

The health workforce crisis in the European Union

Policy options for improving the sustainability of healthcare systems and employment and working conditions in the healthcare sector



KEY FINDINGS

Europe is facing increasing shortages in the health and care workforce (HCWF). The problem had risen to the forefront during the recent COVID-19 pandemic, and is likely to further aggravate in the coming years. Efforts in recent years to increase the numbers of health and care workers (HCW) and other measures have mostly proven insufficient. Shortages are likely to worsen in most countries, calling for comprehensive national HCWF strategies that align diverse stakeholders and measures across sectors to stabilise the HCWF. There is also need for EU leadership to support and coordinate national efforts, and improve EU monitoring and research capacities. The HCWF crisis is far more complex than shortages may show. Organisational restructuring, effective skill-mix and integration of new groups and competencies, i.e., digital skills, and stronger investment in education are important measures to stabilise the workforce. Equally important are equity and gender equality, better working conditions, prevention of all forms of harassment and violence including on social media, and supporting HCWs' wellbeing and mental health.

This paper provides a synthesis of high-level recommendations and guidance for developing a HCWF crisis strategy, introducing a complex set of measurements that consider the needs of both health systems and individual HCWs, as well as interventions on different levels of governance and in different sectors. The EU has several tools at hand to promote these efforts, and is supporting EU projects that analyse the issue and contribute new knowledge.

National good-practice examples reveal novel approaches for stabilising the HCWF through transforming the health systems. Key strategies include strengthening community-centred services and primary healthcare to use resources more efficiently and reduce demand for care rather than solely focussing on increases in workforce supply. Further measures include, for instance, optimising resources through inclusion of migrants/refugees, investment in the education of international graduates, and regional monitoring and policy dialogues to improve real-time planning and connect policy and practice. These transformations could be facilitated by regulatory initiatives at European level.

Four main thematic types of recommendations are following from this report:

- Strengthening evidence-based policymaking and investing in HCWF monitoring and research;
- Improving policy implementation and strengthening governance and leadership;
- Transforming health systems to build sustainable and resilient workforces and systems; and
- Developing a European HCWF strategy to integrate efforts at EU and Member States level.

Introduction

The global health and care workforce (HCWF) crisis is threatening health systems in the European Union (EU) and globally. 20 EU countries reported shortages of physicians and 15 of nurses (OECD, 2024), affecting healthcare provision for the population and the working conditions of health and care workers (HCWs). Demographic change is a root cause of the crisis, creating a double jeopardy of decreasing supply of human resources and increasing demand for services. Exhausted health labour markets are the most visible and documented indicator, but the crisis is more complex. It is driven by multiple transformations, such as changes in population health needs, welfare state policies, and economic and political landscapes. Its impact on EU societies stretches beyond the health sector, hampering economic development, social cohesion and equity, and ultimately trust in governments and democracy.

The COVID-19 pandemic has exacerbated the problems but was only the tip of an iceberg, shedding light on longstanding under-valuation of HCWs and under-investment in education and work conditions (Wismar and Goffin, 2023).

The European Commission and Member States have taken action to respond to the problems, flanked by international organisations, professional associations and other relevant stakeholders. This has led to a significant improvement in data sources, more elaborated labour market monitoring and planning instruments, high-level policy recommendations, and some investigation in research projects. However, this is not enough. Actions often remain poorly connected and piecemeal work, while comprehensive health system transformations and effective governance and implementation strategies are poorly developed or even lacking.

This policy expertise aims to support the development of sustainable health and care workforces and resilient health systems in the EU. It provides an explorative overview of the major indicators and drivers of the HCWF crisis, and a synthesis of key policy recommendations with a focus on EU Member States and a European HCWF crisis plan. Drawing on existing knowledge, the study seeks to shift the focus from data and recommendations towards capacities for policy implementation and health system transformations. Selected good-practice examples on national or regional levels illustrate various efforts to improve workforce stability and, ultimately, health system resilience. It is shown that the EU has several tools at hand to strengthen leadership and can play an important role in supporting Member States as they navigate through this crisis.

Methods

A qualitative explorative approach was applied and an assessment of major HCWF indicators and policy recommendations carried out, drawing on secondary sources (public statistics; European policy documents, published research, national documents, websites, etc.) and expert knowledge.

Additionally, in-depth information was collected from selected country experts to illustrate good-practice examples, considering diverse interventions, workforce profiles and healthcare systems. The research is informed by health system and governance approaches (Greer et al., 2019).

What is known about the EU health and care workforce crisis?

Recent reports published by the OECD (2024) and WHO (2022a) have drawn attention to the HCWF crisis and provide comprehensive HCWF data and analyses. This is part of growing efforts in recent years to document, monitor and plan HCWF developments and align data sources, a trend that the COVID-19 pandemic further accelerated. However, the focus is still on quantitative data and the so-called regulated health professions (physicians, dentists, nurses, midwives, and pharmacists) with some additional data on carers/practising caring personnel (OECD, 2025a, 2024). OECD defines the category of carers as “Healthcare assistants in institutions (ISCO-08 5321) and Home-based personal care workers (ISCO-08 5322)”, excluding ‘informal carers’ and professionalised nurses (OECD, 2025b). Data are less standardised and more diverse for this group of lower-qualified HCWs. Information is also limited and scattered, sometimes even lacking, for other occupational groups (e.g., therapists) involved in healthcare provision, as well as for qualitative HCWF indicators.

A number of analyses and recommendations have recently been presented by EU Joint Actions and projects (BeWell, 2025a,b; HEROES, 2023; SEPEN, 2021), by the European Observatory on Health Systems and Policies key policy briefs (McPake et al., 2023; Williams et al., 2023, 2025; Ziemann et al., 2023), by an exploration of a European health workforce strategy (Wismar and Goffin, 2023; CPMD-EFN-PGEU, 2025), WHO reports and publications (WHO, 2022a, 2023a; Azzopardi-Muscat et al., 2023; Zapata et al., 2023), and some research articles.

Key definitions

Health and care workers and workforce – refer to the WHO (2022a) definition acknowledging all personnel involved in healthcare provision.

Governance – is the systematic, patterned way in which decisions are made and implemented (Greer et al., 2019).

Resilience – “is about the ability of a system to respond to unexpected and compounding threats”, including building healthy systems, organisations, and people who can respond, adapt and transform when faced with a shock (Greer et al., 2023:14).

Gender equality – considers all genders and intersectionality of gender and other inequalities, e.g., race/ethnicity, sexuality, age, profession (WHO-HSPR, 2023).

Profession – is not limited to a formal status but used in a broader and more inclusive sense, including all occupations involved in health and care service provision.

Country profiles and future developments: quantitative indicators of the HCWF crisis.

Over recent years, most EU countries invested in increasing the numbers of HCWs (WHO, 2022a) and improving HCWF planning (SEPEN, 2021; EC, 2015, 2016, 2021; HEROES, 2023; WHO, 2022b). However, these efforts still appear insufficient. Over one-third of physicians and a quarter of nurses in the EU are over 55 and will thus retire in the next decade (OECD, 2024; WHO, 2022a), while the average growth rate of graduates only slowly increased in the last decade, for instance, 0.5% per year for nurses (OECD, 2024). Human resources in the EU will on average decrease strongly in future, while demography increases demand for health and care services. Beyond these general trends, there are differences at national level that must be considered to develop effective and sustainable interventions. A country-comparative health workforce profile for the 27 Member States, based on selected indicators for physicians and nurses as the two largest and most comprehensively monitored professional groups (WHO, 2022a), illustrates strong variations and

divergent trends between countries and professions (Table 1). Future developments are therefore likely to change both the density and the composition of the HCWF in the EU.

