

# Occupational medicine and *Total Worker Health*<sup>®</sup>: from preventing health and safety risks in the workplace to promoting health for the total well-being of the worker

Ivo Iavicoli<sup>1\*</sup>, Giovanna Spatari<sup>2\*\*</sup>, L. Casey Chosewood<sup>3</sup>, Paul A. Schulte<sup>4</sup>

<sup>1</sup>Department of Public Health, Section of Occupational Medicine, University of Naples Federico II, Naples, Italy

<sup>2</sup>Department of Biomedical and Dentistry Sciences and Morphological and Functional Imaging, University of Messina, Messina, Italy

<sup>3</sup>Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, Atlanta, GA, United States

<sup>4</sup>Advanced Technologies and Laboratories International, Inc., Gaithersburg, MD, United States

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## SUMMARY

*The COVID-19 pandemic has highlighted the importance of Public Health interventions for global social and economic development. Still, the community's well-being depends on each individual's health. In addition to pandemics, health conditions can be altered by chronic degenerative diseases, aging, disabilities, and work. Personal behaviors such as poor nutrition, lack of physical activity, tobacco use, excessive alcohol consumption, and drug use can also affect health and safety at work. In the last twenty years, we have witnessed rapid changes in the nature of work, workplace and workforce. In parallel, there is increasing attention to fatigue, psychosocial risks and the achievement of decent, sustainable and healthy work as societal goals. Consequently, in 2011, NIOSH developed Total Worker Health<sup>®</sup>, a holistic approach to worker well-being to help improve worker health and safety. More recently, in Italy, the Ministry of Health has provided for the preparation of projects according to the "Total Worker Health (TWH)" approach in the National Prevention Plan for the five years 2020–2025. As indicated by the Ministry, the strategic role of the occupational physician is fundamental, being the only figure of occupational safety and health professionals able to integrate the health and safety of workers with their well-being to reach the Total Worker Health.*

## 1. INTRODUCTION

The COVID-19 pandemic has affected everyone's life and impacted global social and economic development [1]. It has dramatically shown how the community's well-being depends on everyone's

health. In addition to pandemics, health can be altered not only by chronic degenerative diseases, aging, and disability but also by personal behaviors such as poor nutrition, lack of physical activity, tobacco use, excessive consumption of alcohol and use of other drugs [2–4].

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\*Coordinator of the Working Group on Health Promotion of the Italian Society of Occupational Medicine (SIML) and Corresponding author: Ivo Iavicoli, Department of Public Health, Section of Occupational Medicine, University of Naples Federico II, Naples, Italy; E-mail: ivo.iavicoli@unina.it

\*\*President, Italian Society of Occupational Medicine (SIML).

In this regard, in the constitution of the World Health Organization (WHO), adopted by the International Health Conference held in New York in 1946, health was defined as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” [5]. Forty years later, at the 1<sup>st</sup> International Conference on Health Promotion held in Ottawa in 1986, the WHO reported in the Ottawa Charter for Health Promotion that “To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living.” [6]. As a result, it is pretty intuitive that people should be able to fulfil their aspirations and meet their needs in every field of their existence, including communities, home, and working life, to be considered healthy. In addition with regard to work, if we keep in mind that usually, a work shift lasts about 8 hours, it follows that people spend a third of their working day in the workplace. According to what is defined by the WHO, it is unthinkable that workers can be considered healthy if they are not able to fulfil themselves and adequately deal with the work environment. Indeed, their prerogatives define the possibility of achieving a state of complete physical, mental and social well-being [5].

In the last twenty years, we have witnessed rapid changes in the nature of work, workplace and workforce. In parallel, there is increasing attention to fatigue, psychosocial risks and the achievement of decent, sustainable and healthy work as societal goals [7]. According to the WHO, a workplace should possess several characteristics to be healthy, safe and resilient [8]. First, it should be an environment where workers can perform their tasks without falling victim to illness or injury due to their work. However, at the same time, the workplace should be able to provide them with the opportunity to improve their physical and mental health and, more generally, their overall well-being.

