

Artificial Intelligence as a Strategic Lever for Dental Entrepreneurship and Practice Management in the United States: Market Consolidation, Workforce Maldistribution, and Value-Based Growth

Sarah Borges Silva¹

¹ *Specialist in health and social well-being, Centro Universitário de Tecnologia de Curitiba (UNIFATEC), Curitiba, PR, Brazil;*
ORCID: 0009-0006-1815-6558

Lucielle Guimarães Ferraz Santana²

² *PhD in Dentistry, Fluminense Federal University, Niterói, RJ, Brazil;*
ORCID: 0000-0001-8587-269X

Kelly Barbosa Leal Castro³

³ *Specialist in Periodontology, Odontoclínica Central do Exército (OCEx), Rio de Janeiro, RJ, Brazil;*
ORCID: 0009-0005-0333-6794

Suzana Carolina Ramos Silva⁴

⁴ *Specialist in Periodontology, Instituto Nacional de Pesquisa e Ensino Odontológico (INPEO), Cuiabá, MT, Brazil;*
ORCID: 0009-0008-3771-9365

Luiz Augusto Ferreira de Medeiros⁵

⁵ *Specialist in Marketing (MBA in Clinic and Hospital Management), FAESA, Vitória, ES, Brazil;*
ORCID: 0009-0000-5085-5849

Larissa Caroline Cayres Pereira⁶

⁶ *Specialist in Implant Dentistry, University Cruzeiro do Sul, São Paulo, SP, Brazil;*
ORCID: 0009-0008-2406-8137

André Luís de Oliveira⁷

⁷ *Specialist in Digital Dentistry, Specialist in Implant Dentistry, Centro Universitário Avantis – UNIAVAN, São Leopoldo Mandic, Curitiba, PR, Brazil;*
ORCID: 0009-0005-2647-3038

Abigail de Carli Oliveira⁸

⁸ *Specialist in Digital Dentistry, Specialist in Operative Dentistry, Centro Universitário Avantis, Centro Universitário De Jales (Unijales), Francisco Beltrão, PR, Brazil;*
ORCID: 0009-0004-4414-3326

Background: The United States dental market is undergoing a simultaneous structural and technological transition. Ownership is shifting from solo practice toward group, Dental Service Organization (DSO) and private-equity-backed models, artificial intelligence (AI) is entering clinical and administrative workflows, and federally designated dental shortage areas continue to expand. How entrepreneurial dental organizations can align these forces with access and cost containment remains insufficiently addressed in the management literature.

Objective: To analyze the strategic management and entrepreneurial implications of AI adoption in U.S. dentistry, and to propose an integrated framework linking AI capabilities to market positioning, workforce leverage, access expansion and value-based prevention.

Materials and Methods: A narrative literature review of peer-reviewed studies (2018–2026) retrieved through the Consensus academic platform (Semantic Scholar, OpenAlex and PubMed-indexed sources), complemented by official federal workforce statistics from the Health Resources and Services Administration (HRSA) and data from the American Dental Association Health Policy Institute.

Results: Solo practice declined from 64% to 52% of U.S. dentists between 2000 and 2015, and more than one in four early-career dentists were DSO-affiliated in 2024. Private-equity acquisition was associated with a 3.3% increase in charges and a shift away from diagnostic and preventive procedures. AI evidence is most mature in image-based diagnosis, where AI-assisted dentists achieved higher sensitivity in CBCT interpretation (0.854 vs 0.767), whereas evidence for operational AI is promising but thinner. As of December 31, 2025, 7,443 dental Health Professional Shortage Areas covered approximately 63.7 million residents, only 32.9% of need was met, and 10,744 additional practitioners were required. Risk-based prevention and outcome-oriented payment showed favorable economic profiles.

Conclusion: AI generates sustainable competitive advantage in dentistry only when deployed as an integrated management capability—diagnostic, operational, access and value intelligence—rather than as an isolated device. The proposed AI-Enabled Dental Entrepreneurship Framework offers a replicable, state-adaptable model to extend the productive capacity of a scarce workforce, redirect growth toward prevention and reduce avoidable costs for patients and public payers.

Key Word: Dental practice management; Entrepreneurship; Artificial intelligence; Dental Service Organizations; Health Professional Shortage Areas; Value-based care.

