Planning and design of territorial healthcare facilities in rural areas: opportunities, advantages and recommendations

Laura Sacchetti
PhD IDAUP / University of Ferrara

DOI: 10.37199/o41009124

Abstract - *In most countries, the majority of healthcare facilities and hospitals are located in urban areas, causing limited access to essential medical services and treatments in rural regions. This situation is further exacerbated by the fact that rural areas are often characterised by isolation, poor infrastructure, and a lack of basic amenities. Often, the primary care system has been underdeveloped and does not provide adequate geographical coverage. This issue has far-reaching consequences on the health and well-being of the rural population and needs to be addressed by developing a comprehensive and sustainable strategy to foster the expansion of healthcare facilities in rural regions, as well as for the underlying challenges related to urban development and infrastructure, which impact on the access to healthcare services, in order to face the future demographic, epidemiologic, economic, and social developments.*
Nowadays, the advantages of an extensive and comprehensive primary care system are well-established and the role of primary care in prevention, treatment and management are delineated and endorsed in different strategic national documents.
The opportunity of providing rural areas with territorial healthcare facilities is discussed, with a possible comparison with other practicable solutions (e.g. introduction of mobile health clinics, etc.). Several domains are analysed, starting from the contributing factors to the development of primary care facilities, the design of primary care centres, including healthcare typologies, new construction or renovation, accessibility and recognisability of the facilities, as well as urban regeneration strategies and the implications of the location in rural contexts at the architectural level. This paper addresses Albania and the Municipality of Finiq to exemplify the implementation of the proposed strategy. An illustration of the possible dimensioning and configuration, as well as recommendations for the design of local health services in the Finiq Municipality are proposed as a starting point for the discussion on the potential future scenarios of healthcare services in Albania.
The results of this contribution are potential recommendations for the future planning and design of territorial healthcare facilities in remote areas.

Keywords:
healthcare design; local healthcare facilities; recommendations; urban and architectural scales.

Introduction and background - In most countries, the majority of healthcare facilities and hospitals are located in urban areas. In some cases, this concentration has caused limited access to essential medical services and treatments in rural regions, due to an inadequate number of facilities as, over time, many of them ceased to function due to equipment shortages and staff resignations (Nuri & Tragakes, 2002; Hotchkiss et al., 2005). This situation is further exacerbated by the fact that rural areas are often characterised by isolation, poor infrastructure and a lack of basic amenities – such as clean water, sewage and urban waste management (Hoxha, 2020) – contributing to higher rates of preventable conditions and health risks. One of the countries experiencing this situation is Albania, where the number of primary care (PC) services and physicians in relation to the population size is quite unfavourable for rural areas, traditionally disadvantaged and underserved in comparison with urban districts (Adhami et al., 2013). Reasons for this distribution are to be found in the historical evolution of the Albanian healthcare service: after adopting, in the 60s, an extensive PC system, with sanitary centres set up in each district, in the 70s the country switched to prioritising hospitals to provide basic inpatient care and polyclinics for specialist outpatient care (Nuri & Tragakes, 2002). With the political changes in the 90s and the dismissal of many health centres – two-thirds of the rural health posts (Albanian Council of Ministers, 2001) – and district hospitals, the number of hospital beds in Albania decreased by 20%, also due to the economic crisis that led to the closure of many facilities in rural areas (Bulakh, 2019) (Fig1).
As for now, the PC system in many countries, including Albania, is underdeveloped and not providing adequate geographical coverage. The quality of Albanian PC services faces challenges on multiple levels, including governance, access, infrastructure and shortage of healthcare workers (Saric et al., 2021). The issue of limited access to healthcare has far-reaching consequences on the health and well-being of the rural population, with vulnerable groups of people – older adults, people with disabilities or chronic health conditions – being excluded from local support services. As in most European countries, a strong PC system would be required to face these challenges and the future demographic, epidemiologic, economic, and social developments related to the Albanian population (Gjonça et al., 2021), thus displaying great potential for improvement and utilisation in the upcoming years.
The advantages of an extensive and comprehensive PC system are well-established. A distributed network of local healthcare facilities acts as a gatekeeping system, through diagnosis and treatment of conditions that GPs are normally able to take care of. This is crucial to prevent people from using hospitals and polyclinics as their first point of contact with medical care, thus avoiding unnecessary hospital admissions and reducing healthcare expenses. Moreover, PC provides a range of support that addresses the physical, emotional, and social needs of individuals, creates deep-rooted relations with the local context, enhances acceptance and participation from local communities and combines therapy with information, prevention, and integration.
Nowadays, the role of PC in prevention, treatment and management is delineated and endorsed in different strategic national documents; in Albania, a program of rehabilitation of 300 health centres across the whole country and building 80 new facilities is currently in place from the Ministry of Health and Social Protection (Gabrani et al., 2020).
In these circumstances, it is of utter importance that PC services' implementation is addressed by developing a comprehensive and sustainable strategy to foster the expansion of healthcare facilities in

