The International Journal of Health Planning and Management

WILEY

EDITORIAL

New WHO Priorities in the European Region and Health Workforce Competencies: A Rapid Assessment of Capacities and Gaps in Public Health Competencies Frameworks

Ellen Kuhlmann[1,2] | Katarzyna Czabanowska[3,4] | Monica Georgina Brînzac[5,6] | Emilia Aragón de León[7] | Michelle Falkenbach[8,9] | Marius-Ionut Ungureanu[2,5,6] | Matthias Wismar[8] | Tomas Zapata[10] | Tiago Correia[2,11]

[1]Institute for Economics Labour and Culture, Goethe-University Frankfurt, Frankfurt, Germany | [2]WHO Collaborating Center for Health Workforce Policies and Planning, Instituto de Higiene e Medicina Tropical, IHMT, Universidade Nova de Lisboa, UNL, Lisbon, Portugal | [3]Department of International Health, Care and Public Health Research Institute (CAPHRI), FHML, Maastricht University, Maastricht, the Netherlands | [4]Faculty of Health Sciences, Institute of Public Health, Jagiellonian University, Krakow, Poland | [5]Department of Public Health, Faculty of Political, Administrative and Communication Sciences, Babeș-Bolyai University, Cluj-Napoca, Romania | [6]Faculty of Political, Administrative and Communication Sciences, Center for Health Workforce Research and Policy, Babeș-Bolyai University, Cluj-Napoca, Romania | [7]Division of Country Health Policies and Systems, WHO Regional Office for Europe, Copenhagen, Denmark | [8]European Observatory on Health Systems and Policies, Brussels, Belgium | [9]Department of Health Management and Policy, University of Michigan, Ann Abor, Michigan, USA | [10]Health Workforce and Service Delivery Unit, WHO Regional Office for Europe, Copenhagen, Denmark | [11]Global Health and Tropical Medicine, GHTM, Associate Laboratory in Translation and Innovation Towards Global Health, LA-REAL, Instituto de Higiene e Medicina Tropical, IHMT, Universidade Nova de Lisboa, UNL, Lisbon, Portugal

Correspondence: Ellen Kuhlmann (e.kuhlmann@em.uni-frankfurt.de)

Received: 27 March 2025 | **Accepted:** 28 March 2025

Funding: The authors received no specific funding for this work.

Keywords: competencies development | health and care workforce | leadership | public health workforce | WHO European region

ABSTRACT

The 74th WHO Europe Regional Committee introduced a set of health priorities comprising core areas of public health and expanded tasks to respond to multiple crises and emergent needs of populations and health systems. No systematic procedure of competencies development and routine review has been established to align changing health policy priorities and workforce. We argue for a transformative approach to competencies development from theoretical constructs to actionable pathways. A rapid qualitative assessment of three of the most relevant public health workforce competencies frameworks in the WHO European region was undertaken using selected priorities and the public health workforce as cases. The results highlight that existing competencies frameworks provide some helpful guidance, but gaps exist in specific and generic competencies and leadership. Further research and policy are needed, calling European and national policymakers to action to invest in public health competencies development to respond to evolving priorities.

1 | Introduction

The 74th WHO Europe Regional Committee (RC74) introduced a set of health priorities comprising core areas of public health and expanded tasks to respond to multiple crises and emergent needs of populations and health systems [1, 2]. The evidence for these new priorities is clear, but implementation on national and regional levels of Member States calls for further action and

Ellen Kuhlmann and Katarzyna Czabanowska share first authorship.

© 2025 John Wiley & Sons Ltd.

a competent health and care workforce (HCWF) [3, 4], raising critical questions on preparedness, governance and leadership and the role of public health within changing social, economic, climatic, and geopolitical environments. As part of the HCWF, public health encompasses a very diverse ranges of workers whose decisions significantly impact policy, politics, and population health.

Over recent years, efforts in transforming professional education and developing public health competencies frameworks have been strengthened [5], including critical reflections on lessons learnt from the COVID-19 pandemic [6–9], survey data on young public health professionals' views [10], and advancement of green and digital skills [11], among others. However, growing HCWF shortages [12–14] and multiple crises in the European region call for more systematic procedures of comprehensive competencies development and routine review to align changing health policy priorities and workforce competencies, that are currently lacking.