These transformations in the HCWF not only have an impact nationally on health system resilience, they exacerbate existing inequalities in the EU and create additional ones. The retirement cohorts in relation to the annual inflows of new graduates highlight a widening future gap in the group of physicians and/or nurses in several countries. This may affect health systems with low HCWF density per population and low Universal Health Coverage (UHC) more strongly, for instance, Bulgaria, Greece, Estonia, and Lithuania, while some high-resourced health systems show more favourable trends, like for instance, Finland, Denmark, Ireland, and Sweden.

These trends are, however, not uniform and linear across countries and professional groups. In particular, less-well-resourced systems may increase the number of new HCWs entering the professions (in particular, medical and nursing graduates), as the examples of Romania, Croatia, Latvia, Malta, and Slovakia demonstrate, while some high-resourced health systems failed to sufficiently increase the inflow of graduates and are likely to worsen the gaps, as shown for Italy, Germany, and France. In Germany, for instance, a retirement bulk will cause a loss of about 45% of the entire physician workforce in about the next decade, while only 28 new graduates per 1000 practitioners per year enter the profession (WHO, 2022a, Table 1).

Countries invest unevenly in training physicians and nurses. Ireland and the Netherlands still focus on medical graduates, but several other countries follow a broader approach in line with international recommendations to use skills more efficiently and increase the number of nursing graduates (OECD, 2024; Maier et al., 2022). There is no ideal ratio of medical to nursing graduates and country contexts must be considered, but stabilising the nursing workforce and increasing the numbers is among the key priorities (EC, 2024; WHO, 2022a). Strong increases in the number of nursing graduates are documented for Romania, Croatia, Finland, and Latvia; in contrast, inflows are very low in Bulgaria, Czechia, Ireland, and the Netherlands. These trends must be assessed in relation to attrition, in particular, the retirement cohorts, and new annual inflows from HCWs from other countries.

The HCWF migration patterns also vary strongly between countries and between physicians and nurses, ranging from overall strong dependency on migrant HCWs in Ireland and Cyprus to low annual inflows of HCWs from other countries in Latvia, Estonia, Lithuania, and Bulgaria. Growing shortages and unequal attrition trends and self-sustaining capacities between countries will reinforce labour mobility within the EU and may also attract migration from third countries, creating new migration flows in the EU and globally. While labour mobility may have some benefits for individual HCWs, its impact on health systems is highly diverse and unequal between Member States; these developments may support host countries more strongly and threaten HCWF stability in sending countries (WHO, 2025; Kluge, 2025).

Knowledge on mobility and migration is overall poor, for instance, data are not broken down by EU mobility and third country migration, and outflow data are estimated from the number of requested certificates to practice abroad but actual numbers of leavers are mostly unknown. Robust monitoring and effective control mechanisms of the internal EU labour market (Wismar and Goffin, 2023) are lacking; the voluntary control mechanisms of the WHO Global Code of Practice (WHO, 2010) are not sufficient to respond effectively to EU mobility and diverse needs of health systems (Kuhlmann et al., 2025a; Williams et al., 2020).

For instance, countries, such as Italy, with currently low HCW intake from other countries but large retirement cohorts, must in future fill a huge gap in the HCWF. This may create new push-pull factors for HCWs in neighbouring low-resourced sending countries, for instance, Bulgaria or EU candidate countries.

Shortages in the HCWF increase gender inequalities in different ways. The health labour market is strongly gender-segregated with women accounting for the majority of nurses, carers, and midwives (OECD, 2024; WHO, 2022a; Eurofound, 2023) and among frontline workers (WHO, 2019). Women are thus affected by growing workload, stress, and emotional burden in higher numbers; this is reinforced by insufficient or lacking gender-specific support services (Ziemann et al., 2023). Shortages also affect women as service users disproportionately strong in maternity care, and in elder care due to women's longer life expectancy and higher morbidity.

Regional inequalities within EU countries will also be exacerbated, due to the maldistribution of human resources. The number of physicians per 1000 inhabitants is overall lower in rural areas and recruitment of new doctors more challenging due to decreasing attractiveness of these areas (Groenewegen et al., 2020), making rural and remote areas more vulnerable to shortages (WHO, 2022a; OECD, 2024). Regional imbalances and inequalities are not limited to countries with large and scarcely populated regions, i.e. the Nordics. They matter as well in small and densely populated countries, such as, for instance, Luxemburg or the Netherlands (WHO, 2022a), and might also be observed in socially deprived urban areas.

Table 1. Country-comparative health workforce profiles, EU-27

Country	Density [#] per 10,000 population	Ratio of physicians: nurses*	% of physicians aged >55	% of nurses aged >55	Graduates per year per 1000 practising physicians	Graduates per year per 1000 practising nurses	Annual intake of physicians from other countries	Annual intake of nurses from other countries	UHC Service Coverage Index
Austria	161.3	1 : 2,0	32.3	24.4	26	32	257	661	82
Belgium	149.9	1 : 3.4	44.0	14.0	52	41	483	567	85
Bulgaria	88.9	1 : 0.98	44.5	40.0	28	17	28	6	70
Croatia	107.2	1 : 1.97	26.4	11.6	44	87	n/a	n/a	73
Cyprus	100.9	1 : 1.31	25.0	2.0	12	26	309	n/a	79
Czechia	131.8	1 : 2.11	36.0	26.0	40	15	148	n/a	78
Denmark	148.0	1 : 2.39	30.3	27.3	54	44	246	77	85
Estonia	102.2	1 : 1.83	46.2	27.3	30	43	12	3	78
Finland	174.7	1 : 3.91	22.6	20.2	34	60	272	207	83
France	155.4	1 : 3.56	44.3	20.8	30	35	950	201	84
Germany	187.2	1 : 3.12	44.8	23.6	28	31	1349	7014	86
Greece	99.5	1 : 0.55	30.2	3.1	20	42	161	1	78
Hungary	99.6	1 : 2.1	45.0	16.7	50	38	123	53	73

Country	Density [#] per 10,000 population	Ratio of physicians: nurses*	% of physicians aged >55	% of nurses aged >55	Graduates per year per 1000 practising physicians	Graduates per year per 1000 practising nurses	Annual intake of physicians from other countries	Annual intake of nurses from other countries	UHC Service Coverage Index
Ireland	190.3	1 : 3.8	22.4	17.3	71	22	1017	2301	83
Italy	103.8	1 : 1.52	56.4	n/a	44	30	293	576	83
Latvia	77.5	1 : 2.15	47.4	34.3	72	70	2	1	72
Lithuania	124.9	1 : 1.74	39.8	34.7	45	28	10	15	70
Luxembourg	150.7	1 : 3.93	43.4	n/a	n/a	9	n/a	n/a	86
Malta	127.0	1 : 1.92	17.7	n/a	76	32	24	n/a	81
Netherlands	151.7	1 : 2.89	24.5	22.2	39	22	145	135	86
Poland	79.6	1 : 2.14	n/a	n/a	44	47	390	53	74
Portugal	126.8	1 : 1.33	28.6	13.1	30	38	357	n/a	84
Romania	111.1	1 : 2.32	26.9	10.1	79	125	224	7	71
Slovakia	97.9	1 : 1.58	34.8	10.0	47	37	n/a	n/a	77
Slovenia	138.1	1 : 3.14	28.9	20.4	41	28	69	n/a	80
Spain	108.8	1 : 1.33	32.0	20.9	30	35	4036	617	86
Sweden	159.3	1 : 2.51	29.9	29.0	31	40	723	185	87

Source: Author's own table based on WHO, 2022a; #density is based on the sum of physicians, nurses, midwives per 10000 population; * own calculation based on WHO, 2022a; n/a = not available; for further information, see WHO, 2022a.