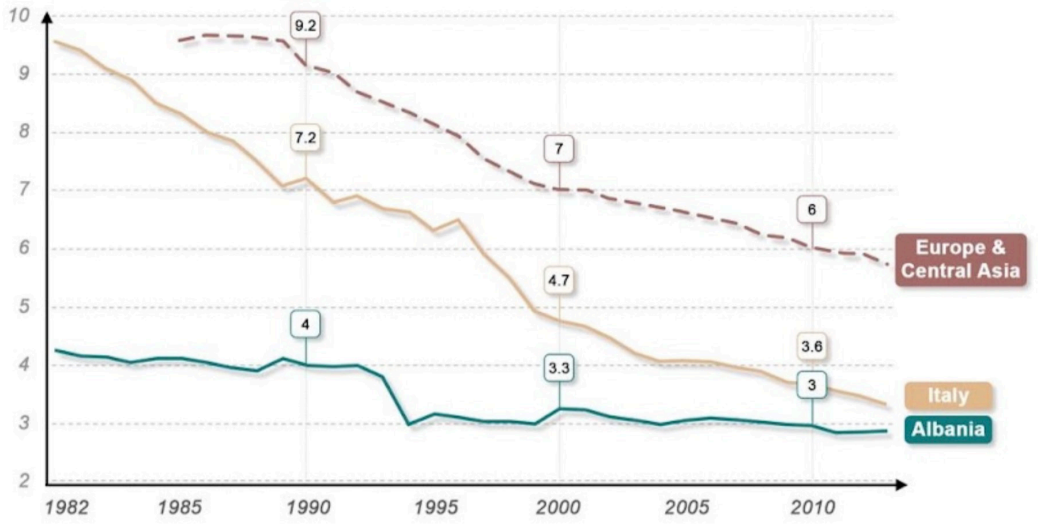


Fig1 / Hospital beds per 1.000 people, since 1982. Albania in comparison with Italy Europe and Central Asia
source / elaboration on data from the World Health Organisation

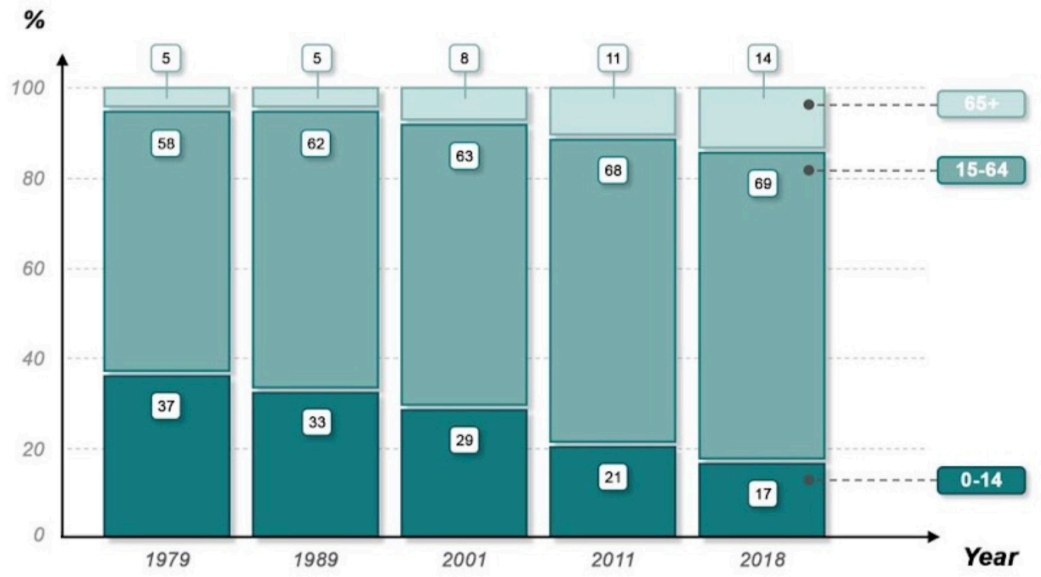


Fig2 / Percentage of population per age group, since 1979
source / elaboration on data from Prof. G. Rembeci

rural regions, as well as for the underlying challenges related to urban development and infrastructure, which impact on the access to healthcare services.
This paper will discuss the opportunity of providing rural areas with territorial healthcare facilities, with a possible comparison with other practicable solutions (e.g. Mobile Health Clinics, etc.), addressing Albania and the Finiq Municipality to exemplify the implementation of the proposed strategy. The results of this contribution are potential recommendations for the future planning and design of territorial healthcare facilities in remote areas.