Date of Submission: 11-10-2026

Date of Acceptance: 23-10-2026

I. Introduction

Oral health care in the United States is delivered predominantly through privately owned businesses, which means that the strategic decisions of dental entrepreneurs—where to open, how to staff, what to invest in and which services to prioritize—directly shape who receives care and at what cost. This makes dental practice management not only a business discipline but also a determinant of population access. The magnitude of the access problem is documented by federal agencies: according to HRSA, as of December 31, 2025, the country had 7,443 dental Health Professional Shortage Areas (HPSAs), home to approximately 63.7 million people, with only 32.9% of the need for dental practitioners met and 10,744 additional practitioners required to remove those designations^{1,2}.

At the same time, the industry is being reorganized from within. Prior work co-authored by the present author showed that U.S. dental practice management has evolved in response to rising market competition, technological advancement and changing patient expectations, and that leadership models emphasizing organizational efficiency, financial planning and digital transformation are associated with better clinical and business performance³. Consolidation into larger organizations, salaried employment and DSO affiliation has advanced steadily^{4,5}, while artificial intelligence (AI) has moved from research prototypes to commercially integrated diagnostic and workflow tools^{6,7}.

These three movements—consolidation, AI adoption and persistent geographic shortage—are usually analyzed separately. Market-structure studies rarely discuss technology, AI reviews rarely discuss business models, and access studies rarely discuss entrepreneurship. Yet for an entrepreneur deciding whether and how to invest in AI, the relevant question is integrative: can AI be deployed so that it simultaneously strengthens the economic sustainability of the practice, extends the reach of a limited clinical workforce, and redirects growth toward prevention rather than toward higher-cost procedures alone?

Scope and significance of the study. This article addresses that integrative question. Its scope is national: the shortage it examines is formally designated by the federal government in every state, and the market forces it analyzes—DSO growth, private-equity investment and AI diffusion—operate across the entire U.S. dental sector. The study is therefore intended to inform dental entrepreneurs, managers, investors, educators and policymakers whose decisions affect oral health access and health care expenditure at a scale that extends well beyond any single practice or locality. Its specific objectives are (i) to synthesize the current evidence on U.S. dental market consolidation and its strategic trade-offs; (ii) to critically appraise the clinical and operational evidence on AI in dentistry; (iii) to relate both to the documented workforce maldistribution and to the economics of prevention; and (iv) to propose an original, state-adaptable AI-Enabled Dental Entrepreneurship Framework.

II. Material and Methods

Study design. A narrative literature review with a strategic-management orientation was conducted. The narrative design was selected because the research question spans heterogeneous bodies of evidence—health economics, clinical AI performance, workforce geography and value-based payment—that are not amenable to quantitative pooling.

Sources and search strategy. Peer-reviewed literature was retrieved through the Consensus academic research platform, which searches more than 400 million records indexed in Semantic Scholar, OpenAlex and PubMed. A structured research brief covered four thematic axes: (1) dental practice management, entrepreneurship, DSOs and private equity in the U.S.; (2) AI for dental diagnostics and practice operations; (3) dental workforce shortages, dental deserts and teledentistry; and (4) preventive dentistry, cost-effectiveness and value-based care. Of approximately 1.46 million records retrieved by the platform, 192 were deemed eligible and 20 were included in the core synthesis on the basis of relevance, recency (2018–2026) and methodological transparency. Four prior publications by the author addressing U.S. dental management, workforce shortage and technology adoption were additionally included^{3,8,9,10}.

Official data. Workforce figures were obtained from HRSA Bureau of Health Workforce shortage-area statistics for the first quarter of fiscal year 2026 (data as of December 31, 2025/January 1, 2026), as compiled at state level by KFF State Health Facts^{1,2}, and from the American Dental Association Health Policy Institute for DSO affiliation trends⁵.

Analysis. Evidence was synthesized thematically and then integrated through a strategic-management lens (competitive positioning, resource leverage and value creation) to derive the framework presented in Section IV. Because the design is narrative, no formal risk-of-bias scoring was performed; the strength and maturity of each evidence stream are discussed explicitly.

