

## Digital X-Ray Systems Can Transform Your Practice

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I've dedicated my professional life to building some of the largest and most profitable practices in North America. In that effort, I pass on those strategies that I've personally adopted that have enabled me to run a highly successful practice. One of the most powerful strategies has been to incorporate digital x-ray technology into my practice. Having the ability to share my diagnosis with my patients with annotated x-rays, as well as to overlay annotations of where they could be through treatment, paints a powerful picture indeed.

Digital x-ray systems offer chiropractors many advantages compared to film-based radiography. The advent of digital radiography is comparable to the rise of digital cameras over traditional film cameras in the consumer industry - and the comparative benefits are actually quite similar. Think about it, would you ever purchase a film-based camera today in preparing for a family vacation? Of course not because the benefits of digital technology far outweigh film. The pictures you can take with an iPhone(R) today are high quality, can be easily shared, modified and corrected, and provide the opportunity for instant review with friends and family. And while the cost of digital cameras has plummeted, the quality has only increased. So it is with digital x-ray systems.

### Return on Investment

By nature, we are visual beings. It is well known that people are more likely to act based on what they see far more than what they hear. And, because of this fact, I've successfully converted my x-ray process from a cost center into a profit center. I can tell you first-hand that showing a series of annotated x-ray images on an iPad to a patient makes quite an impression. The ability to see their diagnosis - and where they can be with further treatment - instead of just hearing what I have to say, makes it easy for them to decide to book their next appointment. Additionally, patients want to know that their doctor is using the latest equipment and software, as it gives them a feeling they're in the right hands.

One of the great benefits of the digital x-ray system is the convenience that it provides when compared to analog radiography. For example, the chiropractor will no longer need a darkroom and the associated storage space when using a digital system. Once the software has captured the digital image, it is immediately available for manipulation by the chiropractor. The digital system captures and processes high-resolution images consisting of millions of pixels in a matter of seconds.

Digital radiography produces x-ray images that users can then modify and annotate on their computer. For example, the chiropractor can mark images and save the markings on storage media. The system I personally use will allow me to hide the markings when showing the images to the patient, a powerful illustration tool as I can reveal the images as I'm explaining the patient's condition.

A digital system can also allow the chiropractor to zoom to real size when displaying x-ray images to patients. Some systems are compatible with touch screen monitors as well, allowing the chiropractor to manipulate images easily using this feature. Chiropractors can capture multiple images simultaneously and they can fuse/stitch images together to create a complete "picture" for the patient. They can then store the images or burn them on DVDs or CDs to give to the patient. Additionally, chiropractors can e-mail the files directly from the software to patients or other medical experts. Generally, digital x-rays save in web-compatible and other highly portable formats like JPEG, JPEG2, GIFF, TIFF, BMP and PNP.

Once the image is in a portable format, it is available for copying to redundant backup media systems. In comparison, it is expensive to create multiple copies of film images. Instead, most chiropractors would digitize the images to save money. The digital image is easy to send over a network and the user can make as many copies as needed with no additional expense other than ensuring that there is sufficient storage space. When chiropractors retrieve the x-ray later, all the patient information is available for easy access.

While costs have certainly come down in recent years, falling as much as 40%, adopting a full digital system is simply beyond the scope of some practices. In this case, I highly recommend purchasing just the annotation software, using a digital camera (such as one found on a smart phone) to take pictures of film x-rays and then importing those digital images into their software to manipulate and annotate. When you see the reaction a patient has to digital annotations that reveal both their existing condition as well as where they should be, you'll never go back to just film.

## Safety

One of the major potential advantages of digital x-ray systems is the possible reduction in radiation dosage to the patient. Because digital systems have a wider dynamic range than film-based systems, they can accept a wider exposure range. Generally, they require less radiation to produce an image of similar quality to an analog film system.

## Chemical Usage and Environmental Impact

Film-based x-ray systems require chemicals and water for film processing. A digital x-ray system does not require either and can save chiropractic offices hundreds or thousands of gallons of water a year depending on the size of their operations. Digital radiography can also save thousands of gallons of fixer and other film developer chemicals each year.

By eliminating the use of water and chemicals, digital x-ray systems are significantly more environmentally friendly as compared to analog film systems. Further, digital radiography is more power-efficient than analog film radiography. Not only does the digital system require less radiation, but it does away with the more costly power requirements of film developing, resulting in a smaller carbon and chemical footprint.

The chemicals used in film development are toxic and can cause major environmental problems if not disposed of correctly. For example, fixer contains silver halide crystals and other substances that are difficult for most water treatment facilities to remove.

## Efficiency

One of the things I hammer home to my clients time and time again is strive for efficiency in every aspect. In the time it takes most doctors to process a set of film prints, I've already taken, received, annotated and shared the results with the patient - and chances are they've already booked their next appointment. Each patient leaves with their annotated x-rays in-hand (DVD or CD), and they'll share this with their close friends and family. Now, the annotations become both an educational tool and a marketing tool as well.

I've also integrated my EHR system with my digital x-ray system, saving time in creating notes and having the ability to call up my annotated x-ray images quickly and easily. Again, efficiency is one of the main components of any successful practice.

Digital radiography is convenient and powerful, allowing chiropractors to accomplish more work with less effort, time and expense. The images are available immediately, can help increase patient visits and can be easily stored, shared and modified. And when looking at the costs and hassles (i.e. inefficiency) of film-based systems, there really is no comparison. I would estimate that in the next few years, you simply won't find a successful, high-volume practice using film-based equipment. Just like you won't find a film-based camera around your neck when taking your next family vacation.