

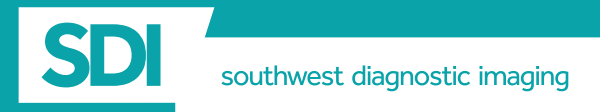
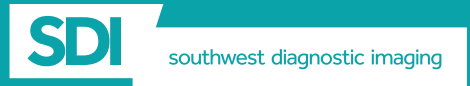


# 2016

ANNUAL QUALITY REPORT

**SMIL**  
SCOTTSDALE MEDICAL IMAGING

**SDI** southwest diagnostic imaging



Scottsdale Medical Imaging is an affiliate of Southwest Diagnostic Imaging, a Phoenix-based company formed collaboratively with two other radiology practices in the metro area: EVDI Medical Imaging and Valley Radiologists Limited.

DR. ROD OWEN



DR. RONALD NEWBOLD



DR. GAVIN SLETHAUG



DR. SUNIL RAM



DR. ROLF HULTSCH



# WELCOME

Scottsdale Medical Imaging (SMIL) is proudly committed to quality, patient safety, lifelong learning and continual process improvement. This annual report provides you with an overview of our 2016 key performance metrics and quality improvement initiatives.

The 38 radiologists of SMIL combine to yield hundreds of years of collective learning and expertise in radiology. All our physicians are board certified by the American Board of Radiology, and the vast majority of have gained additional training through subspecialty fellowships. In partnership with HonorHealth™ we provide outpatient services in 15 imaging centers throughout Scottsdale, Fountain Hills, Phoenix and Gilbert. We also provide fulltime professional services for HonorHealth™ Osborn, Shea and Thompson Peak medical centers.

SMIL's high standards ensure that our imaging equipment, technologist training and exam protocols are continually reviewed and updated. These efforts provide our radiologists with state-of-the-art images for interpretation, which translates into optimal opportunities for best patient care. Our focus on the advancement of technology, information systems, equipment and staff is crucial for SMIL to remain responsive, flexible and efficient while constantly improving healthcare value.

Uniting excellent physicians, staff and equipment is not enough to ensure outstanding quality. SMIL drives the advancement of quality and value through the dedication of human and capital resources and tools. Even more importantly, SMIL embraces a deep cultural commitment to innovation and improvement.

We invite you to learn about our latest achievements, our goals we've set to further improve quality and our commitment to pursuing excellence in patient care.

## MISSION

To be leaders in medical imaging and intervention through clinical excellence, advanced technology, innovation and research, and to serve our patients and referring clinicians in a collegial work environment.

## VISION

To be nationally recognized as a premier provider of service-oriented patient care using medical-imaging guided intervention and state-of-the-art-technology.

## VALUES

**SERVICE** | We are committed to providing excellence service and compassionate care with responsible stewardship of our resources and traditions.

**INTEGRITY** | We honor commitments and maintain the highest standards of behavior.

**QUALITY** | We pursue excellence in patient care and service.

**INNOVATION** | We improve quality of imaging services by adopting new technology and participating in research.

**EQUITY** | We strive for equality of effort and benefit.

- THE SMIL BOARD



**385**  
EMPLOYEES



**38**  
RADIOLOGISTS

**46%** EMPLOYEES AT SMIL  
FIVE YEARS OR MORE



**360,038**

EXAMS OUR IMAGING CENTERS COMPLETED

**643,684**

EXAMS INTERPRETED BY SMIL RADIOLOGISTS

PATIENT SURVEY OVERALL SATISFACTION WITH SMIL

AVERAGE ON 5 POINT SCALE

**4.8**

**84%**

MR & CT EXAMS  
PRE-SCREENED FOR  
APPROPRIATENESS  
BY ASSESSMENT  
COORDINATORS

**292**

COMMUNITY  
SERVICE HOURS VOLUNTEERED  
BY SMIL EMPLOYEES AND THEIR  
FAMILIES



**3** HOSPITALS SERVED

**15** IMAGING CENTERS

SCHEDULING PHONE LINE CALLS ABANDONED

PERCENT OF CALLS  
UNANSWERED BY SCHEDULING  
TEAM, EXCEEDS BEST-IN-CLASS  
BENCHMARK OF 5%

**1.8%**

# WE'VE GOT YOU COVERED

## IMAGING CENTERS

### NORTH SCOTTSDALE

DESERT RIDGE MEDICAL CAMPUS  
THOMPSON PEAK PKWY. & SCOTTSDALE RD.  
92ND STREET & MOUNTAIN VIEW RD.  
HONORHEALTH SHEA MEDICAL PLAZA II

### SOUTH SCOTTSDALE

SCOTTSDALE RD. & OSBORN RD.  
2ND STREET & BROWN RD.

### CAREFREE

SCOTTSDALE RD. & WESTLAND OFFICE SUITES

### FOUNTAIN HILLS

PALISADES BLVD. & SAGUARO BLVD.

