Why was MICI created?

The MarkeTech Group and AHRA collaborated on the creation of MICI based on the belief that measuring the confidence of US medical imaging administrators on a regular basis would provide a valuable index for those having an interest in this industry.

The MICI panel consists of a select group of imagePRO™ panel members from around the U.S. representing different hospital sizes and geographic locations to capture a true “industry outlook”: how imaging administrators see the future of medical imaging in regard to revenues, costs, purchasing, and growth.

This exciting initiative captures the “mood” of imaging administrators on a quarterly basis regarding the state of medical imaging in the U.S. It also provides a unique statistical index that is likely to attract a lot of attention from those following this industry.

What is imagePRO™ and why is it important?

imagePRO™ was created by The MarkeTech Group to provide a professional community for imaging administrators to participate in studies aimed at advancing the development of medical imaging technology.

The imagePRO™ panel is a true community of industry professionals and is the leading opt-in panel of this industry. Members are subjected to strict enrollment requirements to represent the voice of their peers and to be part of a group of professionals whose knowledge and input is important.
Index Methodology

150 imaging directors/managers of hospitals completed the 3-minute Web survey regarding their perception of medical imaging trends for the fourth quarter of 2018.

Scores

Scores measure the level of confidence, and range between 0 to 200. The score interpretation follows:

- Below 50 is extremely low confidence
- 50 to 69 is very low confidence
- 70 to 89 is low confidence
- 90 to 110 reflect an ambivalent score (Neutral)
- 111 to 130 is high confidence
- 131 to 150 is very high confidence
- Anything above 150 is extremely high confidence

Hospital bed size:

- **44%** Under 100
- **37%** 100-299
- **19%** 300 or more
Index Methodology

Results
are reflective of national trends because of the manner in which participants were invited to participate.

- Participants were recruited by region and number of beds to reflect known AHA incidence.
- Once the final counts were confirmed there were some statistical adjustment—weighting—to ensure the index reflects the U.S. hospital imaging market. This type of adjustment is common when estimating overall market share, trends, and attitudes.

Recruitment
accounts for about 90% of correct hospitals and regions to reflect the U.S. hospital market.

- While relatively minor in magnitude, the weighting accounts for the final 10% to refine the estimates and ensure they represent the U.S. hospital market.
- This refinement is necessary to create an index that truly represents how radiology departments view the economic outlook for the current quarter and will ensure that subsequent MICI results are valid.
Index Methodology

Regions

- Mountain: 5%
- West North Central: 19%
- East North Central: 21%
- Mid-Atlantic: 13%
- South Atlantic: 14%
- West South Central: 12%
- East South Central: 5%
- Pacific: 11%
Results for Q4 2018
<table>
<thead>
<tr>
<th>Topic</th>
<th>Score Mean</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will grow monthly in diagnostic and interventional radiology</td>
<td>124</td>
<td>High confidence</td>
</tr>
<tr>
<td>Receive adequate reimbursement from Medicare for diagnostic and interventional imaging</td>
<td>79</td>
<td>Low confidence</td>
</tr>
<tr>
<td>Internal operating and staff costs will remain constant</td>
<td>131</td>
<td>Very high confidence</td>
</tr>
<tr>
<td>Will have access to capital for imaging equipment and IT needs</td>
<td>97</td>
<td>Neutral</td>
</tr>
<tr>
<td>Will maintain/grow as a profit center</td>
<td>132</td>
<td>Very high confidence</td>
</tr>
</tbody>
</table>

Composite score across all areas                                      111        Neutral

There is concern about receiving adequate reimbursement from Medicare.
Hospitals with **100 or more beds are more confident** that **growth in diagnostic / interventional radiology** and **growth as profit center** will occur more than hospitals with less than 100 beds.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Under 100 beds</th>
<th>100 to 299 beds</th>
<th>300 or more beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will grow monthly in diagnostic and interventional radiology</td>
<td>110</td>
<td>132</td>
<td>141</td>
</tr>
<tr>
<td>Receive adequate reimbursement from Medicare for diagnostic and interventional imaging</td>
<td>80</td>
<td>78</td>
<td>77</td>
</tr>
<tr>
<td><strong>Internal operating and staff costs will remain constant</strong></td>
<td>131</td>
<td>142</td>
<td>111</td>
</tr>
<tr>
<td>Will have access to capital for imaging equipment and IT needs</td>
<td>85</td>
<td>101</td>
<td>116</td>
</tr>
<tr>
<td><strong>Will maintain/grow as a profit center</strong></td>
<td>118</td>
<td>143</td>
<td>143</td>
</tr>
<tr>
<td>Composite score across all areas</td>
<td>103</td>
<td>118</td>
<td>117</td>
</tr>
</tbody>
</table>
Regional differences: although not statistically different, Mountain seems to be different.

South Atlantic, West South Central, and Mountain regions very high confidence in growth in diagnostic / interventional radiology.

