

# Occupational cancer epidemiology - why we need more evidence

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Studies of workers have played a crucial role in identifying human carcinogens and have led to national and regional authorities setting occupational exposure limits (OEL) enforced by legislation to protect workers and the environment.

The first step towards preventing occupational cancers is to identify carcinogenic agents. Thereafter to assess the relevance of each exposure in the population or industry to identify where prevention measures are best needed.

The Global Burden of Disease (GBD) study and other studies provide global estimates of cancers related to different risk factors, including occupational exposure to carcinogens. It is a useful and scientifically rigorous international exercise serving to observe quantifiable progress in global health over time as well as geographic variability. The underlying data is unfortunately often scarce leading to very large uncertainties. The GBD 2016 Occupational Carcinogens Collaborators derived exposure information primarily from CAREX (Carcinogenic Exposure) database, which provided the prevalence of exposures to selected agents in industries in Western Europe in the early 1990s. The actual measurements resulting in the development of CAREX originated from series of measurements in Finland and the US mainly in the 1980s, and the GBD study assumed that exposures had not changed when estimating the cancer burden globally in 2016. Scientists usually acknowledge the uncertainties and the lack of data from most countries, but the downstream use of these estimates tend to ignore the many assumptions made and the subsequent uncertainties.

Governance is usually reactive to scientific developments. Therefore, occupational cancer epidemiology and exposure surveillance from more countries, notably LMICs are needed because exposures may differ considerably within and across countries and over time.

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