2019 Imaging Market Update

Disruptions coming to imaging
1. Imaging market dynamics

2. Determining your strategy

3. The future of steerage
Flying high in 1975

Airline travel was a bit different 40 years ago…

Source: Imaging Performance Partnership interviews and analysis.

Flickr.com / James Vaughn.
Deregulation leads to bumpy ride

However, consumers benefit from rise of low-cost competition

Airline Deregulation Act of 1978
- Removed federal control of fares, routes, and entry of new airlines
- Led to more flights, lower fares, and airline mergers

$575
Average round-trip fare, 1979 (inflation adjusted)

$350
Average round-trip fare, 2011

Impact of airline deregulation
1980-2005

- 1980: PEOPLEExpress, Spirit, Sun Country
- 1985: Continental
- 1990: Delta/Western, TWA/Ozark, Continental/Texas Air, American/AirCal
- 1995: Pan Am
- 1995: Frontier
- 2000: jetBlue, Allegiant
- 2005: US Airways, United, TWA
- 2005: Delta, Northwest

Key
- $ Bankruptcy
- ▲ Merger
- ✈ New competitor

Legacy carriers strike back

Cyclic nature of competition means carriers flying high once again

Airline competitive development cycle

- Market inefficiency
- Disruption
  - Airline Deregulation Act of 1978
  - Airlines no longer insulated from price and route competition
- Consolidation
  - Surviving carriers merge to prevent further erosion
- Margin compression
  - Emergence of low-cost carriers leads to strong price competition
  - Legacy carriers experience bankruptcies, must adapt to survive

Source: Imaging Performance Partnership interviews and analysis.
Is imaging facing similar turbulence?

Price inefficiencies gain attention of industry insiders and disruptors alike

**Price variation, lower-limb MRIs**

25\(^{th}\)-75\(^{th}\) percentile range, mean  
\(n = 50,484\) MRI scans

- **Hospital-based MRIs**
  - $0
  - $250
  - $500
  - $750
  - $1,000
  - $1,250
  - $1,500
  - $1,750
  - $2,000

- **Non-hospital-based MRIs**
  - $0
  - $250
  - $500
  - $750
  - $1,000
  - $1,250
  - $1,500
  - $1,750
  - $2,000

12x  
MRI price variation nationally

5x  
Within-market MRI price variation

$468  
Average total savings\(^{1}\) per MRI if patients went to cheapest provider within 60-minute drive from their home

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1) Combined insurer payments and patient copayments.

The potential path ahead for imaging

Imaging competitive development cycle

- Market inefficiency
- Disruption
- Consolidation
- Margin compression

Source: Imaging Performance Partnership interviews and analysis.
Modest growth expected for imaging

Chronic disease burden, aging population drive utilization

National outpatient radiology projections

Estimated volumes, 2018-2023

<table>
<thead>
<tr>
<th>Procedure</th>
<th>2018</th>
<th>2023</th>
<th>2023 Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-ray</td>
<td>122.2M</td>
<td>129.5M</td>
<td>+6%</td>
</tr>
<tr>
<td>Ultrasound</td>
<td>56.7M</td>
<td>65.8M</td>
<td>+16%</td>
</tr>
<tr>
<td>CT</td>
<td>39.8M</td>
<td>41.4M</td>
<td>+4%</td>
</tr>
<tr>
<td>Mammography</td>
<td>28.0M</td>
<td>28.8M</td>
<td>+3%</td>
</tr>
<tr>
<td>MRI</td>
<td>25.3M</td>
<td>26.0M</td>
<td>+3%</td>
</tr>
<tr>
<td>Nuclear Medicine</td>
<td>6.0M</td>
<td>6.0M</td>
<td>-1%</td>
</tr>
<tr>
<td>PET</td>
<td>2.3M</td>
<td>2.6M</td>
<td>+9%</td>
</tr>
</tbody>
</table>

Overall growth projected for outpatient radiology from 2018 to 2023: 7%

Source: Market Scenario Planner, 2015, Advisory Board.
# Modality Drivers and Barriers