Contributing factors to the development of primary care facilities

To better understand the importance of the contribution of local primary care facilities and their urban and social impact, other contributing factors need to be considered. First of all, the ageing of the population is a trend concerning most European and non-European countries. In the case of Albania, the percentage of elderly (over 65) has tripled since the 70s, showing a clear and sharp ageing trend. Conversely, the share of young people (age group 0-14) has significantly decreased in the same period, while the proportion of intermediate age groups has remained rather steady, with a slight increase in the past two decades (Fig2). This is critical because the traditional values of care for the elderly at the household level by younger generations will be undermined by the demographic changes and, at the same time, the health system will be challenged in terms of healthcare provision due to an increase in chronic diseases associated with old age (Gjonça et al., 2021). The ageing of the population generates, on the one hand, the demand for increased medical treatments for older adults and, on the other, the need for unique services at the urban and architectural scale, that design can – and must – take into consideration in order to improve citizens' quality of life. The second contributing factor is the potential change and increase in tourism flows. During the past decades, there have been progressive investments in Albania, and especially in the Saranda region, for the tourism sector and the economic development in this area will increasingly rely on the promotion of tourism and ecotourism[1] (Hoxha, 2020), even by the reduction of the phenomenon of seasonality through additional alternative forms of attractivity (Thano, 2013). This determines the need for the public sector to incorporate additional resources in several fields, such as investments in infrastructure, road and transport networks, water supply, but also healthcare services to be implemented into existing or new facilities, to ensure that they are equipped to meet the medical needs of tourists.

Recommendations for the design of primary care facilities

Healthcare typologies

Against this background, the strengthening of PC at the local level in rural areas is much needed. However, this could be achieved in several ways, with significant consequences at the urban level and different implications for the targeted communities.
Usually, an integrated network of local facilities includes: (i) PC and outpatient services, provided by Physicians, Community Healthcare Centres and Clinics; (ii) inpatient services, such as Nursing Homes and Community Hospitals; (iii) palliative care, namely Hospices; (iv) Home Care provided by nursing staff, hosted within posts usually located in Healthcare Centres; (v) and Emergency or First Aid units.
Along these, all social services managed by local associations – which ought to be fully integrated within the healthcare network – are of equal importance and comprise daycare centres at the service of the community.
The Albanian PC policy that was developed in 1997 with EU support stated that there should be at least one health centre in each commune and one health post in each village (Albanian Ministry of Health and Environment & EU Phare Programme, 1995). These health centres are supposed to be on separate sites from polyclinics, other medical centres and hospitals (Nuri & Tragakes, 2002).
In particular cases of low-density areas, these services can be replaced or supported by Mobile Health Clinics (MHCs), which are healthcare units designed to bring medical care and services directly to patients in remote or underserved areas. They are typically housed in vehicles such as vans or buses and provided with medical equipment and supplies suitable for basic medical care. This type of service has already been experimented with in Albania and in the Saranda region in the post-pandemic period, when medical equips from Greece reached the Albanian villages to offer free healthcare check-ups to the residents[2].
However, it has to be acknowledged that these solutions are not to be relied on solely, as they do not provide a comparable service in terms of (i) capacity, as the number of patients they can treat is very limited; (ii) quality of care, as they are not fully equipped with advanced medical supplies; (iii) consistency, as they are available for defined periods of time; (iv) community engagement and outreach, as they do not represent the desirable community hub and they cannot contribute to the fundamental role that local facilities play in education, training and support within local communities.

New construction or renovation?

In the dire need for the implementation of new local facilities to improve healthcare access, especially for rural communities, one of the first observations should regard the potential reuse of existing buildings.
In Albania, the closure of many small hospitals – mostly rural – since 1992 has led to a high number of facilities that have

1 / Tourism related to activities in the natural environment, such as bird watching, flora observation trips as well as organised guided excursions.

2 / https://sarandanews.al/finiq-misioni-i-pare-i-mjekeve-nga-greqia-dhe-tirana-u-kurorezua-me-sukses-me-vizita-ne-terren/.

been dismissed or, in some cases, have been converted into health centres (Nuri & Tragakes, 2002). The presence of underused facilities on the national territory represents a great opportunity to combine the renovation of the existing building stock with the provision of new health services. The regeneration process involves the reuse of existing structures and materials, with resulting savings in land use and waiting resources.
However, besides the economic and environmental implications of renovation in comparison with new construction, which are still to be fully unfolded and vary according to site-specific conditions, social and cultural aspects might imply that renovating former facilities could be beneficial to local communities. As stated by Needleman (1965), «modernisation produces less social disturbance than replacement» for local residents, due to the sense of belonging and trust they might have developed towards some "institutions", as part of their history and background. However, economic, social, administrative and organisational factors (Sigsworth, & Wilkinson, 1967) must be deeply understood to evaluate the most convenient option. In fact, historical, cultural, social and architectural implications might influence the population's perception towards these buildings.
It is highly recommended, in such circumstances, to pursue participatory approaches, engaging the local community through co-designing and co-creation processes that confer several advantages in terms of (i) social inclusion and cohesion; (ii) a sense of belonging; (iii) cultural awareness; (iv) citizens' empowerment; (v) shared acceptance of the final solutions.