Workforce organisation, education and working conditions in healthcare: qualitative crisis indicators

Maldistribution and inefficient use of skills and talent are one of the root causes of the HCWF crisis. OECD analyses (2016) and other research evidence (Maier et al., 2022) suggest that changes in the skill-mix and task-shifting together with new professional groups (e.g., Nurse Practitioners), teamwork approaches, and intersectoral coordination can help to make use of available resources more efficiently. "These innovative models of care may include care integration, digitalisation, teamwork, community involvement, healthcare delivery approaches like hospital-at-home services, to name a few" (Wismar and Goffin, 2023). Community involvement and the building of community health systems embody strong transformative capacities for re-organising health systems and strengthening multisectoral (or transsectoral) and interprofessional models that are under-used and under-researched in the EU (Kuhlmann et al., 2025c; EU-THCS, 2025).

The COVID-19 pandemic drew public attention towards various opportunities for transforming the HCWF (Brau et al., 2022, 2024; Kuhlmann et al., 2021; Williams et al., 2023), demonstrating that "changes to scope of practice and the introduction of team-based roles are possible and central to an effective, sustainable

workforce" (Ziemann et al., 2023). Pandemic innovations could be retained and expanded, for instance, flexible care pathways and use of e-Health technologies (Greer et al., 2023). However, transformations in workforce organisation and skill-mix often meet with resistance. Professional 'boundary work' and 'silo approaches' (Correia et al., 2024) – typically for professional hierarchies that place medicine on the top and care work at the bottom – are still prevalent in many areas, hampering teamwork and multi-professional collaboration.

Boundaries not only exist in professional cultures and the minds of (some) HCWs, they are embedded in the education and governance of the HCWF. Interprofessional programs and career paths are still poorly established or lacking. There is an overall need for stronger investment in educating HCWs to develop new competencies and adapt to new demands in the health sector; this could prevent attrition and motivate active engagement in the transformations. The professional competencies frameworks must be revised and updated to respond to new and emergent health policy priorities as well as population health needs (Kuhlmann et al., 2025b). Further important measurements include an expansion of upskilling and reskilling (BeWell, 2025b; Williams et al., 2025; Schmidt et al., 2025; Wismar and Goffin, 2023; EP, 2025c), for instance, in e-Health, health security, and culturally sensitive care provision (e.g., knowledge of, and responsiveness to the health needs of migrants and refugees). Education should also consider "health equity and encourage professionalism that incorporates concern for the individual and the community" (Frenk et al., 2022:1539). Upskilling and reskilling of personnel may compete with daily work and challenge service providers. However, it is important to understand that investment in HCWs is not a cost but a benefit and prerequisite of future HCWF efficiency and effectiveness of service provision.

New demand on education also entails a critical review of the regulatory architectures of Member States and the EU. One important step to support the organisational transformations and draw lessons from the COVID-19 pandemic would be to expand the EU Qualification Directive (Directive 2005/36/EC; Directive 2013/55/EU) towards a broader range of professional groups (Wismar and Goffin., 2023). The development of "skills-standards and training curricular that make the skills of health workers, especially in cross-border healthcare better comparable" and "EU-wide training schemes for continuous professional development which ensures that skill-gaps can be assessed and closed in a timely manner" (Wismar and Goffin, 2023:25) would be further important recommendations. EU-wide regulatory measures could also promote "voluntary cross-border collaboration in the health workforce, with a view to specialist training", supporting especially small EU countries are not able to provide all specialisations (Wismar and Goffin, 2023:25).

Other important measures to improve workforce stability include a review of salaries and remuneration schemes of HCWs. Some countries have increased salaries for physicians to improve retention and counteract migration, especially in Eastern Europe (Eurofound, 2023), but less information is available for nurses (EU, 2024). Salaries and remuneration schemes must be critically reviewed from a gender equality perspective and action taken to reduce a persisting gender pay gap (ILO, 2022; OECD, 2024) within professional groups. Women "face a 24 percentage point pay gap (in the case of mean monthly earnings) compared to men across the health and care sector" (Ziemann et al., 2023:23). This gap is created, for instance, through poor recognition of women's qualifications, lack of career chances, and an overall higher share of caring responsibilities (WHO, 2024). Inequalities are also result from the devaluation of care work that causes unfair remuneration schemes and salaries for nurses and carers, while physicians and technology-based HCWs are privileged, to name only few examples.

While fair salaries are important, “improvements must go beyond remuneration” (Wismar and Goffin, 2023) and set the focus on working conditions (EP COVI, 2023). Decent work must be a priority issue to improve recruitment and retention and to prevent “staff burnout and retention difficulties” (EP, 2025a,b,e; see also, Azzopardi-Muscat et al., 2023; Zapata et al., 2023). Long working hours and overtime work, high workload and insufficient staffing levels, and new health risks during the pandemic have been identified as major risks of attrition (Wismar and Goffin, 2023). Addressing the lack of career support, harassment and violence, and poor child care facilities and family support services is also important to improve retention, underscoring the gendered dimensions of the crisis (Kluge and Azzopardi-Muscat, 2023; WGH, 2023; Morgan et al., 2022). It is also likely that poor working conditions affect migrant HCWs and other minority groups more strongly (e.g., Magri et al., 2022), but systematic analysis and comprehensive data are missing for the EU. Action must be taken to improve equity and introduce a coordinated strategy, linking improved working conditions and worktime flexibility, career development, social support services, access to individual mental health support, and social inclusion, diversity and equality measures.

Health, well-being and protection of the health and care workers: the ‘human side’ of the crisis

The HCWF debate has, for many years, focused on labour market statistics, planning and forecasting goals, and service delivery needs, while the ‘human face’ (Kuhlmann et al., 2020a) of the health labour market and the responsibility to ‘care for those who are caring’ have often been ignored. The COVID-19 pandemic highlighted the health needs of HCWs, thereby opening them up to a public debate. Threats to the health and wellbeing of HCWs increased significantly during the pandemic and this trend seems to continue (Kuhlmann et al., 2021, 2024b). The challenges are caused by a cumulation of risks in different areas: poor working conditions, growing violence and aggression in societies including on social media, persisting gender inequalities, insufficient protection of HCWs including poor legal action and mental health support services.

Violence against HCWs may serve to illustrate the multi-faceted threats and the intersections between individual and structural dimensions of HCW wellbeing and protection, calling for a coordinated strategy to align legal action, policy measures and organisational interventions (EC, 2025e). For instance, violence includes physical and verbal attacks of mentally-ill, psychiatric, or drunken patients, and relatives/friends accompanying patients; the problem is not new, but the attacks increased in numbers and severity. A second type of violence relates to all forms of sexual and gender-based aggression, mostly affecting women but also some men. Third, HCWs are affected by a racialised dimension of violence, that threatens migrant HCWs and other minority groups. A fourth type of violence targets HCWs in emergency care and rescue services, and highly politicised healthcare (e.g., vaccination teams during the COVID-19 pandemic, or providers of care for refugees) treating them as representatives of a political system, similar to the police, but governments do not provide the necessary legal protection for HCWs (Kuhlmann et al., 2023).

International organisations and professional associations call on policymakers to take action to improve violence prevention and protect HCWs (ICN et al., 2024; CPME-EFN-PGEU, 2025; WHO, 2023a), and research evidence highlights the threats of violence to HCWs and workforce stability (Zapata et al., 2023,2024b). However, evidence does not easily translate into action (Correia et al., 2025; Kuhlmann et al., 2024a) and a systematic strategy is still lacking. A lack of evidence-based policymaking has complex and diverse reasons, including politics and interest-driven priorities but also structural deficits. The latter one could be solved through improving governance and creating regulatory frameworks and funding programs to support knowledge transfer and translation.

