

# Ultrasound for interventional radiology can help cut costs

Market expected to produce single-digit volume growth, expanded applications

By Helen Titus

**Reducing costs and producing better patient outcomes don't always go hand in hand, but that's exactly what's happening in interventional radiology (IR), which offers minimally invasive procedures that deliver significant benefits.**

The concept behind interventional radiology is to diagnose and treat patients using less invasive techniques that eliminate or reduce the need for major surgical procedures, which offers less risk and reduced pain for patients as well as faster recovery times than surgery.

Interventional radiology uses image-guided procedures — often using real-time ultrasound — for both diagnosis and treatment. In the past IR was primarily dedicated to making cardiovascular procedures less invasive. But, in recent years, these techniques have been applied to diverse diseases and conditions.

A Transparency Market Research report indicates the most common IR procedures include angioplasty, venous access, biopsy, fibroid embolization, stents, arteriograms and embolization. It is also used to provide tumor biopsies, which are essential for developing treatment plans and evaluating patients with multiple issues to determine which procedure is the most urgent.

IR is particularly beneficial for patients who are in frail health, or who have already undergone numerous surgeries.

Use of ultrasound not only expedites diagnosis and treatment, it simultaneously reduces the need for additional imaging procedures and related costs. And with the ultrasound image guidance available through IR, physicians can quickly assess the patient's

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condition, conduct procedures in less time and help expedite patient recovery.

But developing successful IR programs poses a unique set of challenges that imaging leaders must address.

An article published by Advisory Board outlines three key trends for both growth and challenges for interventional radiology.

## 1. Interventional radiology services are gaining referrals from new sources

Interventional radiologists are capturing referrals from two new areas: non-procedure-based specialists and patients. Physicians in medical oncology and pediatrics are a strong referral source for interventional radiology because they don't offer competing services. Patients in some health care organizations can review online resources for surgical alternatives and many are electing to undergo IR procedures. In these cases, patient self-referrals can account for a significant volume of referrals.

## 2. Interventional radiology programs have an identity challenge

The radiology department generally oversees both diagnostic and interventional radiology, which can cause physicians and administrators to view the two specialties as comparable in terms of roles and resources. However, many physicians do not understand the scope of IR services and send referrals directly to surgeons. IR programs must develop awareness for the services they provide. The best way to do this is to work with leaders of radiology departments to create a protocol that identifies patients who are best suited for IR procedures.

## 3. Interventional radiology's value proposition aligns with future market trends

The potential for growth is strong since IR mirrors three significant health care trends:

- Cost-effective care: Lower-cost, high-quality care sets organizations up for success in risk-based payment models.
- Attractive to consumers: The minimally invasive nature of interventional procedures attracts patients who shop before receiving care.

- Available in an outpatient setting: Many IR procedures can be safely performed in an outpatient setting and offer rapid recovery. This mirrors a broader health care trend in which a growing number of patients are receiving care at outpatient and freestanding facilities.

The IR market is expected to reach \$23.5 billion by 2021, up from \$16.99 billion in 2016 with a compound annual growth rate of 6.7 percent, according to a recent report from MarketsandMarkets. Achieving the growth potential for ultrasound-guided procedures means administrators and interventional radiologists should look for systems that are tailored to performing IR procedures.

### Specialized features deliver important benefits

Expansion in the delivery of interventional radiology procedures is greatly enhanced by the latest generation of ultrasound systems that marry excellent image quality and specialized IR features with a compact footprint.

Interventional radiologists are looking for ultrasound systems with needle guide technology and the ability to steer the transmit beam so it's always perpendicular to the needle for improved needle visualization. Systems should allow remote control of the transducer when performing procedures — allowing the user to freeze, store or activate cine, color or a biopsy guide, even from the opposite side of the exam table.

Advanced capabilities include image fusion that can enable real-time CT navigation. Rapid, automatic visual registration can lock CT to ultrasound, and IR specialists can navigate through CT slices in real time. Instrument tracking and intuitive target planning also offer important advantages.

### Ergonomic adjustments can reduce injuries

Maintaining a sterile field while controlling needle placement and the ultrasound system often requires IR physicians to either assume awkward positions or get assistance from a nurse or technologist at the workstation to comfortably and safely complete a procedure.

It's important for interventional radiologists to position themselves carefully when performing exams to avoid injury. Reducing

reach and arm abduction while scanning is very important and arranging the workstation to optimize ergonomics is also essential. The monitor should allow interventional radiologists to easily position it with one hand to expedite adjustments while scanning a patient. The system also should support height adjustment to address positioning for patients of all sizes and to enable ergonomic imaging for exams whether the interventional radiologist is seated or standing.

### Projected areas of growth for ultrasound procedures

Interventional radiology is not the only area in which use of ultrasound systems is expanding. An article authored by iData Research Inc. reports that the two largest segments of the overall ultrasound equipment market in 2014 were cardiology and radiology, which each represent more than 25 percent of the overall market. Due to advances in 3-D and 4-D imaging, as well as elastography and combined MRI/ultrasound imaging techniques, growth rates in these markets are expected to remain in the mid-single digits until at least 2020.

Additional growth is expected in the point-of-care (POC) market that includes ED, critical care, anesthesiology and musculoskeletal applications. Technological improvements and affordable pricing are driving increased adoption of ultrasound as a tool for diagnostic and guidance procedures. In these settings, physicians are using ultrasound to improve the accuracy of needle placement procedures and to replace costly radiation-based imaging techniques with real-time, cost-effective ultrasound imaging.



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