In this editorial, we argue for a transformative approach to competencies development from theoretical constructs to actionable pathways that is capable to respond effectively to new health policy priorities, using the public health workforce as a pilot for a broader HCWF assessment approach. Following the definition of WHO and the Association of Schools of Public Health in the European Region (ASPHER), competencies represent combinations of individual attributes (such as knowledge, skills and personal or professional attitudes) individuals require to undertake the role they are expected to take on [5, pp. 4–5], we apply a broad inclusive approach: 'To achieve transformative capacity, critical public health competencies must be considered for all healthcare workers on all levels of policymaking' [6, p. 14]. A rapid qualitative assessment was undertaken drawing on high-level expert reviews and three of the most relevant public health workforce competencies frameworks: the WHO-ASPHER Core Competency Framework for the Public Health Workforce in the European Region [5], the Core Competencies in Applied Infectious Disease Epidemiology of the European Centre for Disease Prevention and Control [15], and the WHO Global Competency and Outcomes Framework for the Essential Public Health Functions [16].

We have selected four major topics from the WHO priority list [1, 2] that serve as case studies to identify strengths and gaps of competencies frameworks.

- Strengthening emergency preparedness and medical teams.
- Strengthening national health security.
- Tackling the health impacts of the climate crisis.
- Addressing the pushback on sexual and reproductive health and rights, and a rise in gender-based violence.

Our selection focuses on new and expanded priorities in different areas of public health; classic fields of public health (e.g., prevention, health behaviour) were not considered and have been discussed elsewhere [6]. It reflects only some of the contemporary health challenges, and the priorities may not necessarily fully meet the WHO approach and presentation.

2 | New WHO Policy Priorities: What Competencies Are Desirable to Support Implementation?

We identified major competencies on three levels: specific competencies (related to specific tasks, roles or functions within a particular field of practice), generic competencies (broad, transferable skills that apply across various roles and sectors), and leadership (skills focused on guiding teams, managing organisations, and driving strategic change). It is important to note that the list is not exclusive and should be read as a first effort to guide further research and analyses.

2.1 | Strengthening Emergency Preparedness and Medical Teams

This priority has received most attention from countries [17]. It is closely linked to lessons from the COVID-19 pandemic and primarily informed by biomedical and epidemiological approaches.

- Specific competencies: knowledge of epidemiology and infectious diseases, including field epidemiology, law, health systems, knowledge of conflict and disaster preparedness (including natural disasters and armed conflicts), HCWF planning, management, and upskilling [17–19].
- Generic competencies: communication, coordination, collaboration, organisation and management of services, teamwork.
- Leadership competencies: there is currently a prioritisation of medical-epidemiological leadership, but a strong need exists for more balanced approaches and public health leadership including social dimensions and multidisciplinary approaches.

2.2 | Strengthening National Health Security

- Specific competencies: civil society protection, political science, health systems, health policies, law, foreign affairs, global health policy, and HCWF planning, management, and upskilling, including humanitarian workers [20].
- Generic competencies: coordination, communication, collaboration, organisation and management of work, teamwork, working in global, *trans*-sectoral, and multidisciplinary environments.
- Leadership competencies: strong public health approach to govern multiple stakeholders and interests involved, high flexibility to respond to ad-hoc needs.

2.3 | Tackling the Health Impacts of the Climate Crisis

- Specific competencies: climate conditions, geography, heat protection, cold protection, flood prevention, natural sciences, civil society protection, engineering, multidisci

plinary workforce planning, management, and upskilling/education of the HCWF [21–23].

- Generic competencies: coordination, collaboration, communication, teamwork, trans-sectoral and multidisciplinary work environments.
- Leadership competencies: strong public health approach to govern multiple stakeholders and interests involved, and adaptive leadership to respond to evolving crises and integrating equity-focused perspectives to address the needs of vulnerable populations.

2.4 | Addressing Pushback on Sexual and Reproductive Health and Rights, and Rise of Gender-Based Violence

- Specific competencies: gender and health, sexual and reproductive health, sexual and reproductive rights, law, gender-responsive and gender-transformative healthcare delivery and services, feminist theories and policy approaches, gender mainstreaming methodology, psychology, social work, criminology, gender-based violence prevention targeting women and girls as victims, gender-based violence prevention targeting men as victims, gender-based violence prevention targeting men as aggressors, multidisciplinary workforce planning, management, and upskilling/education of the HCWF [24–27].
- Generic competencies: coordination, communication, collaboration, teamwork, trans-sectoral and multidisciplinary work environments.
- Leadership competencies: public health to serve as lead or moderator depending on needs, gender-responsive and transformational leadership.

