

# AHEAD



**ACTION FOR HEALTH AND EQUITY  
ADDRESSING MEDICAL DESERTS**

EU Level Research Brief

August 2022

## D4.3 EU Level Research Brief

*Grant Agreement Number*

*101018371*

***AHEAD***

***Action for Health and Equity - Addressing Medical Deserts***

<b>Call identifier</b>	HP-PJ-2020-2		
<b>Topic</b>	PJ-01-2020-2 Support to reforms in health workforce field - Initiatives on medical deserts (Heading 1.2.1.1 of the AWP 2020)		
<b>Starting date</b>	01/04/2021	<b>Duration in months</b>	26

*Date:*

*26/09/2022*



Co-funded by the  
Health Programme of  
the European Union

The content of this document represents the views of the authors only and is their sole responsibility; it cannot be considered to reflect the views of the European Commission and/or the European Health and Digital Executive Agency (HaDEA) or any other body of the European Union. The European Commission and the Agency do not accept any responsibility for use that may be made of the information it contains.

## Table of Contents

1. Introduction.....	4
1.1 Purpose of this document .....	4
1.2 Rationale.....	5
2. Methodology .....	6
2.1 Academic literature review .....	6
2.2 Policy analysis.....	7
2.3 Media Analysis.....	7
2.4 Key informant interviews .....	7
3. Results .....	8
3.1 Academic literature review findings.....	8
3.2 Results from policy analysis.....	11
3.2.1 EU Health Programmes .....	11
3.2.2 EU non-Health Programmes.....	15
3.3 Results from media analysis .....	23
3.4 Results from interviews.....	24
4. Conclusions.....	27
References of literature review.....	29
Annexes .....	34

# 1. Introduction

The Project AHEAD addresses the challenge of medical deserts and medical desertification in Europe in an effort to help reduce health inequalities. The Project is carried out in Italy, Moldova, the Netherlands, Romania and Serbia, and intends to benefit health policymakers, patients' organizations, health professionals' organisations, affected communities and more. The countries were carefully selected to highlight different manifestations of medical deserts. To read further information on AHEAD project, please visit our website: [www.ahead.health](http://www.ahead.health).

## 1.1 Purpose of this document

One of the main goals of the AHEAD project is to “support policy makers in their efforts to counteract and prevent medical deserts and medical desertification”. To make this possible, AHEAD will:

- (1) Help develop feasible, acceptable and context-specific policy measures
- (2) Stimulate policy makers to implement those measures
- (3) Identify synergies with existing EU policies and instrument, in order to increase the likelihood of that implementation, as well as the impact of such implementation

To address (1) and (2), the consortium developed a contextualizable consensus building methodology, findings of which will be discussed and disseminated during various policy dialogues on both national and EU level, organised as part of the AHEAD activities.

The third line of action - identification of synergies – is the focus of the current document. As formulated in the Grant Agreement, the AHEAD project partners will produce an analysis at EU level based on the following activities:

- Conduct in-depth interviews with stakeholders at EU level.
- Conduct policy analysis (desk research) at EU level on policies *affecting* and *addressing* medical deserts

The findings of these activities are summarised in this document.

The **main aim of this research** is to

1. Understand manifestations of medical deserts in the EU (and neighbouring countries), as described and/or defined in (academic and grey) literature
2. Have an overview of current remedial action by EU / EU funded programmes / EU instruments:
  - a. What are the policies/programmes/instruments in place right now (rationale, actors involved, funding sources, aims, outcomes/results)
  - b. What other (existing) policies can be implemented to address this better?

## 1.2 Rationale

The COVID-19 pandemic highlighted the inequalities and differences among the EU Member States' health systems even further. Particularly, the 2021 EU State of Health Companion report brought attention to the need to rethink health workforce strategies across the Union. Starting with the basic indicator of health worker density in various Member States, the available data indicates a 5.6 fold difference between the regions highest and lowest density of physicians<sup>1</sup>. This highlights the diversity of physician availability, not just among the countries, but also within the different regions in countries, from rural to urban settings. The lower the density of health workers in a region, the most likely it is to be considered a medical desert, and thus be an area with potentially limited access to medical services.

Moreover, the State of Health in EU Companion report has shown that almost all European Member states face a challenge in recruitment of health personnel, particularly physicians to rural areas. Country specific strategies and policies have been implemented to various degrees, and success.

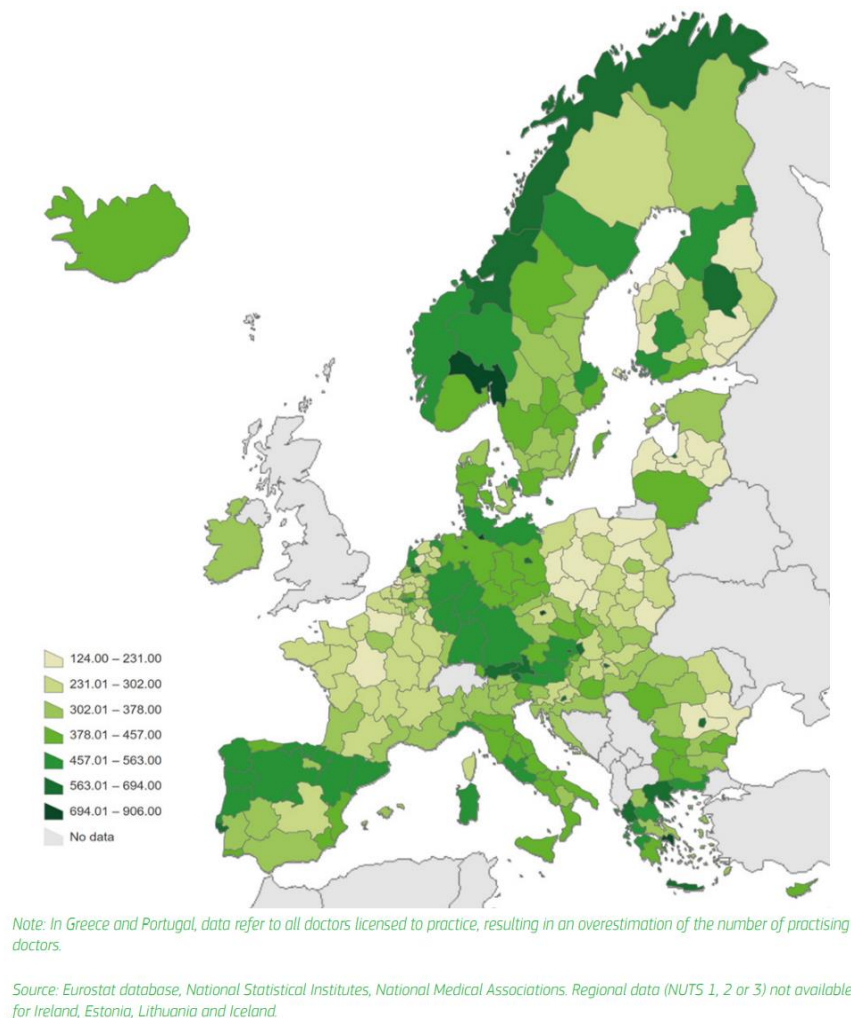


Figure 1. Doctors per 100 000 population – regional breakdown, 2020, or latest year available

<sup>1</sup>State of Health in the EU: Companion Report 2021: [https://health.ec.europa.eu/system/files/2022-02/2021\\_companion\\_en.pdf](https://health.ec.europa.eu/system/files/2022-02/2021_companion_en.pdf)

AHEAD developed a working definition<sup>2</sup> for a ‘medical desert’ to operationalise this concept and ease the process of finding areas that need additional support in ensuring access to health care. The definition is found below and is being validated via project activities:

*“Medical deserts imply the inability of a given population (and / or a population group) to access health services, or the state of isolation when it comes to receiving health services, based on three categories of quantitative and qualitative barriers (‘dimensions’), which are interrelated and dependent on each other, in varying degrees and modalities.*

***Dimensions: physical access, social and policy barriers”***

All three dimensions are underpinned by the availability of health workers, medical facilities and necessary technologies to facilitate access to primary care services. Further details on the definition, including examples of barriers we consider in the different dimensions is given via this [link](#). The examples of barriers on the web page are not exhaustive, however gives a good overview of what AHEAD considers to be limiting access to medical services, based on the research in the 5 countries of our consortium.

One factor that is certain, is the availability of appropriate of health workers, which is apparent in all dimensions. Although health workforce challenges are often addressed at country level, their solutions do not only have a national component, but also an international, European component. The freedom of movement of health workers in the European Union has resulted in dynamic and complex health worker mobility flows, exacerbating health worker shortages in countries and regions where working conditions are less favourable. The resulting inequalities go against the European ambition to shoulder the responsibility for shared prosperity for all in the Union in collaboration, to aim for solidarity and, in the 3rd Health Programme, to reduce health inequalities. Member States as well as EU level institutions therefore bear the responsibility to – together – look for ways to achieve this. The complexity of different EU policies and the complex interplay between national and EU level policies, requires an explicit EU approach to the possible solutions.

## 2. Methodology

The study comprised four different research activities: review of academic literature; policy analysis; media analysis; and key informant interviews.

### 2.1 Academic literature review

The inclusion criteria of the literature were as follows: (1) recent (last 10 years), (2) published in top-level databases, e.g. Pubmed or Cochrane Library (3) includes a set of mesh terms and free text relevant for the topic of medical desertification, such as ‘medical deserts’, ‘physician density’, ‘distance to health emergency health services or GP’, and others. In addition, local literature, including grey literature from the five consortium countries was considered, translated and analysed. The full list of mesh terms is given in Annex A.

---

<sup>2</sup> <https://ahead.health/results/medical-desert/>

Data was extracted using a dedicated extraction template (Annex B) and was checked by two reviewers. To analyse the results a narrative synthesis was performed.

A total of 109 articles matched the inclusion criteria and were reviewed.

## 2.2 Policy analysis

A scoping review methodology was applied to search for relevant policies and programmes implemented on EU level, relevant to and on the subject of health workforce strengthening activities and medical deserts.

This was divided into two thematic areas:

1. EU health programmes: implemented, financed or guided by the European Commission's Health and Food Directorate General (DG SANTE).
2. EU non-health programmes: implemented, financed or guided by EU Directorates General and executive agencies that are not directly involved in healthcare/public health/wellbeing activities, but are still related to and relevant to the subject of health, care and wellbeing in European context.

## 2.3 Media Analysis

A selection of media reports, news outlets, press releases, and articles that focus or mention medical deserts, health workforce, mobility and access to health and social care were collected and analysed using a dedicated template. A full list of key terms and media outlets that were included in the search and analysis is provided in Annex C.

## 2.4 Key informant interviews

Relevant and notable stakeholders were interviewed to identify possible blind spots in the desk research and validate findings. These were from organisations such as DG SANTE, HaDEA, WHO EURO, European Forum for Primary Care, and notable field experts on health workforce and medical deserts.

Consent for interview and its recording was collected and interviews were analysed using a dedicated analysis template. All interviews were anonymised. Further details on specific inputs from interviewees can be found in Annex D.

### 3. Results

#### 3.1 Academic literature review findings

Academic literature analysis was conducted to understand the various manifestations of medical deserts in the context of Europe, including in the neighbouring countries, to understand how they are defined or described in the published peer-reviewed and grey literature.

