LETTER TO THE EDITOR/EDITORIAL

The Crucial Role of Occupational Health Surveillance for Health-care Workers During the COVID-19 Pandemic

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The coronavirus disease (COVID-19) pandemic is a challenge for the national health care systems of all countries, and this is particularly true because of the price that many health-care workers (HCWs) are paying. As of July 20, 2020, 29,860 HCWs in Italy have tested positive for COVID-19, making up more than 10% of Italy's confirmed COVID-19 cases; 174 medical doctors and 40 nurses have died (Istituto Superiore di Sanità [ISS], 2020). Nevertheless, these figures probably underestimate the real impact of COVID-19 on Italian health care staff, because many HCWs have not been tested. In health care companies where HCWs' health surveillance continued during the epidemic, it has been observed that those who have undergone unprotected exposures to infectious patients or contracted the infection have a significant increase in the risk of insomnia, anxiety, and depression (Magnavita et al., 2020).

Health care workers must be protected from this infection through a risk assessment process leading to specific preventive measures that include health surveillance of workers and effective personal protective equipment (PPE; Chirico & Magnavita, 2020). The workplace risk management process is a method where employers identify hazards (hazard identification), evaluate the probability of occurrence of injury or disease (risk analysis) and establish the most effective preventive and protective measures to eliminate risk and protect workers' health and safety (risk control). It should follow the best technical standards and guidelines (European Agency for Safety Health at Work [EU-OSHA], 2010) and could be effectively implemented according to the A.S.I.A. method, which is a coordinated succession of Assessment, Surveillance, Information, and Auditing actions (Magnavita, 2003).

The European Directive 2000/54/CE divides biological hazards into four groups based on the inherent hazard of the organism. We believe that this classification should be updated by including SARS-CoV-2 into the fourth group, as a pathogen that "causes severe human disease and is a serious hazard to workers; it may present a high risk of spreading to the community; there is usually no effective prophylaxis or treatment available" (EU-OSHA, 2010), or at least into the third group. This classification is one of the requirements for completing an effective occupational risk assessment process.

The World Health Organization (WHO, 2020a) recently released guidelines for infection prevention and control when COVID-19 is suspected. The WHO's strategies include environmental, engineering, and administrative controls. With regard to PPE, the experience gained with Severe Acute Respiratory Syndrome (SARS) in 2003 (Puro et al., 2004) showed that HCWs have to wear medical masks when treating patients with suspected or confirmed COVID-19. In cases of aerosol-generating procedures, they should wear a filtering facepiece respirator at least as protective as the N95 respirator, that meets the U.S. National Institute for Occupational Safety and Health (NIOSH) N95 classification of air filtration, meaning that it filters at least 95% of airborne particles, roughly corresponding to EU standard FFP2 (filtering facepiece with filter efficiency of 95%; Rengasamy et al., 2009). Unfortunately, PPE shortages are currently posing a tremendous challenge to health care worldwide (Center for Diseases Prevention and Control [CDC], 2020a).

National guidelines as well as policy-making processes should not be influenced by these shortages (Chirico et al., 2020a). Therefore, in health care settings, HCWs, patients, and visitors should be carefully checked to avoid the spreading of COVID-19 hospital infection. This procedure should be based on mass testing of symptomatic and asymptomatic patients, monitoring of symptoms and serological and swabs tests on HCWs by mandatory health surveillance programs information campaign for the public and workers and, finally, a policy of universal masking and eye shielding for all HCWs involved in direct patient care (Chirico et al., 2020b).

Transmission of SARS-CoV-2 by asymptomatic workers or patients is possible (Kenji et al., 2020; WHO, 2020b), and the

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virus has a high transmissibility rate in indoor environments like hospitals (European Center for Diseases Prevention and Control [ECDC], 2020). Conducting health surveillance programs with the intervention of occupational health professionals in the hospital setting could prevent both workers and patients from getting sick. As there are currently no widely available reliable antibody testing approaches recommended to demonstrate both current and previous COVID-19 infection, their usage could raise technical and ethical concerns. On the contrary, serology tests could be useful for conducting seroprevalence surveys (e.g., large-scale geographic surveys, community level surveys, and smaller-scale surveys focusing on specific populations; CDC, 2020b). As part of health surveillance, however, we believe that all HCWs (including those that are asymptomatic) should be tested with Reverse Transcription Polymerase Chain Reaction (RT-PCR) testing on nasopharingeal swabs for early diagnosis of SARS-CoV-2. Viral test are the best available tools to diagnose current infection with SARS-CoV-2 and point-of-care tests, meaning results may be available at the testing site in less than an hour, could be particularly useful. Testing of HCWs should be considered not only in case of workers with symptoms, known or suspected exposure to SARS-CoV-2, or with previous diagnosis of COVID-19, but routinely on all health care workers employed at hospitals and homecares (CDC, 2020b).

Timing of the test should be planned on the basis of the risk assessment process, which should consider the worker's risk profile due to individual and organizational factors (e.g., frequency and type of exposure) and his or her individual risk for poor outcomes due to advanced age or chronic conditions (Larochelle, 2020). In addition, occupational health surveillance programs should be utilized for monitoring the mental health of HCWs who may be dealing with anxiety, depression, and/or burnout due to a high emotional load caused by this health emergency (Chirico et al., 2020). All these measures could improve the care process and prevent the high rate of infection that, in Italy and elsewhere, has depleted the already exhausted health care workforce. Finally, all these measures should be adapted to the epidemic trends of the COVID-19 through the risk assessment process and are a good example of how occupational health surveillance could aid epidemiological surveillance systems of infectious diseases representing public health threats (Chirico & Magnavita, 2019).

Authors' Note

Authors declare the manuscript has not been published or accepted by other journals for publication. All authors have contributed equally to the manuscript.

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