Moreover, a healthy, safe and resilient workplace should allow the worker to be in harmony with the surrounding nature and be protected when a catastrophic event occurs. In this context, the WHO [8]

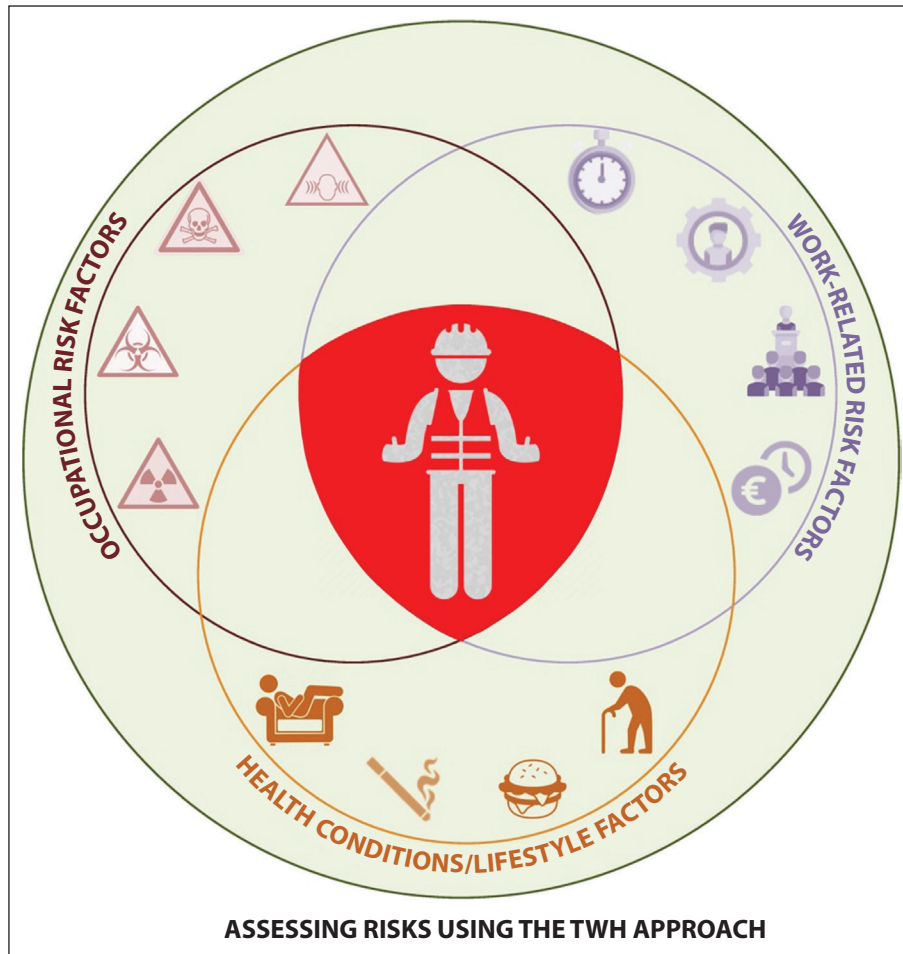
has also defined strategies and initiatives that aim to increasingly improve health and safety conditions in the workplace to achieve healthier, safer and more resilient workplaces for all. These interventions include: (i) the support to the development and subsequent practical implementation of national policies and action plans that are focused on protecting both workers' health and safety and the environment; (ii) the development of evidence-based programs for the prevention of occupational risks (physical, chemical, biological and psychosocial); (iii) the control and monitoring of both occupational and work-related diseases and accidents at work; (iv) the promotion of all workers' health, safety and well-being, including migrants and those in precarious working conditions; and (v) the establishment of workplace resilience against extreme climatic events, atmospheric pollution, industrial disasters and pandemics.

It is, therefore, inevitable that the achievement of a safe, healthy, and resilient workplace can only be achieved by a holistic approach that, on the one hand, protects the health and safety of workers through the prevention and protection from risks at work, from other through their health promotion. Critical to health promotion is not telling workers what to do but removing obstacles so they can make healthful choices.

