

# Improving Radiology Revenue Opportunities for Community Hospitals Through Higher Quality Service Levels

## Top Contributor to Bottom Line

Radiology, in any community hospital setting, must be seen first as a center of excellence before any profitability considerations can enter into the equation. But quality in radiology can drive radiology economics. Revenue from radiology is, by far, the largest of the outpatient service line contributors to a community hospital's bottom line. It dwarfs its nearest competitor – cardiology – by nearly three times.<sup>1</sup> (Table 1). This profit source is also a major reason why diagnostic imaging departments have attracted large capital investments from their hospital's executive suite to fund CT, MR and PET purchases over the last decade.

But the leakage of referral studies to Independent Diagnostic Testing Facilities (IDTFs) has made the hospital-based imaging service the market share laggard for these high tech and lucrative imaging studies. Only recently has the DRA impact slowed the growth of CT and MR studies going the way of free-standing imaging centers.

Some of the perceived advantages of an IDTF for referring physicians might include more available scheduling slots for patients and more convenient access for commuting or parking within the community. But the real objection a hospital needs to overcome is when your hospital-based radiology services are perceived to be of inferior quality and lower service levels to those provided by a local imaging center.

An even more ominous trend is if a prominent referrer such as an orthopedic surgeon might ask a patient to travel to a further-away academic center to get what they feel to be a better imaging exam. If this happens with any regularity then you know that your facility has a sub-par image interpretation reputation.

Outpatient Service Line	2007 U.S Contribution Profit (billions)	% Outpatient Contribution Profit
Lab	\$3.2	5%
Orthopedics	\$3.2	5%
Primary Care	\$7.3	11%
Cardiology	\$8.2	12%
Radiology	\$24.1	37%

**Table 1.** The Advisory Board ©2008, Top 5 Outpatient Service Lines by Contribution Profit Hospitals 2007 as reported by imagingBiz.

## Not So Friendly Competition?

It is also not uncommon for local radiology groups to provide better service at their own imaging centers than at the hospitals

they service through faster turn around times or to cater to specialists and surgeons with reports that meet their particular preferences. DRA pressures lend even more urgency to a Radiologist-owned imaging center to produce volumes of studies so that the competitive bar is raised even further.

We have even encountered one local radiology practice that specified their own imaging center by name as the point of service for follow up studies in their dictated reports at the local hospital. And another practice handily substituted the hospital's script pad for their own imaging center's script with the rejoinder "we're all one big family."

Clearly the competitive landscape is energized by the revenue opportunities that both hospitals and IDTFs need to help fund the most advanced imaging modalities that can service the patients and referring physician requests. But just having the best clinical equipment is not sufficient to provide the best clinical service. The rallying cry ought to be report quality, not just an equipment arms race.

## Equipment Does Not Render a Diagnosis

Even with an impressive capital investment you have funded in imaging modalities and IT infrastructure such as PACS and various systems and applications requested by your radiology group, your service levels are going to be predominantly influenced by the quality and process discipline of the Radiologists themselves. Most community hospitals have a fairly sophisticated array of capabilities to scan a patient. The rate-limiting step to getting referrals and satisfaction from your Medical Staff from those studies is the timely and accurate interpretation by a Radiologist.

Common quality issues in radiology include a lack of subspecialty availability that matches the specialization levels of your other Medical Staff, long turn around times, inconsistent and indecisive reports and lack of availability for consultations. In addition, most local radiology practices provide peer review quality programs as a mere formality but with scant quantitative and actionable data to back it up.

It does not take many unsatisfactory reports for your key referrers to soon forget about the big check you wrote for the new MR suite or PET/CT and to recognize that the pretty images come with a lackluster interpretation.

## Will Higher Service Levels Reclaim Physician Referrals?

When Radisphere begins to service a community hospital we immediately see, as a high-quality focused National Radiology

Group practice, the direct impact we have on referring physician satisfaction. Radiology Department satisfaction levels improve dramatically within the next annual survey cycle and continue to rise above the 85% level. This is entirely due to providing a mix of responsive on-site Radiologists with a national network of highly regarded Radiologist specialists. The specialists read all complex studies that would benefit from a reader with higher level training and a far greater case load experience in that specialty than any single community practice could encounter.

These documented satisfaction levels occur even when no new imaging equipment or computer systems are purchased by the community hospital when we assume a contract for services. So we know that the quality of our Radiologists improves medical staff satisfaction, not the equipment. But can it improve the hospital's referral patterns and profitability?

Well to be clear, this needs to be looked at from two perspectives because improving financial results can be based on either improving revenue or decreasing costs. Let's investigate both sides to the radiology profitability coin.

**Regaining High Tech Outpatient Volume from a Local IDTF**

The studies that have prompted the greatest turf battle between hospital-based imaging and IDTFs lie almost exclusively in the domain of CT and MR. These are studies that have the highest reimbursement value to the interpreting radiology practice, but they also are the most complex to read due to the enormous volumes of data represented in those slices and sequences that are acquired.

