

TACKLING THE DOCUMENTATION BURDEN

AI can synthesize outside records, draft visit notes, and translate retina jargon, but the physician remains responsible for every word.

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Retina practice is a documentation stress test. A single encounter may require synthesis of outside anti-VEGF history, prior surgery, systemic medications, examination findings, multimodal imaging, and injection details followed by initiating a plan that patients and referring clinicians can understand. In one academic study, ophthalmologists spent a mean of 10.8 minutes in the electronic health record (EHR) per encounter, totaling 3.7 hours during a full clinic day.¹

Large language models (LLMs), which can organize information quickly, may be able to reduce some of this burden; however,

they can also omit crucial facts, reverse laterality, and add unsupported details.

BEFORE THE VISIT

New retina consultations often arrive with fragmented or lengthy notes, imaging reports, operative records, and injection histories. AI can extract a timeline and populate a problem-oriented draft, so the physician has a structured summary. For example, Mayo Clinic's RecordTime, a tool that organizes and summarizes outside records, anecdotally saved one physician 5 to 30 minutes of preparation per patient,² although peer-reviewed performance data have not yet been published.

In our study, a locally hosted LLM generated pre-charting drafts for 48 external retina, uveitis, and ocular oncology referrals.³ AI drafts were rated more complete and organized, whereas physician drafts were clearer and more

clinically relevant; overall preference did not significantly favor either source. Physicians spent a median of 5.12 minutes manually summarizing and pre-charting each referral, although the study did not directly compare this time with physician review and editing of AI drafts. Among available AI note-review forms, errors were reported in 20 of 43 and pertinent omissions in 18 of 45, supporting supervised synthesis rather than autonomous record review.³ These findings suggest AI solutions can accelerate record synthesis but cannot replace clinical prioritization, source verification, or final review.

DURING THE VISIT

Ambient-listening AI scribes convert the patient-clinician conversation into a draft note, but studies show heterogeneous rather than universal benefit. In

KEY TAKEAWAYS

- ▶ AI can assist with documentation before, during, and after a retina visit, but efficiency gains vary by product, clinician, and workflow.
- ▶ Protected health information should be processed only through approved systems with appropriate contracts, security review, patient disclosure, and clinician oversight.
- ▶ Clinicians should use AI to organize and draft and require verification of high-consequence details.



THE SUCCESS OF AI-ENHANCED DOCUMENTATION DEPENDS ON WHETHER IT RETURNS ATTENTION TO THE PATIENT, SHORTENS THE PATH TO AN ACCURATE RECORD, AND FAILS SAFELY WHEN THE WORKFLOW EXCEEDS WHAT IT CAN CAPTURE.

a randomized trial of 238 outpatient physicians across 14 specialties, one solution reduced time-in-note by 9.5% relative to usual care, whereas another product did not affect the documentation time. Both products improved several clinician-reported measures, although clinicians reported occasional clinically significant inaccuracies.⁴ Another trial of 66 clinicians across ambulatory practices similarly found improvements in work exhaustion and documentation-related outcomes, while showing that adoption, workflow fit, and baseline documentation habits influenced who benefitted from the AI scribes.⁵

Real-world evidence is broader and mostly observational. In a five-center study of 8,581 clinicians, including 1,809 adopters, AI scribe access was associated with 13.4 fewer minutes of total EHR time and 16 fewer minutes of documentation time per 8 patient hours, no significant change in after-hours EHR time, and 0.49 additional visits per week.⁶ Another study of 263 clinicians found that self-reported burnout decreased from 51.9% to 38.8% after 30 days of AI scribe use.⁷ Survey data also showed improved documentation-related wellbeing, but individual experiences ranged from major time savings to added editing burden.⁸ Although ophthalmologists were included in at least one multispecialty cohort, none of the cited studies reported ophthalmology or retina-specific outcomes.

Retina adds a fundamental limitation: Much of the clinic work occurs outside the recorded conversation or is never verbalized. For example, OCT interpretation and comparison may occur before the patient encounter, and the peripheral retinal examination is often performed silently or only partially narrated. Ambient audio therefore captures only a subset of the information required for a complete retina note. In scripted vitreoretinal encounters, models additionally fabricated information in some cases.⁹

AFTER THE VISIT

AI may be most valuable when it turns a finalized note into a plain-language summary or concise referral letter. In our randomized quality improvement study, 85% (n = 362) of non-ophthalmology clinicians and professionals preferred ophthalmology notes that included an AI-generated plain-language summary. Diagnostic understanding increased by 9% and clarity by 23%. However,

ophthalmologist review identified at least one error in 26% of summaries, although most were low risk and none were judged to pose a risk of severe harm or death.¹⁰ Other studies have similarly found major readability gains alongside omissions and inaccuracies requiring review.^{11,12} Our group is now evaluating patient comprehension in a randomized controlled trial (NCT06859216).¹³

Automated post-visit summaries could translate the finalized note into a clear explanation of the diagnosis, treatment, follow-up, and return precautions, improving communication with patients, caregivers, and referring clinicians while reducing manual drafting. Their value, however, depends on the physician's initial documentation and careful verification.

NONNEGOTIABLES FOR SAFE IMPLEMENTATION

First, only use an organization-approved platform. When a vendor handles health information on behalf of a covered entity, a business associate agreement is generally required, together with institutional risk assessment and security safeguards.¹⁴ Practices should understand where and how long data are stored; whether they are used for model training or other secondary purposes; which subcontractors can access them; and how access controls, audit logs, breach notification, and data return or destruction are managed. Retention should be minimized, justified, and contractually defined.

Second, be transparent with patients. Recording and consent requirements vary by state and institution. The Ophthalmic Mutual Insurance Company recommends combining general disclosure, periodically updated written consent, and an institutional governance policy.¹⁵ Qualitative research also supports clear education, flexible consent methods, and an accessible opt-out process.¹⁶ At the visit, confirm that the patient agrees and may decline without affecting care.

Third, require clinician review and audit the full workflow. Signing an encounter should remain a hard stop, supported by a retina-specific checklist that focuses on laterality, imaging, medications, procedures, and follow-up. During implementation, measure adoption, editing time, same-day note closure, high-consequence errors, patient opt-outs, and

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clinician and patient experience. Reassess performance after software updates and in challenging encounters involving interpreters, multiple speakers, or complex surgical histories.

VERIFY, VERIFY, VERIFY

The success of AI-enhanced documentation in retina depends on whether it returns attention to the patient, shortens the path to an accurate record, and fails safely when the workflow exceeds what it can capture. In retina, evidence remains limited, and benefits cannot be assumed from other specialties. Retina specialists should implement AI with caution; use it to organize and draft, require verification of high-consequence details, and retain only workflows that improve accuracy, efficiency, and patient care. The goal is an accurate, timely, understandable record that allows the physician to reserve their attention for the patient. ■

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