Re-profiling emergency medical services in Greece

Assessment report

With funding by the European Union
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Assessment report

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WHO European Centre for Primary Health Care
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Abstract

This report presents the results of an assessment of emergency medical services in Greece. Acute care requires a coordinated response that involves a continuum of services that begin with primary care. In accordance with the European Framework for Action on Integrated Health Services, this report proposes focusing efforts on managing chronic diseases in primary care, strengthening the primary care workforce through primary care networks, establishing networks of out-of-hours providers in primary care, re-profiling emergency departments as specialized services, reinforcing the various connectors and interfaces to increase communication and coordination between primary care and emergency medical services and reorganizing hospitals to support primary care. The assessment comes as part of a series of activities outlined in the context of the collaboration between the WHO Regional Office for Europe and the Ministry of Health to strengthen the health system in Greece, financially supported by the Structural Reform Support Service of the European Commission.

Keywords

DELIVERY OF HEALTHCARE
HEALTH CARE SYSTEMS
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Background

This report presents the results of an assessment of the role of emergency medical services in managing the acute care needs of people with chronic diseases in Greece. The work is part of a larger collaboration initiated in January 2016 between the WHO Regional Office for Europe, Division of Health Systems and Public Health and the Ministry of Health of Greece to implement the 5-year reform plan: “Greece’s health sector beyond austerity: the 100 actions plan for universal coverage.”

The collaboration, known as “Strengthening Capacity for Universal Coverage,” is financially supported by funds from the Structural Reform Support Service of the European Commission. The second phase of Strengthening Capacity for Universal Coverage focuses on policy interventions and activities aiming to strengthen public health services, financial protection of the population by reducing out-of-pocket payments and strategic planning of human resources for health.

In 2011, in accordance with European Union (EU) directives (1), a Central Health Council working group recommended defining the competencies, knowledge areas and skills for emergency physicians; proposed the contents and structure for emergency medicine specialists training programmes; and suggested the development, classification and staffing of the autonomous emergency departments in hospitals (2).

Following this proposal, in 2012, the Ministry of Health issued a decree governing the organization, structure, operational procedures and staffing of emergency departments. In practice, this regulation was never implemented.

In 2015, emergency departments of public hospitals served more than 4.5 million emergency cases, and health centres (mostly in rural areas) responded to 3 million cases (3). During the assessment, informants reported that more than 60% of the health services in emergency departments in Greece could be treated in primary care. This misuse of resources risks the safety of patients, compromises the overall quality of care, adds an enormous and unnecessary strain on health professionals and risks increasing inequity.

In this context, WHO conducted an assessment of emergency medical services in January 2017 with the aim of providing guidance for its re-profiling as part of the continuum of services that start in primary care. Taking an integrated approach to health services delivery (4), the assessment focused on services dedicated to managing acute care needs in terms of services provided, the role of practitioners and the settings in which the services are provided (5).
The report outlines findings and policy recommendations on how to alleviate the pressure on emergency medical services by strengthening the foundations of primary care and improving the organization of hospitals to ensure they are supportive of a primary care–led health system.
Methods

This report is based on the findings of a five-day country assessment at the end of January 2017. A multidisciplinary team of professionals conducted the assessment. During the week, the experts visited a range of services currently managing acute care in Greece accompanied by Ministry of Health officials.

The findings were complemented with the review of the most up-to-date background documentation on the health system and primary care reforms in Greece provided by the WHO Project Office in Greece. In addition, a dedicated research team at the WHO Project Office provided data on emergency medical services and hospital visits. Preliminary findings and policy recommendations were presented and discussed with the Ministry of Health.

Field visits and interviews
Field visits included the National Centre for Emergency Medical Services (EKAV), the Elefsina Heli-Centre, the Psachna Health Centre, the Regional Clinic of Drosia in Evia, the Chalkida Hospital emergency department and the Ippokrateio General Hospital emergency department. To understand the services for acute conditions and health providers’ roles and future plans, interviews were held with chief executives and professional staff member of these institutions.

Meetings were also arranged with Ministry of Health officials, representatives of the primary health care task force and various associations, including the Organization of Cooperative Pharmacists, the Hellenic Diabetes Federation, the Greek Association of General Practitioners and members of the Hellenic Regulatory Body of Nurses. These meetings aimed to understand the relationships between various actors and their respective responsibilities in shaping the development of health services in Greece.

Conceptual framework used for assessing acute care
The work is framed in accordance with the model for managing acute care developed by Hirshon et al. (6). According to Hirshon et al. (6), responding effectively to acute care requires integrating a range of health services (both providers and settings) that are designed and organized to deliver acute care (Fig. 1). Acute care is uniquely defined by the need to restore health following a state of infirmity but also by its timeliness (6). Understanding the scope of services provided in emergency medical services was therefore the point of entry of the assessment.
Four elements were considered to effectively integrate services that respond to acute care: (1) a focus on clinical outcomes and stratification to recognize and identify the priorities and level of urgency of the different clinical cases; (2) differentiation of services in terms of their scope in the network of providers available; (3) networking between providers to optimize capacity and responsibilities; and (4) strengthening connectors and interfaces using technologies and platforms to optimize communication between services and providers. Table 1 describes these elements in more detail, and Fig. 2 describes how they are related to one another.
If any of these elements is sub-optimally developed, emergency medical services are overwhelmed by conditions that could have been better treated and managed in primary care, preventing the provision of critical, trauma, emergency and overall specialized services in a timely, equitable and safe manner.

