



HEROES

D2.6 Layman Report



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ABSTRACT

The HEROES Layman Report provides a clear and accessible overview of the Joint Action HEROES and its contribution to strengthening health workforce planning across Europe. The report presents the main challenges facing European health systems, explains the importance of health workforce planning, and describes the HEROES approach to improving data, forecasting models, skills development, and stakeholder engagement.

It highlights the key achievements of the project, including progress made by participating countries, the development of practical tools and methodologies, and the establishment of a European learning ecosystem that supports collaboration and mutual learning. The report also outlines the project's policy recommendations, sustainability approach, and the expected benefits for citizens through stronger, more resilient, and future-oriented health systems.

Funded under the EU4Health Programme, Joint Action HEROES supports countries in building the capacities, partnerships, and governance structures needed to ensure that the right health professionals, with the right skills, are available where they are most needed.

STATEMENT OF ORIGINALITY

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

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HEROES

Joint Action on **H**Health **w**ork**f**orce to meet health **ch**all**Eng**es**S**

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JOINT ACTION HEROES

Planning for tomorrow's Health Workforce in the European Union

The healthcare sector is a cornerstone of European Member States' prosperity and social cohesion. It is not only vital for the well-being of citizens but also a primary driver of the economy, underpinning a productive labour force and reducing the economic burden of disease.

However, European health systems are facing profound and interconnected challenges, including demographic ageing, increasing demand for chronic and long-term care, health workforce (HWF) shortages, evolving professional expectations, technological transformation, and growing pressures on the sustainability of healthcare delivery. European health systems are navigating a “demographic double transition”: a rapidly aging population requiring complex care alongside an aging workforce nearing retirement. These interconnected challenges—including OECD estimates (Health at a Glance: Europe 2024) of a 1.2 million professional shortage—have made health workforce (HWF) planning a strategic priority for system resilience.

The crisis extends beyond mere numbers to professional well-being. High stress, burnout, and shifting expectations among younger generation workers mean that traditional planning based solely on numerical projections is no longer sufficient. The COVID-19 pandemic acted as a critical stress test, exposing fragilities like uneven regional distribution and insufficient surge capacity. To maintain stability, European systems must move beyond reactive measures toward integrated governance. This approach connects data systems, forecasting models, and stakeholder engagement to foster a proactive, sustainable strategy that improves both workforce satisfaction and healthcare delivery. Across Europe, HWF planning has therefore become a strategic priority for health system resilience, sustainability, and reform.

What do we mean by the “Health Workforce Planning”?

The health workforce includes all individuals whose work is primarily aimed at improving health. This includes clinical professionals such as doctors, nurses, and midwives, as well as associate professionals and support staff working in community settings. A strong health workforce is essential for the performance of any health system.

Where earlier work (previous Joint Action on health workforce and the SEPEN project) highlighted the importance of health workforce planning, HEROES takes the next step by helping Member States improve the data, tools, and skills needed to plan their workforce more effectively and use models in policy practice to inform reforms and transform healthcare delivery. HEROES recognizes that health workforce planning is more than a technical exercise; it is a strategic governance function essential for reaping the benefits of digitalization and modern care models. HEROES represents a major conceptual shift from a traditional workforce planning approach where matching of supply and demand prevents shortages, while Joint Action HEROES has introduced an expanded, institutional definition: “A continuous, institutionalised, multi-level governance process that integrates quantitative forecasting, qualitative analysis of skills, and structured stakeholder engagement to ensure a sustainable workforce aligned with population health needs”. By doing so, HEROES aims to transition planning from episodic analytical projects to a permanent institutional function embedded within national health system architectures and governmental functions. This ensures that governments can take intelligence-led actions to improve outcomes rather than merely observing trends.

Main Objectives

Joint Action HEROES was implemented with the primary objective of strengthening health workforce (HWF) planning capacities across participating European countries. Building upon previous European initiatives, HEROES moved beyond mere methodological exchange towards implementation-oriented support, institutional development, and the long-term sustainability of HWF planning systems.