III. Results

3.1 Structural transformation of the U.S. dental market

U.S. dentistry has historically been organized as small owner-operated businesses, but this model is eroding. Between 2000 and 2015, the share of dentists in solo practice fell from 64% to 52% while average practice size increased, and a growing proportion of dentists became salaried employees of larger organizations⁴. The same study found that higher concentration among commercial dental insurers was associated with dentists choosing not to own a practice, suggesting that consolidation is partly a defensive response to payer bargaining power⁴. The trend is generational: ADA Health Policy Institute data indicate that in 2024 more than one in four dentists within ten years of graduation were affiliated with a DSO, a proportion much higher than among later-career dentists⁵.

DSOs centralize nonclinical functions—billing, marketing, human resources and administration—allowing clinicians to concentrate on patient care^{4,11}. Their expansion has been driven by dentists and by private financial investors acquiring established, profitable practices, creating transition and exit opportunities for owners¹². Larger organizations can also negotiate fees on behalf of affiliated dentists⁴. The literature nonetheless identifies a governance trade-off: corporate models may reduce clinicians’ control over practice direction, specialty strategy and professional autonomy¹¹.

Private-equity ownership intensifies these dynamics. In a recent national analysis, practices acquired by private-equity firms increased charges by 3.3% after acquisition, were more likely to become multispecialty practices and shifted their service mix from diagnostic and preventive procedures toward higher-reimbursement restorative, specialty and surgical procedures; negotiated allowed prices, however, did not change significantly¹³. Revenue growth in this model therefore appears to derive more from list prices and procedure mix than from improved payer reimbursement—an important signal for entrepreneurs and policymakers concerned with prevention and affordability¹³. Table 1 summarizes the strategic profile of the main ownership models.

Table 1: Strategic profile of the principal U.S. dental business models

Model	Strategic advantage	Strategic risk	Sources
Solo / small owner-operated practice	Autonomy, direct patient relationship, full control of clinical philosophy	Weak scale in administration, technology investment and payer bargaining	Nasseh et al. ⁴
DSO-affiliated group practice	Centralized nonclinical operations, bargaining scale, transition and exit liquidity	Reduced clinician control over practice direction and specialty strategy	Malerba & Menikheim ¹² ; Jackson ¹¹
Private-equity-backed practice	Capital for multispecialty expansion and revenue optimization	Shift away from prevention; higher list prices passed to patients	Nasseh et al. ¹³

Source: elaborated by the author from the cited literature.

3.2 Artificial intelligence in dentistry: clinical and operational evidence

AI has been adopted across all dental disciplines—operative dentistry, periodontics, orthodontics, oral and maxillofacial surgery and prosthodontics—but most applications remain concentrated in diagnosis based on radiographic or optical images, because image tasks are better supported by available data and computing resources than broader workflow tasks⁶. Convolutional neural networks are used for apical lesion and root-fracture detection, periodontal bone-loss assessment, caries detection, cyst and jaw-lesion diagnosis and tooth segmentation^{14,15}, and recent reviews report high accuracy in interpreting CBCT scans, intraoral photographs and radiographs⁷.

Clinical validation is strongest for detection. In a real-time CBCT evaluation involving 24 dentists, AI-aided clinicians achieved a sensitivity of 0.8537 versus 0.7672 for unaided clinicians, with specificity of 0.9672 versus 0.9616 and a statistically significant difference between groups ($p = 0.032$)¹⁴. Evidence for caries, however, is more nuanced: a 2026 scoping review found that AI consistently increased sensitivity, but its effect on specificity varied, it lengthened assessment time in two of three studies, its cost-effectiveness was uncertain and it could promote unnecessary intervention in early lesions¹⁶. From a management perspective, this means that diagnostic AI may raise case detection—and therefore treatment volume—without automatically improving value unless it is coupled with minimally invasive, prevention-first decision protocols.

Operational AI is less mature but strategically significant. Reviews describe AI-facilitated workflow automation, electronic record management, real-time documentation and predictive analytics for personalized care planning^{7,15}. Workflow modules integrated into commercial imaging platforms have been reported to reduce patient-record processing time by at least 30% in standard practice⁷, and AI is expected to reduce clinician workload by making diagnoses faster and more efficient⁶. Predictive modeling and business analytics have also been proposed to address inequity in access through more effective allocation of resources⁷. Direct peer-reviewed validation of AI for dental scheduling, revenue-cycle management and patient retention in U.S. clinics remains limited, and these uses should be treated as promising rather than proven.