Effective ad-hoc measurement could be policy dialogues connecting research, policy and practice; long-term efforts should aim to institutionalise these connections (OBS/HEROES, 2025; Kuhlmann et al., 2025d).

Failure to effectively protect the health and wellbeing of the HCWF has strong gendered effects; it will exacerbate both the HCWF crisis (Kluge and Azzopardi-Muscat, 2023) and gender inequalities in the HCWF society. For instance, high workload, exhaustion and emotional burden may affect women nurses most and increase mental health risks (WGH, 2023; Ziemann et al., 2023; Morgan et al., 2022); a large US study reports a suicide rate twice as high as in the general population (Davis et al., 2021). There is an urgent need for better data on how the HCWF crisis impacts in gender equality in the EU and how this intersects with other social inequalities. For instance, the vast majority of caring personnel (OECD, 2025a) are women and many of them are migrant workers, facing a double jeopardy of being a migrant worker in a strongly sex-segregated health labour market that pushes women and caring tasks to the bottom (Kuhlmann et al., 2020b). Added to this, discrimination experiences are often reinforced through prejudices on the side of the patients and society at large.

What policy recommendations and good-practice examples are available?

Several policy recommendations have been launched and measures taken by Member States, the EU and international organisations to respond to the crisis, but no systematic overview is available and evaluations are largely lacking. The following section provides a synthesis of high-level policy recommendations, EU interventions and Joint Action projects, and selected practice examples on national level to illustrate opportunities and benefits of knowledge exchange and explore existing governance and implementation gaps.

High-level policy recommendations

Growing awareness and attention to the HCWF crisis broadened the scope of recommendations and stakeholders involved. The proposed actions move beyond the 'planning-and-increasing-numbers' policy that has long dominated the HCWF debate, now acknowledging system-based, organisational, and individual needs as well as multi-level governance action. Bringing the needs of a person behind every worker into the debate marks a shift in HCWF policy (Kuhlmann et al., 2020a), that gained currency during the COVID-19 pandemic and is reinforced through the crisis debate.

Table 2. Synthesis of high-level policy recommendation to strengthen the HCWF in Europe: policy areas and interventions

Policy areas	Interventions, selected
Education	<p>Increase investment; align education with population needs and service requirements; strengthen continuing professional development, integrate new knowledge and competencies (WHO, 2022a; OECD, 2024; EP, 2025c); establish EU-wide training schemes (Wismar and Goffin, 2023).</p> <p>Improve digital skills among the HCWF (WHO, 2023a; CPME, 2025).</p> <p>Prepare the workforce for technological change; strengthen work-based learning and EU tools, e.g., the European Education Area initiative, funding under Erasmus+ and the European Social Fund Plus (ESF+) (EP, 2025c).</p>
Information systems/ planning	<p>Strengthen health information systems for better data collection and analysis (WHO, 2022a; Zapata et al., 2023).</p> <p>Establish strategic HCWF planning (WHO, 2023a), and EU planning and forecasting mechanisms to support Member States (Wismar and Goffin, 2023).</p> <p>Establish minimal control mechanisms of an internal EU labour market; develop EU-wide electronic health professional registers including health professional cards and employment data; monitor health workers from third countries (Wismar and Goffin, 2023).</p>
Recruitment/ retention	<p>Improve workplace conditions to attract and retain talent (OECD, 2024; EC, 2025e).</p> <p>Implement the EU strategy in attracting and retaining nurses (EC, 2024; EP, 2025a).</p> <p>Develop strategies that attract and retain HCWs in rural and remote areas; implement priority policy actions to improve retention to stop attrition and intention to leave (WHO, 2022a; Zapata et al., 2023).</p> <p>Encourage the use of measures shown to work at different stages of careers and in different locations, including those impacting on working conditions, career progression and provision of other support; embrace zero tolerance of violence (WHO, 2023a).</p>
Migration, mobility	<p>Target underutilised labour and integrate migrants and refugees, through implementing streamlined systems to assess and accredit qualifications gained abroad and offering short, modular training to deliver any additional content required for accreditation in the host country, as well as language training (Eurofound, 2023).</p>
Digital tools	<p>Expand the use of digital tools that support the HCWF (WHO, 2022a).</p> <p>Implement a new declaration on vocational education (VET) adopted in 2025 to continue the Copenhagen Process and align policy actions and VET reforms with new developments in the labour market and technological developments, such as artificial intelligence (EP, 2025c).</p> <p>Develop a Competitiveness Compass for the EU that applies AI to healthcare (EP, 2025a).</p> <p>Develop a EU-wide electronic health professional register, including health professional cards and employment data to monitor the EU labour market (Wismar and Goffin, 2023).</p>
Organisation of work	<p>Delineate efficient division of roles, support multiprofessional HCW teams; optimise performance of HCWs, use capabilities to the full extend (WHO, 2023a).</p> <p>Optimise the use of skills within new models of care to meet rising demands with limited resources, while also supporting the digital and green transitions (OECD, 2024).</p>
Working conditions	<p>Improve working conditions, support more flexible work arrangements (WHO, 2023a; EC, 2025a,d).</p> <p>Decent working conditions for all workers in the care sector; measures to ensure decent minimum wages, and a maximum number of work hours (EP, 2025a; EC, 2025e).</p>

Policy areas	Interventions, selected
	<p>Improve salaries, prevent violence (Zapata et al., 2023; EC, 2025e).</p> <p>Improve implementation of the EU Working Time Directive (EC, 2025a).</p>
Support of HCWs	<p>Protect and improve health and mental well-being; create work conditions that promote a healthy work-life balance; care for HCWs (WHO, 2022a, 2023; Zapata et al., 2023; EC, 2025e).</p>
Gender equality, equity	<p>Take action to eliminate the gender pay gap, value unpaid care work, promote gender balance in all decision-making positions and service delivery; take gender- and age-based risks and needs into account, such as burn-out, violence, workplace safety, and child and family care (WHO, 2023a).</p>
Governance	<p>Promote Social Dialogue and collective bargaining (EC, 2025e).</p> <p>Build leadership capacity for planning and governing (WHO, 2022a).</p> <p>Ensure research and data are used to inform policymakers (WHO, 2023a).</p> <p>Create a coherent framework for addressing long-term care workforce challenges (recognition of skills; working conditions); training and certification standards for EU healthcare professionals; recognition of foreign-trained qualifications (EP, 2025a; WHO, 2023a).</p> <p>Involve all stakeholders, including representatives of the HCWF, their employers, national ministries of finance and education, international NGOs, trusts and foundations; promote gender-balance; ensure research evidence and data are used to inform policy (WHO, 2023a).</p>
Public investment	<p>Increase investment in education, development and protection; optimise the use of funds through innovative workforce policies (WHO, 2022a).</p> <p>Promote performance and quality of care; promote environmentally sound solutions (WHO, 2023a).</p> <p>Innovations to increase HCWF productivity; additional investment equivalent to about 0.6% of GDP on average across EU countries compared to pre-pandemic levels is estimated to strengthening the HCWF to build resilient health systems (OECD, 2024).</p>
EU investment and leadership	<p>Create an EU legal framework specifically on and for health professions; build an EU labour market for health workers that is aligned with health system goals; support Member States to transform their health systems by introducing new models of care; establish EU-wide training schemes for continuous development which ensures that skill gaps can be addressed and closed (Wismar and Goffin, 2023).</p> <p>Invest in research and action-oriented research to support HCWF developments; make use of EU initiatives (e.g., Erasmus+) and results from EU projects and Joint Actions (Wismar and Goffin, 2023).</p> <p>Review existing EU legal frameworks regulating the health professions (e.g., Qualification Directive); take decisive action as demonstrated by the EU's COVID-19 health system responses; align legal and budgetary instruments impacting the HCWF with health system goals; use the EU's budgets for health system development to address the HCWF crisis (Wismar and Goffin, 2023).</p> <p>Review the Recovery and Resilience Facility (RRF) with a focus on EU HCWF shortages and capacity building; scale-up the Social Cohesion funds to improve recruitment and retention of healthcare professionals in rural and medically underserved areas (CPME-EFN-PGEU, 2025).</p> <p>Develop EU policies on zero-tolerance to violence against healthcare professionals; develop EU policies on safe staffing levels; ensure safe working conditions and fair remuneration and strengthen monitoring and compliance with existing EU legislation such as the European Working Time Directive (CPME-EFN-PGEU, 2025).</p> <p>Unite EU social partners (EC, 2025e).</p>

Source: Author's own table and selection, based on WHO, 2022a, 2023a; EP/EC documents; Eurofound, 2023; CPME-EFN-PGEU, 2025; Wismar and Goffin, 2023; selected interventions are cited verbatim or paraphrased from the original documents.

