

## Part 2; - Co-Diagnosis and the Intra-Oral Camera System in Clinical Care.

Seventeen years ago when I started to put my former practice together, I was toying with some sort of intra-oral camera. I had seen them at various shows, but never really had an opportunity to play with them. Intra-oral cameras were large, bulky, needed a direct feed from a local power company to run them, supplied most of the heat to centrally heat the whole building, and a seriously reinforced cart to wheel them from one place to another.

Then intra-oral camera systems (IOCS) started to get smaller, and at one show in the north of the UK, I was shown a new system that Dental Practice Systems (DPS) were importing from the USA. I was hooked. I ordered, and started to play with it in my home. It was at a time when my new practice was not ready to move into, so for large cases that needed a bit more than a shopping list of items to price up (I will get around to Treatment Planning in a future article!), I started to carry out a preliminary exam on a large 40" screen linked to the camera and a thermal colour printer. When the IOCS was finally moved into the new practice, within in a very short time large case acceptance went from about 55-60%, to about 90-95%. And the whole concept of 'Co-Diagnosis' dropped into place, and showed me how powerful a medium vision really was. It moved selling 'concepts' to selling 'visual plans'. I authored a number of articles, and in 1966, 'A Continuing Affair With A Familiar Orifice' appeared in 'Dentistry Monthly'.

What I wrote then is as true today. IOCS's revolutionised the way I communicated with my patients and clients. The necessity for dental treatment no longer has to be taken at face value by the patient, as they are able to view the diseased areas, and I am able to demonstrate the need for treatment. This technology is a real must for any dental practice purporting to practice 21st Century Dentistry.

There are a few items I use in the surgery every day which I often wish I had purchased at least 15 years previous to actually taking the plunge and the Bank Manager's funds to the limit! My Cavimed was one, and my Endosonic 1500 is another. But at the top of the list are my IOCS and DIAGNOdent. I have been to demonstrations at other Dental Practices and at the Exhibitions, and even had an intra-oral camera to play with in my Surgery. But I have never felt that I could justify the costs either to the Accountant or my wife. However, having now had the system installed in the surgery for 18 years, I wish I had invested in one 5 years previous to that!!

The IOCS is used every day, virtually on every patient. Its main use is for diagnosis, as the picture on a 27" screen is out of this world. Early decay, cracked cusps and fractures in porcelain, accessory root canals and so on are just so easy to find. I remember commenting to a patient after fibre optics had been installed in one of my previous surgeries, that it was nice to be able to see at last what I was doing – although on reflection it was not the best patient to be honest with! The intra-oral camera gives me even better vision, and an undistorted picture.

The reaction of my patients has been without exception one of amazement at the detail they can see. The pictures say a thousand words, and for those of you who already enjoy using an IOCS, you will have found the same thing. New patients are amazed at amount of debris present in their mouths, especially those who thought they were doing a good job of cleaning. In some ways, the big screens make a small problem look horrendous, but it really does motivate them into doing something positive about the situation. I do remember trying to carefully align a couple of mirrors so

that my patient could get a fleeting glimpse of a particular detail that I thought was of great importance. Now it is simple to display every little feature in glorious colour and enlarged for even my poor-sighted elderly patients to see. The reason for wanting to replace a filling, or for replacing a recent filling due to poor placement, is clear to all.

Root canal treatment of an upper 8 is now simple, as every step of the procedure can be clearly seen, and our patients now have a much better understanding of what has to be done for a successful outcome, and the fee that this commands. Assessments for full mouth rehabilitation are much easier, as my patient and I can discuss the case with full photographs. I still use my Dental Eye 35mm camera for before and after pictures of selected cases, but by the time it takes to get the pictures out of the chip into the computer file, the patient may well have forgotten what little point it was we discussed last week. With the facility to print the captured image, it serves as a very powerful reinforcement of what is currently being discussed.

It does of course work both ways. Not only are Patients suddenly far more aware of what is going on, but it is impossible to gloss over the filling that did not work out just as you had wished, and you thought you would leave for a period of time, before having another go at it! Also, it pulls your quality of work up sharply, and I have already found myself re-evaluating my own work, and replacing a few crowns with unacceptable margins. At 'normal' vision with the mirror and probe and even with loops, you just would have never been aware that the crown longevity had been compromised.

Some IOCS's have interchangeable lenses, and whilst many of the other manufacturers and distributors of IOCS's belittle this feature, due to the time taken to change the lenses, in practice it is of no importance. The few seconds taken, is usefully spent chatting with patients and getting to know them a little better and the resultant higher quality images that can be achieved put the "all in one lenses" well and truly in the shade. Your display screens have to be top-quality; otherwise the enlarged picture would be distorted and blurred. I installed Sony screens, but alternatives would be Panasonic and Toshiba.

