

PERSPECTIVE ARTICLE

Post-myocardial infarction care in remote Greece: When geography is a determinant of cardiovascular outcomes—The example of the Prespes region

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Abstract

Survival after myocardial infarction depends not only on reperfusion but on continuity of follow-up, medication adherence, rehabilitation and psychosocial support. In remote regions, geography disrupts each stage of this pathway. Using Prespes in northwestern Greece as an illustrative case, this perspective examines how long travel distances, absence of local percutaneous coronary intervention capability, successive transfers, limited specialist access and weak continuity of care affect acute and long-term outcomes. Existing local practices, including informal ECG sharing, telemedicine infrastructure and mobile health services, are described, highlighting their limited integration into routine care. A tiered implementation framework is proposed, distinguishing measures feasible with current resources, interventions requiring regional coordination and reforms dependent on national policy. Priorities include formal STEMI networks, simplified clinical pathways, protected early follow-up, telecardiology, supported use of patient-owned devices, specialist outreach, treatment simplification and improved access to rehabilitation. The objective is equitable evidence-based cardiovascular care regardless of place of residence.

Keywords: Myocardial infarction; Rural area; Rural cardiology; Medication adherence; Healthcare; Public health; Greek healthcare; STEMI networks

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Citation: Iliadou A. Post-myocardial infarction care in remote Greece: When geography is a determinant of cardiovascular outcomes—The example of the Prespes region. *Brain & Heart*. doi: 10.36922/BH026270036

Received: July 2, 2026

Revised: July 28, 2026

Accepted: August 10, 2026

Published online: August 26, 2026

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1. Introduction

Survival after myocardial infarction (MI) has improved with modern reperfusion therapies and evidence-based treatment. Yet recovery depends on a continuum of care extending beyond the acute hospital phase, including timely diagnosis, structured follow-up, medication adherence, cardiac rehabilitation and psychosocial support, all of which shape long-term outcomes. In remote, mountainous regions, each of these is hard to access. Geographic isolation, limited specialist availability and transport barriers can disrupt both emergency management and long-term secondary prevention.

The Municipality of Prespes, in northwestern Greece near the borders with Albania and North Macedonia, illustrates these challenges. It has roughly 1,200 permanent

residents¹, an aging population, mountainous terrain and long distances to secondary and tertiary care. First medical contact (FMC) is typically provided by rural service physicians, often newly licensed doctors completing compulsory service, who manage cardiovascular emergencies with limited specialist and diagnostic support, while also coordinating long-term care after discharge.

This perspective article examines the full post-MI care pathway in Prespes, from acute reperfusion to long-term recovery and uses this setting to identify barriers and implementation priorities relevant to remote Greece. Greek national registries provide aggregate data on MI care but not outcomes for Prespes or comparable remote mountainous communities.^{2,3} Available Greek evidence does not specifically address reperfusion, early follow-up completion and rehabilitation access across the full care pathway in these settings. Descriptions of current local practice, service availability and approximate travel times are based on direct clinical experience in Prespes and are presented as illustrative observations rather than systematically collected outcome data.

2. The acute Phase: When minutes are miles

2.1. Distance as a determinant of outcome

Time remains the most important determinant of myocardial salvage in ST-elevation myocardial infarction (STEMI). When STEMI is diagnosed in the pre-hospital setting or at a non-percutaneous coronary intervention (PCI)-capable hospital, the choice of reperfusion strategy depends on the expected time to PCI-mediated reperfusion (wire crossing).^{4,5} Current European Society of Cardiology (ESC) guidelines recommend primary PCI when wire crossing can be achieved within 120 min of FMC; when this cannot be met, fibrinolysis should be given within 10 min of diagnosis, followed by prompt transfer to a PCI-capable centre.^{4,5}

These targets are hard to meet in geographically isolated regions, as demonstrated by studies from rural healthcare settings. In North Carolina, nearly 40% of rural emergency medical services (EMS) patients with STEMI missed the recommended FMC-to-PCI target, with women more likely than men to miss the target.⁶ In a US registry of 14,518 patients transferred from non-PCI hospitals, approximately one-third exceeded 120 min despite estimated transfer times below one h.⁷ In rural Iceland, just 21% of patients received primary PCI within 120 min (median time, 157 min), supporting pre-hospital fibrinolysis for distant areas.⁸ Delayed reperfusion is consistently associated with larger infarcts, impaired left ventricular function, heart failure, and higher mortality.^{4,5}