<table>
<thead>
<tr>
<th>Modality</th>
<th>Drivers increasing utilization</th>
<th>Drivers decreasing utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>CT</td>
<td>• Cardiac imaging technology</td>
<td>• Clinical decision support</td>
</tr>
<tr>
<td></td>
<td>• Chronic conditions (cancer, ischemia)</td>
<td>• Radiation dose concerns</td>
</tr>
<tr>
<td>MRI</td>
<td>• Preference for non-irradiating modalities</td>
<td>• High-deductible health plans</td>
</tr>
<tr>
<td>PET</td>
<td>• Potential for new radiotracers</td>
<td>• Medicare reimbursement limits</td>
</tr>
<tr>
<td>Nuclear medicine</td>
<td>• Chronic diseases</td>
<td>• Radiotracer supply challenges</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cost</td>
</tr>
<tr>
<td>Ultrasound</td>
<td>• Preference for non-irradiating modalities</td>
<td>• Use by non-radiologists</td>
</tr>
<tr>
<td></td>
<td>• Breast density reporting requirements</td>
<td></td>
</tr>
<tr>
<td>Mammo</td>
<td>• Population health initiatives</td>
<td>• Demographics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Alternative screening modalities</td>
</tr>
<tr>
<td>X-ray</td>
<td>• Digital x-ray adoption</td>
<td>• Improving alternatives (CT, nuclear medicine)</td>
</tr>
</tbody>
</table>
Utilization growth won’t save imaging revenue

Demographic shifts, utilization controls may cap revenue growth

Utilization by generation

<table>
<thead>
<tr>
<th>Generation</th>
<th>Population</th>
<th>Characteristics</th>
</tr>
</thead>
</table>
| Millennials    | ~79.4M     | • Price sensitive due to high use of HDHPs¹  
|                |            | • Imaging needs mostly for emergent conditions                                    |
| Gen X          | ~65.7M     | • Commercially-insured high utilizers                                             |
|                |            | • However, absolute numbers much smaller than Baby Boomers or Millennials          |
| Baby Boomers   | ~75.5M     | • High utilizers, but reimbursed at lower Medicare rates                           |
|                |            | • Increasingly choosing Medicare Advantage, associated with lower imaging utilization |

Projected imaging volume growth by age cohort,² 2018-2023

- 5.1% ages 20-39
- -1.5% ages 40-59
- 11.5% ages 60-79

¹ High deductible health plans
² Age cohorts refer to ages of Millennials, Gen X, and Baby Boomers in 2023.

Price disruptions coming in multiple forms

<table>
<thead>
<tr>
<th>Medicare</th>
<th>Employers</th>
<th>Private payers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mandate</strong></td>
<td><strong>Cost shifting</strong></td>
<td><strong>Steerage</strong></td>
</tr>
<tr>
<td>CMS has power to implement site neutral payment, limited only by public pushback</td>
<td>Employers use high deductibles to control benefits costs, encourage patients to shop for lower-cost care</td>
<td>Private payers steer patients to cheaper freestanding imaging instead of hospitals</td>
</tr>
</tbody>
</table>

- **Barriers**
  - Public backlash
  - Industry influence
  - Political shifts
  - Employee pushback
  - Lack of price shopping behavior
  - Member pushback
  - Provider market power
  - Availability of low-cost capacity

~$3B
Potential annual all-payer savings from equalizing hospital and freestanding imaging pricing

1) Total non-ED hospital-based OP imaging payments estimated at $5.1B. Estimated by assuming 36% Medicare, 64% commercial payer mix, and commercial payments 293% of Medicare rates.
CMS uses weight to level payment across sites

Site-neutral payment extended to all clinic visits in 2019

The path to site-neutral payment

<table>
<thead>
<tr>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>June 2013</strong></td>
<td>MedPac estimates equalizing payments for 66 APCs would save Medicare $900 million annually</td>
</tr>
<tr>
<td><strong>January 2018</strong></td>
<td>CMS lowers the site-neutral rate to 40% from 50% of HOPPS³</td>
</tr>
<tr>
<td><strong>November 2015</strong></td>
<td>SNP² implemented as part of Bipartisan Budget Act. Only impacts hospital-owned facilities built or acquired after November 2, 2015</td>
</tr>
<tr>
<td><strong>January 2019</strong></td>
<td>CMS extends SNP cuts to all off-campus HOPDs for clinic visits (CPT G0463), reducing spending by</td>
</tr>
</tbody>
</table>

- **$380 million** in 2019
- **$800 million** in 2020

~$1.6B additional annual savings potential to Medicare from expanding SNP to all sites, 2019-2023⁴


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1) Ambulatory Procedure Classification
2) Site-neutral payments
3) Hospital Outpatient Prospective Payment
4) Includes services beyond radiology
Employers use deductibles to contain benefits costs

As deductibles rise, patients find it difficult to cover costs

Growth of deductible size

Percent increase from 2008 baseline

$1,573
Average deductible for single coverage, 2018

40%
of Americans cannot cover a $500 emergency expense


1) High-deductible health plan
Price growth continues unabated

HDHP utilization reductions outweighed by price increases

Outpatient radiology prices, utilization

Commercial payers, percent increase from 2013 baseline

Prices paid to hospitals by private health plans are high relative to Medicare and vary widely

