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Health workforce protection and preparedness during the COVID-19 pandemic: a tool for the rapid assessment of EU health systems

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This article is dedicated to the WHO International Year of Health and Care Workers in 2021 in recognition of their commitment during the COVID-19 pandemic. The study aims to strengthen health workforce preparedness, protection and ultimately resilience during a pandemic. We argue for a health system approach and introduce a tool for rapid comparative assessment based on integrated multi-level governance. We draw on secondary sources and expert information, including material from Denmark, Germany, Portugal and Romania. The results reveal similar developments across countries: action has been taken to improve physical protection, digitalization and prioritization of healthcare worker vaccination, whereas social and mental health support programmes were weak or missing. Developments were more diverse in relation to occupational and organizational preparedness: some *ad-hoc* transformations of work routines and tasks were observed in all countries, yet skill-mix innovation and collaboration were strongest in Demark and weak in Portugal and Romania. Major governance gaps exist in relation to education and health integration, surveillance, social and mental health support programmes, gendered issues of health workforce capacity and integration of migrant healthcare workers (HCW). There is a need to step up efforts and make health systems more accountable to the needs of HCW during global public health emergencies.

Introduction

The COVID-19 pandemic has created extreme pressures and new threats for the health workforce. Healthcare workers (HCW) have responded with high commitment and capacity to serve the new and unprecedented needs of the population and to support flawed health systems.[1–3] Sadly, however, HCW have not been sufficiently protected and prepared for these new challenges imposed by the pandemic.

HCW account for 8% of the global COVID-19 cases and the risk they run of getting infected is more than triple the risk of the general population.[2] During the first wave until early May 2020, a systematic review reported 152 888 infections and 1413 deaths among HCW globally; infections were mainly in women (72%) and nurses (39%), but men (71%) and doctors (51%) died more often.[4] The authors further highlighted that Europe had the highest absolute numbers of reported infections and deaths.[4] As of September 2020, there were 7000 COVID-related deaths among HCW globally[5] and estimations by the end of 2020 pointed to an increase in 2262 deaths.[6] The second and third waves of the COVID-19 pandemic strongly increased the numbers and changed the geographical focus of the virus; in summer 2021, the USA, India and Brazil were heading the table of absolute numbers of infections and deaths (https://coronavirus.jhu.edu/map.html). These developments also affected HCW; for instance, estimations for Brazil were higher than the global figures.[7] In Europe, the proportion of HCW affected by COVID-19 varied strongly between reporting periods/pandemic waves and between countries, yet comparison is hampered, because even basic data are lacking for some countries.[8]

There is still no global surveillance system of HCW protection during the pandemic,[6] and reliable data on the impact of COVID-19 on the health workforce are therefore lacking. However, the available evidence points to higher risks in some social and occupational HCW groups. For instance, the long-term care (LTC) sector and nursing homes face the highest risk due to the demographic composition of patients, which raises questions regarding HCW protection.[6,9–11] Female HCW are also known to be affected more strongly by the pandemic. 'Confirmed COVID-19 cases among female health workers are two to three times higher than those observed among their male counterparts', based on data from Germany, Italy and Spain.[12] Gender inequality and violence against women have increased dramatically in societies under lockdown, and women's needs have often been ignored. There is evidence of female HCW being protected less and of female leadership and expertise being ignored in the academic debate and policymaking.[11–14]

Migrant HCW are another group requiring attention. Many countries heavily rely on the nearly 2 million migrant HCW working in the European Union (EU).[9] Migrant HCW were affected by

mobility restrictions in many ways, and if travel bans were suspended for HCW, they put their health at risk when travelling. The pandemic disrupted 'care chains' in well-resourced receiving countries and put service provision at risk. At the same time, specific cross-border agreements reinforced the 'care drain' in sending countries at a time when an increase in health workforce surge capacity was needed most.[15,16]

The COVID-19 pandemic has put the resilience of the health workforce to the test, but first and foremost, it raised questions about the healthcare system itself. The health workforce is the 'heart and soul'[17,18] of every healthcare system and 'central to an effective response to the pandemic', as WHO has reminded us.[2,19] Health workforce protection and pandemic preparedness are not limited to individual HCW, but they strongly impact the health system resilience and must therefore become a policy priority.[2,19–21] 'A healthcare system cannot function by relying solely on the good nature of its workforce and their sense of duty in the face of extreme adversity', as a recent Lancet editorial highlighted.[22]