Safe adoption depends on governance. The black-box nature of many AI systems limits interpretability and clinician trust, so explainable AI, regulatory oversight and professional training are considered essential¹⁷; data privacy, algorithmic bias and regulatory gaps remain persistent barriers⁷, and reporting standards such as the MI-CLAIM checklist have been advocated to improve transparency⁶. The author's earlier work on laser-assisted oral surgery in the U.S. market reached an analogous conclusion for another high-cost technology: adoption should be guided by patient risk profile, evidence certainty and practice-level safety capacity rather than by marketing claims alone⁸.

3.3 Workforce maldistribution and dental deserts

The U.S. access problem is one of distribution as much as of absolute supply. A national spatial analysis of 2023 clinic locations estimated that almost 1.7 million people lacked a dental clinic within a 30-minute drive and about 24.7 million lived in areas with fewer than one dentist per 5,000 residents¹⁸. Rural areas averaged one dentist per 3,850 inhabitants, compared with one per 1,470 in urban areas, and shortages were more likely in rural, highly deprived and racially segregated communities, as well as in counties with high uninsured populations¹⁸.

Federal shortage designations confirm the breadth of the problem (Table 2). Florida alone required 1,271 additional dentists, with only 18.7% of need met across 283 designations covering nearly six million residents; Georgia, Kentucky and Delaware met less than 20% of their need². The author's previous studies showed how this generalized shortage compounds the barriers faced by specific vulnerable groups in Florida: only about one-quarter of the nearly nine million veterans enrolled in Veterans Health Administration care are eligible for comprehensive dental benefits⁹, and national autism prevalence among 8-year-olds rose from 1 in 150 in 2000 to 1 in 31 in 2022, outpacing the growth of a workforce trained in special-care dentistry¹⁰.

Table 2: Dental Health Professional Shortage Areas in selected states, as of December 31, 2025

State	Dental HPSA designations	Population in designated HPSAs	Percent of need met	Practitioners needed
United States (total)	7,443	63,700,964	32.9%	10,744
Florida	283	5,967,522	18.7%	1,271
California	565	2,976,924	36.0%	475
Georgia	186	1,924,209	17.8%	402
Illinois	248	2,121,151	28.3%	383
Arizona	229	2,328,399	34.7%	381
Kentucky	226	966,127	10.4%	219

State	Dental HPSA designations	Population in designated HPSAs	Percent of need met	Practitioners needed
Alabama	92	755,541	24.3%	139
Delaware	12	407,121	4.4%	104

Source: HRSA Bureau of Health Workforce, as compiled by KFF State Health Facts^{1,2}. Percentages rounded to one decimal place.

The intervention literature favors multi-component responses. A 2025 systematic review of 37 studies from 26 countries identified 14 intervention types—workforce skill-mix and recruitment-retention strategies, outreach (teledentistry, mobile and school-based services, new community clinics), in-reach through dental school clinics and auxiliary measures addressing affordability and remuneration—all of which appeared to improve access¹⁹. In Oregon, a coordinated program combining community-based recruitment, a retention toolkit for Dental HPSAs and a teledentistry model demonstrated that state, academic and local actors together can expand care for underserved populations²⁰.

Technology-enabled models are particularly relevant to entrepreneurs. Teledentistry modalities such as e-consults and virtual dental homes have improved access and preventive care delivery, and hybrid models that combine virtual screening with in-person treatment improve continuity and efficiency for underserved groups¹⁷. In a rural primary-care study, 43.3% of cases were managed remotely, 80.8% of referrals were confirmed as appropriate by specialists and most providers reported faster referral decisions and fewer unnecessary referrals²¹. These models cannot replace hands-on procedures, and they remain constrained by broadband, device access and image quality¹⁷—limitations that AI-assisted image triage is well positioned to mitigate.

3.4 Prevention and value-based care as economic strategy

Value-based oral health care (VBOHC) is characterized by prevention and early intervention, patient-centered care, shared decision-making and outcome-based compensation; it represents a shift from fee-for-service volume toward outcomes and cost-efficiency, and it requires providers to adopt outcome-focused workflows, digital health technologies and team-based care²². VBOHC particularly benefits vulnerable populations with limited access to regular care and reduces health care costs over time²². Periodontal policy analyses similarly conclude that proactive prevention integrated with primary care offers greater equitable gains than expanding procedure-intensive treatment²³.

