As a respected thought leader and convener, the American Medical Association bases its work in practice transformation and professional satisfaction on rigorous research and practice science.

Physician burnout has economic costs as well as financial costs associated with staff turnover, lost revenue, decreased productivity and risks to the organization from lower quality of care and potential for more frequent medical errors.

AMA research has highlighted the system-level issues that drive burnout, and the steps organizations can take to coordinate solutions for effective changes.

Our seminal research on physician burnout has shaped other collective understanding of its underlying causes, drivers of burnout, and the impact burnout has on physicians, patients and health care organizations. In collaboration with health care systems, the AMA’s research efforts are aimed at delivering evidence-based, actionable solutions to increase professional well-being.

**Electronic health records research**

Research has illustrated that EHRs may largely contribute to physician burnout and frustration. The AMA has partnered with several research teams from around the country to further understand the impact of EHRs on professional satisfaction and to illuminate the promise of objective EHR use metrics to quantify elements of efficiency of practice and teamwork.
Metrics for assessing physician activity using EHR log data

Published in *JAMIA* in 2020, authors propose seven core measures of EHR use that reflect multiple dimensions of practice efficiency and use cases of these measures for multiple stakeholders. Authors argue that standardization of EHR use measures will foster cross-study synthesis and comparative research. Learn more.

EHR-use metric research 2021 grant awardees

The AMA has provided a second set of grants to several organizations to continue researching EHR-use metrics and their relationship to burnout, professional satisfaction, well-being, and other practice-related factors. Research partners who have collaborated with the AMA to expand understanding of the EHR and EHR-use metrics include:

- Alliance Chicago
- Stanford University
- University of California San Francisco
- University of Wisconsin Health
- Yale University

Perceived EHR usability as a predictor of task load and burnout among U.S. physicians

Published in *JMIR* in 2020, authors conducted a secondary analysis of a cross-sectional survey of US physicians from all specialties from October 2017 to March 2018. This investigation found that physicians with higher levels of cognitive workload have higher rates of burnout. In an Emerging Topic presentation, Cognitive workload: A modifiable contributor to physician burnout?, authors Elizabeth Harry, MD and Christine Sinsky, MD, discuss study findings and approaches that health care organization leaders can take to address system issues to reduce burnout and promote physician well-being. Learn more.

Tethered to the EHR: Primary care physician workload assessment using EHR event log data

This retrospective cohort study, followed by direct observation, found that primary care physicians spend more than one-half of their workday, nearly six hours, interacting with the EHR during and after clinic hours. Learn more.
Association of perceived electronic health record usability with patient interactions and work-life integration among U.S. physicians

This cross-sectional study evaluated positive and negative perceptions of EHR use during patient encounters and at home after work hours. Higher physician-perceived EHR usability was associated with higher levels of perceived positive outcomes such as improved patient care, and lower levels of perceived negative outcomes such as worse patient interactions and work-life integration. The authors propose that EHR usability can be improved, thus improving patient care and physician well-being, if it is made a priority by those who design, implement and regulate EHRs. Learn more.

Characterizing physician EHR use with vendor derived data: A feasibility study and cross-sectional analysis

This study uses EHR audit-log data to determine that for every eight hours of scheduled patient time, ambulatory physicians spend more than five hours in the EHR. Differences in EHR use varied by specialty and physician gender. The analysis also demonstrates that while vendor-derived audit-log data are useful to some degree, their limitations do not allow for derivation of all proposed core EHR metrics and comparison of metrics across vendor products. Learn more.

Key research

Factors affecting physician professional satisfaction and their implications for patient care, health systems and health policy

This formative report identifies key drivers of professional satisfaction and provides recommendations to reducing burnout. Learn more.

National burnout survey

The most recent study in this series found that 43.9% of U.S. physicians exhibited at least one symptom of burnout in 2017, compared with 54.4% in 2014 and 45.5% in 2011. Learn more.

Physician task load and the risk of burnout among U.S. physicians in a national survey

Cognitive task load can affect providers’ ability to perform their job well and may contribute to burnout. Learn more.
Resilience and burnout among physicians and the general US working population

Resilience is inversely associated with burnout symptoms, but burnout rates were substantial even among the most resilient physicians. Learn more.

Allocation of physician time in ambulatory practice: A time motion study in four specialties

For every hour physicians provide direct clinical face time to patients, nearly two additional hours are spent on EHRs and desk work in a clinic day. Learn more.

Estimating attributable cost of physician burnout

The organizational cost of physician burnout can range from $500,000 to more than $1 million per physician. Learn more.

Professional satisfaction and the career plans of U.S. physicians

This survey research demonstrated nearly 1 in 5 U.S. physicians intend to reduce clinical work hours in the next year, and roughly 1 in 50 intend to leave medicine altogether in the next 2 years to pursue a different career. Learn more.

Personal and professional factors associated with work-life integration (WLI) among US physicians

This cross-sectional study identified factors associated with work-life integration in physicians and found that lower WLI was reported by physicians who are women, single, aged 35 years or older and who work more hours and call nights. Learn more.

Disparities in burnout and satisfaction with work-life integration in US physicians by gender and practice setting

This article explores the interaction between academic practice, private practice and gender in relation to physician burnout and satisfaction with work-life integration and finds that gender differences in rates of burnout are related to practice setting and other differences in physicians' personal and professional lives. Learn more.

TEAM approach reduced wait time, improved “face” time
This article describes a study that evaluated the TEAM approach to clinical practice. Findings showed the model improved workflow, increased face time and decreased patient wait times. Learn more.

**Advanced team based care: How we made it work**

This case study, based on the experience at Bellin Health, describes the 3 components of the advanced team-based care model, identifies the barriers that existed in the minds of multiple stakeholders (from patients to clinicians and Bellin executives) and describes the strategies that enabled them to overcome these barriers. Learn more.

**Preliminary report: U.S. physician stress during the early days of the COVID-19 pandemic**

This quantitative research evaluated the impact of COVID-19 on physician stress and mental health using a 10-item survey that assessed stress, fear of exposure, perceived anxiety/depression due to COVID and work overload. Learn more.

**Prevalance and correlates of stress and burnout among us healthcare workers during the COVID-19 pandemic: a national cross-sectional survey study**

This study evaluates stress related to COVID-19, with a particular focus on work roles and race and gender. The findings suggest stress is higher among nursing assistants, medical assistants, social workers, inpatient workers, women and persons of color is related to workload and mental health, and is lower when feeling valued. Learn more.