The systemic and global nature of poor health workforce preparedness and the lack of health policy responsiveness to new challenges has been identified long before the SARS-CoV-2 virus arrived, as a Lancet Commission revealed more than a decade ago:

> [. . .] fresh health challenges loom. New infectious, environmental, and behavioural risks, at a time of rapid demographic and epidemiological transitions, threaten health security of all. Health systems worldwide are struggling . . . Professional education has not kept pace with these challenges, largely because of fragmented, outdated, and static curricula that produce ill-equipped graduates. The problems are systemic.[23]

More specifically, the Lancet Commission report identified the following major problems:

> [. . .] poor teamwork; persistent gender stratification of professional status; . . . quantitative and qualitative imbalances in the professional labour market; and weak leadership to improve health-system performance. Laudable efforts to address these deficiencies have mostly floundered.[23]

So, while healthcare systems have been warned, especially by public health researchers,[17,20,23,24] the lessons have not been well received. Problems continue to persist and have been reinforced during the pandemic.[1,2,18] Improving research and data alone will therefore not be enough. We must also talk about knowledge translation, governance and implementation, and this includes critically reflecting about existing policy and research priorities. While information on health workforce surge, capacities, finance and planning[16,25,26] has improved, but very little attention has been paid to the 'human' behind the individual HCW[18] and how they could be better protected.[27,28] As the WHO Regional Director has highlighted, we 'have no COVID-19 response if we do not care for our health-care and essential workers: their needs and well-being must be prioritized'.[29]

Aims and objectives

The present study is dedicated to the WHO International Year of Health and Care Workers in 2021 in recognition of their commitment during the COVID-19 pandemic.[30] The aim is 2-fold: to introduce a tool for rapid assessment and to empirically explore the preparedness and protection of HCW. More specific objectives include: exploring the strengths and weaknesses of health workforce governance and identifying major governance gaps that may hamper effective HCW protection and preparedness.

Methods

The study is explorative in nature and applies a comparative approach. It draws on secondary sources (documents, public statistics and literature) and expert information, and it comprises two major steps: the development of a rapid assessment tool based on a conceptual multi-level governance approach and an empirical exercise using material from four EU Member States.

The conceptual approach and instrument development

A conceptual approach developed by the European Public Health Association Health Workforce Reserach (EUPHA-HWR) section (https://eupha.org/health-workforce-research) to improve health workforce research in the EU reflects the importance of health systems and the complexity of governance.[31] It systematically connects hierarchical levels of health workforce governance (transnational/EU, macro-level/state, meso-level/organizations and professions, and micro-level) and the substance of governance in relation to four dimensions: system, sector, occupation and socio-cultural, the latter with a focus on gender equality and migrant/mobile HCW. Organizational practices are placed at the meso-level and professional development at the micro-level, both within the wider context of health systems and transnational policy and governance (table 1).[31] The benefit of this approach is that it is theory-driven, referring to governance and professions theories.[3,29,32]

The multi-level matrix serves as a springboard towards developing an instrument for assessing HCW protection and preparedness during the COVID-19 pandemic from a comparative perspective. The suggested tool (table 2) takes the need for rapid analysis and an overall lack of established HCW surveillance and monitoring systems into account. It is amended and adapted from the matrix shown in table 1 in two ways: first, the tool is less complex than the initial matrix; it is more focused on the substance of governance, while the levels of governance are not explored systematically. Second, the tool is specified for the pandemic and now includes vaccination and surveillance policies. This multi-level tool facilitates comparative analysis and an integrated assessment of policy action. Due to our research focus on EU countries with a joint regulatory framework, the transnational dimension of health workforce governance is briefly reflected as common context (not included in table 2).

The four major dimensions of the substance of governance[31] are specified in relation to preparedness.

i. *System preparedness* refers to the development of a system-based approach capable of improving pandemic preparedness by integrating the education and healthcare systems, of comprehensive surveillance and monitoring systems, and HCW vaccination programmes.
ii. *Sector preparedness* focuses on the integration of different healthcare sectors, the strengthening of public health and the adaption to new tasks.
iii. *Occupational/organizational preparedness* comprises the improvement of collaboration and coordination between and within health professions and with other groups involved in care, of skill-mix and team approaches, of public health training programmes and competencies, as well as the provision of sufficient personal protection equipment (PPE), vaccination programmes and appropriate social and mental health support services for HCW during the pandemic to prevent stress and burn-out.
iv. *Sociocultural preparedness* focuses (for the purpose of the present study) on two selected dimensions:
    - *gender equality* addresses gender-based and intersectional social inequalities, and the establishment of support programmes to mitigate the threats of COVID-19 especially to female HCW.
    - *migrant HCW and minority groups* includes improving awareness and establishing support programmes to mitigate COVID-19-related threats, as well as cross-border HCW regulation, professional accreditation and, more generally, solidarity-based health workforce governance.