EU tools to support workforce development and build capacity for an EU strategy

The EU has various tools at hand to support capacity building for a sustainable HCWF and resilient health systems through regulation, funding, research, and governance investment in the HCWF or relevant sectors making use of co-benefits (Greer et al., 2024; Wismar and Goffin, 2023). Opportunities exist on different levels. Measurements may be implemented directly on the EU-level, such as, for instance, the Qualification Directive (Directive 2005/36/EC; Directive 2013/55/EC) and the campaign for nurses (EC, 2024) or through supporting Member States with collaborative measures and expertise (e.g., Joint Actions SEPEN, 2021; HEROES, 2023) and/or economically (e.g., EC, 2025b).

The Joint Actions seek to connect different stakeholders with policy and practice, and stimulate knowledge exchange between Member States. Most efforts have focused on planning and forecasting (e.g., EC, 2015a, 2016, 2021; SEPEN, 2021; EC, 2021; HEROES, 2023) and significantly improved tools, data sources, and monitoring systems (for an overview, see OBS/HEROES, 2025). More recently, novel issues receive greater attention, for instance, artificial intelligence (AI) and the well-being of HCWs. Comprehensive recommendations have been developed on how to prepare the HCWF and ensure the necessary competencies to respond to new demands (BeWell, 2025a,b; Williams et al., 2025; Schmidt et al., 2023). Other relevant actions include the so-called 'Medical Deserts' project (Brinzac et al., 2024; Dubas-Jakóbczyk et al., 2024) that set the focus on underserved areas and regional inequalities to highlight problems, including in comparably high-resourced health system, and help optimise resource allocation.

One important area still in need for greater attention is equity and gender equality in HCWF policy development. This must include a critical re-assessment of existing planning and evaluation tools through a gender equality and diversity lens and, more generally, capacity building for gender-transformative HCWF policy. Gender-transformative policy approaches aim at wider system transformations – in our case, a more sustainable workforce and resilient health systems – through improving gender equality. For instance, "tailored gender-responsive measures to maintaining HCWF capacity" during the COVID-19 pandemic (Ziemann et al., 2023) provide an example of this approach. These measures could include, for instance, improving the participation of women in decision-making bodies, increasing the number of women in leadership positions, and ensuring a gender mainstreaming approach in policy-making and planning, as well as support for frontline HCWs with caring responsibilities.

The EU has comprehensive tools at hand to promote and strengthen these transformations. The EU Gender Equality Strategy provides a mandatory legislative framework for defining policy priorities and intervention strategies (EC, 2025c), as well as gender mainstreaming tools to integrate the gender perspective into all other policies (EIGE, 2025), and specific measures for the empowerment of women (EC, 2025c). The Strategy includes several key objectives that are indicative for stabilising the HCWF, for instance, "new EU-wide work-life balance rights for parents and carers", and "the European Care Strategy, linked to new targets on early childhood education and care to enhance women's labour market participation" (EC, 2025c). Measures for "flexible working arrangements" and "making better use of European funds to improve provision of formal care services", among others, seek to increase labour market participation of women and could thus benefit the HCWF with its high proportion of women (EC, 2025d).

No systematic overview of existing EU tools and measurements is available to support the development of a sustainable HCWF and resilient health systems in the EU and how they are used.

However, recommendations prepared by professional organisations (e.g., CPME, 2025; CPME-EFN-PPGEU, 2025) and the European Observatory on Health Systems and Policies (Wismar and Goffin, 2023; Greer et al., 2023; Maurer et al., 2023) highlight capacities for action. Wismar and Goffin call for “a thorough review of the EU legal frameworks” and introduce a set of recommendations (Table 2, last column) that may provide helpful guidance for developing an EU strategy. Most importantly, “attention to the pressing need for addressing the HCW crisis” must be aligned “with the ongoing transformations within healthcare systems” (Wismar and Goffin, 2023:25). The expansion of regulatory capacities during the COVID-19 pandemic and the adaptation of a pharmaceutical strategy in 2023 demonstrate the feasibility of stronger EU leadership and governance, and how the EU can drive the building of a resilient HCW and take the next step to “push for an EU HWF strategy” (Wismar and Goffin, 2023:26).

National good-practices: selected case studies

No country has solved the HCWF crisis and responded effectively to the challenges, but more complex measurements are gaining ground in several Member States. Some promising examples can be identified, although innovative policy approaches are mostly in a development stage and a coherent HCWF crisis plan is missing. The selected cases (for limitations, see appendix) illustrate a range of different tools and policy approaches to optimise the stability of the HCWF in the EU. Several of the national measurements highlight a need for a coherent HCWF crisis strategy and the benefits of a European approach and action.

Transforming the healthcare system to respond to the HCWF crisis

Sweden is an interesting example of emerging efforts to transform the system rather than the HCWF. The decentralised health system is connected to a community-centred approach with high UHC, strong primary healthcare, and comparably high density of HCWs, typical for a Nordic-type health system and welfare state. Over the last two decades, the numbers of physicians, nurses and other HCWs increased strongly, yet it is recognised that the national labour market is exhausted, and the health sector is fishing from the same pool as other relevant welfare sectors in need of personnel. A new long-term policy approach titled ‘national learning system’ is currently piloted that strengthens the regulatory capacities of the regions and aligns the various stakeholders and resources. Four Swedish regions are piloting an integration of ‘learning processes’ into the system to explore ‘solution spaces’ and govern the flow of resources more effectively between sectors (Socialstyrelsen, 2025). Digitalisation and information-driven decision-making play an important role in the new strategy. Currently, a regional case study (Region Halland, 2025) explores the impact in the HCWF and the benefits for workforce stability. New policy directions and regional pilots would also greatly benefit from enhancing international knowledge exchange and collaboration.

The Netherlands also introduced system-based transformations as a response to the HCWF crisis (Schuurmans et al., 2021, 2023). The Dutch health system is based on a social health insurance system with strong corporatism and civil society involvement, but known for its innovations and increasingly combines various governance approaches. The HCHW is comparably well-staffed with an increase in numbers over recent years, strongest for physicians and midwives; attrition through retirement cohorts is modest (WHO, 2022a, Table 1). The introduction of a new policy approach started ten years ago with the so-called ‘participatory society’ policy. It marks an important shift in welfare state policy, that seeks to manage the HCWF crisis through decreasing the demand for services.

Citizens are encouraged to stay at home as long as possible, using their own networks as the first point for help and only asking for professional help if no other sources are available. In 2018, the 'reorganisation of care' policy enhanced further system transformations targeting demand rather than supply-side interventions. This policy puts the community in the centre of transformations, arguing that reorganising community settings is more effective than centralised governance and action. One major aim is to strengthen intersectoral collaboration; for instance, collaboration between General Practitioners (GPs) and specialists should be improved, and specialists should be involved more closely in providing services directly nursing homes.