Bringing together 18 Member States and Norway, the Joint Action addressed four interconnected dimensions to achieve these goals: data and HWF intelligence systems, forecasting models and planning tools, skills and capacities for HWF planning, and stakeholder involvement and governance mechanisms. Specifically, its ambition was to support countries in developing the structures, capacities, and partnerships required to make HWF planning more systematic, evidence-informed, and sustainable over time.

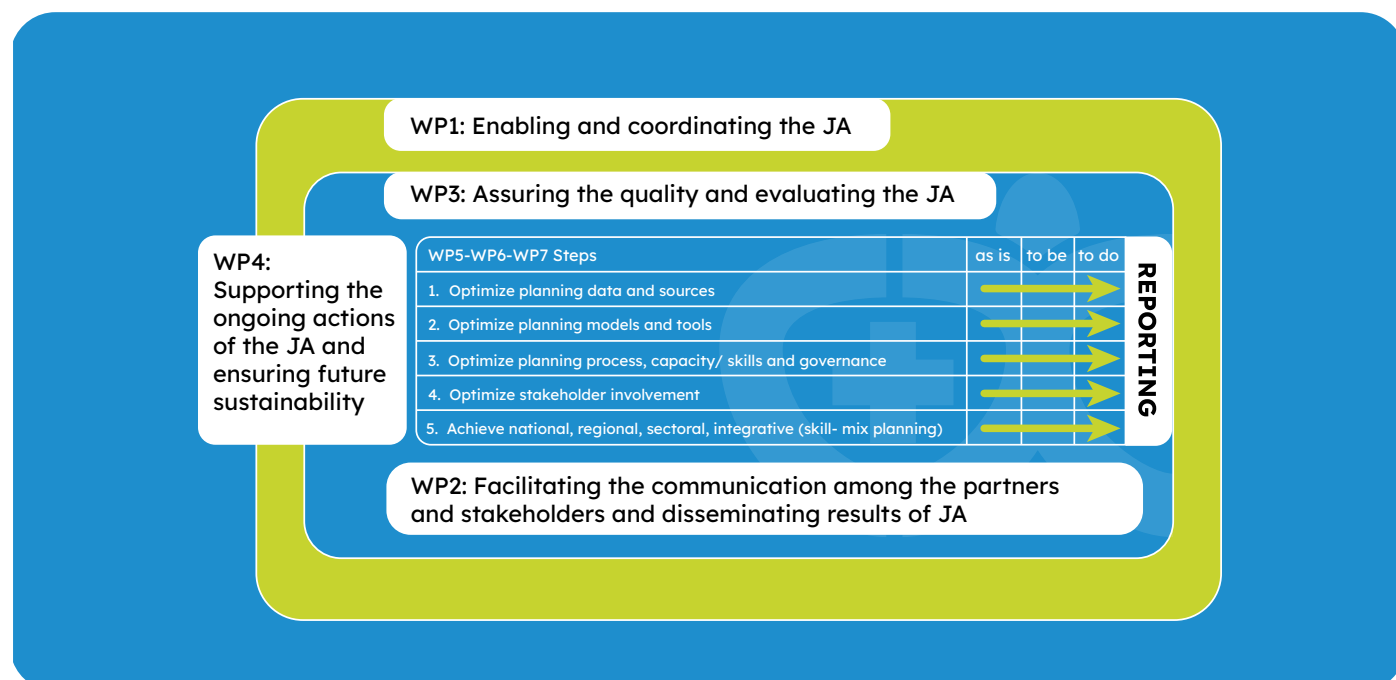
Overall, HEROES aimed to ensure that HWF planning is recognized and institutionalized as a permanent, integrated, and evidence-informed governance function essential for the resilience and future transformation of European health systems.