The key to optimizing emergency medical services and primary care services is therefore to understand what resources both these services have available to address the current and future need of acute care, also given the burden of disease and accessibility.

The following section presents and discusses these considerations applied to the context of Greece.

---

**Table 1. Elements for effectively integrating acute care health services**

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focusing on clinical outcomes and stratification</td>
<td>Different clinical needs are associated with different time sensitivities. Having a well-informed understanding on how to identify, set priorities for and manage these clinical cases using national guidelines and a nationalized triage guideline is essential to ensuring that these clinical needs are given appropriate priority.</td>
</tr>
<tr>
<td>Service differentiation</td>
<td>Various services are necessary to manage acute conditions over the course of time, with some being more appropriate than others at any given point in time. Sharing a common understanding of the scope and purpose of these services is key to understanding which of these services are more or less needed at any given time.</td>
</tr>
<tr>
<td>Network providers</td>
<td>Acute conditions are managed over time and with a life-course perspective. These clinical needs and the various service needs should be addressed by a network of providers whose integration is fundamental for ensuring the best outcomes for patients. Further, arrangements need to be set up to maximize the integration of these providers with each other so that provider services at all levels (primary, secondary, tertiary and quaternary) can benefit maximally.</td>
</tr>
<tr>
<td>Connectors and interfaces</td>
<td>To operationalize a response, given the previous three tasks, connectors and interfaces are of utmost importance in keeping lines of communication open between services, providers and patients. This ensures the continuity and coherence of care that is needed to ensure the best response to patient needs.</td>
</tr>
</tbody>
</table>

Source: WHO European Centre for Primary Health Care.
Findings

Focus on clinical outcomes

Acute care demand due to chronic conditions and ageing

Health status in terms of life expectancy and mortality has continually improved in Greece, but the pace of improvement has been slower than in other countries in the WHO European Region. The health and demographic profile for Greece is experiencing changes towards chronic noncommunicable diseases that are putting pressure on all services in Greece. Noncommunicable diseases alone account for an estimated 90% of total deaths (Fig. 3). Noncommunicable diseases place disproportional pressure on services because they require time-sensitive acute care. If not managed and monitored in a preventive manner by monitoring organ degeneration, adjusting and renewing medication according to changes in status and dietary regulation, for example, these diseases quickly accelerate. If health systems are not subsequently organized to differentiate the services available to manage this degeneration, this will necessarily result in an uneven pressure on emergency medical services.

Major pressure currently results from increased levels of premature death from circulatory diseases, cancer and respiratory diseases. At present, ischaemic heart diseases cause 48% of total deaths and neoplasms 26% (7, 8). The period from 2005 to 2015 saw the greatest increase in deaths caused by chronic obstructive pulmonary disease (74%) but also Alzheimer's disease (57%), followed by ischaemic heart disease (23%) and liver cancer (21%) (9).

Risk factors influencing morbidity and mortality from noncommunicable diseases include the high proportion of adult smoking (46% among men and 34% among women), placing Greece among the countries with the most smokers in the Organization for Economic Co-operation and Development (OECD), high blood pressure (27% of the population) and the high proportion of child obesity (10). Austerity has been associated with a rise in maternal and infant death rates and an increased rate of male suicide (7).
In 2014, life expectancy at birth in Greece was above the average for the WHO European Region (83 years for women and 79 years for men), and the 20% of the population older than 65 years is among the highest and most rapidly growing proportions in the EU and WHO European Region (Fig. 4) (11).
Ambulance and triage system

In many countries in the European Region, systems for monitoring emergency medical services are based on national triage tools and guidelines. Such systems are important to provide clarity at the emergency departments and to help practitioners at other points of care and settings to decide when to refer patients to the emergency department. Either a five or three-level triage tool is used. The main purpose is to determine the level of priority-setting of the care at the moment the patient arrives at an emergency department rather than to guide patients in navigating the network of possible services available. Greece has no unified national triage system. Triage varies in all the emergency departments visited, including the National Centre for Emergency Medical Services dispatcher service. Triage in rural health centres also varies.

Efforts are in place to coordinate emergency calls through the National Centre for Emergency Medical Services. However, because a single national triage system shared across the country is lacking, the final result remains inefficient and raises quality and equity concerns. Frustration is palpable with regard to the ambulance services, especially among rural health centres. Several anecdotal stories reporting...
ambulances lying idle in rural health centre parking lots confirm the lack of a shared understanding and coordination inefficiency.

**Differentiation of services**

**Emergency departments as the first point of care**

To take care of their health needs, most patients seek specialist care, bypassing primary care providers. Urban emergency departments appear to be highly affected by this pattern, with informants reporting that 60–80% of the visits could be avoided and cared for in rural or urban health centres and solo primary care units. This overcrowding is happening despite the coverage of emergency departments across the country.¹

In Athens, Thessaloniki and some other major cities in Greece, access to emergency departments is guaranteed 24/7 on a rotating basis. An emergency department “on duty” covers the entire city’s emergency needs, with shifts from 15:00 until 8:00 the next day. There are also some hospitals on duty 24/7, from 8:00 until 8:00 the next day.