Chapin White, Christopher Whaley

- Using resources from self-insured employers, state-based all-payer claims databases, and health plans, researchers analyzed $13 billion in hospital spending from 2015 to 2017

- Key findings:
  - Relative prices varied three-fold among hospital systems, ranging from 150 percent of Medicare on the low end to 350-400%+ percent of Medicare on the high end
  - Relative prices for hospital outpatient services were 293 percent of Medicare rates on average, much higher than the relative price for inpatient care (204 percent of Medicare)

Patients on HDHPs apparently not shopping for care

They are following referring providers’ recommendations

Patient MRI pathway

Physician refers patient to affiliated hospital for MRI

Low-priced imaging center

Patient receives MRI at much higher price

“Patients, on average bypassed six lower-priced providers between their home and the location where they received their scan.”

Chernew, Cooper, Larsen-Hallock, and Morton

Are health care services shoppable? Evidence from the consumption of lower-limb MRI scans

Michael Chernew, Zack Cooper, et al

- Researchers analyzed 2013 claims data for non-contrast lower-limb MRIs from a large national insurer that has coverage in all 50 states (sample size: 50,484 MRI scans)

- **Key findings:**
  - Despite significant out-of-pocket costs and little variation in quality, patients often received MRIs at high-priced locations when lower-priced options were available
  - Less than 1 percent of patients in the study used a freely-available price transparency tool
  - The key determinant of where a patient received her MRI was referring physician recommendation
  - MRI prices varied by a factor of 5 within markets and 12 across markets

Patients clearly prefer low costs...

Importance of price factors when choosing imaging provider

*Mean utility scores (4 = highest, 0 = lowest)*

n=2,040

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean Utility Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Out-of-pocket costs will be less than $30</td>
<td>3.39</td>
</tr>
<tr>
<td>Provider is in-network</td>
<td>3.15</td>
</tr>
<tr>
<td>I will know the exact price I will pay before my exam</td>
<td>2.50</td>
</tr>
<tr>
<td>I can get a price estimate, but my final bill may be more or less</td>
<td>0.87</td>
</tr>
<tr>
<td>Provider is out-of-network</td>
<td>0.40</td>
</tr>
<tr>
<td>I won't know how much the exam will cost me until I receive the bill</td>
<td>0.38</td>
</tr>
<tr>
<td>My out of pocket costs will be between $200 and $1000</td>
<td>0.28</td>
</tr>
<tr>
<td>My out of pocket costs will be over $1000</td>
<td>0.17</td>
</tr>
</tbody>
</table>

## Necessary conditions for shopping

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
<th>Current state in health care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differentiation</td>
<td>Meaningful variation in price and quality</td>
<td>Price variation exists, but unclear quality differentiation</td>
</tr>
<tr>
<td>Incentive</td>
<td>Consumer has financial stake in purchasing process</td>
<td>Incentive to shop limited to services like imaging that fall below deductibles</td>
</tr>
<tr>
<td>Transparency</td>
<td>Ability to compare among different providers</td>
<td>Price often not available until after service rendered</td>
</tr>
</tbody>
</table>

Source: Imaging Performance Partnership interviews and analysis.
Price transparency is the new mandate

Several different initiatives underway

Addressing barriers to transparency

Transparency mandate
Federal, state governments preparing rules to mandate disclosure of provider (and potentially payer) negotiated rates

Potential impact: Greater price competition among providers may lead to a race to the bottom in some markets

Competitive disruption
Some providers such as Smart Choice MRI use flat, transparent pricing to disrupt referral networks and gain market share

Potential impact: Disruption of existing hospital referral networks where physicians and patients prefer lower-cost options

Surprise billing
Federal and state legislators preparing legislation to limit or forbid “balance billing” for out-of-network services

Potential impact: Increased bad debt for radiologists due to uncollected professional fees, loss of leverage in payer negotiations

Source: Imaging Performance Partnership interviews and analysis.
Payers double down on steerage

Anthem, UHC deny HOPD imaging

Private payer steerage policies growing in scale

40 million lives

UnitedHealthcare\(^3\) conducts site-of-care reviews for CT, MRs in HOPDs for 42 states

BCBS MA to offer lower co-insurance, co-pays at freestanding centers, higher at HOPD

4.5 million lives\(^2\)

Anthem considers care setting in CT, MR, denies hospital-based exams not meeting criteria in 13 states

172K lives

Anthem begins offering $50–$200 if patient chooses lower cost provider in NH, CT, IN

2012

2018

March 1, 2019

**4.5 million lives**

- **Anthem considers care setting in CT, MR**, denies hospital-based exams not meeting criteria in 13 states

- **BCBS\(^4\) MA rewards $250 when patients shop**, get care at lower-cost sites (MRIs, mammograms)

1) The timeline addresses only major steerage initiatives and may not capture all covered lives impacted by other payer policies.