HEROES Approach

The HEROES approach is characterized by a strategic shift from purely methodological exchange toward implementation-oriented support, institutional development, use in policies and transformation of health systems to take advantage of technological advancements and the long-term sustainability of health workforce (HWF) planning systems.

This orientation is operationalized through a structured three-step methodological pathway—AS IS (analysis of the current situation), TO BE (definition of the desired future), and TO DO (design and implementation of concrete actions)—applied across four interconnected domains: data intelligence, forecasting models, planning skills, and stakeholder governance.

Central to the HEROES framework is a multi-level learning architecture that utilizes cluster-based exchanges, bilateral twinning, and the Community of Practice to facilitate peer-learning and the contextual adaptation of tools. Ultimately, the HEROES approach defines HWF planning as an integrated institutional ecosystem, recognizing that sustainable improvement requires the simultaneous development of technical analytical components and strong governance arrangements.



By fostering a “Community of Practice,” HEROES allows technical experts and policymakers to learn from each other, resulting in the real-world implementation of good practices rather than just theoretical exchanges.

Correct and timely data: The foundation of planning

Effective planning is impossible without reliable data. Building on the foundations of previous European cooperation, Joint Action HEROES has evolved the original Minimum Data Set (MDS) - as a result of the previous Joint Action on Health Workforce Planning and Forecasting (JA EUHWF) - into a more comprehensive Advanced Minimum Dataset (AMDS).

This evolution represents a significant step forward in optimizing workforce intelligence. While the original MDS focused primarily on quantitative metrics such as headcounts, age, and professional registration, the new AMDS framework integrates these core figures with qualitative insights into the high-level drivers of change. By including data on factors such as working conditions, professional preferences, and organizational contexts, the AMDS provides a much more nuanced understanding of the health labour market and defines the demand for HWF. This advanced approach allows the dataset to accommodate different levels of system maturity across Member States, transforming it from a mere administrative tool into a strategic asset for needs-based forecasting and proactive policy-making.

Key Findings from the Data Domain: Analysis of health workforce data revealed that while most countries have established robust registries for doctors, significant gaps persist in tracking other key professions—such as nurses, midwives, pharmacists, and health associates—as well as in documenting activity within the private sector.

HEROES has supported countries in addressing these bottlenecks through:

- **Expanding Professional Coverage:** Incorporating professionals without formal registration, as well as those working in the social and informal care sectors into the planning processes of some countries.
- **Better Monitoring of the Practicing Workforce:** Moving from “nominal stock” (who is registered) to “actual capacity” (who is working and for how many hours).
- **Strengthening Demand-Side Intelligence:** Integrating demographic and epidemiological indicators to better predict future population needs.
- **Improving Mobility Tracking:** Developing better indicators for the inflow and outflow of health professionals to understand cross-border dynamics.
- **Set foundations for interprofessional planning** rather than planning for isolated professions.

Establishing modern forecasting models

From Simple Ratios to Complex Scenarios: Many traditional planning models were single-profession oriented and supply-based. HEROES encourages a transition toward needs-based and multi-professional modelling. These modern tools allow policymakers to explore different “what-if” scenarios, such as the impact of new technologies or shifts in care delivery.

Participating countries have used the HEROES framework to:

- **Integrate Skill-Mix Dynamics:** Planning for teams rather than individual roles, accounting for task-shifting and interprofessional collaboration.
- **Regional Planning:** Addressing territorial maldistribution by developing models that can operate at sub-national levels.
- **Visualize Results:** Creating dashboards to make complex projection results accessible and engaging for decision-makers.
- **Support long-term health workforce policies and reforms** to foster new care models.

Developing the skills of tomorrow

Planning as a Human Competency: Strengthening systems require more than software; it requires skilled people. HEROES identified that effective planners need a multidisciplinary set of competencies.