3 | Public Health Workforce Competencies: How Do They Align With New Priorities?

Table 1 provides an overview of how core competencies considered in the selected three competencies frameworks may align with new priorities. It is a consensus statement based on an expert review by the authors and allows for conclusions on two issues: (1) responsiveness and capacity of competencies framework to prepare the public heath workforce for new priorities, and (2) gap analysis.

Our rapid assessment reveals that the frameworks do have some transformative capacity and may help support new priorities in some areas.

- Emergency preparedness is partly incorporated and most clearly supported by existing competencies frameworks, including legal aspects, governance in case of emergency, coordination of responses, and health service provision.
- National health security may be supported by competencies in the areas of security measures, governance structures and their connection to health security, risk assessment, managing health infrastructures, data intelligence, and national laws and regulations.
- Tackling health impacts of climate change is mentioned explicitly and supported by understanding and knowledge of climate change, One Health and interconnectedness, competencies in evidence-based communication to protect the public from infodemics and strengthen safety and security.
- Sexual and reproductive health and violence prevention might, in principle, benefit from competencies in the areas of ethical professional behaviour, professional accountability and adherence to standards and norms, compassion, empathy, cultural sensitivity and zero tolerance of racism, discrimination, and harassment. However, the gender-based and sexual dimensions are not considered and the benefits are thus not clear.

4 | Transforming Public Health Workforce Competencies to Support New Priorities: What Major Gaps Are Emerging?

Aligning competencies frameworks and new priorities reveals several relevant gaps that must be closed to improve public health competencies and prepare the HCWF effectively for new priorities. One major problem is the misfit between existing competencies frameworks based on professional interests often led by 'silo' approaches [12] and a strong need for multidisciplinary competencies, collaboration and coordinated problem-solving to effectively foster implementation of new priorities. A need for adaption and amendment is relevant for all four priorities, but strongest and most complex in relation to specific competencies, and differences are most obvious in this area. For instance, emergency preparedness and climate change are mentioned explicitly while the other two priorities are missing from the frameworks, underscoring the importance of routine review procedures. Below we highlight some of the major emergent gaps, which may serve as a springboard for further, more comprehensive investigation.

4.1 | Gaps in Specific Competencies

Preparedness: Specific competencies related to tasks, behaviours and performance of the medical personnel considering a specific role; differentiation between public health and medical personnel specific competencies or skill-mixes; preparedness in case of hybrid threats.

Health security: Knowledge on how to protect the health of the population if security measures are introduced in a crisis situation; assurance of security of health personnel and workforce.

Climate: Specific competencies related to the protection of health of communities, individuals and the population based on specific impacts; One Health; specific climate change competency areas such as: climate justice, knowledge of climate mitigation, climate risk assessment, Geographic Information

TABLE 1 | Aligning WHO priorities and public health workforce competencies.

WHO priorities	WHO-ASPHER Core Competency Framework for PHW in the European Region	Core Competencies in Applied Infectious Disease Epidemiology in Europe	Global Competency and Outcomes Framework
Strengthening emergency preparedness and medical teams	Content & context 4. One Health & health security 4.3. Knows and where needed applies the international health regulations to coordinate and develop strategic partnerships and resources in key sectors and disciplines for health security purposes. 4.7 Knows and participates in the development and application of multi-sectorial evidence-based guidelines and systems for surveillance, prevention and control of diseases and other acute public health events. 4.8 Performs surveillance of risks and threats to the full continuum of factors that influence and determine health in order to identify intervention needs.	Domain B1: Preparedness for infectious disease outbreaks B.6. Consider appropriate public health preparedness and response plans to infectious diseases in all relevant settings (e.g., healthcare facilities, schools, workplaces, direct provision centres). Area E: Contextual influences on infectious disease management E2: Organization of healthcare. E2.1 Establish contact with the government agency tasked with organising the health system in the country/region. E3. Healthcare delivery. E3.1 Explain the framework within which healthcare services are delivered to the public i.e. primary, secondary, tertiary, long-term care, community, mental health and social care services. E3.3 Map the scope of practice specific to the healthcare setting or service with the country or region.	Practice activity domain V Public health emergency management. Practice activity 36: Planning for risk management and emergency management actions. Practice activity 37: Implementing risk management and emergencies preparedness actions. Practice activity 38: Coordinating emergencies response. Practice activity 39: Providing health services as part of emergency response. Practice activity 40: Coordinating service continuity and equitable recovery.
Strengthening national health security	Content & context 1. Science & practice 1.8 Evaluates local public health services and interventions applying sound methodology based on recognised evaluation models. 1.10 Understands the health system structure, its governance, funding mechanisms and how healthcare services are organised. 3. Law, policy & ethics 3.1. Knows, understands and applies the relevant international, European and national laws or regulations to maximise opportunities to protect and promote health and wellbeing. 3.4. Participates in the implementation of health and social policies and plans that	Domain C2: Infodemiology and infodemic management C2.3. In collaboration with communication experts and data scientists, work to ascertain the origin and spread of misinformation on social media platforms. Domain E2: Organisation of healthcare E2.2. Review the code of governance of the health service agency in the country or region, including how it directs and controls its functions and manages its business. E2.7. Interpret and comply with the relevant EU, international and national legislation on infectious diseases. E3 Healthcare delivery. E3.5 Summarise the relevant	Practice activity domain II practice activity 15: Conducting risk assessments and emergency preparedness assessments. Practice activity domain IV Practice activity 33: Managing public health infrastructure. Practice activity domain V: Public health emergency management (listed in the area above). Practice activities in the systems domain, organised using the WHO health systems building blocks: • Leadership & governance. • Service delivery. • Health system financing. • Health workforce. • Medical products, vaccines and technologies.