### GILBERT

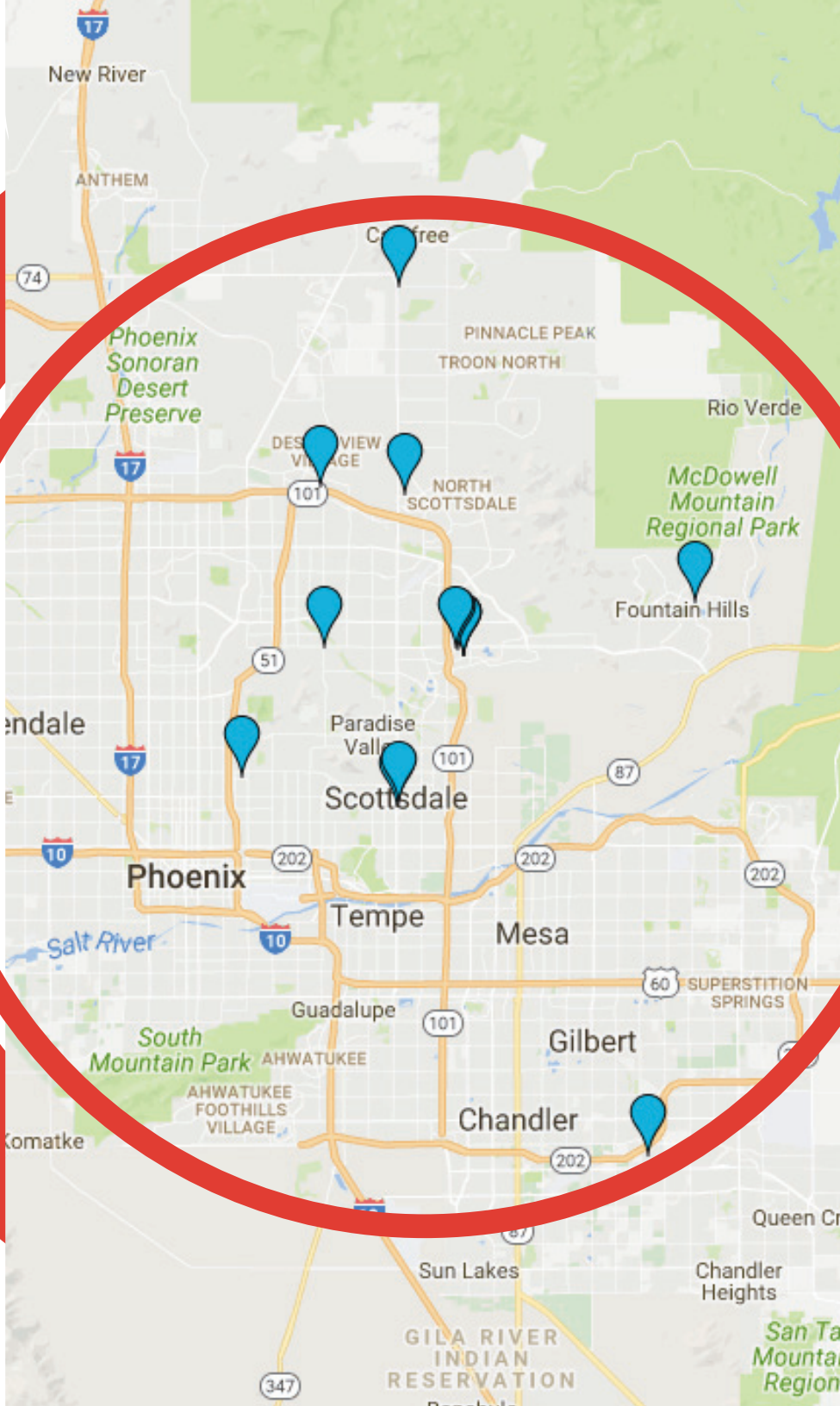
MERCY RD. & ROME ST.

### PARADISE VALLEY

TATUM BLVD. & SHEA RD.

### PHOENIX

HIGHLAND AVE. & 22ND STREET

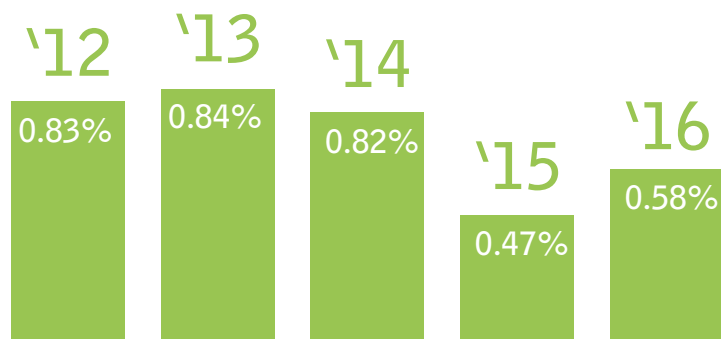


# KEEPING PACE AT HONORHEALTH™

## ENSURING FAVORABLE CLINICAL RESULTS:

SMIL tracks the outcomes of biopsies performed by our radiologists at Scottsdale Osborn, Shea and Thompson Peak Medical Centers to ensure that pathologists are able to make accurate diagnoses for our patients.

### CHEST PORTS PLACES BY SMIL INTERVENTIONAL RADIOLOGY AND REMOVED WITHIN 30 DAYS DUE TO INFECTION:



Recent literature search reveals published standard implanted venous access device short term complication rate (less than 30 days) of 1.0%.

### PERCUTANEOUS NEEDLE BIOPSIES AND DIAGNOSTIC ACCURACY 2016

	RECOMMENDED THRESHOLD (%)	SMIL RATE (%)
SUCCESS RATE BY BIOPSY SITE		
LUNG	85	91.5
MUSCULOSKELETAL	80	98.4
OTHER SITES	80	94.5
OVERALL	80	95.0
BIOPSY COMPLICATIONS		
PNEUMOTHORAX	45	15.9
PNEUMOTHORAX REQUIRING CHEST TUBE	10	5.7
DIAGNOSTIC ACCURACY		
APPENDICITIS	85	97.2
CHOLECYSTITIS	80	96.4



# HOSPITAL OUTPATIENT IMAGING EFFICIENCY MEASURES

As part of its Hospital Outpatient Quality Reporting Program, CMS created several Outpatient Imaging Efficiency (OIE) measures to promote high-quality, efficient care and to reduce unnecessary exposure to contrast material and/or ionizing radiation. SMIL has long-standing, excellent relationships with several local hospital systems where we provide professional radiology services.

