Health systems in the European Union and policy responses to Covid-19: A comparative analysis between Germany, Sweden, and Greece

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Abstract

Background: Existing health systems are a product of, and are influenced by, specific political, historical, cultural, and socio-economic traditions. Consequently, they may differ considerably across countries. The pandemic has become a turning point for our healthcare systems and at the same time has also highlighted the need to strengthen the EU’s role in coordinating health care. This paper analyzes the characteristics of the health care systems in three EU countries—Germany, Sweden, and Greece—that represent three different health care system types in Europe as well as their health policy response, to the COVID-19 pandemic.

Design and methods: More analytically, the paper attempts to identify indications of interaction between health care system types and national responses in the health crisis, using data collected from the COVID-19 Health Systems Response Monitor, the European Observatory on Health Systems and Politics as well as the OECD health system characteristics database and national health legislation.

Results: The investigation revealed some common responses in all three systems. During the pandemic, in all three health care systems a new model is revealed where the private and the public sector coexist and is characterized by the dynamic state-market relationship. As a result a multilevel approach in health policy, combining national, sub-national, and supranational action is again in the foreground.

Conclusions: The paper concludes by articulating some remarks regarding health policy during the pandemic, as well as the European health systems transformation and the importance of maintaining a strong welfare state in Europe.

Keywords

COVID-19, European Union, health policy, health systems, public health, welfare state

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Introduction

As the health crisis unfolds and European countries are implementing additional measures to strengthen their health systems’ capacity to endure the COVID-19 pandemic, it is a moral imperative for European health policymakers to begin taking steps to build resilience in their health system. In the post-pandemic era, it will thus be key to adequately frame resilience as a key dimension of health system performance, so that it can be systematically factored in health system decision making and policy design processes.¹

Finance and organization of health care in the EU Member States is based on national political and socio-economic traditions. Countries share common social objectives in health care finance and delivery and as a
result, although EU countries have each developed their own mechanisms, concerning health care provision, similar objectives, and common historical developments have resulted in systems which have much in common. The COVID-19 crisis poses challenges in all areas and as a result the pandemic could result to significant divergence or convergence in public health policy in EU countries.

The paper aims at analyzing the characteristics of health care systems in Germany, Sweden, and Greece with special reference to population coverage, degree of decentralization, ownership and management of health structures, sources of funding, private sector share, and the employment status of doctors, using data from the European Observatory on Health Systems and Policies as well as the OECD health system characteristics database and national health legislation. The selection of the countries for analysis, is based on a theoretical framework that gives us the opportunity to classify countries, based on their characteristics, into welfare state types and healthcare models.

Moreover, the paper investigates, using data from the Health Systems Response Monitor, the responsiveness of health care systems in COVID-19 pandemic. The overall analysis designates the individual characteristics of health care systems in Europe as well as their responses to the pandemic, by analyzing health system characteristics such as, population coverage, degree of decentralization, ownership and management of health structures, sources of funding, private sector share and the employment status of doctors, and reveals similarities and differences between the initial principals and goals of the systems.

The paper concludes with some conclusive remarks about the major direct and indirect impacts of the pandemic in healthcare that exposed the structural fragilities that characterized many European health systems prior to its onset, which remained either undetected or underestimated in their risk potential until the health crisis hit.

From welfare state to health care system classification

When looking at the literature regarding welfare state classification, one can see that most comparative studies on welfare systems employ, as a benchmark, the Esping-Andersen Three Worlds of Welfare classification. Based primarily on the examination of labor market decommodification, Esping-Andersen proposed a three-fold welfare state typology whereby Western countries fell into one of three regime ideal-types: Liberal, Conservative, or Social Democratic.

Gosta Esping-Andersen’s theory, at a methodological level, is also a starting point for the development of healthcare models. Often, of course, the general model of a welfare state differs from the individual areas of social policy. Therefore, for the design of ideal types of healthcare systems, it is necessary to take into consideration different parameters from those that apply to the design of ideal types of welfare state.