(Continues)

TABLE 1 | (Continued)

WHO priorities	WHO-ASPHER Core Competency Framework for PHW in the European Region	Core Competencies in Applied Infectious Disease Epidemiology in Europe	Global Competency and Outcomes Framework
	help guarantee the right to equitable and effective healthcare and policies enabling environments favourable to health. 4. One Health & health security 4.9 Identifies minimum or basic safety conditions in health care delivery, for the design and implementation of programmes and activities for surveillance, risk management and sustainability inherent to health service delivery. Relations & interactions 7. Communication, culture & advocacy 7.8. Advocates for healthy public policies and services that promote and protect the health and well-being of individuals and communities.	accountability, quality assurance guidelines and medico-legal context specific to the healthcare setting or service in the country or region.	• Health information systems. Competency domain V: Evidence 14.1 Seeks data, information, research, and other types of evidence from a range of contexts and reliable and appropriate sources. 14.2 Detects and corrects disinformation.
Tackling health impacts of climate change	1. Science & practice 3. Law, policy & ethics 3.1. Knows, understands and applies the relevant international, European and national laws or regulations to maximise opportunities to protect and promote health and wellbeing. 4. One Health & health security 4.1 Understands the local implications of the one health approach, its global interconnectivity (interdependencies among human, animal, plant, environment) and its impact on health conditions in the population. 4.2 Critically analyses the changing nature, key factors and resources that shape one health in order to influence actions (emergency preparedness planning and response) at the local and international level.	Domain D5: One health and climate change D5.7. Recognise the disruptive effect of climate change and the impact of climatic events on the ecosystem, increasing the risk of infectious disease transmission. D5.8 Review and disseminate knowledge from the Sustainable development goals 2015 on the impact of climate change on infectious diseases currently and into the future D5.6 Describe the components and importance of food safety and the food chain. Domain C2: Infodemiology and infodemic management C2.2. Promote both the use of evidence-based and evidence-informed decision making for successful infodemic management. C2.3. In collaboration with communication experts and data scientists, work to ascertain the origin and spread	Competency domain III: Communication Competency 8: Conveys information purposefully, including through trusted sources and key partners. 8.1 Provides timely, relevant, accurate and complete information. 8.2 Adopts strategies that encourage a common understanding of information and decisions. Practice activity 33: Managing public health infrastructure Circular guide 19. Tools to change practice and introduce for example climate change, related efficiencies, for example, water efficiency, switching to green, energy supplies, waste management practices. Competency domain V: Evidence 14.1 Seeks data, information, research, and other types of evidence from a range of

(Continues)

TABLE 1 | (Continued)