In particular, three OIE measures involve decisions and work flows where radiologists at SMIL make a positive impact:

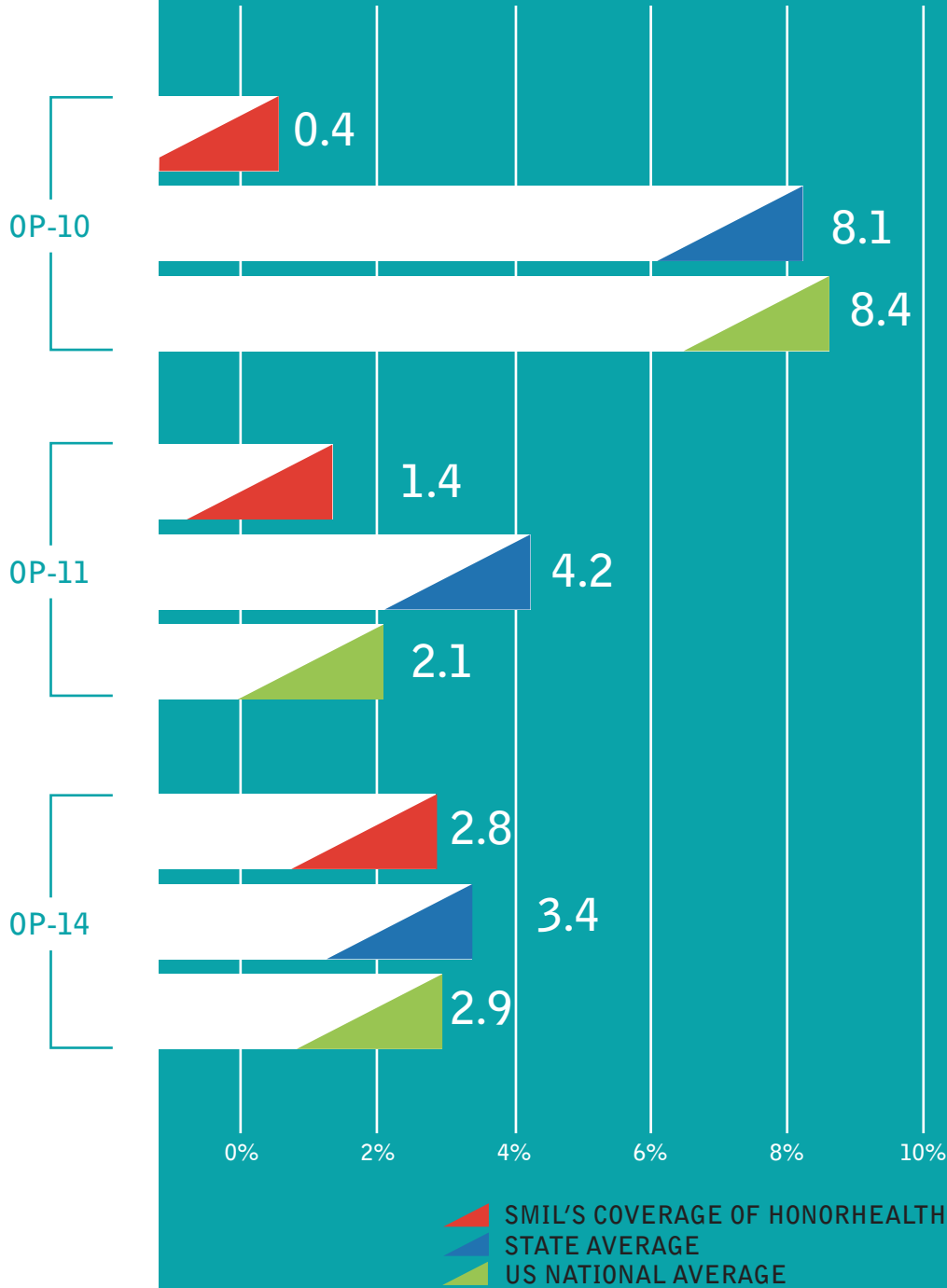
**OP-10: ABDOMEN CT USE OF CONTRAST MATERIAL**  
Percentage of abdomen studies that are preformed with and without contrast out of all abdomen studies performed.

**OP-11: THORAX CT USE OF CONTRAST MATERIAL**  
Percentage of thorax studies that are performed with and without contrast out of all thorax studies performed.

**OP-14: SIMULTANEOUS USE OF BRAIN CT AND SINUS CT**  
Percentage of brain CT studies with simultaneous sinus CT performed on same day at same facility.

IF A NUMBER IS HIGH, IT MAY MEAN THAT TOO MANY PATIENTS HAVE A DOUBLE SCAN WHEN A SINGLE SCAN IS ALL THEY NEED. LOWER PERCENTAGES ARE BETTER.

7/1/14 – 6/30/15



SMIL'S COVERAGE OF HONORHEALTH  
 STATE AVERAGE  
 US NATIONAL AVERAGE

# SMIL QUALITY PERFORMANCE

In The Advisory Board's (*Radiologist Professional Services Performance Dashboard*) they outline several metrics designed to help radiology leaders evaluate the clinical performance of radiologists in a hospital setting. The authors broke down performance into three categories: "traditional" reflects typical performance 3-5 years ago; "new status quo" reflects typical performance of successful radiology groups today and "progressive" reflects the highest performers.



## CLINICAL PERFORMANCE OF RADIOLOGISTS IN A HOSPITAL SETTING

	TRADITIONAL	NEW STATUS QUO	PROGRESSIVE	SMIL PERFORMANCE <sup>1</sup>
EMERGENCY DEPARTMENT TURNAROUND TIME (TAT)	2 - 4 hours	30 min - 2 hours	Under 30 min	<b>18 min</b>
HOSPITAL INPATIENT TAT	Same day results	4 - 8 hours	Under 4 hours	<b>32 min</b>
HOSPITAL OUTPATIENT TAT	24 hours	4 - 8 hours	Under 4 hours	<b>42 min</b>
PERCENT OF SELF-EDITED HOSPITAL REPORTS USING VOICE RECOGNITION	Under 80%	Above 80%	100%	<b>98%</b>
PERCENT OF CASES PEER REVIEWED	1% or fewer	1% - 2%	Greater than 2%	<b>3.5%</b>

<sup>1</sup> MEDIAN TIMES LISTED, PERFORMANCE SCORES BASED ON AVAILABLE DATA



# QUALITY PERFORMANCE IN BREAST IMAGING

SMIL providers have exceeded the requirements of the Mammography Quality Standards Act (MQSA), as regulated by the Food and Drug Administration (FDA), since the final regulations became effective in 1994.

