

Primary Health Care in Greece: Institutional Evolution, Sustainability Challenges and the Cultural Dimension

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Abstract

Primary Health Care (PHC) constitutes the structural and normative foundation of equitable, resilient, and sustainable health systems. In Greece, PHC has undergone a complex process of institutional evolution since the establishment of the National Health System (NHS) in 1983, culminating in the comprehensive reform of 2017. Despite successive legislative interventions designed to strengthen accessibility, continuity, and universality, the operational consolidation of PHC remains incomplete and structurally fragmented.

This article provides an institutional and theoretical analysis of PHC development in Greece through the lens of sustainability and health system resilience. It examines governance arrangements, financing mechanisms, workforce capacity, digital integration, and the implementation of the family physician model. Drawing upon contemporary PHC performance frameworks, health system governance theory, and sustainability scholarship, the study argues that the primary challenge lies not in legislative design but in persistent implementation gaps, structural underinvestment, weak coordination, and insufficient integration of social determinants.

Beyond institutional and economic dimensions, the paper conceptualizes the cultural and community dimension as a structural component of sustainability, linked to social capital, trust, and resilience. It concludes that the transition toward a sustainable PHC model in Greece requires systemic coherence, strategic resource allocation, workforce reinforcement, interoperable digital systems, institutionalized evaluation mechanisms, and integration of social and cultural determinants into health planning.

Keywords: Primary Health Care; Health System Sustainability; Health Governance; Resilience; Social Determinants; Integrated Care

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1. Introduction: Primary Health Care and Health System Sustainability

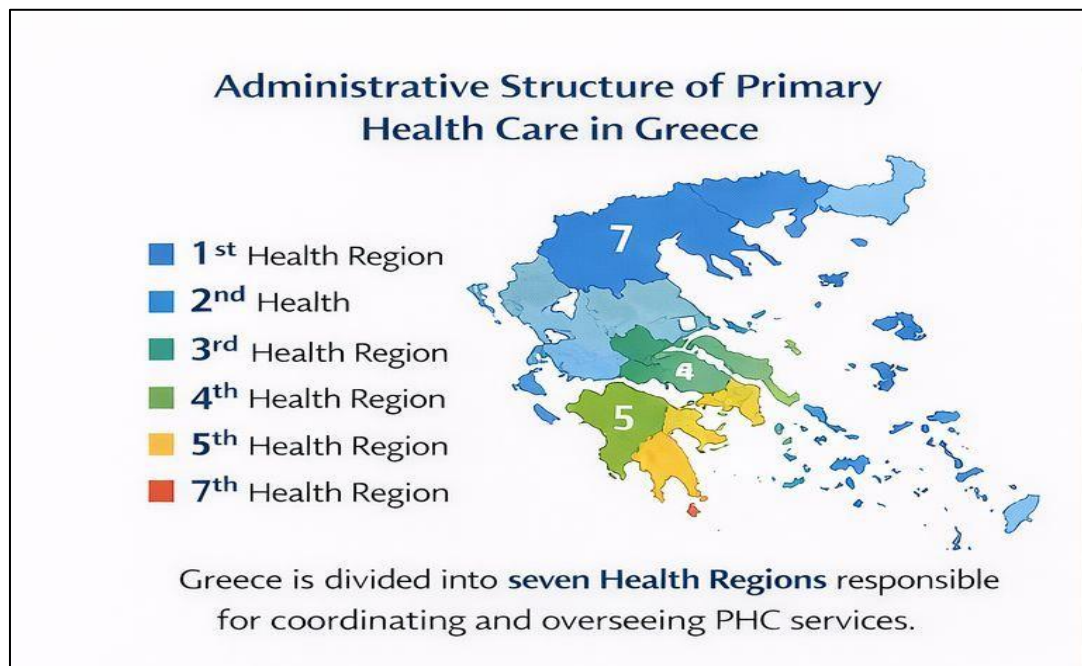


Figure 1 Primary Health Care in Greece

Primary Health Care (PHC) is widely recognized as the foundation of effective health systems. It operates not merely as an entry point to care but as the coordinating infrastructure through which prevention, diagnosis, treatment, rehabilitation, and community engagement are integrated. In sustainability-oriented health systems research, PHC is increasingly framed as the structural core of resilience, equity, and long-term cost-effectiveness (WHO, 2023).

