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

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

- Pacific: 9%
- Mountain: 5%
- West South Central: 13%
- West North Central: 16%
- Mid-Atlantic: 14%
- South Atlantic: 15%
- East North Central: 22%
- East South Central: 7%
### Staff costs to remain constant, growth in volume and profit

<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>120</td>
<td>High confidence</td>
</tr>
<tr>
<td>Receive adequate reimbursement from Medicare for diagnostic and interventional imaging</td>
<td>83</td>
<td>Low confidence</td>
</tr>
<tr>
<td>Internal operating and staff costs will remain constant</td>
<td>134</td>
<td>Very high confidence</td>
</tr>
<tr>
<td>Will have access to capital for imaging equipment and IT needs</td>
<td>102</td>
<td>Neutral</td>
</tr>
<tr>
<td>Will maintain/grow as a profit center</td>
<td>130</td>
<td>High confidence</td>
</tr>
<tr>
<td>Composite score across all areas</td>
<td>113</td>
<td>Neutral</td>
</tr>
</tbody>
</table>

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

<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>108</td>
<td><strong>129</strong></td>
<td><strong>127</strong></td>
</tr>
<tr>
<td>Receive adequate reimbursement from Medicare for diagnostic and interventional imaging</td>
<td>78</td>
<td>87</td>
<td>86</td>
</tr>
<tr>
<td>Internal operating and staff costs will remain constant</td>
<td>139</td>
<td>132</td>
<td>124</td>
</tr>
<tr>
<td>Will have access to capital for imaging equipment and IT needs</td>
<td>94</td>
<td>101</td>
<td>119</td>
</tr>
<tr>
<td>Will maintain/grow as a profit center</td>
<td>123</td>
<td>134</td>
<td>141</td>
</tr>
<tr>
<td><strong>Composite score across all areas</strong></td>
<td><strong>107</strong></td>
<td><strong>115</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>
Regional differences: While none of the differences are statistically significant...

North Central and South Central regions have **very high confidence** that internal operating and staff costs will remain constant.

South Atlantic region has **very high confidence** in growth in diagnostic / interventional radiology.

Mid-Atlantic, South Atlantic, and Mountain regions have **very high confidence** in growing as a profit center.

West South Central and Pacific regions have **very low confidence** about receiving adequate reimbursement from Medicare, while the Mid-Atlantic, East South Central, and Mountain regions also have **low confidence**.

Pacific region has **low confidence** in access to capital for equipment.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Score Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mid-Atlantic</td>
</tr>
<tr>
<td>Will grow monthly in diagnostic and interventional radiology</td>
<td>116</td>
</tr>
<tr>
<td>Receive adequate reimbursement from Medicare for diagnostic and interventional imaging</td>
<td>76</td>
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<tr>
<td>Internal operating and staff costs will remain constant</td>
<td>121</td>
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<tr>
<td>Will have access to capital for imaging equipment and IT needs</td>
<td>99</td>
</tr>
<tr>
<td>Will maintain/grow as a profit center</td>
<td><strong>134</strong></td>
</tr>
<tr>
<td>Composite score across all areas</td>
<td>108</td>
</tr>
</tbody>
</table>
Summary

1. There is **high confidence** in the growing of diagnostic and interventional radiology, staff costs will remaining constant, and 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.

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

5. West South Central and Pacific regions have **very low confidence**; while the Mid-Atlantic, East South Central, and Mountain regions have **low confidence** about receiving adequate reimbursement from Medicare. The Pacific region has **low confidence** in access to capital for equipment.
Q1-2018 Member comments about their optimistic outlook

**Optimistic Outlook:**
- We have focused on our interventional lab in 2017 and look to see the benefits in 2018. Our focus this year will be breast care so we look to capitalize with increased MRI procedure counts.
- It seems as though the patients entering the hospitals are with a higher acuity than in the past. This is why I feel we will continue to see our procedural volume increase.
- As a strategic initiative and to improve resource allocation, integration plans are being developed to make Cardiac Cath and Interventional Radiology one service line, thereby reducing operational costs and increasing efficiency.
- I do have money for capital for a need of our department to purchase DR plates and also an upgrade to our PACS system that we will be planning to go live in 4-6 months.
- Funding approved for new RIS. Interventional Radiology is merging with Interventional Cardiology to form a new service line with capital investments being made.

**Uncertainty / complaints about healthcare policy and reimbursement:**
- Some of the IR and NM procedures are reimbursed by Medicare at a rate less than the cost of expenses related to the procedure.
- Economy seems to be getting better, although insurance preauthorization continues to be a nightmare. Insurance is still in the drivers seat for denials on needed patient procedures, which hurt volume and patient care. Suppliers continue to charge what they want even though reimbursement for their products doesn't meet cost, and hospitals have to figure out how to pay the difference and manage a profit.
- Continued financial constraints, including reduced reimbursement, procedure bundling, and now further pre-authorization constraints from carriers - makes it hard to finance equipment replacement or invest in new technologies or expansion.
- I feel this year with some changes in Medicare / Medicaid we will have some difficult times.
- Medicaid and Medicare are always cutting reimbursements. Doctors are allowed to siphon commercial insurance to their imaging centers leaving hospitals to live on crumbs.
- 2018 reimbursement changes expected to have a negative effect on all hospital performed imaging including outpatient.
- Future depends on direction the Federal Government takes towards health care.
- The current ACA political conflict and its lack of stability has driven healthcare consumers to delay their imaging studies or cancel them for fear of future cost liabilities.
Other general comments:

- First few months are traditionally a little slow and capital monies normally aren't released until 2nd quarter.
- Because of the new year, people have not met their deductibles as yet-so they tend to shy away from spending $ on healthcare right off the bat, unless it's absolutely required.
- Volumes usually drop throughout the first few months of the year to do insurance plans that do not cover many items like it did in the past (before Obamacare). All previous plans that were rich have been moved to having higher deductible and co-pays that eliminate elective procedures until the have met their deductibles/copays.
- Over the next quarter our capital funding will be tied up in expansion of other areas outside of imaging.
- Qualified staff are difficult to recruit, thus the wages will have to increase. The company that owns/manages hospital is facing financial challenges and only replacing equipment as it is at end of working life.
- I disagreed with money available for capital equipment, IT and expansion because 2017 was a big year for purchasing and expansion facility wide, but particularly in imaging. Capital dollars will be allocated to other departments in this upcoming year.
- Age of equipment vs. capital available is a poor situation, largely driven by the hospital's allotment for capital which is based on previous year's revenue accomplishment. The ageing equipment happens regardless of profit margins and revenue growth year over year, and the formula hardly works as an answer for appropriate replacement needs.
- We're opening a new imaging center so my outpatient volume will decrease here at the hospital.
- Investments in DR will be made to avoid penalties.
- A lot of education to referring MDs will need to happen regarding medical necessity. Fortunately, we have a strong IN and INR clinic that provides excellent documentation to allow reimbursements for interventional procedures.
- I will be purchasing some capital equipment, it will not be IT or PACS related. I do not expect volume or revenue to grow, mainly stay at current levels.
Quarter-to-Quarter analysis

Results are now shown for Q2 2016 through Q1 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
Q4-2017 through Q1-2018

<table>
<thead>
<tr>
<th>Topic</th>
<th>Score Mean</th>
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<tbody>
<tr>
<td></td>
<td>Q4 2017</td>
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<tr>
<td>Will grow monthly in diagnostic and interventional radiology</td>
<td>116</td>
<td>120</td>
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<td>Internal operating and staff costs will remain constant</td>
<td>131</td>
<td>134</td>
<td></td>
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<tr>
<td>Will have access to capital for imaging equipment and IT needs</td>
<td>100</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>Will maintain/grow as a profit center</td>
<td>124</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td><strong>Composite score across all areas</strong></td>
<td><strong>110</strong></td>
<td><strong>113</strong></td>
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</tbody>
</table>

No statistically significant differences in confidence for any of the MICI scores between Q4 2017 and Q1 2018.
Quarter-to-Quarter analysis
Q2-2016 through Q1-2018

TRENDING:
Growth as a profit center has higher confidence in Q1 2018 compared to Q3 2016. No significant differences in all areas from Q4 2017 to Q1 2018.

Margin of error: ±8 percentage points
Quarter-to-Quarter analysis
Q2-2017 through Q1-2018

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 as a profit center*

In aggregate, **higher confidence** in Q1 2018 compared to Q3 2016.

**Under 100 beds:**
Higher confidence in *growth as a profit center*

**Higher confidence** in Q1 2018 compared to Q3 2016.

**100 to 299 beds:**
Higher confidence in *receiving adequate reimbursement*

**Higher confidence** in Q1 2018 compared to Q4 2016.

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

**No changes** in MICI between Q1 2018 and Q2 2016.
Study & report have been conducted & brought to you courtesy of:
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: January to March 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: Q2-2016 through Q1-2018 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: Q2-2016 through Q1-2018 results

Under 100 beds: Growth as a profit center has higher confidence in Q1 2018 compared to Q3 2016. No significant differences in all areas from Q4 2017 to Q1 2018.
Appendix:
Q2-2016 through Q1-2018 results

100 to 299 beds: Receiving adequate reimbursement from Medicare has higher confidence in Q1 2018 compared to Q4 2016. No changes in MICI between MICI Q1 2018 and Q4 2017.
Appendix: Q2-2016 through Q1-2018 results

**Hospital bed size: 300 or more beds**

- 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

300 or more beds: No changes in MICI between MICI Q1 2018 and Q2 2016. No changes between Q1 2018 and Q4 2017.
Appendix: Q2-2016 through Q1-2018 results

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

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Under 100 beds</th>
<th>100 to 299 beds</th>
<th>300 or more beds</th>
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<tbody>
<tr>
<td>2016</td>
<td></td>
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<td>2nd quarter</td>
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<tr>
<td>3rd quarter</td>
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<td>4th quarter</td>
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<tr>
<td>2017</td>
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<tr>
<td>1st quarter</td>
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<tr>
<td>2nd quarter</td>
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<td>3rd quarter</td>
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<td>4th quarter</td>
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<tr>
<td>2018</td>
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<tr>
<td>1st quarter</td>
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</tbody>
</table>

Back to Hospital bed size summary
Appendix:
Q2-2016 through Q1-2018 results

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

Back to Hospital bed size summary
Appendix:
Q2-2016 through Q1-2018 results

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

<table>
<thead>
<tr>
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<tbody>
<tr>
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</tbody>
</table>

Back to Hospital bed size summary
Appendix: Q2-2016 through Q1-2018 results

Will have access to capital for imaging equipment and IT needs: Hospital bed size

Back to Hospital bed size summary
Appendix: Q2-2016 through Q1-2018 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

2nd quarter 3rd quarter 4th quarter 1st quarter 2nd quarter 3rd quarter 4th quarter 1st quarter

Back to Hospital bed size summary