

NIOSH Response to the NIH Pathways to Prevention Workshop Recommendations

The National Institute for Occupational Safety and Health (NIOSH) appreciates the recommendations of the independent panel of the National Institutes of Health (NIH) Pathways to Prevention workshop, "Total Worker Health—What's Work Got to Do With It?" (1). The workshop speakers, audience contributors, and panelists provided useful insights (2).

The Total Worker Health (TWH) program is 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. The definition for TWH was updated in 2015 to emphasize that integration from a TWH perspective focuses on the ways work-related and nonwork risk factors interact to cause worker injury and illness. This represents an evolution from an earlier TWH definition when the evidence report was first commissioned. The current definition emphasizes the primacy of health protection and prioritizes work organizational factors over individual behaviors in advancing worker well-being. NIOSH is taking the following actions and looks forward to moving quickly to implement the panel's 8 recommendations.

Recommendation 1: Convene a meeting of stakeholders to set research priorities for integrated interventions.

NIOSH will collaborate with the NIH Office of Disease Prevention and the National Heart, Lung, and Blood Institute (NHLBI) to convene a meeting of federal stakeholders, review the panel report, and identify possible follow-up actions and opportunities for addressing the research gaps (3). The meeting will build on the workshop's momentum in developing prevention strategies.

Recommendation 2: Develop a consensus-based conceptual framework to guide future intervention research.

The final National TWH Agenda, which identifies a framework for identifying priorities in research, practice, policy, and capacity building, was published in April 2016 (4). The draft agenda was posted in the *Federal Register* for public comment, and comments were also solicited during 2 conferences in 2014.

Recommendation 3: Develop a core set of measures and outcomes that are incorporated into all integrated intervention studies.

NIOSH is developing a framework for worker well-being, including domains and measures for an instrument to assess well-being, and is convening an invitational research methodology workshop within a year. The workshop will review current methodological approaches to TWH-related research and explore the methods that have the most promise to advance the

scientific evidence base for the betterment of worker well-being.

Recommendation 4: Use a transdisciplinary and participatory process for intervention development.

NIOSH is committed to a transdisciplinary, participatory process for TWH and encourages an integrated approach addressing a wide variety of issues relevant to advancing worker well-being (5). NIOSH researchers have studied compensation and benefits, such as paid sick leave, and have created a working group to examine new employment patterns of the new economy. For all research and practice activities, TWH advocates for tripartite engagement and integration across disciplines. As with all NIOSH initiatives, public-private partnerships are critical to intramural and extramural research and translation activities, including partnerships with labor unions, worker safety and health advocacy, and community organizations.

Recommendation 5: Ensure that future intervention studies represent an appropriate range of worker populations and settings.

To ensure that special exposures and outcomes are considered, NIOSH organizes research by industry categories and continuously develops research on cross-cutting issues, such as new employment patterns. Ongoing research within NIOSH and the TWH Centers of Excellence (6) focuses on vulnerable populations, including workers in small businesses. Changing workforce demographics and diversity will continue to be priorities for NIOSH, as discussed in the 2015 funding opportunity announcement for NIOSH Centers of Excellence for TWH (7).

Recommendation 6: Expand research and evaluation design options to include a range of rigorous methodologies.

NIOSH has developed a logic model (8) to serve as an evaluation framework for TWH that identifies short-, intermediate-, and long-term outcomes for TWH research. The research methodology workshop will further address this goal. Leading investigators in the field of TWH will collaborate to develop a set of promising research methods to guide the design of future TWH studies.

Recommendation 7: Develop effective strategies for timely dissemination of findings to a wide variety of stakeholders.

Dissemination and translation of findings are foundational to accomplishing NIOSH's mission. The 21 NIOSH TWH affiliates are groups that provide innovative dissemination of findings to stakeholders and implement TWH in the workplace. For the TWH Centers of Excellence, up to 25% of funds (7) is spent on delivering science-based information through partnerships, particularly to reach high-need groups. NIOSH contin-

ually seeks evidence-based, knowledge transfer, and diffusion strategies to ensure uptake and incorporation of research recommendations.

Recommendation 8: Make investments in research infrastructure and assets to develop population-based laboratories for TWH research.

NIOSH will continue to make investments as shown by the planning and convening of the research methodology workshop. It looks forward to the partners meeting that will be convened by NIH Office of Disease Prevention to collaborate with the NHLBI and other stakeholders to identify opportunities for future research.

In conclusion, the Pathways to Prevention workshop on TWH was invaluable in assessing the state of science on TWH and identifying research gaps and future research priorities. NIOSH appreciates the NIH Office of Disease Prevention and the NHLBI for their sponsorship in this effort. NIOSH has already taken steps to carry out the recommendations of the panel, based on the interim draft report, and welcomes opportunities to collaborate with all stakeholders to make further progress in TWH research and practice to advance the safety, health, and well-being of the nation's workers.

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