Several factors appear to compound the overcrowding of emergency departments. Health centres at a distance from large urban centres are required to provide 24/7 care but report limited capacity – in terms of both human resources and equipment. Subsequently, they do not actually operate as a first response to care needs but rather as dispatchers of patients to larger emergency departments through the ambulance services of the National Centre for Emergency Medical Services. Informants report that many patients are directed from smaller urban health centres nearby that comprise the national primary health care network, and there is also a high proportion of self-referrals. The pattern of seeking care in urban emergency departments seems to be further reinforced by the general attitude that specialists are best positioned to manage patient care and an overall lack of trust in primary care practitioners to manage acute illness. This lack of prestige of general practitioners is exacerbated by the absence of an adequate training programme for them. Overall, the training and practice of general practitioners remains hospital focused, and there is no university curriculum for enhancing such skills as communication, patient management and collaboration, family medicine principles, public health, pharmacy and palliative care.

**Types of services demanded in emergency departments**

Data show an overall decline in visits to emergency departments since 2012 (Table 2), but no systematic registration has taken place to understand whether patients met the criteria for being treated in an emergency department or could have been better treated elsewhere. Large urban emergency departments systematically report emergency department visits but do not distinguish between cases treated. Large emergency departments of regional or urban hospitals reported no registration of waiting time.

Informants report that many people accessing emergency departments seek follow-up care, refills on prescriptions or advice on non-acute conditions. It is unclear

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¹ Greece has 423 emergency departments. These include: the emergency departments of rural or urban health centres (303), regional hospitals and large hospitals throughout the country, of which 22 are in Athens and 98 are outside Athens.
how many of these patients are admitted to the hospitals. One facility reported that more than 20% of the people visiting an emergency department were admitted. Discharge data in hospitals report shorter stays than the average for the EU.\(^{1}\)

Without reliable data describing the demographic and epidemiological profile of these patients, emergency medical services have difficulty in setting targets, benchmarking emergency departments, reorganizing services and identifying which competencies in managing acute care would be useful to strengthen in primary care. An opportunity for analysing data on the use of emergency medical services lies with the National Centre for Emergency Medical Services: the centralized public national service for medical emergencies. No statistics are available regarding the type of services provided. However, officials report that the Athens branch of the National Centre for Emergency Medical Services receives 30 000 calls a day, conducts about 800 evacuations per day and has experienced a 5% increase in calls since 2014. Informants recognize the relevance of a centralized system for planning purposes.

As with emergency medical services, there is no monitoring of primary care services provided in terms of nature of visits, diagnosis and degree of urgency.

**Table 2.** Number of visits in the emergency departments of hospitals in the public health system in Greece, 2012–2015

<table>
<thead>
<tr>
<th>Health Region</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>Change 2012-2016 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attica</td>
<td>1 116 548</td>
<td>1 149 093</td>
<td>1 213 228</td>
<td>1 142 275</td>
<td>+2.30</td>
</tr>
<tr>
<td>Piraeus Region and Aegean Islands</td>
<td>616 763</td>
<td>587 867</td>
<td>604 895</td>
<td>585 111</td>
<td>-5.13</td>
</tr>
<tr>
<td>Western and Central Macedonia</td>
<td>651 696</td>
<td>638 651</td>
<td>637 212</td>
<td>603 122</td>
<td>-7.45</td>
</tr>
<tr>
<td>East Macedonia and Thrace</td>
<td>865 387</td>
<td>815 945</td>
<td>765 381</td>
<td>710 302</td>
<td>-17.92</td>
</tr>
<tr>
<td>Thessaly and Central Greece (Sterea Ellada)</td>
<td>483 506</td>
<td>452 565</td>
<td>460 987</td>
<td>434 977</td>
<td>-10.04</td>
</tr>
<tr>
<td>Peloponnese, Ionian Islands Epirus and Western Greece</td>
<td>803 130</td>
<td>757 512</td>
<td>829 054</td>
<td>795 803</td>
<td>-0.91</td>
</tr>
<tr>
<td>Crete</td>
<td>392 348</td>
<td>388 888</td>
<td>399 123</td>
<td>380 718</td>
<td>-2.96</td>
</tr>
<tr>
<td>Total</td>
<td>4 929 378</td>
<td>4 790 521</td>
<td>4 909 880</td>
<td>4 652 308</td>
<td>-5.62</td>
</tr>
</tbody>
</table>

Source: ESYnet database [online database] (3).

**Response by emergency departments**

Another factor exacerbating the lack of coordination and clear differentiation of services at the point of emergency care is the lack of a specialization in emergency medicine. Equipping emergency departments with emergency medicine specialists
allows emergency departments to remain focused on cases that require specialized procedures improving quality and health outcomes. The EU sets a minimum of five years of training necessary to specialize in this field. Greece has not yet complied with this EU directive, and a national specialization in emergency does not exist. A national specialization in emergency is as important for the process of triage as for providing care after the triage.

For patient care after triage, emergency departments rely on specialists who move through the emergency department on a rotating basis. The presence of specialists in emergency departments may explain the high admission rates and, most importantly, raises concerns about the lack of a holistic approach.

In the absence of this specialization, nurses are not handling triage, which could be a way to release general practitioners towards primary care and to allow emergency specialists to provide care in emergency departments. Some nurses reported that they have volunteered to undergo courses from the National Centre for Emergency Medical Services but that this is not an official requirement by the hospital or by the government.

Only one hospital provides on-the-job emergency medicine training to its staff members but reported that this was unique. Paramedics working at the National Centre for Emergency Medical Services undergo two-year training at one of the National Centre for Emergency Medical Services centres in Athens or Thessaloniki, regardless of whether they work at the call centre or tend to patients in ambulances or air fleets.

National Centre for Emergency Medical Services training centres offer courses in emergency care (advanced life support, pre-hospital trauma life support, advanced trauma life support and basic life support) to professionals across the country. Data regarding enrolment were not available. These training programmes are a potential base on which nationwide mandatory training could be developed.

