

Inpatient blood draws are often performed during sleep hours, patient-care study finds

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The sleep of hospitalized patients may be often interrupted due to non-urgent blood draws, a new Yale study has found.

In an analysis of more than 5 million non-urgent blood draws collected at Yale New Haven Hospital (YNHH) from 2016 to 2019, a team of researchers found that a high proportion of them occurred during a three-hour window in the early morning.

"We found that nearly four in 10 of total daily blood draws were performed between 4 a.m. and 7 a.m.," said César Caraballo-Cordovez, MD, a postdoctoral associate at Yale Center for Outcomes Research and Evaluation (CORE) and co-lead author of the study. "Importantly, we found that this occurred across [patients](#) with different sociodemographic characteristics, including older individuals who are at highest risk of adverse health events from [sleep deprivation](#)."

Although early morning blood draws are often considered necessary to inform decisions during morning medical rounds, the authors suggest that [sleep](#) interruptions may increase the risk of delirium and other adverse events. "Patients who were recently hospitalized experience a period of generalized risk for myriad adverse health events, a condition named posthospital syndrome," added Dr. Caraballo-Cordovez. "The [stress](#) that patients experience during the hospitalization—including stress from sleep deprivation—is a key contributor to this period of increased risk."

"This is not an issue at just one hospital," said Harlan M. Krumholz, MD, SM, professor of medicine and [public health](#) at Yale and CORE director. "Our findings reflect an aspect of how inpatient hospital care is being delivered in modern medicine. A more patient-centered care would limit nonurgent tests during sleep hours. However, these [early morning](#) blood draws are often considered necessary to make decisions during rounds."

"We need to re-design our process to protect patients' sleep, but major changes in our practice must be informed by solid studies that

demonstrate the efficacy of strategies to do so without untoward effects," added Krumholz.

The work is published in the journal *JAMA*.

More information: César Caraballo et al, Timing of Blood Draws Among Patients Hospitalized in a Large Academic Medical Center, *JAMA* (2023). [DOI: 10.1001/jama.2022.21509](https://doi.org/10.1001/jama.2022.21509)

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