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Using the COVID-19 Job Exposure Matrix for Essential Workplace Preparedness

To the Editor:

The COVID-19 pandemic has made imperative a unified global response to prevent future crises of this kind.[1] It has brought long-term economic and social disruption to the livelihood, health, and wellbeing of millions of people worldwide, with devastating impacts on the world of work.[2,3] In response, the General Conference of the International Labour Organization adopted in June 2021 a global call to action for a human-centered recovery from the COVID-19 crisis, which emphasizes the need to strengthening occupational safety and health measures for the protection of all workers.[4] As businesses grapple to protect and retain employees, workplaces are delivering interventions that protect worker health and improve economic outcomes.[3]

Effective workplace COVID-19 exposure prevention policies have been difficult to implement, with physical distancing, ventilation, wearing masks, vaccination mandates, and screening tests that vary widely and are highly dependent on country-level regulations, wealth, and infrastructure.[5–9] However, with guidance from occupational health practitioners, companies have developed workplace safety protocols.[3,10,11]

A valuable tool to assist decision-makers and workplace stakeholders in prioritizing protective and prevention measures against COVID-19, is the job exposure matrix (JEM). A JEM is a tool developed and used by researchers for the global evaluation of workplace exposures. Its design incorporates epidemiologic evidence to account for the probability of exposure to SARS-CoV-2, based upon job-task activities.[12,13] To note, a COVID-19 JEM is meant to complement assessment of non-occupational (community) exposures to SARS-CoV-2, which JEMs do not discern. Moreover, developed COVID-19 JEMs are in still in the validation process.

In addition to the conventional use of JEMs, which is to assess occupational exposures at the population level, JEMs can support calculating workers' compensation and retirement benefits.[14–16] The COVID-19 JEM, however, may have a broader use. First, occupational safety and health (OSH) practitioners may employ the JEM to identify targeted and priority areas for applying corrective action policies when conditions are complex and require high levels of OSH expertize. Second, when such OSH practitioners are unavailable, employers and employees can use the COVID-19 JEM as a tool for risk assessment aiming to quickly identify and implement appropriate job-task-specific controls. Third, at the company/management or jurisdiction level, the JEM offers useful exposure estimates for public health surveillance when required in the country or company policies.

Such a JEM, however, does not replace professional exposure and risk assessments of specific workplaces. Indeed, JEMs have limitations, including challenges in coding/classifying industry and job information, and they provide aggregate data that may not capture subtle individual-level differences within job categories.[17] The group probability of a JEM can thus only be extrapolated to a group when there are few disparities between individuals within the same job. Furthermore, static JEMs do not capture temporal fluctuations in viral circulation, mutations, or seasonal changes to workplace practices and prevention measures. These could be captured in a dynamic JEM.

In sum, a COVID-19 JEM may an important asset for workplace preparedness and pandemic planning.

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Clinical significance: Though still in a validation process, the job-exposure matrix (JEM) may be a valuable tool to assist decisionmakers and workplace stakeholders in prioritizing protective measures against SARS-CoV-2 infections. Its design incorporates the probability of exposure to SARS-CoV-2 based on job-task activities.

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