Esping-Andersen’s work was strongly criticized and as a result alternative welfare state typologies emerged. The study of welfare state taxonomy revealed that some countries are representative examples of welfare state types in all sub-classifications. The present paper examines the characteristic of the healthcare systems in Germany, Sweden, and Greece, countries that, represent three different types of welfare state in Europe.

In comparative health policy, the German health care system is characterized in most studies as a social security system, also as a corporate model, social health care system, or basic capitalist. Swedish healthcare system is characterized as Beveridge model, National Health Services System, as most socialized, core capitalist social welfare, entrenched command and control state, or universal coverage controlled access system.

The healthcare system in Greece, which is characterized by Moran as an insecure control and regulatory state system, is inspired by the British system.

Health system characteristics in Germany, Sweden, and Greece

Population coverage

National Health System of Sweden, as well as Social Health Insurance System of Germany and Greece, obtained universal coverage for permanent residents and in some cases for additional population groups, such as immigrants, but always as part of the public system coverage.

In Germany for example, all residents have the right in health insurance, a right which is based primarily on the insurance scheme. Vulnerable groups, refugees, asylum seekers, and illegal immigrants, can either join a health insurance scheme, or are provided with limited healthcare services.

Swedish healthcare system provides universal coverage for those residing in the country, for children seeking asylum, and since 2013 emergency hospital care and maternity care, is also provided for the illegal immigrants.

In Greece, although in the past the coverage was mainly related to the employment relationship, in 2014 the universal access to health care was established by law. All Greek citizens now have the right to have access to primary health care, including diagnostic tests. Moreover, in 2016 the right to health coverage extends to both the uninsured and vulnerable social groups.

Overall, for the EU countries, the Directive 2011/24/EU on the implementation of patients’ rights in cross-border healthcare, ensures full healthcare for all EU citizens in all EU countries. Guests who hold a European Health Insurance Card, do not make direct payments for care in their country of residence. The host country has the right to claim the cost of care from the compulsory insurance system of the country of origin of the visitor.
**Degree of decentralization**

The degree of decentralisation varies largely in the three countries. On the one hand, Greek system can be characterized as central governing, while on the other hand, the Swedish system can be characterized as local. In all three countries, efforts have been made, during the last decade, to decentralize services as well as the level of decision-making. Health policy in Sweden presents a high level of decentralization, while in Germany and in Greece, the provision of health care is a central responsibility or responsibility of the Federal State.

The decentralization of health care in Germany took a form of delegation of governmental power to corporatist institutions within the SHI system, while institutions at the federal level (e.g. the Federal Ministry of Health) are responsible for setting the legal framework and the supervision of the main corporatist bodies. In Sweden, the role of local government is important, with healthcare being almost the sole responsibility of local authorities. Decentralization of responsibilities within the Swedish health care system not only refers to relations between central and local government, but also to decentralization within each county council.

In the case of Greece, the responsibilities of providing health services often fall under the responsibility of the central government or social security institutions, leaving little or no room for decentralized structures.

**Provision and financing of health care**

In Germany, social security funds or private companies are responsible for providing health care. In Greece, a single social security institution (single-payer model) and the private sector are responsible for the provision of health care while in Sweden, the services are provided by the National Health System which covers the entire population.

In Sweden, the financing of basic insurance is gradually transferred from National to local level. Co-payment is required in several cases, such as provision of hospital care services in public health care system. In Greece and Germany, hospital care, as well as primary care, is provided free of charge at the point of use (provided by public bodies) for patients covered by compulsory health insurance and private health insurance. In Sweden, patients in primary care are required to pay a fee regulated by each Regional Council.

Diagnostic and laboratory tests are provided free of charge at the point of use, in public facilities, in Germany and Greece, while in Sweden co-payment is required.

In Germany, patients are required to pay 10% of the cost of medication, while in Greece the rate ranges from 0%, 10% and 25% depending on the category of drugs. In Sweden, the participation fee is recoverable although if the patient exceeds a specific amount, a co-insurance rate applies. The cost for special care is the same among health care providers and is usually recoverable from social security funds. In Greece, the cost of specialized health services may differ between providers.