## CANCER DETECTION RATE

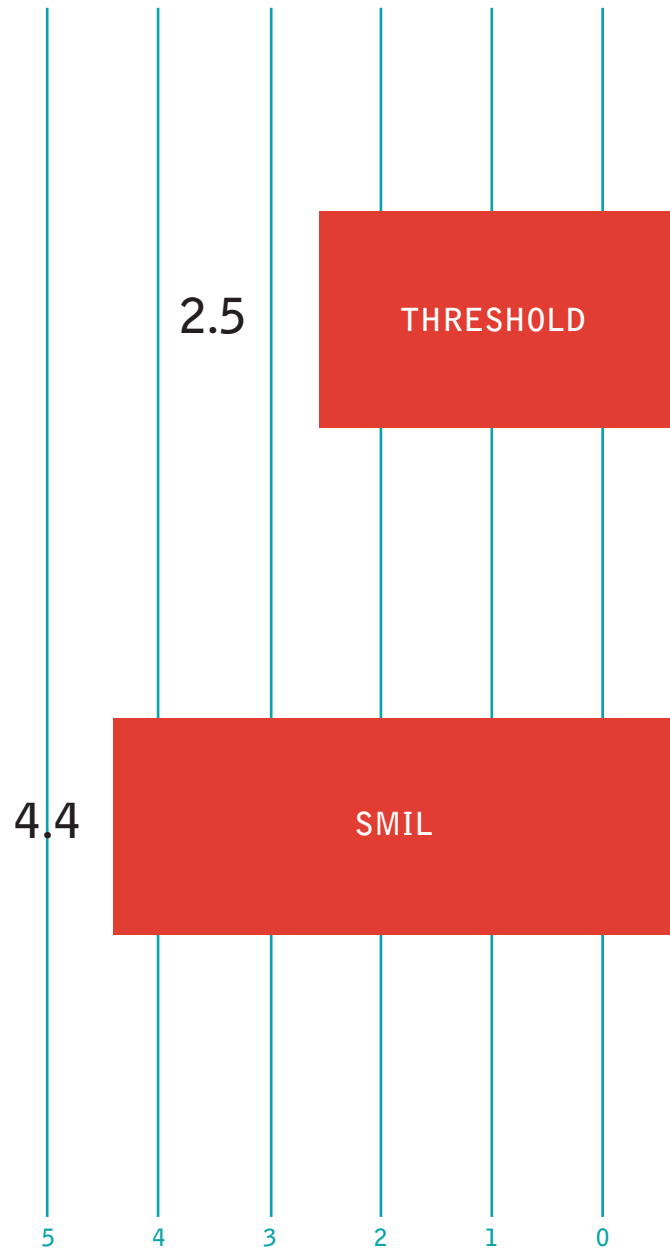
The cancer detection rate is comprised of the number of cancers correctly identified by screening mammogram, per thousand per thousand patients seen.

Within any given population we should be able to detect, on average, 6 cancers per thousand but these numbers can fluctuate.

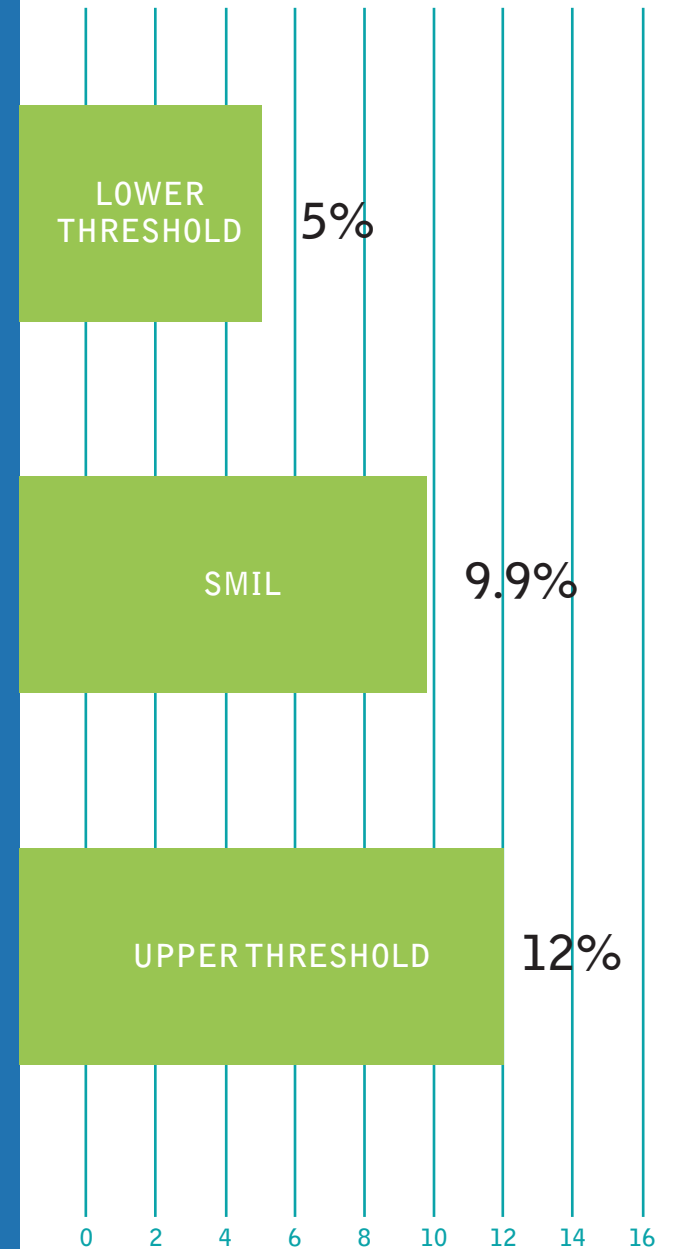
## IMAGING RECALL RATE

The screening mammogram callback rate refers to the number of patients who are advised to have a diagnostic mammogram following interpretation of their screening mammogram. Excessively high recall rates increase patient anxiety, inconvenience the patient and add unnecessary costs. Recall rates that are very low can indicate potential missed opportunities to detect cancer.

