

Digital Imaging: Is It Right For Your Practice?

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The questions and options that a chiropractor has in X-ray today are simple: He can take them the traditional way by using film, a dipping tank or processor and waiting for the picture to develop.

He can use computed radiology (CR), which utilizes a method of capturing an image on a plate and then by placing in a processor it becomes a digital image for computer presentation. He can use a complete referral-based program, he can use true digital sensor or not use X-ray at all.

Traditional Technology

Most of the chiropractors in the U.S. are still using the traditional method of irradiating a film, putting it in a processor, then waiting for it to develop.

It was invented about 100 years ago and the patient had to endure 11 minutes of radiation to enable the doctor to get an X-ray.

With today's technology we now use only 2 percent of the original radiated dose. The office purchases film and chemicals and as the office takes more X-rays the cost increases proportionately. The benefits to this method are all about cost of entry. An office would only pay for an X-ray when it takes one. If the practice does not take many X-rays, or is more holistic based, it may only spend \$30 per week on supplies and monthly processor cleaning. It would make little or no sense to invest in an enhanced X-ray system because the practice would not generate enough income to support it.

It is easy to criticize these systems; they smell, have harmful by-products, they are slow, there is a lot of identified and hidden waste.

In a practice that is growing, traditional X-rays may not only cause a bottle neck on readings, but in the event that an X-ray did not develop, the patient has to be retaken with all of the inherent risks that are associated with increased radiation exposure.

That being said, I have yet to meet a chiropractor who tells me that the traditional method for taking films make him any worse of a doctor.

Computed Radiography

CR, or computed radiography, is a process that utilizes phosphor plate technology. These plates trap the X-ray energy and require an intermediate processing step to release the stored information so it can be converted into a digital image.

The process was invented by Fujifilm in 1982 in Japan. It offered doctor's offices the ability to take digital images. The process became more cost-effective and much quicker than had been previously possible with traditional X-ray.

Once the image was converted to the computer it was then easily manipulated. There are many benefits to this technology. It is very flexible to use; and it produces excellent quality images that once converted to a digital signal can be stored and transferred like any other digital file across the office or e-mailed to anyone.

The negatives to this system are similar to those of film. Although there are no chemicals, there are still ongoing maintenance costs. The plates, after each use, are wiped by the processor for reuse (and if you are careful can last for many images); but, they are fragile and, more often than not, are damaged or simply wear out.

This forces the practice to continue to pay for new plates as capital expenditure, with no commensurate benefit. There is time involved and although there are some inexpensive CR units on the market, the lower the cost, the slower the processor. It was always seen as an intermediate technology and we are seeing less and less of them being advertised and marketed at trade shows.

Outsourcing

It is really hard to have a firm grasp on what percentage of doctors send out X-rays; I do believe that we shall see more as we move towards true electronic health records (EHRs). A doctor's original concern that "if I let an X-ray leave my office that is the last that I will ever see of it", are gradually diminishing. By using digital images an office can burn a disk or e-mail any file to any other doctor for him to review without having to expose the patient to unnecessary radiation.

[pb]The benefits for many small practices far outweigh the reduction in control. There is no capital outlay or upkeep for equipment, and hospital and radiology groups have the ability to purchase systems that are far more advanced than the busiest chiropractor's office can justify financially.

They are also able to see obese patients, who are a challenge to even the most advanced in-office digital systems. Liability is a non-issue. It is hard for us to argue against using this method if it makes both financial and practical sense to outsource X-rays.

Digital X-Rays

More and more doctors are looking at digital X-rays as a way to move their offices to comply with both the needs of the patient and the push towards EHRs. Like all of the other systems, there is more than one type of digital imaging available.

The primary differences are as complex and as simple as their description: indirect and direct. The two words have implications that bear no resemblance to how the image is taken and the fact that it ends up on a computer screen with no additional processing needed.

Digital imaging is fast, efficient, easy to use and manipulate: no dark rooms or storage areas for film, and a large reduction in retakes due to the ability to enhance the image by adjusting contrast and brightness on the computer screen. I will not go into great detail on this, but a simple search on Google may leave you blinded with plenty of information.

The question regarding how long it takes to convert to digital imaging will depend totally on the type of digital option that the doctor chooses. Most companies require that you purchase a complete system: that means a new generator, bucky system and the digital plate.

If one is buying CR (computed radiography), a processor is also necessary. The time needed to strip out your existing room and set the new system in place will be a function of lead time and the local dealer. After it is installed the new system has to be certified by the state and then you can start to take X-rays.

A sign of a good system in place is the time it takes to implement; you should expect to be digital within 40 minutes of the system arriving at your office.

As far as retrofitting goes, some systems can be used on any X-ray system that has the capacity to output 125KvP and 300ma. The costs of going digital range from the low \$20,000 to \$100,000, and higher for the newest and latest wireless systems.

Figuring Out If It's Worth the Switch to Digital

We are working on a study that will give us an idea of how many offices currently are using X-ray. For us, the first question to the clinic after establishing that they do indeed take film can be a simple mathematical equation: multiply the numbers of X-rays by the cost of film, plus chemicals and processor cleaning - you then have the basic cost.

If that number exceeds financing costs either through leasing, bank loans or lines of credit then the purchase is simple. Not only will the system save you time, but will also make you real money.

The next group will be those who fall into the smaller practice that still uses film, but when the math is calculated it really is a long-term investment; the question for them is time, space and practice management.

When using digital X-ray, the doctor can have images available to him in as little as 10 seconds, or in a few minutes with CR, both are exponentially quicker than with the traditional X-ray.

Most chiropractors fall into this group. There are also some tremendous tax advantages for purchasing equipment; it makes no sense that a practice would give the tax man a little over \$20,000, when he could buy a digital system and never spend a dime on X-ray again.