AUA Quality Improvement Summit

Urologist Led Success Stories in Stewardship of Imaging for Prostate Cancer

Jim Montie MD
Co-Director
MUSIC
• MUSIC contract from BCBS Michigan
• Histosonics shareholder
Imaging in MUSCI

- One success with BS and CT
- One “jury still out” with MR
A consortium of urologists and urology practices throughout the State that aims to improve the quality and cost-efficiency of care provided to men in Michigan with prostate cancer

**Our Goal:** Make Michigan #1 in Prostate Cancer Care
Principles

• Collegial
• Non-competitive
• Evidence-based
• Confidential
• No “billboards”

• Actionable data
• Focus on effectiveness
• Make a contribution
• No secrets
Initial Focus: Prostate Cancer Care

- Registry established with vendor Arbormetrix
  - 150 data variables
- Trained data abstractors & Coordinating Center support
- Clinical champion at each site
- Collaborative-wide meetings 3x/year
- Projects chosen by members, not Coordinating Center
MUSIC vital statistics 2017

- 261 Urologists (90% of state)
- 44 Practices
- >42,000 Cases
- 12 QI Initiatives
- 23 MUSIC Publications
MUSIC Playbook

Repeat

Data

Information

Action

Outcomes

Collect what you need, need what you collect

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Appropriate Imaging

Rationale: Focus of AUA Choosing Wisely Campaign 2013

Intervention was feedback of data
MUSIC Imaging Appropriateness Criteria

- Order a Bone Scan if:
  - Gleason Score ≥ 8
  - PSA >20

- Order a CT Scan if:
  - Gleason Score ≥ 8
  - PSA >20
  - Clinical T Stage ≥ T3

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

Timeline for intervention

- 2012-2013 baseline
- 2014 implementation of new criteria
- 2015 post intervention

multi-pronged intervention was labor intensive; no EMR informatics or financial incentives
Imaging Appropriateness Intervention 2014

- Choosing Wisely Discussion
- "Do When You Should Don’t When You Shouldn’t"
- In-Office Tool Kits
- Site Visit Interviews With 32 Practices

MUSIC Practice Data Published
Clinical Champion Presentation for their practice
Script to Educate Patients
Repetitive Performance Feedback
Aiming to improve the quality of care for men diagnosed with prostate cancer
Results of Imaging Interventions

In 2015 in Michigan, saved men 147 BSs and 223 CTs
Imaging rates when indicated by MUSIC criteria, Baseline (2012-2013) vs. Post-Intervention (2015)

- Bone Scan
  - Baseline (2012-2013): 81.6%
  - Post-Intervention (2015): 82.8%
  - p = .4911

- CT Scan
  - Baseline (2012-2013): 74.6%
  - Post-Intervention (2015): 74.6%
  - p = .9812

n = number of patients
Issues

• Targets: always will be marginal patients, symptomatic patients, anxious patients, etc., so adherence never anticipated to be 100%
• “Thermostat” effect (both “indicated” and “not indicated” go down) was not observed
• Ownership did not make a difference
What interventions work to change behavior?

• Feedback of data is necessary
• Simply ranking based on rates minimally effective Association of hospital participation in a quality reporting program with surgical outcomes and expenditures for Medicare beneficiaries. Osborne NH et al. JAMA 313:496, 2015.
• Providing social comparisons using norms (clear guidance the about appropriateness) is effective to some degree Lian JM et al. JAMA 316:1151 2016
• Financial incentives or EMR prompts complex but can be effective Dreischulte T et al. N Engl J Med 374:1053, 2016
Bottom line

• Changing imaging behavior is likely “low hanging fruit” and easier than other topics (e.g. surgical technique, treatment appropriateness, collecting patient reported outcomes, etc.)

• But even this requires more than just data feedback to obtain optimal results.

Prostate MR in MUSIC

A challenge, yet to be defined as a success
Prostate MR

• Great potential demonstrated by centers of excellence—just look at AUA 2017
• If and how those results can be translated to a population is uncertain


“It is (reproducible), provided you quality assure every scanner, optimize the sequences iteratively, quality control scans and have robust training for radiologists.”
In late 2015 and 2016, we knew we had a problem.

• Enormous hype in literature
• Use increasing dramatically, 84% in 2016 (but less than in PURC)
• Our data collection was severely lacking (did 2 pilots and one survey)
• Urologists knew they often could not trust the quality of the MR they might get.
In my experience, I am finding MRI not useful. I think the positive biopsy rate for PI RADS 4 lesions is under 50 percent. Also, still get multiple physicians reading the MRI and when reviewed by an experienced radiologist, getting inconsistent reports (sometimes agrees with original read, sometimes not).

