



A Dentist's Guide to Digital Imaging with AI

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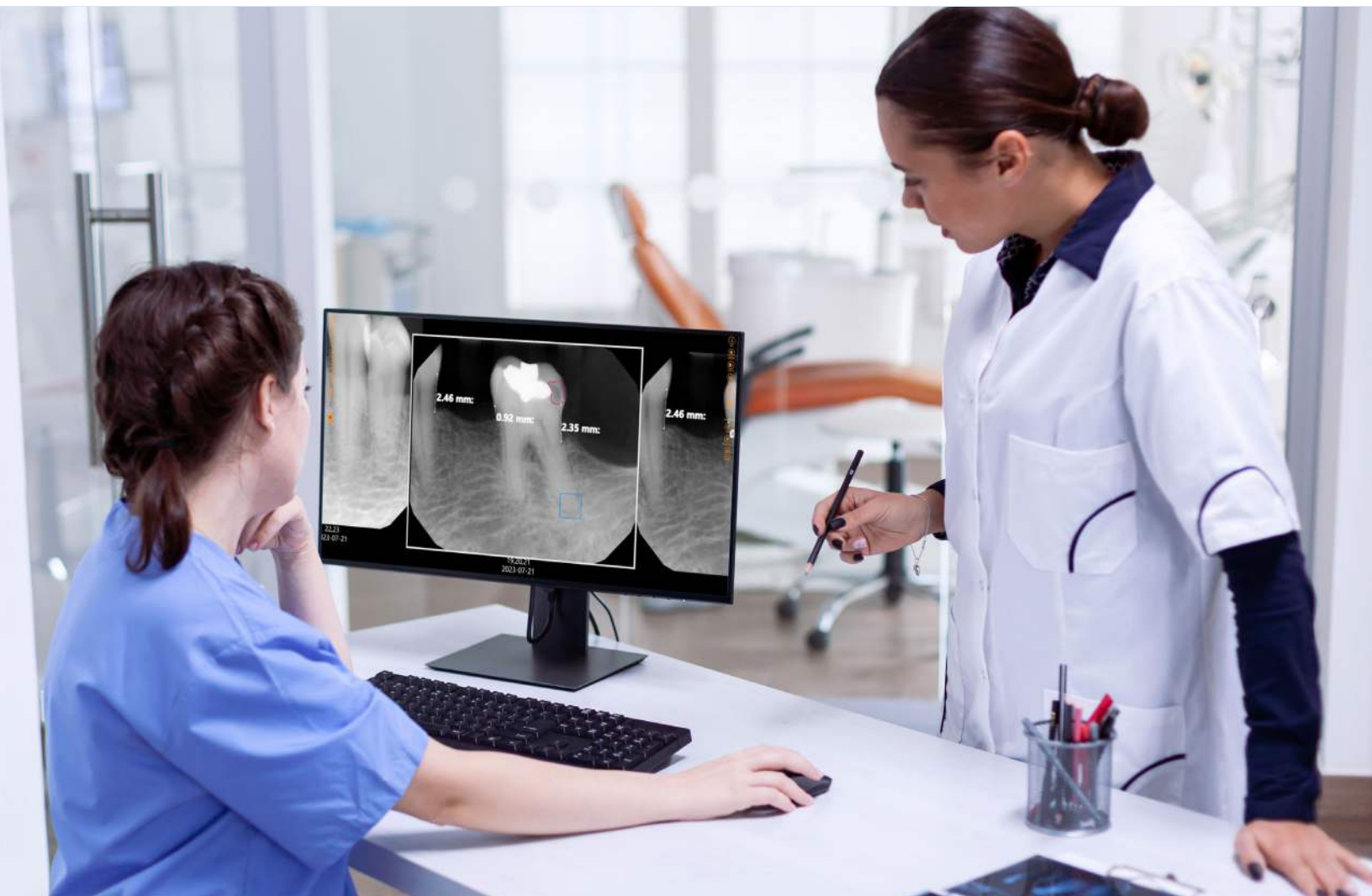
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The Digital Revolution in Dentistry

The field of dentistry has experienced a significant transformation over the past few years, largely driven by advancements in technology.

Among these advancements, digital imaging has played a pivotal role in enhancing diagnostic capabilities, improving patient care, and streamlining dental practice workflows.

Traditional film-based X-rays have given way to digital radiography, offering numerous benefits such as reduced radiation exposure, faster image acquisition, and the ability to store and transmit images electronically via cloud-based software. Now top-of-the-line digital imaging systems include embedded artificial intelligence (AI) technology to aid in the detection of pathologies and elevate patient care.



The Role of Artificial Intelligence (AI) in Dental Imaging

AI does not replace a clinician's expertise, but it can make it easier than ever to analyze and interpret patient images.

With its ability to process vast amounts of data quickly and accurately, AI gives dentists a valuable tool to use in diagnosing, treatment planning, and patient care.

This ebook aims to provide dentists and dental professionals with a comprehensive guide to leveraging digital imaging with AI in their practice. We will explore the key considerations when choosing between cloud-based and server-based imaging solutions, delve into the advantages of embedded AI for dental X-ray analysis, and discuss the compatibility of imaging systems with various technologies. Plus, you'll find a valuable checklist to assist you in evaluating and selecting the right dental imaging system for your practice.



Cloud-Based Imaging vs. Server-Based Imaging

For decades, dentists relied on servers that were on-premise, and the data could only be accessed when somebody was in the office or via VPN. In the era of digital dentistry, cloud-based imaging solutions are a must-have for their flexibility and accessibility.