7/1/15 - 6/30/16  
BASED ON AVAILABLE DATA



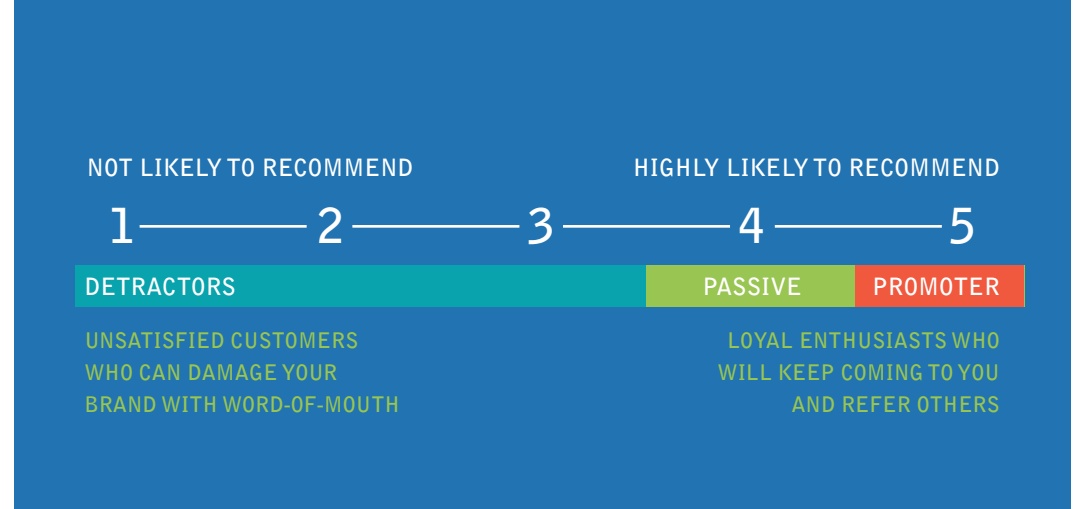
**CANCER DETECTION**  
(PER THOUSAND)



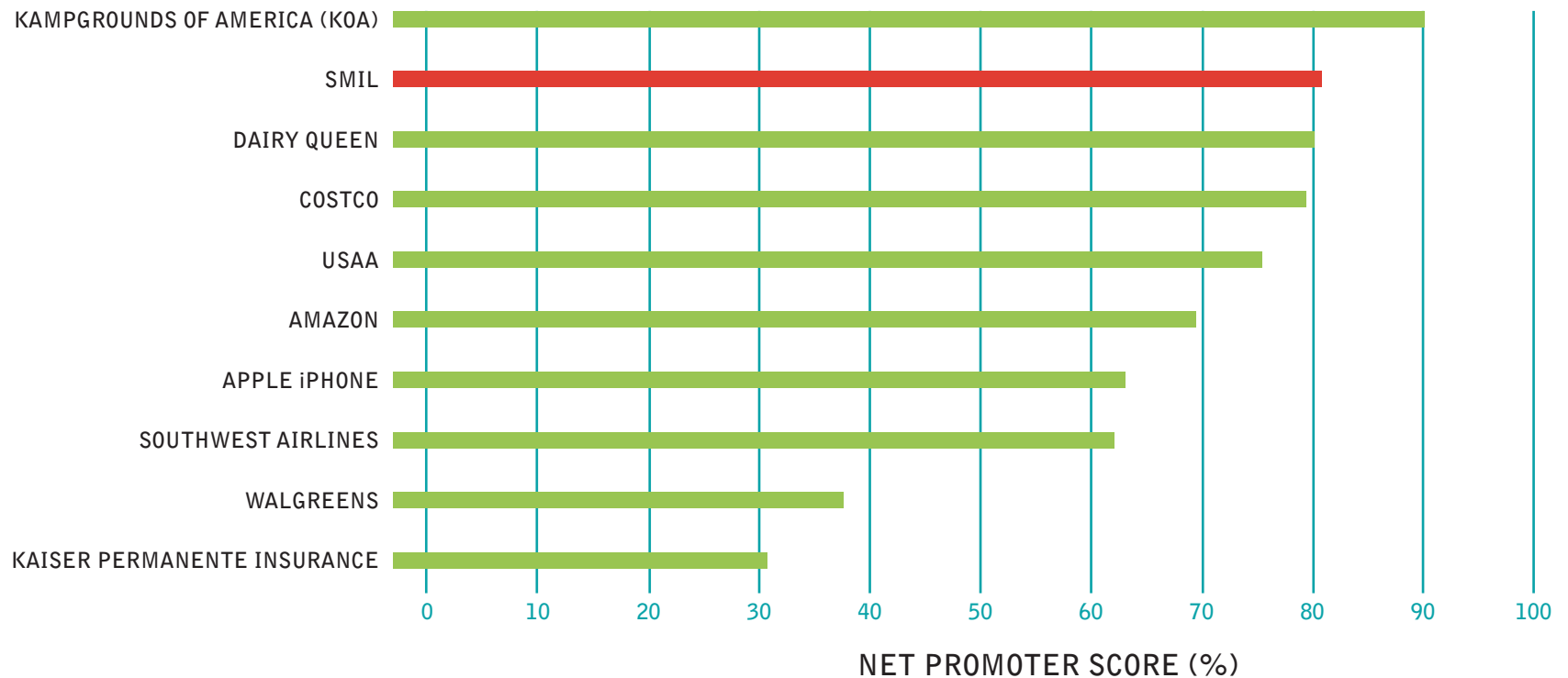
**IMAGING RECALL RATE**

# PATIENT EXPERIENCE: NET PROMOTER SCORE

Net promoter score is a recognized standard in business performance measuring customer loyalty. It is calculated by subtracting the percent of customers who are detractors (score of 1, 2 or 3) from the percent who are promoters (score of 5).



