Creating Value

Moderators

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Johns Hopkins Health System
Learning Objectives

• Describe a radiology value-added matrix to define, categorize, and quantify value-added non-interpretative activities
• Utilize a radiology value-added matrix strategically for providing value to multiple stakeholders
• Understand how radiology groups can add value in their practice environment that goes above and beyond image interpretation and reporting.
Annual Medicare Payments (Fee for Service) to Non-Radiologists

Professional Payments

Technical Payments

Global Payments

AJR 2015; 204:1042-1048

U.S. Healthcare Spending: % of GDP

World Healthcare Spending as % of GDP

Health Care Spending as % of GDP
1995-2014

3200% Growth of Healthcare Administrators
1975-2010

Radiology Opportunity in Value-Based Care

# Patients

Permanent Patient Condition Archive

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No. of Medicare Beneficiaries Served by Medical Specialty (JACR 2018; 15:734-739)

<table>
<thead>
<tr>
<th>SPECIALTY</th>
<th># of Beneficiaries per Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic Radiology</td>
<td>3,150 ± 2,344</td>
</tr>
<tr>
<td>Cardiologists</td>
<td>2,511 ± 2,000</td>
</tr>
<tr>
<td>Cardiac Electrophysiologists</td>
<td>2,279 ± 1,604</td>
</tr>
<tr>
<td>Dermatologists</td>
<td>2,164 ± 2,023</td>
</tr>
<tr>
<td>Urologists</td>
<td>2,061 ± 1,711</td>
</tr>
</tbody>
</table>

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# Unique Patients

- 20-30% of census population in primary counties serviced had imaging interpreted by Radiology, Inc.

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Permanent Patient Archive

What is Value?
the regard that something is held to deserve; the importance, worth, or usefulness of something

Perception + Reality
What is Value?

Value = \frac{\text{Outcomes}}{\text{Cost}}
Standing Out From the Crowd

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IMAGING 3.0
Blueprint for High Value Care

- Beyond Interpretations
- System Integration
- Empowered Patients

2013 and Beyond

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Security & Stability

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Goal: Invest time and demonstrate an outcome in each category/year
Capturing Radiologist Value-Added Activities

- Physician Name: _______________________
- Date of Activity: ______________________
- Hour(s) Spent on Activity: ____________
- Location (check one): Site A  Site B
- Description: _______________________

Individual Radiologist Value-Added Hours
Individual Total Radiologist Productivity

- More Accurate Reality
- Symbiotic
- “Deep Bench”

- Monitor, manage, but not mandate (no minimum targets)
- Complementary heterogeneity
- Team, NOT Group

Annual Value-Added Hours

<table>
<thead>
<tr>
<th>Year</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>9,932</td>
</tr>
<tr>
<td>2014</td>
<td>10,961</td>
</tr>
<tr>
<td>2015</td>
<td>11,788</td>
</tr>
<tr>
<td>2016</td>
<td>13,394</td>
</tr>
<tr>
<td>2017</td>
<td>15,418</td>
</tr>
</tbody>
</table>
Mean Radiologist Value-Added Hours per FTE

Radiology, Inc. Value Management Program Components

<table>
<thead>
<tr>
<th>People/Management</th>
<th>Equipment/Materials</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician Director/Champion</td>
<td>Platform: Hardcopy/Softcopy</td>
<td>Start with Few Activities</td>
</tr>
<tr>
<td>Non-Physician Support</td>
<td>Data Input</td>
<td>Monthly Data Review</td>
</tr>
<tr>
<td>Leadership Support</td>
<td>Data Analysis</td>
<td>Consider a Value Committee (Define Outputs)</td>
</tr>
<tr>
<td></td>
<td>Define End Product (Presentation)</td>
<td>Presentation Internally and Externally Periodically</td>
</tr>
</tbody>
</table>

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# Value Management Program Guidance

