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The Reply

We appreciate the commentary from Nanri et al[1] that highlights findings from our original report[2] and requests additional analyses. In response, we provide additional data that characterizes national trends in extended duration shifts (EDS) based on university or community-based program affiliation across three distinct data collection intervals between 2002 and 2023.

Each cohort was presented with the question, "Would you say your program is predominately community-based or university-based". Community vs. university status was present for 91.7% of monthly reports in Cohort 1, 95.1% of monthly reports in Cohort 2, and 99.6% of monthly reports in Cohort 3. The proportion of monthly reports from respondents at predominately community-based programs was 30.3% in Cohort 1, 34.9% in Cohort 2, and 32.4% in Cohort 3. Trends in extended duration shifts at community-based programs largely mirrored trends observed at university-based programs for resident physicians in their first postgraduate year (PGY1s) until 2020 (Table). Between 2020 and 2023, PGY1s at community programs reported slightly fewer EDS per month on average and a slightly higher proportion of months without any extended duration shifts compared to PGY1s at university-based programs (though EDS remained infrequent regardless of program type).

The frequency of extended duration shifts was similar among more senior resident physicians (PGY2+) at community and university-based programs in Cohort 1. Despite the transient restriction on extended duration shifts applying solely to PGY1s at US residency programs during the Cohort 2 data collection interval, the frequency of extended duration shifts progressively decreased among PGY2+. From 2014 onward, PGY2+ at university-based programs tended to work more EDS compared to PGY2+ at community-based programs (Table). For example, PGY2+ at university programs averaged 1.18 EDS per month (95% CI 1.15-1.22) from 2014-2017 and 0.62 EDS per month (95% CI 0.59-0.65) from 2020-2023; relatively higher compared to PGY2+ resident physicians at predominately community-based programs from 2014-2017 (mean 0.81 per month, 95% CI 0.77-0.85) and 2020-2023 (mean 0.44 per

Table Trends in extended duration shifts at among resident physicians at university-based programs compared to community-based programs.

	Cohort 1 2002-2007	Cohort 2 2014-2017	Cohort 3 2020-2023
Mean EDS (95% CI)			
PGY1 Overall (per month)	3.89 (3.82-3.94)	0.23 (0.21-0.25)	0.34 (0.32-0.36)
PGY1 University Program (per month)	3.94 (3.89-3.98)	0.24 (0.22-0.25)	0.38 (0.35-0.41)
PGY1 Community Program (per month)	3.82 (3.75-3.88)	0.22 (0.20-0.23)	0.26 (0.23-0.29)
PGY2+ Overall (per month)	2.44 (2.34-2.54)	1.06 (1.00-1.12)	0.56 (0.54.0.58)
PGY2 University Program (per month)	2.43 (2.37-2.49)	1.18 (1.15-1.22)	0.62 (0.59-0.65)
PGY2 Community Program (per month)	2.46 (2.36-2.55)	0.81 (0.77-0.85)	0.44 (0.41-0.47)
Proportion of Months without Any EDS			
PGY1 Overall	31.5%	94.6%	88.4%
PGY1 University Program	31.5%	94.5%	87.5%
PGY1 Community Program	30.7%	94.7%	90.2%
PGY2 Overall	48.3%	70.8%	81.8%
PGY2 University Program	49.2%	69.0%	80.6%
PGY2 Community Program	45.4%	74.5%	84.5%

CI = confidence interval; EDS = extended duration shifts; PGY = postgraduate year.

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month, 95% CI 0.41-0.47)). In addition, PGY2+ resident physicians at community-based programs reported a greater proportion of months without any extended duration shifts during and after the PGY1 work hour restrictions were lifted.

Nanri et al also note the increase in the proportion of extended duration shifts completed without sleep and point out the limited discussion of factors contributing to this trend. We agree that more detailed examination is warranted. Our monthly reports lacked the desired granularity to adequately characterize the time and intensity of various ancillary tasks that likely represent a meaningful proportion of work hours; as well as the existence of nap policies, cultural norms, and suitable sleep environments for staff.[3,4] Studies designed specifically for this purpose are needed to determine the reasons for declining sleep on EDS.

We are grateful for the interest in this topic and the opportunity to report these additional comparisons. Carefully designed studies examining work hours, workload, and sleep deficiency among physicians-in-training continue to be needed to inform policies that prioritize the safety, health, and wellbeing of physicians and protect patient safety.

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Dr. Landrigan has consulted with and holds equity in the I-PASS Institute, which seeks to train institutions in best handoff practices and aid in their implementation. In addition, Dr. Landrigan has received monetary awards, honoraria, and travel reimbursement from multiple academic and professional organizations for teaching and consulting on sleep deprivation, physician performance, handoffs, and safety, and has served as an expert witness in cases regarding patient safety and sleep deprivation.

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