These international findings establish the broader effect

of geography, while Greek national data provide the closest available context for Prespes. In the Greek Stent for Life registry, the mean FMC-to-balloon was approximately 182 min, of which about 129 min elapsed before arrival at the PCI centre, and only 37.9% of patients with STEMI reached the catheterisation laboratory via the emergency medical service.³ Earlier national observation data reported a median pain-to-door time of 180 min, with reperfusion delivered to approximately 60% of patients with STEMI.² Key quantitative findings from selected Greek and international experiences are summarised in [Table 1](#).

Against this background, patients with suspected STEMI in Prespes are first assessed at a rural primary healthcare facility by a single rural physician, with weekday nursing support. Clinical evaluation, electrocardiography, antiplatelet therapy, and initial stabilisation are provided locally, but definitive treatment requires transfer. Fibrinolysis is not delivered locally. Introducing a pharmaco-invasive pathway would require trained staff, standardised protocols, immediate specialist consultation, drug availability and defined transfer arrangements for failed reperfusion or bleeding complications.^{9,10} A single ambulance is available for transfer. The nearest secondary hospitals, about 50 min away, lack PCI capability, so most patients then need onward transfer to a tertiary interventional centre, often after further time spent on assessment, stabilisation and transport coordination. Depending on weather, ambulance availability and in-hospital logistics, total time to reperfusion frequently exceeds guideline targets ([Figure 1](#)). These delays arise from structural features of the care pathway, including successive transfers, ambulance availability and the uneven distribution of PCI centres, rather than from individual clinical decisions. As a result, patients with the same condition may follow very different pathways depending only on where they live, making timely reperfusion a marker not only of care quality but also of equitable access.

2.2. Organising acute care: The STEMI network model

The operational response to the transfer-related delays illustrated in [Figure 1](#) is an organised STEMI network. Such networks follow a hub-and-spoke model, in which peripheral non-PCI facilities (the 'spokes') provide initial assessment, stabilisation, and fibrinolysis, where appropriate, while a central PCI-capable centre (the 'hub') provides definitive reperfusion. The model rests on three key components^{11,12}:

- (i) Pre-hospital electrocardiogram (ECG) and direct routing. STEMI is diagnosed in the pre-hospital setting, and where feasible, patients bypass the nearest non-PCI hospital and are transferred directly

