

Intraoral Cameras: The Value Is Clear

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Abstract: *Intraoral cameras (IOCs) are extremely valuable tools for today's dental practices, though many dentists still do not incorporate them into their practices. They provide an empowering technology for diagnosis, patient education, case presentation, and virtual documentation. This article outlines important factors to consider when choosing an IOC for use in dental practices, gives an overview of the various IOCs available on the market, and discusses cost and return on investment.*

Despite the fact that the dental intraoral camera (IOC) has been in existence for over 15 years, many practices still do not use one. Even practices that have IOCs rarely use them to their full potential. The IOC is one of the most powerful and useful technologies in dentistry today. It is extremely cost-effective and when used to its full capacity will result in a tremendous return on investment. In my opinion, an IOC should be used with every single patient to enhance diagnosis, treatment planning, and case presentation, and provide increased patient education as well as virtual documentation of each patient's dentition.

Considerations

No one IOC has it all, so individual camera features must be considered when deciding which system is the most appropriate and desirable for your practice.

First, does the IOC provide a good, clear image on the computer or video screen? To determine this, test the IOC in your office using your own equipment. What you see at a convention may not produce the same image quality in your office.

Next, is the IOC portable or self-contained? Cameras that require a capture card (analogue) are portable and digital, and wireless IOCs are self-contained. In other words, analogue cameras require a

separate docking station in each operatory and self-contained cameras do not. Having a docking station in each operatory requires consideration of space and positioning.

The camera must be compatible with your practice management software. This will enable you to send images directly into a patient's virtual record, and to print out an excellent hard copy. Imaging software will enable you to educate patients about esthetic enhancement possibilities.

There are several mechanical features to consider. First, does the IOC have 1 lens for all image perspectives or are multiple lenses available, and are you able to easily change them? Multiple interchangeable lenses enable you to take the image of a single tooth, an entire quadrant, or a full frontal smile view, which are important not only for diagnosis and patient education but also for case presentation and virtual documentation of a patient's entire dentition.

Second, what is the focusing mechanism of the IOC? Some have fixed, some have adjustable, and some are autofocus-ing. Different focusing mechanisms suit different needs, so the one that works best depends on what the operator is trying to photograph.

Third, what is the depth of field of the IOC? How close do you have to put the camera to the object you wish to image?

camera with macro, intraoral, smile, or portrait settings on the handpiece. Ultimate from SciCan, Inc^m, is an LED/fiber optic camera with a USB 2.0/USB connection and a BRC connection for use with an analogue monitor. SIROCAM 3 from Sirona Dental Systems, Incⁿ, is a white light LED IOC with a 3-position focal range that captures intraoral, extraoral, smile line, and full face images via a foot switch.

Claris 1310 by Sota Precision Optics, Inc^o, uses a single click image capture button that can directly integrate into any software system. AdvanceCam by TPC Advanced Technologies^p also uses LED technology with a wireless remote control that enables users to zoom, capture, delete, and access memory. Oracam by Video Dental Concepts^q uses CCD chip and LED technologies to provide full face extraoral and intraoral images. Optum^r by Camsight has a 2-button configuration and a thin autofocus handpiece for ease of use. Optum Plus, also by Camsight, wirelessly transmits images to a television or personal computer.

Cost

What is the financial investment in an IOC for an average dental practice with 4 to 5 operatories? It depends on which system you purchase. The price for a digital IOC is approximately \$3,000. For a 4 to 5 operatory practice you would most likely purchase 2 cameras, so for a \$6,000 purchase the monthly payments over 3 years would be about \$175 per month, over 5 years about \$110 per month. Analogue systems cost between \$10,000 and \$15,000. Over 3 years, the monthly payments would be \$290 to \$425, and over 5 years the monthly payment would be between \$175 and \$275.

Return On Investment

I believe that every dentist will come to realize that the IOC is one of the most valuable and powerful technologies available. Patients understand what they see more clearly than what you tell them. Pictures provide for better case presentation and ser-

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^pTPC Advanced Technologies, City of Industry, CA 91748; (800) 560-8222

^qVideo Dental Concepts, Ormond Beach, FL 32176; (386) 672-0450

^rCamsight, LosAngeles, CA 90010; (877) 477-2580

vice, and patients are more likely to follow through with treatment recommendations because better case presentations lead to increased case acceptance.

The IOC magnifies on a monitor what cannot be easily seen with the naked eye. This technology can help practitioners to better educate patients, who in turn can take responsibility for their oral health through better understanding and ownership of their treatment. In my opinion, only an IOC can provide this service as well as be the nexus to cosmetic imaging. Create before and after IOC photographs and print them out so patients can show others.

Finally, the most undervalued service the IOC provides is the virtual documentation of a patient's dentition in addition to the case notes. The IOC images are not only useful to patients but also to the dentist with respect to risk management. Images can be more revealing and persuasive than written case notes, and when you have these images to substantiate your case notes, risk management will be minimized.

In my experience, the financial rewards of an IOC system far outweigh the initial costs. A quick review of the numbers will prove my point. Just 1 composite restoration per day of an asymptomatic old restoration at an average fee of \$150 and based on a 180-day work year translates to \$27,000 per year. Just 2 onlays per week at an average fee of \$750 for 48 weeks equals approximately \$72,000. Finally, just 12 cosmetic cases per month at an average of \$5,000 per case equals another \$60,000.

Conclusion

I believe that an IOC system should be a part of every dental practice. IOCs are cost-effective and result in a tremendous return on investment. I believe that both patients and dental practices can benefit from the use of IOCs to improve the accuracy of diagnoses, enhance treatment planning and case presentation, and allow dentists to better educate their patients and document their cases through virtual documentation. The best way to determine which system is best for your practice is to become familiar with the various systems and test them in your office with your team.