In this perspective, we aim to describe the Total Worker Health (TWH) approach that has this purpose and its governmental applications in Italy and to provide some reflections on the importance of the occupational physician (OP) for its application in work settings.

## 2. TOTAL WORKER HEALTH

The origin of TWH (Figure 1) dated to 2003 when National Institute for Occupational Safety and Health (NIOSH) developed the “NIOSH Steps to a Healthier US Workforce Initiative”, which aimed, in addition to healthy and safe work, to have environments that support health and access to adequate health care for protecting, supporting and improving the health of workers. In 2005, NIOSH developed the WorkLife initiative, addressing the health and well-being of workers more comprehensively and considering the physical and



**Figure 1.** The integrated TWH approach to assessing risks that threaten worker health and well-being. This model focuses on how the OSH system can better understand the adverse health effects correlated to the workers' exposure to occupational and/or job-related risk factors, while taking into account the individual health conditions/lifestyle risk factors that may be present. Assessing and mitigating all of these risks is an essential step to improve the overall safety, health and well-being of workers.

organizational work environment and individual behaviors. In 2011, the WorkLife was renamed the *Total Worker Health* Program, defined "as policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness-prevention efforts to advance worker well-being" [9].

More recently, NIOSH published a workbook "Fundamentals of *Total Worker Health*® Approaches" (2016), focusing on five defining elements that are: "(i) demonstrate leadership commitment to worker safety and health at all levels of the organization; (ii) design work to eliminate or reduce safety and

health hazards and promote worker well-being; (iii) promote and support worker engagement throughout program design and implementation; (iv) ensure confidentiality and privacy of workers; (v) integrate relevant systems to advance worker well-being" [9].

### 3. TOTAL WORKER HEALTH IN ITALY

In Italy, the concept of health promotion, as well as the design, implementation and practical application of interventions aimed at improving the health conditions of workers in the workplace, is an