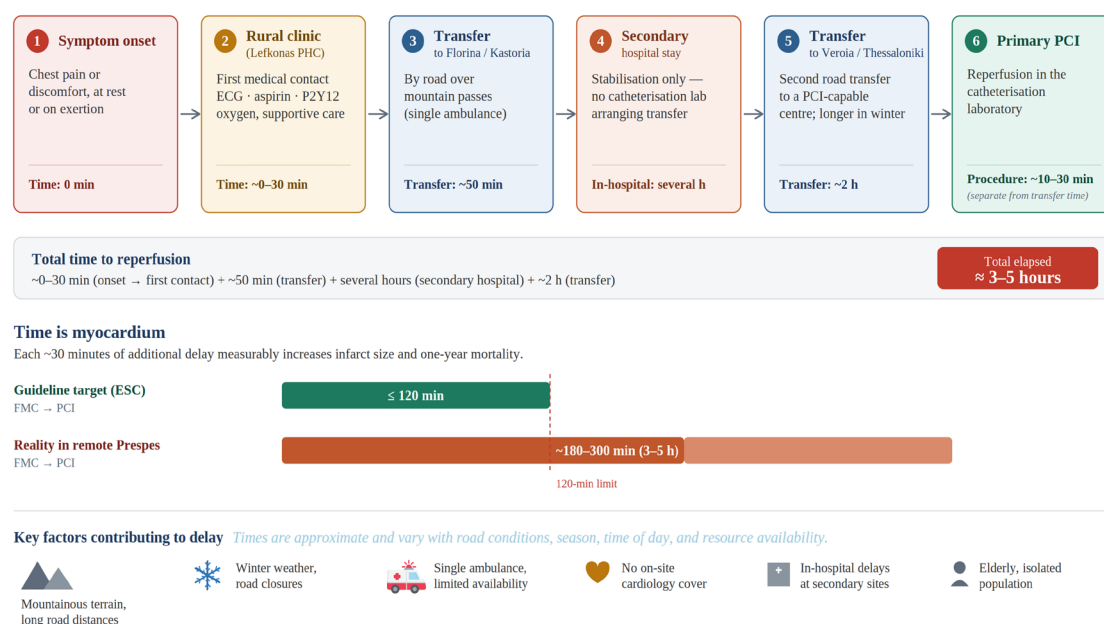


Figure 1. Illustrative patient journey from symptom onset to primary PCI in the remote Prespes region (based on local clinical observations). Across first medical contact, two road transfers, and an interim stay at a secondary hospital without catheterisation capability, the cumulative time typically reaches three to five h—far beyond the 120-min guideline target from first medical contact to reperfusion. Times are illustrative estimates rather than systematically collected data and vary with road conditions, season, time of day, and resource availability. Image created by the author. Abbreviations: ECG: Electrocardiogram; FMC; First medical contact; PCI: Percutaneous coronary intervention; PHC: Primary health centre.

to the PCI-capable centre, with the catheterisation laboratory activated before arrival.

- (ii) A pharmaco-invasive strategy for remote patients. Where PCI cannot be reached within 120 min, fibrinolysis is administered at FMC—ideally pre-hospital—followed by immediate transfer for angiography.
- (iii) Standardised protocols and a quality registry. Responsibilities are clearly defined, and treatment times and outcomes are monitored continuously to drive improvement.

Applied to the Prespes region, the rural healthcare facility and the secondary hospitals of Florina and Kastoria (50 min away) would function as ‘spokes’, while the PCI-capable hospitals in Veria (2 h away) or Thessaloniki (3 h away) serve as the ‘hub’.

One component of this model already occurs informally in Prespes. Rural physicians contact colleagues at the receiving hospital and share ECG images for remote review when STEMI is suspected. This clinician-to-clinician communication demonstrates that remote ECG assessment is feasible, but it currently depends on personal initiative rather than a standardised pathway. Incorporating

this existing practice into a formal regional protocol could enable earlier specialist assessment and allow transfer arrangements and, where appropriate, catheterisation-laboratory activation to proceed in parallel. Evidence from organised telecardiology programmes suggests that ECG transmission can substantially shorten treatment delays and is associated with lower in-hospital mortality.¹³ Formalisation would therefore build on an established local practice rather than require an entirely new system.

Norway illustrates a distance-adapted network:¹² Oslo University Hospital serves as the single PCI hub for eight non-PCI hospitals. Patients within roughly 100 km undergo primary PCI, while those farther away receive pre-hospital fibrinolysis and direct transfer to the catheterisation laboratory without re-evaluation in the emergency department.

Other countries have tackled the same problem differently. In the Netherlands, expansion of the PCI network through off-site catheterisation laboratories reduced the median ambulance driving time to PCI centres from approximately 25 to 15 min. This brought timely PCI within reach of almost the entire mainland population, with helicopter transfer covering the few remaining areas.¹⁴

Table 1. Selected populations, settings and key quantitative findings from Greek and international reports on STEMI care

Setting	Study population/setting	Key quantitative findings
Greece — HELIOS ²	1,840 patients with AMI from 31 hospitals; 1,096 with STEMI	Median pain-to-door: 180 min; STEMI reperfusion: ≈60%
Greece — Stent for Life ³	Patients with STEMI registered in the Greek Stent for Life program	Mean FMC-to-balloon: 182.5 min; FMC-to-PCI center: 129.1 min; EMS transfer to PCI hospital: 37.9%
Rural Iceland ⁸	86 patients with STEMI diagnosed outside Reykjavik and transported to the national PCI center	Southern Iceland: PPCI within 120 min: 21%; median FMC-to-PPCI: 157 min
South-eastern Norway ¹²	Patients with STEMI presenting > 100 km from the PCI center; symptom onset < 6 h; no contraindications to fibrinolysis	Distance threshold: >100 km; fibrinolysis followed by transfer to the PCI center within 24 h
Netherlands ¹⁴	Population-based geographical model: 4,046 postal-code areas; 17.1 million inhabitants; 30 PCI centers	Median ambulance driving time in affected regions: 25.4 → 14.7 min; population with PCI access within 90 min: 99.94%