The review included research, published in English, from countries such as Bulgaria, Czechia, Estonia, Croatia, Latvia, Lithuania, Hungary, Poland, Slovenia, Slovakia, UK, France, Ireland, Germany, Norway, Belgium, Spain, Sweden. Literature in the national languages (as well as English) of the AHEAD countries was also included and analysed (i.e. literature published in Romanian, Dutch, Moldovan, Serbian and Italian). Additionally, countries outside the European context were analysed (e.g. USA, Canada, Australia and others with similar context to European context), however was not given a significant weight in the analysis but considered as part of the wider understanding of the phenomenon of medical desertification.

The findings show that the salience of the debate in contemporary health policy in regard to medical desertification is beyond dispute. The term is intensively used in this exact syntagm in French academic and grey literature for at least four decades (Barlet & Marbot, 2016; Bilodeau et al, 2021; Chevillard, Lucas-Gabrielli, & Mousques, 2018; Descours, 2003, Pieron & Rocca, 2017), being also employed in various other societies, if not as such (i.e. “medical deserts”), then through similar expressions, but covering roughly the same concept (Janes & Dowell, 2004; Kanelo et al, 2021). Cross-European analysis explicitly aiming the European healthcare system incorporates the debate with respect to the use of Eastern-born doctors to bridge the gaps in Western medical deserts (Stan & Erne, 2021).

However, it is important to note that the issue receives no attention at all in an analysis of 2008-2019 health reforms in 11 Central and Eastern Europe countries (Dubas-Jakóbczyk et al, 2020), despite a proven interest of the authors in the topic (Rechel et al, 2016).

The vocabulary of medical deserts differs from one author to another and illustrates slightly different ways of looking at the phenomenon. French literature uses the term of medical deserts quite often (“déserts médicaux”), so it is safe to say that the term originates from France. It refers to the absence of at least one type of health care provision and typically relates to places far away from a certain level of medical services (Chevillard, Lucas-Gabrielli, & Mousques, 2018).

In literature, various connotations were used, stressing one or another aspect of desertification. For instance, Picheral (2001) discusses medical deserts as a space without doctors or lacking doctors. Guagliardo (2004) focuses on access to medical services. Rechel et al (2016) use it to demonstrate density of health care providers. Lemhuis (2020) discusses how low density of population is associated with difficulties to access mental health services. Some reports actually focus on waiting time for medical intervention (relevant for instance in the Dutch context, e.g., Vermanen et al, 2020).

Still in France, the labels applied to these areas included: “deficient zone”, “multi-professional zoning”, “under-endowed areas”, “areas with insufficient medical provision”, “zones of complementary action”, “zones of dense priority”, as noted by Chevillard, Lucas-Gabrielli, & Mousques (2018). The definition referred to lacking medical staff, hospitals, other care facilities, and involved a mixture of indicators, mainly based on distances to doctors and care, density of GPs or other staff, time to health



care facilities, and, sometimes, affordability. (Barlet & Marbot, 2016; Descours, 2003; Munck *et al.*, 2015; Vergier *et al.*, 2017).

The English-speaking world employs “rurality” to designate practically the same broad concept. The idea is that an area with limited access to health care provision is actually more rural. The focus is on inequalities of access, but when considering ways of measuring, the same indicators are used for operationalization (Kralj, 2000; Lucan *et al.*, 2018; Steinhäuser *et al.*, 2014; Turnbull *et al.*, 2008). Furthermore, an extensive body of literature discusses provision of health care in rural areas, or by “small hospitals”, in terms close to the concept of medical desertification (Vaughan & Edwards, 2020). As in the case of usages of “medical deserts”, rurality is also vaguely defined, or sometimes the meaning is assumed as known and not specified (e.g., Kaneko *et al.*, 2021; Kralj, 2000). In fact, the French-inspired literature on medical deserts can also be traced to the rural/urban distinction. For instance, Véran (2013:80) depicts medical deserts as “small communes, rural territories in which the organization of healthcare provision did not meet the criteria of urban areas” (p. 80). Through extension, the quoted paper includes in this category “sensitive urban areas” (p. 78) and develops the argument of the GP as catalyst of the entire social life, and essential node in local networks.

Marchildon *et al.* (2018) discuss “remoteness” in terms of distance from specialized types of medical care. Remoteness becomes clearly equivalent to desertification. In many other works (e.g. Fisher, 2021; Roberts *et al.*, 2014), distance to health care providers is the key issue, being addressed from various points of view, like the explicit debate on desertification, but without naming it as such.

Rural/urban discrepancies of access are also key to the conceptualisation of this phenomenon in Romanian documents (e.g., Cournoyer *et al.*, 2021). Janes *et al.* (2001) discuss “isolation” and inequalities, also focusing on rural areas. Isolation is also considered in other papers, from various parts of the world (Orcao & Cornago, 2005; Zaahirah *et al.*, 2018). “Accessibility” is the complementary keyword to be retrieved in various works (Barrios González & Schorn, 2009; Verma & Dash, 2020), sometimes being explicitly coined as “spatial accessibility” (Freeman *et al.*, 2020; Naylor *et al.*, 2020). “Remoteness” is also recurrent in the existing literature (Parsons *et al.*, 2021; Verma & Dash, 2020; Véran, 2-13). “Territorial assistance” is employed by Italian reports (Chiorazzo *et al.*, 2020), in particular with respect to COVID-19 pandemic, and becomes relevant with respect to “inner areas” - “rural areas characterized by their distance from the main service centers (education, health and mobility)” (Cardillo *et al.*, 2021; Picucci *et al.*, 2020). “Regional discrepancies” come into context as a debate that is further from the topic, but still related to desertification when it comes to density of health care provision (e.g. Cournoyer *et al.*, 2021; Garrattini *et al.*, 2021).

**Table 1. Selected definitions of desertification and related concepts**

Definition	Source
Territories where inhabitants lack proper access to healthcare	Chevillard <i>et al.</i> , 2018
Shortage of health professionals	Ambroise <i>et al.</i> , 2018
Availability of health care supply in a given area	Lucas-Gabrielli <i>et al.</i> , 2016
Instrumental definitions: Density of GPs (locality level – communes); Density of pharmacies, Density of dentists; etc.	Barlet & Collin, 2009
Rurality is given by representations about it, being rather a social construct	Steinhäuser <i>et al.</i> , 2014

Underserved and under stress, isolated from critical healthcare infrastructure	Bryan, 2019
Areas with inadequate access to basic medical services	Burton, 2021
The opportunity to receive hospital treatment should reflect need and not distance from services	Haynes et al, 2009
Remoteness is defined as distance from specialized types of medical and hospital care	Marchildon et al, 2018
Discrimination in geographical accessibility to quality care (discriminations dans l'accessibilité géographique à des soins de qualité)	Véran, 2013
Areas (particularly rural communities and suburbs) which are isolated and underserved possibly due to the challenges faced in human resource management in distributing healthcare workers in these areas	Zaahirah et al, 2018
Territories, usually rural communities and regional towns, where inhabitants lack proper access to healthcare and do not have the same care quality as citizens in other territories, usually cities	Clarke & MacDonald, 2018
Particular health policy problem in countries with vast geographical distances and low population density.	Rechel et al, 2016

Lynch (2019) employs the term “deprivation” to depict “an area’s potential for health risk from ecological concentration of poverty, unemployment, economic disinvestment, and social disorganization”. The focus is however not on lack of health care supply but on deficient health care supply as part of a larger spectrum of social problems manifest in the same geographic area. However, through its consequences, such deprivation is quite close to the concept of medical deserts.

Policies for regionalization (Cournoyer et al, 2021; Mocanu et al, 2016) provide hints for the debate on desertification, even when they do not name it as such. They involve a discussion on decentralization and regional centralization, with focus on getting all services closer to the beneficiary.

Another important stream in the literature deals with the role of telemedicine and digitalization. Sometimes the tool is specifically referred to as an instrument to cope with medical deserts (Ambroise et al, 2018; Andrès et al, 2019; Clarke & MacDonald, 2018; Gavriluc et al. 2011; McKinnon, 2017), while in other instances telemedicine implicitly refers to desertification without naming the latter as such (Babić et al, 2012; Picucci et al, 2020).

From a complementary perspective, there is a question of coverage. Desertification may generally refer to accessing health care (Parsons et al, 2019), can be focused on basic care, meaning GPs and emergency services (Hartmann et al, 2006; Vallée & Chauvin, 2012), or can include “advanced medical care”. The latter is sometimes a composite concept (Kralj, 2010), other times pertaining to a specific field of intervention, such as surgery (Ambroise et al, 2018; Bühn et al, 2020), maternal health (Bryan, 2019), screening-preventable cancers (Freeman et al, 2020), etc.

Steinhaeuser et al (2014) make another important observation, stating that the concept (rurality in their case) is a matter of perception. In their meaning, this does not imply that desertification is subjective but conceives a dependency on the framework of reference. Defining a medical desert or rurality in a certain area depends on the referential to be chosen. The referential is not an absolute standard and, in most cases, it might be not necessary conscient, but a reflection of internalized

knowledge and experience, that is common for the entire collectivity (which, in turn, might be a community, a society, etc.).

A similar point can be derived from some direct definitions of medical desertification. For instance, Clarke & MacDonald (2018) define the concept in terms of access to “proper” health services. This “proper”, also employed by other authors in their definitions (Andrès et al, 2019; Chevrillard et al., 2018) speaks to the need to define standards.

Consequently, the literature suggests that the definition is context dependent. It seems imperative that a set of common indicators that can be measured in each context needs to be considered. These can be defined as ‘core indicators’ that can help identify the level of medical desertification of an area; an area at serious risk of medical desertification would require further investigation to truly understand the locality. It is therefore important to also have additional (2-4) ‘country specific’ indicators that are relevant for that context. This way, the phenomenon can be country specific, yet remain comparative across the continent.

## 3.2 Results from policy analysis

### 3.2.1 EU Health Programmes

#### What is the EU Health Programme

The European Commission (EC) has been giving more and more attention to health workforce issues in the last decade, focusing efforts on initiating Joint Actions and (co-)funding projects that address a variety of health workforce issues.

