score specific clinical scenarios as “Appropriate”, “Uncertain”, “Inappropriate”**
- **The measures must recognize that patient preferences will trump the criteria in some cases**



# Demonstrating the Value of MUSIC



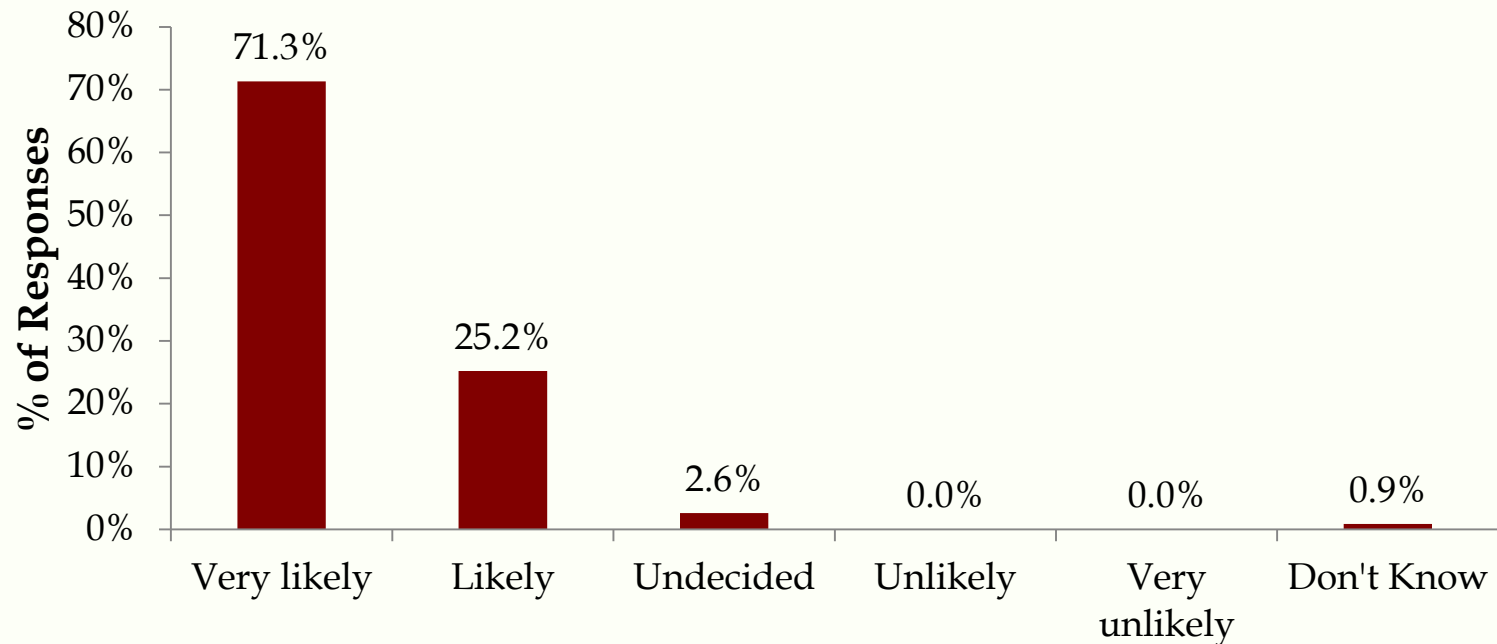
# Participant Engagement

- **Recruitment trips and site visits**
- **Regular provider interaction through emails and phone calls**
- **Commitment to excellent customer service**
- **Working groups (3 – 6 members) focused on each QI priority**
- **Health Policy/Administrative Benefits:**
  - » **PQRS Qualified Clinical Data Registry**
  - » **CME**



# Value to clinicians

**How likely would you be to recommend MUSIC to other urologists who are not members of the collaborative?**





# Value expressed by a MUSIC patient advocate

*“I just wanted to give you my two cents worth about the subject conference call. My thought is that a video is an excellent way for all to improve. An individual may be doing something a specific way and may not realize that a minor change could have a significant impact on the result. It is a great challenge and a very noble effort to make outcomes for patients better.*

*Thanks for having me part of this interesting process.”*



# Shameless Promotion of MUSIC

*“Perhaps equally important to the data collected are the model and methods themselves. It is remarkable that the MUSIC voluntary effort includes nearly 90 per cent of the urologists in Michigan. This type of clear headed and proactive cooperative thinking and pooling of data which combines best patient guidelines/recommendations with health system financial considerations for medical practice patterns should serve as a model for emulation across the whole span of clinical practice issues.”*

Sagalowsky (UTSW), Editorial in *Urology*



# “Value” framework

$$*Value = Appropriateness \left( \frac{Outcomes}{Cost} \right)$$

Appropriateness = appropriateness score + patient preference

Outcomes = peri-op score + PRO score + cancer control

**For the first time, I think we can actually tackle *value* because we can quantify appropriateness, outcomes, and cost**

\*Adapted from D. Spahlinger





# Thank you

