

# Internet of Things (IoT) in Assessing Physician Wellness

Sir,

Burnout is a psychological syndrome which imparts adverse physical and mental effects, compromises decision-making, patient safety, and quality of care. In emergency physicians, the levels exceed 60% compared to 38% in general physicians.<sup>1</sup> There are a number of factors that come into interplay; association of on-floor practices like dealing with physiological variations, unpredictable situations, lack of manpower, breaking bad news etc. play a pivotal role towards burnout. There are many studies on the assessment of the level of burnout in emergency physicians<sup>2</sup> but none focused on evaluating the steps using Internet of Things (IoT) as a tool to facilitate engagement. We herein propose areas where IoT can be a useful adjunct in evaluating workplace and everyday physical and physiological factors that may play a part in developing burnout in emergency physicians.

IoT is an invisible framework formed by physical objects connected to the internet. With the advent of technology in healthcare, remote patient monitoring by 5G-enabled medical devices, healthcare charting, integrated EHR system with multidisciplinary data for a holistic and systematic approach, programs tracking bed occupancy and automating transparent inter/intra departmental logistics, wait time and staffing etc. are all measures that systematise daily tasks for smooth flow through the emergency department (ED). Recent literature suggest identifying physician burnout by utilising mobile apps to screen for daily satisfaction and mood, track shift-related problems by administering online surveys, monitoring stress with smart bands, utilising blue-tooth low energy beacons to ensure safe workplace and de-clutter the ED, artificial intelligence (AI)-driven algorithms like machine learning to analyse data and guide management restoring the sense of personal accomplishment, systematise rostering and shift schedules by accommodating planned and emergency leaves, in-shift reminders to take breaks for snacks etc. and around the clock monitoring of compliance are ways by which physician wellness can be assessed. Furthermore, establishing web or smartphone based applications like Headspace, Mood gym, Coach.me, and digital mindfulness interventions can be used to train physicians to manage their stress and be able to enjoy their work.<sup>3,4</sup>

Therefore, physicians and residency program administrators can integrate IoT in the culture of promoting wellness, such that it streamlines the workload, timely recognises, and introduces interventions to manage burnout amongst ED physicians. This is

imperative for instilling engagement-the positive antithesis of burnout, by developing vigour, dedication, and positivity so as to ensure the delivery of safe and quality care to patients, ultimately promoting physician well-being.

## COMPETING INTEREST:

The authors declared no competing interest.

## AUTHORS' CONTRIBUTION:

IA: Acquired the existing data on the subject by literature review, designed the layout of the manuscript and wrote the initial draft of the letter with emphasis on the introduction of the subject with recent references.

NS: Reviewed recent literature on the subject, refined and edited the initial draft, contributing to the role of IoT (internet of things) in assessing physician wellness, and checked for plagiarism.

SW: Revised the manuscript critically, refined to precision, and gave final approval of the document to be submitted.

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## REFERENCES

1. Physician burnout & depression report 2022: Stress, anxiety, and anger. Medscape. 2022 Apr 11. [www.medscape.com/slideshow/2022-lifestyle-burnout-6014664?faf=1](http://www.medscape.com/slideshow/2022-lifestyle-burnout-6014664?faf=1).
2. Zhang Q, Mu MC, He Y, Cai ZL, Li ZC. Burnout in emergency medicine physicians: A meta-analysis and systematic review. *Medicine (Baltimore)* 2020; **99(32)**: e21462. doi: 10.1097/MD.00000000000021462.
3. Davis MJ. Using technology to combat clinician burnout. *J Healthc Manag* 2020; **65(4)**:265-72. Doi: 10.1097/JHM-D-20-00099.
4. Xu HG, Eley R, Kynoch K, Tuckett A. Effects of mobile mind-fulness on emergency department work stress: A randomised controlled trial. *Emerg Med Australas* 2022; **34(2)**:176-85. doi: 10.1111/1742-6723.13836.

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