The new community-centred governance approach and system re-organisation challenge a more centralised and corporatist regulatory architecture of the Dutch system. However, this bottom-up experiment is supported by the authorities although it does not sit easily with the regulatory structure. For instance, the government has set up a well-resourced large funding program for evaluation research (including implementation). It might be funded differently, e.g., by the Regions, insurers, and government, but involves the Ministry of Health and follows an overarching aim to help regions to make the requested transition towards community-centred care provision.

In both countries, the health system transformations are ongoing processes and the benefits (or opposite results) of these dynamics for the HCWF not fully clear, but the strengthening of community-centred governance and care provision may entail novel solutions to improve workforce stability through reducing demand for care and optimising resource allocation. However, they must be flanked by coherent transformations in the education systems to train and prepare the HCWs and create new occupational groups of community-centred health workers, that may serve as a bridge between health and social services; these groups may include specialised community nurses or social workers, as well as a wide range of other groups with multi-professional backgrounds and diverse competencies that serve the health of the people in the community and are employed by the community (see also, Kuhlmann et al., 2025c). Most importantly, transformations create a new need for governance and EU regulation. For instance, the Dutch policy opens new spaces for private entrepreneurs in less strongly regulated community-centred service provision, often appearing to be national actors but operating on EU level. These developments call for a European response to adapt existing and establish new monitoring systems, improve transparency, and strengthen regulatory measures for internationally and EU-wide operating private firms in the health sector.

Strengthening primary healthcare and local service provision and supporting informal carers

Portugal's National Health Service (NHS) has a strong primary healthcare approach and a HCWF density in a middle range with strong increases in the past and comparably moderate size of retirement cohorts. In particular, the annual inflow of nursing graduates is high and the percentage of nurses aged over 55 low (WHO, 2022a, Table 1). The country introduced important health system measurements to improve HCWF stability. Strengthen primary healthcare, local service provision, and support for care givers are key elements that are combined. The creation of Family Health Units (Unidades de Saúde Familiares – USF), comprising multidisciplinary teams, has been a major primary care reform. It highlights a novel approach that focuses on reorganising service delivery to make more efficient use of existing resources. This approach prioritises the demand side by increasing discretion of the teams and introducing performance-based incentives.

A second important measurement is the reform of Local Health Units (Unidades Locais de Saúde – ULS), launched in 2024, which seeks to integrate hospital, primary, and community care under a single governance structure. Similar integrated approaches have been piloted through Local Health Systems (Sistemas locais de saúde), which bring together different branches of the NHS, private and social-sector providers, and even school health promotion agencies.

A third innovation is the Informal Caregiver Statute (ICS) introduced in 2019, which formally recognises and supports family caregivers, granting them rights, financial assistance, and access to respite care, thus acknowledging the importance of informal care from a health system perspective. It distinguishes between principal caregivers, who live with and provide continuous unpaid care to a dependent person, and non-principal caregivers, who offer regular but not permanent care. Initially implemented through pilot projects in 30 municipalities, the ICS was later scaled nationally, supported by regulatory decrees and an intersectoral monitoring commission. Its primary aims are to reduce caregiver burden, improve the quality of home-based care, and enable dependent individuals to remain in their communities, thereby reducing pressure on hospitals and long-term care institutions. Although promising, the ICS's evaluation has revealed mixed results. The pilot phase confirmed its potential to improve caregiver well-being and foster coordination between health and social services, but it also exposed challenges (e.g., low levels of formal registration, administrative barriers, uneven implementation across regions). While the ICS provides a robust framework for valuing and supporting informal care, its long-term effects on the HCWF and health system sustainability, equity, and cost-effectiveness remain to be fully assessed, underlining the need for continued monitoring and adjustment.

The transformative efforts are evolving measures, that might not be sufficient and the implementation uneven. However, the focus on primary healthcare and local capacities (WHO, 2023b) and the embeddedness in existing governance structures and provider institutions make the policy measures more robust and increase acceptance and feasibility.

Using regional labour market monitoring and multi-stakeholder policy dialogues to improve workforce stability

Germany's workforce density is among the highest in the EU with a continuous increase in HCW numbers over recent years. Yet future workforce stability is strongly challenged by attrition of large retirement cohorts and insufficient investment in education and self-sustainment (Table 1, WHO, 2022a). The federalist and decentralised health system with its sectoral and professional fragmentation has long ignored the importance for a coherent national health workforce planning and monitoring system. In this situation, a regional labour market monitoring approach may provide ad-hoc solutions. A multi-professional regional HCWF monitor comprising 18 professional groups was established in 2010 under the authority of the federal state of Rhineland Palatinate in cooperation with researchers. It served as a framework for establishing policy dialogues to align labour market, education and provider demand with supply data, feed evidence back into practice to strengthen implementation, and respond effectively to an increasingly dynamic situation in health labour markets and populations (Rhineland Pfalz Ministerium, 2025; Kuhlmann et al., 2016). The monitoring project is currently on hold due to changes in the Ministry, highlighting the weak points of regional projects and funding programs.

The Nursing Monitor of the federal state of Hesse follows a similar approach but is (currently) limited to nurses (Hessisches Ministerium, 2025). It connects relevant stakeholders in the region and is linked to a European Network on Regional Labour Market Monitoring (EN-RLMM, 2025). Regional HCWF monitoring projects highlight effective and cost-efficient interventions that build capacities for participatory intersectoral governance and policy implementation to improve workforce stability regionally (see also, EN-RLMM, 2025). Yet the transformative capacities are more limited and uncertain, as a coherent national strategy and governance framework and sustainable funding are missing.

Optimising HCW resources and integrating migrants and refugees

Czechia's workforce density per population is positioned in a middle range of EU countries. The attrition caused by retirement cohorts is high, but may partly be compensated for physicians through the inflow of graduates; the situation is worse for nurses, as the inflow of nursing graduates is among the lowest in the EU. The government seeks to optimise the resources through integrating migrant and refugee HCWs. Official statistics do not distinguish refugees from other foreign residents, but Czechia is among the EU countries with high inflows from Ukraine refugees after the Russian war and it can be assumed that HCWs are a relevant group.

Since 2022, around 2,100 Ukraine HCWs have entered the Czech health system, often employed in lower positions than their original qualifications would allow, and around 700 physicians received permission for supervised practice (MoH, 2024). Data from 2023 and 2024 show high demand for the recognition process. In 2023, 852 physicians, dentists and pharmacists from Ukraine and 379 nurses and allied health professionals applied for the recognition process. In 2024, in total 837 candidates, a majority from Ukraine, registered with pass rates of 68% for physicians, 52% for dentists, and 75% for pharmacists (IPVZ, 2024).

Several measures have been taken to improve integration of Ukraine HCWs, combining top-down governmental policies, bottom-up initiatives from professional associations, and external support provided by international organisations, most notably UNICEF and the WHO. For instance, the Society of General Practice allocated 1 million CZK (approx. 41,000€) to support the employment of Ukraine physicians as practice assistants in primary care practices. The integration enabled the placement of more than 20 Ukraine physicians, mostly women, in GP/primary care practices and facilitated healthcare provision for thousands of refugees. The program has strong benefits for all stakeholders: as patients, Ukraine refugees could communicate in their native language; as HCWs, Ukraine physicians gained easier entry into the Czech health system; for the GP practices the workload decreased and communication improved; and the state benefited as refugee physicians became taxpayers instead of relying on social benefits.

This example highlights three things: first, investment in the integration of HCW refugees and migrants can be efficient and contribute temporarily to workforce stability, and these migrant physicians could play a key role in ensuring healthcare provision for other migrants from the same countries. Second, Ukraine HCWs are often not employed according to their qualification, and the long-term use of their competencies and the effects on the HCWF are not clear. Third, the policy decisions are not data-driven: the integration of Ukraine physicians is more strongly supported, but the need is strongest for inflows of nurses. A coherent HCW strategy would help to optimise the use of available resources.