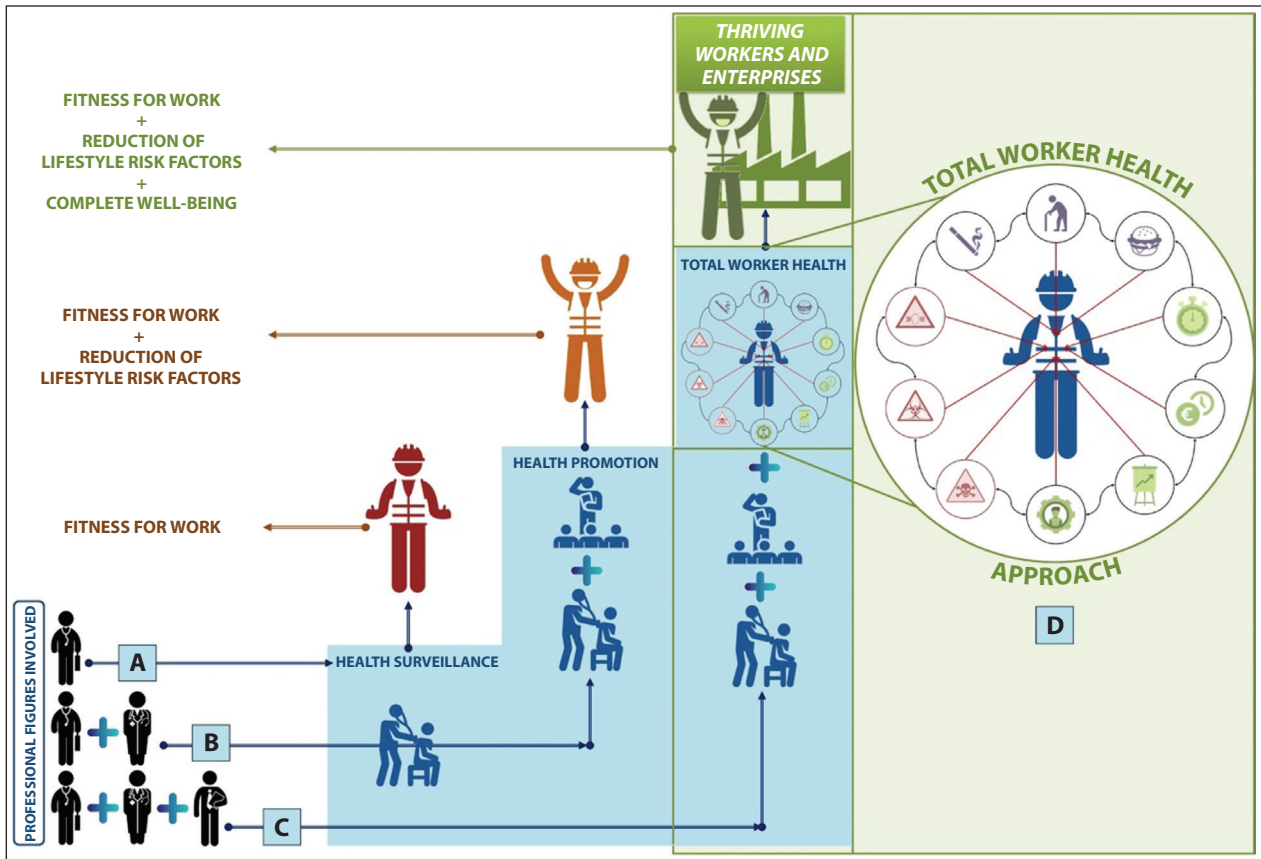
integral part of the regulatory framework governing the protection of health and safety in the workplace. Indeed, article 25 of Legislative Decree 81/08, which sets out the obligations of the OP, states that the tasks of this professional figure also include collaboration in the implementation and enhancement of voluntary health promotion programs, according to the principles of social responsibility [10]. In this regard, it should be noted that, according to the decree mentioned above, one of the main tasks of OPs, by conducting the health surveillance medical examinations, is to assess and issue the fitness for work, that is to evaluate, considering exposure to various occupational risk factors, the suitability of workers for specific tasks, thus guaranteeing a satisfactory fit between person and job [11]. However, to enable workers to perform the work for which they have been hired in a safe and healthy manner, it is also necessary for the OP to take due account of any diseases, health issues or disabilities that might hinder the proper and secure performance of working tasks [12]. Therefore, based on these considerations, it is not surprising that the reference Italian regulatory framework on health and safety protection in the workplace also gives the OPs a leading role in implementing health promotion programs.

The medical nature of this professional figure, combined with an understanding of the many critical aspects of occupational exposures and the in-depth knowledge of workers' health conditions, allows the OP to hold a privileged position to contextualize the theoretical principles of health promotion in individual production sites. The OP can therefore implement effective programs tailored to workers' needs, thus fully realizing the role of collaboration and support to the employer as established by law. Despite the many issues associated with technological progress, climate change, work organization, the ageing workforce and, last but not least, the pandemic, Occupational Medicine (OM), is continuously evolving to respond to these stresses. Born as a clinical discipline, OM is mainly concerned with prevention [13]. In this context, OM, and in particular OPs who are integral parts of the occupational safety and health (OSH) system, represent the natural interlocutor and recipient of TWH strategies, methodologies and policies. Indeed,

applying the TWH principles would not lead to a distortion of the OM essence but rather to an extension of its primary preventive scope. A global assessment of all the risk factors calls for integrating occupational, work-related, and individual traits influencing workers' health and well-being.

Indeed, the strategic role of the OPs for the TWH model is further recalled and strongly emphasized by the Italian Ministry of Health through National Prevention Plan (NPP) for the five years 2020-2025 [14]. Here, the TWH approach is referred to in the Central Support Line no. 3, "Activation of technical tables for the strengthening of the overall health of the worker according to the *Total Worker Health* approach". Line no. 3 aims to activate processes and interventions to make the workplace a health-friendly environment. In agreement with the TWH principles, the NPP pointed out that this objective must be pursued through the involvement of all prevention professionals, including the OP. Similarly, the TWH is also mentioned within the macro-objective M04, "Injuries and accidents at work, occupational diseases". TWH is an effective intervention methodology addressing the various factors with a potentially negative impact on the work organization and the workforce's health. In planning the prevention policies and interventions, TWH would allow for adequately considering the synergy between work-related risks, environment, lifestyles and personal health conditions.

