Using Telemedicine to improve Radiology cost and quality
Smaller hospitals are facing extreme pressure

- Challenging Payer and Patient Mix
- Lean Balance Sheets Limits Capital Investments
- Demand for More Sophisticated Procedures
- Volume doesn’t drive provider productivity gains
- Evolving Reimbursement Models
- Competitive to recruit Specialists
Radiology economics imply scale matters

Minimum 30,000 annual studies required to support an onsite radiologist (typically 100-150 bed hospital)

Average Subsidies at 20 Small Hospitals

Typical small hospital can expect to pay close to $200k in total radiology subsidies*

*Expected value of subsidies paid across 20 small hospitals recently surveyed
Flawed radiology delivery model limits access to subspecialists and impacts service levels

**TYPICAL RADIOLOGY DELIVERY MODEL**

**OUTCOMES**

12-16 hr report turnaround times
Inconclusive results
$ follow-up studies
Missed diagnoses

*Generalist has no access to sub-specialists*  
*Nighthawk services deliver preliminary results*
Emergence of telemedicine in Radiology

Two critical assets required

• Cloud based network of subspecialty radiologists across 8 different specialties, available 24/7
• Proprietary technology platform to ensure right study gets to the right radiologist at the right time, with advanced QA and analytics

Teleradiology long considered “good enough” patient care for night and weekend coverage
Radisphere delivers final reads 24-7 and guarantees service levels

<table>
<thead>
<tr>
<th>RADIOLOGY STANDARD</th>
<th>MEASURE</th>
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<tr>
<td>Subspecialty</td>
<td>8 subspecialties; all high-tech read by subspec.</td>
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<td>Turn-Around Time</td>
<td>Defined, measured, accountable for final reports</td>
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<td>Consultation</td>
<td>On-demand in real-time, 24-7 (iPhone app)</td>
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<td>Peer Review</td>
<td>Statistically valid sample, proactive, double-blind</td>
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<td>Concurrence Review</td>
<td>Automatic double-read of all high risk studies</td>
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<td>Critical Findings</td>
<td>Proactive call at time of diagnosis for all CF</td>
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<td>Checklist-driven Reporting</td>
<td>Embedded in workflow to improve accuracy</td>
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<td>Interventional Radiology</td>
<td>Available on-site</td>
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<td>Utilization Insight</td>
<td>Data to drive growth and appropriate utilization</td>
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<td>Leadership</td>
<td>Active participation (MEC, Tumor Boards, etc.)</td>
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Radisphere has developed a “cloud” solution

<table>
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<tr>
<th>Specialist availability</th>
<th>Turnaround times</th>
<th>Proprietary workflow platform</th>
<th>Quality</th>
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<tr>
<td>Largest network of subspecialty radiologists in the US (compensated on quality and productivity)</td>
<td>Final reports for every case – 24/7 No costly prelims</td>
<td>Utilization of video consults, iPhone app for critical findings and advanced business intelligence analytics</td>
<td>Advanced radiology quality program through our Radiology Quality Institute</td>
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<td>30% of volume read by subspecialists Rads are 2x more productive</td>
<td>&lt;5 hours for all final reads &lt;30 minutes for all STAT final reads</td>
<td>&lt;30 minutes to connect</td>
<td>2% randomized sample of cases reviewed 14% of volume has C.F. with 98% called at time of diagnosis</td>
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Our cloud-based system enables virtual care delivery and access to 150 specialized radiologists nationwide.

Woman sent to Community Hospital for RTN MRI of brain in Oregon

radii™ routes order

Radisphere Neuro Rad in Ohio interprets study

Neuro Rad captures critical finding, in radii™

Neuro Rad and Provider consult by iPhone

Woman life flighted to California

Neuro Rad consults with Specialist in Texas

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4 common operational questions typically arise

1. Delivering Consultations
2. Covering simple Interventional Radiology procedures
3. Optimizing Diagnostic Mammography workflows
4. Supervising Fluoroscopy studies
1. Consults: More efficient, not less

- Radiologist waits for Referring Provider rather than Referring Provider waiting on radiologist, who may be in a procedure or meeting
- Referring Provider and Cloud Radiologist discuss case through web-conference (computer or smartphone) while simultaneously accessing the same images and reports
- Consult is happening with one of the 25-30 radiologists privileged at the hospital, including all subspecialities

Higher medical staff satisfaction: consult requests responded to in less than 30 minutes
2. Light IR

• Employ a Physicians Assistant (PA): Biopsies, drainages localizations initially
  ❑ “PAs have a proven record of providing high-quality, cost effective care... as licensed health care professionals with appropriate training, PAs can perform a majority of the minor procedures in an IR practice.” - SIR

• Empower specialists
  ❑ Cardiologists performed 65% of peripheral interventional procedures in 2005 up from 25% in 1996 whereas interventional radiologists performed 30% of these procedures in 2005 down from 65% in 1996

Important to be realistic about volume and quality of care
3. Diagnostic Mammography: workflow solution

- **Prepare Patient**
  - Communicate process to patient and family
  - Bring patient into imaging room

- **Image Transfer and Reading**
  - Move patient to waiting room while sub-specialist interprets image

- **Image Manipulation and Interpretation**
  - Transfer patient between waiting room and imaging room to capture and interpret additional images

- **Patient leaves hospital**
  - Discharge the patient after the final report is delivered with little probability of callback

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4. Fluoroscopy

- Remote interpretation utilizing video capture technology, integrated into our technology platform: remote Radiologist views the progression in real-time.
- Need to ensure compliance with state regulations with regards to onsite supervision for these studies: Radiology Technician (Rad Tech).
  - 15 states: Rad Tech’s ability to perform Fluoroscopy not regulated
  - Additional 28 states have no restrictions
  - California, Iowa, Vermont and Oregon allow Rad Techs to conduct Fluoroscopy with special approval or training
  - Kansas, New York and New Jersey only three states that require onsite radiologists or physicians to supervise studies

**Typically <100 studies per year, <1% of total imaging volume
No correlation in referral patterns with key referring providers**
Equal performance without a $250k subsidy

Two small hospitals - adopted different radiology staffing solutions with no impact on performance

- Located within 50 miles and owned by the same corporate health system
- Each hospital averaging ~19,000 imaging studies per year
77 Bed Rural Hospital
$40M in annual revenue; approximately 19,000 radiology studies annually

Client Situation:
• Growing discontent among medical staff related to quality and performance of Radiology services
• Difficulty recruiting and retaining radiologists
• Nighthawk fees $75k/year; Transcription $50k/year

Radisphere Cloud Solution:
• Remote network of radiologists who provide top-quality coverage in 8 subspecialties and final reads 24/7/365 (no onsite radiologists)
• Advanced radiology quality programs to ensure highest standards in peer review, critical findings management, checklist-driven reports and training
• Contracted service level commitments for turnaround times and critical findings compliance
• Business intelligence analytics to drive growth and ensure appropriate utilization
• Marketing programs to increase community outreach and grow mammography referrals

Impact:
• Eliminated all subsidies and extra fees
• Met /exceeded all service commitments
  ❑ Turnaround times averaged 4:48 (compared to an industry average of 12-16 hours)
  ❑ 95% of STAT reports completed within 60 minutes (industry average 24:45)
  ❑ 96% of cases reviewed for critical findings in under 20 minutes
• Grew imaging volume in high value modalities and settings
  ❑ Outpatient MRI – 82% growth
  ❑ Mammography – 38% growth
• Happy Medical Staff – 40% of top referring providers increased their referrals by 10% or higher
Thank you! Questions?