Economic evaluations support prevention, provided it is targeted. In U.S. children, risk-based caries prevention compared with current practice yielded an incremental cost-effectiveness ratio of US\$83,000 per quality-adjusted life year (QALY)—an economic value comparable to other pediatric prevention programs—whereas extending prevention to all children was less efficient (US\$154,000/QALY)²⁴. Multinational modeling showed that the economic burden of caries is concentrated in the most deprived groups and that leveling-up prevention generates the largest cost reductions there²⁵. Results are sensitive to time horizon: in Australia, no intervention was cost-effective in the base case, but fluoride varnish had a 91.5% probability of cost-effectiveness under longer-horizon extrapolation²⁶.

Payment design is decisive. Modeling of global periodontal expenditure indicated that achieving high coverage under fee-for-service would substantially raise costs, whereas a capitation-informed scenario reduced projected expenditure by 30% at the same coverage level²³. This contrasts directly with the private-equity evidence, in which revenue grew by moving away from preventive procedures¹³, and identifies prevention-oriented payment as the condition under which preventive strategies become financially sustainable for dental businesses.

IV. Proposed AI-Enabled Dental Entrepreneurship Framework

Synthesizing the four evidence streams, this study proposes that AI creates durable competitive advantage in dentistry only when it is managed as an integrated organizational capability rather than purchased as a stand-alone device. The framework comprises four interdependent pillars (Table 3). Each pillar connects a technology capability to a business outcome and to a population-level outcome, so that commercial and access objectives reinforce rather than compete with each other.

Table 3: The AI-Enabled Dental Entrepreneurship Framework

Pillar	AI capability and managerial action	Business outcome	Access and public-health outcome
1. Diagnostic intelligence	Validated AI for radiographs/CBCT used as a second reader, coupled with minimally invasive, prevention-first treatment protocols ^{14,16}	Higher diagnostic consistency, case acceptance, medico-legal documentation	Earlier detection without overtreatment of early lesions
2. Operational intelligence	Workflow automation, AI documentation, predictive scheduling and record management ⁷	Lower administrative cost per visit; more clinical hours per dentist	Greater effective capacity of a scarce workforce
3. Access intelligence	Teledentistry hubs with AI-assisted image triage linked to hub-and-spoke or mobile units in shortage areas ^{17,21}	New patient catchment in underserved markets; efficient referral flows	Care reaching HPSA residents; fewer unnecessary referrals and emergency visits
4. Value intelligence	Risk-stratified prevention guided by predictive analytics; participation in value-based or capitation-informed contracts ^{24,22,23}	Predictable recurring revenue; resilience to payer concentration	Reduced long-term disease burden and avoidable public expenditure

Source: proposed by the author on the basis of the synthesized evidence.

Pillar 1 – Diagnostic intelligence. The most mature AI evidence lies here^{6,14}. The managerial task is not merely to purchase an algorithm but to embed it in protocols that convert higher sensitivity into better decisions, avoiding the risk of unnecessary intervention identified for early caries¹⁶. Diagnostic outputs also serve as structured, auditable documentation—an asset in payer negotiations and quality reporting.

Pillar 2 – Operational intelligence. Reported reductions of at least 30% in record-processing time⁷ translate, at the practice level, into clinical hours released from administrative tasks. In a market where the shortage is measured in thousands of dentists², any technology that increases the productive capacity of each clinician has value that extends beyond the individual firm.

Pillar 3 – Access intelligence. Rather than competing for saturated urban markets, entrepreneurs can use AI-supported teledentistry to serve shortage areas through hub-and-spoke designs: AI-assisted triage at remote or school-based points of contact, with in-person treatment concentrated at a central clinic or mobile unit^{17,19}. The Oregon experience shows that such models are most effective when combined with recruitment and retention incentives and partnerships with educational institutions²⁰.

Pillar 4 – Value intelligence. Predictive analytics can stratify patients by caries and periodontal risk so that preventive resources are concentrated where they produce the greatest return—the strategy that showed favorable cost-effectiveness in U.S. children²⁴. Coupled with outcome-oriented contracts, this converts prevention from a loss leader into a source of predictable revenue^{22,23}, and it offers independent and group practices a differentiated alternative to the procedure-mix strategy observed in private-equity acquisitions¹³.