## SMIL'S NET PROMOTER 2016 COMPARED TO INDUSTRY LEADERS\*

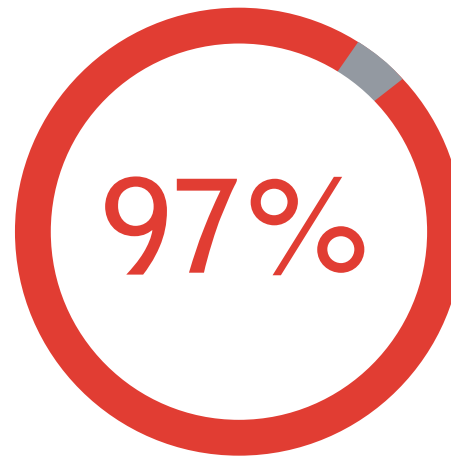
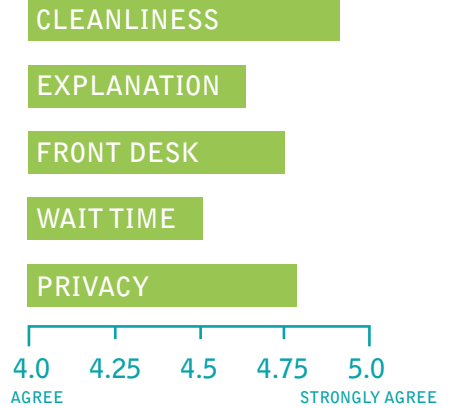


\*NPS® BENCHMARKS

# PATIENT EXPERIENCE

In our patient satisfaction surveys, we ask for the strength of agreement with several different aspects of the patient's experience:

- The front desk staff was friendly and helpful.
- My wait time was satisfactory.
- Staff showed concern for my privacy.
- The technologist explained what was going to happen.
- The imaging center was clean.



PATIENTS WHO SCORED THEIR OVERALL SATISFACTION WITH SMIL AS EITHER GOOD OR VERY GOOD

**appointment**  
avenue

In response to feedback we received from our patient satisfaction surveys we developed Appointment Avenue, a first-in-class online radiology scheduling tool.



MAMMOGRAM



X-RAY



MRI



DEXA BONE DENSITY SCAN



ULTRASOUND



CT SCANS

**SCHEDULE FAST 24/7 ONLINE**

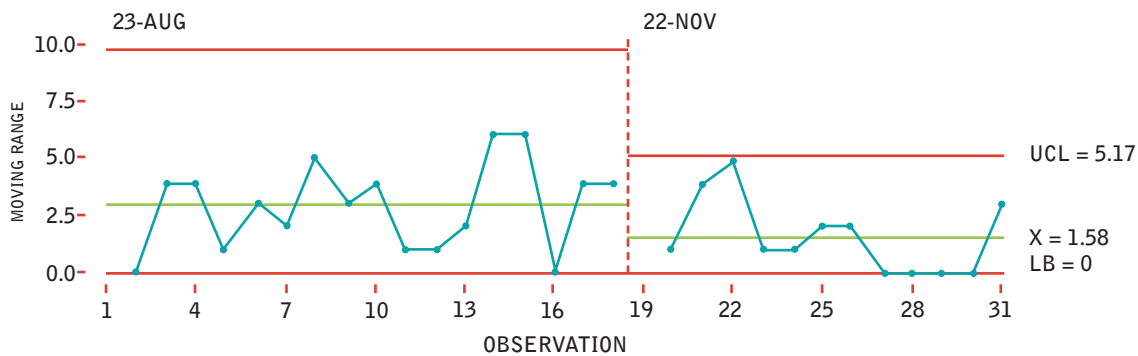
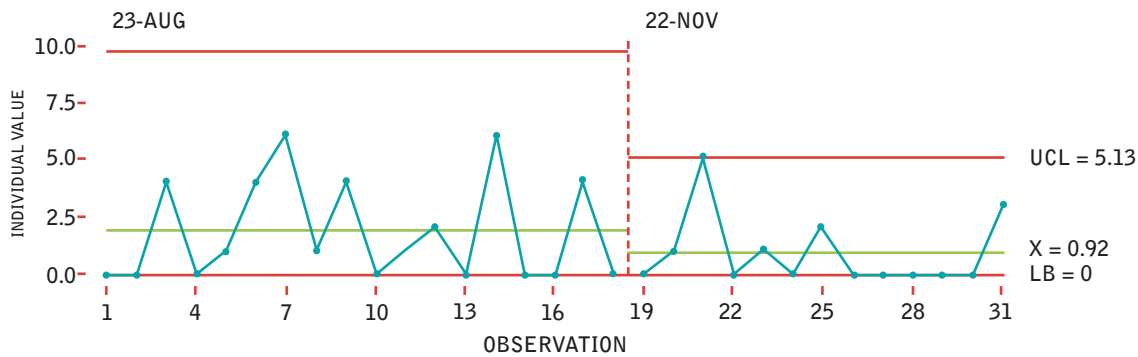


# BETTER QUALITY THROUGH PATIENT HISTORIES

One of this year's projects was completed by a Lead Mammography Technologist. Her project aimed to obtain more complete patient history data during our medical registration process. A more thorough medical history allows the interpreting radiologist to better answer the clinical question at hand.