One of the approaches taken by the EC is to provide funding mechanisms to support priority areas, as identified by the Directorate General for Health, and adapted by EC. These are the EU Health Programmes:

1. 1<sup>st</sup> Health programme between 2003-2008
2. 2<sup>nd</sup> Health Programme between 2008-2013
3. 3<sup>rd</sup> Health Programme between 2014-2020

The objectives of the 3rd Health Programme (with a budget of € 449.4 million) are as follows:

- Promote health, prevent diseases and foster supportive environments for healthy lifestyles according to the 'health in all policies' principle
- Protect Union citizens from serious cross-border health threats
- Contribute to innovative, efficient and sustainable health systems
- Facilitate access to better and safer healthcare for EU citizens

#### The history of activities to address health workforce issues

Specifically, some of the most notable activities were around the development of Joint Actions on the subject of health workforce, which has been ongoing since 2007. A brief visual summary of this development and activities on the subject, until 2016 is given below:<sup>3</sup>

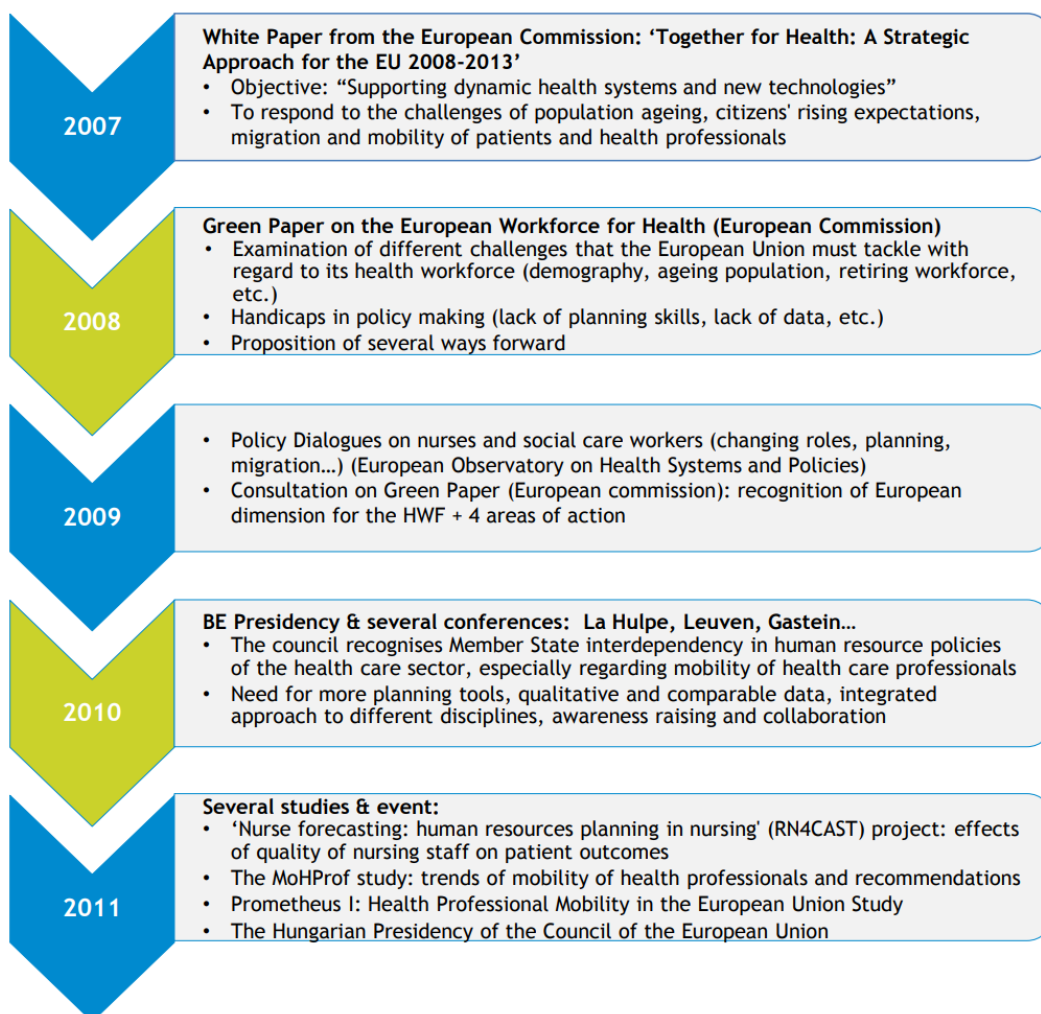
---

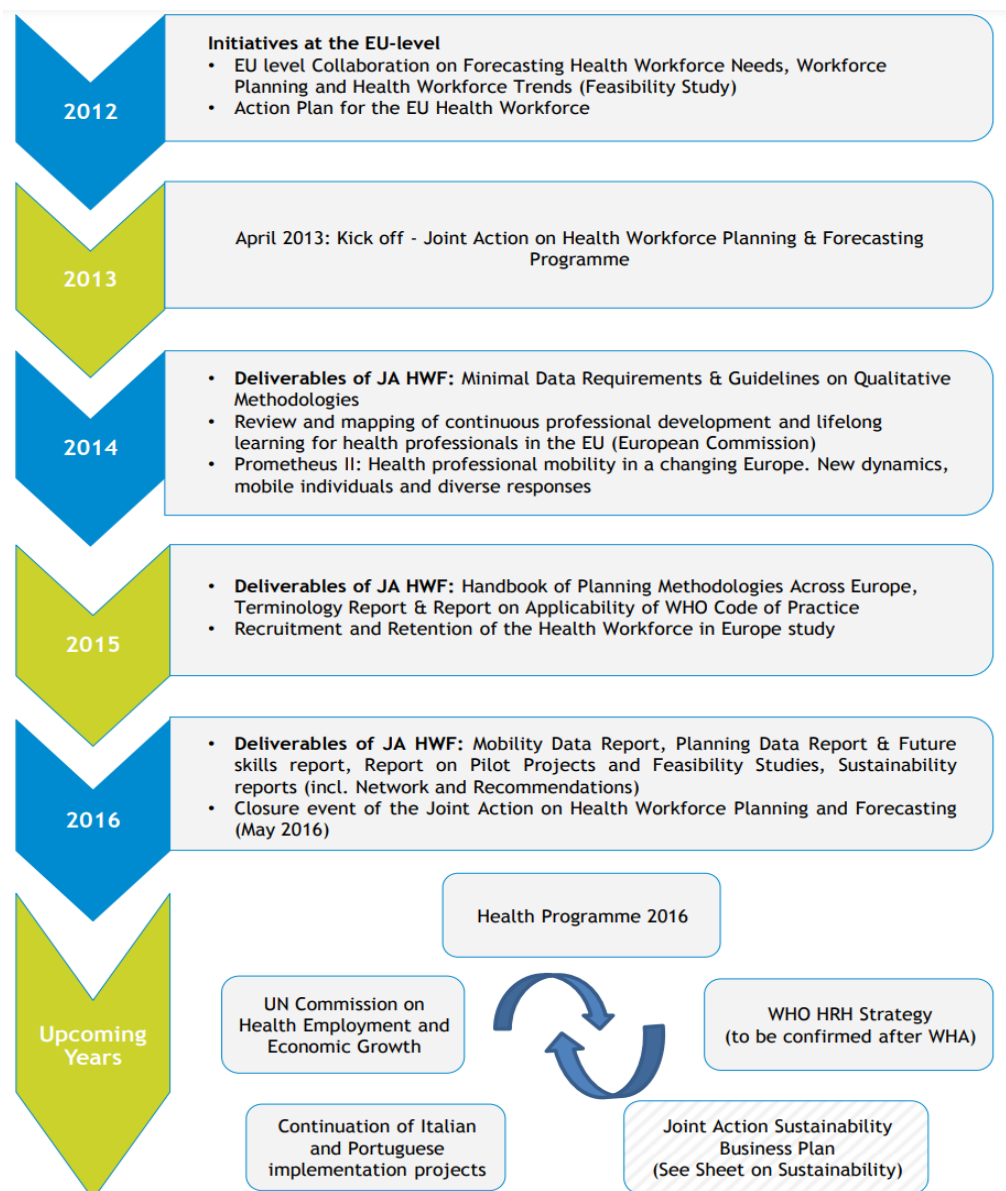
<sup>3</sup> From: [https://healthworkforce.eu/wp-content/uploads/2016/11/WP2\\_FINAL\\_GUIDE\\_final\\_version.pdf](https://healthworkforce.eu/wp-content/uploads/2016/11/WP2_FINAL_GUIDE_final_version.pdf)

Figure 2. Timeline of Joint Action on Health Workforce development

### Timeline

The following timeline shows how the Joint Action on HWF was developed through a history of 10 years of European Investment in Health Workforce strategies and highlights some of the Joint Action's main results.





To touch upon a couple of milestones, and highlight the synergy of activities, it is important to note the creation of the '[Action plan for EU health workforce \(2012\)](#)' with the aim to encourage EU countries to work together to (1) improve health workforce planning and forecasting and (2) anticipate future skills needs and improving continuous professional development.

The action plan then led to the initiation of [Joint Action Health Workforce Planning and Forecasting \(2013 – 2016\)](#), that had 30 associated partners and 34 collaborative partners from 28 European countries working together on advancing the issue, the final report of which can be read [here](#). This action focused on several objectives, under the theme on planning and forecasting tools, including improved data availability and analysis, increased planning capacity and updated information on mobility trends, to impact better policy decision making for health workforce needs.

Subsequently, [SEPEN](#) (Support for the health workforce planning and forecasting expert network, 2017-2018) aimed to create further synergy among experts in health workforce issues, to sustain cross-country cooperation and provide support to Member States on the matters of health workforce planning and strategies. This network was funded by the EU's 3rd Health Programme (2014-2020), implemented by Chafea (now known as HaDEA).

#### Current and upcoming activities under the EU Health Programme

Moving forward, and after the completion of SEPEN, the EU Health Programme also co-funded the following 5 projects, 3 of which focus on addressing medical desertification in EU. These projects all kicked off in 2021, and are ongoing until 2023/2024 (project duration varies). Together, they form the Health Workforce Projects Cluster (HWP Cluster), a network of projects, hosted on the European Health Policy Platform.




#### Health Workforce Projects Cluster



The aim of this network is to provide supporting tools, practical guidelines and to improve sharing of best practices that can help Member States to design and implement their policies related to health workforce retention, task-shifting and tackling regional medical deserts. Contribution from key stakeholders to the policy dialogue is essential to advance on these challenging issues.



The projects focus on three key topics - **medical deserts**, **task shifting** and **retention policies** - that are investigated thoroughly in throughout the project timelines. In total, these projects are operating in 16 European countries.

Table 2. Overview of HWP Cluster projects

Projects	Aim	Website
 <b>AHEAD</b>	Support policy makers in their decision making to counteract medical deserts	<a href="http://www.Ahead.health">www.Ahead.health</a>
 <b>METEOR</b>	Increase job retention in healthcare workers	<a href="http://www.meteorproject.eu">www.meteorproject.eu</a>
 <b>OASES</b>	Support health authorities to identify, analyse and mitigate medical deserts	<a href="http://www.oasesproject.eu">www.oasesproject.eu</a>

	Provide a novel understanding on task shifting and on transferability and update of good practices	<a href="http://www.tashiproject.eu">www.tashiproject.eu</a>
	Reduce disparities in population's health within the EU	<a href="http://www.route-hwf.eu">www.route-hwf.eu</a>

### *Newly established and upcoming projects*

#### The EU4Health Programme (2021-2027)

In 2021, and until 2027, the [new EU4Health programme](#) was adopted as a response to the COVID-19 pandemic and to reinforce crisis preparedness in the EU, for a total budget of €5.3 billion. The pandemic highlighted the fragility of national health systems. This is also one of the key instruments for implementation of the [European Health Union](#).

This new programme has several objectives, the most relevant to addressing medical deserts being the health systems strengthening, which specifically focuses on:

- Reinforcing health data, digital tools and services, digital transformation of healthcare
- **Enhancing access to healthcare**
- Developing and implementing EU health legislation and evidence-based decision making
- Integrated work among national health systems

#### Additional remarks

A new Joint Action on Health workforce in EU will be kicked off in autumn 2022. Unfortunately, no further public information is available at the time of writing of this report.

### 3.2.2 EU non-Health Programmes

There are several programmes under the umbrella of European Commission that have a significant impact on the health and wellbeing of the populations and interlink with the EU health programmes. Below is the overview of some key programmes linked to the phenomenon of medical desertification.