2) Includes BCBS MA 45,190 enrollees.

3) Advisory Board is a subsidiary of UnitedHealth Group, the parent company of UnitedHealthcare. All Advisory Board research, expert perspectives, and recommendations remain independent.

4) Blue Cross Blue Shield.

Paying patients to switch: impact of a rewards program on choice of providers, prices, and utilization

Christopher Whaley, Lan Vu, Neeraj Sood, et al

- Researchers analyzed a Blue Cross Blue Shield rewards program offered in IL, MT, NM, OK, and TX that included 270,000 enrollees and 29 employers
- Patients received awards ranging from $41 for ultrasounds to $409 for surgeries for using lower-cost provider options

Key findings:
- Despite only 8% of patients using a price transparency tool to compare prices, the program decreased MRI payments by 4.7%, ultrasound payments by 2.5%, and mammogram payments by 1.7%
- The strategy may be appealing to employers as it encourages price shopping without placing penalties on patients, which could cause pushback among employees

Plenty of unknowns on site-of-care policies

Major questions that will influence policy success

1. **Is there sufficient freestanding capacity?**
   - Due to historical reimbursement cuts and hospital acquisitions, many markets lack low-cost capacity
   - **Our take:** New entrants will absorb steered demand over time

2. **Will there be patient and employer pushback?**
   - Patients may be inconvenienced or, at worst, charged for uncompensated hospital-based MRIs and CTs
   - **Our take:** Patient and employer pushback may scuttle policies

3. **Do insurers have enough market power?**
   - Hospital consolidation has significantly limited insurers’ negotiating power in many markets
   - **Our take:** Dominant providers in fragmented insurer markets may effectively resist policies

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**Risk to payer for site-of-care policy effectiveness**

- Low
- Medium
- High

*Source: Imaging Performance Partnership interviews and analysis.*
Physicians becoming more aggressive shoppers

New CMS Primary Care Initiative likely to accelerate trend

Physician VBP⁠¹ today

Physician VBP⁠¹ tomorrow

APMs⁴ begin receiving 5% annual bonus payments in 2019, increased MIPS⁵ risk

CMS Primary Care Initiative

CMS estimates 25% of PCPs will participate

Requirement for ACOs to take on downside risk sooner

MSSP Pathways to Success

MACRA

Bundled payment initiatives

Commercial ACOs

MSSP²

PCMHs³

1) Value-based payment
2) Medicare Shared Savings Program
3) Patient-Centered Medical Homes
4) Advanced Alternative Payment Model MACRA track
5) Merit-based Incentive Payment System MACRA track

The net impact of price disruptions

Pleasantville Hospital’s not-so-pleasant experience

Impact of price disruptions on Pleasantville Hospital imaging

Model health system that includes both on-campus HOPD and off-campus HOPD

<table>
<thead>
<tr>
<th></th>
<th>Starting imaging revenue</th>
<th>Anthem CT/MRI steerage</th>
<th>UHC CT/MRI steerage</th>
<th>&quot;Soft&quot; steerage</th>
<th>Site-neutral payment</th>
<th>Ending imaging revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$30.0M</td>
<td>($2.0M)</td>
<td>($2.9M)</td>
<td>($1.0M)</td>
<td>($1.7M)</td>
<td>$22.4M</td>
</tr>
</tbody>
</table>

1) Refers to payer incentives for patients to go to lower cost sites and physician-based steerage. Assumed 10% reduction in revenue from non-Anthem and non-UHC commercial payers

2) Off-campus HOPD Medicare revenue reduced by 60% to account for SNP rate (40% of Medicare HOPPS)

Source: Imaging Performance Partnership interviews and analysis; Hospital Benchmark Generator, 2019, Advisory Board; Imaging Productivity and Efficiency Benchmark Generator, 2018, Advisory Board.
CASE EXAMPLE

Pleasantville Hospital
- 250-bed community hospital, Somewhere, USA

<table>
<thead>
<tr>
<th>Payer</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicare/Medicaid</td>
<td>50%</td>
</tr>
<tr>
<td>UHC</td>
<td>15%</td>
</tr>
<tr>
<td>Anthem</td>
<td>10%</td>
</tr>
<tr>
<td>Other commercial(^1)</td>
<td>25%</td>
</tr>
</tbody>
</table>