Abbreviations: ACS: Acute coronary syndrome; AMI: Acute myocardial infarction; EMS: Emergency medical services; FMC: First medical contact; PCI: Percutaneous coronary intervention; STEMI: ST-elevation myocardial infarction.

Although these models differ in organisation, both adapt reperfusion pathways to geographical access rather than administrative boundaries. The European ‘Stent-Save a Life’ initiative offers a framework for establishing STEMI networks with existing resources and has been implemented across numerous European and middle-income countries.¹¹ Greece already possesses the components—an emergency service, a telemedicine network and a defined referral chain—but these are not yet integrated into a coordinated acute pathway for remote regions such as Prespes.

3. Beyond the acute event: The challenge of long-term follow-up

Successful reperfusion does not eliminate the geographical disadvantage after discharge. Post-MI care requires regular clinical review, optimisation of medical therapy and monitoring of cardiovascular risk factors over months and years. Cardiac rehabilitation is an established cornerstone of secondary prevention, as it reduces cardiovascular mortality and hospital readmissions, improves quality of life and should form an integral part of long-term follow-up.¹⁵ The need for structured follow-up is greatest during the early post-MI period. In the TIGREECE study¹⁶, the risk of recurrent cardiovascular events was highest in the first weeks and months after an acute coronary syndrome, with approximately one in ten patients experiencing a recurrent cardiovascular event or death, predominantly of ischaemic origin, within one to three years. This is precisely when close follow-up has the greatest impact and when geographical barriers make continuity of care most difficult to achieve.

3.1. Follow-up care and diagnostic challenges

Timely follow-up is not merely a matter of convenience; it

has direct clinical consequences. In an observational study of patients discharged after acute myocardial infarction, follow-up within six weeks was associated with better medication adherence at 90 days and one year, whereas delayed follow-up was associated with poorer adherence and higher rehospitalisation rates.¹⁷

In Prespes, however, implementing this recommendation is difficult. Based on local clinical experience, reaching a cardiologist means travelling about 50 min on mountain roads to the nearest city—a real obstacle for older patients living alone or without reliable transport, especially as public transport is limited to a single weekly bus. The difficulty is compounded by the diagnostic tests that follow-up requires. Echocardiography, Holter monitoring and stress testing are unavailable locally and demand referral to an urban centre. Local experience suggests that some patients also prefer to be seen by the cardiologist who treated them during their acute event, adding further distance and delay. Even routine blood tests, needed to monitor statin and renin-angiotensin inhibitor therapy, can be hard to arrange for a frail or immobile patient.

Because so much cannot be done locally, the rural physician becomes the central coordinator of care, reviewing discharge plans, monitoring symptoms, reinforcing adherence and liaising with distant specialists. Where the system cannot reach the patient, the community sometimes fills the gap: through collaboration between the regional health centre and the municipal ‘Help at Home’ programme, blood sampling is organised for vulnerable or bedridden patients, with samples transported to public laboratories. Modest as it is, this shows how simple community-based measures can preserve continuity of care in isolated populations.

3.2. Medication adherence

According to current secondary prevention guidelines, patients after myocardial infarction should receive aspirin, beta-blockers, statins, P2Y12 inhibitors and angiotensin-converting enzyme inhibitors (ACE) or angiotensin II receptor blockers (ARBs), with mineralocorticoid receptor antagonists (MRAs) in selected patients, as these therapies improve prognosis and survival.¹⁸ However, their clinical benefit depends on sustained adherence. Published evidence indicates that non-adherence after MI is common and is linked to higher mortality and more frequent hospital readmissions.¹⁷ A systematic review reported 30-day readmission rates ranging from 11% to 20%.¹⁹ Previous studies also suggest that clear discharge planning and patient education can improve adherence by addressing the information gaps that patients often experience after leaving hospital.^{20,21}

In remote regions, several pressures compound these difficulties. The prevalence of coronary disease in Greece is rising, alongside hypertension, dyslipidaemia, diabetes, obesity and depression.¹⁶ Local clinical practice suggests that many patients feel safer near a large hospital or the doctor who treated them and prefer to continue follow-up with the cardiologist who managed their acute event, which is rarely possible when specialist access is limited. For others, insecurity after the event drives frequent, unplanned medical contact. Either way, the behaviour departs from what guidelines assume.