- (1) [EU's Long-term vision for rural areas](#) (June 2021), the Commission's (DG REGIO, DG AGRI) initiative to develop a common European vision for 2040. A Rural Pact (launched December 2021) and an EU Rural Action Plan (yet to come) with tangible flagship projects and new tools will help achieve the goals of this vision. Health-related elements in the Action Plan are e.g.: stronger, attractive, prosperous rural areas, with innovative solutions for better service

provision; use of appropriate digital tools; encouraging social innovation; inclusion of rural communities in policy and decision-making processes.

*Connected stakeholders (a.o.):*

- [The Rural Pact](#): The Rural Pact is a framework for cooperation among authorities and stakeholders at the European, national, regional and local level. It contributes to achieving the shared goals of the long-term vision for the EU's rural areas by facilitating interaction on rural matters between public authorities, civil society, businesses, academia and citizens. From EU side, the Committee of the Regions, the European Economic and Social committee, the European Rural Parliament and networks under the common agricultural policy and cohesion policy are key players.
- [The European Network for Rural Development](#)
- [Territorial Thinkers](#)
- [The European Leader Association for Rural Development](#)
- [AIM Healthcare and social benefits for all](#) (with specific statement on medical deserts)

- (2) The Commission's [Green Paper on Aging](#) (adopted January 2021), published to stimulate a broad public debate on the challenges and opportunities of Europe's ageing society. Important element in the Green Paper is the provision of health and long-term care services. The Paper is based on a broad consultation of stakeholders.

On the topic of Health, the respondents to the consultation agreed on the need to reorganise healthcare systems taking into account the needs of an ageing population. To reconcile adequate and affordable healthcare with fiscal and financial sustainability, respondents mentioned the need to tackle challenges related to access to healthcare, health inequality, low quality and affordability of healthcare, as well as staffing shortages. Many stakeholders called for reshaping healthcare systems by investing in more coordinated and integrated forms of care provision; a holistic and 'health-in-all policies' approach; and people-centred healthcare that delivers quality services across the lifecycle. Telehealth and digital tools can play a transformative role in enabling home- and community-based care. Some stakeholders highlighted the benefits of telehealth initiatives introduced at local level, with some of them greatly appreciated by older people as it means they can stay at home.

Respondents generally supported the increased digitalisation of healthcare as a means of providing better healthcare services. However, they also pointed out the importance of ensuring an appropriate balance between digital tools and in-person care.

On long-term care, respondents' inputs mentioned that focusing on increasing the provision of home- and community-based care is considered key to enable 'ageing-in-place'. Such person-centred care services can best be created through co-development with all stakeholders. In addition, new technologies and digital solutions can improve care delivery, in particular in rural and remote areas.

The Commission responded to the written question by pointing out that no follow-up to the Green Paper in form of a White Paper or an Age Equality Strategy was planned for the moment. The Commission vows to integrate demographic change and ageing in all relevant policies. The main specific policies on ageing outlined by the Commission are the European Pillar of Social



Rights Action Plan, the announced EU Care Strategy and the implementation of adopted legislation: the European Accessibility Act and the Employment Directive.

*Connected stakeholders (a.o.):*

- [AGE Platform Europe](#)
- [EuroHealthNet](#)
- [European Respiratory Society](#)
- [Equinet](#)
- [European Aging Network](#)

Overarching framework is provided by the European Pillar of Social Rights (2017), a set of documents containing 20 key principles and rights intended to build a fairer Europe in the fields of labour markets and welfare systems. It relates to health in principle 18: “Everyone has the right to affordable long-term care services of good quality, in particular home-care and community-based services.” The [European Pillar of Social Rights Action Plan](#) (March 2021) turned the principles into concrete actions to benefit citizens, and proposed headline targets for the EU to reach by 2030.

#### BeWell

BeWell is an Erasmus+ project (2022-2026) that aims to build a movement of healthcare stakeholders involved in the development, implementation and upscaling of a strategy that will upskill and reskill the European health workforce (through Pact for Skills), specifically on digital and green skills. Activities include building comprehensive curricula and training programmes, which will target a variety of health workforce professionals, including health students, health professionals and professionals of emerging occupations. These training programmes will help inform a strategy that integrates into local, regional, national and European plans.

### 3.2.3 Other tools & guidelines <sup>4</sup>

In addition to the previously described programmes and projects, there are also numerous tools and guidelines that can be utilised by Member States, and other relevant policy making actors, to address the issues associated with health worker availability and skills, in relation to medical desertification in the EU. These tools can and should be adapted to a specific setting to ensure sustainable impact.

Table 3. Overview of tools and guidelines relevant for health workforce development/medical deserts

Name	Year	Lead Organisation	Type of publication
<i>WHO/Observatory guidelines</i>			
<a href="#">New pan-European strategy set to transform primary health care across the Region</a>	2022	WHO EURO	Regional Strategy
<a href="#">Health labour market analysis guidebook</a>	2021	WHO HQ	Guidance document

<sup>4</sup> The list is not exhaustive, but is given to provide an overview of the variety of tools available

<a href="#"><u>Strengthening health systems resilience: key concepts and strategies</u></a>	2020	European Health Observatory on Health Systems and Policies	Key concepts and strategies
<a href="#"><u>Use of digital health tools in Europe: before, during and after COVID-19</u></a>	2021	European Health Observatory on Health Systems and Policies	Key concepts and strategies
<a href="#"><u>Everything you always wanted to know about European Union health policies but were afraid to ask (third edition)</u></a>	2022	European Health Observatory on Health Systems and Policies	Key concepts and strategies
<a href="#"><u>The politics of healthy ageing: myths and realities</u></a>	2022	European Health Observatory on Health Systems and Policies	Key concepts and strategies
<a href="#"><u>Health system performance assessment: a framework for policy analysis</u></a>	2022	European Health Observatory on Health Systems and Policies	A framework for policy analysis
<a href="#"><u>Health system resilience post-COVID: Moving towards more European cooperation (Eurohealth)</u></a>	2022	European Health Observatory on Health Systems and Policies	Journal article, special issue of Eurohealth to better understand how health systems have responded to the health crisis and to draw lessons for improving resilience of health systems.
<a href="#"><u>WHO guideline on health workforce development, attraction, recruitment and retention in rural and remote areas</u></a>	2021	WHO HQ	Guideline, global policy recommendations
<a href="#"><u>Retention of the health workforce in rural and remote areas: a systematic review</u></a>	2020	WHO HQ	Research findings
<a href="#"><u>Towards a sustainable health workforce in the WHO European Region: framework for action</u></a>	2017	WHO Euro	Framework for action
<i>Tools developed by other CSOs/NGOs</i>			
<a href="#"><u>Mapping of national health workforce planning and policies in the EU-28; Final study report</u></a>	2021	SEPEN/EC; Leuven University, Semmelweis University	A comprehensive overview of health workforce planning systems and policies in the EU-27 Member States and the United Kingdom.
<a href="#"><u>EuroHealthNet Inequalities Portal</u></a>	2021	EuroHealthNet	Interactive portal

<a href="#">CPME Policy on Health Inequalities</a>	2021	CPME	Policy Recommendations
<a href="#">CPME Policy on Health Workforce</a>	2021	CPME	Policy Recommendations
<a href="#">European Health Parliament Recommendations (7<sup>th</sup> round)</a>	2022	EHP7	Policy Recommendations
<i>Other</i>			
<a href="#">WHO European Regions for Health Network (RHN)</a>	1993	WHO EURO	Implementation of Agenda 2030 and the European Programme of Work (EPW), 2020 –2025. The Network is instrumental in efforts “to support local living environments that enable health and well-being”.
<a href="#">COVID-19: A turning point for upward convergence in health and healthcare in the EU?</a>	2021	EUROFOUND	The policy brief stresses that a European Health Union would ideally not only reinforce the crisis preparedness of the EU but also ultimately enable convergence in health and healthcare indicators across its Member States.

### 3.2.4 Funding opportunities from EU<sup>5</sup>

#### (1) The Multi Annual Financial Framework (MFF)

The EU’s current long-term budget, the [Multiannual Financial Framework \(MFF\)](#) covers the years 2021-2027. The total is 1.8 trillion Euros. The [MFF regulation](#) shows how much will be allocated to different EU funds to match the EU’s agreed strategic priorities.

Amidst the COVID-19 pandemic in 2020, an additional emergency 'recovery fund' called 'NextGenerationEU' (NGEU) was agreed in parallel to the MFF. The NGEU was designed to help address the short and medium-term effects of the pandemic until 2024. Part of it will be transferred via a new Recovery and Resilience Facility (RRF), set up explicitly to fund investments and reforms in the Member States, including but not limited to their health care systems.

#### (2) Recovery and Resilience Funds (RRF)

The aim of the Recovery and Resilience Facility is “to mitigate the economic and social impact of the coronavirus pandemic and make European economies and societies more sustainable, resilient and better prepared for the challenges and opportunities of the green and digital transitions.”

An analysis performed by DG Sante yielded examples from 15 Member States that have proposed reforms and investments relating to medical deserts (table 4).

Table 4. Overview of Recovery and Resilience funds for reforms related to medical deserts

RRF reforms and investments
-----------------------------

<sup>5</sup> The information in this chapter has drawn extensively from EuroHealthNet's document "[Seizing the opportunities for a health recovery](#)" and from information provided to us by DG Sante

<b>Austria</b>	Strengthen primary care (low threshold decentralised access, especially in rural areas); establishment of a network of community nurses.
<b>Czechia</b>	Center for Cardiovascular and Transplant Medicine in the South Moravian region.
<b>Estonia</b>	Increasing capacities of the emergency system to provide care in peripheral areas (helicopters); the reform of the reimbursement scheme to incentivise provision of services in remote areas.
<b>Spain</b>	Investments in high-tech equipment in regions to address disparities in access to healthcare; programmes of promotion of physical activity in rural areas; healthcare workforce reform promoting as one of the objectives better distribution of medical professionals across regions.
<b>Finland</b>	Increasing access to healthcare through support to innovative and remote care model; implementation of a care guarantee through digital solutions.
<b>France</b>	Investments in the territorial dimension of healthcare according to regional needs.
<b>Croatia</b>	Improve access to pharmacies in remote and rural areas through mobile pharmacies; improving access to cardiologist care in remote and rural areas through digitalisation of cardiology services; mobile primary outpatient system in rural and remote areas; specialist training to address shortages of specialists in underserved areas.
<b>Italy</b>	Territorial health network; community health houses; improving access to care at home, community hospitals and telemedicine.
<b>Lithuania</b>	Improving access to home care and community-based care; optimising the hospital network.
<b>Luxembourg</b>	Improving access to healthcare through telemedicine.
<b>Latvia</b>	Investments improving availability of outpatient and inpatient services.
<b>Portugal</b>	Investments in primary care; mobile health units to ensure access to healthcare in lower population density areas.
<b>Romania</b>	Investments in primary care and community centres in rural and marginalised areas; telemedicine solutions to improve access to specialised care in rural and small-town areas; mobile medical caravans.
<b>Slovenia</b>	Training of professionals for mobile palliative care teams.
<b>Slovakia</b>	Support to new outpatient care units in deprived areas; optimising the hospital network.

More information on national plans and adoption packages can be found here:

[Recovery and Resilience Facility | European Commission \(europa.eu\)](#)

(3) Cohesion Policy funds, consisting of European Social Fund+ (human capital) and European Regional Development Fund (mainly infrastructure).

EU Cohesion Policy “contributes to strengthening economic, social and territorial cohesion in the European Union. It aims to correct imbalances between countries and regions. It delivers on the Union's political priorities, especially the green and digital transition”.