The project implemented training programs across four major areas in priority skills domains:

- **Policy Making:** Developing leadership and “systems thinking” to align workforce planning with broader health reforms.
- **Data Analytics:** Enhancing the ability to integrate heterogeneous data sources and use advanced analytical techniques.
- **Human Resources Management:** Strengthening strategies for the recruitment and retention of professionals.
- **Collaboration:** Building the “soft skills” necessary for structural stakeholder engagement and building trust among diverse actors.

Learning together: A European Ecosystem

A Multi-Level Learning Architecture: One of HEROES’ greatest achievements is the creation of a European learning ecosystem. Learning was not limited to reports; it was activated through:

- **Cluster-Based Exchange:** Grouping countries with similar health systems to facilitate targeted peer learning.
- **Bilateral Twinning:** Direct cooperation between countries to transfer specific tools or methodologies or good practices.
- **Community of Practice:** A permanent and structured platform for continuous learning and collaboration where countries share challenges, exchange experiences, and reflect on emerging issues like workforce flexibility, mobility, and task shifting retention, attractiveness, etc. This project-wide space facilitates the adaptation of methodologies and the strengthening of workforce planning as a strategic governance function

This European HEROES learning ecosystem has allowed countries to accelerate their development by learning from the successes—and challenges—of their peers.

Diversity and intensity of mutual learning processes within the Joint Action:

			Mutual Learning/ Training- Bilateral Activities																		
			Work Package 5						Work Package 6					Work Package 7							
			GR	ES	IT	NO	PT	IE	SE	HR	HU	LT	PL	SI	BE	CZ	DE	EE	MT	NL	SK
Mutual Learning/ Training- Bilateral Activities	Work Package 5	GR	●		●															●	
		ES	●	●	●	●			●												
		IT	●		●	●			●			●		●						●	
		NO			●	●			●				●	●							
		PT					●		●			●		●				●		●	
		IE				●		●													
		SE			●	●	●		●											●	
	Work Package 6	HR								●											
		HU								●	●		●					●	●		
		LT					●					●	●					●			
		PL									●	●	●							●	
		SI								●				●	●						
	Work Package 7	BE			●	●	●		●				●	●				●		●	●
		CZ													●					●	●
		DE														●					
EE						●				●	●			●			●	●	●	●	
MT										●							●	●	●		
NL		●		●		●			●			●		●	●		●	●	●	●	
SK															●		●		●	●	

National implementation highlights for the 19 participating countries



Belgium

Strengthened integrated and multidisciplinary HWF planning by improving HWF data integration through the implementation of the Practice Registry and incorporating qualitative dimensions such as well-being and skill mix.

Croatia

Established new institutional and analytical foundations for HWF planning by integrating the National Register of Healthcare Providers with pension insurance data and introducing a more advanced Excel-based HWF planning model.



Czechia

Shifted from reactive analyses towards a structured, coordinated, and evidence-based HWF workforce planning approach, opening a national policy dialogue for the first time and strengthening cooperation between demographic and analytical experts.

Estonia

Established structured national forecasting capacity and dedicated HWF planning governance by transforming a fragmented landscape into an integrated system populating the Advanced Minimum Data Set (AMDS).



Germany

Advanced federal monitoring and forecasting capacity through European collaboration, making significant progress in implementing a federal-level HWF monitoring and forecasting model pilot.

Greece

Improved HWF intelligence and governance coordination by developing a structured, stakeholder-prioritised set of HWF indicators and an AMDS aligned with EU and WHO standards.



Hungary

Strengthened governance-oriented HWF planning capacity by improving co-ordination across policy domains and shifting from monitoring-oriented capacities toward a broader capability framework.

Ireland

Strengthened national HWF planning foundations by refining the AMDS, expanding the scope of the national projection model, and publishing the strategic paper “Ireland’s Future Health and Social Care Workforce”.



Italy

Advanced integrated and evidence-informed HWF planning through the expansion of the ISTAT integrated information system and the prototyping of an agent-based simulation model for medical specialty training needs.