Table 1 A multi-level health workforce governance research matrix

Levels of health workforce governance	Substance of health workforce governance			
	System integration	***Sector integration***	***Occupational integration***	***Socio-cultural integration and gender equality***
Transnational (international/EU)			Standardization of professional regulation and requirements	International migration and EU mobility; gender equality programmes
Macro-level (State/regional)	Educational system; health labour market; general labour market	Primary care; secondary care; mental healthcare; public health; social sector	Relationships between different professional groups; inter-professional governance	Regional imbalances; deprived areas; population decline areas; gender equality
Meso-level (organizations/professions)	Match of education, workforce and population needs	Resilient organization of care; trans-sectoral coordination	Task-delegation; inter-professional collaboration; mental health programmes	Integration of diverse (gender, ethnicity, etc.) professionals in organizations
Micro-level (individual actors)	New competences for resilience and preparedness	Cooperation; skill-mix in teams	Inter-professional education and practice; stress prevention	Motivation and retention; intercultural relations

Source: adapted from Kuhlmann et al.[31]

Table 2 A tool for rapid assessment of health workforce preparedness and protection during the COVID-19 pandemic

Substance of governance	Major assessment categories
System preparedness	• integration of the education, healthcare and labour market systems • financial compensation and bonuses • HCW vaccination programme • surveillance and monitoring of COVID-19 incidence and deaths among HCW
Sector preparedness	• integration of sectors, especially public health • public health roles, leadership and adaption to new tasks
Occupational/organizational preparedness	• innovation in collaboration, skill-mix and team approaches • coordination • training programmes and public health competencies • PPE and implementation of vaccination policy, surveillance programmes • support for mental health during the pandemic • social support (including childcare facilities)
Sociocultural preparedness • Gender equality • Migrant HCW	• gender equality (and intersectional) policies and monitoring during COVID-19 • support for women and female leadership during COVID-19 • prevention of sexual harassment and violence • health workforce migration policies during COVID-19 • transnational EU and bi-national agreements • support programmes during the COVID-19 pandemic

Source: authors' own table, revised and amended from Kuhlmann et al.[31].

Major categories of our comparative assessment tool are summarized in table 2.

The country sample

Four EU Member States have been selected for our assessment—Denmark, Germany, Portugal and Romania—which represent major types of healthcare systems and different regions in the EU: a Nordic National Health Service (NHS) system, a classic Bismarckian Social Health Insurance (SHI) system, a Southern European NHS system and an Eastern European SHI system. However, with our sample, we move beyond health system types and geographic location. The selection seeks to take into account the multitude of factors and different conditions in relation to both the availability and composition of health human resources and the epidemiological situation of COVID-19. Table 3 offers empirical details on the country-specific conditions of our sample.

Results

The COVID-19 pandemic put EU regulatory capacities to the test, precisely in an area where national authority is strongly protected.[33] New EU vaccination policies and the EU4Health 2021–27 research programme[34] point towards stronger EU regulation,[33] which might also impact health workforce governance. EU4Health aims to 'establishing a reserve of medical, healthcare & support staff'.[34] While this narrow focus does not adequately reflect the need for better HCW

Table 3 Mapping the country sample

Categories	Denmark	Germany	Portugal	Romania
Health system				
Governance	National Health Service (NHS), public corporatism, partly decentralized	Social Health Insurance (SHI), joint SHI self-administration, federalist, decentralized,	National Health Service (NHS), public and professional corporatism, partly decentralized	Social Health Insurance, public corporatism with some market; partly decentralized
Finance	Funded national and local-level taxes	Funded mainly by employer and employee contributions	Funded by national taxes with private share	Funded by employees' insurance contributions with relevant private share
Total health expenditure, %GDP	10.1%[a]	11.7%[a]	9.5%	5.2%
Provision	Strong public provision with weak private mix	Public provision with strong private mix, but joint SHI regulation	Strong public provision with private mix, no joint regulation with the State	Strong public provision with increasing private mix, no joint regulation
Hospital beds per 1,000 population	2.6[a]	8.0[a]	3.45[a]	5.28
Health workforce				
Total health & social employment density	89.58[a]	71.67[a]	38.86[a]	n/a
Physician density	4.19[a]	4.31[a]	5.39	3.04
Physicians, % foreign trained	9.53%[a]	9.53%[a]	11.99%[a]	n/a
Nurse density[a]	10.1[a]	13.22[a]	7.37	7.21
Nurses, % foreign trained	1.85%[a]	8.73%[a]	2.5%	n/a
Professional carers density[a]	16.21[a]	4.89[a]	3.06[a]	3.59
COVID-19				
Cases/population[b]	39,315	32,217	80,243	47,147
Deaths/population[b]	415	898	1,647	1,167