Cohesion Policy 2021-2027 is delivered through specific funds:

- The European Regional Development Fund (ERDF), to invest in the social and economic development of all EU regions and cities.
- The Cohesion Fund (CF), to invest in environment and transport in the less prosperous EU countries.
- The European Social Fund Plus (ESF+), to support jobs and create a fair and socially inclusive society in EU countries.
- The Just Transition Fund (JTF) to support the regions most affected by the transition towards climate neutrality.

With the exception perhaps of the Just Transition Funds, the other three can (and will be) used to tackle health care delivery challenges. For example, the 2019 strategic report on the implementation of the European Structural and Investment Funds (ESIF) contains examples from sixteen countries that have submitted proposals for reforms that are relevant to medical deserts and medical desertification (table 5).

Table 5. Examples from countries that have submitted proposals for reforms relevant to medical deserts

	2019 country reports on ESIF
<b>Bulgaria</b>	Increase access to health services, in particular primary care, including through infrastructure and digital health solutions; support the re-skilling and upskilling of social and health-care workers and their <b>territorial mobility</b>
<b>Czechia</b>	Strengthen and improve access to primary care particularly for <b>vulnerable groups</b>
<b>Estonia</b>	Improve <b>equal access</b> to affordable and good-quality social services, long-term care and healthcare
<b>Greece</b>	Increase <b>equal access</b> to eHealth services to promote e-inclusion, notably for vulnerable groups; invest in the primary health care systems (local primary health care units and similar), in information and communication technologies for health purposes that emerge from the business plan on health, tele-medicine, and interoperability of related systems
<b>Spain</b>	Strengthen primary care and integrated care, including through investments in infrastructure and e-health, in particular in <b>regions lagging behind</b> and with a view to reducing health inequalities

<b>France</b>	In the <b>outermost regions</b> , contribute to building new and improving existing health infrastructures, moving away from a hospital-centred model to more outpatient, primary and community-based care
<b>Croatia</b>	Tackle <b>geographical obstacles</b> in access to healthcare and address gaps in healthcare infrastructure and shortages in workforce, based on mapping of needs
<b>Italy</b>	Enhance high quality, accessible and affordable social services and their infrastructure, including housing, childcare, healthcare and long-term care, taking into account regional disparities and the rural/urban divide, also in access to innovative technologies and new care models
<b>Latvia</b>	Ensure equal access to affordable, accessible and good quality social services and healthcare
<b>Lithuania</b>	Improve equal access to affordable and good quality healthcare and long-term care
<b>Hungary</b>	Foster access to affordable healthcare, reducing inequalities, especially in disadvantaged districts
<b>Poland</b>	Foster equal access to affordable healthcare services, particularly for vulnerable groups, strengthening primary care, integration of care, health promotion, disease prevention and digital health solutions
<b>Portugal</b>	Undertake infrastructure investments in health with a view of reducing inequalities
<b>Romania</b>	Support the upskilling of social, healthcare and long-term care workers and tackle territorial disparities
<b>Slovenia</b>	Tackle geographical disparities in access to healthcare, with a focus on the socioeconomically deprived
<b>Slovakia</b>	Address shortages in the number of medical occupations, taking regional disparities into account

In the previous Cohesion Policy period 2014-2020, more than €9 billion of European Regional Development Fund (ERDF) and European Social Fund (ESF) were foreseen for health-related investments, in all EU Member States, with 41,7 million EU citizens benefitting from improved health services, including e-health. See: [https://health.ec.europa.eu/system/files/2016-11/esif\\_factsheet\\_en\\_0.pdf](https://health.ec.europa.eu/system/files/2016-11/esif_factsheet_en_0.pdf)

#### a. European Semester process

The [European Semester](#) is the EU's annual cycle of economic and social policy coordination, or "the framework for integrated surveillance and coordination of economic and employment policies across the European Union. Since its introduction in 2011, it has become a well-established forum for discussing EU countries' fiscal, economic and employment policy challenges under a common annual timeline".

DG SANTE participates in this policy guidance. Resilience of health systems and access to health care is an important theme. DG SANTE has highlighted problems of distribution of resources for health systems strengthening in 15 Country Specific Recommendations during the last cycle, in order to stimulate Member States to undertake policy action.

Pre-Covid-19, this cycle consisted of the following elements:

- Publication of the Annual Growth Survey, the Commission's main tool for setting out the general economic and social priorities for the EU for the following year
- In February of that following year, the country reports are published. They analyse the overall economic and social developments in each Member States; assess the progress made by each Member State in addressing the issues identified in the previous year's recommendations.
- In April, Member States present national reform programmes on economic policies and stability or convergence programmes on budgetary policies.
- The Commission then analyses these programmes and issues Country-Specific Recommendations (CSRs) in May, in time for these to be endorsed by the European Council before the summer. Member States should then incorporate this policy guidance into their annual budgets and other national legislation ('National Action Plans').

However, during Covid-19 this policy cycle was merged with the processes of the then newly created Recovery and Resilience Funds. Needless to say, that recommendations for health systems have become central. EuroHealthNet was quick to realise that “The importance of the Semester has now increased with the integration of the governance of Europe’s Resilience and Recovery Fund (RFF)”. In November 2020, EuroHealthNet published an [analysis](#) of how the European Semester processes can benefit health, social and well-being outcomes, in the context of these merged processes.

#### *Additional remarks*

European Observatory on Health Systems and Policies also mentioned the European Investment Bank, which provides low-cost loans mainly for infrastructure. This could be large infrastructure projects such as hospitals, but also Primary Health Care facilities. [Austria](#) (strengthening primary health care by the establishment of 75 multi-professional and interdisciplinary primary health centres) and [Ireland](#) (strategic investments in digitalisation of the Irish health sector, including supporting the National Electronic Health Record Programme) were mentioned as examples in this context.

During the [2022 Annual Conference of the European Health Management Association](#), the European Observatory mentioned the untapped potential of EU tools and mechanisms available to support health systems strengthening processes, pointing out that the post-Covid era offers an unprecedented window of opportunity to identify those tools and instruments and combine them for maximum impact. The EU is a natural laboratory providing numerous opportunities for cross-country learning, sharing of best practices and mutual support that Member States should utilise to their advantage. Adapting solutions to different national and local contexts is a must, as is the creation of synergies with other multilateral actors such as WHO.

### 3.3 Results from media analysis

News articles, reports and opinion pieces provide interesting information on how ‘medical deserts’ and other (geographical) health care access challenges are being perceived in the European Union, and

what the importance of the topic is in public opinion and for EU policy makers. A systematic search was performed using a pre-defined list of search terms (see annex C).

A total of 80 English language articles were identified, of which 10 behind a paywall (not accessed), 4 sponsored articles, and 10 op-eds. The term ‘medical deserts’ was found four times and exclusively in French media outlets, about French regions. Depopulation, and depopulating regions within countries, was the topic of eleven items, with two of them also describing reverse developments during the Covid-19 pandemic (Italy and Spain), i.e. people leaving urban areas and moving to rural areas.

Six items found were reports of events hosted or co-hosted by the European Commission, European Parliament special interest groups or other European-level organisations. Although health equity and health inequalities were centre of focus, they mainly focused on East-West disparities; none were about more localized geographical access challenges such as medical deserts.

Health workforce challenges were paramount in 22 articles, mentioning (among others): the need for better planning and forecasting; persistent health worker shortages; overburdened workers during Covid-19 pandemic; mass resignation; strikes; and pay rises. Health worker migration within the EU was mentioned in eight articles.

With the search terms we used, we also found four articles describing or promoting the use of Europe’s regional development funds and cohesion funds to tackle social and economic challenges in rural areas, including health care access challenges. A similar number of articles touched upon the topic of European powers in public health policy, and the need to expand these, especially post-Covid.

Many of the articles identified turned out to be of less relevance for the concept of ‘medical deserts’. For example, they dealt with specific social or economic determinants of health inequalities within one country; gender inequalities in health care; health inequalities experienced by persons with specific conditions (lung cancer, rare diseases, pregnancy); privatization in health care; medical technological innovation, including tele-health, to overcome health inequalities in very general terms (sponsored article); medicine shortages.

In conclusion:

- The term ‘medical desert’ is not used often in the media, except for the French context
- Geographical imbalances in health care access are mentioned regularly, but mostly in the context of European East-West imbalances, not related to specific in-country areas
- While the many health workforce challenges are recognized in many media articles, very few focus on their availability in ‘medical desert’ areas, let alone do they mention specific policy measures that would be needed to address this challenge
- The general social and economic challenges of depopulating and rural areas are acknowledged and deemed very important and a threat to the concept of European cohesion, but few articles make specific mention of health care access challenges and/or how to tackle those challenges specifically
- An important exception is the recent own-initiative report by the European Parliament’s Committee for Regional Development suggesting to [‘make full use of Cohesion Policy to abolish health inequalities’](#).

### 3.4 Results from interviews

The key informant stakeholder interviews were predominantly conducted to validate knowledge and understanding gained from the desk review and to gather additional insights, fill the gaps and identify



blind spots in this policy area. The interviewees were also asked to comment on their understanding of the concept of medical deserts and the presented working definition developed by AHEAD. Further details on the interview protocol and template analysis are given in an Annex D.

All interviewees recognised the 3 dimensions of [AHEAD's medical deserts working definition](#), and some provided suggestions on how to improve it, or to include specific perspectives or considerations. Notably, dimension 3 (policy) was one that was specifically mentioned by 3 out of 5 interviewees: this is an overarching and encompassing issue, which in essence influences the other 2 (and beyond). This dimension also needs to be considered from different dimensional perspectives separately, i.e. policies that influence the social factors and those that influence physical barriers could have different angles, in contrast to policies that influence financing availability in sub-national regions or incentives for health workers to work in certain areas, particularly rural and disadvantaged areas.

It was advised to consider key societal elements for policy development/recommendations (therefore highlights the importance of cohesion needed among the dimensions): the willingness of health workers to relocate and work in a rural or disadvantaged area. Namely, relocation to rural areas is not just the decision taken by individual health worker but is often a family choice (thus a more holistic approach is necessary). Additionally, special considerations for gender, age, and work life balance are necessary, as these social determinants are significant influencers of the willingness to move to more isolated locations. It was noted that some findings indicate that health workers that are from rural areas are more likely to work in those areas later in life, and stay there for longer periods, than those that relocate to the area either as a result of financial incentives or educational/regulatory requirements. In addition to that, ensuring an appropriate financing system for GP practices is considered a determinant of success or willingness of physicians to establish GP practices in rural areas.

Needs assessment requirement (or measuring unmet medical needs) and the need to manage people's expectations were mentioned by 3 out of 5 interviewees. It is important to do a situation assessment whenever an area is considered to be at a disadvantage (a challenge also lies in establishing a threshold for this), and to differentiate between the needs here vs. those of the general population. When developing policies that address these context specific issues, it is important to involve the affected populations during solution making process, not just for sustainability and feasibility perspective, but to ensure that expectations of those populations are met. It was noted that in certain countries where rural communities are well-represented in the political discourse and can be heard, change is likely to happen and be sustained.

When it comes to labelling areas as 'medical deserts', it was suggested to consider a more positive terminology, due to the negative connotations the word 'desert' could have (isolation, nothingness). Additionally, while the research shows that medical deserts are more commonly found in geographically remote areas, urban areas that are not well connected to capital or city centres, or experience social and economic challenges, need not be forgotten.