**Ownership and management of health providers**

During the last decade, public, private non-profit, and private for-profit hospitals coexist in all three countries. Public hospitals, in Germany, are self-governing structures in municipalities, while the management of health structures in Sweden is in the responsibility of the local government. In Greece, the management of hospital care is in the responsibility of the Central Government.

The method of payment for public hospitals and private non-profit hospitals in Germany and Greece is the fee per incident. In the case of Sweden, public hospitals are funded on a total budget. Since the early 2010s, payment per case is gradually applied.

**The role of the private sector**

In all three systems, statutory health insurance and substitutive private health insurance coexist. However, in Germany, until 2004, private insurance was for those excluded from the public. Since 2004, statutory health insurance and substitutive private health insurance together provide de facto universal health coverage.

The introduction of the “internal market,” which separated the purchasing (commissioning) and provision of health care services and existed in Sweden, aimed at increasing the efficiency and quality of services by drawing on the principles of a competitive market, while private entities entered the primary care system in order to compete with public structures. Thought, the “internal market” did not change the basic principles of the system, but privatization of health services began when health suppliers had the right to enter the system and compete, in order to secure funding, with public primary care providers. In addition, for-profit health care providers, who meet certain criteria, are allowed to choose where to set up tax-funded health centers, based on the increasing of their profits rather than meeting the needs of the population.

In Germany, both primary and specialist outpatient care are provided by private doctors or groups of private doctors. Hospital care is provided by public hospitals which are self-governing structures, at the level of the Municipality, non-profit private hospitals or private hospitals. Patients are free to choose a primary care physician or hospital for treatment.

In Sweden, primary, specialized and hospital care are provided by both public and private entities. The hospitals belong to the Local Government with the administration being granted to private non-profit organizations. Patients have the right to choose provider. They also have the right to choose where to be treated as funding follows the patient.
In the Greek health care system, primary care is provided mainly by private doctors or by private doctors. The specialized services are provided mainly by private doctors or by private hospitals. Hospital care is provided by public hospitals, non-profit private hospitals or even private hospitals. Patients have the right to choose a structure or doctor but their choice may affect the cost they have to pay.17

Right to practice medicine privately

In the German healthcare system, primary health care is provided mainly by private doctors in solo and in group practice. Some private doctors have the right to provide services to their patients in hospitals. Private practice doctors are paid according to a predetermined price list while they also retain the right to examine patients privately and to be paid at higher rates than those of the sickness funds. All hospitals mainly employ salaried doctors who usually do not have the right to practice privately. Older doctors can provide services to privately insured patients for a fee per medical act. Hospitals can also provide specialized services in outpatient clinics. Primary care physicians have the right to practice privately.15

In the Swedish healthcare system, doctors have the right to practice privately. Doctors and other staff in public structures are paid with a salary, while private doctors, who have a contract with the District Councils, are paid per medical act. Since 2005, practitioners are allowed to become self-employed and not exclusively salaried civil servants. Citizens have the right to choose a private family doctor by giving private doctors the right to enter the local health market.16

In Greece, doctors of the National Health System are full-time and of exclusive employment. They can also practice medicine privately only in the afternoon clinics of hospitals. Exceptions are made for university and military doctors. Moreover, private doctors can enter in primary health care, depending on the health needs of the population, especially in remote arias (Table 1).17

Health systems response to the COVID-19 pandemic

Data in this chapter are mostly collected from the COVID-19 Health Systems Response Monitor, a joint initiative of the World Health Organization in Europe, the European Commission and the European Observatory on Health Systems and Policies.

The data collected revealed that a variety of policies have been implemented in the three countries in response to the COVID-19 pandemic. The three systems, often shared common strategies as well as significant differences in the way they managed the pandemic.