Sources: authors' own table, based on: OBS, https://www.hspm.org/mainpage.aspx; OECD, https://stats.oecd.org; EUROSTAT and national statistics if OECD data were missing.
Portugal: data 2019; https://www.pordata.pt/; physician density, nurse density: licensed/no data available on practising; nurses % foreign-born/no data available on foreign-trained.
Romania: data 2018 or nearest year, EUROSTAT data; https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Health.
a: OECD, 2019 or nearest year; for workforce data: per 1000 population, head counts, practising.
b: Cumulative confirmed cases per million people, data as per 23 March 2021; https://ourworldindata.org/explorers/coronavirus-data-explorer.

support and protection and the importance of the HCW for health system resilience, it might facilitate the establishment of a European health workforce surveillance system, which may increase risk awareness. EU health workforce governance has yet to come, however. Comprehensive HCW surveillance and monitoring systems and the regulation of cross-border mobility during a pandemic remain lacking. Other transnational actors may provide some guidance, on top of this WHO,[2,12,19,20] but they enjoy only weak governing powers.

National health systems are the key to health workforce preparedness and protection. Our multi-level governance tool has proven useful and easily accessible for the rapid assessment of country responses during the COVID-19 pandemic. Major findings are presented below and summarized in table 4.

System preparedness

Across countries, action has been taken in three main areas: improved HCW protection, mainly through prioritizing vaccination of all HCW groups (sometimes also including students); financial compensation for frontline HCW; and strengthened digitalization, which may take different forms in the countries. These efforts can be identified as major strengths in all four countries. We also found relevant country similarities in relation to major weaknesses: integration of health and education systems, public health competencies, and surveillance and monitoring systems were overall poorly developed. Qualitative country differences must be considered, however, with Denmark faring better than the other three countries in all three areas. Some action was taken locally in Germany and Portugal to improve HCW surveillance and data, and in Germany also nationally.

Sector preparedness

The expansion of public health leadership as well as new tasks were observed in all countries, while the overall position of public health varied significantly, ranging from a well-established sector in Denmark to more marginal positions in the other countries.

Occupational/organizational preparedness

In all countries, we found *ad-hoc* transformations of work routines and tasks, which confirmed the HCW commitment and capacities to adapt to new needs and demands during the pandemic; some training and up-skilling of public health competences was also observed. Skill-mix innovation and collaboration were strongest in Demark and weakest in Portugal and Romania. In relation to HCW protection, the implementation of vaccination policies was strong (some regional variation may exist); PPE and surveillance were strong in the hospital sector but weaker in LTC (expect for Portugal). The picture was more diverse when considering other protective strategies: social support structures (especially access to childcare) were better established in Denmark and Portugal and worst in Romania, while all countries except Denmark lacked appropriate attention to mental healthcare programmes to mitigate the new COVID-19 pressures.

Gender equality

All countries had previous gender equality policies in place (poor in Romania), but attention to the impact of COVID-19 and to the support of female leadership were very poor, if not lacking. While there was growing attention to the prevention of sexual violence (strongest in Denmark), systematic action was lacking.

