# ABSTRACT

**Background:** In recent decades, suicide and fatal overdose rates have increased in the U.S., particularly for working age adults with no college education. The coincident decline in manufacturing has limited stable employment options for this population. Recent plant closures in the Michigan automobile industry provide a striking case study.

**Methods:** We used individual-level data from a retrospective cohort study of 26,890 autoworkers in the United Autoworkers-General Motors (UAW-GM) cohort, with mortality follow-up from 1970 to 2015. We estimated hazard ratios for suicide or fatal overdose in relation to leaving work, measured as active or inactive employment status and age at worker exit.

**Results:** There were 258 deaths due to either suicide (n = 203) or overdose (n = 55); all but 21 events occurred after leaving work. The hazard rate for suicide was 17.7 times higher for inactive versus active workers (95% CI: 10.8-29.1). Hazard ratios for suicide were elevated for all younger age groups relative to those leaving work after age 55. Those 30-39 years old at exit had the highest hazard ratio for suicide, 1.7 (95% CI: 1.1-2.6). When overdose was included the rate increased to 2-fold for both 19-29 and 30-39 year olds at exit. Risks remained elevated when follow-up was restricted to five years after exit.

**Conclusions:** Autoworkers who left work had higher risk of suicide or overdose than active employees. Most events occurred within five years of leaving work among those who left before retirement age, suggesting that leaving work early may increase the risk.

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