And it is here in musculoskeletal, body and neuro imaging where having an experienced and well trained eye will produce the best, most definitive reports for the referring physician. Frustration is common amongst medical professional specialties that local Radiologists just do not provide the level of service they need to add clinical value to their work-up of a patient. Were a hospital administration to set a new higher bar for radiology clinical quality expectations, some marginal referrals would no doubt come back to their hospital imaging service.

Common CT & MR Outpatient Exams	CPT Code	Technical Fee/Study <sup>2</sup>	Annual Revenue @ 250 studies/yr
CT abdomen w/o & w/dye	74170	\$ 416.90	\$ 104,225
MRI lumbar spine w/o & w/dye	72158	\$ 669.28	\$ 167,320
		<b>TOTAL</b>	<b>\$271,545</b>

**Table 2.** Incremental revenue for one CT and one MR per weekday of additional referral volume to a community hospital imaging department (based on 50 weeks and 250 days/yr).

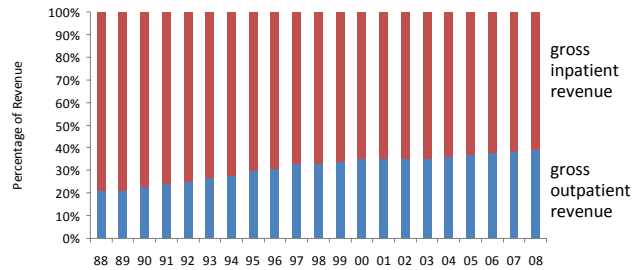
Table 2 demonstrates the relative revenue power that regaining just one CT and one MR referral every day would generate in incremental revenue. Because the equipment amortization costs and technologist costs are a fixed expense with this modest volume increase, this revenue would fall almost completely to the profit line on the P&L.

Note that we refer to these as "regaining studies" and not just increasing volumes. The distinction is important. With the climate of questions tugging at overutilization of imaging in healthcare it is not a valid strategic assumption that you can create organic growth of imaging studies within the population you serve. Any type of local market analysis you employ will be stronger if you assume a zero sum game with your competitive facilities. These competitive market share gains adding 6-figure revenues are a material sum for the community hospitals we serve and are welcome in any hospital system today no matter how large.

It has also been shown that a strong marketing plan to communicate to both the referring physicians as well as to the patient community will significantly increase your chances of garnering these modest but profitable increases. And remember, this is not growth that has to be sustained each year. Once you reach a new plateau of an additional 250 studies per high-tech modality each year, that becomes your baseline of referral volume that you can then defend based upon your higher quality service levels and that revenue becomes an annuity – or for at least as long as those reimbursements are not cut to a lower level.

**Reducing Costs on Bundled Inpatient Procedures**

Even though outpatient revenues have been increasing for the last 20 years (see Fig. 1), inpatient revenues are still the majority that community hospitals obtain. But the bundled reimbursement profile of inpatients presents a tradeoff when it comes to radiology since incremental imaging services for an inpatient will add more costs with no concomitant revenue to the hospital.



**Figure 1.** Avalere Health analysis of American Hospital Association Annual Survey data, 2008, for community hospitals.

How can Radiologists participate in the upside or downside demand for these inpatient procedures? After all, it is to their personal and group practice benefit if additional studies are ordered no matter where they come from.

It is a common practice for Radiologists to reflexively order follow-up studies to give them additional diagnostic confidence, some of which may be prompted by the defensive medicine posture that so many providers find themselves in due to our litigious healthcare environment. But a material number of follow up studies are ordered by General Radiologists because they are not as confident in definitively calling a normal or disease state compared to a specialist.

Our data analysis indicates that the Radisphere specialists are far more conservative in requesting follow-up studies. A sample of 44,571 Radisphere reports were analyzed for key words such as “recommend” after the impression. Only 5.8% of these reports specified a follow up imaging exam was recommended. This percentage compares to rates reported in the literature ranging from 19% to over 30%<sup>3,4</sup> which recommend follow up exams as part of their reports – a remarkable four to five times higher. For any of these studies that might be an inpatient this can lead to two cost drivers to the hospital with no revenue associated with them:

- a. Hospital performs the additional imaging exam and files the CPT procedures for cost accounting but has the inpatient DRG fixed payment contribute no additional revenue. This inpatient would also take additional technologist time and a valuable time slot in the CT or MR suite schedule.
- b. If the radiology report that recommends a follow up study is finalized in the morning and that additional scan is scheduled for that afternoon, the report will likely not be available until later that evening or even the next morning for the referring physician to make a discharge decision. That additional night stay associated with waiting for follow up radiology tests is a material contributor to costs and is also acknowledged in the literature as causing over half of delays in surgical discharges.<sup>5</sup>

#### Radisphere Experience in Referral Mix

In your senior leadership role in your hospital, you certainly have numbers you look at to summarize the financial performance of your facility. But sometimes total numbers can mislead if underlying issues offset each other. A good example of this is radiology exam volume. If total exams are flat or going up, you want to know the mix between inpatient and outpatient exams before you get excited one way or another. A good metaphor in personal health is your cholesterol level. As we have all learned, you can't take your total blood cholesterol level as the one number to be concerned about. You have to see what is the mix of “good” cholesterol (HDL) and “bad” cholesterol (LDL) to make a better decision on how to improve your health.

