Age at leaving work and suicide/overdose were null. Yet, among miners with post-1980 job loss, leaving work before age 30 and between ages 30–40 increased the risk of suicide/overdose compared with leaving work after age 55 (1.94 (1.05, 3.58) and 1.46 (0.78, 2.72), respectively).

Conclusions Our results suggest an elevated risk of suicide among male miners in the 1980s, and that the risk increases after leaving work.

**S-243 DEATH BY ROBOTS? AUTOMATION AND WORKING-AGE MORTALITY IN THE UNITED STATES**

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The decline of manufacturing employment is frequently invoked as a key cause of worsening U.S. population health trends, including increased mortality due to rising ‘deaths of despair’. Increasing automation—the use of industrial robots to perform tasks previously done by human workers—is one major structural force driving the decline of manufacturing jobs and wages. In this study we examine the impact of automation on age-sex specific mortality. Using exogenous variation in automation to support causal inference, we find that increases in automation over the period 1993–2007 led to substantive increases in all-cause mortality for both men and women aged 45–54. Disaggregating by cause, we find evidence that automation is associated with increases in drug overdose deaths, suicide, homicide and cardiovascular mortality although patterns differ across age-sex groups. We go on to examine heterogeneity in effects by safety net program generosity, labor market policies, and the supply of prescription opioids.

**S-264 TAKING A WORKING LIFE EXPOSOME APPROACH: WHY DO WE NEED IT AND WHICH CHALLENGES ARE WE FACING?**

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The exposome concept was conceived in 2005 as a way to represent non-genetic drivers of health and disease. The exposome encompasses all non-genetic risk factors experienced during a person’s life (the external exposome) and its relation to biological responses inside the human body (the internal exposome). This concept was born out of the recognition that while there was a revolution in our understanding on the genetic drivers of disease, our understanding on environmental drivers was much more limited. About 70–80% of the disease burden could probably be explained by the exposome.

Fifteen years after the exposome concept was introduced, several advances have been made in the quantification of the exposome by using combinations of different technologies (sensors, bioassays), large exposure and health datasets, and advanced statistical methods. These advances enable moving away from the ‘one exposure-one disease’ approach.

Although occupational risk factors are known to have an important impact on non-communicable diseases, the application of the exposome approach to occupational health has been limited. This is surprising as i) our working life covers a significant proportion of our total lifespan; ii) occupational exposures occur often in complex settings; iii) working-life encompasses important vulnerable life stages including the reproductive period; and iv) occupational exposures are closely related to lifestyle (e.g. diet, physical activity, smoking and alcohol consumption) and socioeconomic status.

Given the varying exposures and interrelations with other factors across the life course a (holistic) network approach is needed to fully understand the impact of the working life exposome on health. The exposome approach and associated tools start to allow building a (partial) picture of the occupational exposome, which may lead to new insights on how the occupational exposome affects health and provide new leads for prevention.