Lithuania

Modernised workforce data systems and forecasting infrastructure by migrating the national forecasting model from Excel to the Palantir system (Contour) managed by the State Data Agency.





Malta

Transitioned towards evidence-based and institutionalised HWF planning by adopting a national HWF planning and forecasting model and establishing permanent governance structures within the People Management Division.

Netherlands

Strengthened collaborative learning and scenario-based planning approaches by enhancing the use of policy scenarios within HWF planning models to better translate policy ambitions into measurable impacts.



Norway

Enhanced forecasting infrastructure and policy integration by modernising modelling infrastructure (migrating from SAS to R) and developing an interactive dashboard for projection results.

Poland

Improved HWF analysis and stakeholder engagement through analytical reports on primary healthcare structures and stakeholder workshops on postgraduate medical education and residency allocation.



Portugal

Strengthened institutional and forward-looking HWF planning by consolidating fragmented data sources through the “BI RH SNS” business intelligence system and transitioning toward medium- to long-term forecasting.

Slovakia

Strengthened integrated HWF intelligence and institutional governance by advancing the preparation of the National Strategy for Healthcare Workforce Planning, formally endorsed by the government in 2026.



Slovenia

Improved HWF registry integration and stakeholder coordination by linking the nursing professions registry with the national Register for Health Workers and Providers.

Spain

Strengthened coordinated and policy-oriented HWF planning capacity by achieving national consensus on a Minimum Data Set (MDS) and enhancing analytical capacities among planners.



Sweden

Developed a learning-based and capability-oriented HWF planning approach by testing a Capability Framework through regional pilot initiatives to integrate patient needs and local conditions into planning.

Maintaining momentum: Sustainability and the policy Cycle

From Projects to Sustainable Systems The impact of Joint Action HEROES is designed to last beyond the project's duration by transitioning from episodic analytical projects to a permanent, institutionalised governance function embedded within health system architecture. Long-term sustainability depends on the ability of countries to institutionalise workforce planning functions, integrate data, models and skills into permanent institutional structures, and embed planning processes within national policy cycles. This requires stable mandates and adequate resources to ensure workforce planning remains a structural component of health system governance beyond project-based funding cycles.

Policy recommendation and call to action

Building a Future-Ready Health Workforce: The HEROES project has shown that planning for our healthcare workers is a vital leadership function that keeps our health systems strong. To ensure that patients always have the care they need, we must stop reacting to crises and start building permanent, smart systems that can predict and meet future challenges.

Key Policy Recommendations

Make Planning Permanent (Institutionalize): Health workforce planning is a foundation of sound health workforce policies and strategies so governments need to establish permanent offices or teams with official power, steady funding, and clear mandates to oversee the workforce every day.

Focus on Teams, Not Just Job Titles: Healthcare is a team effort. Health systems should plan for integrated teams. This means looking at “skill-mix”—how different professionals can work together and share tasks to provide the best care. Workforce planning should move beyond counting professionals and focus on anticipating the skills, competencies, and new models of care that will be required to meet future population health needs.

Build Better “Workforce Intelligence”: To make good decisions, we need the full picture. Countries should invest in modern data systems that can “talk” to each other, linking information from universities, licensing boards, and hospitals into one clear, real-time map of the workforce.

Turn Data into Action: Planning results are only useful if they lead to change. Forecasts must be directly linked to real-world decisions, such as setting university quotas, creating better hiring strategies, and improving how healthcare is delivered to patients. HEROES showed that health workforce planning is a powerful tool to support long-term vision and transition of healthcare delivery, addressing both challenges related to demographic trends and strategic opportunities brought by innovations, including Biotech, technological developments, digitalisation.

Talk to Everyone (Stakeholder Engagement): Successful planning requires everyone at the table. Governments must work closely with professional associations, universities, regional leaders, and healthcare providers to ensure that everyone supports and understands the national strategy.

