

Dental AI: Hype or Reality? The True Impact on Dentistry

450,000 Patient Analysis

Dental Leaders Agree that AI is a Valuable Asset in Dentistry

In my two decades of dentistry, few advancements have shown as much promise as AI. It's not just about technology; it's about augmenting our skills and enhancing patient trust. With AI, we're not only diagnosing with greater precision but also crafting treatment plans that resonate with our patients. It's transformative, both for our practice and for those we serve.



Dr. Michael Scialabba
Chief Clinical Officer, 42North Dental

The integration of AI into our workflow has been nothing short of revolutionary. Beyond the evident clinical benefits, it's the unseen advantages—more informed decisions, streamlined operations, and increased patient engagement—that truly underscore its value. In AI, we're witnessing the future of dentistry unfold.

Lorri Detrick
COO, Riccobenne



AI in dentistry is akin to having an expert colleague by your side at all times. It elevates our practice, ensuring that we're consistently delivering top-tier care. What's incredible is seeing the real-world outcomes—healthier smiles, more confident patients, and a team that's empowered with cutting-edge tools."



Dr. Mike Acierno
Chief Medical Officer, DecisionOne Dental

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**This publication,
by the numbers:**

41

DSOs

100

practices

470,831

patients analyzed

\$78,268

annual growth per practice

13%

annual net production growth for
restorative and periodontal treatments

Executive Summary

In the evolving landscape where technology continually redefines healthcare, dentistry stands poised for a significant transformation, with Artificial Intelligence (AI) leading the way. VideaAI by VideaHealth is at the forefront of this change, delivering outcomes at dental practices across the U.S.

To answer the question if AI in dentistry is hype or – as often promised – the next big transformation of dentistry, this research studied 100 dental practices across 41 DSOs over a nine-month span, and analyzed data from 470,831 unique patients. The results show that by supporting the dental clinician to identify disease earlier and provide a second opinion to the patient, the average office saw a remarkable 13% increase in annual net production for restorative and periodontal treatments. This translates into an additional \$78,268 in annual growth per practice following VideaAI integration.

Beyond these impressive figures, VideaAI signals a new era of enhanced clinical consistency, elevated patient experiences, and a data-centric approach to dental care. For dental leaders contemplating AI's role, this paper analyzes the true impact of AI in dentistry.

Introduction: The Big Picture of Dental AI

Dental clinicians, dentists and hygienists are tasked with handling increased complexities in modern dentistry. Often, they play the role of diagnostician, surgeon, primary care physician and business owner – leaving little time for the doctor-patient relationship. This becomes increasingly apparent in group practices and Dental Support Organizations (DSOs), which manage a multitude of dental offices and up to thousands of clinicians.

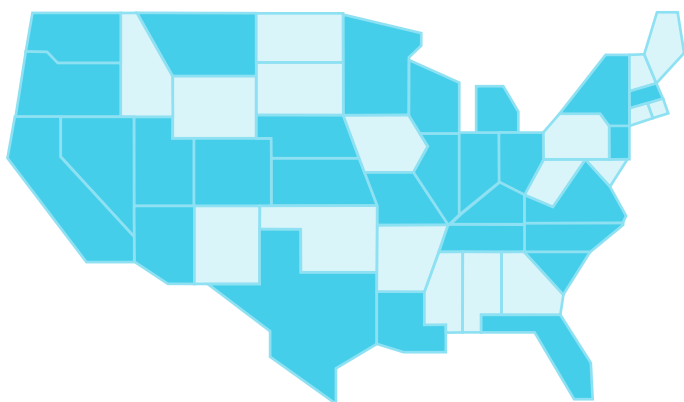
The emergence of Artificial Intelligence has brought many promises to dentistry. Dental AI has the promise to support time-strapped dentists and hygienists in their diagnoses and treatment planning, helping them to identify diseases such as decay and periodontal disease earlier while offering a second opinion to the patient chairside. DSOs are especially interested in the technology as it promises to introduce clinical consistency across their locations and dentists. At the same time, AI can often be overhyped. This whitepaper is poised to answer the question: is dental AI hype or reality? Is this the next big technological revolution in dentistry, or just a short-term hype?

To comprehensively answer this question, this analysis investigates the clinical and financial value of AI across 100 locations picked from over 40 DSOs across the United States. This is set to be the first large benchmark study of AI in dentistry.

Methodology

The goal of this study was to analyze the true impact of AI on the clinical and financial performance of dental practices. To control for seasonality and other changing factors in the dental office such as change of personnel, the largest dataset to date was used to understand the value of AI, based on a Nine-month timespan across 100 locations and over 471,000 patients.