Here's a closer look at why dentists are modernizing their practices through cloud-based imaging:

- ✓ **ACCESSIBILITY:** Access patient images and data from anywhere with an internet connection, enabling remote consultations and collaborative case reviews.
- ✓ **SCALABILITY:** Easily expand storage and computing resources as your practice or dental group grows without the need for significant hardware investments.
- ✓ **DATA PROTECTION:** Floods, fires, and other natural disasters can damage on-premise servers and take weeks to restore access to your patient images. If the images are stored in the cloud, you have immediate access and could serve patients from another location.
- ✓ **AUTOMATIC UPDATES:** Cloud-based systems receive regular updates and maintenance, ensuring your technology remains current without the need for on-site I.T.
- ✓ **COST SAVINGS:** While server-based imaging solutions require hardware, maintenance, and ongoing I.T. support at the office level, cloud-based imaging systems do not.



We are based in Houston, and hurricanes are the norm here. And then came the pandemic. **With a cloud-based solution, we're up and running 100% of the time.** There's no data loss, hard drive problems, or technical issues, ever. Our imaging is up and running 24/7. It's a cost savings and offers continuous access.

DR. JONATHAN PENCHAS | Managing Partner, Midtown Dentistry, 5 locations

Implemented Apteryx XVWeb with AI

Embedded AI for Dental X-Ray Analysis

Radiographs are one of the most important diagnostic tools, but dentists' interpretation can vary widely depending on their training, experience, time pressure, eye fatigue, and lighting conditions. Artificial intelligence-powered analysis can add consistency and objectivity. Dentists who are evaluating imaging systems can now choose a service that includes embedded AI. This allows for real-time analysis of images, providing immediate insights and assistance to dental professionals.

Here are some of the benefits of incorporating embedded AI into digital imaging:

- ✓ **IMPROVED DIAGNOSTIC ACCURACY:** AI algorithms can identify subtle abnormalities, such as early signs of cavities, bone loss, or infection, that might be missed by the human eye. By catching these issues early, dentists can provide more effective treatment and improve patient outcomes.
- ✓ **ENHANCED PATIENT COMMUNICATION:** The AI adds color and measurements to traditional X-rays, making it easier for patients to visualize where they have problems that need to be addressed.
- ✓ **INCREASED CASE ACCEPTANCE:** When patients better understand why they need treatment, they are more likely to accept their doctor's recommendations.
- ✓ **EVIDENCE-SUPPORTED INSURANCE CLAIM SUBMISSIONS:** Dentists can submit claims with greater confidence when their diagnosis is supported by the objective AI findings.



15% increase in production for Southridge Dental Group



It's an amazing patient communication tool. The patients see the X-rays with the AI quantification and color and it helps them to become engaged. Apteryx really helps on the insurance side, too. Insurance companies are notorious for denying claims. Now there's undeniable proof.

DR. SANJAY MERCHANT | Owner, Southridge Dental Group, 2 locations

Implemented Apteryx XVWeb with AI

Compatibility with Various Imaging Technologies

When dentists are considering which digital imaging system to implement, it's easiest to select a system that is compatible with their current imaging sensors and other technology.

Look for a system that enables you to import and view images and data from multiple devices all in one platform:

- ✓ 2D IMAGING SENSORS
- ✓ CONE BEAM COMPUTED TOMOGRAPHY (CBCT)
- ✓ PRACTICE MANAGEMENT SYSTEM
- ✓ INTRAORAL CAMERA
- ✓ DICOM IMAGE FILES

AI-Powered Detection

Caries | Bone Levels | Calculus | Notable Margins | Periapical Radiolucency

“ We wanted **a cloud solution so our patients could have access to all our locations and our doctors could access information easily.** We do a lot of specialty care. Not having to send over different X-rays, make patients go to different offices, or complete new paperwork was a deciding factor.

MARY LADD | CEO, Ladd Dental, 8 locations

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Checklist for Evaluating a New Dental Imaging System

When considering the adoption of a new dental imaging system, it's essential to evaluate various factors to ensure it meets the unique needs of your practice.

Here's a checklist to guide you through the evaluation process:

- ✓ Compatible with your practice management system
- ✓ Compatible with your imaging sensors
- ✓ Compatible with CBCT
- ✓ Compatible with intraoral cameras
- ✓ Cloud-based accessibility anytime, anywhere
- ✓ Includes embedded AI
- ✓ Includes image optimization tools
- ✓ Includes ability to export images
- ✓ Easy to implement
- ✓ Easy to use
- ✓ Includes training
- ✓ Is HIPAA-compliant

By carefully evaluating these factors, you can make an informed decision when selecting a dental imaging system that will enhance patient care, improve diagnostic accuracy, and streamline your practice's operations.

Discover how Apteryx Cloud Imaging + AI can help your dental organization

ACCESS ANYTIME, ANYWHERE

Real-time image sharing allows you to pull up patient images regardless of which office the patient visits.

DEVICE AGNOSTIC

Optimize your workflow system during acquisitions with the freedom to work with any hardware or software.

SAVE TIME AND MONEY

Reduce IT and server expenses by limiting the amount of physical in-house hardware needed while also maintaining the level of support with automatic updates and upgrades for one consolidated monthly fee.

EMBEDDED AI

Increase diagnostic confidence and case acceptance with instant AI analysis of X-rays.

EASE OF USE

Provide a seamless experience for patients and staff by reducing time spent toggling between multiple screens.

MICROSOFT AZURE BACKED SECURITY

Backed by Microsoft Azure with the latest software updates to prevent viruses, malware, and ransomware.



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Planet DDS is the leading provider of cloud-enabled dental software solutions serving over 10,000 practices in North America with over 60,000 users. The company delivers a complete platform of solutions for dental practices, including Denticon Practice Management, Cloud 9 Practice Management, Apteryx XVWeb Cloud Imaging, and Legwork Practice Marketing. Planet DDS is committed to creating value for its dental practice clients by solving the most urgent challenges facing today's dental practices in North America.