East and West North Central, West South Central, and Mountain very high confidence that internal operating and staff costs will remain constant.

South Atlantic, East and West North Central, West South Central, and Mountain regions very high confidence in growing as a profit center.

<table>
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<tr>
<th>Topic</th>
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<tbody>
<tr>
<td>Will grow monthly in diagnostic and interventional radiology</td>
<td>126 137 115 120 103 134 153 114</td>
</tr>
<tr>
<td>Receive adequate reimbursement from Medicare for diagnostic and interventional imaging</td>
<td>72 78 91 94 59 63 68 70</td>
</tr>
<tr>
<td>Internal operating and staff costs will remain constant</td>
<td>126 121 139 142 98 132 147 123</td>
</tr>
<tr>
<td>Will have access to capital for imaging equipment and IT needs</td>
<td>97 100 108 92 69 85 106 99</td>
</tr>
<tr>
<td>Will maintain/grow as a profit center</td>
<td>120 144 131 132 87 141 163 124</td>
</tr>
</tbody>
</table>

Composite score across all areas: 107 115 116 114 82 109 126 105
Summary

1. There is **high confidence** in the **growth of diagnostic and interventional radiology**; while **very high confidence** in the **staff costs remaining constant and facility growing as a profit center**.

2. There is **concern** about receiving **adequate reimbursement from Medicare**.

3. Hospitals with **100 or more beds** are **more confident** in growth of diagnostic / interventional radiology and growth as a profit center. Hospitals with **200 to 299 beds** are **more confident** that internal operating and staff costs will remain constant.

4. The **Mountain** region has **extremely high confidence** in growth in diagnostic / interventional radiology and growing as a profit center. **East and West North Central, West South Central, and Mountain** regions have a **very high confidence** that internal operating and staff costs will remain constant.

5. **East South Central** region has **very low confidence** about receiving adequate reimbursement from Medicare and access to capital for equipment, while **low confidence** in growing as a profit center.
Study volume increase / planned growth:
- Interventional Imaging has grown by 11.9% in 2018 due to the high acuity of the patient population.
- New fiscal year has allowed release of capital funds needed for equipment replacement and upgrades.
- Optimistic about increasing volumes as we approach the end of the year and patients have met their deductibles.
- I firmly believe image will remain constant in some areas but grow some in advanced imaging such as CT and MRI. Cardiac will be a big driver in this arena for both modalities which will lead to downstream revenue.
- Costs relating to staffing will continue to be constant with volume increasing and new hospitals joining.

Uncertainty / complaints about healthcare policy and reimbursement:
- Reimbursement issues from CMS and Private pay continue to hinder patient care. Pre-authorization processes slow down or sometimes make it impossible to move forward.
- Volumes and recruitment of physicians still remain an issue.
- We are experiencing a decline in volume for all areas except CT and Ultrasound.
- I think the reduction in reimbursements is hurting imaging departments and will continue if Medicaid and Medicare continue to cut further into reimbursements.
- Nuclear medicine studies are down but all other imaging departmental studies are increasing. General x-ray studies and some nuclear medicine studies are not typically reimbursed at a high enough rate by Medicare but most of the other areas are.
Quarter-to-Quarter analysis

**Results** are now shown for Q1 2017 through Q4 2018.
- *Comparisons are presented to show any trending of the data over a one year period.*

**Analyses** are based on between group analysis of variance (ANOVA) where participant’s scores are compared over time to determine if changes occur.
# Quarter-to-Quarter analysis Q3-2018 through Q4-2018

Growth in diagnostic / interventional radiology higher in Q4 2018 compared to Q3 2018.

<table>
<thead>
<tr>
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<tr>
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<td>Will have access to capital for imaging equipment and IT needs</td>
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</tr>
<tr>
<td>Will maintain/grow as a profit center</td>
<td>126</td>
</tr>
<tr>
<td><strong>Composite score across all areas</strong></td>
<td><strong>109</strong></td>
</tr>
</tbody>
</table>
Quarter-to-Quarter analysis
Q1-2017 through Q4-2018

Average MICI Scores

Will grow monthly in diagnostic and interventional radiology
Receive adequate reimbursement from Medicare for diagnostic and interventional imaging
Internal operating and staff costs will remain constant
Will have access to capital for imaging equipment and IT needs
Will maintain/grow as a profit center
Composite score across all areas

TRENDING:
Growth in diagnostic and interventional radiology has higher confidence in Q4 2018 compared to Q1/Q2/Q3 2017 and Q3 2018.

Margin of error: ±8 percentage points
Quarter-to-Quarter analysis
Q1-2018 through Q4-2018

Average MICI Scores

Margin of error: ±8 percentage points

For details on MICI scores by bed size – please click on underlined links, or go to Appendix B.
Quarter-to-Quarter analysis
Trend Summary

**Overall:**
Higher confidence in *growth in diagnostic and interventional radiology*

In aggregate, **higher confidence** in Q4 2018 compared to Q1/Q2/Q3 2017 and Q3 2018.