Interviewees were asked to propose improvements to AHEAD's current working definitions; their suggestions are presented in the table 6.

Table 6. Summary of respondent' feedback relevant to AHEAD's working definition of medical deserts.

Respondent	1	2	3	4	5
<b>Additional indicators/missing elements from current definition</b>	(i) Seasonal or climatic migration (ii) availability	(i) Mobile team availability/coverage (ii) The extent of interprofessional collaboration	(i) existing policies to incentivise HWs to work in	None	(i) Intention to stay (ii) Absenteeism (any reason)

	of patient transport	(iii) The extent of task shifting, without affected income of GPs	disadvantaged areas (ii) the existence of framework to capture resource allocation to disadvantaged areas		(iii) number of HW remaining in place for 1-3 years (iv) vacancy rates
--	----------------------	-------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------	--	---------------------------------------------------------------------------

When answering the question on possible EU funding opportunities that can be utilised to address the issue of medical deserts and medical desertification, elaborate information was shared by one respondent. Their input is integrated in chapter 3.2.4.

## 4. Conclusions

In this study, we aimed to:

1. Understand manifestations of medical deserts EU, as described and/or defined in (academic and grey) literature

We concluded that there are many different manifestations of this phenomenon, however, some common denominators are thought to be: physical distance to facilities, waiting time in accessing care, type of care provided, availability of health professionals, particularly GPs and other primary care services, as well as appropriateness and acceptance of available health services. These can be measured using several (quantitative) 'core indicators' that can help identify 'high risk' areas that need to be investigated further and validated. These core indicators should be complemented with 2-4 additional context and country specific indicators.

The AHEAD consortium subsequently tried to unravel the different barriers (to achieve equal access to care) and has categorised them as physical access barriers, social barriers and policy barriers. This working definition is being tested during the AHEAD project activities. The EU level desk review, and specifically the interviews, have yielded valuable insights into the applicability and usefulness of the working definition as well as possibilities for its improvement.

2. Have an overview of current remedial action by EU / EU funded programmes / EU instruments:
  - a. What are the policies/programmes/instruments in place right now (rationale, actors involved, funding sources, aims, outcomes/results)

We concluded that DG Sante has initiated, funded and stimulated a long chain of projects dealing with the manifold health workforce challenges (see chapter 3.2.1) throughout the different EU Health Programmes. From research and development side, there have also been funding opportunities to investigate health workforce issues and develop guidelines and recommendations for specific health workforce issues.

Projects involved academia (research & development projects) and national actors (in Joint Actions, SEPEN), and included cross-country learning, exchange of knowledge on technical / managerial aspects of health workforce issues, particularly on monitoring and planning of national strategies, improving digital skills of health workers, and examples of specific case studies that address these issues.

However, it is not DG Sante's mandate to make structural change happen. This is up to the Member States themselves (subsidiarity principle). So, even though the 'technical' know-how is there<sup>6</sup>, the implementation of recommendations, the sustainability of policies or ensuring adequate funding for these reforms, is often (still) a challenge in policy arena.

Also, the European health workforce crisis doesn't seem to be regarded as a European crisis that should be tackled by the collective of Member States. Even the Covid-19 crisis has not triggered a need to build more resilience into our health systems, including in times of extreme external

---

<sup>6</sup> Some recommendation date back to 1979: Physician and Nurse Migration: Analysis and Policy Implications, Report of a WHO Study, Geneva. ISBN 92 4 1 56059 2

stressors, such as a pandemic. This would explain the absence of more stringent or mandatory action 'imposed' by EU institutions.

b. What other (existing) policies can be implemented to address this better?

We learnt that there is an awareness issue on both the medical deserts phenomenon and also on the possible solutions and tools to address them. We note several solutions and tools to make better policies (or improve current ones), mostly focusing on addressing health workforce related issues, however, the health workforce crisis is still on-going, as are the associated health inequalities (including unequal access to care, particularly in remote areas). It appears that despite available knowledge and tools, they are not sufficiently utilised by Member States and policy makers.

There is also the issue of (in)availability of funding. This could also be linked to awareness: if the policy makers are not aware of existing funding opportunities, they are less likely to implement the proposed solutions proposed by the programmes that address medical deserts. Additionally, recommended solutions often do not include recommendations for potential funding sources. Addressing this could improve the likelihood of successful implementation of the recommendations.

Overall, the study showed that term 'medical desert', or the phenomenon of medical desertification has so far received limited attention across the European continent. However, there is overall agreement that this is something that should be addressed, and further policies to mitigate this growing issue should be developed. This is challenging to do, given the context specific nature of the phenomenon.

It is also important to identify medical deserts in a systematic way to be able to address them. Since no concrete definition is available/has been operationalised, policy development for mitigation is even more challenging.

The study also indicated the working definition of AHEAD has been successful in operationalising this concept, but further improvements can be implemented. This work is ongoing and definition improvements will be published on AHEAD website.

## References of literature review

- Allan, D. P. (2014). Catchments of general practice in different countries—a literature review. *International journal of health geographics*, 13(1), 1-15.
- Ambroise, B., Benateau, H., Prevost, R., Traore, H., Hauchard, K., Dia, H., & Veyssière, A. (2018). The contribution of telemedicine to humanitarian surgery. *Journal of Cranio-Maxillofacial Surgery*, 46(8), 1368-1372.
- Andrès, E., Talha, S., Hajjam, M., & El Hassani, A. H. (2019). Telemedicine for Chronic Heart Failure: An Update. Pp. 7-21 in Giuseppe Rescigno, Michael S. Firstenberg, eds., *Topics in Heart Failure Management*, intechopen, DOI: 10.5772/intechopen.74704.
- Apparicio, P., Gelb, J., Dubé, A. S., Kingham, S., Gauvin, L., & Robitaille, É. (2017). The approaches to measuring the potential spatial access to urban health services revisited: distance types and aggregation-error issues. *International journal of health geographics*, 16(1), 1-24.
- Babić, R., Milošević, Z., & Babić, G. (2012). Teleradiology-Radiology at Distance. *Acta Facultatis Medicae Naissensis*, 29(3).
- Barlet, M., Collin, C. "Localisation des professionnels de santé libéraux." *Comptes nationaux de la santé* (2009): 27-56.
- Barrios González, M. C., & Schorn, J. (2009). Accesibilidad a los servicios de salud y educación: una clasificación de las entidades de población en Tenerife. *Ciudad Y Territorio Estudios Territoriales (CyTET)*, 41(159), 103-116.
- Batenburg, R., Wiegers, T., Ruizendaal, W., Verheij, R., & De Bakker, D. (2015). De NIVEL Zorgmonitor Krimpgebieden Resultaten van een quick scan en conceptueel monitorontwerp. *Utrecht: Nivel*.
- Bhattarai, N., Mcmeekin, P., Price, C. I., & Vale, L. (2019). Preferences for centralised emergency medical services: discrete choice experiment. *BMJ open*, 9(11), e030966.
- Bigoteau, M., Grammatico-Guillon, L., Massot, M., Baudet, J. M., Cook, A. R., Duroi, Q., ... & Khanna, R. K. (2021). Ambulatory surgery centers: possible solution to improve cataract healthcare in medical deserts. *Journal of Cataract & Refractive Surgery*, 47(3), 352-357.
- Bryan, D. (2019). Promoting Maternal Health in Rural and Underserved Areas. *Mercatus Policy Brief*, Available at SSRN: <https://ssrn.com/abstract=3562255> or <http://dx.doi.org/10.2139/ssrn.3562255>
- Bühn, S., Holstiege, J., & Pieper, D. (2020). Are patients willing to accept longer travel times to decrease their risk associated with surgical procedures? A systematic review. *BMC public health*, 20(1), 1-10.
- Burton, A. W. Disparities in Pain Care Treatment In The Socioeconomic World.
- Buzza, C., Ono, S. S., Turvey, C., Wittrock, S., Noble, M., Reddy, G., Kaboli, P. J., & Reisinger, H. S. (2011). Distance is Relative: Unpacking a Principal Barrier in Rural Healthcare. *Journal of General Internal Medicine*, 26(2), 648–654.
- Cardillo, G., Fusco, C., Nunzia Mucci, M., Occhino, T., Picucci, A., Xilo, G. (2021). *Associazionismo e Attuazione - I comuni alla prova della realizzazione della Strategia nazionale per le aree interne*, Roma: Formez.PA. Retrieved online 24<sup>th</sup> August 2021, [http://www.formez.it/sites/default/files/associazionismo\\_e\\_attuazione\\_def\\_.pdf](http://www.formez.it/sites/default/files/associazionismo_e_attuazione_def_.pdf)
- Chambers, D., Cantrell, A., Baxter, S. K., Turner, J., & Booth, A. (2020). Effects of increased distance to urgent and emergency care facilities resulting from health services reconfiguration: a systematic review.
- Chevillard, G., Lucas-Gabrielli, V., Mousquès, J., & Dill, L. L. (2018). “Medical deserts” in France: Current state of research and future trends. *LEspace géographique*, 47(4), 362-380.

Chiorazzo, V., D'Autilia, M.L., Flaccadoro, E., Marra, L., Romano, M. (2020). *Rapporto 2020 sul coordinamento della finanza pubblica*, Roma: Corte dei Conti. Retrieved online 24<sup>th</sup> August 2021, <http://www.quotidianosanita.it/allegati/allegato5380690.pdf>

Clarke, R., & MacDonald, C. (2018). *Can healthcare policy and technology heal rural-urban divides?*, OECD.

Cournoyer, JB, Boulton, G., Iatrou, G., Murauskiene, L., Weissman, T., Curea, D., Furtunescu, F. 2021. Studii complete de fezabilitate pentru trei spitale regionale din România. CLUJ.

Derrendinger, I. (2020). Les nouvelles voies d'accès aux études de santé. *Sages-Femmes*, 19(3), 48-50.

Dubas-Jakóbczyk, K., Albrecht, T., Behmane, D., Bryndova, L., Dimova, A., Džakula, A., ... & Quentin, W. (2020). Hospital reforms in 11 Central and Eastern European countries between 2008 and 2019: A comparative analysis. *Health Policy*, 124(4), 368-379.

Fischer, T. (2021). Understanding the Spatial-Related Abstraction of Public Health Impact Goals and Measures: Illustrated by the Example of the Austrian Action Plan on Women's Health. *Sustainability*, 13(2), 773.

Freeman, V. L., Naylor, K. B., Boylan, E. E., Booth, B. J., Pugach, O., Barrett, R. E., ... & McLafferty, S. L. (2020). Spatial access to primary care providers and colorectal cancer-specific survival in Cook County, Illinois. *Cancer medicine*, 9(9), 3211-3223.

Garattini, L., Martini, M. B., & Nobili, A. (2021). The Italian NHS in Lombardy and Veneto: near but far. *Internal and Emergency Medicine*, 1-3.

Gavriliuc, M., Lozan, O., & Grumeza, A. (2011). Telemedicina în neurologie. Perspective în activitatea de cercetare. Pp. 239-244 in Andronic L., Lișii T., eds. *The current problems of organization and self-organization of research and development system in the Republic of Moldova*. Chișinău: Academia de Științe R. Moldova

Ghorbanzadeh, M., Kim, K., Ozguven, E. E., & Horner, M. W. (2021). Spatial accessibility assessment of COVID-19 patients to healthcare facilities: A case study of Florida. *Travel Behaviour and Society*, 24, 95-101.