Computer based systems do have the advantage of being able to store the pictures in a computerised patient file, but with the simple addition of an additional board in your existing computer, the TV based systems can be linked in too. Beware the sales person who says you cannot do this. A printer to give a printed picture of the captured image is a real must, although in this digital age, these pictures can always be e-mailed. Colour printers are now comparatively cheap, and serve several purposes. They are a constant reminder to the patient at home of what the state of their mouth really is. We have found, with the addition of a message at the base of the pictures, that these become a very powerful referral tool, and a form of advertising that is constantly there. Problems pictured are easy to talk about and explain, and as the problem is viewed out of the patient's mouth, some of our more nervous patients have accepted treatment more calmly and easily.

Referral letters to Consultants and Specialists, with a picture of an ulcerated area (which of course heals by the appointment date!), have a more positive feedback from the Consultant, and a lesion of doubt pictured can reduce the time on a waiting list, with potentially better survival if the lesion were found to be a carcinoma. The onus is on the Consultant then to decide if the lesion warrants an appointment quickly, or when there is a space available.

The greater the time spent learning the system determines what use you are going to find for it and getting the most back from your investment. Computer based systems tend to generate fear. I have worked in a Practice where 3 computer based Intra-Oral Camera systems were installed. Eight months on, and they remain in the corner of the surgeries, very occasionally turned on, and certainly not earning their initial cost. The simpler the system is, the faster it will be integrated into the every-day running of your practice, and the sooner all will benefit from that investment. On this basis, the TV based systems win hands down.

The computer based systems at first generate fear. Staff are reluctant to turn it on for fear of breaking it, or wiping the disk of all the information. Then a great deal of time has to be spent in both learning the system programs, and how to capture and manipulate the image. Then you have to learn how to store that image in a clear, easily retrieved filing system unless you purchase a patch to link in with your practice management system. All require time, which of course for us is very expensive, and most of us just want to be able to pick up the camera, point it, and shout 'capture'!!

So, if you are interested, where do you go from here? Well, try to see as many IOCS's as possible. Draw up a list of the procedures that you carry out, and ask the Sales Representatives how their IOCS can help with these procedures. To ask for the system to be made available for a week is unreasonable, as Suppliers and Manufactures have only so many systems available, and to control the 'loan' systems would be a nightmare. So ask for a day's demonstration of the IOCS with your patients in your Practice, and question the Company's Technical Representative how their particular camera will help in patient communication. Remember, systems do vary in ease of use. One important question is ALWAYS ask them how large a customer base they have, and what repair facilities they have. If the customer base is small, when you need repairs or help, that company may have closed, leaving you on the end of a disconnected telephone. Talk to your colleagues who have IOCS's and how they have got on with them. If your colleagues will let you, sit in for a day to see how they perform. You only discover just how powerful a communication tool you could have if you research first, and then have a demonstration with patients in your chair.

Earlier, I touched on my fear of justifying the cost of an IOCS. I now realise how unimportant this worry was. My IOCS arrived 2 months before Christmas, and was promptly installed in our dining room at home. As friends and neighbours came into the house, they were taken on a guided tour of their mouths. The photographic printer was put to good use, and each print carried the practice number. I was amazed when we had two New Patients to our practice call and ask to come in for a second opinion, because they wanted to see the treatment that had been recommended to them by other Practitioners. Within four weeks of delivery, the system had paid for itself twice over, and 2 months later, I had bought a second system for our Clinic Hygienist. If the DPS Sales Director had told me that, I probably would not have believed him.

From a medico-legal view point, the IOCS allows presenting-, during- and after- treatment photographs to be quickly taken and stored. I am not suggesting that you have to do this for every case. I have worked in practices where this has been enforced, and I feel it is a great idea to make the intra-oral photograph routine. What I am suggesting is that if you are involved in a large number of cases where substantial sums of money change hands, a quick photographic survey could make the difference in being able to resist a claim, or having no option but to settle that claim.

I cannot think of another piece of equipment that I have ever seen that has changed the way I now involve my patients in their treatment. A past BDJ article emphasised that cost was a minor barrier to acceptance of recommended treatment. The major determining factor was the Patient - Dentist relationship, and the patient's feeling that they had been involved in decisions about their Dental Treatment.

The general public expect all Professions to keep up to date. In my role as a clinical teacher and lecturer, I strongly believe that if you want to stay ahead, it is essential that new technology is brought into the practice on a regular basis. Patients are now far more dentally aware, and the majority of those born in the 70's onwards, are computer literate. The elder generations too have seen new technology creep into their lives, and now expect to find it in the Professionals Offices. The IOCS is one essential piece of equipment that all Practitioners should have, and for those of you who need convincing, it will be the only bit of equipment that will guarantee you a profit. You could not say that about a new set of Turbines.