Generally, the COVID-19 pandemic has shown the importance of public health leadership. Countries that had strong public health leadership were better able to design and implement rapid and effective responses that reduced the spread of infection, minimized the impact on lives and the economy, and engaged with the public.20

Germany’s response

During the first wave of the COVID-19 pandemic, the federal structure of several states has proven to be effective in responding to the health crisis. By declaring a “disaster situation” most of them, centralized the decision-making process to some extent.21 In Germany, for example, the “Act for the Protection of Public Health in an Epidemic Situation of National Importance,” adopted on 27 March 2020, gives the Federal Ministry of Health extended powers. In other countries such as Greece, the Minister of Health is in charge of the action against COVID-19.

Moreover, in Germany, on March 25, 2020, the parliament passed the COVID-19 Hospital Relief Act. The law included measures to ensure the financing of hospitals and to ensure their cash flow. The additional costs for these measures are financed by the Central Reallocation Pool (Gesundheitsfonds), which consists of Social Security contributions and taxation. The law aimed at strengthening the capacity of hospitals by compensating them for reducing admissions, providing financial assistance, increasing their efficiency at the level of COVID-19 incident management, as well as reducing the administrative burden. In addition, in February 2021, the Federal Government announced measures in order to provide financial support for health professionals.22

Together with intensive care physicians, the Federal Government and the Länder have the responsibility to transfer COVID-19 intensive care patients from regions heavily affected by the pandemic to hospitals in less severely affected regions.22

On March 28, 2020, the Federal Parliament passed the first Act for the protection of the population in case of a pandemic of national importance and on May 14, 2020, a second law, with a purpose to extend the provisions of the first law is also signed. The laws, included a package of measures concerning testing, the obligation to report test results, health and long-term care professionals, and their financing.23 Special regulations for private health insurance have been also laid down to protect the insurance status of patients.

The prevention and control of infections in Germany is regulated by the law on protection against infections. The Ministry of Health also has the ability to support staff in the healthcare system, for example, authorizing health professionals to perform medical work even if they are qualified following the pandemic management guidelines and under the responsibility of the Ministry of Health.22 Although Germany is a rather centralized federation, the distribution
| Welfare state model | Germany | Sweden | Greece |
|---------------------|---------|--------|--------|
| Conservative-Corporatist, Bismarck, Continental, Corporatist, Model that emphasizes providing the necessary income for household maintenance, Conservative, Christian democratic | Social democratic, Scandinavian, Inclusive, Ecumenical, Social democratic | Latin territory, Southern countries, Model of Mediterranean countries, |
| Healthcare system model | Social security system, Basic capitalist, Contributed based on gross corporate governance, Corporate, Social security, Benefit oriented | National health service system, Basic social welfare Capitalist, Tax-based, State-controlled and regulatory, National health services, Universal coverage and controlled access | Tax-based public, Unsafe control and regulatory state, Former fascist |
| Establishment of a National health insurance/coverage system | 1883–1889 (First National Social Security System with a series of laws), 1951 (Law on Local Government) | 1946 (National Health Insurance Act) | 1983 (Law 1397/83 “Establishment of a National Health System”) |
| Basic principles of the system | - Principle of solidarity | - Principle of solidarity and priority as needed, | - Principle of solidarity, health is defined as a social good |
| | - Principle of self-government | - Principle of human dignity, | - Principle of exclusive responsibility of the state, |
| | - Principle of compulsory insurance | - Principle of providing a high level of benefits, | - Principle of free and fair access to health services, |
| | - Principle of financing from contributions to the funds | - Principle of cost-effectiveness control of services for better utilization of resources, | - Principle of citizenship and employment status, |
| | - Principle of not direct payments | | - Principle of providing a high level of benefits, |
| Role of the state | Regulatory and legislative, not responsible to guarantee integrated care | Regulatory state with the transfer of responsibility for the provision of all health services from the central to the regional and local level | Guarantees the existence of private and public bodies, ensuring free choice and respect for human dignity |
| Population coverage | Almost universal coverage is provided for all permanent residents by sickness or private insurance, however there are some gaps. (Contributory health coverage) | Universal coverage of those living in the country (Residence - based health coverage) | The coverage of the population is connected with the insurance regime while from 2016 onward the uninsured and the immigrants are now covered (Contributory health coverage) |
| Population coverage | 100% social health insurance coverage | 100% statutory national health system coverage | 100% social health insurance coverage |
| Decentralization Degree | High. Assignment of responsibilities to local structures and organizations outside the Central Government such as non-governmental organizations which are indirectly controlled by the State. Governance at three levels, at the level of Federal Government, Regions and self-governing bodies. | High. Decentralized health system serving distinct geographical areas. The 21 District Councils are responsible for the provision, purchase and financing of services, the districts for the provision of primary care and the Municipalities for the care of the elderly and people with disabilities. | Low degree of decentralization, strong state-centered tendency. The Ministry of Health has the responsibility of institutionalizing and coordinating health services with local authorities taking on gradually increased tasks |
| Type of basic insurance | Public | Public | Public |
| Main sources of funding for basic health insurance | Mandatory health insurance system financed by contributions in the insurance funds or companies. Taxation is supplementary funding | Tax funded local health systems that serve distinct geographic regions | Mandatory health insurance system financed by contributions to the single health insurance fund (single-payer model). Taxation is supplementary funding |
| Costs sharing for hospital care | Co-payment of 10 euros per day of hospitalization with a maximum of 280 €/year | Co-payment of SEK 50–100 per day of hospitalization. Children and young people under the age of 20 and adults over the age of 85 are excluded from participation. | Free at the point of provision of services by public bodies. Co-payments and additional charge for patients in private hospitals. |
Table 1. (continued).