State adaptability. Because shortage profiles differ markedly between states (Table 2), the framework is designed to be calibrated locally. States with very large absolute deficits and large covered populations, such as Florida, favor high-throughput hub-and-spoke designs and special-population clinics—for veterans and patients with autism spectrum disorder, as previously modeled by the author^{9,10}. States with very low proportions of need met, such as Delaware and Kentucky, favor teledentistry-first entry with mobile treatment capacity, while states with extensive rural territories, such as Arizona, favor tele-triage networks linked to community clinics.

V. Discussion

5.1 Strategic implications for dental entrepreneurs and managers

The evidence indicates that the U.S. dental entrepreneur faces a strategic dilemma. Scale—through DSO affiliation or private-equity capital—solves problems of administrative cost, technology investment and payer bargaining^{4,12}, but it has been associated with reduced clinical autonomy and with revenue models that shift away from prevention^{11,13}. AI partially dissolves this dilemma: operational automation allows smaller organizations to capture some economies of scale without surrendering governance, while diagnostic and predictive tools allow prevention-centered practices to demonstrate measurable value to payers. This is consistent with the author's earlier finding that sustainable growth in U.S. dental practices depends on aligning managerial competencies, economic strategy and technological adoption³.

A second implication concerns market positioning. The concentration of shortage in rural, deprived and uninsured communities¹⁸ means that the largest unmet demand lies where traditional practice economics are weakest. AI-supported tele-triage, hybrid care and risk-stratified prevention change those economics by lowering the cost of each contact and directing in-person time to the patients who need it^{17,21}. For entrepreneurs, underserved markets thus become a growth opportunity rather than solely a social obligation.

5.2 Economic and public-health significance at the national scale

The relevance of this framework is not confined to the profitability of individual clinics. The shortage it addresses is officially documented by a federal agency in every state, affects approximately 63.7 million residents and would require more than ten thousand additional practitioners to resolve^{1,2}. Workforce supply cannot be expanded quickly, since training new dentists takes years; technologies and management models that increase the effective capacity of the existing workforce therefore offer one of the few levers capable of producing results within a short horizon.

The framework also aligns private incentives with public fiscal objectives. Preventive and risk-based strategies reduce the downstream costs of advanced disease, which fall disproportionately on deprived populations and, through public insurance and emergency care, on public budgets^{25,24}. Payment models oriented to outcomes can expand coverage with substantially less cost escalation than fee-for-service²³. By demonstrating how AI can make such models operationally viable for private dental businesses, the framework contributes to a more efficient use of health care resources nationwide, to improved access for veterans, children, patients with special needs and rural communities^{9,10}, and to the competitiveness of U.S. dental care delivery in a period of rapid technological change.

Finally, the model is replicable. Its components—validated diagnostic AI, workflow automation, teledentistry hubs and risk-stratified prevention—are commercially available or already demonstrated in U.S. settings^{20,7}, and its state-level calibration allows adaptation across very different shortage profiles. This replicability is what allows a management innovation developed within a single organization to generate benefits that propagate across the broader health system.

5.3 Limitations and directions for future research

This study has limitations inherent to its narrative design: study selection was not exhaustive, no formal quality appraisal was performed and some included evidence (e.g., teledentistry outcomes and economic evaluations) originates outside the United States. Evidence on operational AI—scheduling, revenue-cycle management and patient retention—remains largely conceptual, and the proposed framework has not yet been empirically tested. Workforce figures reflect a single point in time and are revised quarterly by HRSA. Future research should include prospective implementation studies of AI-enabled hub-and-spoke models in designated shortage areas, cost-effectiveness analyses of AI-assisted risk-stratified prevention under U.S. payment arrangements, and comparative studies of clinical and financial outcomes across independent, DSO-affiliated and private-equity-backed practices that adopt AI.