**Network of providers**

**Hospitals**

The population of Greece is served by 127 hospitals and 34,068 beds. This represents 3.1 beds per 1000 inhabitants, below the average for the 15 countries that were EU members before 2004 (EU15) and 27% lower than the average in the WHO European Region. However, the beds are not equitably distributed across the country. Some regions currently show an excess of hospital beds, such as Epirus, whereas others have a deficit, such as Sterea Ellada (Table 3).

The services provided in hospitals are not planned according to local needs and gradual specialization by case mix complexity. Smaller hospitals provide services based on the availability of the staff members and their specialties, generating inequalities in access across the country.

Hospital staffing is mostly based on availability at a specific hospital in that specific...
area or region rather than planned according to health local needs.

This situation mainly results from the lack of strategic planning of hospitals.

Hospitals do not appear to be reorienting patients towards primary care because of incentives to increase admissions. Practitioners from hospital and primary care report not being mutually informed about their patients.

The overall performance of hospitals is not measured, assessed or analysed.

**Table 3.** Hospital beds per 1000 population in regions in Greece

<table>
<thead>
<tr>
<th>Region</th>
<th>Inhabitants</th>
<th>Beds</th>
<th>Beds per 1000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Greece</td>
<td>679 796</td>
<td>1 871</td>
<td>2.8</td>
</tr>
<tr>
<td>Peloponnese</td>
<td>577 903</td>
<td>1 598</td>
<td>2.8</td>
</tr>
<tr>
<td>Attica</td>
<td>3 828 434</td>
<td>13 639</td>
<td>3.6</td>
</tr>
<tr>
<td>East Macedonia and Thrace</td>
<td>608 182</td>
<td>1 140</td>
<td>1.9</td>
</tr>
<tr>
<td>North Aegean</td>
<td>199 231</td>
<td>383</td>
<td>1.9</td>
</tr>
<tr>
<td>West Macedonia</td>
<td>283 689</td>
<td>673</td>
<td>2.3</td>
</tr>
<tr>
<td>Epirus</td>
<td>336 856</td>
<td>1 553</td>
<td>4.6</td>
</tr>
<tr>
<td>Thessaly</td>
<td>732 762</td>
<td>1 777</td>
<td>2.4</td>
</tr>
<tr>
<td>Ionian Islands</td>
<td>207 855</td>
<td>781</td>
<td>3.7</td>
</tr>
<tr>
<td>Central Macedonia</td>
<td>1 882 108</td>
<td>6 771</td>
<td>3.6</td>
</tr>
<tr>
<td>Crete</td>
<td>623 065</td>
<td>2 279</td>
<td>3.6</td>
</tr>
<tr>
<td>South Aegean</td>
<td>309 015</td>
<td>794</td>
<td>2.5</td>
</tr>
<tr>
<td>Sterea Ellada</td>
<td>547 390</td>
<td>809</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10 816 286</strong></td>
<td><strong>34 068</strong></td>
<td><strong>3.1</strong></td>
</tr>
</tbody>
</table>

Source: ESYnet database [online database] (3).

**Rural health centres and primary care centres**

Primary care services are delivered in different settings: larger rural health centres, smaller primary care centres – that are part of the national primary health care network or small solo practices. Most personnel working in primary care are trained as specialists (14). General practitioners report that their practical training was mostly done in hospitals and did not prepare them for the realities of practice in the community.

Greece has 203 rural health centres. According to the last census in 2011, they adequately account for the primary care needs of 21% of the population living in rural areas. They are staffed with physicians (predominantly specialists and internists), nurses, midwives, internists, dentists and radiologists.

There are also primary care centres serving either smaller communities or urban centres. Solo practices are also in place – both private and public. Although all these centres and rural health centres are limited in their equipment
to monitor and manage acute conditions in terms of diagnostics, available laboratory services and medicines, the situation is most extreme in rural public solo primary care units.

In the absence of a nationally defined scope of practice for primary care providers and a limited number of updated evidence-based national clinical guidelines in primary care, managing patient pathways and equipment is difficult.

The lack of gatekeeping and referral systems further limits the role of primary care. A registry system is promised in the new strategy for rolling out primary health care.

Clinical guidelines and clear scopes of practice for general practitioners and nurses in primary care are lacking. Where clinical guidelines are in place, they are specialist-centred and physician-centred. The National Organization for the Provision of Healthcare Services does not pay for the employment of nurses by general practitioners, and nurses are therefore rare in solo practices. Instead, nurses and other health professionals who want to work in primary care tend to concentrate in and around the larger rural health centres or national primary health care network clinics in the city. Even here, nurses seem to be underutilized compared with their potential. In one setting, an informant reported that, while trained to conduct deliveries in her midwifery training, she only provides basic prenatal care and has only attended three births in three years. During this visit, no physiotherapists were available to address musculoskeletal disorders nor were dietitians, psychologists or social workers available.

Continuing education for health professionals is mandated but is not overseen by managers of rural health services and smaller clinics. Practitioners in rural areas report difficulty in reaching training when they are available, since they have no replacements to care for their patients. No on-the-job training was reported upon starting to work in the rural health centre. The training was provided in one of the larger hospitals.