| Costs sharing for primary care | Germany | Sweden | Greece |
|-------------------------------|---------|--------|--------|
| Free at the point of care for patients with statutory health insurance and patient with selected PHI contracts. | Co-payment of SEK 150–300 | Free at the point of provision of services by public bodies. Co-payment for the afternoon surgeries. |

| Costs sharing for diagnostic tests and specialized services | Free at the point of care | Co-payment of SEK 200–400 if no referral has been made by the primary care. Maximum participation is SEK 1,100. | They are usually covered without participation for the provision in public facilities and with low participation cost by the private providers for those with private health insurance. |

| Private health insurance is a secondary source of coverage for some of the population | Yes, those who are excluded from public or voluntarily choose supplementary private insurance. | Yes, private voluntary supplementary insurance. Private health insurance rates have been rising for the past 15 years | Yes, private voluntary supplementary insurance. |

| Primary care services are mainly provided | Private solo practice | Public primary care clinics | Public primary care clinics |
| Second significant form of service provision | Private group practices staffed by physicians only | Private group practices | Private solo practice |
| Specialized outpatient care services are mainly provided | Private solo practice | Public clinics | Private solo practices |
| An alternative form of providing specialized outpatient care services | Private group practice | Private group practice | Outpatient clinics of private hospitals |

| Provision of emergency hospital care | Publicly owned hospitals, Not-for-profit privately owned hospitals, For-profit privately owned hospitals | Publicly owned hospitals, For-profit privately owned hospitals | Publicly owned hospitals, Not-for-profit privately owned hospitals |

| Right to practice medicine privately | Yes, for primary care physicians. Hospital doctors are usually not allowed to practice privately | Yes, doctors have the right to practice privately | The doctors of the National Health System, except university and military doctors, can practice privately only in the afternoon clinics of hospitals. |

| Public hospitals are mainly owned | Governance in the level of Municipals | Regional governance | Central governance |
| Method of employment of doctors who provide primary care services and payment method | Self-employed/Fee for Services | Public employees/Salary | Publicly employed/Mix of salary and fee for services |

| How doctors are employed in outpatient clinics | Self-employed | Public employees | Self-employed |
| How doctors are employed in hospital care | Public employees | Public employees | Public employees |

| Do primary care physicians control access to specialist care? | There is no need and no incentive to obtain primary care physician referral | Primary care physician referral is compulsory to access most types of specialist care (except in case of emergency) | There is no need and no incentive to obtain primary care physician referral |