250% commercial prices as percent of Medicare

<table>
<thead>
<tr>
<th>Modality</th>
<th>On-campus HOPD</th>
<th>Off-campus HOPD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volumes(^1)</td>
<td>Medicare price(^2)</td>
</tr>
<tr>
<td>CT</td>
<td>12,000</td>
<td>$296</td>
</tr>
<tr>
<td>MRI</td>
<td>3,500</td>
<td>$332</td>
</tr>
<tr>
<td>PET</td>
<td>1,000</td>
<td>$1,300</td>
</tr>
<tr>
<td>NM</td>
<td>2,200</td>
<td>$412</td>
</tr>
<tr>
<td>US</td>
<td>6,000</td>
<td>$163</td>
</tr>
<tr>
<td>X-ray</td>
<td>25,000</td>
<td>$140</td>
</tr>
</tbody>
</table>

1) Across all commercial payers (non-UHC, non-Anhem), 10% losses are assumed due to soft steerage.
2) Volumes based on median values from Imaging Performance Partnership’s Productivity and Efficiency Benchmarks, whose data is based on a 2017 survey of ~200 providers.
3) Average price benchmarks based on Advisory Board’s Hospital Benchmark Generator tool, which using MedPAR data among other sources.

Source: Hospital Benchmark Generator, 2019. Advisory Board; Imaging Productivity and Efficiency Benchmark Generator, 2019. Advisory Board.
Non-hospital providers headed for a field day?

Freestanding imaging appeals to price-sensitive players

Lower-limb MRI average prices

<table>
<thead>
<tr>
<th></th>
<th>Hospital providers</th>
<th>Non-hospital providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average prices paid</td>
<td>$1,474</td>
<td>$643</td>
</tr>
<tr>
<td>n=50,484</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional advantages of non-hospital providers

Access
- Shorter wait times, flexible scheduling stemming from freestanding centers’ lower-acuity case mix

Convenience
- Often located in accessible commercial areas with plentiful parking

Facilities
- Waiting areas, exam rooms often more updated than hospitals’, and patients don’t need to navigate hospital corridors

Customer service
- Predictable patient flow allows non-hospital providers to focus on service touches

But many markets lack freestanding capacity

Reimbursement cuts led to significant shakeout, acquisitions by hospitals

MPFS\(^1\) total diagnostic radiology spend

*In Billions (USD\(^2\), 2002-2015*

![Graph showing MPFS total diagnostic radiology spend from 2002 to 2015.](graph)

Estimated number of IDTFs\(^4\) nationally

- **2008**: 7,080
- **2015**: 6,598

IDTF reimbursement decline continues

- **2018 final**: (4%)
- **2019 final**: (5%)

Impact due to changes in practice expense inputs


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1) Medicare Physician Fee Schedule.
2) US Dollars.
3) Technical component.
4) Independent Diagnostic Testing Facilities.
Dominant health systems still hold keys

Consolidation led to even greater market power

**Acquiring Competitors**
Purchasing radiology-owned imaging centers, IDTFs

**Employing Providers**
Employment increasing proportion of referring physicians

**Merging Hospital Networks**
Expanding capital, geographic footprint through consolidation

- **Acquiring Competitors**
  - 100% of imaging centers
  - 0% of imaging centers

- **Employing Providers**
  - 44% of physicians are employed by systems
  - Increase in employment from 2012-2018

- **Merging Hospital Networks**
  - 94% of Imaging Performance Partnership members are part of multi-hospital systems
  - 20% Growth in number of hospitals in health systems from 2004-2014

Consolidation drives price increases

Market concentration limits payer power

Average prices by hospital market consolidation

*California, 2014*

<table>
<thead>
<tr>
<th>Procedure group</th>
<th>Less consolidated markets(^1)</th>
<th>More consolidated markets(^1)</th>
<th>Price difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP orthopedist procedure</td>
<td>$311</td>
<td>$577</td>
<td>+85%</td>
</tr>
<tr>
<td>Heart attack</td>
<td>$108,483</td>
<td>$165,119</td>
<td>+52%</td>
</tr>
<tr>
<td>OP primary care</td>
<td>$472</td>
<td>$622</td>
<td>+32%</td>
</tr>
<tr>
<td>OP oncology procedure</td>
<td>$10,370</td>
<td>$13,269</td>
<td>+28%</td>
</tr>
</tbody>
</table>


1) Consolidation defined by Herfindahl-Hirschmann Index (HHI), a common definition of market concentration. Low consolidation = HHI < 1,500; high consolidation = HHI > 1,500.
IDTFs increasingly consolidated

