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**PUBLISHED ABSTRACT**

# Reducing Sleepiness and Burnout in Subspecialty Fellows Due to Non-Urgent Overnight Calls

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## Background

Trainees with inadequate sleep are more likely to report working in an impaired condition and making significant medical errors. Subspecialty medicine fellows at Mount Sinai and across the nation routinely take overnight pager call by phone and then work the following day. Fellows receive calls directly from patients, emergency room physicians, inpatient teams, and administrators (e.g. transfer office). Experts in trainee fatigue recommend decreasing or eliminating inessential overnight calls. This project aims to reduce the number of non-urgent overnight calls that awaken subspecialty fellows.

## Methods

On-call gastroenterology fellows recorded all overnight calls and assessed the clinical urgency of these calls. The on-call fellows also completed the “Stanford Sleepiness Scale” and “Physician Work-Life Study’s Single Item” after each shift. Common consultations (e.g. active GI bleeding, anemia without active bleeding, leaking PEG tube, misrouted call for another service) were discussed in consensus meetings with attendings, chief residents, and fellows from the Departments of Emergency Medicine and Medicine and the Division of Gastroenterology. Each specific consult was designated as “urgent” vs. “non-urgent” and a triage algorithm was created. Grant funding from the Graduate Medical Education (GME) Office and the Department of Medicine (DOM) was used to subsidize the work of nocturnal Physician Assistants (PAs) to triage the incoming calls to the gastroenterology pager according to the algorithm. For urgent calls, the PAs were instructed to wake up the on-call GI fellow. For consultations deemed non-urgent, e-mails containing pertinent clinical information were sent to the daytime GI fellows for review during business hours. The primary endpoint of this intervention was to assess for reduction in non-urgent overnight calls. Secondary endpoints included reduction in the total number of overnight calls reaching the fellow and improved scores on the “Stanford Sleepiness Scale” and “Physician Work-Life Study’s Single Item” questionnaires.

## Results

Data was collected from 35 nights of PA coverage and 23 nights without coverage. The number of “Non-urgent Calls” reaching fellows was significantly reduced with PA coverage [ $p = 0.004$ ]. “Total Overnight Calls” were also significantly reduced with PA coverage [ $p = 0.009$ ]. Scores on the “Stanford Sleepiness Scale” significantly improved from a median score of 3 (Awake, but relaxed; responsive but not fully alert) to a score of 2 (Functioning at high levels, but not at peak; able to concentrate) [ $p = 0.0003$ ], which equates to the sleepiness level of fellows who are not on call. The “Physician Work-Life Study’s Single Item” did not change with PA coverage and remained at a score of 2 (Occasionally I am under stress and I don’t always have as much energy as I once did, but I don’t feel burned out) [N.S.].

## Conclusions

PA coverage of the gastroenterology service significantly reduced the number of non-urgent overnight calls that awaken gastroenterology fellows. Furthermore, the total number of calls reaching fellows was reduced with the intervention and scores on a validated sleepiness scale were improved. Such consensus meetings and physician extender-led overnight coverage algorithms can be replicated in other divisions as a tool for mitigating trainee fatigue. Future work will attempt to implement similar interventions in the divisions of hepatology and nephrology.

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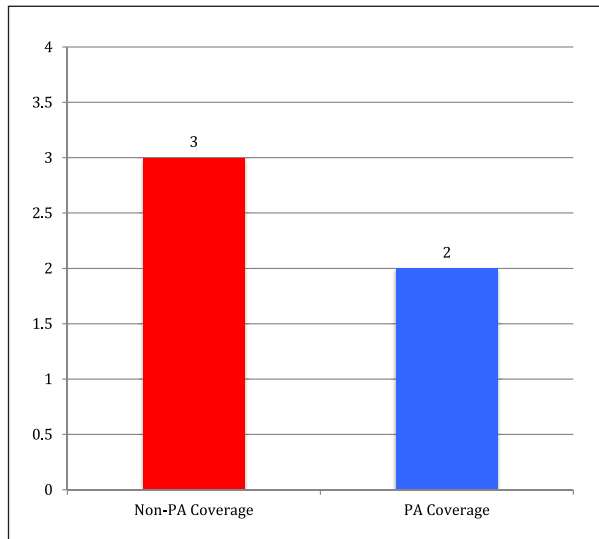


Figure 1: Total Overnight Calls (10 pm-7 am).

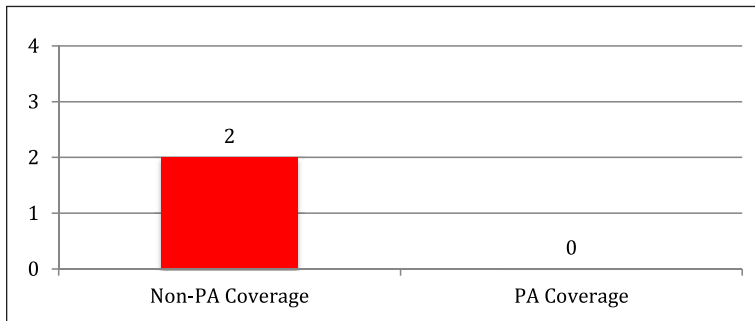


Figure 2: Non-Urgent Overnight Calls (10 pm-7 am).

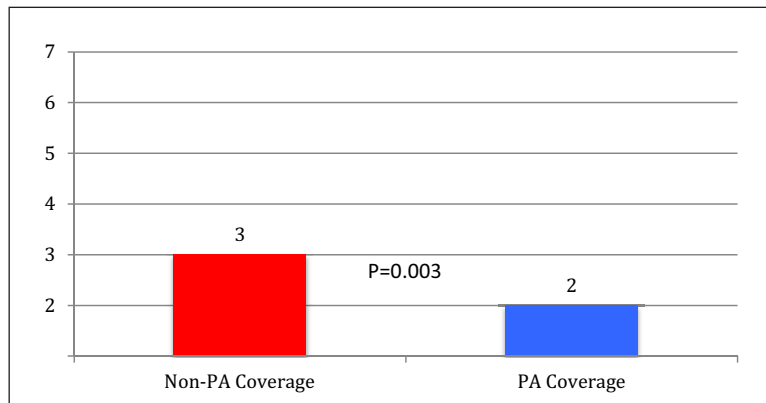


Figure 3: Stanford Sleepiness Scale.

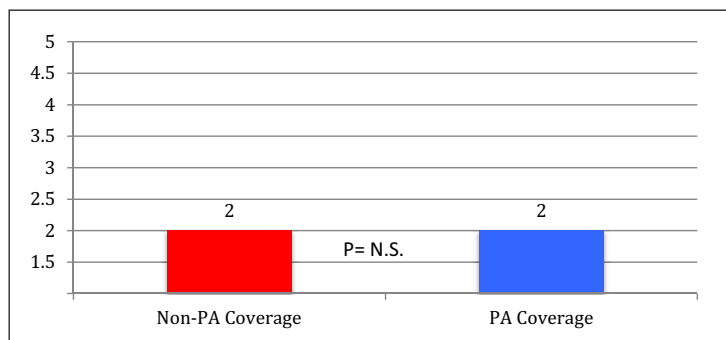


Figure 4: Physician Work-Life Study Single Item.

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