| Are patients generally free to choose a primary care provider? | Patients are not given any incentive to choose one provider over another | Patients are not given any incentive to choose one provider over another | Patients can choose any primary care provider but have financial incentives to choose certain providers |
| Are patients usually free to choose providers for outpatient specialist services? | Patients do not face any incentives to choose one provider over another | Patients do not face any incentives to choose one provider over another | Patients can choose any physician providing outpatient specialist services but have financial incentives to choose certain providers |

| Are patients usually free to choose hospitals for in-patient care? | Patients can choose any hospital without any consequence | Patients can choose any hospital without any consequence | Patients are free to choose any hospital but they have financial incentives to choose some providers |

| Are prices of primary care services the same or different between providers? | Health care services are free at the point of care | All providers charge the same price to patients (partly or fully refunded by coverage schemes) | All providers charge the same price to patients (partly or fully refunded by coverage schemes) |
| Are prices of outpatient specialist services the same or different between providers? | Outpatient specialist services are free at the point of care | All providers charge the same price to patients (partly or fully refunded by coverage schemes) | Prices charged to patients can vary across providers with possible consequences for the patient’s own expenses |

Source: Data were collected from the database on the characteristics of the health systems of the OECD countries. OECD Health Committee, “Health Systems Characteristics Survey 2016 Project Outline,” 2016, http://www.oecd.org/els/health-systems/OECD-HSC-Survey-2016-Project-outline.pdf
of powers, in the event of a public health crisis, puts most responsibility on the Länder, Germany’s constituent units. The crisis has not led to a shift of authority either. It mainly confirmed the emphasis on coordination and collaboration characteristic of German federalism.24

The decentralized approach to restriction measures meant that they could be tailored to local circumstances. The most severely affected Länder could impose stricter measures than others with fewer cases. Intergovernmental coordination ensured that decentralized decision-making nevertheless would not lead to contradictory measures or harmful policy diversity.24

Other consensus countries displaying similar response patterns include Sweden.

Sweden’s response

In Sweden, universal coverage is provided for the control of COVID-19 disease as well as for the care of all citizens and individuals residing or visiting Sweden and there are no additional costs for these services. Children who are undocumented migrants or seeking asylum as well as adult asylum seekers or undocumented migrants, are entitled to health care in case of serious illness caused by COVID-19.25 On April 15, the government decided to provide additional funding to regions and municipalities to cover the extra costs of providing health and social care services as a result of COVID-19. The Swedish Public Health Agency coordinates pandemic action at national level and supports planning at regional and local level, where interventions take place. The Swedish Public Health Agency is responsible for planning, coordinating and distributing the vaccines to the regions. Vaccinations are provided by the statutory health system free at the point of use. This includes undocumented immigrants and asylum seekers. The regions can decide if and how they want to include private actors. The central authorities that cooperate and have the responsibility of managing the disease are the bodies of the Ministry of Interior and the Ministry of Social Affairs, the Public Health Service and the National Council for Health and Welfare and Social Security.25

In each area there is an infectious disease doctor who draws up an action plan against the pandemic and works with representatives of the area who have taken over the management of emergencies. Municipalities also have pandemic action plans and emergency plans. Moreover, in order to strengthen health care system’s capacity, people with a background in care or health care, have offered their services to hospitals who have been hiring on demand. The private sector and military have provided support with material resources. Several Swedish companies are changing their production to ensure the domestic production of healthcare materials, including masks and disinfectants. The Rise State Research Institute is responsible for quality control of materials.25

Greece’s response

In the case of Greece and according to the Government Gazette for “Compulsory provision of hospital beds, intensive care beds, facilities and wards, in the Greek State by private health care providers, to cover the urgent need of public health, from the outbreak of coronavirus COVID-19,” collaborations were made between the public and private sectors for the purchase of beds in Intensive Care Units, with private hospitals being able to be reimbursed by the national health insurance fund. Patients who will be treated in private clinics will not be charged any costs. There is an emergency plan in case the number of COVID-19 patients increases dramatically.26,27

The ordering of private clinics (facilities, personal protective equipment, pharmaceuticals, and staff), implemented by Ministerial Decision on November 19, for Compulsory Provision of Hospital Beds, Intensive Care Beds, Facilities and Wards, in the Greek State by Private Health Care Providers, to Cover the Urgent Need of Public Health, from the Outbreak of Coronavirus COVID-19,28 followed the dramatic increase in cases in the country.