WHO priorities	WHO-ASPHER Core Competency Framework for PHW in the European Region	Core Competencies in Applied Infectious Disease Epidemiology in Europe	Global Competency and Outcomes Framework
	4.11 Knows and correctly identifies the main features of the climate change process, along with its implications for public health and understands the public health responsibility for the natural environment	of misinformation on social media platforms.	contexts and reliable and appropriate sources. 14.2 Detects and corrects disinformation, misinformation and infodemics.
Addressing pushback on sexual and reproductive health and rights, and rise of gender-based violence	Relations & interactions 5. Leadership & systems thinking 5.5. Demonstrates emotional intelligence with an awareness of the impact of one's own beliefs, values, and behaviours upon one's own decision-making and upon the reactions of others. 5.8 Catalyses change (behavioural and/or cultural) in the organisation, communities and/or individuals. Performance & achievement 9. Professional development & reflective ethical practice 9.3. Acts according to ethical standards and norms with integrity, promotes professional accountability, social responsibility and the public good.	Domain F2: Ethical and professional practice F2.1. Adopt ethical standards and norms with integrity, promoting professional accountability for the public good.	Competency 3: Fosters inclusive and participatory approaches to public health that embrace cultural diversity and inclusion. 3.2 Demonstrates respect for the autonomy, goals, perspectives, preferences, priorities, rights and values of all people. 3.5 Champions a culture of zero tolerance for racism, discrimination, and stigma. 3.6 Takes positive action to avoid and dispel abuse, harassment, or other disruptive behaviours. Competency 9: Adapts communication to the contextual goals, needs, urgency and sensitivity of the situation 9.4 Demonstrates compassion, cultural sensitivity, empathy, and respect for all people or example through using gender inclusive language that does not reinforce stereotypes.

Source: Authors' own table based on major competencies frameworks [5, 15, 16] and authors' review.

System mapping, health impact assessment, and sustainability practices into health service delivery.

Sexual health: Prevention of abusive sexual behaviour of others; knowledge of the legal or administrative tools and how to use them; knowledge of how to act in case of gender-based and sexual abuse directed towards HCWs; knowledge of safe communication channels; knowledge of gender-transformative policy approaches.

4.2 | Gaps in Generic Competencies

Artificial intelligence and technology: Although mentioned, greater attention and further improvement is necessary to facilitate adoption with due consideration of the risks to equity and security.

Communication and coordination: These were already strong issues, but further efforts and specification are necessary, including lessons learnt from the COVID-19 pandemic [7].

Gender equality: It must be addressed explicitly by integrating modules on gender-sensitive leadership and gender-transformative interventions targeting disparities in health and healthcare access and outcomes.

Intersectoral collaboration: Further efforts and specification are necessary to foster dialogue between countries and partners for a coordinated multisectoral approach to gender-based violence,

emergency preparedness and health security including on national level.

4.3 | Gaps in Leadership

A strong need for leadership and coordination competencies is emerging across the various new priorities, reinforcing need and urgency for competencies and preparedness of key actors in the field and directing attention to the important leadership role of public health [28]. The COVID-19 pandemic has taught us that recovery and transition 'requires more than a technical understanding of the transformation at hand. It also requires commitment and courage from leaders and policy makers to challenge dominant constructs...' [29].(summary) Moreover, transformational leadership is contextually anchored and is not confined to a single competency domain or WHO priority. It crosscuts domains leading to more unison execution of core public health functions. 'Transformational leaders pursue strategic approaches for value-based, innovative solutions and proactively manage partnerships with diverse actors' [30].

5 | Conclusions and Policy Recommendations

Competency frameworks should transition from conceptual models to practical tools by embedding competency-based education into national training programs and developing monitoring and evaluation procedures. The frameworks may serve as a useful springboard for a more tailored and comprehensive identification of relevant competencies, but the existing versions do not provide sufficient guidance for policy and practitioners. Major gaps exist in relation to specific competencies to respond to new priorities; gender equality, reproductive rights and health security are missing as keywords, for instance. Leadership and generic competencies also need greater attention, in particular to strengthen artificial intelligence, coordination, communication and collaboration, and equality and gender-transformative competencies.

There is an urgent need for a dynamic transformative approach and further research into competencies development to support the implementation of new and expanded priorities, including all relevant stakeholders at all levels of public health governance and education. Public health cannot solve all problems, but its interdisciplinary workforce structure and its role and capacity to shape policy agendas makes it an important mosaic in health systems that can drive broader transformative changes in the entire HCWF. We call on European and national/regional health policymakers to take action to strengthen public health competencies and prepare the HCWF to respond to evolving priorities.

Acknowledgements

The authors have nothing to report.

Ethics Statement

The authors have nothing to report.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

No original data were used in this paper.