Furthermore, we controlled for seasonality as well as change of fee schedules with year-over-year comparisons. The locations were semi-randomly* selected from 41 DSOs across the U.S. to control for a geographically diverse and representative sample of dentistry and not have regional and patient population biases.



Geographic coverage of VideaAI practices included in this study.

This complete dataset was split into treatment plans, e.g., treatments planned, scheduled and completed, with and without Artificial Intelligence. The analysis was done 3 months after the last patient was analyzed given that treatments completed is a lagging indicator.

The treatment plans were analyzed for specific ADA CDT codes which should be driven by VideaAI's modules: Restorative Treatments (D2***) codes and Periodontal Treatments (D4***) codes.

The analysis allowed us to calculate several key indicators of clinical and financial performance across the patient population with and without AI. The key indicators were the "net production per patient" and "change of net new patient acquisitions" (e.g., a change of share of patients who receive a specific treatment). Furthermore, in order to control if a potential change in these indicators across these 2 major treatment categories is a true increase in treatment acceptance or a shift of treatments, this paper also analyzed the year-over-year total revenue as a control.

Furthermore, both qualitative and quantitative feedback from the engaged dentists and hygienists was actively sought. This dual approach ensured not only a rigorous analysis of hard data but also captured the nuances of user experience, clinical application, and patient interaction.

Category	Codes
Diagnostic	D0***
Preventative	D1***
Restorative	D2***
Endodontics	D3***
Periodontics	D4***
Prosthodontics Removable	D5** through D6188
Maxillofacial	D58*
Implant	D60** through D61**
Prosthodontics Services	D62** through D69**
Oral and Maxillofacial Surgery	D7***
Orthodontics	D8***
Adjunctive	D9***

The ADA codes of restorative and periodontic treatments were the primary focus of this study.

Key Findings

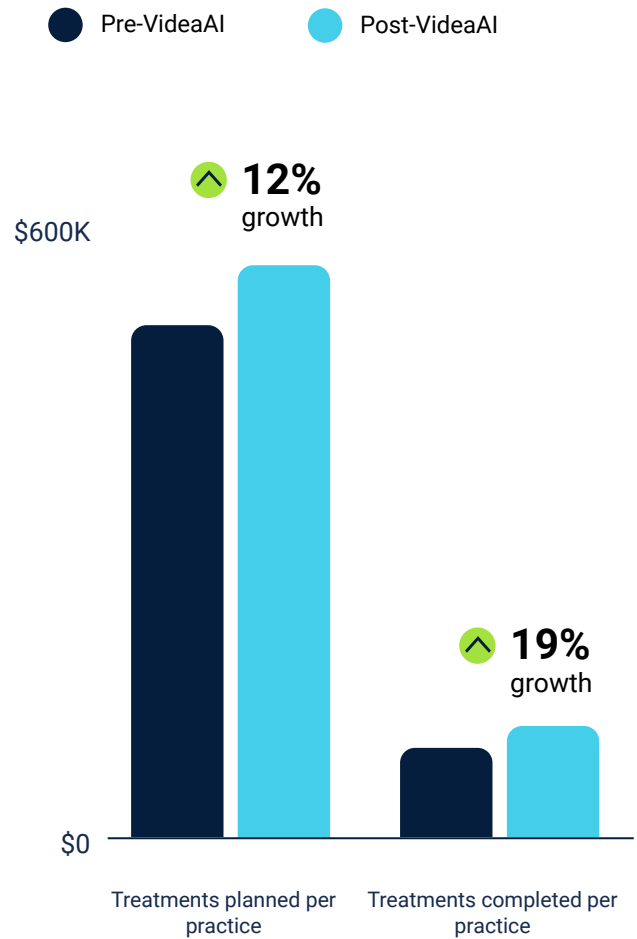
Across 470,831 patients and 100 locations, the average dental practice saw a **13% rise in annual net production** for restorative and periodontal treatments, representing an **annual growth of \$78,268 per practice**. Controlling for seasonality, fee schedules, and shifting revenues across the DSOs, the data has a high level of significance indicating leading to share that growth is attributed to the this is true impact of AI and not due to other “confounders”.

VideaAI’s integration into dental operations brought forth a ripple effect of positive change, touching both the qualitative and quantitative facets of clinical operations. The most pronounced effects were the growth in new patient numbers and enhanced diagnostics for existing and new patients. The ripple extended to the domain of net production per patient. This growth wasn’t merely localized to the restorative and periodontal sectors - it was all across the board, ensuring other treatment categories’ growth without being overshadowed.