The main OM objective would be to implement a worker protection model evolving from the prevention of accidents at work and occupational diseases towards the "active preservation" of workers' health through a multidisciplinary approach involving the strengthening of the collaboration network between OPs, other health professionals, territorial and hospital services and general practitioners (GPs). The NPP highlighted that a primary line of action to achieve the aim mentioned above is the promotion of the strategic role of OPs in the design, implementation and monitoring of TWH and health promotion interventions (Figure 2). In addition, the TWH approach is also mentioned in several predefined programs (PP), such as in PP3 "Workplaces that promote health", PP4 "Addictions", PP6 "Targeted prevention plan", PP7 "Prevention in



**Figure 2.** The added value of the TWH approach to the OSH system activities. **A:** Traditionally, OSH protection programs are focused on guaranteeing that work is safe and that workers are protected from occupational risk factors. In this context, the OPs carry out the health surveillance medical examination in order to verify and assess their suitability for specific working tasks; **B:** A good collaboration between the OPs and the other physicians should be able to guarantee workers greater protection of their health. One of the main areas in which this interaction can materialise is in the field of health promotion, which is not only indicated by the the American College of Occupational and Environmental Medicine as one of the most important occupational physician additional knowledge and skill [15], but is also an integral part of the Italian regulatory framework governing the protection of health and safety in the workplace; **C:** The aim of the TWH approach is to achieve a working environment that is as free as possible of risks and hazards that may compromise the safety and health of workers, but at the same time its policies, programs, and practices aim to promote the complete well-being of workers; **D:** In this regard, the TWH model implements a robust culture of safety, worker protection, and greater health opportunity through the analysis of both occupational and/or work-related risk factors and personal health conditions and/or lifestyle factors and the evaluation of the possible interactions and reciprocal influences between all these elements.

construction and agriculture”, and PP8 “Prevention of professional cancerogenic risk, of occupational diseases of the musculoskeletal system, of work-related stress risk”. For this reason, on 15 June 2022, the Italian Society of Occupational Medicine (SIML) approved the establishment of a working group on health promotion to identify the knowledge and needs of OPs on this issue to support them

in developing health promotion initiatives in the workplace which also consider the TWH approach.

Building up a bridge between hospitals and the territory is a significant challenge for health managers, but building a bridge between OPs and GPs is an OM’s critical objective. OM is concerned with an important part of the population and should represent a crucial node in the network being built

up to implement proximity medicine [16]. Integrating both joint and complementary activities (e.g., GP's and OP's common education efforts to implement prevention programs, GP's proximity care, OP's return to work after acute illness or exacerbation of chronic diseases) is a challenging task that should be addressed within an innovative and modern alliance to be built up among OSH professionals and proximity care network based on GPs. Converging efforts of all physicians concerned with workers' health is necessary to ensure the long-term sustainability of the Italian universalistic health system.

#### 4. CONCLUSIONS

The OP is fundamental and strategic for implementing TWH interventions. OP, collaborating with other OSH professionals, can allow the integration between the prevention and protection measures against risks at work and the promotion of the health and well-being of workers according to a *Total Worker Health* approach. It is known that the current hierarchy of control is a system for controlling risks in the workplace based on a risk assessment and management without due consideration to inter-individual differences among workers. It is carried out on workers' homogeneous groups exposed to the same risks, irrespectively of the individual health and well-being that only the OP, treating sensitive health data, can know. It follows that through TWH interventions, it is possible to reach a targeted risk assessment and management that allows for workforce and personalized prevention. The effective integration of OP's workplace health promotion with proximity care may depend on many factors such as the characteristics of national health systems and the relative existing contributions of the public and private sectors. In this regard, OPs and other physicians involved in the care of the worker/patient should integrate their roles and activities with the fundamental principles of the TWH in such a way as to guarantee subject with health and preventive services that protect them comprehensively, enabling them to achieve an overall and satisfactory state of well-being.

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