Cardiac CT Downstream revenue

CALCULATING THE REAL RETURN ON YOUR CT INVESTMENT

by: John A. Rumberger, PhD, MD, FACC

For improving patient care and staying competitive in cardiology today, Cardiac CT is a “must-have” technology. But the high initial capital costs and uneven reimbursement environment have kept many cardiology groups from taking the plunge. Too often, the calculation of whether the addition of Cardiac CT will be profitable focuses exclusively on the direct revenue from coronary CT angiography without consideration of how Cardiac CT can be used to increase the flow of new patients. In fact, the “downstream revenue” potential of a well run cardiac CT program far surpasses the revenues for the actual scans and can make cardiac CT highly profitable for even a small cardiology group.

In weighing the decision to add a CT Scanner most practices focus on whether the they expect a sufficient number of “in-house” referrals from their own group members, which is highly dependent on group size, and try to guess how many scan referrals they might get from outside physicians. Implementing a Cardiac CT program will undoubtedly enhance the reputation of your practice, improve patient care and increase referring physician satisfaction. Each of these is likely to increase patient referrals to your group.

Relying on this model of patient referrals overlooks one very important factor that is perhaps one of the greatest strengths of Cardiac CT: the ability of Cardiac CT to detect the presence of sub-clinical atherosclerosis and move your group beyond treating symptomatic disease and into the much larger universe of Preventive Cardiology.

While Coronary CT Angiography is not yet appropriate for use as a screening test because of high radiation dose and the possibility of contrast reactions, Coronary Calcium Scans are well established as an effective screening tool. This scan is fast, exposes the patient to minimal radiation, does not require contrast or expensive supplies, and is highly effective at detecting the presence of clinically significant plaque. Coronary calcium is more effective at assessing risk, and therefore guiding treatment, than traditional risk factors. Coronary Calcium Scans are appropriate for patients at Intermediate Framingham Risk, a group encompassing about 40% of the adult population.

Let’s take a look at how Preventive Cardiology is likely to translate into growing your cardiology practice:

Coronary Calcium Scans are generally not reimbursed by most insurance plans because it is considered a screening study. But the cost of providing Coronary Calcium Scans to your referring primary care physicians is very low and can be done at a very affordable price. We have used $99 in our model below. A common price range for these scans currently varies from as little as $49 to more than $500.

For every 100 patients scanned, assuming an even distribution of ages 40-65, you can expect an average of about 17% to have a score of 1-20, 14% to have a score of 20-100, 10% to have a score of 100-400 and about 13% to have a score over 400.*

Score	
1-100	**14%**
100-400	**10%**
400+	**13%**

Patients with non-zero scores have atherosclerosis. For those patients with a score over 20, a lipid evaluation and consultation to assess the need for lifestyle modification, pharmacologic therapy or further evaluation of symptoms is appropriate.

Patients with scores over 100 have a 2% per year cardiac event risk, or higher. Therefore, the 23% of patients in this group have a high or even CHD-equivalent risk. . Although each practice can determine their own algorithm for treatment and work-up recommendations at each calcium score, further evaluation with a nuclear stress perfusion study is appropriate in patients with scores over 100 to identify those with significant ischemia. The likelihood of an abnormal perfusion study is approximately 25% in this group and those patients will require further evaluation with CTA or Invasive Angiography.

For those patients with Calcium Scores under 400 and an abnormal perfusion study, referral for a CT Angiography may be considered.

Patients with calcium scores over 400 and an abnormal perfusion study are likely to have significant stenosis and to require intervention. Referral to Invasive Angiography is appropriate for those patients.

Based on this algorithm, for every 100 patients who have a calcium score, whether physician referred or self-referred, you can expect downstream revenue as shown in the table below.

Patients Scanned:		**100**	
Modality	**Number**	**Fee**	**Revenue**
Calcium Score	100	$99	$9,900
Consults	37	$200	$7,400
Nuclear	23	$900	$20,700
CTA	3	$500	$1,250
Cath	3	$350	$1,400
TOTAL			**$40,650**

Calcium scans require little scanner time. A well run office can easily scan 4-6 patients per hour. Since this is a non-contrast scan, a physician in attendance is generally not required. Operating the scanner during evening or weekend hours allows large volumes of patients to be scanned without interfering with diagnostic scans such as Coronary CTA and Peripheral Vascular CTA during regular business hours.

A well run heart scan program will improve patient care, identify patients at risk and allow you to implement preventive therapy in a timely manner.A Cardiac CT Screening Program can help you develop new referral sources, increase existing referrals, expand patient volume, increase revenue and enhance the practice’s reputation

With the increasingly favorable reimbursement environment Cardiac CT will become more attractive to radiologists. Cardiology practices that wait too long to become proficient in CT may find they are too late to the party as their referral base increasingly demands the latest technology and migrates to the radiologist's office.

An efficient cardiac imaging center will use their scanner not just for Coronary CTA but for Peripheral Vascular studies and Preventive Cardiology to maximize new patient referrals and downstream revenue. Practices that take this broad-based approach to cardiac CT are likely to find they achieve an excellent return on their investment in the first year.

* Source: US Preventive Medicine