Gideon, D., Buebel, B., & Zaccagnini, N. (2015). When the Hospital is the Patient: Closing a Hospital Requires Careful Planning. *Huron Consulting Group Inc.*

Hartmann, L., Ulmann, P., & Rochaix, L. (2006). Access to regular health care in Europe. *Revue française des affaires sociales*, (6), 115-132.

Haynes, R., Bentham, G., Lovett, A., & Gale, S. (1999). Effects of distances to hospital and GP surgery on hospital inpatient episodes, controlling for needs and provision. *Social science & medicine*, 49(3), 425-433.

Janes, R., & Dowell, A. (2004). New Zealand rural general practitioners 1999 survey--part 3: rural general practitioners speak out. *The New Zealand Medical Journal (Online)*, 117(1191).

Janes, R., Dowell, A., & Cormack, D. (2001). New Zealand Rural General Practitioners 1999 Survey-Part 1: An overview of the rural doctor workforce and their concerns. *New Zealand Medical Journal*, 114(1143), 492.

Jang, W. M., Lee, J., Eun, S. J., Yim, J., Kim, Y., & Kwak, M. Y. (2021). Travel time to emergency care not by geographic time, but by optimal time: A nationwide cross-sectional study for establishing optimal hospital access time to emergency medical care in South Korea. *Plos one*, 16(5), e0251116.

Kaneko, M., Ohta, R., Vingilis, E., Mathews, M., & Freeman, T. R. (2021). Systematic scoping review of factors and measures of rurality: toward the development of a rurality index for health care research in Japan. *BMC Health Services Research*, 21(1), 1-11.

Kim, Y., Byon, Y. J., & Yeo, H. (2018). Enhancing healthcare accessibility measurements using GIS: A case study in Seoul, Korea. *PloS one*, 13(2), e0193013.

Kralj, B. (2000). Measuring “rurality” for purposes of health-care planning: an empirical measure for Ontario. *Ont Med Rev*, 67(9), 33-52.

Kuhl, C. Addressing inequities in access to health care for vulnerable groups in countries of the European region.

Leemhuis, J. S. (2020). A question of (social) geography?—Mental health stigma and help-seeking behavior for depressive symptoms among individuals living in rural and urban areas: A literature review (Master's thesis, University of Twente).

Leimane, I. (2017). *Health workforce for tuberculosis treatment and support in the Republic of Moldova. Assessment report*, Chişinău: centrul PAS.

Lubi, K., Uibu, M., Koppel, K., & Mets-Oja, S. (2020). The rising impact of civic activism on health policy: The analysis of the closure of smaller obstetric units in Estonia. *Health Policy*, 124(11), 1239-1244.

Lucas, G., Bielska, I. A., Fong, R., & Johnson, A. P. (2018). Rural-urban differences in use of health care resources among patients with ankle sprains in Ontario. *Canadian Journal of Rural Medicine*, 23(1), 7-14.

Lucas-Gabrielli, V., Nestrigue, C., & Coldefy, M. (2016). Analyse de sensibilité de l'Accessibilité potentielle localisée (APL). *IRDES [Internet]*.

Lynch, B. (2019). *Reconfiguration of emergency and urgent care systems in Ireland from 2006: analysis of quantitative performance indicators at a population level* (Doctoral dissertation, University College Cork).

Mahé, E., Beauchet, A., Reguiai, Z., Maccari, F., Ruer-Mulard, M., Chaby, G., ... & Resopso, G. (2017). Socioeconomic inequalities and severity of plaque psoriasis at a first consultation in dermatology centers. *Acta dermato-venereologica*, 97(5), 632-638.

Marchildon, G. P. (2018). A Policy Research Agenda for Health Systems in Canada's North. *HealthcarePapers*, 17(3), 35-40.

McKinnon, K. J. (2017). *Telemedicine: An Augmentation Strategy to Mitigate Primary Care Shortage* (Doctoral dissertation, Walden University).

Mizrahi, A., & Mizrahi, A. (2010). La densité répartie: un instrument de mesure des inégalités géographiques d'accès aux soins. *Villes en parallèle*, 44(1), 94-113.

Mocanu, V., Volovei, I., Volovei, V., & Mocanu, I. (2016). Regionalizarea serviciilor spitalicești în opinia medicilor și a experților. *Revista de Știință, Inovare, Cultură și Artă „Akademos”*, 42(3), 116-123.

Naylor, K. B., Tootoo, J., Yakusheva, O., Shipman, S. A., Bynum, J. P., & Davis, M. A. (2019). Geographic variation in spatial accessibility of US healthcare providers. *Plos one*, 14(4), e0215016.

ORCAO, Ana Isabel Escalona; CORNAGO, Carmen Díez. Retos y problemas de la accesibilidad a servicios en zonas despobladas: un caso en la provincia de Teruel (España). *Scripta Nova. Revista Electrónica de Geografía y Ciencias Sociales*, 2005, vol. 9, no 181-204.

Osservatorio Nazionale sulla Salute nelle Regioni Italiane. 2019. AAA in Italia cercasi medici disperatamente, 18 April 2019, retrieved on 24<sup>th</sup> August from <https://www.osservatoriosullasalute.it/news/aaa-in-italia-cercasi-medici-disperatamente>

Parsons, K., Gaudine, A., & Swab, M. (2019). Experiences of older adults accessing specialized healthcare services in rural or remote areas: a systematic review protocol. *JB I Evidence Synthesis*, 17(9), 1909-1914.

Picucci, A., Rigoni, A., Xilo, G. (2020). *I processi di digitalizzazione nelle aree interne*, Roma: Formez.PA

- Picucci, A., Rigoni, L., Xilo, G. (2020). *I processi di digitalizzazione nelle aree interne*, Roma: Formez.PA. Retrieved online 24<sup>th</sup> August 2021, [http://www.formez.it/sites/default/files/i\\_processi\\_di\\_digitalizzazione\\_nelle\\_ai-.pdf](http://www.formez.it/sites/default/files/i_processi_di_digitalizzazione_nelle_ai-.pdf)
- Rechel, B., Džakula, A., Duran, A., Fattore, G., Edwards, N., Grignon, M., ... & Smith, T. A. (2016). Hospitals in rural or remote areas: An exploratory review of policies in 8 high-income countries. *Health Policy*, 120(7), 758-769.
- Roberts, A., Blunt, I., & Bardsley, M. (2014). Focus on: distance from home to emergency care. *Qual Watch*, 1-46.
- Salih, T., Martin, P., Poulton, T., Oliver, C. M., Bassett, M. G., & Moonesinghe, S. R. (2021). Distance travelled to hospital for emergency laparotomy and the effect of travel time on mortality: cohort study. *BMJ quality & safety*, 30(5), 397-406.
- Stan S, Erne R. (2021). Time for a paradigm change? Incorporating transnational processes into the analysis of the emerging European health-care system. *Transfer: European Review of Labour and Research*. 27(3):289-302.
- Stan, S., & Toma, V. V. (2019). Accumulation by dispossession and public-private biomedical pluralism in Romanian health care. *Medical anthropology*, 38(1), 85-99.
- Statz, M., & Evers, K. (2020). Spatial barriers as moral failings: What rural distance can teach us about women's health and medical mistrust author names and affiliations. *Health & place*, 64, 102396.
- Steinhaeuser, J., Otto, P., Goetz, K., Szecsenyi, J., & Joos, S. (2014). Rural area in a European country from a health care point of view: an adaption of the Rural Ranking Scale. *BMC health services research*, 14(1), 1-6.
- Tao, Z., Cheng, Y., & Liu, J. (2020). Hierarchical two-step floating catchment area (2SFCA) method: measuring the spatial accessibility to hierarchical healthcare facilities in Shenzhen, China. *International Journal for Equity in Health*, 19(1), 1-16.
- Turnbull, J., Martin, D., Lattimer, V., Pope, C., & Culliford, D. (2008). Does distance matter? Geographical variation in GP out-of-hours service use: an observational study. *British Journal of General Practice*, 58(552), 471-477.
- Vallée, J., Shareck, M., Le Roux, G., Kestens, Y., & Frohlich, K. L. (2020). Is accessibility in the eye of the beholder? Social inequalities in spatial accessibility to health-related resources in Montréal, Canada. *Social science & medicine*, 245, 112702.
- Vaughan, L., & Edwards, N. (2020). The problems of smaller, rural and remote hospitals: Separating facts from fiction. *Future healthcare journal*, 7(1), 38.
- Vaughan, L., & Edwards, N. (2020). The problems of smaller, rural and remote hospitals: Separating facts from fiction. *Future healthcare journal*, 7(1), 38.
- Véran, O. (2013). Des bacs à sable aux déserts médicaux : construction sociale d'un problème public. *Les Tribunes de la sante*, (2), 77-85.
- Verma, V. R., & Dash, U. (2020). Geographical accessibility and spatial coverage modelling of public health care network in rural and remote India. *Plos one*, 15(10), e0239326.
- Vermanen, J., Heijkant, J., Ros, J. (2020). Spoedeisende hulp niet overal goed bereikbaar: waar liggen de 'zorgwoestijnen'?, *Pointer*, 25 september 2020, retrieved on 21<sup>st</sup> August from <https://pointer.kro-ncrv.nl/spoedeisende-hulp-niet-overal-goed-bereikbaar-waar-liggen-de-zorgwoestijnen#gs.6xyv0i>
- Wang, X., Yang, H., Duan, Z., & Pan, J. (2018). Spatial accessibility of primary health care in China: a case study in Sichuan Province. *Social Science & Medicine*, 209, 14-24.



White-Means, S., Dapremont, J., Davis, B. D., & Thompson, T. (2020). Who can help us on this journey? African American woman with breast cancer: Living in a city with extreme health disparities. *International journal of environmental research and public health*, 17(4), 1126.

Xia, T., Song, X., Zhang, H., Song, X., Kanasugi, H., & Shibasaki, R. (2019). Measuring spatio-temporal accessibility to emergency medical services through big GPS data. *Health & place*, 56, 53-62.

Zaahirah, M., Juni, M. H., & Rosliza, A. M. (2018). Planning theories in primary health care planning. *International Journal of Public Health and Clinical Sciences*, 5(4), 12-28.

Zhao, P., Li, S., & Liu, D. (2020). Unequable spatial accessibility to hospitals in developing megacities: New evidence from Beijing. *Health & place*, 65, 102406.

## Annexes

### Annex A: mesh terms used in the literature review

1. "medical deserts"
2. "medical density"
3. "distance to GP"
4. "patients per GP"
5. "time to a healthcare provider."
6. "distance to a healthcare provider"
7. "distance to emergency health services"
8. "disparities in access to health care"
9. "physician shortage"
10. "health care deserts"
11. "telehealth"
12. "telemedicine"
13. "ambulance intervention time"
14. "ambulance arrival time"
15. "equitable access to healthcare"
16. "patient-doctor/ nurse ratio"
17. "mobility of health workers"

## Annex B: Literature review analysis template

Study: title	
Study: link	
Study: domain of science	
The main objective of the study	
Concepts (labels)*	
Definition(s)*	
Geographical area(s) (location)	
Year(s) referred by data	
Alternative concepts used in the text	
What data do they use, from where they get it	
What methodology do they employ? Please specify the indicators***	
How they construct the index(es) for desertification***	
Do they use the index for studying the relation with other concepts? Which concepts? What are the findings?**	
General comments Would you please refer to any causes of medical desertification Would you please make references to any solutions that they may propose	
The criteria/methodology/indicators might be applicable in your country?	
From where do you get updated data?	