Table 4 Rapid assessment of health workforce preparedness and protection in selected EU countries, March 2021

	Denmark	Germany	Portugal	Romania
System	Centrally regulated education system, some coordination with the health system, some public health competences; Local financial bonuses for nurses; New fee for video consultations for general practitioners; Vaccination priority group; Weak focus on HCW surveillance and monitoring, despite high-quality information	Health and education systems poorly integrated, weak public health competencies; Small financial bonuses for nurses, compensation for office doctors; New digital services; Vaccination priority but some local variation; Weak focus on HCW surveillance and monitoring, despite quality data, some local action	Health and education systems poorly integrated, some public health competences; Financial compensation for frontline HCW but unevenly implemented; New digital services; Vaccination priority but local variation; Weak focus on HCW surveillance and monitoring, despite quality data, some local action	Health and education systems poorly integrated, some public health competences; Some financial compensation for frontline workers; New digital services; Vaccination priority group; No coherent HCW surveillance programme, poor monitoring and fragmented data
Sector	Public health is well established at national level, less so at local level; New tasks; Expansion of municipal public health leadership	Public health is marginal but some up-scaling and staff expansion; New tasks, new policy programme for public health sector; Some recognition of public health leadership	Public health lacks recognition and is poorly integrated; New tasks and roles emerged for public health specialists; Some public health leadership, *ad-hoc* involvement in taskforces created by decision-makers	Public health is marginal, facing under-staffing and outdated skills and competencies; Temporary staff expansion for County Public Health Directorates; Little public health leadership
Occupation/Organization	Local innovation in skill-mix and professional and cross-sectoral collaboration reflecting decentralized health governance; PPE and surveillance especially strong in hospitals, less so in LTC; Some training/up-skilling of public health competences; Vaccination priority of all HCW; Growing attention to mental health and development of support services especially by trade unions; Regular access to childcare facilities for HCW during lockdown	Local innovation in skill-mix and professional and sectoral collaboration; PPE and surveillance strong in hospitals, but weaker in LTC; Some training/up-skilling of public health competences; Vaccination priority of all HCW, some local variation; Lack of attention to mental health and innovation/ adaption of support services; Weak social support, some limited access to childcare facilities for HCW during lockdown	Local innovation in skill-mix and professional and sectoral collaboration; PPE strong in all groups; Some training/up-skilling of public health competences; Vaccination priority of all HCW, some local variation; Lack of attention to mental health and innovation/ adaption of support services; Access to childcare facilities for HCW during lockdowns	Some local innovation but poor extent of collaboration and skill-mix; PPE and surveillance overall strong in hospitals but worse in primary/outpatient care and LTC; Some training/up-skilling of public health competences; Vaccination priority of all HCW; Lack of attention to mental health and innovation/ adaption of support services; Lack of social support, limited access to childcare facilities for HCW during lockdown
Gender	Gender equality policies exist, but no systematic attention to impact of COVID-19; No explicit support of female leadership; Growing attention to preventing sexual violence	Gender equality policies in place but lack of attention to the impact of COVID-19; No support for female leadership; Some attention but no systematic response to preventing sexual violence	Gender equality policies at place but lack of attention to the impact of COVID-19; No support for female leadership; Some attention but no systematic response to preventing sexual violence	Poor gender equality policies, lack of attention to the impact of COVID-19; No support for female leadership; Poor attention and response to preventing sexual violence
Migration	General bi-national policy agreements to enable cross-border worker mobility; No policies in place to restrict emigration; Lack of attention to foreign HCW' specific needs	Specific policy agreements to facilitate cross-border HCW mobility when borders were closed, bi-national agreements in border regions; No policies in place to restrict emigration; Lack of attention to foreign HCW' specific needs, some provider-level support but no coherence	Temporary obligation to remain in the NHS/emigration prohibited; Special allowance to practice for physicians trained abroad and enrolled in licensing; Some international support of HCW supply during severe phase; Lack of attention to foreign HCW' specific needs	Some bi-national agreements to facilitate cross-border mobility, especially for LTC professionals; No policies in place to restrict emigration; Lack of attention to foreign HCW' specific needs

Source: authors' own table, based on country expert information.

Migrant HCW

All countries put specific policy agreements in place to facilitate cross-border mobility during lockdowns or when borders were closed, e.g. through bi-national agreements for cross-border regions, temporary relaxing of licensing. Portugal also introduced emigration bans for NHS staff and received some humanitarian support of HCW supply during the most severe phase. However, we found no agreement and an overall lack of attention in relation to the specific needs of migrant HCW during the pandemic. We did not consider minority groups, like refugee HCW or certain nationalities outside the EU, as there were no signs or data that these groups received relevant attention.

Discussion

Our comparative analysis of the substance of health workforce governance has identified major strengths and weaknesses across countries. Relevant capacities included:

i. Strong efforts to improve the physical protection of HCW through vaccination and PPE in the clinical sector; less strong in LCT.
ii. Advancement of digital services, although countries may invest in different sectors and services.
iii. Transformations of day-to-day practices and work routines, with some innovation in coordination and skill-mix and some expansion of public health leadership. There are relevant differences between countries, however, reflecting health system characteristics and resources.