<table>
<thead>
<tr>
<th>Category</th>
<th>Activity</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference</td>
<td>Conference Name</td>
<td>1.5 hours each; Includes 0.5 hour preparation</td>
</tr>
<tr>
<td>Leadership</td>
<td>Medical Executive Committee or Board of Directors</td>
<td>2.5 hours each; Includes 1 hour preparation</td>
</tr>
<tr>
<td>Accreditation Requirement</td>
<td>Annual CME</td>
<td>1 hour/CME</td>
</tr>
<tr>
<td>National/State Radiology</td>
<td>RADPAC Donation</td>
<td>1 hour/$100</td>
</tr>
<tr>
<td>Community Service</td>
<td>Client Charitable Contribution (<a href="https://www.independentsector.org/volunteer-time">https://www.independentsector.org/volunteer-time</a>)</td>
<td>1 hour/$24.14</td>
</tr>
<tr>
<td>Leadership</td>
<td>Committee Chair</td>
<td>5-10 hours/month depending on committee</td>
</tr>
<tr>
<td>National/State Radiology</td>
<td>Society Membership</td>
<td>1 hour/$100</td>
</tr>
<tr>
<td>Peer Review</td>
<td>Individual Exam Peer Review</td>
<td>1 minute/exam; built into PACS</td>
</tr>
</tbody>
</table>

# Published Papers on non-wRVU Activities

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>AJNR 2016</th>
<th>JACR 2018</th>
<th>JACR 2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Frame</td>
<td>3 months</td>
<td>4 months</td>
<td>12 months</td>
<td>12 months</td>
</tr>
<tr>
<td>Practice Type</td>
<td>Academic</td>
<td>Academic</td>
<td>Private Practice</td>
<td>Private</td>
</tr>
<tr>
<td>Tracking Mechanism</td>
<td>Web-Based</td>
<td>Web-Based</td>
<td>Paper/Internal App</td>
<td>Internal App</td>
</tr>
<tr>
<td>Value Hours</td>
<td>-</td>
<td>1,223</td>
<td>9,932</td>
<td>13,394</td>
</tr>
<tr>
<td># Categories</td>
<td>2</td>
<td>4</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>% of Total Work</td>
<td>19%</td>
<td>6%</td>
<td>15%</td>
<td>18%</td>
</tr>
</tbody>
</table>
**Radiology Value-Added Matrix & Academic Practices**

• “Funds flow describes the financial arrangements between various entities in an academic health system to support research, teaching and clinical missions.”
  - Acad Med 2003; 78:119-24

• “The radiology value-added matrix provides a framework that can be used to establish funds flow support for performance, as well as negotiate incentive payments for exceeding performance targets.”
  - J Am Coll Radiol 2017; 14:818-824

**Value of Non-Financial Reporting Internally & Externally**

1) Communication tool to build relationships
2) Improve thinking and strategic decision-making
3) Meeting needs and expectations of clients
4) Perception of the quality of a company’s reporting impacts perception of quality of its management
5) Help organization succeed
How is the Value Story Showcased?

Radiology, Inc. 2017 Value Management Program Annual Report (200 “value outcome items”)
- 513 multidisciplinary conferences (29 distinct)
- 17,087 radiology-pathology correlations
- 1,979 documented technologist imaging exam feedback
- >17,500 patient-radiologist face-to-face encounters
- 27 different client-based committees
- 2 hospital board members
- 20% of group members on hospital medical executive committees
- ACR Global Humanitarian award
LEAN Performance Improvement Project: CT Contrast Standardization

Reason for Action

- High IV contrast cost
- No IV standardization

Summary/Insights

- Patient Safety
- Cost

Lean Analysis

Expected Goals
- Improved CT contrast standardization
- Patient safety and cost savings

Contrast Standardization

Reason for Action

- High CT contrast cost
- No IV contrast use standard

Expected Standard
- ACR Contrast Manual
- Manual

Problem Identification

- Detected

Problem Solving

- Continuous Improvement

Importance

- Patient Safety
- Cost

Lean Analysis

Overproduction
- Not using
- Inventory
- Waste

Carotid CTA Optimization: Improved Patient Safety (Interventional & Diagnostic Radiology Collaboration)

1. Reason for Action

- Overproduction
- Defects
- Technical Reporting Errors
- Unevenness
- No Acquisition/Reporting Standardization

4. Root Cause Analysis

- High radiation exposure
- High contrast use
- No efficient contrast delivery
- No effective reporting actions
- No standardized coding requirements

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- Appropriately client revenue enhancement (coding)
Collaborating w/ Other Specialties

Appropriate Reduction in Oral Contrast Utilization for Emergency Department Adult Patients Undergoing CT Abdomen/Pelvis by Implementing a Decision Support Algorithm

- Increased appropriateness of oral and IV CT contrast utilization based on ACR Appropriateness Criteria
- Reduced variation in ordering practices
- Reduced ED patient length of stay
Institute of Healthcare Improvement: Triple Aim