\*Related to inequality of access, medical deserts, etc. Please refer here, preferably in extenso, to:

How are medical deserts be defined?\*\*

\*\* Please refer here to:

- Who is most affected by medical deserts in these areas (e.g. subgroups in the population)?
- What (context) factors cause or contribute to the development of medical deserts in these areas?
- What policy measures have [countries] undertaken in the past [x years] to address medical deserts in ..... and to what extent have these been effective, or why not?

\*\*\* Themes that should be included here:

- What measuring strategies are employed.
- How these strategies are validated.

## Annex C: Media analysis search terms and media outlets

### Search terms:

- (1) #EU OR #european union OR # Europe AND #health workforce mobility OR #health workers  
OR # health professionals
- (2) #EU OR #european union OR # Europe AND #medical inequality OR #medical inequalities  
OR #health inequalities
- (3) #EU OR #european union OR # Europe # AND isolated areas OR #depopulating areas  
OR #depopulating regions OR # medical deserts
- (4) add #Solutions
- (5) (Medical or health) brain drain

### Media outlets:

Bloomberg  
Politico  
HealthEuropa.com  
HealthyEurope.eu  
Healthfirsteurope.eu  
Le Monde  
France24  
Devex  
Euractiv  
Financial Times  
ThomsonReuters  
Times group  
The Guardian  
Statnews.com  
Healthpolicy-watch.news  
Neweurope.eu  
euronews.eu  
EUobserver.com  
theparliamentmagazine.eu  
healthcare-in-europe.com  
European Public Health Alliance  
European Generation  
BBC  
Eyes on Europe

## Annex D: Key informant interview protocol and analysis

### Introduction

Research is needed to develop the EU level policy brief that we committed to in the AHEAD Grant Agreement. This research will consist of a desk review (academic literature, policy analysis, media analysis) and a round of interviews with key stakeholders at EU level. The current document is meant to guide the interview phase.

### Aim of the research

- To understand the current situation on medical deserts in EU
  - How is it defined or described in literature (for EU)
  - How can it be remedied on EU level
    - What are the policies in place right now
    - What policies can be improved
    - What other policies can be implemented to address this better

### Aim of the interviews

Overall aim is to validate our own knowledge and understanding, gained from desk research and experience / engagement with AHEAD and the HWPC. More specifically:

- To collect viewpoints from key stakeholders about medical deserts: how they would describe them, who are affected, what are root causes, what should be done
- To gain better understanding about EU policies and programmes addressing medical deserts
- To fill gaps and blind spots in our overview of this policy area
- To guide our thinking about most promising areas of additional (EU) intervention, including funding sources

### Interview rounds – Basics

- 4-8 interviews
- Online
- Semi-structured
- 45 minutes max., if possible
- We ask respondents in advance if they object to their interview being recorded, to facilitate transcription/analysis (and recording will be deleted after the project ends; when we start the recording, we ask them to reiterate their approval = informed consent)

### Protocol

- Identify potential respondents
- Approach by email. Include question about recording and informed consent to participate in this research. Include link to AHEAD website with AHEAD's current working definition, as this is (a.o.) subject to discuss
- Set time & date, provide Teams link
- Hold interview & record it (provided consent is given)
- Analyse interview according to guidelines

Email text

Dear ....

(a few personalised sentences)

As you know, Wemos is lead partner of the AHEAD Consortium: Action for Health and Equity Addressing medical Deserts. AHEAD is an EU-funded programme (3<sup>rd</sup> Health Programme), runs from 2021-2023, and involves partners in Italy, Moldova, Netherlands, Romania and Serbia. For more information see <https://ahead.health/>.

As part of AHEAD's research activities, Wemos has been tasked to conduct some research on EU level concerns regarding medical deserts. In this research, we are organising some interviews with key stakeholders/informants, hence this email to you now.

The aim of our research is to better understand the current situation on medical deserts in and across EU, and to get a better overview of what is being done and what else/more could be done to mitigate and prevent medical desertification.

We hope to achieve this by (a.o.) interviewing various stakeholders who – based on their position or role in their organisation – can share their ideas on:

- How medical deserts can or should be defined
- To what extent they / their organisations are working on preventing / mitigating (manifestations of) medical deserts
- Potential additional (policy level) remedies for it.

We would be grateful and much obliged if you could share your expertise and knowledge on this subject matter and if you would be willing to be interviewed by Aysel or me (depending on availability). Please let me know if this is something you could participate in, and if yes, your availability for this call in the next few weeks. We understand availability can be challenging these months, so if you think we should reach out to one of your colleagues instead, we would be grateful for a referral or a recommendation of an appropriate contact.

The interview will be around 45 mins, and preferably recorded (only if you agree) to ease transcription and analysis. The recording will be deleted after the project is completed in May 2023. You can remain anonymous if preferred.

I would be happy to provide further information, if needed.

Looking forward to hearing from you.

### Interview questions

- Present our definition of 'medical deserts' (<https://ahead.health/results/medical-desert/>). Then: In your capacity as [function / role], which manifestations of medical deserts are you most familiar with / knowledgeable about?
- Do you agree with our current definition? Are important elements missing, if yes: which?
  - [if need be: highlight the different elements in our definition, to elicit responses to these specific elements or spark creativity on additional elements / nuances]
- [within your organization / constituency:] Which initiatives, programmes, policies do you know that aim to help prevent/ mitigate/ counteract medical desertification?
  - References to information / data sources
- More specifically: what instruments does the EU have at its disposal to help prevent/ mitigate/ counteract medical desertification?
- Which DGs / Commissioners / Parliamentary groups / Committees should be most involved?

## Guidelines for analysis

	Resp. 1	Resp. 2	Resp. 3	Resp. 4	Resp. 5
<b>AHEAD's working definition: dimensions familiar?</b>	Yes, wasn't familiar with the term before, but agrees with the proposed definition/dimensions	Yes, especially dimension 3	Yes, except for dimensions 2 (social barriers)	Yes, except dimension 3.	Yes, but fundamental remarks, see below.
<b>AHEAD's working definitions: remarks</b>		The root cause of all the dimensions is poor governance (part of dimension 3).	MD not necessarily defined by geographical. But they do tend to cluster in certain geographic areas; rural areas, or specific urban areas, not well connected to capital or city centres	Needs of the population needs to be at the centre of the definition. There are different ways to measure or calculate this. Examples from France: number/%-age of population who cannot register with a GP.  And surveys, regularly done, but with different definitions of 'unmet medical need'.  Challenge: how to define a cut-off point/threshold?	1- Health workforce issues should be a separate dimension, and should be mentioned as the first.  2- The definition should include the dimensions; do not present definition and dimensions separately.  3- The term medical desert is a negative term. Try and find a more positive term.
<b>AHEAD's working definition: missing elements?</b>	1- The dimensions don't necessarily capture seasonal/climatic migration, which has a significant influence in certain contexts. 2 – patient transport: is this part of the social dimension? Access to public transport is an important accessibility factor	Important to invest into 1. Mobile teams, 2. Promotion of Interprofessional collaboration (including changes in curriculum and collaborations with social workers too), 3. Task shifting (but without affecting income of, particularly GPs)	In dimension 3: policies to incentivize hw to work in certain (disadvantaged) areas; and (existence of framework with objective/measurable criteria for the) allocation of sufficient resources to sub-national regions (incl. disadvantaged areas)		Suggestions for concrete and helpful indicators:  * intention to stay * absenteeism (any reason) * hw remaining in place for 1-2-3 years



					* vacancy rates
<b>AHEAD's working definition: redundant / not applicable</b>	N/A		Dimension 2: this applies to whole population, not just those in medical deserts	Dimension 3: this is the driver behind dimensions 1 and 2, so why consider it separately?	
<b>Existing programmes, initiatives in your organisation</b>	N/A	Coordinates with organisations that are interested/concerned about MDs: WONCA, EURIPA, PGEU (pharmacists).  New initiative the org. Is part of: BeWELL (on digitalization)		Many – mainly localised – initiatives (see detailed notes for examples).  A few - more political - calls to use more coercion in 'settlement policies'. But you cannot force people to settle here or there; you can only prohibit them from settling in a particular area.	Two main instruments or tools used:  Health Labour Market Analysis  And  Rural Retention guidelines.
<b>Existing (funding) instruments available</b>	Aware that some funding opportunities exist but doesn't know specifics.  Suggest to consider WHO Code type of intervention, but contextualized to EU: red zone/shortage lists for EU countries? Or prioritization of those areas for funding and development aid.  Financing the care: certain payment mechanisms have negative effect on this issue: fee for service (doesn't	Most initiatives/funding streams are focusing on cure. Not aware on anything specific on MD. BeWell project focuses on digitalization, which can be part of solution	Initiative for rural areas: long-term vision for rural areas, improving access to services / health care specifically mentioned.  Green Paper on Aging, 2021.  Policy Advice in European Semester. CSRs include guidance from DG Sante.  CSRs now in combination with RRF, after the coronavirus crisis. 15 MSs RRF plan address disparities, is good result. "Target for digital (in	Existing at local and national level. Regions become eligible when certain indicators pass a certain threshold, such as the 'localised potential access' indicator (<2.5).  Not familiar with existing (funding) instruments and initiatives at European level.	None. Would like to know more about it.  Positive example of how they can provide technical assistance to countries in implementing their Recovery and Resilience Plans, funded with R&R funds.

	encourage team working which is very important for rural areas).		RRF) could very much apply to health and health systems.”  Cohesion Policy funds, consisting of European Social Fund+ (human capital) and European Regional Development Fund (mainly infrastructure). 16 MSs with such plans. DG Sante tries to highlight need to invest in health workers (as part of human capital). Suggestion: evaluate these plans on hwf elements.		
<b>Which DGs / Commissioners / Parliamentary groups / Committees should be most involved</b>	N/A	DG Sante is limited by its mandate. DG Employment, Social Affairs & Inclusion	n/a	n/a	
<b>Specific notes &amp; quotes (anonymous)</b>	Training locally has an advantage of sustainability and better outcomes have been in contexts where it was implemented. However, this is a long-term approach and requires curriculum changes (inclusion of rural health, use of technology, adjusting entry requirements for rural students, additional help and networking for rural residents, etc.)	Expectations management is key – what health and care should be provided/accessible vs what is expected by citizens	“Perhaps countries do not know enough about the existence and possible use of non-health instruments for health and hwf. But perhaps it is not their priority, either.”	Example (France) of how to measure/ calculate supply:  "Localised potential accessibility" = "Number of consultations with GP per inhabitant per year". Threshold value = 2,5.	
	Political power imbalance: sometimes the representatives of areas that can be called deserts are not well represented on political policy level. This is important, as the communities are the most motivated		“Sustained investments in hwf require strong vision and strong political support.”		

	about making a change and that's where the solutions come from				
			DG Sante cannot issue minimum benchmarks for staffing levels, this is not the responsibility of EU. Trying to push through European Semester, is all they [DG Sante] can do.		



**Co-funded by the  
Health Programme  
of the Europe Union**

**The content of this deliverable represents the views of the author only and is his/her sole responsibility; it cannot be considered to reflect the views of the European Commission and/or the European Health and Digital Executive Agency (HaDEA) or any other body of the European Union. The European Commission and the Agency do not accept any responsibility for use that may be made of the information it contains.**