The Declaration of Alma-Ata (WHO, 1978) established PHC as central to “Health for All,” emphasizing equity, universality, intersectoral collaboration, and community participation. The Declaration of Astana (WHO, 2018) reaffirmed these principles within the contemporary context of universal health coverage and the Sustainable Development Goals (SDGs).

Empirical evidence consistently demonstrates that strong primary care systems are associated with improved population health, reduced mortality, greater equity, and lower overall system costs (Starfield, Shi, & Macinko, 2005). Kringos et al. (2010; 2013) developed a comparative framework identifying structural, process, and outcome dimensions of PHC strength, demonstrating that governance coherence and financing stability are decisive determinants of performance.

From a sustainability perspective, health systems must achieve long-term functional continuity under fiscal, demographic, and epidemiological pressures. Kruk et al. (2018), in the Lancet Global Health Commission, argue that high-quality health systems must be people-centered, resilient, and accountable. Similarly, Saltman, Greer, and Figueras (2011) emphasize that governance arrangements determine the capacity of health systems to sustain reform over time.

In Greece, PHC has been institutionally embedded within the NHS since 1983. Yet, its development has been marked by fragmentation, underinvestment, and hospital-centered expenditure patterns (European Commission, 2019; OECD, 2022). The economic crisis (2009–2016) and the reform of 2017 represent critical junctures in this trajectory.

This article analyzes the evolution of Primary Health Care (PHC) in Greece through a sustainability lens, integrating health system governance theory, the PHC performance framework of Kringos et al., resilience theory, and social determinants scholarship. Adopting a conceptual and institutional policy analysis approach, the study draws upon legislative reforms, official policy documents, and secondary international datasets (OECD, European Commission, WHO) to systematically assess structural, process, and outcome dimensions of PHC strength. The analysis applies a

multi-theoretical framework to evaluate governance coherence, financing patterns, workforce sustainability, digital integration, and the incorporation of social and cultural determinants within the Greek PHC model.

2. Conceptual Framework: PHC Strength, Governance, and Sustainability

To analyze PHC sustainability in Greece, this study draws upon three complementary theoretical frameworks:

2.1. PHC Strength Framework (Kringos et al.)

Kringos et al. (2010; 2013) conceptualize PHC strength across:

- **Structural dimensions** (governance, financing, workforce density)
- **Process dimensions** (continuity, coordination, comprehensiveness)
- **Outcome dimensions** (equity, efficiency, quality)

This framework enables systematic assessment of Greek PHC beyond legislative design.

2.2. Health System Governance Theory

Saltman et al. (2011) argue that governance determines the sustainability of reform through accountability, regulation, and strategic oversight. Fragmented governance undermines long-term reform capacity.

2.3. Sustainability and Resilience in Health Systems

Health system sustainability requires adaptive capacity under fiscal and demographic pressures (WHO, 2023). Resilient systems integrate:

- Stable financing
- Workforce planning
- Digital infrastructure
- Community trust

Trust, according to Gilson (2003), constitutes a foundational element of health system performance. Social determinants scholarship further highlights the role of community engagement and social capital in shaping health outcomes (Marmot et al., 2008).

This multidimensional framework guides the analysis of Greek PHC.

3. Institutional Evolution of PHC in Greece (1983–2008)

The establishment of the Greek NHS through Law 1397/1983 introduced universal access and equity as guiding principles. PHC was formally recognized as a foundational pillar. Subsequent reforms (Laws 2071/1992; 2194/1994; 2519/1997) attempted to modernize administration.

Law 3235/2004 defined PHC as an integrated and continuous system linked to secondary and tertiary care. The framework included preventive services, chronic disease monitoring, rehabilitation, social support, and health information management.