Patient Experience

Health of Populations

Reducing Per Capita Cost

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Model to Evaluate the Professional Component Imaging Cost per Stage 0/1 Breast Cancers Diagnosed: Case Study for Future Outcomes Cost-Effectiveness Comparison

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- ↑ cancer detection rate
- ↑ % Stage 0+1 cancers
- ↓ recall rate
- ↓ short term follow-ups
- ↓ inappropriate diagnostics
- ↑ subspecialization

PC Imaging Costs / # of Breast Cancers Diagnosed
- 2004: $6,480
- 2014: $4,803
- 26% ↓

PC Imaging Costs / (# Breast Cancers x Mean Estimated 5-Year Survival Based on Stage at Diagnosis)
- 2004: $6,919
- 2014: $5,153
- 26% ↓

PC Imaging Costs / (# Breast Cancers x % Stage 0/1)
- 2004: $10,458
- 2014: $7,122
- 32% ↓
Increasing Visibility to Patients

https://www.acr.org/Practice-Management-Quality-Informatics/Imaging-3/Case-Studies/Patient-Engagement

IMAGING3.0®

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Imaging 3.0 Case Study: Patient Forward

https://www.acr.org/Practice-Management-Quality-Informatics/Imaging-3/Case-Studies/Patient-Engagement/Patient-Forward

- AHA-ACR Webinar:
  https://www.aha.org/physicians/webinars/library/Patient-forward

Doctors, nurses, and other hospital representatives meet weekly with lung cancer patients who are at the center of the Thoracic Oncology Clinic. They review CT scans, discuss treatment options, and study treatment effectiveness.

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Interventional and Diagnostic Radiology Collaboration

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Better together for patients, communities, health systems

ACR Global Humanitarian Award

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Never know what a kind action could lead to

https://www.youtube.com/watch?v=V0znKv7mua4
https://www.youtube.com/watch?v=0hF1YU8Qyw
Ecuador Earthquake 2016

• What has it been like since the earthquake?
  “The initial 12 hours after the earthquake were relatively normal at our hospital since the majority of victims were on the coast. Nevertheless, with the public hospitals filling up in Santo Domingo and victims finally making it out of the coastal region, we began receiving a number of patients arriving in any way possible: cars, ambulances, mattresses, motorcycles. You name it. Transportation has been a huge issue here because of the significant road damage. As a result, many patients went without care for over 12 hours because the hospitals on the coast were destroyed in the earthquake. Since the patients’ arrival, we’ve been in triage mode and just trying to stabilize and quickly assess patients for injuries. Most patients required imaging (which luckily we have access to CT and XR here), a few went to surgery and then the rest went to the inpatient wards once stabilized. Everyone has been working so hard and collaborating beautifully...you can really sense the morale and desire to care for these victims and their families.”

Interaction with Vendors: Product Development/Testing

Vendor: Validation/Feedback
Client: Price Reduction
Practice: Clinical Tools

• Radiology, Inc.: Design input for 8 commercially available devices/software
Increasing Visibility with Leadership (C-suite)

- Periodic scheduled & unscheduled interactions
- Bring a new positive ("give") to start off meetings
- Unique differentiator from other specialties

Time investment in their organization
- Performance improvement actions with FINANCIAL benefit
- Don’t start out with "No"

Nature Abhors a Vacuum
- "If you are not at the table, you are on the menu"

How Not to Cut Health Care Costs

Reducing spending on line-item expense categories in profit/loss statements "appears" to generate immediate “positive” results, but ultimately is counterproductive, leading to higher costs and usually lower quality of care.

- **Mistake #1** Cutting Back on Support Staff
  - Reduces ability to work at top of license.
- **Mistake #2** Underinvesting in Space & Equipment
  - Consistently costs are an order of magnitude smaller than personnel costs.
- **Mistake #3** Focusing Narrowly on Procurement Prices
  - Failing to examine the entire care cycle.
- **Mistake #4** Maximizing Patient Throughput
  - May have greater overall productivity by spending more time with fewer patients (initial time investment can reduce total cost of treatment).
- **Mistake #5** Failing to Benchmark & Standardize
  - High variation due to eminence-based, not evidence-based.

Summary:

1. Acknowledge, quantify, and invest in non-image interpretation activities
2. Be involved with continuous innovation and improvement
3. Collaborate with others (within and outside of radiology)