Five health centers in Attiki (Capital Region) have dedicated their operation to COVID-19 patients, with potential expansion to rural health centers. A tele-counseling network for COVID-19 patients, operating through Health Centers has been constructed.29

In addition, the Act of Legislative Content, “Urgent Measures to Prevent and Limit the Spread of Coronavirus,”30 provided additional financial support to the Ministry of Health for the recruitment of health personnel and the purchase of medical supplies in an effort to stop the spread of COVID-19. Significant funding has been provided to the Ministry of Health through donations in cash and in kind.29

Greece has secured access to a sufficient number of vaccines to cover its entire population through the EU joint purchasing mechanism. The Covid-19 vaccine is free & administered only in public structures. According to the Act 4675 of Prevention, Protection and Promotion of Health-Development of Public Health Services and Other Provisions,31 the national response to COVID-19 is led by the National Agency for Public Health (EODY) and the Ministry of Health.29

EU response

The recent health crisis has triggered even greater collective action, in the European Union, although the provision of healthcare and public health remains in the responsibility of the Member States. The outbreak of the coronavirus pandemic has necessitated the coordination of national policies and the rapid activation of the European mechanism for tackling the pandemic and its socio-economic impact on the EU countries.

On 21 July 2020, following a proposal from the European Commission, the EU leaders reached an agreement on the
recovery plan and the European long-term budget 2021–2027 for the EU27, that will allow the EU to provide funding over the coming years to support recovery from the COVID-19 pandemic and the EU’s long-term priorities across different policy areas.\textsuperscript{32}

Moreover, a total of €750 billion will be allocated through the Next Generation EU initiative in the Member States. Most of the funding provided, will be used to support public investment and key structural reforms in the Member States, with an emphasis on the effects of the crisis.

The budget of the new Multiannual Financial Framework (MFF) of €1.074 billion, will allow the European Union to meet current and future challenges and meet its policy priorities for the period 2021–2027. The Next Generation EU (NGEU), therefore, will be the main instrument for implementing the recovery package in response to the socio-economic impact of the pandemic.\textsuperscript{33}

Moreover, “Health” program will be established to enhance safety and prepare for future health crises. The funding from the Health program will be €5.3 billion and it is expected to improve and foster health in the Union and to tackle cross-border health threats as well as improve the resilience of health systems to ensure better health outcomes for all.\textsuperscript{34}

The European Commission also plays a key role on disease management by ensuring a better level of equipment supplies, availability to all EU citizens, the fastest possible, safe vaccine and safe medication, while taking every step to strengthen health systems and provide a common framework for disease management and treatment. As a result, on 17 June 2020, the European Commission, presented the EU Vaccines Strategy to accelerate the development, manufacturing and deployment of vaccines against COVID-19.\textsuperscript{35}

Moreover, the Commission launched an accelerated joint procurement procedure and a €2 billion reinforcement of rescEU will strengthen the capacity of the systems to deal with cross-border emergencies such as the COVID-19 pandemic.\textsuperscript{36} The voluntary agreement on the joint supply of medical equipment enables the joint purchase of the relevant supplies and allows for the large-scale common market for equipment and supplies. The European Commission coordinates the process, bringing together the needs of the Member States. According to the European Commission, in the recent past, the joint procurement agreement has succeeded in improving Member States’ preparedness for the next influenza pandemic. In addition, it ensures equal access and treatment, guarantees more balanced prices and highlights the high level of solidarity between EU Member States.\textsuperscript{37}

In June 2021, the European Commission in a statement, presented the first lessons learned from the COVID-19 pandemic in the last 18 months, in order to improve action in this area, at national and EU level. Among other things, it has been found that the ability to deal with a pandemic

depends on continuous and increased investment in health systems. Member States should receive support to enhance the overall resilience of healthcare systems as part of their investment in recovery and resilience. In addition, the need to establish pandemic preparedness partnerships between Member States is recognized.\textsuperscript{38}

**Discussion**

The data used in the present analysis were gathered from the European Observatory on Health Systems and Politics as well as the OECD health system characteristics database and national health legislation.

