Ambient Artificial Intelligence in Otolaryngology: Scoping Review and State of the Market

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Introduction

The use of ambient artificial intelligence (AI) in medical documentation is rapidly expanding. Starting with zero commercially available products at the end of 2022, there are now over two dozen data-backed platforms, many of which are already in use at major academic medical centers. Despite being trialed in primary care, dermatology, and emergency medicine, there are no studies to-date evaluating ambient AI's use in ENT-based practices.

Methods

We perform a scoping review of ambient AI platforms currently available for implementation in otolaryngologic practices, examine the current literature around their use, and delineate what factors clinicians should consider when choosing from the multitude of options.

Findings

Myriad factors may influence providers' choice of platform. Cost, availability of shorter subscriptions, ease of integration into the electronic medical record, degree of training required before implementation, degree of encryption, post-visit editing requirements, inclusion of commonly spoken languages and ability to exclude translator interlocution, and availability of free trials prior to purchase may all influence stakeholder preference. Attention to the nuances of conversation such as fluency or prosody may play a particularly significant role for a specialty so highly attuned to the study and treatment of human perception and communication. Inclusion of ENT-specific procedure codes, diagnoses, and suggested orders will be essential. Generation of imaging interpretations or comparisons (i.e., parotid mass has grown X% between 2019 and 2024 MRIs) may streamline providers' assessments. As AI adopts biases borne of its training data, clinicians must ensure that training datasets represent the diverse ethnicities, languages, and socioeconomic backgrounds of their patients.

Table 1: Comparison of Popular Ambient AI Scribe Technology

Platform	Cost	Short Subscription Availability	EMR Integration Ease	Training Reqs	Post-Visit Editing	Multilingual Support	Free Trial	Fluency/Prosody Handling	ENT-Specific Features	Imaging Interpretation
Abridge	$$	Yes	High	Low	Minimal	Yes	Yes	Advanced	Moderate	No
Ambience Healthcare	$$	Yes	High	Moderate	Minimal	Yes	Yes	Advanced	High	Yes
DeepScribe	$	Yes	Moderate	Low	Moderate	Limited	Yes	Basic	Moderate	No
Nabla	$	Yes	Moderate	Low	Moderate	Yes	Yes	Moderate	Low	No
Nuance DAX	$$$	Limited	High	Moderate	Minimal	Yes	No	Advanced	High	Yes
Oracle Health	$$$	No	High	High	Moderate	Limited	No	Moderate	Moderate	Yes
Suki	$$	Yes	High	Low	Minimal	Yes	Yes	Advanced	Moderate	No

Conclusions

The rapid expansion of any technology is often accompanied by early growing pains. Though cost remains an important deciding factor, adopters should also consider specialty and practice-specific factors when assessing what technology may best suit their practice.

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