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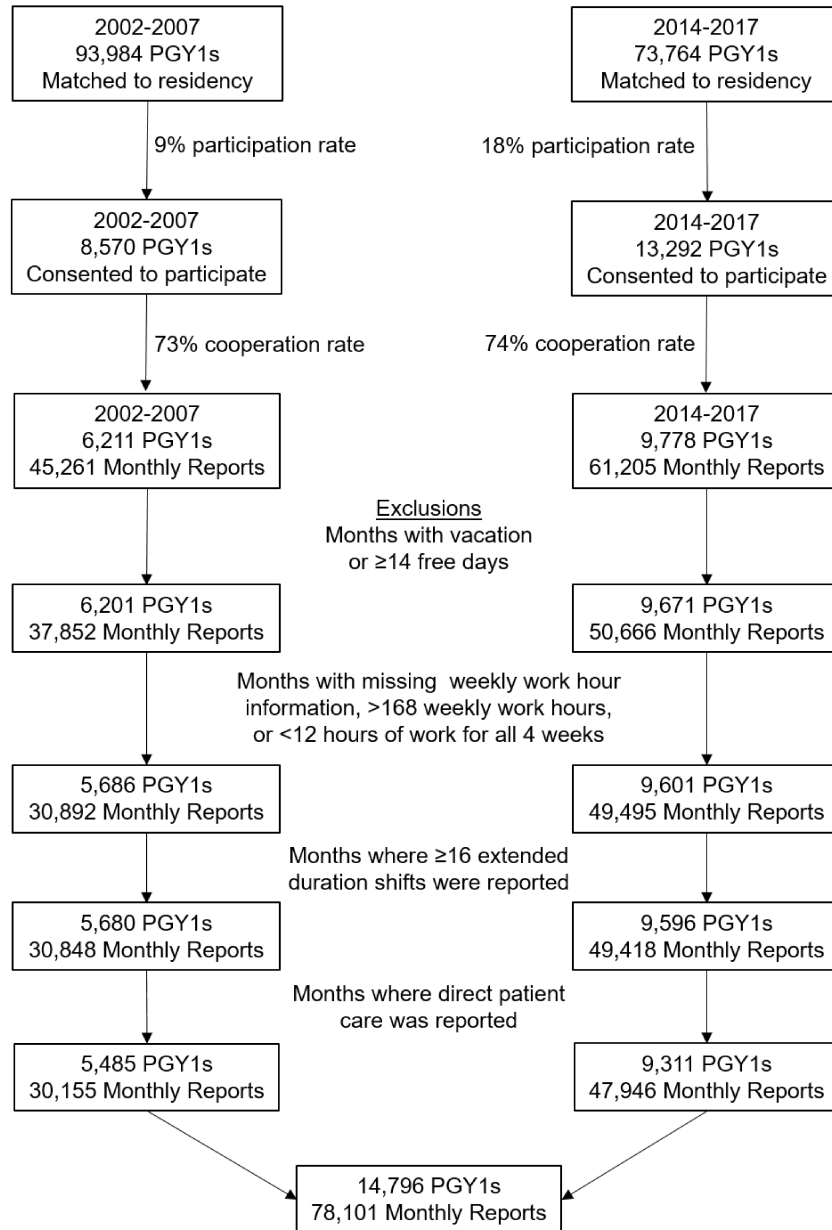
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Supplemental Figure 1. Participation in the study and exclusion criteria.



Supplemental Table 1 The adjusted association between extended duration shifts and resident-physician-reported adverse safety outcomes stratified by cohort.

	Extended Duration Shifts (overall)			Extended Duration Shifts (2002-2007)			Extended Duration Shifts (2014-2017)		
	None	≥1		None	≥1		None	≥1	
Attentional Failures	Ref	2.17 (2.03-2.32)	***	Ref	2.50 (2.28-2.74)	***	Ref	1.61 (1.43-1.81)	***
Medical Errors	Ref	1.83 (1.71-1.95)	***	Ref	2.00 (1.84-2.18)	***	Ref	1.55 (1.38-1.74)	***
PAE	Ref	1.62 (1.38-1.89)	***	Ref	1.81 (1.45-2.26)	***	Ref	1.37 (1.03-1.83)	*
Fatal PAE	Ref	1.88 (1.25-2.84)	*	Ref	1.67 (1.09-2.56)	*	Ref	Failed to converge	

All models adjusted for age, gender, specialty, hours in patient care, and community vs. university program. P-values are obtained from likelihood ratio tests.

*** p-value<0.001

** p-value=0.001.

* p-value>0.001 & <0.05.

Supplemental Table 2. The adjusted association between extended duration shifts and resident-physician-reported adverse safety outcomes stratified by surgical vs. non-surgical specialties.

	Extended Duration Shifts (overall)			Extended Duration Shifts (Non-Surgical)			Extended Duration Shifts (Surgical)		
	None	≥1		None	≥1		None	≥1	
Attentional Failures	Ref	2.17 (2.03-2.32)	***	Ref	2.37 (2.20-2.55)	***	Ref	1.33 (1.14-1.55)	***
Medical Errors	Ref	1.83 (1.71-1.95)	***	Ref	1.92 (1.79-2.06)	***	Ref	1.34 (1.13-1.60)	**
PAE	Ref	1.62 (1.38-1.89)	***	Ref	1.77 (1.47-2.13)	***	Ref	Failed to converge	
Fatal PAE	Ref	1.88 (1.25-2.84)	*	Ref	2.00 (1.19-3.32)	**	Ref	Failed to converge	

All models adjusted for age, gender, hours in patient care, and community vs. university program. P-values are obtained from likelihood ratio tests.

*** p-value<0.001

** p-value=0.001.

* p-value>0.001 & <0.05.

Supplemental Tables 3A and 3B. The demographics of the study sample compared to the characteristics of first-year residents nationally during the study interval.

A	Study Sample	ACGME National Data		
	2014-2017 (n=9,778)	2014-2015 (n=28,220)	2015-2016 (n=29,074)	2016-2017 (n=30,381)
Age	28.7±3.2	30.6	30.6	30.7
Female Gender	48%	44%	44%	44%
Specialty*				
Internal Medicine	25%	34%	34%	34%
Family Medicine	12%	13%	13%	13%
Pediatrics	11%	11%	11%	10%
General Surgery and surgical specialties	10%	13%	13%	13%
Emergency Medicine	7%	7%	7%	7%
Obstetrics/Gynecology	5%	5%	5%	5%
Psychiatry	4%	5%	5%	5%
Anesthesiology	4%	3%	4%	3%
Other (including combined)	15%	9%	8%	10%

*Percentage of residents in each specialty.

B	Study Sample	ACGME National Data
	2002-2007 (n=6,211)	2007-2008 (n=36,012)
Age	28.9±3.9	Not Reported
Female Gender	56%	41%
Specialty*		
Internal Medicine	24%	31%
Family Medicine	11%	10%
Pediatrics	14%	10%
General Surgery and surgical specialties	11%	9%
Emergency Medicine	7%	4%
Obstetrics/Gynecology	6%	3%
Psychiatry	4%	5%
Anesthesiology	1%	4%
Other (including combined)	20%	22%

*Percentage of residents in each specialty.

Footnote: National PGY-1 specific demographic information is not available for years prior to 2007. Reporting practices may explain some differences in the demographic characteristics of our study sample compared to residents nationally. The lower prevalence of internal medicine residents in our study may be explained by the reporting of planned specialty rather than preliminary or transitional year.