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Physician Burnout by the Numbers

Examining the Power of A.I. to
Reduce Physician Burnout

Introduction

Thanks for taking the time to review this study of the data, causes, and possible solutions to the topic of physician burnout. As a practicing physician, I've felt the weight of added regulations, new technologies, and the pressures that come with our daily work. Like you, my goal is to focus on improving patient care, and I believe our way forward looks brighter with emerging A.I. solutions. My hope with this paper is to facilitate conversations between physicians, colleagues, and health systems to reduce burnout and find our way forward together.

- Robert Van Demark, Jr. MD

A Troubling Trend

Scan industry publications or Google searches on the topic of physician burnout, and a common theme emerges—physicians are stressed out and hurting. For example, an August 2018 article reports the following data:

*Executives at Central Maine Healthcare have been struggling to reduce high rates of physician burnout with **80 of the health system's 300 employees** leaving in the past fiscal year partly because of dissatisfaction with its EHR system...¹*

One fiscal year, 80 employee departures. What is going on and how can we stop it?

A Hidden Crisis

Talk to any doctor about their career, and you'll likely hear about their sense of calling—to help people, to cure diseases, and to make the world a healthier place. Increasingly, doctors are experiencing a growing phenomenon that threatens to drastically impact their personal calling and the state of healthcare across the United States—while doctors are trying to focus on healing others, they are experiencing unprecedented personal levels of job burnout themselves. This level of burnout is creating a hidden crisis within healthcare that is slowly coming to the forefront of conversations in practices and healthcare systems across the country.

The numbers illustrating the growing crisis are truly staggering. According to a 2016 Advisory Board Report, physician burnout rates increased by 28% in just over four years (2013-2016)² and a startling 88% of physicians report feeling moderately to severely stressed and burned out on an average work day.³ Stress and burnout on the job at these levels is unsustainable for an industry as central to our societal well-being as healthcare.

Unfortunately, many doctors don't feel the organizations they work for are seeking solutions to the burnout crisis. Based on a 2015 VITAL WorkLife Survey, over 80% of physicians say their organization is doing nothing to help them deal with stress or burnout.⁴ While organizations may feel like they are offering support, that feeling is clearly not shared by a vast majority of their trained workforce. This double whammy of feeling career burnout and feeling unsupported by workplaces and employers can compound stress and anxiety levels.

9 out of 10 physicians report feeling moderately to severely burned out



Impact on Patient Care

The dangers and damage created by physician burnout is not borne by the physician alone. Indeed, the level of burnout and stress currently experienced by many of our doctors has dire consequences on the level of care and attention patients receive. According to a recent article published by the Mayo Clinic, physician burnout has been shown to negatively influence quality of care, patient safety, physician turnover, and patient satisfaction.⁵

The 2016 Advisory Board Report confirms these risks. According to their study, physician burnout is linked to a 16% decrease in patient satisfaction and an 11% increase in reported medical errors, increased turnover, and early retirement.⁶ The impact of these factors—lower satisfaction, higher turnover, and reduced safety—negatively affect everyone in healthcare, doctors and patients alike.

Even when patients and staff do not experience these direct effects of burnout on their care or work environment, the symptoms of burnout show up in many other ways. Physicians and staff report a large number of additional personal and environmental effects of burnout:

- **Decreased job satisfaction**
- **Decreased daily productivity**
- **Insufficient work-life balance**
- **Conflict at work and home**
- **Feelings of irritability, moodiness, anger, and hostility**
- **General tiredness, lack of sleep, and difficulty sleeping**
- **Negative impacts on physical health**
- **Negative impacts on mental health, including depression, anxiety, apathy, cynicism, and less social/relational interest**
- **Patient-safety concerns such as difficulty making decisions, communicating effectively, and increased medical errors⁷**

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The burden of these symptoms on our doctors is very real, and it is challenging their motivation and desire to remain in the medical field. While most doctors view their work not only as a career but also as a calling, the threat of burnout and the

added stress of the modern medical environment can begin to overcome that sense of calling. When this happens, doctors head for the doors in record numbers.

