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CEREC vs. the laboratory

Have you ever considered working in a dental laboratory? Well, in my view, that's what you will do if you purchase a CEREC3D system. Sales of these systems, which allow dentists to produce restorations on site, have skyrocketed in recent years. Part of this growth stems from the popularity of cosmetic dentistry. Also, CEREC sales literature claims to eliminate lab bills and attract patients with reduced-hassle, "one-visit" service. Many dentists have invested in a CEREC system hoping to take maximum advantage of this trend.

CEREC systems appear regularly on eBay. Recently, I found one for $40,000 — a good price, considering a new system costs about $100,000. I expect dentists to become increasingly skeptical about CEREC's advantages versus traditional lab-based restorations. I think CEREC does not live up to the hype about greater patient convenience, comparable quality, and lower doctor costs.

If dentists use CEREC for designing, milling, and finishing restorations, they will reduce lab fees. But how significant are these savings? There are two ways to answer this. The first is a dollar-for-dollar cost comparison of CEREC with the traditional approach. This answer ignores the impact different methods generally have on patient satisfaction. The second, more comprehensive answer incorporates the effect of patient satisfaction on profits.

Based on my research, I estimate that dentists who do traditional restorative work spend an average of $7,000 per month on lab services. With other things being equal, lab fee savings offset the $100,000 initial investment in CEREC equipment in about 15 months. However, other things aren't equal. Materials and usage costs are higher with CEREC. Porcelain blocks are $16 to $25 apiece. The wear on milling burs costs about $2 per block. A software licensing fee ranges from $4 to $7 per restoration. Dentists using the lab-based method pay none of this, but do pay for impression materials at some $10 per restoration.

Dentists should also consider the cost of their time when comparing CEREC to the lab-based process. The initial steps, which are preparing teeth and scanning or taking an impression, require about equal time. However, a CEREC dentist also must design the restoration with software, mill and polish the ceramic block, and prepare the porcelain to bond. This extra work requires at least 45 minutes. According to my nonscientific poll, the average dentist wants to gross about $750 an hour. Since dentists using the traditional process will not pay the lab $750 an hour, CEREC dentists must make up for the difference in cost for the extra steps. If they pass the costs to patients, they will be less competitive. Of course, a dentist can pay an assistant to do the extra work. But this would involve significant training and monitoring for quality control. It could also require adding an employee to cover other office work, not to mention the associated hassle and expense involved with such a hiring.

Given these cost considerations, dentists should ask whether it might be better to invest $100,000 elsewhere. The question becomes more pertinent regarding quality. The esthetic and functional quality of restorations affects customer satisfaction more than anything else. If patients believe a two-visit procedure will improve quality, they likely will sacrifice one-visit convenience. If patients are satisfied with quality, they tend to refer their friends. Referrals are the bread-and-butter of a dental practice.

In terms of quality, a first-class lab surpasses even the most talented CEREC dentist. In a standard CEREC procedure, one mills the restoration from a monochromatic or minimally polychromatic porcelain block. Natural-looking teeth are not monochromatic. Lab technicians have the training and experience to customize a restoration by hand. They can stain and use cut-back techniques to layer in different-colored porcelains, create a more natural-looking whiteness and translucency, and sculpt the restoration to make it appear less manufactured. In my view, CEREC restorations resemble temporaries.

A CEREC dentist can try to offset a lab's advantage by staining and glazing the restorations rather than just polishing. But this would be economically detrimental — the cost of the porcelain oven, materials, training, and the time spent crafting each restoration would reduce ROI. I doubt a dentist could match the quality produced by lab technicians, who create restorations daily and have access to porcelains and materials unavailable to CEREC systems. A better, quicker approach might be to drop the milling component of the CEREC procedure, and scan the teeth rather than take an impression. A dentist could then e-mail the 3D image to the lab for creating restorations.

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