HIA TECHNOLOGIES, INC.™

PUBLISHED AUGUST 2021

CAN PHYSICIAN-CONTROLLED AI PROVIDE RELIEF TO BURNED-OUT CLINICIANS

Jolean Sheffield examines the potential for artificial intelligence, designed and controlled by clinicians, to alleviate rising burnout rates

INTRODUCTION

It didn't take long for COVID-19 to change the business model of healthcare, and in its wake clinicians have spent months learning how to adjust - a trial by fire. Seemingly overnight practices were forced to adopt telemedicine to care for their patients and tasked with undertaking huge remote medicine initiatives with little preparation. All the while, operating margins continued to thin, and elective cases that typically bolstered revenues were put on hold. Even with a vaccine readily available to most citizens, the healthcare sector continues to remain strained and far from recovering. To add to the growing complexity of care in the US a new labor shortage threatens to make matters worse.

CONTINUED

BURNED OUT BEDSIDE

NCBI defines burnout as "a widespread phenomenon characterized by a reduction in nurses' energy that manifests in emotional exhaustion, lack of motivation, and feelings of frustration that may lead to reductions in work efficacy." Regardless of the role one plays in healthcare, be it nurse, physician, technician, or aide, a single truth resonates across all functions: care delivery is a difficult calling. It is a sacred vocation reserved for people who want to make a difference, and who do, through great personal sacrifice. NCBI goes on to outline several root causes of burnout including work overload, a lack of resources/control/justice, and the absence of a sense of community. It is no wonder then, how the COVID-19 pandemic has contributed to an increase in clinician burnout. In a survey of more than 12,000 physicians from 29 specialties, burnout is still seen to be at a critical level with **42% of surveyed providers reporting burnout.**

Lack of personal protective equipment, long hours, grief over patient loss, and the personal stress that a global pandemic has on their home lives, have all compounded the naturally high levels of exhaustion experienced by these clinicians. And, for the first time in the survey's history the gap between burnout rates among males and females has grown the widest it's ever been with males reporting rates of 36% burned out and females at 51%. COVID-19 hit female workers particularly hard by throwing them a curveball; on top of being excellent caregivers at work, they were faced with homeschooling, remote learning, reduced childcare, and mounting fears related to bringing their work home with them, in the form of a highly contagious virus.

42% BURNED OUT

DID COVID-19 BREAK HEALTHCARE?

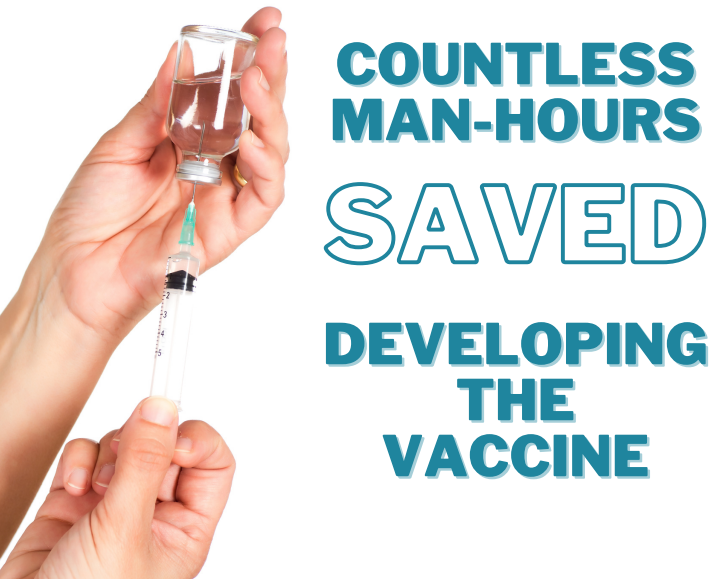
While a global pandemic has indeed impacted morale, healthcare as an industry has long struggled to overcome burnout and attrition. According to Becker's Hospital CFO Report, healthcare faces the second-highest rate of employee attrition in the country, at 20% even before the pandemic. COVID simply compounded an existing, complex, problem. Many companies have risen in the last decade to address it, and with some success. Products like Pieces Predict claim that their AI is capable of predicting patient outcomes so that healthcare providers can give earlier, more focused, care to patients. Using Natural Language Processing and predictive analytics, Pieces products essentially "crawl" the medical record and alert staff to various red flags that may mean things like an undiagnosed condition, an intervention opportunity, the potential for a delayed discharge, or even the need for a community referral. This "background support" is intended to augment the clinical workforce and empower staff, and it's just one example of how AI automation is applied in healthcare today, despite COVID-19 or any other health crisis. [CONT. PG. 3]

CONTINUED

DID COVID-19 BREAK HEALTHCARE? - CONT.

For another example of AI automation in healthcare, we don't have to look any further than the COVID-19 vaccine. Optimizing mRNA sequencing for the COVID-19 vaccine happened at a record pace thanks to artificial intelligence, according to Dave Johnson, chief data and artificial intelligence officer at Moderna. This automation took the place of countless man-hours and freed scientists to focus on other aspects of getting the vaccine to market.