The Staggering Cost of Physician Turnover

In 2014, about 15% of physicians reported leaving their organization due to stress or burnout.⁸ This volume of turnover not only affects patient care—it also adds immense costs for health systems and small practices forced to recruit and train new physicians while losing patient revenue during the transition.

According to the *American Journal of Medical Quality*, the loss and replacement of a single primary care physician starts at \$250,000, while the real overall cost can be over \$1 million.⁹ Another study suggests that the replacement cost for hospital medicine specialists can be \$400,000 to \$600,000 or more, depending on the

specialty.¹⁰ Clearly, these costs are a huge burden on the healthcare system and drive costs up for patients while also reducing patient access to physicians.

For an industry already facing an emerging shortage of physicians in many specialties, this data is highly troubling and foreshadows a larger issue. How can we grow our base of physicians for the coming decades of expected growth across all of healthcare if we can't sustain and retain our current providers? This truly is a defining question of 2018, and the future of healthcare rests on our ability to solve the crisis.

EHR: A Primary Cause of Burnout

No single piece of technology, regulation, or workflow is solely responsible for the burnout crisis, yet emerging data does give us a clear picture of some primary causes. At the top of the list? Electronic Health Records (EHR) and the workflow demands the EHR system places on doctors and staff.

Two recent studies offer compelling data around the struggle EHR usage creates for physician workflows. A 2017 study conducted by the American Medical Association found that physicians and staff spend nearly twice as much time typing and entering data on a computer as they spend conversing and working with patients directly.¹¹ This data was confirmed in a 2018 study published by the *Journal of the American Board of Family Medicine (JABFM)*, which found that “for every hour physicians spent in direct contact with

patients, two more hours are spent on electronic health record (EHR) and desk work.”¹²

This struggle between the screen, keyboard, and patient makes doctors and staff begin to see the

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One Year of Family Physicians' Observations on Working with Medical Scribes
Journal of the American Board of Family Medicine

EHR software as a negative rather than a positive, a curse instead of a benefit.

EHR use has grown exponentially over the past 15 years, and the market is now approaching saturation. Less than a decade ago, nearly 90% of doctors in the United States maintained paper charts for their patients. According to some estimations, by the end of 2017 approximately 90% of office-based physicians nationwide were using EHR systems instead of paper.¹³

This complete shift in chart paradigms in the span of only ten years has completely changed the way practices organize their records—and not always for the better. While EHR has many benefits, its impact on daily workflow has been less than ideal for doctors and staff.

While doctors entered their specialties to care for patients, they increasingly find themselves chained to their desks completing administrative tasks that lead to higher stress and burnout.

In fact, according to a recent study from the University of Wisconsin and the American Medical Association, primary care physicians are spending almost six hours (5.9) on EHR data entry during a typical 11.4-hour workday.¹⁴ For a doctor who

trained for years to care for and heal patients, the daily grind of nearly six hours of EHR data entry can feel like the exact opposite of a medical calling and lead to questions around career and calling. Inside this data, we can begin to see a primary cause of physician stress and burnout. And we don't need to look very deep—physician surveys corroborate the data. "Paperwork and administrative demands" is the number one reported stress factor by 42% of physicians, making it the top reported stress factor by a large margin.¹⁵ And according to the same survey, "More time and/or more control over my time" was selected by nearly 70% of physicians as vital to improving their job health and satisfaction.

Hours physicians spend on EHR data entry during a typical 11.4 hour workday.



Finding Our Way Forward

Time and control—these two things appear to be vital to restoring a sense of health and balance for our doctors. We need to find solutions for doctors and staff to manage EHR entry with less time requirements, and in a way that gives doctors more control of their time, data entry options, and schedule.

Currently, only about 14% of physicians believe they have all the time they need with patients to provide the highest standard of care.¹⁶ But, how can we free up doctors from typing on their computers so that they can spend more face time talking to their patients?

