



# Research Week 2021

## Clinical Notes Across a Decade

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### Keywords

Clinical notes, note bloat, electronic health records

### Abstract

There has been widespread concern that clinical notes have become “bloated” with redundant or irrelevant text since the HITECH Act catalyzed adoption of electronic health records (EHRs) in the United States a decade ago. While this concept of *note bloat* has been widely discussed, there is little evidence on its scope or causes.

This retrospective cross-sectional study aims to help fill this knowledge gap by examining the length and redundancy of nearly 3 million outpatient progress notes written between 2009 and 2018 by over 6,000 authors across 46 medical specialties at Oregon Health & Science University.

We find the median note length increased 60% (99% CI, 47-75%) from 401 words in 2009 to 642 words in 2018 while median note redundancy (i.e., the amount of note text identical to the patient’s last note) increased 11 percentage points (99% CI, 7-14 p.p.) from 48% in 2009 to 59% in 2018. We also find the majority of note text (71%) was entered via templates or copy-paste rather than being manually typed in 2018. Using mixed effects linear models, we find a strong association between having more of a note’s text be templated or copied and having longer notes. We also find trainees and newer hires wrote longer notes than more senior employees who had been using OHSU’s EHR longer.

Recent policy changes by the Centers for Medicare and Medicaid Services (CMS) have tried to limit EHR burden by reducing documentation requirements. This study provides evidence for the magnitude of note bloat over the last decade, and sheds light on the factors that may have driven the increase in both note lengths and redundancy. These results suggest interventions aimed at reducing note bloat may need to simultaneously address multiple factors, such as provider training and note template design.