Connectors and interfaces

Role of the National Centre for Emergency Medical Services

The National Centre for Emergency Medical Services is the centralized public national service for medical emergencies. It has 4088 staff members and 12 branches. All calls to the National Centre for Emergency Medical Services are channelled through one telephone number: 166. The Centre coordinates ambulance transfers. It is widely present across the country and represents a potential source of coordination. Its network – while intended to stabilize and transport people in emergencies – has become more of a transport agency even for patients that do not qualify. Without having out-of-hours services available in primary care and with the prospect of overcrowded emergencies, patients increasingly call the Centre in the hope of getting more rapid and more convenient access to care. The Centre acts as a dispatcher of patients towards emergency departments and
does not have the oversight of the services available in primary care or out-of-hours services, such as in rural health centres or primary care doctors on call. The Centre informants described their role as an executive body. They expressed pride in its training facilities and a willingness to play a role in developing an emergency medicine specialty but also having a larger role in helping to manage acute illness in the community. This will depend on resources.

The Centre reports limitations in its telematics. It can communicate with patients and providers but cannot integrate information with existing patient records or the availability of services to direct patients.

Health records
The possibility of sharing information about patients, their care plans, diagnostic tests and the results of the visits over time improves the coordination of providers and the timeliness of the response to acute episodes. In Greece, the digitization of patient records has not been rolled out yet. The reliance on paper-based records poses time constraints on providers, especially nurses.

Records cannot be shared between providers. Health professionals report often depending solely on patient memory to obtain information about the services provided by other professionals. Patients’ visits to the emergency department are not usually reported back to general practitioners. The lack of mandatory registration with a general practitioner worsens the situation. The lack of shared patient records also increases inefficiency, which is costly to the system and patients from the duplication of procedures, undertreatment or contraindicated care.

eHealth in the piloting phase
All doctors in rural and urban primary health care units have computers, even in small rural clinics. These are needed for prescribing medicine or diagnostic tests. Greece has some documented experiences with telehealth, but these are reported to be on a project basis. These initiatives are not scaled up from their pilot phase and have not been integrated into wider government policy (14).

Professional associations
Professional associations can have important roles in developing training programmes, adopting guidelines and supporting the reorganization of services. In Greece, general practitioners are currently organized in at least three associations with competing and overlapping areas of focus. Specialists face similar problems, which raises concerns about their representativeness. Emergency medicine, however, is organized in one single entity.

All professional associations are funded by their members and pharmaceutical companies. The government provides no financial support.

Because the burden of chronic conditions mismanaged in primary care is growing, many people turn to emergency departments. Exacerbating this situation, emergency departments lack a defined scope of practice and are underresourced.
This section proposes policy recommendations for developing an integrated response to the need for acute care. The policy recommendations hinge on several system enablers to setting out clear health targets; designing services according to these health targets, strengthening the accountability of local health units and regional health authorities; aligning provider payment mechanisms; and reviewing training programmes for health professionals to support practice-based learning.

**Addressing acute diseases in primary care**

Viable primary care that manages chronic conditions and is responsive to acute health needs is a precondition for re-profiling emergency medical services (Table 4).

To achieve this, available data (3, 8–12) should be used to set priorities for developing clinical guidelines and patient pathways. There is also a need to define a scope of practice of primary care providers that includes roles and responsibilities on health promotion, disease prevention while increasing their responsive capacity in diagnosing, treating and managing people with noncommunicable diseases. The guidelines should be developed in collaboration with professional associations representing multiple professions but also multiple specialties to collectively clarify different scopes of practice and identify the coordination mechanisms needed. Pharmaceuticals and examinations linked to guidelines need to be included in the benefits package.

Increased support from nurses should be considered so that general practitioners can update their skills and focus on clinical tasks. This means expanding nurses’ roles to include screening, applying triage, managing prescription renewals, overseeing polypharmacy and directing patient flows between services.

The alignment of providers’ payment mechanisms for primary care teams should complement these efforts. A mixed payment scheme that determines providers’ income based on registered patients and an additional bonus for performance can prevent acute episodes related to chronic conditions. For example, performance related to increased clinical activity and procedures in primary care to manage and monitor hypertension, diabetes, cancer and respiratory conditions should be incentivized. The use of equipment such as spirometry, electrocardiograms, screening tools, colposcopy, speculums and critical blood diagnostics like blood glucose monitoring should be also incentivized. Referral to other health
professionals such as psychologists, dietitians, social workers and physiotherapists should be enabled. Engaging nurses to carry out health promotion and initial screening can also be incentivized by the use of pay for performance.

Performance payment should also encourage seeking care in out-of-hours services before reaching out emergency departments. These incentives should also encourage hospitals, including emergency departments, to connect with primary care providers when patients are referred back.

**Table 4. Addressing acute conditions in primary care**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Timeline</th>
<th>Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moving forward with plans to establish national registry for general practitioners and introducing the requirement for patients to register with a single general practitioner</td>
<td>Short</td>
<td>Ministry of Health, general practitioner association</td>
</tr>
<tr>
<td>Develop and continually revise multiprofessional guidelines to guide primary care teams but also specialists in the prevention of and managing and monitoring patients with the most concerning noncommunicable diseases (ischaemic heart disease, cancer, respiratory diseases, Alzheimer’s disease and depression)</td>
<td>Short</td>
<td>Ministry of Health, multispecialty and discipline professional associations including medicine, nursing, pharmacy, physiotherapy, psychology and dietitians), Central Health Council</td>
</tr>
<tr>
<td>Update primary care provider scopes of practice according to national primary care guidelines</td>
<td>Short</td>
<td>Ministry of Health, multispecialty and multidisciplinary professional associations including medicine, nursing, pharmacy, physiotherapy, psychology and dietitians), Central Health Council</td>
</tr>
<tr>
<td>Engage and train primary care nurses with clearly defined scope of practice in primary care to primarily focus on screening, basic monitoring, managing prescription renewals, overseeing polypharmacy, organizing patient flow in the clinic and between services and developing patient care plans for the short, medium and long term</td>
<td>Short</td>
<td>General practitioner, nursing training institutions, nursing association</td>
</tr>
<tr>
<td>Introduce a mixed payment system to pay for performance in primary care to incentivize services, treatments and activities outlined in the national guidelines for prevention, detection, managing and monitoring noncommunicable diseases in primary care</td>
<td>Medium</td>
<td>Ministry of Health, Ministry of Finance, regional health authorities, National Organization for the Provision of Healthcare Services</td>
</tr>
</tbody>
</table>