Impact on Restorative Treatments

The restorative procedures category experienced changes post-VideaAI’s integration. Three months post-go-live, there was a remarkable \$60,998 surge in annual net restorative production data. This denotes a 12% uptick in restorative output.

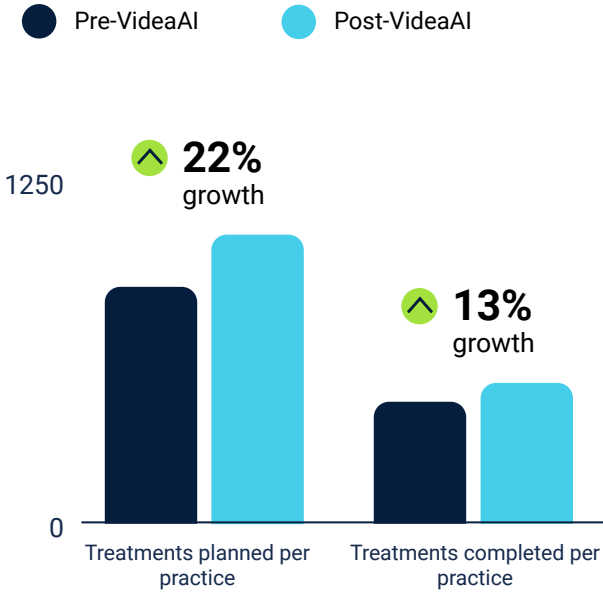
Total Restorative and Perio Production per Practice Growth After Implementing VideaAI



Annual Restorative Production Per Practice Grew 12% After Implementing VideaAI

	Pre-VideaAI	Post-VideaAI	% Growth
Patients per year	4,269	4,269	-
Restorative patients	21.3%	21.6%	0.3%
Net restorative production per patient	\$546	\$605	11%
Total restorative production	\$497,281	\$558,279	12%

Restorative Treatments Planned and Completed Growth after VideAI Implementation



Diving Deeper:

- Patient Engagement:** An increase in the restorative patient population from 21.3% to 21.6% was observed. This translated to an additional 14 net new restorative patients per practice annually.
- Production Per Patient:** There was a significant boost in production per restorative patient, jumping from \$546 to \$605, an 11% enhancement.

- Diagnosis Precision:** The diagnostic rate showcased an impressive surge, with a 22% increase in treatments planned and a 13% rise in completed treatments, revealing the platform’s efficacy in optimizing clinical workflow.
- Specific Treatments:** Crowns experienced a 25% increase in treatments planned and 13% in treatments completed, while fillings saw a 21% growth in treatments planned and 14% in treatments completed.

Impact on Periodontal Treatments

Periodontal procedures displayed marked advancements following VideAI’s implementation.

Three months post-go-live, an annual net increase of \$17,270 in periodontal production was registered, equating to a 19% surge in production.

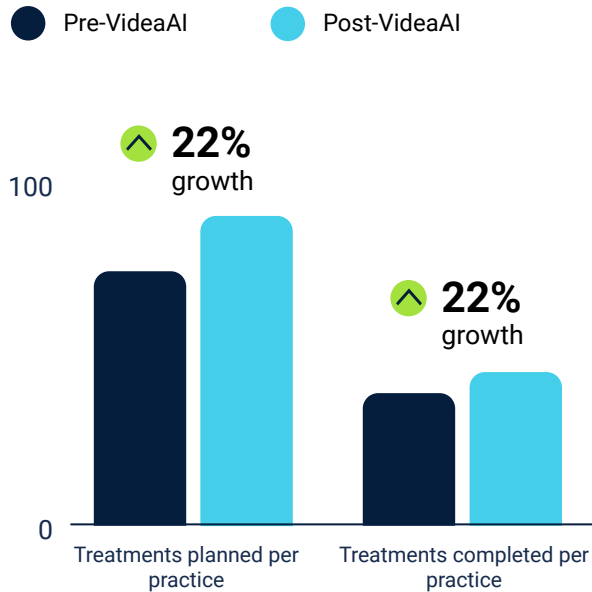
Diving Deeper:

- Patient Engagement:** The percentage of periodontal patients rose from 10.0% to 10.4%, which yielded 18 net new periodontal patients annually, underscoring VideAI’s influence in expanding patient scope.
- Production Per Patient:** The production rate per periodontal patient underwent 15% growth from \$210 to \$241.