VI. Conclusion

U.S. dentistry is simultaneously consolidating, digitizing and failing to reach a large share of its population. The evidence reviewed shows that consolidation brings scale but carries risks for autonomy and prevention, that AI is clinically mature for image-based diagnosis but still emerging for practice operations, that the dental workforce is severely maldistributed, and that targeted prevention under outcome-oriented payment offers the clearest path to cost containment. The AI-Enabled Dental Entrepreneurship Framework proposed here integrates these findings into four pillars—diagnostic, operational, access and value intelligence—showing how dental entrepreneurs can use AI to strengthen economic sustainability while expanding the productive capacity of a scarce workforce, reaching underserved communities and reducing avoidable costs. Deployed and evaluated at scale, this approach can contribute meaningfully to a more accessible, efficient and prevention-oriented oral health system throughout the United States.

References

- [1]. Health Resources and Services Administration, Bureau of Health Workforce. (2026). Designated Health Professional Shortage Areas statistics: First quarter of fiscal year 2026 (data as of January 1, 2026). U.S. Department of Health and Human Services. <https://data.hrsa.gov/default/generatehpsaquarterlyreport>
- [2]. KFF. (2026). Dental care Health Professional Shortage Areas (HPSAs), as of December 31, 2025 [State Health Facts data set, based on HRSA Bureau of Health Workforce data]. <https://www.kff.org/other-health/state-indicator/dental-care-health-professional-shortage-areas-hpsas/>
- [3]. de Oliveira, J. A. P., Apolinário, V. C., Loiola, S. F., de Souza, P. D., Abadessa, S. N., Dalbone, A. F., Lima, P. A. B., de Mello, F. F., de Castro, U. A., Bastos, P. V. O., & Dalla, E. F. (2026). Advancing dental practice management in the United States: Strategic leadership, economic sustainability, and healthcare innovation. *Revista DCS*, 23(90). <https://doi.org/10.54899/dcs.v23i90.5554>
- [4]. Nasseh, K., Bowlblis, J., Vujcic, M., & Huang, S. (2020). Consolidation in the dental industry: A closer look at dental payers and providers. *International Journal of Health Economics and Management*, 20, 145–162. <https://doi.org/10.1007/s10754-019-09274-x>
- [5]. American Dental Association. (2025, November). HPI: More new dentists affiliated with DSOs [Data from ADA Health Policy Institute, The U.S. Dentist Workforce, September 2025]. ADA News. <https://adanews.ada.org/new-dentist/2025/november/hpi-more-new-dentists-affiliated-with-dsos/>
- [6]. Ding, H., Wu, J., Zhao, W., Matinlinna, J., Burrow, M. F., & Tsoi, J. (2023). Artificial intelligence in dentistry—A review. *Frontiers in Dental Medicine*, 4. <https://doi.org/10.3389/fdmed.2023.1085251>
- [7]. Liu, T.-Y., Lee, K.-H., Mukundan, A., Karmakar, R., Dhiman, H., & Wang, H.-C. (2025). AI in dentistry: Innovations, ethical considerations, and integration barriers. *Bioengineering*, 12(9). <https://doi.org/10.3390/bioengineering12090928>