Increasing HCWs' salaries and establishing international education and training

The Romanian health system shows a workforce density positioned in a lower-middle range in the EU and a strong increase in the numbers of physicians (27%) and nurses (21%) in recent years (WHO, 2025: Fig. 65, Fig. 66). The expected attrition caused by retirement cohorts is moderate for physicians and low for nurses (WHO, 2022a, Table 1). However, Romania has been strongly challenged by high out-migration, especially of physicians. The government responded with two important measurements to improve HCWF stability. Firstly, salaries were increased significantly, helping reduce high out-migration. While some positive effects were visible, the efforts may not be sufficient if not connected to wider innovation (more generally for other Eastern EU countries, see Eurofound, 2023).

Secondly, education was expanded and transformed to attract international students, making Romania an important European producer especially of international medical graduates (IMGs) (Ungureanu and Socha-Dietrich, 2019; Zapata et al., 2025; WHO, 2025). Internationalisation of the education system has increased the quality of education and Romania's academic reputation, and the country may also benefit from tuition fees. However, successes in increasing the numbers of IMGs should not distract from the necessity to train sufficient physicians for the domestic labour market and invest in retention, following WHO's call for "investment in domestic training and retention" (WHO, 2025). One key problem is the disconnection between education and health policy, highlighting the importance of intersectoral governance.

The example demonstrates some benefits for HCWF stability and for the education system, but the sustainability and wider health system benefits and transformative capacities are currently not fully clear.

The case study also brings new challenges for national HCWF planning into perspective, not only for the sending but for the receiving countries in the EU. Most countries regulate the number of physicians that newly enter into the profession via a numerus clausus for medical training. The IMGs remain outside this planning procedures and it is not fully predictable, how many return to the sending countries. With an increase in education and training facilities for IMGs in some countries, the mobility flows in the EU get stronger and more dynamic, and national planning less reliable. Data on outflows are generally poor (Eurofound, 2023; OECD, 2025a; WHO, 2025) and the IMGs emerge as an important new area in need of EU monitoring. A single country cannot solve the challenges and close the data gaps (see also, Wismar and Goffin, 2023).

Policy recommendations

Action has been taken by the EU and Member States to respond to the HCWF crisis. Data collection and planning significantly improved (WHO, 2022a,b,c; OECD, 2024, 2025; SEPEN, 2021; HEROES, 2023; OBS/HEROES, 2025) and more comprehensive policy recommendations are now available, taking qualitative dimensions such as working conditions, mental health, and protection of the HCWF into account. However, major challenges remain and the HCWF crisis has still not received the priority it urgently needs. Scaling-up efforts to increase the number of HCWs is not enough and may not be feasible any longer in Europe's exhausted labour markets and economies. Large-scale transformations of health systems and stronger leadership and governance are needed to build sustainable workforces and resilient health systems. Four major areas are emerging from the analysis that should be prioritised in future HCWF policy and strategies.

Strengthening evidence-based policymaking, building capacity for HCWF research

Data and methods remain weakest precisely in those areas that are highly relevant for future HCWF policy, calling for a critical review and novel methodological approaches (Bernini et al., 2024; Rees et al., 2025; EN-RLMM, 2025; OECD LEED, 2025). Inclusion of carers has significantly improved, but data are still focused on the so-called regulated professions. Relevant professional groups are largely ignored, for instance, public health professionals and specialised nurses, and growing need for new experts with digital, green/environmental-sensitive, or community-centred skills. The lack of data is especially critical in areas with strong transformative capacities for building a future HCWF, such as primary healthcare and community-centred workforce development (Kuhlmann et al., 2025; EU-THCS, 2025), and for indicators that document inequalities, such as gender, migration, and regional distribution. For instance, data on outflows are poor or missing (e.g. emigration, dropout, retirement) (Bernini et al., 2024) and mobility and migration analyses increasingly challenged by “a complex web of movements and often in multiple directions” (Kluge, 2025). Further important knowledge gaps exist due to a lack of evaluation of the various measurements, hampering evidence-based policymaking (Eurofound, 2023:4).

More generally, HCWF research is poorly developed and specific programs are mostly lacking on EU and national levels. As an academic field and career orientation, HCWF research is, at best, in its infancy (Kuhlmann et al., 2018). Some meta-review studies exist on the lessons learned from the COVID-19 pandemic (e.g., Williams et al., 2023; Caffrey et al., 2023; Ziemann et al., 2023), but information on qualitative dimensions of the HCWF crisis is mostly taken from national case studies and small-scale research. Building capacity for HCWF research and closing existing gaps in data are pre-requisites of evidence-based HCWF policymaking. Coordinated investigations in funding programs and infrastructures must therefore be integrated in the HCWF priority agenda, nationally and on EU-level, to establish HCWF policy as an academic field to improve research and training of professional experts.

Improving policy implementation, building capacity for institutions and governance

Implementation is the elephant in the room. Knowledge has improved on *what* has to be done to counteract the crisis, as the recommendations illustrate (Table 2). Very little attention has been paid to *how* this can be done (implementation, governance, and capacity building for institutions) and, importantly, *who* (actors) should do it. Effective policy implementation needs political will and leadership from the top to “set an agenda for HCWF development across the whole-of-government and the whole-of-society” (Caffrey et al., 2023). Building capacity for institutions that govern and organise the HCWF effectively is key to respond to the HCWF crisis (for more information and an overview, see, OBS/HEROES, 2025; Kuhlmann et al., 2025d). Alliances with other sectors, in particular, with the education sector, can increase capacity for long-term solutions. It is therefore important to create a new mindset that no longer considers investments in the HCWF as costs for the public sector, but highlights the co-benefits for other sectors (CPME, 2025; Greer et al., 2024; Caffrey et al., 2023). “Making the economic case for the HCWF to secure political leadership for investment” and establishing intersectoral collaboration and governance are key conditions for the development of a sustainable HCWF (McPake et al., 2023).

Another important condition is gender equality. As WHO and women’s health activists highlight, the HCWF crisis is also a gender equality crisis (Kluge and Azzopardi-Muscat, 2023; WGH, 2023). The root causes and

drivers of the HCWF crisis, as well as the policy interventions are strongly shaped by existing gender inequalities and their intersections with migration and other inequalities.

The COVID-19 pandemic has highlighted the importance of “tailored gender-responsive measures to maintaining HCWF capacity” (Ziemann et al., 2023). Action can be taken on various levels, ranging from organisational measures to support career development and leadership of women, family-friendly work conditions and flexible work hours, equal pay and transparent remuneration schemes to stronger legal protection against gender-based discrimination, harassment and sexual violence at the workplace, to name only some of the options. Each of these measurements is important, yet sustainable impact in the HCWF and transformations in health systems need coordinated interventions and a comprehensive gender equality strategy on national and EU level. EU gender equality law and strategic policy plans (EC, 2025c) provide guidance and support for Member States to implement gender equality measures in the HCWF more effectively.

Transforming health systems, investing in sustainable and resilient workforces and systems

Health and care workforce stability in the EU is threatened by strong dynamics in health labour markets, changing population health needs and expanding service demand, disruptions (e.g., the COVID-19 pandemic). “A permacrisis that stretches well beyond the pandemic, climate change and war” is calling for emergency preparedness as well as for “strengthening essential services to address the permacrisis of noncommunicable diseases and HIV” (Kluge, 2022). Interventions in one area of the HCWF and other piecemeal measurements might bring some temporary relief, but they are neither sufficient to respond to the multiple needs nor sustainable. Future HCWF stability and resilient health systems will only be possible if governments take action to systematically transform and adapt health systems to new needs, drawing on evidence-based policymaking and a systematic coherent strategy (CPME, 2025; CPME-ESF-PGEU, 2025; Wismar and Goffin, 2023; EP, 2025a).