References

1. WHO Regional Office for Europe (WHO Europe). *Newsroom. Dr Hans Henri P. Kluge Nominated by Member States to Serve as WHO Regional Director for Europe for a Second 5-Year Term* (WHO, 2024), https://www.who.int/europe/news-room/30-10-2024-dr-hans-henri-p.-kluge-nominated-by-member-states-to-serve-as-who-regional-director-for-europe-for-a-second-5-year-term.

2. WHO Regional Office for Europe (WHO Europe). *RC74. Packed Regional Committee Session Draws to a Close in Copenhagen With Look Ahead to the 2nd European Program of Work* (WHO, 2024), https://www.who.int/europe/news/item/22-11-2024-packed-regional-committee-session-draws-to-a-close-in-copenhagen-with-look-ahead-to-the-second-european-programme-of-work.

3. T. Correia, E. Kuhlmann, G. Lotta, et al., "Turning the Global Health and Care Workforce Crisis Into Action: The Pathway to Effective Evidence-Based Policy and Implementation," *International Journal of Health Planning and Management* 40, no. 1 (2024): 224–233, https://doi.org/10.1002/hpm.3860.

4. E. Kuhlmann, G. Lotta, G. Dussault, M. Falkenbach, and T. Correia, "The Workforce Crisis in Healthcare: Moving the Debate to Bridge Evidence and Policy," *International Journal of Health Planning and Management* 39, no. 3 (2024): 607–613, https://pubmed.ncbi.nlm.nih.gov/38373042/.

5. World Health Organisation Regional Office for Europe (WHO Europe). *ASPHER. Roadmap to the Professionalization of the Public Health Workforce in the European Region* (WHO, 2022), https://www.who.int/europe/publications/i/item/WHO-EURO-2022-4808-44517-63144.

6. K. Czabanowska, P. Rodriguez Feria, E. Kuhlmann, et al., "Professionalization of the Public Health Workforce: Scoping Review and Call to Action," *European Journal of Public Health* 34, no. 1 (2024): 52–58, https://doi.org/10.1093/eurpub/ckad171.

7. K. Czabanowska and E. Kuhlmann, "Public Health Competences Through the Lens of the COVID-19 Pandemic: What Matters for Health Workforce Preparedness for Global Health Emergencies?," *International Journal of Health Planning and Management* 36, no. S1 (2021): 14–19, https://doi.org/10.1002/hpm.3131.

8. M. McKee, R. Rosenbacke, and D. Stuckler, "The Power of Artificial Intelligence for Managing Pandemics: A Primer for Public Health Professionals," *International Journal of Health Planning and Management* 40, no. 1 (2024): 257–270: online first, https://doi.org/10.1002/hpm.3864.

9. G. A. Williams, M. Ziemann, C. Chen, R. Forman, A. Sagan, and P. Pittman, "Global Health Workforce Strategies to Address the COVID-19 Pandemic: Learning Lessons for the Future," *International Journal of Health Planning and Management* 39, no. 3 (2024): 888–897, https://doi.org/10.1002/hpm.3762.

10. M. Brînzac, M. Verschuuren, L. Leighton, and R. Otok, "Public Health Competencies: What Does the Next Generation of Professionals Deem Important?," *European Journal of Public Health* 35, no. S2 (2025): ii11–ii16, https://doi.org/10.1093/eurpub/ckae201.

11. BeWell. Upskilling and Reskilling of the European Health Workforce (2025), https://bewell-project.eu/project.

12. T. Correia, W. Ricchiardi, and M. McKee, "Preparing for the 'Next Pandemic': Why We Need to Escape From Our Silos," *International Journal of Health Planning and Management* 39 (2024): 973–979, https://doi.org/10.1002/hpm.3757.

13. World Health Organisation Regional Office for Europe (WHO Europe). *Health and Care Workforce in Europe. Time to Act* (WHO, 2022), https://www.who.int/europe/publications/i/item/9789289058339.

14. T. Zapata, N. Azzopardi Muscat, M. Falkenbach, and M. Wismar, "From Great Attrition to Great Attraction: Countering the Great Resignation of Health and Care Workers," *Eurohealth* 29, no. 1 (2023): 6–10, https://www.ehfg.org/fileadmin/downloads/21-press/2023/Eurohealth_EHFG2023.pdf.