- [8]. Bastos, P. V. O., et al. (2026). Laser-assisted exodontia and oral surgery in the United States: Clinical benefits, wavelength selection, and a risk-stratified decision framework. *IOSR Journal of Dental and Medical Sciences*. [Volume, pages and DOI to be confirmed by the author]
- [9]. Bastos, P. V. O., et al. (2026). Dental workforce shortage in Florida and access to oral health care for military veterans: A narrative review and strategic health management model. *South Florida Journal of Environmental and Animal Science*. [Volume, pages and DOI to be confirmed by the author]
- [10]. Bastos, P. V. O., et al. (2026). Dental workforce shortage in Florida and access to oral health care for patients with Autism Spectrum Disorder and special needs: A narrative review and strategic health management model. *South Florida Journal of Environmental and Animal Science*. [Volume, pages and DOI to be confirmed by the author]
- [11]. Jackson, D. C. (2024). How will the corporate dentistry model change the specialty and practice of oral and maxillofacial surgery? *Oral Health and Maxillofacial Research*. <https://doi.org/10.61577/ohmr.2024.100006>
- [12]. Malerba, B., & Menikheim, D. (2022). Transitioning to a Dental Services Organization: An emerging trend in orthodontic practice transitions. *Seminars in Orthodontics*. <https://doi.org/10.1053/j.sodo.2022.02.006>
- [13]. Nasseh, K., LoSasso, A., Vujicic, M., & Downey, T. (2025). Financial incisors: Cutting through the effects of private equity on dentistry market dynamics and care delivery. *Health Services Research*. <https://doi.org/10.1111/1475-6773.70075>
- [14]. Ezhov, M., Gusarev, M., Golitsyna, M., Yates, J., Kushnerev, E., Tamimi, D., Aksoy, S., Shumilov, E., Sanders, A., & Orhan, K. (2021). Clinically applicable artificial intelligence system for dental diagnosis with CBCT. *Scientific Reports*, 11. <https://doi.org/10.1038/s41598-021-94093-9>
- [15]. Samaranayake, L., Tuygunov, N., Schwendicke, F., Osathanon, T., Khurshid, Z., Boymuradov, S. A., & Cahyanto, A. (2025). The transformative role of artificial intelligence in dentistry: A comprehensive overview. Part 1: Fundamentals of AI, and its contemporary applications in dentistry. *International Dental Journal*, 75, 383–396. <https://doi.org/10.1016/j.identj.2025.02.005>
- [16]. Sezen-Hulsmans, D., Pereira-Cenci, T., Sonneveld, R. E., Loomans, B., & Cenci, M. (2026). Assessing the role of artificial intelligence in caries detection and clinical decision-making: A scoping review. *Caries Research*. <https://doi.org/10.1159/000550238>
- [17]. Drafta, S., Macris, A., & Petre, A.-E. (2025). Innovations on the horizon: Teledentistry, artificial intelligence, and hybrid models to improve oral health for vulnerable communities. *Frontiers in Oral Health*. <https://doi.org/10.3389/froh.2025.1649715>
- [18]. Rahman, M. S., Blossom, J. C., Kawachi, I., Tipimeni, R., & Elani, H. (2024). Dental clinic deserts in the US: Spatial accessibility analysis. *JAMA Network Open*. <https://doi.org/10.1001/jamanetworkopen.2024.51625>
- [19]. Edwards, J. W., Bogale, B., & Gallagher, J. E. (2025). Tackling geographic barriers to primary dental care (dental deserts): A systematic review. *British Dental Journal*. <https://doi.org/10.1038/s41415-025-8487-8>
- [20]. Schwarz, E., McElfresh, J. P., Dest, A., & Kohli, R. (2025). Addressing dental workforce challenges at the state level through financial incentives, educational innovation, and teledentistry initiatives. *BMC Oral Health*. <https://doi.org/10.1186/s12903-025-05722-y>
- [21]. Alharbi, N. F. (2025). Teledentistry for rural populations: Improving access to care. *The Review of Diabetic Studies*. <https://doi.org/10.70082/kd2r3v97>
- [22]. Bentley, R., Liu, C., & Khalil, H. (2026). Characteristics of value-based oral health care: A scoping review. *JDR Clinical & Translational Research*. <https://doi.org/10.1177/23800844261435909>
- [23]. Peres, M. A., Jin, L.-J., Nascimento, G. G., Preshaw, P., Raittio, E., Chow, D.-Y., & Tay, J.-R.-H. (2026). Periodontal diseases as a public health challenge: Rationale, prevention, equity, and sustainable care—A global call for action. *Journal of Periodontal Research*. <https://doi.org/10.1111/jre.70133>
- [24]. Janusz, C. B., Tran, D., Gebremariam, A., Rose, A. M., Keels, M., Quinonez, R. B., Eckert, G., Yanca, E., Fontana, M., & Prosser, L. A. (2024). A cost effectiveness analysis of population-level dental caries prevention strategies in US children. *Academic Pediatrics*. <https://doi.org/10.1016/j.acap.2024.02.006>
- [25]. Dunleavy, G., Verma, N., Raghupathy, R., Jain, S., Hofmeister, J., Cook, R., Vujicic, M., Kebschull, M., Chapple, I., West, N., & Pitts, N. (2024). Inequalities in oral health: Estimating the longitudinal economic burden of dental caries by deprivation status in six countries. *BMC Public Health*. <https://doi.org/10.1186/s12889-024-20652-0>
- [26]. Nguyen, T., Le, L. K.-D., Calache, H., & Mihalopoulos, C. (2025). Economic evaluation on dental caries preventive interventions for Australian children using a priority-setting approach. *The European Journal of Health Economics*. <https://doi.org/10.1007/s10198-025-01787-2>