Using rapid-cycle improvement methodology, the Teal Belt worked with her team to improve this process. The most significant change was accomplished with a complete redesign of the history sheet. This project successfully reduced the number of unanswered questions per history sheet by 50%.

SHEWART INDIVIDUALS CHART: # OF UNANSWERED QUESTIONS ON MAMMOGRAPHY HISTORY SHEET



## PROCESS IMPROVEMENT: TEAL BELT

The purpose of the Teal Belt program is to give employees the tools they need to lead small-scale Process Improvement (PI) projects that will positively impact SMIL. This is not a new job opportunity, Teal Belts stay in their current role and make an impact in their department.

SMIL has implemented several top-down process improvements, but not as many from the bottom-up. We want to build PI capability within SMIL at all levels. Also, this is a great opportunity for employees to expand their skill sets.

Process Improvement has a rich history, and many of its roots come from Japan. For this reason, Lean Six Sigma practitioners are given titles that are karate belt colors. Traditionally, yellow belts gain a foundation in PI, learn basic tools and work on small-scale projects. We call our yellow belt program Teal Belt in honor of our SMIL branding.

# PROCESS IMPROVEMENT: PHYSICIAN-LED PROJECTS

SMIL radiologists are committed to ensuring excellence. As technologies, medical research, and care-delivery methods progress at a rapid pace, we recognize that continual improvement is integral to our continued success in delivering high-quality services. As such, all our radiologists participate in a formal process improvement project each year within their respective clinical sub-specialty.

## MAMMOGRAPHY

### PROJECT TITLE

Reducing the Number of Days between Diagnostic Mammograms and Breast Biopsies

### DEFINE THE MEASUREMENT

For women undergoing a breast biopsy, the average number of business days between her diagnostic mammogram and the biopsy.

### DESIRED GOAL

We aimed to create a process where the average number of business days would be reduced by 20%.

### BASELINE DATA

There was an average of 8.3 business days between diagnostic mammograms and breast biopsies.

### IMPROVEMENT PROJECT

Through schedule changes, we increased the average number of mammography radiologists working per day. This allowed us to increase the number of slots available for breast biopsies from 71/week in April to 86/week in September.

### IMPROVEMENT PROJECT DATA

There was an average of 6.0 business days between diagnostic mammograms and breast biopsies, which exceeded the initial goal.

### REFLECTION STATEMENT

Expanding the breast biopsy schedule allows for more timely care, lowers patient anxiety and shortens the time to any necessary cancer treatment.

## NUCLEAR MEDICINE

### PROJECT TITLE

Reducing Patient Table Time for Selected Gallbladder Exams

### DEFINE THE MEASUREMENT

Calculated gallbladder ejection fraction (EF) using standard versus trial imaging protocol.

### DESIRED GOAL

We aim to decrease the time the patient spends on the imaging table by 50%, from 60 minutes to 30 minutes, without increasing false results or radiation exposure.

### METHODS

With IRB approval, a total of 302 patients who were undergoing gallbladder exams had the standard 60 minute scan, and additionally during their exam separate images were acquired at 5 minute and

2 minute intervals over a 30 minute time period. The standard scan results were then analyzed to calculate an EF by one technologist, and the interval time scan results were analyzed by a different technologist to reduce bias. The two EF calculations were then compared.

### RESULTS

The trial protocol EFs provided nearly the same efficacy as the standard continuous method. Using a threshold cutoff of 38% to designate normal from abnormal gallbladder function led to less than 1% difference in the accuracy between the two methods.

### REFLECTION STATEMENT

Among the benefits of adopting the trial protocol method are less equipment utilization per exam and improved patient comfort by decreasing table time.



SMIL is honored to have received the Commitment Award from SWAE. This speaks volumes about our process improvement achievements and patient-centered culture, as well as our desire to continue learning and innovating.



STACY HARLEY

MS, MBA, CPHQ, Certified Lean Six Sigma MBB  
Director of Process Improvement

Scottsdale Medical Imaging has been awarded The Advisory Board Company's 2017 Workplace of the Year Award. This prestigious award recognizes hospitals and health systems nationwide for exceptional performance in driving employee engagement.

"Our national award winners have demonstrated an impressive ability to inspire the highest levels of workforce engagement," said Steven Berkow, Executive Director of Survey Solutions at The Advisory Board Company. "Now more than ever before with a significant portion of the healthcare workforce retiring in the coming years and non-traditional employers encroaching on talent, health systems must be laser-focused on engaging their staff."

"We are truly honored to receive this national award," said Jessica Montgomery, Chief Operations Officer of Scottsdale Medical Imaging. "At SMIL we recognize that employee engagement is not a stand-alone initiative. Engagement is deeply built into everything we do to deliver best-in-class patient care. We chose to make a top-down commitment to communication, deep listening and engaging our teams in how to sustain excellence in patient care. We have developed outstanding leaders at every level who understand exactly how important it is to keep our workforce believing in our company and our mission."



**WORKPLACE**  
OF THE YEAR

---

**2017** AWARD  
WINNER

---



# THE FIRST RADIOLOGY-SPECIFIC PATIENT SAFETY ORGANIZATION

SMIL is a founding member of Strategic Radiology (SR), a consortium comprised of more than 1,300 radiologists in 19 of the largest, most innovative, privately owned radiology groups throughout the United States. These groups are uniquely aligned in a collaborative model where data and best practices are shared, clinical practice information is exchanged and certain practice expenses are consolidated. This has helped SMIL establish best practices and benchmarks that are unique and simply not available to the rest of the radiology community.