15. European Centre for Disease Prevention and Control (ECDC). *Core Competencies in Applied Infectious Disease Epidemiology* (ECDC, 2022), https://www.ecdc.europa.eu/sites/default/files/documents/Core-competencies-in-infectious-disease-epidemiology-in-Europe_0.pdf.

16. World Health Organisation (WHO) and IANPHI. *Application of the Essential Public Health Functions: An Integrated and Comprehensive Approach to Public Health* (WHO/IANPHI, 2024), https://www.who.int/publications/i/item/9789240088306.

17. WHO Regional Office for Europe (WHO Europe). *WHO European Region Member States Adopt Two Landmark Health Emergency Action Plans: Preparedness 2.0 Strategy and Action Plan and the Emergency Medical Teams Regional Action Plan 2024–2030* (WHO Europe, 2024), https://www.who.int/europe/news/item/31-10-2024-who-european-region-member-states-adopt-two-landmark-health-emergency-action-plans--preparedness-2.0-strategy-and-action-plan-and-the-emergency-medical-teams-regional-action-plan-2024-2030.

18. World Health Organisation Regional Office for Europe (WHO Europe). *The Emergency Medical Teams Initiative in the WHO European Region* (WHO, 2024), https://www.who.int/europe/teams/who-health-emergencies-programme-(whe)/the-emergency-medical-teams-initiative-in-the-who-european-region.

19. World Health Organisation (WHO). *World Health Emergencies Program* (WHO, 2024), https://www.who.int/europe/teams/who-health-emergencies-programme-(whe).

20. C. Harris, P. O'Neal, and M. Taylor, "The Urgent Need for Disaster Education as a Core Competency in Accredited Schools and Colleges of Public Health by the Council on Education for Public Health," *Disaster Medicine and Public Health Preparedness* 18 (2024): e199, https://doi.org/10.1017/dmp.2024.274.

21. J. Ballester, M. Quijal-Zamorano, R. F. Méndez Turrubiates, et al., "Heat-Related Mortality in Europe During the Summer of 2022," *Nature Medicine* 29, no. 7 (2023): 1857–1866, https://doi.org/10.1038/s41591-023-02419-z.

22. World Health Organisation (WHO). *Climate Change* (WHO, 2024), https://www.who.int/health-topics/climate-change#tab=tab_1.

23. World Health Organisation (WHO). *Fact Sheets: Heat and Health* (WHO, 2024), https://www.who.int/news-room/fact-sheets/detail/climate-change-heat-and-health.

24. M. Betron, I. Bourgeault, M. Manzoor, et al., "Global Health Workforce Network's Gender Equity Hub. Time for Gender-Transformative Change in the Health Workforce," *Lancet* 393, no. 10171 (2019): e25–e26, https://doi.org/10.1016/S0140-6736(19)30208-9.

25. H. Kluge and N. Azzopardi-Muscat, "The Health Workforce Crisis in Europe Is Also a Gender Equality Crisis," *BMJ* 380 (2023): 554, https://doi.org/10.1136/bmj.p554.

26. E. Kuhlmann, M. Brînzac, K. Czabanowska, et al., "Violence Against Healthcare Workers Is a Political Problem and a Public Health Issue: A Call to Action," *European Journal of Public Health* 33, no. 1 (2023): 4–5, https://doi.org/10.1093/eurpub/ckac180.

27. G. Lotta, M. Fernandez, D. Pimenta, and C. Wenham, "Gender, Race, and Health Workers in the COVID-19 Pandemic," *Lancet* 397, no. 10281 (2021): 1264, https://doi.org/10.1016/S0140-6736(21)00530-4.

28. K. Czabanowska, T. Smith, K. D. Könings, et al., and Leaders for European Public Health, "In Search for a Public Health Leadership Competency Framework to Support Leadership Curriculum – a Consensus Study," *European Journal of Public Health* 24, no. 5 (2014): 850–856, https://doi.org/10.1093/eurpub/ckt158.

29. E. A. De León, A. Shriwise, G. Tomson, et al., "Beyond Building Back Better: Imagining a Future for Human and Planetary Health," *Lancet Planetary Health* 5, no. 11 (2021): e827–e839, https://doi.org/10.1016/S2542-5196(21)00262-X30.

30. B. M. Bürkin, K. Czabanowska, S. Babich, et al., "Competencies for Transformational Leadership in Public Health – an International Delphi Consensus Study," *International Journal of Public Health* 69 (2024): 1606267, https://doi.org/10.3389/ijph.2024.1606267.