Territorial and urban scale: accessibility of territorial healthcare services and urban regeneration strategies

When programming the development of PC services in rural regions and the implementation of local healthcare facilities, multiple design scales are implicated, from the territorial and urban scale to the social sphere involving the community, the functional and spatial relations at the building aggregate scale and the more architectural, environmental, and technological factors.
At the larger scale, many domains are involved, but two main factors must be discussed: accessibility, which is tightly connected to the location of the building; and the potential of the urban layout as a trigger for urban integration and regeneration.
As regards accessibility, it can be determined by: (i) the provision of services in a specific area; (ii) available transportation systems; (iii) people's behaviour and abilities; (iv) and the temporal component, that matches transport and activities schedule with individuals' available time (Guida et al., 2022). In the specific case of healthcare facilities, accessibility plays a fundamental role, thus importance to locate the buildings correctly by considering the abovementioned factors.
There are several highly recognised models providing methods to assess the spatial accessibility to healthcare facilities. These are, for example, the two-step floating catchment area (2SFCA), and its enhanced version, the Kernel density method (Yang et al., 2006), the Euclidean distance, Shortest travel time, Provider-to-population ratio, some of which consider both accessibility and availability of services (Guagliardo, 2004), defined as the relation between service volume and patient volume and the type of needs (Ouma et al., 2021).
At the urban level, facilities should be located in central areas and served by an effective network for private cars (with parking lots located at the closest distance, not exceeding 200 meters) and public transport. As regards the acceptable distance from the public health service for citizens living in a specific targeted area, results from previous research highlight that having access to a facility which is close to the dwellings is an important factor for patients attending public PC centres (Gabrani et al., 2020). However, this undoubtedly varies according to different factors, among which are the demographic size of the city or town, the population density and the orography. For example, Oberosler and Sacchetti (2022) define such distance for the Italian case, referring to 10 km for large cities (> 250.000 inhabitants), 25 km for small villages (< 25.000 inhabitants) and 15,5 km for medium-sized towns, owing to the fact that the location of health and emergency services is strictly related to the temporal component (iv), thus the distance itself should be associated with the trip duration.
In addition, it is essential to consider that the integration of healthcare facilities within the existing building stock through adaptive reuse strategies is an occasion of urban regeneration leading to economic and social growth (Gola et al., 2022). The implementation of public facilities in rural contexts responds to the need for essential service provision but, at the same time, it has shown great potential in acting as a trigger for urban regeneration within those areas.
The urban layout of new buildings in close connection with the organised urban fabric, as well as the reuse of existing facilities, should then result in the creation of high-quality public spaces for the community, becoming an integrated place and a landmark for healthcare and for social engagement and interaction. Examples of this practice are consistent in the European context, such as in Ourense (Spain), where the new Valenzà Healthcare Centre built in 2017 was planned with a public square located beside the main building, or in Wolfsberg (Austria) where Habeler & Kirchweger Architects designed the new lymphology wing of the State Hospital with a large public space as an open courtyard in front of the main entrance of the healthcare facility.

Building aggregate scale: recognisability and integration within local communities

Accessibility in healthcare facilities at a closer scale has to do with physical factors, mainly relating to architectural barriers and potential obstacles to people with physical impairment or disabilities.
However, the accessibility of this type of service is also given by the recognisability of the building itself. Not only does a perceptible architectural layout, an easily recognisable entrance, and an inviting and welcoming external image of the building guide users within the facility, but they can also inform and change the public perception of healthcare authorities, creating a sense of trust and confidence towards the institution.
At the building aggregate scale, the location, configuration and layout of the facility are essential to favour the integration within the specific context and to establish contact with the local population. Traditionally, healthcare premises have experienced different building typologies, but they have always been considered a subsystem of the city with a strong social connotation (Lacanna, 2014). PC facilities should be considered as a reference within the community, building trust and a sense of belonging among citizens. For this reason, the design strategy should carefully consider the creation of public and shared spaces, either in front or within the building, accessible by the whole community for recreational activities. Landmarks, art pieces, or co-designed elements should be placed in these spaces in order to make them easily identifiable and recognisable.

Architectural scale: implications of the localisation in rural contexts

The localisation in rural contexts has strong implications for the design of territorial PC facilities. In fact, this usually means that these premises are far from specialised care clinics, as well as facilities providing emergency treatments. For this reason, these structures should comprise a combination of services able to cover a large spectrum of needs and requests from the patients, without at the same time exceeding the resources that can be allocated for this kind of local assistance.
The first solution to this, nowadays, is the more and more frequent adoption of digital platforms as first contact points with citizens, in order to reduce unnecessary access to the physical spaces within the facilities. Remote consultations with physicians and specialised care doctors can be held through digital platforms, in order to assess the need for specialist diagnosis and treatment. Therefore, PC design should take into account the need for separate rooms to hold virtual meetings with the patients and the specialised physicians.
Should the digital consultations not be adequate for the patient's conditions, in rural facilities there might be the need to organise shifts to allow for the temporary presence of physicians or specialised teams regularly coming on a weekly or monthly basis, as it usually happens within Community Hospitals. In this case, there might be a request for hospitality rooms and consultation rooms, assigned to the visiting staff. A similar solution could be applied to provide social services in rural areas, with staff visiting different facilities in a selected area according to a scheduled program or upon the patient's request.
In case of more severe conditions, there might be a need to cover emergencies with ambulance services and urgent care treatments. Designing an emergency reception with an entrance for ambulances and unplanned visits could provide first aid care to the local population, as well as a flexible solution to separate entrances and differentiate flows to reduce the risk of infections in case of need.
A further request for space is made by the need to accommodate rooms for the organisation and operations of home care services, which are provided directly at home but require a main office possibly located in PC facilities.
Additionally, communities might benefit from the introduction of PC of day services for the elderly, in order to promote healthy lifestyles, physical activity and social interaction among this age group, even increasing its independence by sourcing en-