Stay Flexible and Ready (Resilience): The world is changing fast due to new technology (like AI), an aging population, and health emergencies. Planning systems must be iterative, meaning they constantly check their results and adjust their strategies to stay ahead of these shifts.

Prioritize Keeping the Workers We Have (Retention): We cannot simply “recruit our way out” of a shortage. Policies must focus on making health careers attractive by improving working conditions, offering better career paths, and addressing the well-being and stress levels of current staff.

Keep Working Together Across Europe: Health worker mobility creates challenges that extend beyond national borders. European cooperation allows countries to share expert knowledge and successful tools, making every nation's health system more resilient.

Added value for HEROES citizens

Joint Action HEROES ensures that when a citizen needs care, a qualified professional is available by fostering a sustainable, equitable, and resilient health workforce aligned with population needs.



Safer, High-Quality Healthcare

Strong HWF governance is a decisive determinant of performance; it prevents fragmented care and staffing fragilities, leading to improved health outcomes, higher service quality, and enhanced safety for both patients and staff.



Better Access to Care

By proactively predicting skills needs and shortages, countries can better align education, labour market, and health policies, resulting in shorter waiting times and more efficient service delivery and better distribution of health workers across territories.



Care Close to Home

The project specifically targets “territorial maldistribution” and the challenge of “medical deserts,” working to ensure that even citizens in rural or remote areas have equitable access to health professionals.



Modern Treatment and Innovation

By planning for digitalisation and technological transformation, HEROES ensures the workforce is fit for modernized healthcare models, allowing citizens to benefit faster from new clinical workflows and digital health solutions. HEROES embedded the vision promoted by the EHDS, improving data and turning data to policy decisions.



Resilient Systems for the Future

HEROES transforms planning into a permanent governance function, ensuring health systems can adapt to the “demographic double transition” and remain resilient during future public health emergencies.

Sustainable health workforce planning is a long-term commitment that requires both technical excellence and political will. By building on the achievements of Joint Action HEROES, European countries can ensure they have the right professionals, with the right skills, in the right places - securing a resilient health system for generations to come.

Joint Action HEROES has demonstrated that effective health workforce planning is possible when countries combine reliable data, modern planning tools, strong governance, and continuous collaboration. By bringing together 19 countries and 53 organisations, HEROES has helped build a European community committed to strengthening health workforce planning and preparing health systems for future challenges. The knowledge, partnerships, and tools developed through the project will continue to support evidence-informed decision-making long after the project's conclusion.

Heroes involved

19 countries in 3 clusters, altogether
53 partner organisations



Cluster 1 (WP5): Portugal, Norway, Greece, Sweden, Spain, Italy, and Ireland.

Cluster 2 (WP6): Croatia, Slovenia, Lithuania, Hungary, and Poland.

Cluster 3 (WP7): Belgium, Estonia, the Netherlands, Slovakia, Czechia, Malta, and Germany.

Joint Action HEROES has been coordinated by AGENAS Agenzia Nazionale per i Servizi Sanitari Regionali Agenas:
<https://www.agenas.gov.it/>

HEROES final deliverables

D1.2 – Final Deliverable on HWF planning data, models and skills

D2.2 – Initial Leaflet

D2.3 – Website

D2.4 – Policy Briefs

D2.5 – Final Dissemination Report

D2.6 – Layman report

D3.1 – Evaluation Plan

D3.2 – Mid-term evaluation report

D3.3 – Final evaluation report

D4.1 – 20 policy action plans derived from policy dialogues

D4.2 – Final sustainability report at the EU level

D5.1 – WP5 Report on countries' data collection, HWF planning models and tools, stakeholders' involvement

D6.1 – WP6 Report on countries' data collection, HWF planning models and tools, stakeholders' involvement

D7.1 – WP7 Report on countries' data collection, HWF planning models and tools, stakeholders' involvement

Learn more about HEROES Joint Action: <https://healthworkforce.eu/>