Annual Perio Production Per Practice Grew 19% After Implementing VideAI

	Pre-VideaAI	Post-VideaAI	% Growth
Patients per year	4,269	4,269	–
Restorative patients	10.0%	10.4%	0.4%
Net restorative production per patient	\$210	\$241	15%
Total restorative production	\$89,579	\$106,849	19%

Perio Treatments (SRP) Planned and Completed Growth after VideaAI Implementation



Two Key Takeaways:

1. VideaAI's marked impact is evident in the outpacing growth of restorative and periodontal treatments.
2. Growth was holistic; every treatment category grew, precluding any skewing of the treatment mix.

These findings confirm VideaAI's role in enhancing specific treatment areas and fostering overall practice vitality and expansion.

Outlook

Dental practices exist at the center of healthcare and business, balancing patient outcomes with economic viability. With the integration of VideaAI, practices witnessed holistic growth, impacting not just practice production but also the very essence of delivering care.

3. **Diagnostic Precision:** There was a noteworthy 22% uptick in treatments planned and completed post go-live, highlighting VideaAI's pivotal role in enhancing the diagnostic process and follow-through in treatment.

Overall, VideaAI proved to be instrumental in fostering both patient outreach and treatment efficiency in periodontal care, reinforcing its value in optimizing clinical operations.

Controlling Mechanisms to Identify AI's True Impact

An evaluation of the practices paints a portrait of growth in the wake of VideaAI's integration. The influence of AI on restorative and periodontal treatments, which cumulatively account for roughly 68% of a practice's overall production, is clear.

In the recent quarter, spanning April to June, dental practices leveraging VideaAI recorded a 27% growth in combined restorative and periodontal production. Concurrently, all other treatment categories experienced growth.

[The AI] made diagnosing each image faster and easier. Occlusal caries can be hard to spot, and the AI helped me confirm some I may have missed. It will also be a great help to our younger hygienists in building their confidence in diagnosing and spotting caries.



Dr. Olivia Paulsrud, DDS
Family Dental Center of Caledonia

Growth in new patient inflow was a clear testament to the platform's efficacy. But equally important was the enhanced diagnostic precision for both new and existing patients. While this precision grew the financial bottom line, its more profound impact was in the quality of care, ensuring patients received timely and appropriate care.

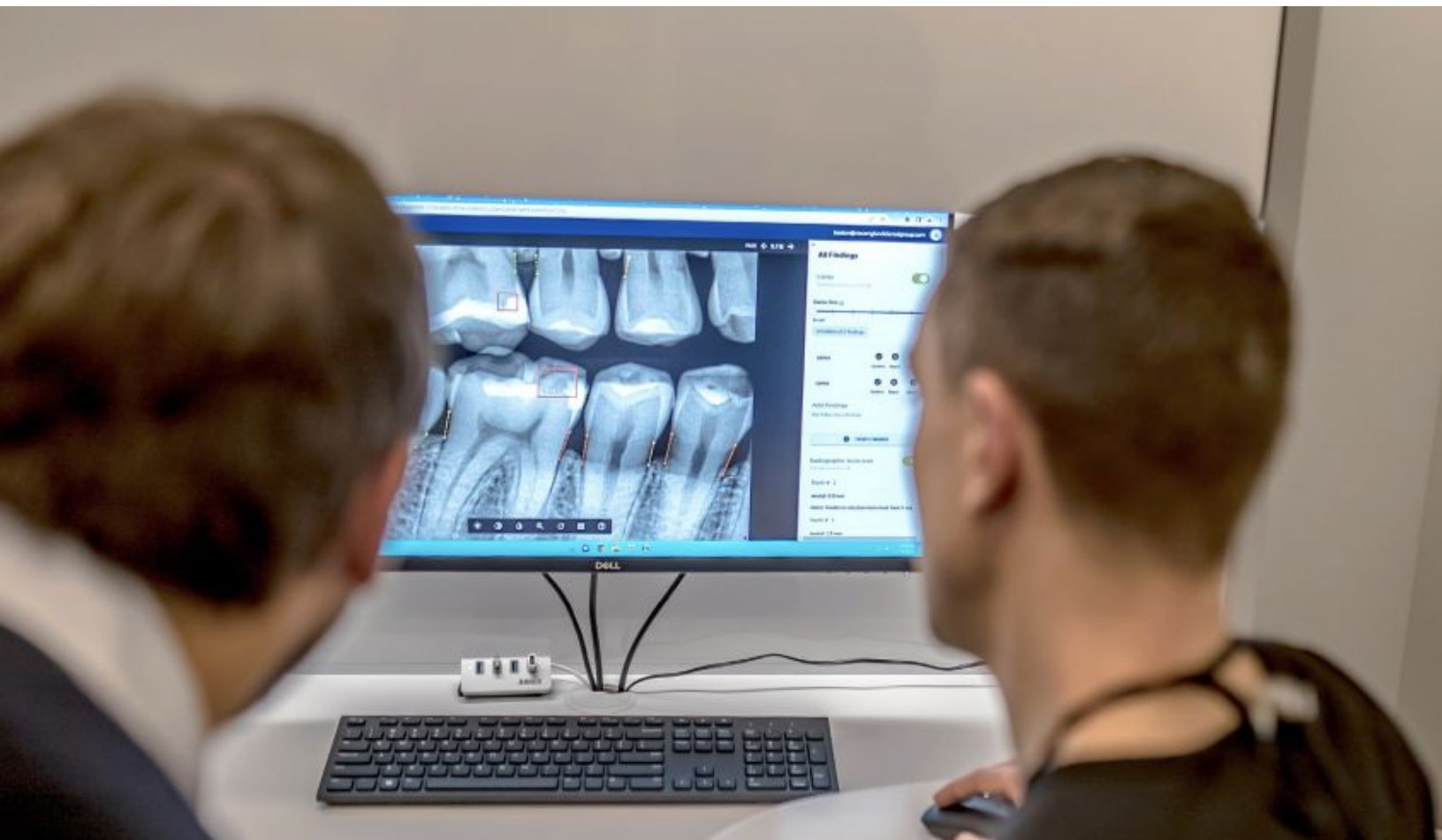
Broadening our view, we observed growth across all treatment categories. This uplift across the board paints a story of a balanced developmental approach. However, the spotlight belongs to the restorative and periodontal categories, where growth was exceptionally pronounced, showcasing where VideAI's influence was felt the most.