Independent centers seek safety in scale

Large imaging center chains getting larger

Number of owned outpatient imaging centers, 2015-2018

<table>
<thead>
<tr>
<th>Chain</th>
<th>2015</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>RadNet</td>
<td>289</td>
<td>323</td>
</tr>
<tr>
<td>CDI</td>
<td>100</td>
<td>107</td>
</tr>
<tr>
<td>SimonMed</td>
<td>63</td>
<td>112</td>
</tr>
<tr>
<td>Akumin</td>
<td>15</td>
<td>95</td>
</tr>
<tr>
<td>Touchstone Imaging</td>
<td>37</td>
<td>63</td>
</tr>
<tr>
<td>MedQuest</td>
<td>74</td>
<td>46</td>
</tr>
<tr>
<td>Outpatient Imaging Affiliates</td>
<td>34</td>
<td>37</td>
</tr>
</tbody>
</table>

1) Owned by Novant Health.

Radiology groups consolidating in step

Capital, capabilities expansion among top reasons

Radiology practices by number of radiologists

Percent of all radiology practices, 2014-2018

 Drivers of consolidation

- Increasing service demands from hospitals
- Reimbursement cuts
- Lack of available capital
- Increased competition, especially from national groups
- IT investment
- Reporting requirements
- Pending radiologist retirements

One thing is certain: imaging is ripe for disruption

Imaging competitive development cycle

Market inefficiency

Disruption
- Full price transparency
- New low-cost competitors
- Steerage

Consolidation
- Radiology group M&A
- Imaging center joint ventures, national chain purchases
- Further hospital-based consolidation

Margin compression
- Site-neutral payments
- Downward pressure on commercial price
- Activated consumers

Source: Imaging Performance Partnership interviews and analysis.
1. Imaging market dynamics

2. Determining your strategy

3. The future of steerage
Hospitals’ “obvious” strategy not so simple

Misreading market may result in needless revenue losses

Griffin Hospital1 misreads the market

1) Pseudonym.

Source: Imaging Performance Partnership interviews and analysis.

Hospitals leaders, concerned about price sensitivity, plan response

Lower prices
- MRIs steeply discounted to $650
- Flat price offered transparently

Build outpatient center
- Outpatient center near hospital planned
- Goal to attract price sensitive patients

No new patients seen as result of price discounts, leading to revenue losses

OP center cannibalized higher-priced on-campus HOPD volumes
Market dynamics dictated by two competing forces

**Price-sensitive** markets characterized by:

- Younger, more educated patient base
- Strong presence of Anthem, UHC, and/or other payers implementing steerage
- Presence of ACOs and Medicare Advantage plans

**Consolidated** markets defined by:

- Few (or single) dominant health systems
- High degree of hospital-physician employment, alignment
- Fragmented payer market, many small employers

Source: Imaging Performance Partnership interviews and analysis.
Match strategy to market scenario

Critical to consider current and future market situation

Imaging market strategy matrix

<table>
<thead>
<tr>
<th>Price competition</th>
<th>Stalemate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price sensitive consumers have many options to shop around</td>
<td>Steerage blunted by dominant health systems; consumers have few options</td>
</tr>
<tr>
<td>Providers compete on service, convenience rather than price in a fragmented market</td>
<td>Providers have strong market power, meaning payer steerage will be less successful</td>
</tr>
</tbody>
</table>

Source: Imaging Performance Partnership interviews and analysis.
Degree of consolidation determines response

Hospital strategy: high price sensitivity

Potential tactics

- Offer strategic price cuts
- Create joint ventures to expand freestanding capacity
- Change billing status of HOPD to freestanding
- Build new hospital-owned freestanding centers

Market consolidation

- Negotiate for mutually beneficial deals with payers
- Push back against policies in media and other channels
- Trade price cuts on HOPD services for price increases on IP services

Hospitals should compete on price

Hospitals should compete on market power

Fragmented

Consolidated

Source: Imaging Performance Partnership interviews and analysis.
As price matters less, service matters more

Non-price-sensitive markets may still be fiercely competitive

When deciding where to go for your imaging exam, what factors are most important?