However, implementation lagged behind legislative ambition. Governance fragmentation and limited financing constrained structural consolidation. Comparative European analysis shows that countries with strong PHC systems invest strategically in governance coherence and workforce planning (Boerma et al., 2015).

The Greek system retained a hospital-centered orientation, reflecting historical expenditure priorities.

4. Economic Crisis and Structural Reconfiguration (2009–2016)

The fiscal crisis reshaped health policy priorities toward cost containment. Reforms included administrative reorganization (Law 3852/2010), electronic prescribing (Law 3892/2010), consolidation of purchasing through EOPYY (Law 3918/2011), and establishment of PEDY (Law 4238/2014).

Electronic prescribing enhanced transparency and pharmaceutical expenditure monitoring. However, austerity measures reduced workforce recruitment and limited PHC infrastructure expansion.

European Commission (2019) data reveal structural imbalances in Greek health expenditure, with hospital spending remaining comparatively high. OECD (2022) confirms lower relative investment in outpatient and preventive care.

From a sustainability perspective, fiscal adjustment without strategic PHC reinforcement risks long-term inefficiency (Kruk et al., 2018).

5. Governance, Financing, and Structural Sustainability

5.1. Governance Architecture and Institutional Coherence

Primary Health Care in Greece operates within a decentralized administrative structure composed of seven Health Regions (YPE). These entities are responsible for supervising primary and secondary care units, allocating personnel, and monitoring service delivery. However, governance fragmentation has historically limited strategic coordination.

Health system governance literature emphasizes that sustainability depends not merely on decentralization but on clear accountability lines, regulatory coherence, and long-term planning capacity (Saltman, Greer, & Figueras, 2011). Fragmented authority without coordinated oversight undermines reform implementation. In Greece, overlapping administrative competencies and fluctuating reform agendas have weakened continuity in PHC policy.

Kringos et al. (2013) demonstrate that strong primary care systems exhibit governance stability and clearly defined regulatory frameworks. In the Greek case, while legal foundations are comprehensive, implementation mechanisms have often lacked institutional reinforcement.

5.2. Financing Patterns and Resource Allocation

Financing of PHC derives primarily from:

- The state budget (public PHC units)
- EOPYY (purchaser model)

Despite structural reforms consolidating purchasing, expenditure allocation remains imbalanced. OECD (2022) data indicate that Greece dedicates a relatively lower proportion of total health expenditure to primary and outpatient care compared to EU averages. The European Commission (2019) similarly identifies hospital-centered spending patterns as a persistent structural characteristic.

From a sustainability perspective, resource allocation determines long-term system efficiency. Starfield et al. (2005) argue that investing in PHC yields downstream cost reductions by preventing avoidable hospitalizations. Nolte and McKee (2008) further emphasize that effective chronic disease management in primary care reduces system strain.

In Greece, chronic underinvestment in PHC infrastructure and workforce planning has limited preventive capacity, reinforcing hospital dependency.

5.3. Resilience and Adaptive Capacity

Health system resilience refers to the ability to maintain core functions during crises and adapt to long-term pressures (WHO, 2023). The COVID-19 pandemic highlighted the strategic importance of robust PHC systems in surveillance, vaccination, and community-level intervention.

Kruk et al. (2018) emphasize that high-quality health systems must integrate resilience into their structural design. In Greece, PHC's crisis response capacity was constrained by workforce shortages and uneven digital integration.

Sustainability thus requires adaptive financing models, strategic workforce planning, and digital infrastructure capable of supporting population-level health monitoring.

6. PHC Strength Assessment: Applying the Kringos Framework

Using the PHC strength framework (Kringos et al., 2010; 2013), the Greek system can be evaluated across structural, process, and outcome domains.

6.1. Structural Strength

- Comprehensive legislative framework
- Consolidated purchasing (EOPYY)
- Regional governance architecture

Weaknesses:

- Underinvestment in primary care
- Uneven workforce distribution
- Limited evaluation infrastructure

Structural strength remains moderate but inconsistent.