**Establishing out-of-hours primary care services**

In order to effectively assume the first line of responsibility for managing acute care needs, primary care will need to be made available 24/7. Providing out-of-hours primary care – after 17:00 and on weekends – requires a place in the national vision for primary care and careful planning to ensure that both practitioners and the population and patients are satisfied (Table 5).

Out-of-hours cooperatives of general practitioners and nurses that cover a specified geographical catchment area after hours, including multiple group practices, with
alternating on-call duties, can be secured in regional networks. For the general practitioners and nurses providing these out-of-hours services, it will be important that they fully participate in designing and organizing themselves in terms of shifts and that the numbers of general practitioners and nurses are available. General practitioners should receive support through ad hoc contractual arrangements. Such contractual arrangements can include pharmacies, social services, physiotherapy services, emergency departments, diagnostic centres and long-term care providers. Out-of-hours primary care services can be located in the existing urban and rural units of the national primary health care network or co-located in or near hospitals and emergency departments. Out-of-hours practices should be equipped with diagnostic tools such as tele-imaging services, echocardiograms, laboratories and other relevant medical instruments. Specialists can provide advice to out-of-hours providers in managing more complicated patient through teleconsultation, dedicated phone lines, telehealth or electronic platforms.

A trained clinical team, possibly comprising doctors and nurses, triage patients to assist them with self-care or home visits or direct them to local out-of-hours practices or ensure transport and access to emergency departments. The existing National Centre for Emergency Medical Services telephone system, duly upgraded, could serve this purpose.

A system signalling general practitioners about their patient’s visit or call to the emergency medical services (emergency departments, National Centre for Emergency Medical Services or out-of-hours services) should be put in place. This signalling system has proven to be useful in reinforcing the primary responsibility of general practitioners towards their patients. General practitioners and primary care teams should then focus on avoiding reoccurrence.
Table 5. Establishing out-of-hours primary care services

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Timeline</th>
<th>Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commit to and legislate that primary care will be made available 24/7</td>
<td>Medium</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>Engage professional associations in designing out-of-hours services</td>
<td>Short</td>
<td>Ministry of Health, professional associations</td>
</tr>
<tr>
<td>Incentivize large out-of-hours cooperatives</td>
<td>Medium</td>
<td>Ministry of Health, National Organization for the Provision of Healthcare Services</td>
</tr>
<tr>
<td>Establish contractual arrangements with and between providers such as pharmacies, social services, physiotherapy services, emergency departments, diagnostic centres and long-term care providers to comprehensively deliver any needed out-of-hours testing, technologies or pharmaceuticals</td>
<td>Short</td>
<td>Ministry of Health, Ministry of Finance, Regional Health authorities, National Organization for the Provision of Healthcare Services, general practitioner Associations</td>
</tr>
<tr>
<td>Incentivize general practitioner group practices participating in out-of-hours services to equip with more diagnostic equipment such as (tele-) imaging services, echocardiograms, laboratory testing and medical instruments</td>
<td>Medium</td>
<td>Ministry of Health, Ministry of Finance, National Organization for the Provision of Healthcare Services, general practitioner associations</td>
</tr>
<tr>
<td>Introduce a dedicated telephone line to primary care providers with information regarding out-of-hours clinics, emergency departments, etc.</td>
<td>Medium</td>
<td>Ministry of Health, general practitioner associations, National Centre for Emergency Medical Services</td>
</tr>
<tr>
<td>Engage specialists to on-call duty for providing advice to out-of-hours services and primary care teams</td>
<td>Medium</td>
<td>Ministry of Health, specialist associations</td>
</tr>
<tr>
<td>Explore out-of-hours primary care services co-located with emergency departments, especially during the transition period</td>
<td>Medium</td>
<td>Ministry of Health, hospital management</td>
</tr>
<tr>
<td>Introduce a system of signalling a patient’s general practitioner when they have attended emergency medical services</td>
<td>Medium</td>
<td>Ministry of Health, emergency departments, National Centre for Emergency Medical Services, National Organization for the Provision of Healthcare Services, eGovernance Centre for Social Security Services, general practitioner association</td>
</tr>
</tbody>
</table>

Re-profiling emergency medical services as specialized services

The main focus of specialized emergency medical services is to care for patients that can be categorized in the top 2 or 3 levels of a nationally triage emergency system. To achieve this, both emergency departments and the National Centre for Emergency Medical Services need to be staffed with emergency medicine specialists as per EU directives. This specialization is relevant to staff members working in emergency departments, those handling the transport of critical patients and those providing urgent care, including general practitioners, nurses, paramedics and the national dispatcher centre. The National Centre for Emergency Medical Services and Ippokrateio General Hospital can provide valuable experience in developing this specialization (Table 6).
National triage guidelines. National triage guidelines using three or five urgency classes to define the parameters for stratifying emergencies should be introduced and implemented by all health providers. This will guide the patient pathways across providers and settings of care. The guidelines are to be developed in close collaboration with the National Centre for Emergency Medical Services, the emergency medicine association, the associations of general practitioners and nurses and representatives of emergency departments and should be properly disseminated to the public. The national guidelines can also help to direct patients back to general practitioners after discharge and to redirect the flow of patients towards out-of-hours practices or general practitioners. The national triage guideline can also be used for collecting data about the type of needs and demands from the patients’ perspectives for developing initiatives for improving services.