In June of 2013, SR formed one of the first physician-driven Patient Safety Organizations (PSOs) to be approved by the Agency for Healthcare

Research and Quality, on behalf of the Secretary of the U.S. Department of Health and Human Services. It is also the first and only radiology-specific PSO in the nation. Through federal protections of legal privilege and confidentiality authorized by the Patient Safety and Quality Improvement Act of 2005, the SR PSO fosters a culture of safety and creates a secure environment where healthcare providers can collect and analyze data. The safe-table discussions we are able to participate in are vital to the ongoing learning and improvements that SMIL is committed to.



**Strategic**  
Radiology





## RADIOLOGIST PERFORMANCE: PHYSICIAN ACCOUNTABILITY

SMIL expects all radiologists to meet high quality standards, work efficiently, exhibit professional behavior and contribute to the success and growth of the company and their hospital partners. To ensure that these standards are met, a Physician Accountability Report is generated annually for each radiologist.



# EXAMPLE PHYSICIAN ACCOUNTABILITY REPORT

## PRODUCTIVITY

METRICS	POINTS AVAILABLE	POINTS EARNED	
WRVU / SHIFT	65	63	
SELF EDIT RATE	20	19	
MINOR PROCEDURES PERFORMED	15	13	
<b>TOTAL</b>	<b>100</b>	<b>95</b>	<b>MEETS EXPECTATIONS? YES</b>

## QUALITY

METRICS	POINTS AVAILABLE	POINTS EARNED	
CME HOURS	25	22	
PQRS	20	20	
ABR MAINTENANCE OF CERTIFICATION	20	20	
ABSENCE OF HOSPITAL VARIANCES	20	20	
CASE EXPLORER	15	11	
<b>TOTAL</b>	<b>100</b>	<b>93</b>	<b>MEETS EXPECTATIONS? YES</b>

## BEHAVIORAL

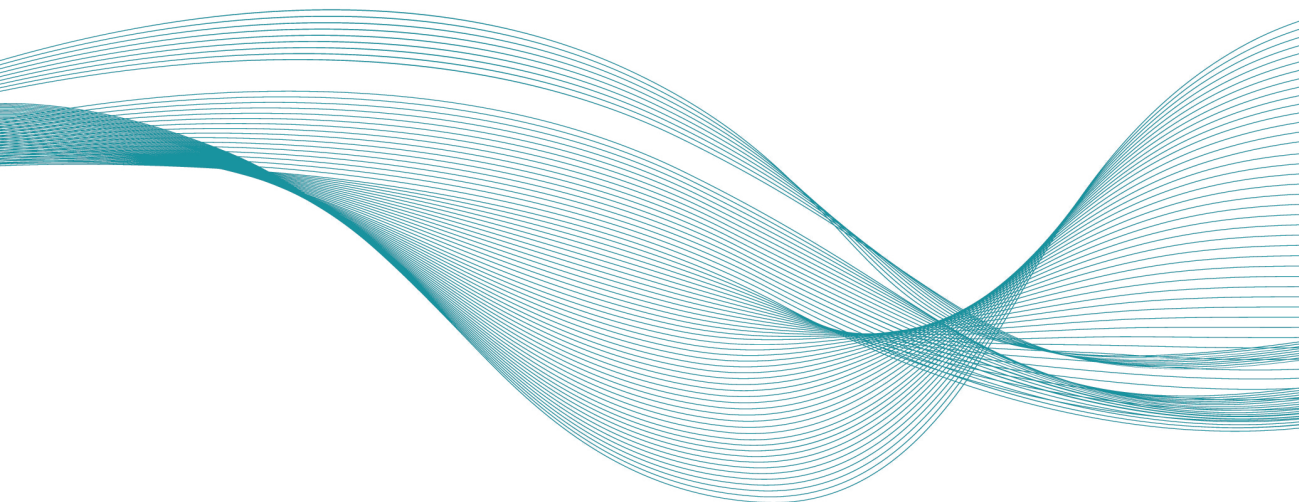
METRICS	POINTS AVAILABLE	POINTS EARNED	
360 REVIEW AVERAGE RATING - STAFF	50	45	
360 REVIEW AVERAGE RATING - PEER	50	47	
<b>TOTAL</b>	<b>100</b>	<b>92</b>	<b>MEETS EXPECTATIONS? YES</b>

## CITIZENSHIP

METRICS	POINTS AVAILABLE	POINTS EARNED	
MEETING PARTICIPATION	50	50	
COMMITTEE AND PROJECT PARTICIPATION	50	46	
<b>TOTAL</b>	<b>100</b>	<b>96</b>	<b>MEETS EXPECTATIONS? YES</b>



The Research Institute  
of Scottsdale Medical Imaging



V I S I O N • E X P E R T I S E • S Y N E R G Y



## QUALITY RESEARCH ADVANCES PATIENT CARE

The SMIL Research Institute was founded in 1995, spurred by an interest to develop new medical imaging technologies. Consisting of a full staff of research coordinators, and drawing from the clinical expertise of our radiologists and experienced technologists, we are able to deliver technically exquisite imaging and trustworthy data.

Current research projects involve cutting edge advancements in imaging, including investigating new drugs and protocols for:

- breast cancer
- Alzheimer's disease and dementia
- prostate cancer

Our efforts recently have been recognized by Endocyte, a biopharmaceutical company seeking to maximize the potential of small molecule drug conjugates with companion imaging agents. The SMIL Research Institute was given the distinction of being a Center of Excellence and will now be providing imaging services to patients from all over the country.



SMIL radiologists and staff are relentlessly cultivating a culture that embraces continuous quality improvement as we striving to meet and exceed our customer's expectations.

By its very nature, a quality and process improvement program is a never ending journey. We are gratified by our accomplishments and helping lead the way in collaboration with our hospital partners, but there is still much work to be done. We view the many challenges ahead as opportunities to improve our organization, and in so doing, improve the care we provide to our patients, service we provide to our referring physicians and the value we bring to our partner institutions and communities.