6.2. Process Strength

Continuity of care depends heavily on the family physician model introduced in 2017. While the reform aimed to strengthen coordination, implementation remains partial. Gatekeeping mechanisms have not been fully institutionalized.

Integrated care literature underscores that coordination across levels of care reduces inefficiencies and enhances quality (Nolte & McKee, 2008). In Greece, referral pathways and digital interoperability remain underdeveloped.

6.3. Outcome Strength

Universal coverage improvements (Law 4368/2016) strengthened equity. However, systematic outcome measurement remains limited. Performance monitoring frameworks aligned with WHO PHC indicators (WHO, 2023) have not been fully institutionalized.

Thus, while structural and legislative foundations are strong, process and outcome dimensions require reinforcement.

7. Workforce Sustainability and Demographic Pressures

Workforce sustainability in Primary Health Care (PHC) in Greece constitutes a critical determinant of the overall resilience and effectiveness of the health system. Although the country maintains one of the highest physician-to-population ratios among member states of the OECD, the internal distribution of medical professionals remains structurally imbalanced, with a disproportionate concentration of specialists compared to general practitioners (OECD, 2022). This imbalance weakens the PHC orientation of the system, reinforces hospital-centered care, and contributes to fragmentation, inefficiencies, and increased healthcare expenditure. Strengthening general practice therefore requires targeted financial incentives, structured career pathways, academic recognition, and improved working conditions in order to enhance recruitment and retention within community-based services.

Workforce sustainability is not solely a quantitative issue but also a qualitative one, closely linked to structured education and competency development. Evidence from learning-curve research in clinical practice demonstrates that systematic training, supervision, and cumulative experience significantly improve performance, patient safety, and quality-of-life outcomes (Michalopoulos et al., 2012; Maniou et al., 2011; Maniou et al., 2019). Studies examining breast lesion excision systems and stereotactic vacuum-assisted breast biopsy show measurable improvements in safety and

procedural efficiency as professional experience increases (Maniou et al., 2011; Maniou et al., 2019). Similarly, diagnostic accuracy in complex imaging procedures such as pelvic MRI for endometriosis improves substantially after adequate supervised training, highlighting the importance of experience thresholds in ensuring reliable clinical interpretation (Bruyère et al., 2020). The structured monitoring of trainees' learning curves further confirms that organized mentorship and evaluation mechanisms are fundamental for safe clinical practice (Maniou, 2024). Moreover, supportive care in vulnerable populations, such as pregnant women undergoing cancer treatment, underscores the need for interdisciplinary collaboration and specialized expertise within healthcare teams (Zagouri & Maniou, 2016).

Beyond initial education, sustainable PHC systems depend on continuous professional development (CPD) and the integration of technological innovation into everyday practice. Historical and contemporary analyses illustrate the dynamic interaction between medicine, technology, and broader cultural developments, emphasizing that medical progress has always required systematic adaptation of skills and knowledge (Maniou et al., 2025; Maniou et al., 2025g; Maniou et al., 2025h). Expanding multidisciplinary PHC teams—including nurses, social workers, psychologists, and community health professionals—can enhance chronic disease management, preventive care, and coordinated long-term support, particularly in aging societies. Furthermore, research linking cultural engagement, community participation, and mental well-being highlights the importance of holistic perspectives in addressing complex health needs (Pagkalos et al., 2025e).

Demographic pressures intensify these structural challenges. Greece is experiencing significant population aging, declining birth rates, and increasing prevalence of chronic diseases, all of which elevate demand for integrated, community-oriented services. Sustainable workforce planning must therefore incorporate demographic forecasting, regional distribution strategies, and specialty rebalancing aligned with projected population needs. In conclusion, ensuring workforce sustainability in Greek PHC requires a comprehensive reform agenda that combines redistribution toward general practice, structured competency-based training, continuous professional development, multidisciplinary expansion, and long-term demographic planning (OECD, 2022). Only through such systemic alignment can the quantitative abundance of physicians translate into qualitative effectiveness and equitable access to care.