Table 6. Re-profiling emergency departments as specialized services

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Timeline</th>
<th>Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduce a special emergency medicine specialization in accordance with EU directives</td>
<td>Medium</td>
<td>Ministry of Health, National Centre for Emergency Medical Services, Central Health Council, Ippokrateio General Hospital, Emergency Physician Association, training institutions</td>
</tr>
<tr>
<td>Revise staff requirements in emergency departments according to a more specialized emergency profile and based on nationally introduced triage guidelines</td>
<td>Medium</td>
<td>Ministry of Health, Hospitals, emergency physician association</td>
</tr>
<tr>
<td>In the interim, provide all general practitioners and current staff members who work in emergency departments with National Centre for Emergency Medical Services emergency medicine training (including emergency department physicians, nurses, paramedics, pharmacists and physicians)</td>
<td>Medium</td>
<td>Ministry of Health, National Centre for Emergency Medical Services, Ippokrateio General Hospital, nursing association</td>
</tr>
<tr>
<td>Review equipment in emergency departments to ensure that it is appropriate and in accordance with the national triage guidelines</td>
<td>Short</td>
<td>Ministry of Health, regional health authorities, hospitals, emergency medicine association</td>
</tr>
<tr>
<td>Introduce a national triage guideline using three or five urgency classes to be introduced across the country in all emergency medical services</td>
<td>Short</td>
<td>Ministry of Health, emergency departments, National Centre for Emergency Medical Services, professional associations, hospital management, Central Health Council</td>
</tr>
<tr>
<td>Develop a public awareness campaign to draw people’s attention to the national triage guideline and the appropriate use of emergency medical services with information on how to reach out to out-of-hours clinics</td>
<td>Medium</td>
<td>Ministry of Health, emergency departments, National Centre for Emergency Medical Services, general practitioner and nurse associations, emergency medicine association</td>
</tr>
</tbody>
</table>
Reorganizing hospitals

Re-profiling emergency departments towards more specialized services requires strengthening supportive primary care services but also requires that hospitals support primary care. Similarly, hospitals need to serve as resources for primary care. This can be achieved in several ways (Table 7).

Hospitals can be organized in a network that provides a gradient of services ranging from concentrated highly specialized and advanced services using the latest technology to lower specialized services. The added value of such an organization of hospitals, usually known as a hub-and-spoke model, is its networking function and its role as a single operating system. It improves efficiency in terms of training opportunities, integrating health information systems and using diagnostic equipment. It also helps to promote multidisciplinary work.

Reorganizing involves thoughtful classification of hospitals according to needs, volumes and level of complexity in managing acute conditions. Efforts in this direction require investing in updating equipment, qualifying health professionals and innovating organizational structures.

Hospitals should be enabled to proactively engage with primary care to plan and follow up patients after discharge through regular meetings and joint planning with the purpose to keep patients healthier and at home. This can be only achieved with accountability arrangements and a supportive hospital information system.

Several international examples are available that share how nurses in hospitals can be engaged in liaising with community services and how to organize hospital services to focus more on discharge planning to the community (15).
Reinforcing connectors and interfaces

Reinforcing connectors and interfaces that are focused on minimizing barriers will be essential for optimizing user orientation away from emergency medical services and towards primary care services. The following three important connectors and interfaces are given highest priority and should be the focus of discussions between a larger group of stakeholders, as identified in Table 8. Without this, their sustainability and scope of success will be limited. Because they are so important to user orientation towards primary care, they can serve as the focus and entry points for study visits to both the Netherlands (optimizing the role of the National Centre for Emergency Medical Services and shared electronic patient records) and Italy (shared electronic records and optimizing eHealth solutions).

Table 7. Reorganizing hospitals

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Timeline</th>
<th>Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classify and organize hospitals in accordance with the hub-and-spoke model</td>
<td>Long</td>
<td>Ministry of Health, regional health authorities, hospitals</td>
</tr>
<tr>
<td>Introduce a system of signalling a patient’s general practitioner when they have attended the hospital</td>
<td>Medium</td>
<td>Ministry of Health, Hospitals, National Organization for the Provision of Healthcare Services, IDIKA SA (e-Government Centre for Social Security Services), general practitioner association</td>
</tr>
<tr>
<td>Connect hospitals with regional primary care networks through decision-making platforms and patient records</td>
<td>Medium</td>
<td>Ministry of Health, hospitals, general practitioner association, National Organization for the Provision of Healthcare Services, IDIKA SA (e-Government Centre for Social Security Services)</td>
</tr>
<tr>
<td>Establish a data monitoring system to follow patient outcomes, progress and experience</td>
<td>Medium</td>
<td>Ministry of Health, Hospitals, National Organization for the Provision of Healthcare Services, IDIKA SA (e-Government Centre for Social Security Services)</td>
</tr>
</tbody>
</table>

Box 1. Essential information needed for complete patient records

- Patient preferences
- Care plan with patient status in terms of the level of support they need to cope effectively
- Up-to-date relevant diagnoses
- Archived correspondence between providers and with patients
- Past diagnoses
- Allergies
- Laboratory results
- Current and past medications

Reinforcing connectors and interfaces
Among the stakeholders to be included, key players in existing or past pilot studies as documented in Greece (14) will also be important to bring together so they can share past experiences of lessons learned and be part of the task force to strategize scaling up the different initiatives that have taken place with telehealth.

