Supplemental Material

Improving and Expanding Estimates of the Global Burden of Disease Due to Environmental Health Risk Factors

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Appendix 1: Summary of key GBD-PHI recommendations.

For IHME/GBD	For the EH Research Community
Air Pollution	
• Advance methods to calculate joint burden	• Advance methods to calculate joint burden • Publish additional studies in high and low exposure areas
• Source apportionment	• Advance research on differential toxicity
Lead	
• Utilize human capital method to account for full spectrum of lead effects	• Obtain better data on B-Pb levels in LMICs
• Account for direct effects of low-level lead exposure on CVD	
• Increase collaborations with subject-matter experts	
Priority New Risk Factors	
• Begin scoping for inclusion of other neurotoxicants (methylmercury, arsenic, polychlorinated biphenyls, polybrominated diethyl esters (PBDEs), organophosphate pesticides, and particulate air pollution)	• Publish comprehensive population exposure estimates to facilitate inclusion of new risk factors in GBD
• Begin scoping for inclusion of endocrine-disrupting chemicals	
• Increase collaborations with subject-matter experts	
Climate	
• Address changes in temperature/precipitation patterns	• Advance research on climate change and mental health outcomes in LMICs
• Address changes in ranges of infectious disease vectors	• Develop stronger understanding of the relationship between climate change, migration, conflict, and health
• Incorporate projections of changing ranges of infectious disease vectors	
• Calculate climate change effects of air pollution	
Nomination & Ranking	
• Create EH Risk Factors Working Group	• Publish systematic reviews to facilitate incorporation of new EH risk-outcome pairs in the GBD
• Utilize existing hazard and risk classifications by authoritative bodies	
• Advance EH systematic review methods through collaboration with NIEHS/NTP	
• Prioritize new EH risk factors based on strength of evidence, size of exposed populations, trends in exposures and diseases, and feasibility/availability of exposure assessment	
• Give appropriate weight to EH observational studies	
• Consider conflict of interest in assessment of study quality	