8. Digital Transformation and Interoperability

Electronic prescribing, implemented in 2010, represented a significant modernization milestone. However, digital sustainability requires broader interoperability:

- Electronic health records
- Shared referral systems
- Population health analytics
- Performance dashboards

Boerma et al. (2015) emphasize that digital systems enhance coordination when embedded within governance frameworks. WHO (2023) identifies digital integration as a core PHC performance lever.

Fragmented digital ecosystems in Greece limit longitudinal continuity and evaluation capacity. Investment in interoperable infrastructure constitutes a strategic sustainability priority.

Finally, it is important to highlight the productive and effective role that digital technologies play in the education sector to support digital transformation and interoperability. We have to be inspired by and adopt methodologies, technologies, and procedures from the various forms of digital technologies exploitation in the education domain. These technologies, such as mobile devices (35), a variety of ICT applications (36-40), AI & STEM ROBOTICS and games (41-45), facilitate and enhance educational procedures such as assessment, intervention, and learning. Additionally, the use of ICTs in conjunction with theories and models of metacognition, mindfulness, and the cultivation of emotional intelligence [46-51], accelerates and improves educational practices and outcomes, particularly in the health care domain, to foster digital transformation and interoperability.

9. Cultural Dimension, Social Capital, and Trust

The sustainability of PHC extends beyond institutional and financial determinants. Social cohesion, trust, and community engagement are foundational to long-term system legitimacy.

The WHO Commission on Social Determinants of Health (Marmot et al., 2008) emphasizes that health outcomes are shaped by broader social environments. Gilson (2003) identifies trust as a core component of health system functioning. Without trust, utilization declines and preventive engagement weakens.

Community participation was central to the Alma-Ata vision (WHO, 1978) and remains essential in the Astana framework (WHO, 2018). Social capital theory (Putnam, 2000) suggests that collective engagement strengthens institutional resilience.

In the Greek context, integrating culturally sensitive health promotion, community outreach, and local engagement initiatives within PHC structures may enhance preventive uptake and system trust. Cultural integration does not replace structural reform but complements it, reinforcing social legitimacy.

10. Conclusions

The development of Primary Health Care (PHC) in Greece demonstrates that institutional reform, while necessary, is not sufficient to ensure systemic sustainability. Since the establishment of the National Health System in 1983, legislative initiatives have consistently embraced the principles of universality, equity, and community orientation. However, the gap between formal policy design and effective implementation has limited the transformative potential of these reforms. Structural fragmentation, uneven regional development, limited coordination among levels of care, and insufficient integration of preventive services continue to challenge operational efficiency and continuity of care.

The sustainability of PHC is further constrained by chronic underfunding and workforce imbalances, particularly the shortage of general practitioners and the incomplete consolidation of the family physician model. Strengthening human resources through incentives, structured professional development, and long-term strategic workforce planning is essential. In parallel, interoperable digital systems and integrated health information infrastructures are critical for transparency, quality monitoring, and coordinated service delivery.

The COVID-19 pandemic highlighted the strategic importance of PHC as the first line of defense in public health emergencies, reaffirming that resilient primary care systems are indispensable for crisis preparedness and population support. At the same time, sustainability extends beyond institutional and economic parameters. Trust in public institutions, social cohesion, and active community participation represent structural determinants of PHC effectiveness and legitimacy.

Integrating social and cultural dimensions into health planning strengthens prevention, public awareness, and mental well-being, enhancing both acceptance and long-term system resilience. Therefore, the transition toward a sustainable PHC model in Greece requires a comprehensive and multidimensional strategy that combines stable financing, workforce reinforcement, digital interoperability, systematic evaluation, and meaningful incorporation of social and cultural determinants. Only through systemic coherence and strategic alignment can Greek PHC evolve into a resilient, equitable, and socially embedded pillar of the national health system.

Compliance with ethical standards

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Disclosure of conflict of interest

The Authors proclaim no conflict of interest.

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