**Under 100 beds:**
Lower confidence in *internal operating cost remain the same*

Lower confidence in internal operating cost remaining the same in Q4 2018 compared to Q3 2018.

**100 to 299 beds:**
Higher confidence in *growth in diagnostic and interventional radiology and internal operating cost remain the same*

Higher confidence in internal operating cost remaining the same in Q4 2018 compared to Q3 2018 and Q1 2017.

**300 or more beds:**
*No change* in confidence

No changes in MICI between Q4 2018 and Q1 2017.

**Higher confidence** in growth in diagnostic and interventional radiology in Q4 2018 compared to Q2-Q3 2018 and Q3-Q4 2017.
Appendix
Appendix: October to December 2018 results

**APPENDIX A - Questionnaire**

**Grow monthly in diagnostic and interventional imaging**
Over the next three months, I am very optimistic that our department:

**S1Q1.** will grow monthly study volumes in Diagnostic imaging modalities (X-ray, Ultrasound, MRI, CT and NM).

**S1Q2.** will grow monthly study volumes in Interventional imaging modalities (biopsy, angio cath lab, etc.).

**Receive adequate reimbursement from Medicare for diagnostic and interventional imaging**
Over the next three months, I am very optimistic that our department:

**S1Q3.** will receive adequate reimbursement from Medicare for Diagnostic imaging studies.

**S1Q4.** will receive adequate reimbursement from Medicare for Interventional imaging procedures.

**Internal operating and staff costs will remain constant**
Over the next three months, I am very optimistic that the imaging department:

**S2Q1.** internal operating expenses (not including staff costs) will remain constant.

**S2Q2.** internal staff costs will remain constant.
Appendix: October to December 2018 results

APPENDIX A - Questionnaire

**Will have access to capital for imaging equipment and IT needs**
Over the next three months, I am very optimistic that our department:

- **S3Q1.** will have access to capital/credit to fund investments in new imaging equipment and the costs associated with Imaging capital projects (e.g. siting & construction costs).
- **S3Q2.** will have access to capital/credit to fund investments in areas outside of imaging equipment, such as PACS, RIS, or other imaging-related IT needs.
- **S3Q3.** will have access to capital/credit to fund investment in imaging facility expansion, if desired.

**Will grow as a profit center**
Over the next three months, I am very optimistic that our department:

- **S4Q1.** will continue to maintain/grow Diagnostic imaging services as a profit center.
- **S4Q2.** will continue to maintain/grow Interventional imaging services as a profit center.
Appendix:
Q1-2017 through Q4-2018 results

APPENDIX B

Graphs are presented by number of beds to show MICI for all quarters.

Interpretation is by number of beds—any changes across quarters are identified as being significant.

If no changes are identified then differences that might appear are due to random fluctuation in responses over time and should not be considered real.
Appendix: Under 100 beds
Q1-2017 through Q4-2018 results

Under 100 beds: Higher confidence in internal operating and staff cost remaining constant in Q3 2018 compared to Q4 2018.
**Appendix: 100 to 299 beds**

**Q1-2017 through Q4-2018 results**

100 to 299 beds: Higher confidence in internal operating and staff cost remaining constant in Q4 2018 compared to Q3/Q2 2018 and Q3/Q4 2017. Growth in diagnostic and interventional radiology has higher in Q4 2018 compared to Q3 2018 and Q1 2017.
Appendix: 300 or more beds
Q1-2017 through Q4-2018 results

300 or more beds: No changes in MICI between MICI Q4 2018 and Q1 2017. No changes between Q4 2018 and Q3 2018.
Appendix: Growth in diagnostic/interventional cardiology; Q1-2017 through Q4-2018 results

Will grow monthly in diagnostic and interventional radiology: Hospital bed size

- Under 100 beds
- 100 to 299 beds
- 300 or more beds

Back to Hospital bed size summary
Appendix: Receive adequate reimbursement Q1-2017 through Q4-2018 results

Receive adequate reimbursement from Medicare for diagnostic and interventional imaging: Hospital bed size

Quarter
- Under 100 beds
- 100 to 299 beds
- 300 or more beds

Back to Hospital bed size summary
Appendix: Operating and staff cost Q1-2017 through Q4-2018 results

Internal operating and staff costs will remain constant: Hospital bed size

- Under 100 beds
- 100 to 299 beds
- 300 or more beds

Back to Hospital bed size summary
Appendix: Access to capital Q1-2017 through Q4-2018 results
Appendix: Growth as profit center
Q1-2017 through Q4-2018 results

Average MICI Scores

Will maintain/grow as a profit center: Hospital bed size

Quarter

Under 100 beds 100 to 299 beds 300 or more beds

Back to Hospital bed size summary