Reducing on-call registrar fatigue

Introduction of an overnight answer message: a retrospective single-centre cohort study

Han Zhang[1], Maria John[2], Alice Flavell-Birch[1], Katherine Baguley[1]

[1] Department of Otolaryngology, Head & Neck Surgery, Wellington Regional Hospital, Te Whatu Ora, Health New Zealand

[2] Biostatistics Group, Dean's Department, Faculty of Medicine Wellington, Ōtākou Whakaihu Waka University of Otago

34% relative reduction in overnight call rate

0.66 rate ratio (95% CI 0.54–0.80)

19.6 fewer overnight calls per month on average

BACKGROUND

Overnight calls interrupt sleep and contribute to fatigue and reduced quality of life for on-call clinicians.

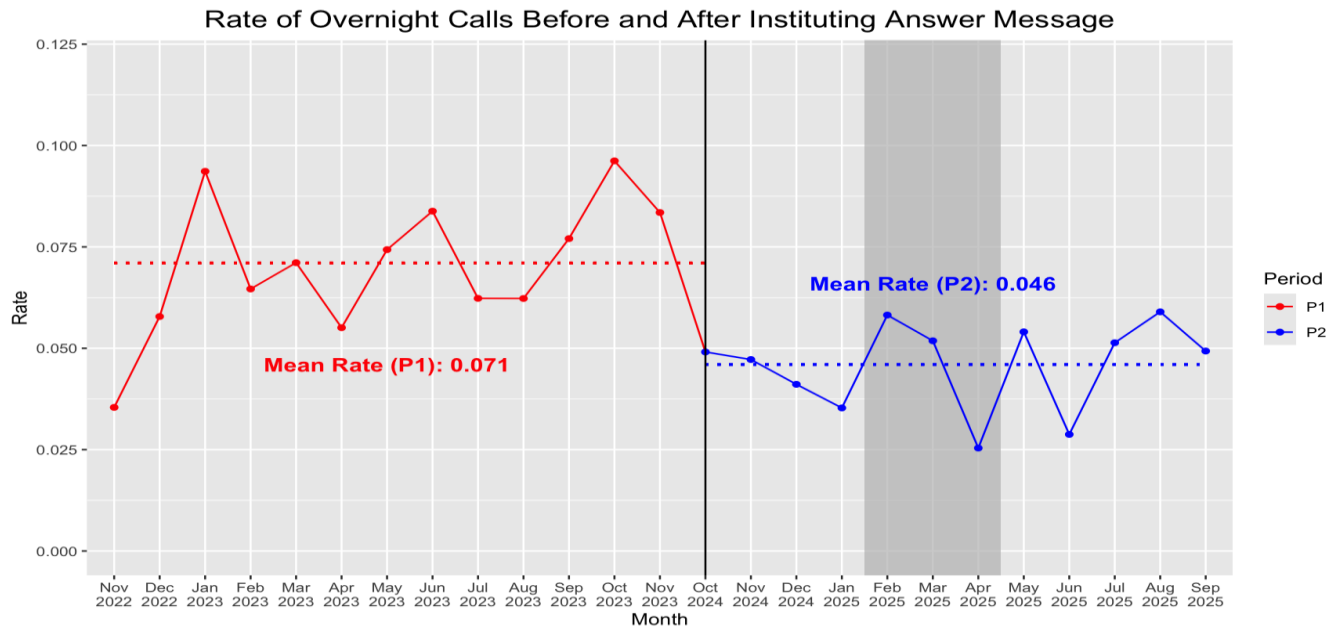
At Wellington Hospital, an automated overnight message was introduced to prioritize urgent referrals while directing non-urgent callers to call back after 06:00.

AIM

To determine whether the overnight answer message reduced the rate of calls received by the ENT registrar while maintaining patient safety.

PRIMARY OUTCOME

Monthly rate of overnight calls (22:00–06:00) divided by total calls.

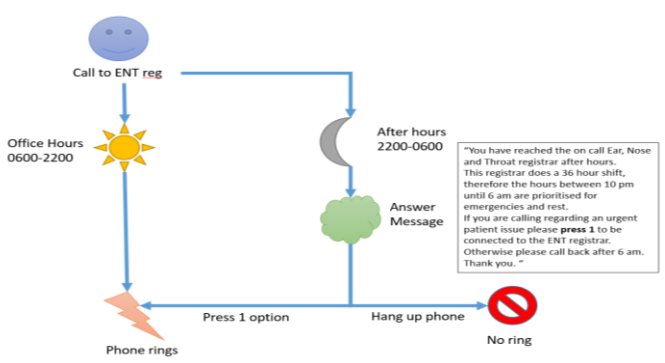


INTERVENTION

22:00 **Calls automatically diverted** to an overnight answer message

PRESS 1 **Urgent → registrar**

Otherwise → call after 06:00



STUDY DESIGN

Retrospective single-centre cohort study

- P1: 13 months before intervention (Nov 2022–Nov 2023).
- Washout: Dec 2023–Sep 2024.
- P2: 12 months after intervention (Oct 2024–Sep 2025).

Three P2 months were excluded from the primary analysis because of technical problems with call diverting being turned off.

REGISTRAR EXPERIENCE

89 % supported an overnight answer message

66 % reported a significant negative impact of on-call work on quality of life

0 % consistently achieved 8 hours of uninterrupted sleep while on call

100 % of registrars who worked in both periods reported better sleep and improved quality of life

9 / 12 **registrars responded to the survey**

STATISTICAL ANALYSIS

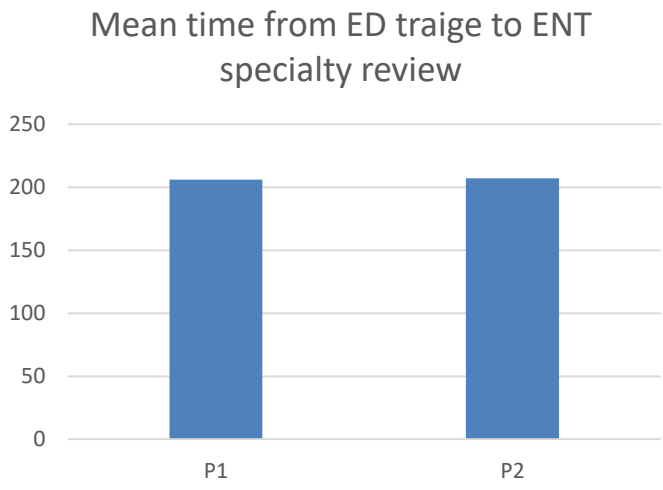
Negative Binomial: RR 0.66 (95% CI 0.54–0.80), P<0.0001

Sensitivity analyses were consistent:

- RR 0.65 (0.53–0.78) including excluded months
- RR 0.68 (0.57–0.81) using matched months.

SAFETY

No complications related to delayed referral were identified in ENT or ED morbidity & mortality review. No significant difference in mean time from ED triage to ENT review: 206 min (P1) vs 207 min (P2).



CONCLUSION

• The overnight answer message reduced ENT registrar overnight call rate by one-third, without an observed increase in adverse events.