Beyond these gains, clinical consistency – often a challenge in dynamic practice environments – was notably strengthened. Patients received standardized care and enriched experiences with VideAI aiding in seamless case presentations and facilitating better patient-practitioner interactions.

Our virtual doctors love it because it helps them basically be able to quantify opportunities quicker and more efficiently, and it's a great tool for educating our patients. There's nothing like seeing those red dotted lines to let you know that there's something that you should be concerned about... I like the fact that it has caught some occlusal caries that I probably wouldn't have caught.



Dr. Kwane Watson, DMD
Kare Mobile



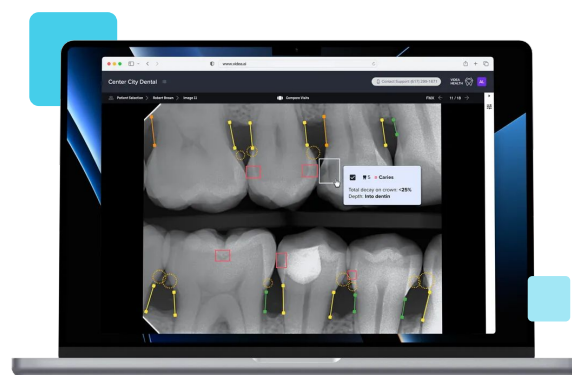
Conclusion

In an era where technological advancements continuously redefine medical practices, the findings from this study illuminate VideaAI's pivotal role in revolutionizing dental healthcare within dentistry. The tangible growth in restorative and periodontal net productions stands as a testament to its efficacy. But perhaps more vital is the less quantifiable—yet profoundly impactful enhancements in clinical consistency and patient engagement.

For dental practices, VideaAI isn't merely a tool; it represents a transformative shift, bridging the gap between modern technology and quality patient care. As practices stride into the future, it's clear that solutions like VideaAI will be at the forefront of this evolution.

Want to Learn More?

For those at the helm of DSOs and dental practices, understanding the nuances and value of dental AI is pivotal. To delve deeper into VideaAI's data and implications, reach out to our team at [videa.ai](https://www.videa.ai) to learn more.



About the Organization

VideaHealth brings AI to the dental chair, helping dental clinicians provide better care, build patient relationships and drive financial performance. Providers from the largest dental chains in the country to smaller independent practices use VideaHealth to identify and treat the most important dental conditions, helping thousands of dentists analyze millions of patients each year. Backed by leading venture capital firms Spark Capital, Zetta Venture Partners, and Pillar VC, VideaHealth is headquartered in Boston.

For more information, visit <https://www.videa.ai>.