Three major approaches have been highlighted in the literature that should be linked: strengthen prevention and health promotion to keep people healthy and reduce demand for healthcare; invest in primary healthcare to improve universal health coverage, equity and inclusiveness (WHO, 2023b); and strengthen community-centred approaches that may respond more effectively to population needs (Kuhlmann et al., 2025c). As highlighted for the primary healthcare sector, it is important to “understand the various existing primary healthcare models and their dynamics to determine the necessary quantity, competencies, and composition of HCWs and how they can be governed effectively to implement” new models (Kuhlmann et al., 2024c); this applies in the same way to community-centred systems and health promotion services and the evolving demand for new competencies of HCWs.

These strategies promise long-term solutions to the HCWF crisis and a more effective allocation of available human and economic resources to improve resilience of health systems and preparedness for disruptive events, such as pandemics, military aggression, or threats emerging from climate change and heat waves, among others. However, health system transformations will not happen overnight and not without resistance. They require strong leadership, as learned from the COVID-19 pandemic (Ziemann et al., 2023; Caffrey et al., 2023), and capacity building for the implementation of robust measurements and governance approaches. These approaches align relevant stakeholders across sectors and professional groups, improve public acceptance, ensure appropriate funding, and maximise the co-benefits of investments in the health

sector (Greer et al., 2019, 2024). The transformations must be sensitive to social and environmental contexts and adapted to the resources and institutional pathways of national health systems.

However, an EU HCWF crisis plan can provide guidance “to support Member States in their efforts to transform their health systems by introducing new models of care” (Wismar and Goffin, 2023:23). It can also maximise benefits and motivate knowledge exchange across countries.

Developing an EU health and care workforce strategy, investing in the future of the EU and Member States

The complexity and urgency of the crisis cannot be solved in isolation: in one country or on national level alone. The results emerging from the HCWF profiles in the 27 Member States (quantitative indicators, Table 1) and the explorative national case studies reveal existing governance gaps and new demand for monitoring and regulation, that call for strong EU leadership and action. There is a need for a “comprehensive EU Health Workforce strategy, built on coordinated and multisectoral solutions that give this crisis the political priority and practical answers it urgently deserves” (CPME, 2025). One important benefit of an EU HCWF crisis plan would be it provides a framework to look at the challenges “from a health systems and health workforce point of view, acknowledging that policy-makers in countries require room for manoeuvre to develop the health workforce of the future” (Wismar and Goffin, 2023:25).

The EU has several tools at hand to support Member States and strengthen EU leadership. Examples include, for instance, experiences with cross-border regulations, the Patients’ Right Directive, the pharmaceutical strategy, and interventions during the COVID-19 pandemic (Greer et al., 2013; Wismar and Goffin, 2023), as well as gender equality law (EC, 2025b,c) and, most recently, EU-level social dialogue to build a resilient hospital and healthcare sector (EC, 2025e). These experiences and the policy recommendations synthesised in Table 2 together with results from the EU Joint Actions (OBS/HEROES, 2025) may serve as a platform to review existing legislation, tools, budgets, and programs (e.g., EU-THCS, 2025), establish appropriate and sustainable funding mechanisms, and build alliances for comprehensive stakeholder networks. A European HCWF crisis plan, to stabilise the HCWF and support sustainability and resilience of health systems, must also improve equity and gender-transformative action in all areas and on all levels of the future HCWF.

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Appendix

Methodology

A qualitative explorative approach was applied drawing on secondary sources (European policy documents, published research, public statistics, national documents and websites, etc.) and expert information on the health and care workforce (HCWF) in the EU. An assessment was carried out with a focus on key documents, in particular, from the WHO Regional Office for Europe, the Bucharest Declaration, the European Commission and European Parliament, and EU Joint Actions SEPEN, HEROES, and BeWell, as well as Policy Briefs and other publications of the European Observatory on Health Systems and Policies, OECD reports, and selected research publications, also considering lessons drawn from the COVID-19 pandemic. The issues of HCWF planning and forecasting are mentioned but not discussed in more detail, as these are the theme of the ongoing EU Joint Action HEROES and three forthcoming Policy Briefs, published by the European Observatory on Health Systems and Policies. Major results were recently presented and discussed in a Policy Dialogue “European health workforce development supporting health system transition and sustainability: strategy discussion and action plan”, organised by the European Observatory on 17 September 2025 in Brussels.

The documents were assessed with a focus on summary statements and emerging topics and policy solutions, using thematic analysis. In addition, in-depth expert information was collected on six selected country cases representing a diverse range of health systems and workforce conditions as well as geographical variety of the EU Member States; key informants are named below (following informed consent and agreement).

Against the backdrop of improved data sources provided by the OECD, national agencies and several projects elaborating on quantitative HCWF indicators and planning, this policy expertise gives priority to policy implementation. It considers challenges and opportunities and novel solutions to the HCWF crisis, considering national and EU policy measures. The study connects three major parts: (1) an illustrative overview of future HCWF trends in the 27 Member States, drawing on basic indicators taken from a report of the WHO Office of the European Region (WHO, 2022a), (2) an explorative synthesis of major high-level policy recommendations (based on documents, see above), information on relevant EU actions, and selected good-practice country examples to highlight opportunities for innovative approaches as well as new regulatory need, and (3) policy recommendations evolving from the analysis.

This Policy Expertise is explorative in nature and based on a rapid assessment of selected secondary sources, and has a number of limitations. Most importantly, the material selected for inclusion in this study seeks to illustrate relevant approaches and recommendations, but does not claim to be representative or comprehensive and exhaustive, and the selected national measures may not necessarily mirror the country’s priorities in HCWF policy. It should be highlighted that the selected countries and case studies do not intend to provide a priority list of HCWF innovations; they also do not provide a comparative overview of national strategies in the EU, that would require a far more complex analysis.

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- Dr Tiago Correia, Associate Professor, Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa, Lisbon, Portugal and Head of the WHO Collaborating Center for Health Workforce Policies and Planning;
- Dr Zuzana Kotherová, Researcher at Institute of Sociological Studies, Faculty of Social Sciences, and Institute of Public Health and Medical Law, First Faculty of Medicine, Charles University, Czech Republic;
- Dr Christa Larsen, Director of the Institute for Economics, Labour and Culture (IWAK), Goethe-University Frankfurt, Germany and Coordinator of the European Network on Regional Labour Market Monitoring (EN-RLMM);
- Åsa Olssen, Subject Specialist Human Resources for Health, Socialstyrelsen/The National Board of Health and Welfare, Stockholm, Sweden;
- Dr Marius-Ionuț Ungureanu, Associate Professor and Chair, Department of Public Health, Babeș-Bolyai University, Cluj-Napoca, Romania, and President of the European Public Health Association (EUPHA) section Health and Care Workforce;
- Dr Iris Wallenburg, Professor, Erasmus School of Health Policy & Management, Erasmus University, Rotterdam, The Netherlands.

Feedback on a draft version was provided by:

- Dr Tiago Correia, Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa, Portugal;
- Dr Michelle Falkenbach, European Observatory on Health Systems and Policies, Brussels, Belgium;
- Dr Marius-Ionuț Ungureanu, Department of Public Health, Babeș-Bolyai University, Cluj-Napoca, Romania.

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Administrators responsible: Christian KURRER and Ioana-Alice POSTU
Contact: ecti-poldep-b@europarl.europa.eu

Editorial assistant: Irene VERNACOTOLA

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