tertainment at the local level.
In general, rural healthcare premises should be able to provide a large range of services within the available spaces and resources. For this reason, flexibility is essential to ensure adequate service supply. A flexible design comprised both flexible functional solutions – such as the arrangement of separate flows, the distribution of spaces around shared services, the deployments of "general" rooms with storage for the equipment of the variable intended uses – and architectural and technological solutions – such as the application of modular schemes for interchangeable layouts or pro-active systems design.

Planning healthcare territorial facilities in Finiq Municipality, Albania

Finiq is a small town located in Vlorë County to the south of Albania (Fig3). According to the Municipality[3], its population accounts for slightly over 11.000 citizens distributed in over 50 small villages, within a surface area of 441 km2.
At the moment, in Finiq Municipality and its rural areas, there is a documented lack of healthcare facilities. As already mentioned, in 2021 – after the COVID-19 pandemic outburst – the shortage of services in these villages entailed the external intervention of Greek medical equips for general check-ups among frail members of the community.
In addition, Finiq and the Saranda region are a popular Albanian summer destination, with increasing tourism flows attracted, among other reasons, by the archaeological sites and cultural activities.
For this reason, in the near future, the Municipality will be probably urged to plan new services and facilities, to cover the healthcare demand of both residents and tourists.
This section aims to illustrate a possible configuration of PC facilities in this territory based on an approximate number of expected clinics, as well as recommendations for future interventions as a starting point for the discussion on the potential future scenarios of healthcare services in Albania.

Dimensioning and localisation of primary care services: methods and findings

At the moment, available data sources[4] show that the current healthcare services comprise small rooms for a few physicians' offices that are located in 5 of the largest villages in the Finiq Municipality: Finiq, Mesopotam, Aliko, Dhiver and Livahdja.
In general, in order to cover the population's demand, the healthcare system should expect over 1 physician/1000 residents. The Italian regulations, for example, define a minimum of 1 physician/1000 citizens or fractions > 500, for territorial tracts comprising at least 3.500 residents, excluding the population aged between 0 and 14[5]. In Albania, this value is around 1.9/1000 population (The Data World Bank, 2020). However, the EU average number of doctors per 1000 population is around 3.5 (OECD, 2021).
Considering that this study is applicable to rural areas, a value of 2.5 is taken as a reference to analyse the actual PC demand made by the Finiq population. According to this rough estimation, there should be around 20 physicians within the analysed area (Tab1).

Fig3 / Map of the Finiq Municipality (red) within the Vlorë County (yellow) in Albania source / Vlora Municipality (2024)

3 / Data retrieved from Bashkia Finiq website, https://bfiniq.gov.al/statistics/, last accessed 27 March 2023.
4 / Documentation from local authorities, available information on newspapers and Google Maps
5 / Optimal ratio defined in the General Practitioners national collective agreement, article 19 (available at: https://ape.agenas.it/documenti/Normativa/C_18_normativa_3_listafile_file_0_linkfile.pdf).