The most helpful solution indicated by physicians is “EHR entry support.” In fact, over 60% of physicians report that “more self-directed time” and “more ancillary support for paperwork and charting” are the top two ways their organizations can help them reduce stress and burnout.

This way forward indicates the first part of our solution. Doctors don’t dislike the EHR itself, but they do dislike the onerous data entry requirements and the difficulties involved in ensuring accurate patient data is entered across the entire EHR record. Finding new and innovative ways to support doctors in entering data efficiently is a first step forward for reducing the burnout crisis. But, saving doctors time alone will not solve this crisis. In fact, according to an article on the topic in *South Med*, control of care is also vital. “The number of hours a physician works

is not related to happiness,” they write. “But the perceived ability to manage workload is significantly related to happiness.”¹⁷ Think about that for a moment. Control (or the perception of control) is vital to physician happiness. How can we help doctors regain time with their patients and regain control of their workflows?

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Partial Solutions

Physicians and practices have looked to a number of solutions in the past five to ten years to save themselves time and reclaim control of their EHR workflow. Unfortunately, these first attempts have only yielded partial success, drastically added to costs, or both.

One tactic practices have employed to make EHR more efficient is the use of scribes alongside the physician to take notes and complete EHR data entry for the physician. A popular vestige of paper chart days, scribes can be an effective partial solution for physicians struggling with the massive EHR entry workload. In fact, the *JABFM* 2018 study article notes that the “triad partnership” between physician, scribe, and medical assistant has potential to improve physician wellness and decrease burnout.¹⁸

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However, in a time where practices are looking to add efficiency to their staffing and care workflow, the added cost of scribes can be a challenge. In addition, even a highly trained scribe has the same challenge as the physician—he or she is only one human, forced to manually enter a massive amount of data across the entire EHR, using proper codes and structured data elements. Completing the entire record with no errors or missed information is a challenge for even the most trained and focused scribe. To make entering patient data quicker, other physicians looked to emerging technology such as medical speech recognition software to optimize their EHR data entry.

Through medical speech recognition software, physicians can dictate the patient narrative into a computer efficiently, and improvements in the software have led to increased accuracy in capturing the patient narrative. This can be very helpful for physicians.

But parsing the patient narrative into structured data elements and matching those elements across the entire patient record in the EHR? That has been an entirely different challenge, and medical speech recognition software options haven't found complete solutions to this problem. Even when the entire narrative is entered, the entry across the EHR has still required manual copying and pasting, dragging and dropping, or other very time-consuming options.

We know the challenge, and we've seen advancements in partial solutions over the past five years. But how can we leverage technology to help capture the patient narrative *and* turn that narrative into the structured data required by the EHR to help improve patient outcomes? The answer is slowly emerging in the field of Artificial Intelligence (A.I.) and new technology innovations.

Emerging Solutions

Artificial Intelligence (A.I.) offers physicians and EHR vendors new and powerful tools to augment their EHR experience by simplifying EHR workflows, data entry, coding, and chart completion. In an era of increasing regulations and added coding complexity, artificial intelligence can help physicians and staff automate their EHR workflow with incredible simplicity, accuracy, and efficiency.

This intelligent automation can help physicians save time, retain control of their EHR workflows in meaningful ways, and easily enter specific data on each patient—rather than standard diagnosis—resulting in better patient outcomes. A.I. is now powering solutions that allow doctors to enter patient narratives easily and let the

software do the heavy lifting. Intelligent machine learning technology can learn to understand each physician's unique way of describing patient information and accurately complete the entire patient note. As you can imagine, the time savings and workflow control offered with this type of technology are immense.

For example, Samantha® from Noteswift is a powerful EHR solution that uses highly advanced A.I. technology to “virtually assist” doctors in entering all patient data into the EHR.

Remember the “triad partnership” proposed in the 2018 *JABFM* article, a partnership which offers physicians the ideal kind of support to increase

wellness and decrease burnout?¹⁹ For the first time, Samantha uses technology to bring together the power of scribes and medical assistants to truly empower physicians with a simple, yet powerful, solution for capturing the patient narrative and using the narrative to accurately complete the entire patient record.