More analytically, OECD health system characteristics database was used in order to extract data concerning health care system characteristics, with special reference to population coverage, degree of decentralization, ownership and management of health structures, sources of funding, private sector share, and the employment status of doctors, in Germany, Sweden, and Greece. The dataset consists of results for the 2016 round of the Health System Characteristics survey as provided by countries, as well as results for the 2012 round of the survey.

Moreover, the comparison tool from the European Observatory on Health Systems and Politics database was used in order to extract data regarding the response to the pandemic. More analytically, using the comparison tool, Germany, Sweden, and Greece were selected in order to compare their health systems. The database extracted the content from the published Health system review, referring to the first and the second wave measures, and data were collected using keywords such as, population coverage, governance, private sector, private practice. The data collected corresponds to the first and the second wave measures.

The investigation revealed some common responses in all three countries. All three systems maintained the universal coverage providing for free COVID-19 treatment, as well as tracking, testing and vaccination. Universal coverage reduced unmet care needs and health inequalities among population in a way that the pandemic turned the attention to the future architecture of the health care systems.

Moreover, all countries used a more centralized approach to decision making. Germany have passed emergency laws in order to impose rapid cross-sectoral governance as well as authorizing governments to take specific actions. In Greece, the Minister of Health is at the forefront of the governmental response to COVID-19. Sweden, seems to have relied on technical expertise of the public health agency, with politicians distancing from the decision-making process. In the second wave of the pandemic, there seems to be less centralization, particularly in federations, and regional or local governments are more prominent.\textsuperscript{39}
The cooperation between public and private actors turned to be a necessity during the pandemic. Hospitals and in some cases private health infrastructures, were forced to convert existing wards to make them suitable for patients with COVID-19. Moreover, in systems where private practice is part of the health care provision, private practice doctors were forced to offer their services to hospitals and to coordinate to the system in order to strengthen system’s capacity.

In all three systems additional funding was provided from the governments and from the EU as well as measures to support businesses. The EU funding is expected to improve and foster health in the Union and to tackle cross-border health threats as well as improve the resilience of health systems to ensure better health outcomes for all. But most importantly, it has been found that the ability to deal with a pandemic depends on continuous and increased investment in health systems. The involvement of the EU can lead to a policy convergence, necessary for the resilience of the systems.

Conclusion

This paper investigated indications of interaction between health care system types and national responses in the health crisis, by analyzing the characteristics of the health care systems, with special reference to population coverage, degree of decentralization, ownership and management of health structures, sources of funding, private sector share, and the employment status of doctors, in three European countries—Germany, Sweden, and Greece—that represent different health care system types in Europe as well as their health policy response to the COVID-19 pandemic. The investigation revealed that unlike previous crises, the coronavirus crisis poses challenges in all areas, without questioning the role of state intervention. A multilevel approach in health policy, combining national, sub-national and supranational action is again in the foreground. In all health care systems, a new model is revealed where the private and the public sector coexist and is characterized by the dynamic state-market relationship. Health policies seem to converge in the international environment with weaker countries adopting policies and how to manage crises of powerful countries. The welfare state, despite its weaknesses, still maintains its resilience, and its policies are as important today for the functioning of modern European societies as they were a century ago.

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Ethics approval and consent to participate
Not applicable

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Not applicable

Significance for Public Health

Unlike previous crises, the coronavirus crisis poses challenges in all areas, without questioning the role of state intervention. By presenting data collected from three representative health care models in EU, the study presents similarities and differences in policy responses due to the pandemic outbreak. The purpose of the study is to highlight the need to strengthen the EU’s role in coordinating health care in Europe. Although the provision of healthcare and public health remains in the responsibility of the Member States, the health crisis revealed the necessity of coordination of national policies with the activation of the European mechanism.

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Availability of data and materials

All data generated or analyzed during this study are included in this published article.
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