When asked whether the automation freed scientists or replaced them, Dave States, "We don't think about AI in the context of replacing humans. We always think about it in terms of this human-machine collaboration, because they're good at different things. Humans are good at creativity and flexibility and insight, whereas machines are good at precision and giving the exact same result every single time and doing it at scale and speed. What we find [to be] the most successful projects are where we kind of put the two together — have the machine do the parts of the job that it's good at [and] let the humans take over for the rest of that." Mundane tasks that demand repetition, consistency, and accuracy are a natural fit for artificial intelligence, regardless of the business.



WHERE ELSE CAN AI BE APPLIED?

As healthcare leaders seek to improve outcomes for both patients and overburdened providers, the opportunity for AI to provide relief continues to expand. WIRED Health, Tech's virtual 2020 conference, focused primarily on disruptors in health, medicine, and science, explored the topic of AI at length. Among them, Dr. Eric Topol - founder of the Scripps Research Translational Institute, discussed how properly applied AI could make medicine human again. "The main objective of AI for healthcare and medicine has been to improve accuracy," he observed, noting that it's historically been used to improve how physicians diagnose disease. But Dr. Topol believes that additional applications exist that could bring about "far-reaching benefits" including the ability to free healthcare providers from routine tasks to focus more on their patients.

Could artificial intelligence, and the broader spectrum of use cases Dr. Topol alludes to, be that hope that the burned-out clinical workforce is looking for?

THE ROLE OF AI IN PATIENT EDUCATION

To answer this question we must look to the adopters themselves, those willing to apply the technology to new or different use cases, and what results they've seen. [CONT. PG 4]

CONTINUED

THE ROLE OF AI IN PATIENT EDUCATION - CONT.

One such early adopter is Dr. Alidad Ghiassi, Chief Medical Officer at HIA Technologies Inc. and active board-certified Los Angeles Orthopedic surgeon. A well-known educator and researcher, Dr. Ghiassi believes that one of the greatest opportunities for AI to impact both patients and providers is to apply it to the education space. More specifically, to automate routine educational conversations between patient and provider. “Artificial intelligence, ” he states, “when properly applied to the patient learning environment, can have a drastic impact on a patient's health literacy - their ability to understand and participate in their healthcare. Of course, we have been attempting to use automation in doctor-patient conversations for quite some time, but so far at a very primitive level: we give patients paper instructions, direct them to our websites to read information and watch videos, etc.”

When asked why this age-old method of information sharing is flawed he continues, “There is usually no way to know that the patient took the time to review the materials, much less whether or not they understood it and had all their questions answered. In my experience, these methods are fruitless and when relying on them I still spent up to 70% of my time educating patients, including re-educating them on the day of their procedure, both in the preoperative and postoperative settings. Additionally, I spend time educating the family or caretakers post-operatively. As a solo practitioner, I do not have the luxury of mid-level providers in my practice. HIA aims to change that. We use physician-authored and controlled AI in a secure virtual learning environment to give patients the freedom to learn more about their conditions and interact with their physician’s digital agent to get trusted, personalized, answers to their questions while respecting their privacy. Imagine taking part of the ‘medical brain’ home with you! My office hours don’t feel rushed and I feel at ease that I have set the proper expectations for both surgical and non-surgical outcomes.”

> **My office hours don’t feel rushed and I feel at ease that I have set the proper expectations for both surgical and non-surgical outcomes**

HIA Technologies’ CEO Vacit Arat explains the opportunity to leverage AI via their HIA TOPICS digital patient education solution, “The digital agent guides patients through the physician’s educational material in a highly visual and interactive UI where the patient can interrupt at any time to ask a question. Using voice-enabled AI, we can accurately match up the patient's question to the correct physician response, seamlessly, conversationally. It’s just you and your guide for an all-access pass to your physicians’ knowledge and experience. But that’s not all: during the session, the roles may be reversed, and the digital agent can also ask the patient questions to test their comprehension or collect information as instructed by the physician.

THE ROLE OF AI IN PATIENT EDUCATION - CONT.

A full transcript of the session is created for the physician to review and act on at the end of the session. The HIA TOPICS product is all about alleviating one of the most repetitive tasks for physicians that may contribute to burnout, and allowing them to use that time to build rapport and trust with their patients."

WHAT'S NEXT?

Healthcare innovation and strategy expert Dr. Vidya Raman-Tangella reminds us that, "Many in healthcare have been reluctant to adopt AI, or to let it interact directly with patients, due to the unpredictable nature of its algorithms. However, physician-controlled AI, like that in use at HIA, eliminates the variability. It can't 'think up' its own answers to patient questions. It's a controlled representative, deputized to provide very specific answers. This type of AI breeds trust rather than uncertainty."

Artificial intelligence has already changed how we understand diseases, develop treatments, and predict care outcomes. No longer science fiction, it sits squarely at the intersection of technology and public policy - ready to showcase its ability to improve quality of care for patients, and quality of life for caregivers experiencing burnout.

To Learn More about physician-controlled artificial intelligence, or virtual patient learning environments like HIA TOPICS, visit HIA.AI

HIA TECHNOLOGIES, INC.™

ABOUT THE AUTHOR

Jolean Sheffield brings 20+ years of clinical and health information technology experience to her current role as VP of Marketing and Content at HIA Technologies, Inc.