

# To the Editor: Incorporating New Technologies Into Graduate Medical Education Practices

**T**echnological advances, such as simulation training, have transformed medical education and training in the modern era and have improved the training of residents and fellows. Residents now learn how to perform complex procedures using simulation and develop competencies before live patient attempts. Despite these improvements, performing other trainee duties, such as logging procedures, cases, and work hours, have failed to leverage such technologies. Using technology to perform these duties may reduce the burden on trainees to accomplish these tasks and may improve trainee satisfaction and well-being.

In a recent issue of the *Journal of Graduate Medical Education*, Anyanwu and colleagues<sup>1</sup> report using automated procedure logs for first-year and second-year cardiology fellows during their cardiac catheterization laboratory rotations. A clinical educational report template (CERT), with automated procedure log generation from the electronic medical record, documented procedures performed by trainees over 1 year. The investigators discovered that the CERT procedure logs were associated with a statistically significant increase in weekly procedure documentation over manual entry of procedure logs. CERT procedure logs also eliminated the 1 to 5 hours weekly that trainees spent documenting these procedures manually. We commend Anyanwu et al<sup>1</sup> for publishing this critical study that may transform graduate medical education (GME) activities such as work hours and procedure logging by trainees.

Traditionally, trainees assume responsibility for documenting tasks manually. Manual data entry is a time-consuming process that can be fraught with inaccuracies.<sup>2</sup> Further, program directors have difficulty verifying these logs. As a result, sponsoring institutions and programs may lose accreditation for violations. Equally important, trainees may not show procedural competency for independent practice if

they make errors in logging procedures. Leveraging technology to document these tasks would be beneficial for sponsoring institutions and trainees.

Automated data collection can facilitate accurate data assembly and assist with the fair assignment of cases to learners. It can also assist program directors in understanding their learners' clinical experiences better and cater to their educational needs. Principally, work hour violations would be avoided, clinical competency would be achieved, and trainee well-being could increase.

It may be time to develop technological applications that facilitate automated procedure and work hours logging. Doing so will enable timely and accurate logging of trainee activities, streamline monitoring by program directors and GME offices, and improve trainees' well-being. Considering that 27% of the trainees in the study by Anyanwu et al<sup>1</sup> spent 3 to 5 hours weekly manually logging their procedures, trainees may instead spend this time on personal well-being and educational activities. Anyanwu et al<sup>1</sup> provide a framework for all of us to follow regarding leveraging technology for GME processes. GME offices should collaborate with technology companies to develop applications that enable automated trainee procedure and work hours documentation.

## Michael Essandoh, MD

Assistant Dean of Graduate Medical Education and Professor of Anesthesiology, The Ohio State University Wexner Medical Center

## Nasir Hussain, MD, MSc

Chief Resident, Department of Anesthesiology, The Ohio State University Wexner Medical Center

## Scott Holliday, MD

Associate Dean of Graduate Medical Education and Associate Professor of Internal Medicine, The Ohio State University Wexner Medical Center

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