*Top 10 factors*

<table>
<thead>
<tr>
<th>Rank</th>
<th>Factor</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Out-of-pocket costs will be less than $30</td>
<td>Cost</td>
</tr>
<tr>
<td>2</td>
<td>Same-day results</td>
<td>Access</td>
</tr>
<tr>
<td>3</td>
<td>Provider is in-network</td>
<td>Cost</td>
</tr>
<tr>
<td>4</td>
<td>Imaging facility has most advanced level of technology</td>
<td>Quality</td>
</tr>
<tr>
<td>5</td>
<td>A radiologist who is subspecialized in this type of MRI will interpret my scan</td>
<td>Quality</td>
</tr>
<tr>
<td>6</td>
<td>Once I arrive, I will wait 5 minutes or less</td>
<td>Access</td>
</tr>
<tr>
<td>7</td>
<td>Doctor recommendation</td>
<td>Service</td>
</tr>
<tr>
<td>8</td>
<td>Facility provider comprehensive understanding of procedure, diagnosis</td>
<td>Service</td>
</tr>
<tr>
<td>9</td>
<td>Quality scores far above industry average</td>
<td>Quality</td>
</tr>
<tr>
<td>10</td>
<td>Patient satisfaction scores far above industry average</td>
<td>Service</td>
</tr>
</tbody>
</table>

Non-hospital providers must consider options too

Joint ventures, M&A among possibilities

Yesterday’s JV incentives

• Lower-risk means of entering new markets
• Competition mitigation
• Care coordination

Today’s JV incentives

• Lower-risk means of attracting price-sensitive volumes
• Capital infusion
• Protection from steerage

M&A still on the table

• Despite SNP¹ policy making M&A less attractive, health systems may still be interested in purchasing centers to create low-cost capacity
• M&A may be particularly well-suited to low-growth markets as a means to neutralize competition without creating excess capacity

¹) Site neutral payment.

Source: Imaging Performance Partnership interviews and analysis.
Price sensitivity offers expansion opportunity

Many options for radiology groups to gain market share

Place new imaging facility away from hospital-owned sites, closer to systems’ competitors to capture new market share

Acquire or merge with radiology groups outside current market to grow into mature site with market presence

Create agreement for specific services where competitors own more market share than system partners

Partner with referrer group to expand services with strong referral base

RAF¹ Outpatient Expansion Strategies

5 Number of RAF joint ventures with health systems or other independent groups

2 Number of RAF wholly-owned freestanding imaging facilities

1) Radiologic Associates of Fredericksburg.

Source: Radiologic Associates of Fredericksburg, Fredericksburg, VA; Imaging Performance Partnership interviews and analysis.
Is bigger better for radiology groups?

If you can’t beat the competition, get bigger

Range of integration options for radiology groups

<table>
<thead>
<tr>
<th>Less integrated</th>
<th>More integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>National service providers</strong></td>
<td><strong>Corporate practices</strong></td>
</tr>
<tr>
<td>A la carte services</td>
<td>Employed radiologists</td>
</tr>
<tr>
<td>No integration required among practices</td>
<td>Goal of complete integration (benefits, RCM², telerad)</td>
</tr>
<tr>
<td><strong>Independent affiliation</strong></td>
<td><strong>MSOs¹, private equity ownership</strong></td>
</tr>
<tr>
<td>Integration focused on strategic objective (e.g., RCM²)</td>
<td>Varying practice ownership</td>
</tr>
<tr>
<td>Participating groups own MSO¹</td>
<td>Objective to build value for sale</td>
</tr>
<tr>
<td><strong>Examples</strong></td>
<td><strong>Wells Carson</strong></td>
</tr>
<tr>
<td>Strategic Radiology</td>
<td>Collaborative Radiology</td>
</tr>
<tr>
<td>Canopy Partners</td>
<td>Exellere Partners</td>
</tr>
<tr>
<td></td>
<td>Unified Radiology</td>
</tr>
<tr>
<td></td>
<td>Covalent</td>
</tr>
</tbody>
</table>

1) Management service organization.
2) Revenue cycle management.

Source: MBMS; Imaging Performance Partnership interviews and analysis.
PE¹, radiology groups share goals for aggregation

Deals require ample due diligence

Drivers of private equity investment in radiology groups

**PE drivers**
- Fragmented market
- Increasing technology investment needs
- Potential for back-office efficiencies

**Rad group drivers**
- Monetize equity in practice
- Reduce administrative burden
- Gain capital for equipment investment
- Large number of radiologist retirements on horizon

**Shared incentives**
- Capital to invest in IT products for additional income
- Stronger leverage for price negotiations
- Capabilities enhancement
- Increased long-term gains from additional contracts, market expansion


¹) Private equity.
Guidelines for radiology group competition

Aggregation, PE investment should support value creation

**IT, data ownership**
Build ownership of PACS, VNA, intelligent worklist to streamline work across multiple facilities, improve productivity, data collection

**Expanded service portfolio**
Offer subspecialty, off-hours coverage support and grow service offerings, such as interventional radiology

**Quality improvement**
Drive radiologist and patient compliance with evidence-based care, enhance peer review, develop new quality assurance processes

**Outpatient center strategy**
Develop, operate outpatient facilities – wholly owned or in joint venture arrangements – in an increasingly outpatient-driven market

Source: Imaging Performance Partnership interviews and analysis.
1. Imaging market dynamics

2. Determining your strategy

3. The future of steerage
Purchasing decisions require price and quality

Source: Imaging Performance Partnership interviews and analysis.
Is radiology a commodity?