A physician enters the patient narrative by typing or dictating the encounter on a single screen in Samantha, and Samantha intelligently parses and segments the narrative to automatically identify the structured data elements required by the EHR.

The artificial intelligence powering Samantha and her built-in seamless integrations with many EHR software platforms ensures she knows exactly where to place all the structured data elements and narrative, and her automated process accurately completes the entire patient record with coding from the single narrative entry by the physician.

Technology innovations in the past have promised to streamline EHR use, but have

instead created added layers of complexity for the user, which have added to the levels of burnout rather than reducing them.

Thankfully, the advancements in A.I. over the past three years—including heuristic learning, medical speech recognition, natural language processing, dynamic parsing and matching technologies—have finally allowed solutions like Samantha to truly simplify the EHR workflow while also adding a tremendous amount of efficiency and accuracy.

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This kind of artificial intelligence promises to provide EHRs and physicians with innovative solutions to make EHRs simpler and more efficient. Technologies like Samantha offer physicians and staff four primary benefits:



Saving Time: By automating data entry across the entire EHR from one dictated or typed narrative, A.I. can eliminate the repetitive, manual data entry that chains physicians to their desks on nights and weekends. According to studies, using Samantha to enter and complete EHR patient charts saves physicians six to eight hours a week of manual EHR data entry.



Workflow Control: While many doctors feel the need to hire transcription services or scribes to handle the increased workload due to EHRs, this lowers their control of the work and its quality. As A.I. continues to improve, it will give doctors both automated control of all data entry based on their accurate patient narrative, as well as powerful review controls to check and ensure the accuracy of the record.



Seamless Integration: As regulations have become more complex, EHR workflows have also become more complex. Many add-on technology solutions offered by EHR partners are not fully integrated into the EHR, so the complexities are magnified rather than mitigated. A.I. solutions like Samantha offer seamless integration within the EHR, ensuring workflows are streamlined rather than complex or only offering limited functionality.



Better Patient Care: Not only can physicians reduce the time they spend in their EHR and increase their time working directly with patients, but the accuracy of their notes will also ensure that patient records are more accurate, leading to better overall patient care.

The Future of EHR and A.I.

At the HIMSS18 Conference in Las Vegas, keynote speaker Eric Schmidt, former Executive Chairman of Google parent company Alphabet, Inc., shared a compelling vision of a future “virtual assistant” that would enable doctors more time and control of their workflow.

“I want you to imagine a mic and a speaker in a room with a patient and a clinician,” he said. “This system listens to the conversation, disambiguates the voices, follows the consultation, and gives suggestions to the clinician in his or her earpiece. It transcribes the situation so everyone has a record of the complete conversation, and then fills out and navigates the EHR.”²⁰

This is a compelling, inspiring vision of a future virtual assistant Schmidt calls “Dr. Liz.” Today, technologies like Samantha are leading the way into this future reality—into a better EHR experience for doctors, staff, and patients. The A.I. technology innovations offered in Samantha are beginning to fulfill the vision offered by Schmidt and others around the power of A.I. to improve EHR workflows and reduce physician burnout.

“We have so many of the tools already to create something like Dr. Liz and do so much more,” said Schmidt. “All it takes is for every one of us in this room to figure out how to build it.”²¹ Tools like Samantha and other A.I. innovations are rapidly leading us toward better EHR workflows. Indeed, the time and control currently offered by Samantha is already providing some of the most important benefits today that Schmidt imagines in a future A.I. solution.

The A.I. technology innovations offered in Samantha are beginning to fulfill the vision offered by Schmidt and others around the power of A.I. to improve EHR workflows and reduce physician burnout.

As these tools mature and continue to emerge, the world of EHR has a bright, efficient, and powerful future. We can slow the trend of physician burnout and give them the time and control they deserve to fulfill their calling of providing health and wellness to people across the nation.



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