In relation to weaknesses, the following major gaps in health workforce governance were identified, which may seriously hamper the ability to protect and prepare HCW effectively during the COVID-19 pandemic:

i. Poor integration of education and health systems hampers responsiveness to emergent demand for new competencies and upskilling of occupational groups.
ii. Poorly developed HCW surveillance and standardized monitoring systems—even in countries with otherwise high-quality data—indicate health system failure that puts HCW health at risk.
iii. Lack of attention to (or poorly developed) appropriate HCW mental health programmes and comprehensive social support services has a negative impact on resilience and sustainability.
iv. Lack of attention to the gendered effects of the COVID-19 pandemic and to the threats of female HCW increases gender inequality and health risks for female HCW.
v. Lack of attention to the specific needs of migrant HCW under pandemic conditions reflects policy priorities that focus on numbers and ignore the person behind every HCW.

It is important to recall that we found similar weaknesses, as well as some strengths, in otherwise different health systems and epidemiological contexts, as shown in table 3. Although relevant qualitative differences between countries must be considered, the results suggest that countries respond to the unprecedented threats of the COVID-19 pandemic with a kind of 'survival mode': physical protection and the hospital sector are strengthened, while comprehensive surveillance and social and mental health support programmes and policies are neglected or even missing.

Health systems and policymakers would not appear to have fully understood the emergent threats during the COVID-19 pandemic, and this is often also true for research. Working under high pressure without comprehensive support structures will trigger HCW fatigue.[28] This may result in lack of motivation, increased sickness leaves and burn-out and eventually job leaves. While the middle- and long-term consequences are hardly predictable, we will most likely face much worse HCW shortages in future, which will inevitably increase competition and reinforce geographic inequalities within and between EU countries and globally.[15] A backlash in gender equality and lack of attention to the needs of women, who account for the vast majority of HCW, will further fuel these dynamics.

Furthermore, health policymakers did not appear to grasp the severity of the situation when borders were closed and the mobility flow of HCW disrupted. While a joint EU vaccination policy was emerging, no action has been taken to establish effective EU health workforce policy to mitigate inequalities within the EU and to reduce the burden of the individual migrant HCW.[10,15,18] Strong advocacy and public health action are urgently needed to support post-pandemic health system recovery and HCW protection. Governance gaps are strongest precisely in those HCW groups where protection is weakest and higher risks are documented, namely LTC workers, women and migrant HCW.[9–11,14,28]

Healthcare systems and policymakers must be held accountable for improving HCW protection and preparedness during the COVID-19 pandemic. Building back after COVID-19 in a fair, equitable and effective manner[12] will only be possible if we join forces for protecting and preparing HCW everywhere.

Limitations

We were able to provide new comparative data and knowledge in an area where research is poorly developed and the need for better evidence is high. However, our study has a number of important limitations. We rely on expert information and secondary sources, while comprehensive primary data and research evidence are overall poorly developed or even lacking. Our rapid assessment must be viewed as one step forward towards better research and knowledge in this neglected health policy area. Nevertheless, the findings helped to identify relevant gaps in existing data and policies that require further investigation and in-depth research.

Conclusion

We argued for greater attention to the protection and preparedness of HCW during the COVID-19 pandemic and introduced a rapid comparative assessment tool, highlighting the need for a health system and governance approach. Our research now reveals the feasibility and benefits of the suggested tool. Health systems have stepped up efforts to improve the physical protection of HCW with a focus on vaccination and the hospital sector, while important weaknesses remained in almost all other areas of health workforce governance. Our research identified important governance gaps and specified the substance areas; thus, the results may provide some guidance for policy interventions.

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Key points

- A rapid assessment of health workforce protection and preparedness reveals health system capacities, but also serious gaps in health workforce governance.
- Health systems improve physical protection with a focus on vaccination and the hospital sector, but ignore the need for complex mental health protection and social support.
- There is a need for a comprehensive health workforce monitoring and surveillance system on the national and EU levels.
- Governance gaps exist in relation to surveillance, mental health and social support, education, gender equality and the integration of migrant healthcare workers.
- Health systems must be accountable for the protection and preparedness of their human resources for health.

Additional Content

A video to accompany this paper is available at https://youtube.com/playlist?list=PLv5eq4ZCoNWubJurAJ-7Ht33cjNshLw7R.

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