“At this point, [radiologists’] value is indeterminate… [radiologists] are hard-pressed to explain to society, consumers, and referring physicians the true value of radiology processes.”

Alexander Norbash, Radiologist
BOSTON MEDICAL CENTER

“Danger inherent in commoditization

“If radiologists can’t figure out a way to save the health care system money while providing good patient care, the only thing we’ll be competing on is price”

Bibb Allen Jr, MD
Vice Chair of ACR Board of Chancellors, June 2013

Quality: the next frontier of steerage

Significant imaging variation on a single patient

63-year-old patient with history of low back pain

Patient receives MRI at 10 different centers in New York City

Patient receives different diagnoses with 10 different treatment plans

30%
Potential number of CT, MRI exams that have diagnostic errors

Introducing Walmart’s new steerage strategy

Using Covera Health to steer based on diagnostic accuracy, not cost

Walmart charts new course by steering workers to high-quality imaging centers
Kaiser Health News

Imaging center A
Quality: ■

Hospital A
Quality: ■ ■ ■

Local Walmart employees requiring imaging

Walmart steering employees to 800 imaging centers to avoid misdiagnoses
Becker’s Hospital Review

Imaging center B
Quality: ■ ■ ■ ■

Covera-designated center of excellence

Covera Health

- Health analytics startup based in New York, NY

- Using independent radiologists to evaluate samples of patient care data combined with machine learning algorithms to determine facilities’ error rates, Covera developed a list of 800 high-quality imaging centers across the country.

- To be included, facilities must agree to submit regular samples of patient images and reports.

- Signed agreement with Walmart, which will now steer patients towards centers based on quality, not just cost.

- Solution could fill current gap in quality information regarding imaging centers for consumers.

Imaging isn’t the only cost that matters

Purchasers finding high-quality imaging means lower downstream costs

“In fact, if it is structured correctly, a competitive marketplace can, and often does, create a ‘race to the top’. Under such a model, individuals and groups cannot expect their practices to perpetually thrive if they consistently provide mediocre expertise or poor service”

David Larson, Radiologist
CINCNATI CHILDREN’S HOSPITAL MEDICAL CENTER

$1,000
Price of high-quality MRI

$27,220
Savings from avoiding unnecessary spine surgery

1) Median Medicare cost of spinal fusion, Advisory Board Hospital Benchmark Generator.

Break the wheel

Imaging competitive development cycle

- Breakthrough
- Price and quality transparency-enabled competition
- Disruption
- Consolidation
- Margin compression

Market inefficiency

Source: Imaging Performance Partnership interviews and analysis.
Key takeaways for imaging leaders

1. Hospitals’ outpatient imaging pricing advantage is eroding and may become a liability under more price transparency.

2. Non-hospital providers may benefit from steerage, but years of reimbursement cuts have caused significant shakeout and consolidation in the sector.

3. While demographic growth will drive modest gains, utilization won’t save imaging from pricing pressure.

4. Two competing forces, price sensitivity and consolidation, determine what strategy to pursue in a given market.

5. For imaging providers, the next frontier of competition may be quality as means to prevent further commoditization.

Partnership resources

- Price shift calculator
- Imaging pricing toolkit
- The top 5 questions on site-neutral payments, answered
- Growing Outpatient Imaging
- Outpatient imaging market estimator
- Imaging leaders’ margin management toolkit
- Imaging leader’s guide to quality improvement

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How to navigate a challenging environment

Combination of market-specific and evergreen actions needed

1. Make data-driven decisions
   - *Imaging’s Analytics Advantage*, 11:30am tomorrow

2. Maximize efficiency
   - *Top Attributes of Highly Efficient Imaging Programs*, 1:30pm today

3. Maximize revenue potential
   - *Enhancing Imaging Revenue Capture*, 4:15pm today

4. Define your growth strategy
   - *Retaining Market Share in an Age of Steerage*, 8am tomorrow
   - *Choosing Your Steerage Response Strategy*, 9am tomorrow
   - *Winning Referring Physicians and Patients*, 10am tomorrow

Table stakes
- Evergreen priorities
- Risk mitigation and future-proofing

Source: Imaging Performance Partnership interviews and analysis.
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