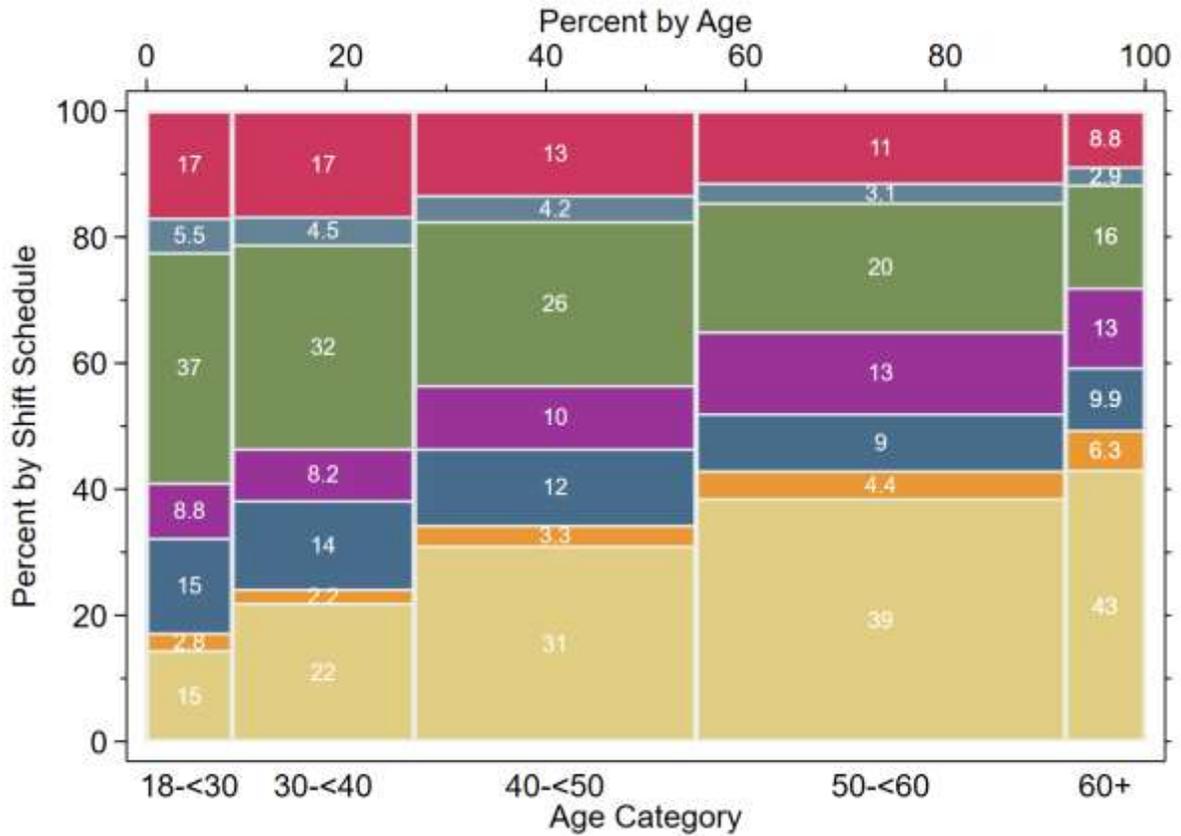


Appendix

Appendix Table 1: Definitions of Working Hour Characteristics in the American Manufacturing Cohort (AMC) 51 Plant Shift Work Cohort

Domain	Working Hour Characteristic	Definition	
Working Time	Work shift	A shift ≥ 3 hours and < 18 hours of active work	
	Work week	A week, beginning on Monday and ending on Sunday that includes at least one work shift	
	Time off-work	A scheduled shift with non-active work time assigned, which included shifts not worked due to sick leave, vacation, occupational injury and other unpaid or paid time off.	
Shift Type	Morning	A shift that starts after 03:00 and not later than 05:30, and is not a night or evening shift	
	Day	A shift that starts after 05:30 and ends no later than 21:00, and is not a night or evening shift	
	Evening	A shift with three hours between 18:00 and $< 02:00$, and is not a night shift	
	Night	A shift with three hours between 23:00 and 06:00	
	Non-day Non-night	A shift that is classified as morning, evening, or night A shift classified as morning, evening, or day	
Intensity	Quick return	A shift with ≤ 11 hours between the previous shift and current shift	
	Very quick return	A shift with ≤ 8 hours between the previous shift and current shift	
Duration	Long shift	A shift ≥ 12 hours in duration A shift ≥ 13 hours in duration	
	Long work week	A work week with ≥ 40 hours; based on start time	
		A work week with ≥ 48 hours; based on start time	
A work week with ≥ 60 hours; based on start time			
Rotation Pattern	Rotation	A shift with ≥ 6 hour difference in start times between the previous shift and current shift and ≥ 6 hours since the end time of the previous shift	
	Rotation Direction	Forward	A rotational shift with a difference in start times between 6 and 10 hours
		Backward	A rotational shift with a difference in start times between -6 and -10 hours
	Flipped	A rotational shift with a shift time difference is between 10 and 12 or -10 and 12 hours	
Social Aspects	Weekend shift	Shift that began on a Saturday or Sunday	

Supplemental Figure 1: Distribution of Annual Shift Schedule by Age in the American Manufacturing Cohort; 51 Plant Sub-Cohort 2003-2014, USA (N= 98,771 person-years)



Supplemental Figure Captions

Supplemental Figure 1: Distribution of Annual Shift Schedule by Age in the American Manufacturing Cohort; 51 Plant Sub-Cohort 2003-2014, USA (N= 98,771 person-years)