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Dentistry

Commentary

Digital Dentistry and its Impact on Future

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DESCRIPTION

Digital dentistry can be defined as any dental technique or gadget that incorporates digital or computer-controlled components, as opposed to mechanical or electrical components alone. This broad description can encompass everything from the most well-known aspect of digital dentistry, CAD/CAM (computer-aided design/computer-aided manufacture), to less well-known aspects, such as computer-controlled nitrous oxide delivery.

The use of CAD/CAM in dental manufacturing and the dental laboratory profession is already in the early adopters, and it will soon reach the later major portion. The laboratory profession has figured out what clinicians have taken longer to figure out: CAD/CAM works. It is more efficient, less expensive, predictable, consistent, and reasonably accurate. If a team approach is followed, the return on investment can be spectacular. CEREC has been around for nearly 30 years, and recent advancements with CEREC and E4D show that chair side CAD/CAM is well positioned to lead our profession in digital dentistry. Dentists may achieve more in less time by combining operations like implant placement and quick professionalization through smart industry collaborations and shared technologies.

Future advancements in CAD/CAM could further align dentistry with what CAD/CAM is used for in most other industry sectors: total repeatability of outcomes while accounting for all extraneous variables. This would comprise skeleton and arch classifications; wear, age, and tooth problems, excursive motions, TMJ condition, exact input of condylar movements in connection to tooth positions, and design based on aesthetics and desired look. Manufacturers will need to continue to acquire and integrate innovations from other industries in order to achieve these future advancements, as well as develop paths for growing investment by going from "early adopters" to "early majority."

It is becoming easier and faster to scan teeth and preparations. Intraoral imaging is currently offered by more than eight firms, with CEREC (Sirona), E4D (D4D Technologies), LAVA COS (3M), and iTero (Cadent/Align) being the most well-known and widely utilised. All of these scanning techniques have been investigated by the CR Foundation (CLINICIANS REPORT) and found to be as accurate as traditional methods (i.e., stone die systems). Most are more precise, faster, and easier to use.

In compared to a traditional instrument or technique, each area of digital dentistry provides advantages. However, the higher expense or method sensitivity may negate some of the benefits. For example, despite the fact that diode lasers have been available for more than a decade, early majority adoption did not occur until laser prices dropped and additional options and competition became accessible. As a result, an alternative to lower-cost electro surgery equipment has emerged. Chairside intraoral imaging and clinician manufacture of indirect restorations, on the other hand, have been accessible for over 25 years (*via* CEREC by Sirona). Even with fresh competitors driving faster innovation (E4D by D4D Technologies), the price remains high, and early majority adoption has not yet occurred.

The future scope

Since digital dentistry evolves and is becoming more widely used, the way to incorporate the issue into teaching quality throughout dental school must evolve as well. Future dentists must be exposed to new digital methods in the curriculum and training as we reach the "digital age of dentistry education.

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