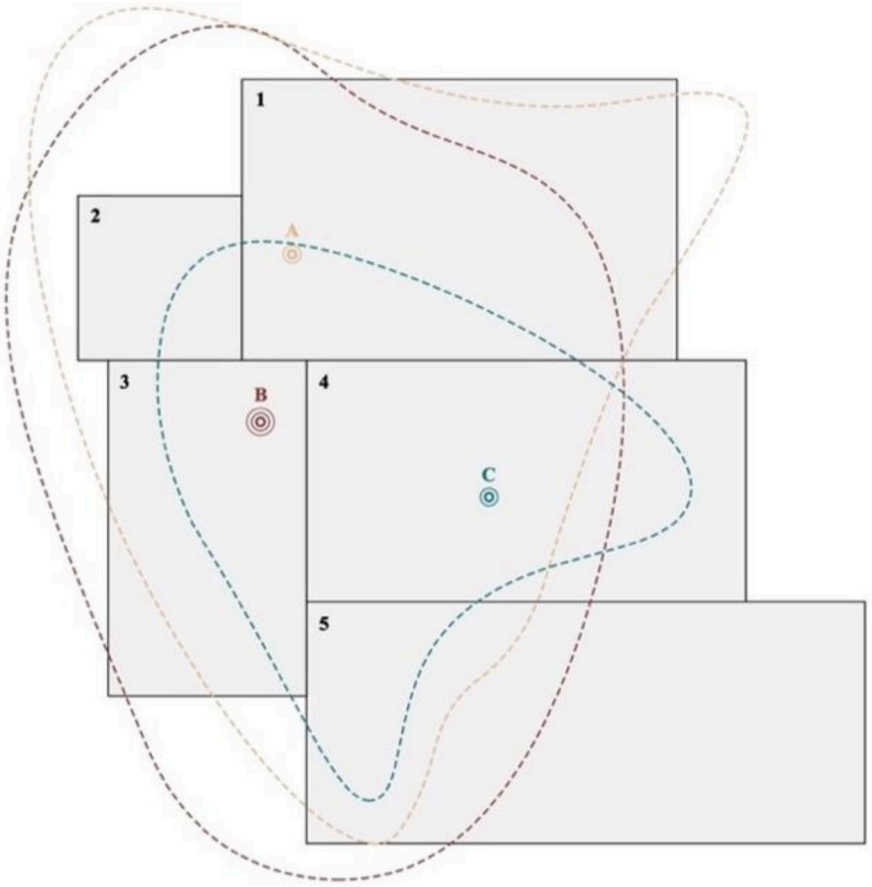
As these areas are sparsely populated, it is reasonable to believe that the PC centres would be located in some, and not all, villages comprising the Municipal territory.
Using a simplification of the abovementioned two-step floating catchment area (2SFCA) method, it has been possible to approximately evaluate the spatial accessibility of the hypothetical distributions of PC centres in the Municipality. The first step was the identification of service areas, defined as those reachable from the healthcare centre within a 30-minute car drive (Luo and Wang, 2003). Then, the distribution of service areas was conceptualised through diagrams, in order to simplify the identification of the most appropriate scenario. This process has demonstrated that the largest overall service area is achievable by locating the facilities in Aliko, Mesopotam and Dhiver (Fig4).
For these areas – that appears to be the most accessible and suitable for the distribution of healthcare services –spatial accessibility would be formally defined as the ratio between the number of physicians in the service area and the population generating the demand (Yang et al., 2006). In these locations, in addition to primary care services, it would be optimal to establish emergency services, as well as inpatient beds for intermediate care (Community Hospital ward) and long-term care for the elderly (Nursing Homes). The latter two must pursue a strong connection with the territory, in order to enable more consistent support and frequent visits to the admitted patients. For this reason, they could be located in the most populated area, in this case, associated with Aliko. As far as emergency services are co cerned, the most important factor is the time required to reach the designated facility. In the case of Finiq Municipality, a matrix of distances expressed in car drive duration helped us understand that the optimal local for the emergency unit serving the whole area could be the town of Livadhja (Fig5).

Design of local healthcare facilities in Finiq Municipality

Once the main facilities' general distribution has been determined, their location must be analysed at a closer scale. As previously mentioned, territorial healthcare facilities should be located in central areas, and identifiable through the presence of public spaces for the local community.
Building on the results of the 8th International IDAUP Workshop, in the Finiq territory it is possible to identify different types of urban settlements, arranged according to the streets' system morphology, with most of the public spaces or buildings located next to significant crossroads (Fig6). These focal points are to be considered as potential sites for the establishment of public spaces and facilities, in order to enhance their position within the urban context. The layout configuration of the building aggregate should favour the connection and integration with the surroundings, as well as the utilisation of the planned or unplanned (in case of spontaneous or informal contexts) public space around the facility. For PC facilities to become a reference point within the local community, this public space should be co-designed with residents in order to be supplied by means of shared and widely accepted requests. For example, by analysing the local context and its needs and shortcomings, a proposal for the Finiq Municipality could be that of placing fountains in healthcare premises' public spaces providing drinking water to the community and creating a recognisable identity shared by all public health services within the area.

MUNICIPALITY OF FINIQ	INHABITANTS	POPULATION > 14 (83%)	POPULATION FRACTIONS	DEMAND N. PHYSICIANS	SUPPLY N. PHYSICIANS
ALIKO	3849	3195	3	7,5	10
FINIQ	1333	1106	1	2,5	0
MESOPOTAM	2786	2312	2	5,0	5
DHIVER	1396	1159	1	2,5	5
LIVADHJA	1165	967	1	2,5	0
	10529	8739	8	20	**20**

