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The perceptions of automated artificial intelligence-powered clinical documentation assisted in dentistry

Artificial intelligence (AI) has been applied in clinical dentistry for the disease prevention, diagnosis, treatment plan, prognosis, and the enhancement of environmental sustainability.^{1,2} Recently, Dragon Ambient eXperience (DAX) Express (Nuance Communications, Inc., Burlington, MA, USA), an AI-powered voice-enabled software, was launched for instantly transcription of medical records during patient visits by using natural language processing (<https://www.nuance.com/healthcare/ambient-clinical-intelligence.html>). The electronic health record can be completed automatically after the transformation between physician and patient conversation by DAX. It could help to reduce clinicians' administrative burdens by automatically generating a draft of clinical notes. DAX also sends the data through a human review process to ensure the accurate and high-quality medical records including patient's symptom, chief complaints, and treatment plans. In this article, the authors will address how DAX could assist and facilitate dentists in daily routine works.

Dentist is a stressful medical professional with highly working stress as well as occupational burnout.³ By the implementation of DAX in clinical dentistry, it could assist dentist in medical chart recording by voice. In addition, DAX will automate standard notes and appear in the medical record within hours. Hence, it is easy for dentist to review the automated summaries of patient's visit as well as the treatment procedure. This could save time and help to minimize working stress and burnout.

Generally, a diverse range of medical malpractice litigation is through medical records judged by the third party. In Taiwan, the overall criminal conviction rate of dental disputes has been reported about 35.7%.⁴ With DAX assisted, each medical record and informed consent generated by AI will be standardized with accuracy and legibility. Therefore, it may be lead to lower or prevent medical disputes.

The notion of entering AI explosive era that DAX might turnover clinical dentistry is shown in [Table 1](#). First, DAX will help dentist to minimize occupational burnout. Second, DAX may better the informed consent and perfect the medical chart records. Finally, DAX would mitigate medical disputes in the long-term aspect. In addition, the unpredictable characteristics of medical malpractice analyses could be calculated. Therefore, insurance company can base on the data to evaluate and design the appropriate insurance plans. Perhaps, a win–win situation between medical care and medical dispute free would be reached. However, patient autonomy, informed consent, and morality have been altered for AI in clinical dentistry.⁵ These critical ethical issues still need to be further investigated.

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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Table 1 The proposed three key stages of changes by DAX implemented in clinical dentistry.

Stage	Outcome
Short	Minimize occupational burnout
Medium	Better medical records
Long	Lower medical disputes

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