**Optimizing the role of the National Centre for Emergency Medical Services.** In terms of managing patients presenting with acute care needs, National Centre for Emergency Medical Services is already a valuable resource and should be supported in assuming the role in directing patient pathways. Its dispatcher role and already well-established switchboard can be significantly expanded. Its regional offices can serve to co-locate both the out-of-hours primary care line and the emergency services line. International experience suggests that, although these lines can be co-located for the purposes of liaising with one another in case of emergency, the out-of-hours primary care line should be staffed and monitored separately.

**Shared electronic patient records.** The interoperability and connectivity of health information systems, including electronic prescription and the use of electronic patient records, facilitate the response to acute needs and the integration of services for managing chronic and acute needs. This is in accordance with the current primary care reform. Proper triage by emergency medical services and out-of-hours telephone centres should also benefit.

**Optimizing e-health solutions.** To improve the feasibility of group primary care practices both in rural and urban areas, telehealth services and communication platforms that link primary care teams with on-call specialists are highly recommended.

**Table 8. Reinforcing connectors and interfaces**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Timeline</th>
<th>Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a new system for monitoring emergency medical services based on the new national triage guideline to understand patient presentation to emergency medical services and guide service improvement initiatives to redirect patients to primary care</td>
<td>Medium</td>
<td>Ministry of Health, emergency departments, National Centre for Emergency Medical Services</td>
</tr>
<tr>
<td>Support the development of telehealth services and communication platforms that link primary care teams with on-call specialists</td>
<td>Medium</td>
<td>Ministry of Health, general practitioner association, specialist associations</td>
</tr>
<tr>
<td>Introduce shared electronic patient records with connectivity to other electronic platforms such as electronic prescription, clinical decision aids and documentation from telemedicine consultations</td>
<td>Medium</td>
<td>Ministry of Health, IDIKSA SA (e-Government Centre for Social Security Services)</td>
</tr>
</tbody>
</table>

**Building learning networks of primary care providers**
The current primary care reform establishes local health units (ToMY) (11). They will comprise a countrywide network of more than 300 primary care units in the first 2 years of roll-out (11). This network has potential to support local initiatives.
in planning and managing learning opportunities and resources. Establishing subnational nodes can help to set priorities among topics and to tailor learning methods according to local needs (Table 9).

With renewed scopes of practice and increased demands on primary care providers, the need for updating health workforce competencies will increase. In particular, new competencies will need to include engaging patients in self-care, teamwork, people-centred care, communication skills, health promotion and disease prevention and early detection, management and monitoring of noncommunicable diseases. Overall, learning should promote inter-professional and interdisciplinary learning and shared decision-making between specialties and professions but also give priority to gathering feedback on how to improve service design and organization.

These learning opportunities can be designed and developed in collaboration with local branches of professional associations and universities.

To give primary care a coherent and representative voice, the establishment of a single general practitioner association should be encouraged. Professional associations can have an important role in self-regulation, sustaining policy reforms, developing clinical guidelines and guiding the implementation of activities.

**Table 9. Building networks of primary care providers**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Timeline</th>
<th>Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move forward with organizing primary care teams in national but also regional networks</td>
<td>Medium</td>
<td>Ministry of Health, general practitioner association</td>
</tr>
<tr>
<td>Develop telehealth infrastructure for the purpose of linking general practitioners in isolated areas with each other into regional learning and decision-making networks</td>
<td>Medium</td>
<td>Ministry of Health, E-health department, regional health authorities, general practitioner association</td>
</tr>
<tr>
<td>Mandate regional networks to develop continual learning opportunities for their primary care teams based on new national guidelines, priority areas and hot topics</td>
<td>Medium</td>
<td>Ministry of Health, universities, professional associations (general practitioners, nurses, specialists)</td>
</tr>
<tr>
<td>Developing nationally supervised communication and decision support platforms targeting the implementation of national primary care guidelines and hot topics</td>
<td>Short</td>
<td>Ministry of Health, general practitioner association, relevant specialist associations</td>
</tr>
<tr>
<td>Create a single member-based national general practitioner association with some financial support from the government to concentrate activities on government priorities</td>
<td>Medium</td>
<td>Ministry of Health, Ministry of Finance, general practitioner association</td>
</tr>
</tbody>
</table>
Conclusion

Emergency medical services in Greece seem to face a large influx of patients. Much of this demand comprises people with chronic conditions derived in acute episodes because of weak management in primary care or other less urgent care needs that do not require time-sensitive interventions.

The response of emergency departments cannot therefore be differentiated from those of other care services. The weak capacity of primary care to provide out-of-hours and basic acute services in the community exacerbates this situation.

Important opportunities lie in increasing the role of primary care in managing chronic conditions to prevent acute episodes and re-profiling emergency medical services as highly specialized care. This needs to be complemented by reorganizing hospitals to complete the continuum of care across settings and levels of care needs.
References


The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

Albania
Andorra
Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czechia
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Luxembourg
Malta
Monaco
Montenegro
Netherlands
Norway
Poland
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Romania
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Serbia
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