

## Changing Technology and Practice: What's New in EP

By Jennifer Schaad, MS, MBA and Charles Kinder, MD

Due to an aging population, advancements in medical technology, and consistently favorable medical studies, experts predict exponential growth in heart rhythm related procedures. However, the decision as to whether an institution should pursue the development of such a program is influenced by a number of factors. New Electrophysiology technology is out there, but since the "newest technology" is expensive, Corazon believes should be carefully evaluated with respect to your hospital's current and desired level of service.

Hospitals typically fall under three levels of EP services: Level I service involves performing pacemaker and standard ICD implants; a Level II service program performs the above, as well as Cardiac Synchronization Therapy (CRT), diagnostic EP studies, and "simple" (non-afib SVT or accessory pathway) ablations; and Level III services are all inclusive, performing more complex and time consuming atrial fibrillation and ventricular tachycardia ablations.

In consulting with programs across the country on cardiovascular program and sub-specialty development, Corazon often finds that the relevance of "new" technology depends not only upon the current service provided, but also staffing, facility design, costs, and physician availability. For instance, it may not be practical for a Level I service program with one cath lab to consider purchasing a \$2 million magnetic navigation system. Rather, a better option would be to increase ICD implants to meet anticipated growth due to the clinical studies showing the benefit of ICDs for primary prevention of sudden cardiac death.

Diagnostic EP, the next level of technology to consider, requires dedicated equipment and lab time. The challenge is not just about purchasing the EP system as much as where the procedures are to be done and whether this area should be dedicated only to EP. Is it a shared cath lab suite or operating room? Are lab resources shared or dedicated? Are schedules blocked for EP-specific procedures?

While these equipment and operational logistics can be manageable with focused attention and planning efforts that include all program stakeholders, the largest hurdle may be finding an Electrophysiologist, as many Level I programs can function solely with cardiologists and/or surgeons performing implants. Although some physicians have taken the Heart Rhythm Society's program for the implantation and management of ICD and Cardiac Resynchronization Therapy (CRT) devices, a trained and experienced Electrophysiologist is required for diagnostic EP studies and simple ablations. Subsequently, the limited number of these specialists, combined with high demand for EP services across the country, makes it difficult to recruit a physician to a program with limited service offerings.

Level II EP programs expand into biventricular devices for heart failure, diagnostic EP studies, and standard "simple" ablations (non-afib SVT and WPW). This level of service requires an EP system, an ablation console, and the associated disposables. Estimated costs for this technology can be significant:

- "Simple" computer mapping system: \$180,000
- Ablation console: \$50,000
- Disposable catheters: Approximately \$2,000-5,000 (\$1,000 per catheter averaging two catheters for diagnostic EP study and up to five catheters for ablations)

Inherent to the success and growth of a Level II program is properly-trained staff as well as a dedicated lab. Even with newer technological advances, these procedures, particularly CRT implants, can be time

consuming, hampering lab efficiencies as well as staffing resources and patient scheduling. Again, creating and/or ensuring operational efficiencies and clinical excellence takes time and effort all through the implementation or expansion phases of adding new technology.

Level III programs offer all procedures, including ablations for ventricular arrhythmias and atrial fibrillation. Procedure time for the latter ranges from 3 - 8 hours and often requires anesthesia services and dedicated staff to accommodate and maximize operating efficiency. Technology requirements include a more sophisticated 3-dimensional computer mapping system (\$250,000) as well as intracardiac echo (\$50,000). New technology in this area includes a computer-controlled system with magnets that helps doctors remotely steer catheters with greater precision.

The technology may improve outcomes, as well as minimize physician exposure to radiation. However, the magnetic navigation system comes at a hefty price - over \$2 million, as well as substantial facility upgrades, such as reinforced flooring and increased room size to accommodate the 4,000-pound magnets used on this system. Institutions that acquire this technology are typically large tertiary and/or teaching institutions or hospitals in a highly-competitive market looking for a distinguishing feature that will differentiate the EP program.

Regardless of the program size or scope of services, Corazon advises focused attention to reimbursement. Although some of the complex arrhythmia patients are younger and not yet eligible for Medicare, the majority of device implants are in the 65+ patient population. The 2007 proposed changes for Medicare's Inpatient Prospective Payment System propose decreasing reimbursement on CRT, ICD, and pacemaker DRGs. Hence, it is important to make sure that both device costs and supply inventory are managed appropriately. Corazon also recommends that EP programs be cognizant of the inpatient vs. outpatient reimbursements differences, which has large implications for physicians and coding staff.

Due to the dramatic interest in demand for electrophysiology and the resulting increase in EP procedures, hospitals need to evaluate their current scope of EP services and decide whether the time is right - in terms of staff complement, facility layout, community need, and available budget - to upgrade or grow EP program technology.

Corazon believes that the first step should always be to determine the market need, and then consider the best option that fits within the program or hospital budget. Indeed, having the latest technology does not necessarily make sense if you do not have trained staff, adequate space for larger equipment, or the referral base for patients who need these services. In working with many clients across the country on program expansions or implementations, we always recommend a feasibility study or strategic planning process to determine the best option.

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**Jennifer** is a Senior Consultant with Corazon, a national leader in specialized consulting and recruitment services for CV program development. **Dr. Kinder** is a Medical Advisor at Corazon, Inc. and Founder and Director of the Heart Rhythm Program for Heart Care Centers of Illinois. Corazon is a 2003 Ernst & Young Entrepreneur of the Year Company and one of the 2004 and 2006 "Pittsburgh 100." Call 412-364-8200 or visit [www.corazoninc.com](http://www.corazoninc.com).