Tab1 / Estimated number of physicians within Finiq Municipality source / author



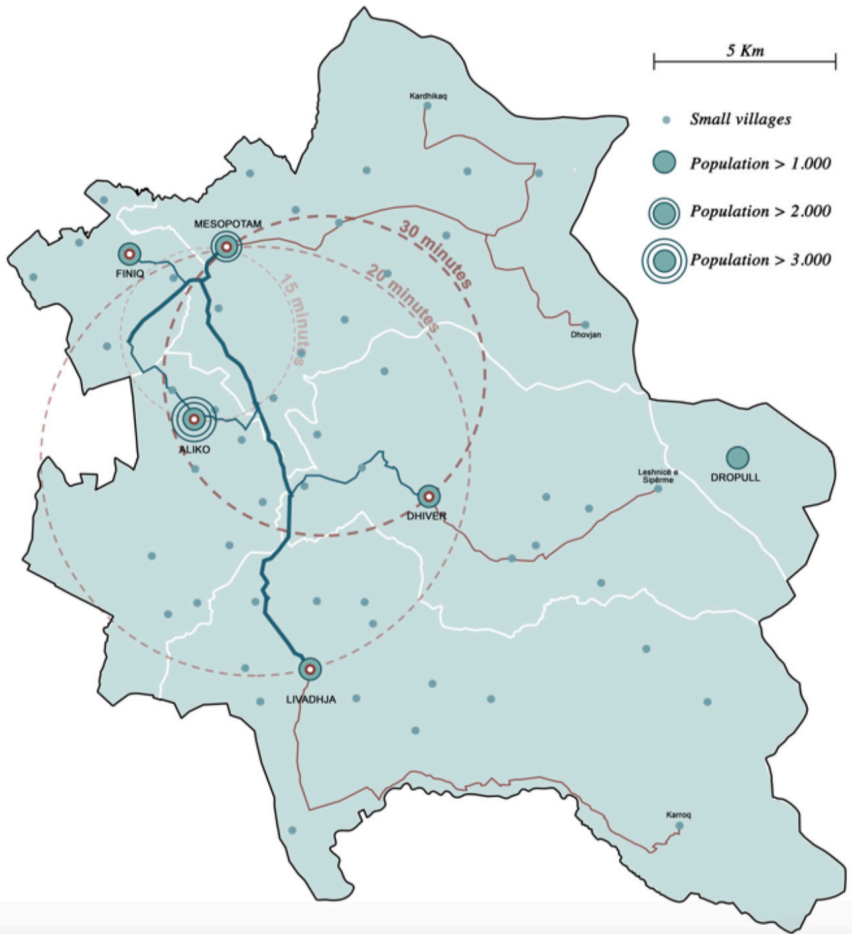
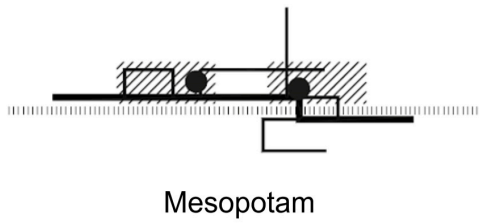
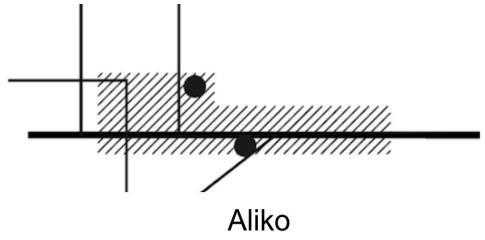


Fig4 / Illustration of the spatial accessibility of the expected distribution of healthcare facilities. A) Mesopotam; B) Aliko; C) Dhiver. Dashed lines represent the 30-minute service areas for each facility. Transport data is not available for this area, thus the use of GIS-based measures had to be replaced by estimations based on Google Maps travel distances.
source / the author

Fig5 / Matrix showing distances (car drive minutes) among the different villages of the Finiq territory
source / author





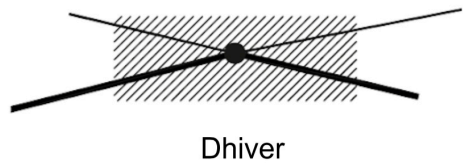


Fig6 / Urban street morphology and public spaces within the three identified locations for healthcare services in the Finiq territory
source / Diagrams from the 8th International IDAUP Workshop

Conclusive remarks and recommendations

In Albania, as in most countries, the issue of limited access to healthcare services in rural areas and the underlying challenges related to urban development and infrastructure – due to a history of prioritising hospital care over primary care – needs to be addressed through a comprehensive and sustainable strategy aimed at defining innovative design approaches to healthcare facilities so that they can cover healthcare provision locally, but also relevant social challenges such as the lack of basic amenities, the ageing of the population or the need for social engagement and integration.

The establishment of a local network of collaborative healthcare facilities has shown the potential to achieve this goal, while at the same time providing flexible solutions that make it possible to respond to the needs and requests related to rural areas, where the distance from specialised clinics often forces small facilities to become the first access point to healthcare services and deal with widely variable patients' conditions.

In order to achieve the paradigm shift towards "proximity" healthcare services with local facilities, there is a clear need for strong commitment of all stakeholders, such as local decision-makers; professional associations and voluntary associations to support and invest in public PC; and architects and designers, on whom communities rely for effective and resilient design, as a trigger for the improvement of urban quality and urban regeneration.

