National Center for Excellence in Primary Care Research

Enabling Real-Time Identification of Burnout Risk Among Clinicians in Primary Care Practices

AHRQ Impact: Researchers have developed a prediction tool to identify primary care practices at high-risk of clinician burnout. Instead of relying on clinician surveys that increase burden, the tool enables real-time reports using already collected electronic health record (EHR) data to help predict and prevent burnout before it occurs. Practices identified as high-risk can implement tailored process improvements to avoid the negative impacts of burnout on clinician well-being and patient care and safety.

Physician burnout surged following the COVID-19 pandemic and persists as a pervasive issue that negatively impacts patient care, patient safety, and the health workforce.[1,2] Family physicians suffer from higher rates of burnout than other specialties, making primary care practices a critical area of focus for burnout assessment and prevention efforts.[3] Burnout results in low patient satisfaction, and also negatively impacts physician well-being and retention.[4,5]

The American Medical Association's (AMA) Vice President of Professional Satisfaction noted that "while burnout manifests in individuals, it originates in systems. Burnout is not the result of a deficiency in resiliency among physicians, rather it is due to the systems in which physicians work."[6]

To help address this issue, an AHRQ-funded study, led by Principal Investigator Daniel Tawfik at Stanford University, developed a tool to identify which primary care practices are at highest risk for clinician burnout. The tool uses a system-level approach with an algorithm that collates electronic health record (EHR) data, metadata, and progress notes to produce a predicted average burnout score for each practice. Because workforce experiences are fluid, the research team designed the tool to facilitate real-time reports, enabling ongoing monitoring to help predict and prevent burnout before it occurs. Typically, healthcare institutions measure burnout using individual clinician surveys. These surveys can have response bias and create extra burden on the participating clinicians.[7] Using this study's tool, an institution can routinely review already collected EHR data across all practice clinicians without requiring any additional effort from them.

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[1] Physician Burnout. Agency for Healthcare Research and Quality, Rockville, MD. https://www.ahrq.gov/prevention/clinician/ahrq-works/burnout/index.html.

[2] Ortega MV, Hidrue MK, Lehrhoff SR, Ellis DB, Sisodia RC, Curry WT, Del Carmen MG, Wasfy JH. Patterns in Physician Burnout in a Stable-Linked Cohort. JAMA Netw Open. 2023 Oct 2;6(10):e2336745. doi: 10.1001/jamanetworkopen.2023.36745. PMID: 37801314; PMCID: PMC10559175.

[3] Medscape Physician Burnout & Depression Report 2022. https://www.medscape.com/slideshow/2022-lifestyle-burnout-6014664#1.

[4] Panagioti M, Geraghty K, Johnson J, et al. Association Between Physician Burnout and Patient Safety, Professionalism, and Patient Satisfaction: A Systematic Review and Meta-analysis. JAMA Intern Med. 2018;178(10):1317–1331. doi:10.1001/jamainternmed.2018.3713.

[5] Windover AK, Martinez K, Mercer MB, Neuendorf K, Boissy A, Rothberg MB. Correlates and Outcomes of Physician Burnout Within a Large Academic Medical Center. JAMA Intern Med. 2018;178(6):856–858. doi:10.1001/jamainternmed.2018.0019.

[6] What is physician burnout. American Medical Association. 2023. https://www.ama-assn.org/practice-management/physician-health/what-physician-burnout#.

[7] Tawfik D, Bayati M, Liu J, et al. Predicting Primary Care Physician Burnout from Electronic Health Record Use Measures. Mayo Clinic Proceedings, Volume 99, Issue 9, 1411 – 1421.

> **After speaking with primary care clinicians, a lot of their pain points were similar but the interventions they wanted implemented [to prevent burnout] varied quite a bit."**

– Dr. Tawfik, Principal Investigator

The research team has found that using aggregate practice-level EHR data has limited effectiveness for identifying individual physicians at risk for burnout, but shows promise for identifying which primary care practices put clinicians at highest risk.[7] The study's qualitative findings indicate that practice leadership should develop tailored interventions to prevent burnout based on practice-specific needs and risk factors.

As the healthcare system continues to find ways to best address clinician burnout and maintain a healthy workforce, tools like this one can be used to help identify practices at greatest risk for clinician burnout. This proactive practice-level screening provides a chance for primary care practices to implement process improvements to prevent burnout before it occurs or becomes pervasive. Ultimately, this can help primary care practices limit the negative impacts of burnout on clinician well-being and patient care.

The research team is currently working to develop the final prediction model, incorporating recent additions. Once completed, the team plans to share the relevant code on https://github.com/TawfikLabStanford for other groups who would like to implement this approach. The team also plans to develop a real-time dashboard for monitoring under a new project.

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