For imaging volume we know quantitatively that more inpatient exams will lead to more costs and no additional revenue whereas reclaiming CT and MR studies lost to outpatient imaging facilities are beneficial to the bottom line of the entire institution. Just think of outpatient volume as the “HDL” that is good for the health of your facility.

The chart in Table 3 shows some compelling statistics from our current clients with the longest history of detailed billing experience. The results show the following:

- Outpatient: The four hospitals have on average **added over 3 additional CTs and 1 additional MRI on a daily basis.**
- Inpatient: All four hospitals have significantly decreased their inpatient volume.

Since Radisphere:		Total Modality Growth	Modality Inpatient (IP) Growth	Modality Outpatient (OP) Growth	New OP studies per Weekday
Hospital A	CT yr 2 v yr 1	-5%	-14%	2%	0.3
	CT yr 3 v yr 2	-10%	-21%	15%	2.9
	MR yr 2 v yr 1	9%	-13%	14%	1.6
	MR yr 3 v yr 2	3%	-23%	10%	1.2
Hospital B	CT yr 1 v start	-1%	-16%	13%	2.3
	MR yr 1 v start	35%	-15%	38%	1.9
Hospital C	CT yr 1 v start	-9%	-26%	24%	3.7
	MR yr 1 v start	-6%	-3%	-3%	-0.3
Hospital D	CT yr 1 v start	12%	-1%	34%	3.7
	MR yr 1 v start	7%	-68%	8%	0.8
<i>Average daily Outpatient CT increase across all 4 sites</i>					<b>3.2</b>
<i>Average daily Outpatient MR increase across all 4 sites</i>					<b>1</b>

**Table 3.** Four current sites with longest billing history showing favorable increase in outpatient CT and MR with decrease in inpatient CT and MR utilization.

#### Summary

Radisphere National Radiology Group gives your community hospital the option to provide outstanding quality and service that will attract the right types of studies. Because highly regarded subspecialists provide extraordinarily definitive reports, the need for additional imaging exams for inpatients falls 4-5 times lower than those reported in the literature. And results for increasing outpatient volumes are materially significant in our current clients. These results show that it is possible to reclaim those outpatient exams that are currently being referred to other imaging facilities in your area. What we believe this data points to is that clinical quality in radiology can have a positive impact on your financial health.

<sup>1</sup> *Implications of Reform for Hospitals: Seismic or Subtle?* Imaging Biz Staff Writer. Posted: February 24, 2010 covering December 2, 2009 presentation in Chicago, Illinois by Shay Pratt, managing director of The Advisory Board

<sup>2</sup> Based upon a 50% mix of Medicare and commercial payer for central Michigan facility technical fee (does not include supplies or professional fee component).

<sup>3</sup> Acad. Radiol. 1997 Dec;4(12):802-5. *Outcome of examinations self referred as a result of spiral CT of the abdomen.* Baumgarten DA, Nelson RC.

<sup>4</sup> Am J Emerg Med. 2007 May;25(4):396-9. *Frequency of radiology self-referral in abdominal computed tomographic scans and the implied cost.* Blaivas M, Lyon M.

<sup>5</sup> Ann R Coll Surg Engl. 2006 Nov; 88(7): 650-652. *A Waiting List to Go Home: An Analysis of Delayed Discharges from Surgical Beds.* RT Benson, JC Drew, and RB Galland

Radisphere National Radiology Group leads the industry in exceptional radiology professional services to community hospitals. Radisphere is a comprehensive on-site and off-site provider that, due to our specialized Radiologists, enables clients to improve referring physician satisfaction, increase referrals and revenue while minimizing radiology staffing and departmental costs. Along with our locally placed general Radiologists, the Radisphere team of more than 100 specialized Radiologists, who combined are licensed in 50 states, includes: board certified musculoskeletal, neuroradiology, body, cardiac, emergency, pediatric, women's imaging and nuclear medicine, all with advanced modality training. Radisphere utilizes a sophisticated custom-engineered technology platform called **radii™** to distribute images, reports, and critical data throughout our network and securely to the hospital enterprise. Founded by pioneer subspecialty Radiologists, Radisphere is located in Cleveland, OH with 250 clients and more than 130 non-physician professional services team members.



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