- Anonymous
The MR quality challenge

Radiologists by Site

Site 1 | Site 2 | Site 3 | Site 4 | Site 5 | Site 6 | Site 7
The MR goals in MUSIC:

- **High Quality Fusion Bx**
- **Safer Active Surveillance**
- **Improved PROs**
- **MRI Coverage Decisions**

**Provide an infrastructure for ensuring and demonstrating high quality prostate MRI and fusion biopsy across Michigan**
1. Thoughts on how Radiology and Urology can collaborate more at local level to improve MR quality
2. Encourage use of PI-RADSv2 and some form of a template in reporting
3. Encourage use of quality assessment program developed in MUSIC for new and existing MR fusion biopsy programs
What’s available in the registry

- **Right equipment**
  - 3T or 1.5T body coil or 1.5 T endorectal

- **Optimal technique**
  - Multiparametric images

- **Consistent interpretation**
  - Use of PI-RADS V2

- **High quality care**
  - Distribution of PI-RADS scores
  - Rad/Path Agreement

Available in the MUSIC Registry; To be distributed to MR Urology and Radiology Clinical Champions
# MRI Prostate/Pelvis

- **# MRIs Ordered**: 489 (Your Practice), 1435 (MUSIC)
- **MRI Type**:
  - 3 Tesla: 99% (Your Practice), 70% (MUSIC)
  - 1.5 Tesla: 1% (Your Practice), 1% (MUSIC)
  - Endorectal Coil + Endorectal Coil: 0% (Your Practice), 0% (MUSIC)
  - Other: 0% (Your Practice), 29% (MUSIC)

## Indications for MRI

<table>
<thead>
<tr>
<th>Indication</th>
<th>Your Practice</th>
<th>MUSIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before First Biopsy</td>
<td>18%</td>
<td>14%</td>
</tr>
<tr>
<td>After Negative Biopsy</td>
<td>13%</td>
<td>10%</td>
</tr>
<tr>
<td>Premalignant Findings on Prior Biopsy</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Prostate Cancer Surveillance</td>
<td>34%</td>
<td>38%</td>
</tr>
<tr>
<td>Rising PSA after Trt</td>
<td>&lt;1%</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>

## PI-RADS Distribution

- No Lesions: 25% (Your Practice), 20% (MUSIC)
- Non PI-RADS: 15% (Your Practice), 10% (MUSIC)
- PI-RADS 1-2: 10% (Your Practice), 5% (MUSIC)
- PI-RADS 3: 5% (Your Practice), 5% (MUSIC)
- PI-RADS 4: 10% (Your Practice), 5% (MUSIC)
- PI-RADS 5: 15% (Your Practice), 10% (MUSIC)

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## MRI Fusion Biopsy Scorecard

<table>
<thead>
<tr>
<th>Metric</th>
<th>Benchmark</th>
<th>Pilot Practice</th>
<th>MUSIC</th>
</tr>
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<tbody>
<tr>
<td>Lesion Level High Grade Cancer Detection Rates (CDR), N = 29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI-RADS 3 High Grade CDR</td>
<td>10 – 25%</td>
<td>40 %</td>
<td>31 %</td>
</tr>
<tr>
<td>PI-RADS 4 High Grade CDR</td>
<td>25 – 60%</td>
<td>39 %</td>
<td>46 %</td>
</tr>
<tr>
<td>PI-RADS 5 High Grade CDR</td>
<td>70 – 95 %</td>
<td>82 %</td>
<td>74 %</td>
</tr>
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- = meeting target  
- = within 10% of target  
- > 10% from target
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<tr>
<td>Patient Level Upgrading, N = 24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upgrading by Standard Biopsy</td>
<td>&lt; 15%</td>
<td>25 %</td>
<td>35 %</td>
</tr>
<tr>
<td>Upgrading by Targeted Biopsy</td>
<td>&gt; 15%</td>
<td>75 %</td>
<td>61 %</td>
</tr>
<tr>
<td>Upgrading to High Grade by Standard Biopsy</td>
<td>&lt; 15%</td>
<td>17 %</td>
<td>17 %</td>
</tr>
<tr>
<td>Upgrading to High Grade by Targeted Biopsy</td>
<td>&gt; 20%</td>
<td>29 %</td>
<td>8 %</td>
</tr>
</tbody>
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- **= meeting target**
- **= within 10% of target**
- **= > 10% from target**

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Imaging in MUSIC

• One success with BS and CT

• One “jury still out” with MR
Thank you

**MUSIC**
- Clinical champions
- Data abstractors
- Urologists
- Co-coordinating center team
- Susan Linsell, Project Manager
- Rod Dunn, Biostats
- David Miller, MD
- Khurshid Ghani, MD
- Jim Dupree MD
- Greg Auffenberg MD
- Hugh Solomon MD

**MUSIC is funded by Blue Cross Blue Shield of Michigan** – Value Partnerships Program

For more information please visit: [www.musicurology.com](http://www.musicurology.com)

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