References

Adhami, A., Çela, D., Rrumbullaku, L., & Roshi, E. (2013). Distribution of primary health care physicians in urban and rural areas of Albania during the period 2000-2012. Albanian Medical Journal, 3, 50–55.

Albanian Council of Ministers. (2001). National strategy for socio-economic development. Tirana.

Albanian Ministry of Health and Environment (Mohe) & European Union Phare Programme. (1995). Primary health care policy. Tirana.

Bulakh, I.V. (2019). Hospital systems in Eastern Europe. https://doi.org/10.24411/2520-6990-2019-10181.

Gabrani, J., Schindler, C., & Wyss, K. (2020). Factors associated with the utilisation of primary care services: A cross-sectional study in public and private facilities in Albania. BMJ Open, 10(12), e040398. https://doi.org/10.1136/bmjopen-2020-040398.

Gjonça, A., Burazeri, G., & Ylli, A. (2021). Demographic and health challenges facing Albania in the 21st century. In-depth secondary analysis of demographic and health trends and challenges in Albania. UNFPA. https://albania.unfpa.org/en/publications/demographic-and-health-challenges-facing-albania-21st-century.

Gola, M., Dell'Ovo, M., Scalone, S., & Capolongo, S. (2022). Adaptive Reuse of Social and Healthcare Structures: The Case Study as a Research Strategy. Sustainability, 14(8), 4712. https://doi.org/10.3390/su14084712.

Guagliardo, M.F. (2004). Spatial accessibility of primary care: Concepts, methods and challenges. International Journal of Health Geographics, 3(1), 3. https://doi.org/10.1186/1476-072X-3-3.

Guida, C., Carpentieri, G., & Masoumi, H. (2022). Measuring spatial accessibility to urban services for older adults: An application to healthcare facilities in Milan. European Transport Research Review, 14(1), 23. https://doi.org/10.1186/s12544-022-00544-3.

Hotchkiss, D., Piccinino, L., Malaj, A., Berruti, A., & Bose, S. (2005). Primary Health Care Reform in Albania: Findings from an Impact Assessment of a Pilot Project. Bethesda, MD: The Partners for Health Reformplus Project, Abt Associates Inc.

Hoxha, A. (2020). Natural and Human Potential in the Municipality of Saranda. Knowledge International Journal, 6, 1249–1255.

Lacanna, G. (2014). Med/Architecture: the Typological evolution of Paradoxical Buildings. Proceedings of the 2nd ICAUD International Conference in Architecture and Urban Design. Epoka University, Tirana, Albania, 08-10 May 2014.

Luo, W., & Wang, F. (2003). Measures of Spatial Accessibility to Health Care in a GIS Environment: Synthesis and a Case Study in the Chicago Region. Environment and Planning B: Planning and Design, 30(6), 865–884. https://doi.org/10.1068/b29120.

Needleman, L. (1965). The Economics of Housing. Staples Press.

Nuri B. & Tragakes, E. (2002). Health care systems in transition: Albania (No. 4; Health Care Systems in Transition). European Observatory on Health Care Systems. https://apps.who.int/iris/handle/10665/107494.

Oberosler, C., & Sacchetti, L. (2022). Architetture resilienti per la sanità territoriale: Linee guida per la progettazione: un nuovo modello di Ospedale di comunità. FrancoAngeli.

OECD, Health at a glance (2021). Doctors (overall number). https://www.oecd-ilibrary.org/sites/b39949d7-en/index.html?itemId=/content/component/b39949d7-en#:~:text=In%20most%20OECD%20countries%2C%20the,in%202019%20(Figure%208.3). Accessed 28 March 2023.

Ouma, P., Macharia, P. M., Okiro, E., & Alegana, V. (2021). Methods of Measuring Spatial Accessibility to Health Care in Uganda. In P. T. Makanga (Ed.), Practicing Health Geography, 77–90. Springer International Publishing. https://doi.org/10.1007/978-3-030-63471-1_6.

Saric, J., Kiefer, S., Peshkatari, A., & Wyss, K. (2021). Assessing the Quality of Care at Primary Health Care Level in Two Pilot Regions of Albania. Frontiers in Public Health, 9, 747689. https://doi.org/10.3389/fpubh.2021.747689.

Sigsworth, E.M. & Wilkinson, R.K. (1967). Rebuilding or renovation?. Urban Studies, 4(2), 109–121.

Thano, R. (2013). Touristic Investments in Saranda Region. Romanian Economic Business Review, 8(2), 117–130.

The data world bank (2020). Physicians per 1000 people – Albania. https://data.worldbank.org/indicator/SH.MED.PHYS.ZS?locations=AL.

Yang, D.-H., Goerge, R., & Mullner, R. (2006). Comparing GIS-Based Methods of Measuring Spatial Accessibility to Health Services. Journal of Medical Systems, 30(1), 23–32. https://doi.org/10.1007/s10916-006-7400-5.