One practical response is treatment simplification. In the SECURE trial, a cardiovascular polypill strategy simplified secondary prevention, improved medication adherence and was associated with a 33% relative reduction in cardiovascular mortality after MI.²² In Prespes, where a single local pharmacy operates on weekdays only, reducing pill burden may be particularly relevant.

3.3. Psychological support

Depression, anxiety and fear of recurrence are common after MI and can slow recovery. In small communities, stigma and limited privacy discourage help-seeking, especially when patients fear being seen as psychologically vulnerable. Some travel to a private physician in another city to stay anonymous, but sustained follow-up soon becomes unaffordable. In Greece, Mobile Mental Health Units are an interdisciplinary, community-based service linked to primary care and offer a practical way to reach patients in remote areas who would otherwise go without support; their coverage continues to expand.²³ Improving psychological recovery should therefore be considered an integral component of post-MI care rather than an optional adjunct, particularly in geographically isolated communities.

4. Telemedicine and mobile health services

Remote regions need ways to bring care to the patient. Two approaches already operate in Greece: digital telemedicine and physical mobile health units.

4.1. Telemedicine

Digital health in cardiovascular medicine covers telemonitoring, teleconsultation and remote rehabilitation, though implementation has practical challenges.²⁴ Telehealth-delivered rehabilitation can increase participation with outcomes similar to facility-based programmes²⁵ and telephone, audio, or video follow-up improves adherence.²⁶ Greece is expanding its National Telemedicine Network, with new patient-to-physician stations, tablets for physicians and home monitoring.²⁷ The Prespes health centre already has telemedicine equipment and trained staff, but it remains underused in the acute phase. In this setting, the principal limitation appears to be organisational rather than technological: a lone physician managing an emergency cannot easily undertake additional transmission procedures without a predefined workflow and receiving team.

Rather than merely replacing in-person visits, digital health tools could support the full continuum of post-MI care in Prespes. A recent meta-analysis involving more than 7,600 patients with acute coronary syndrome demonstrated that digital health interventions were associated with substantially lower all-cause mortality, fewer rehospitalisations, better medication adherence—including a 69% reduction in antiplatelet non-adherence—and lower systolic blood pressure compared with standard care.²⁸ In practice, the existing telemedicine infrastructure could support a scheduled early post-discharge review, allowing the rural physician and a cardiologist to jointly assess symptoms, validated blood pressure measurements, medication adherence, adverse effects and the need for further investigation, without requiring a 50-min journey to the nearest city.

This model could also incorporate patient-generated data from consumer wearables that some patients may already own and use in daily life. Depending on the device, these may provide single-lead ECG recordings, heart-rate and rhythm alerts, blood-pressure readings, oxygen saturation, activity and sleep trends, and fall or possible sleep-apnoea notifications. However, the clinical performance of these functions is device- and setting-specific. In a recent systematic review, wearable ECG devices can show high diagnostic accuracy for atrial fibrillation in supervised settings, but algorithm limitations make clinician review essential.²⁹ Sleep-apnoea and fall-detection functions should be treated as prompts rather

than diagnostic substitutes; the fall evidence cited here derives from induced falls in healthy adults.^{30,31} LIGHT substudies reported improved peak VO_2 in patients at high cardiovascular risk and improved heart-rate-variability parameters in diabetic patients at high cardiovascular risk.^{32,33}

Their use in Prespes, however, should be incorporated into a simple clinical pathway defining what is recorded, when the patient should contact the rural physician and which findings require confirmation with validated medical equipment or face-to-face assessment. This is especially important for cuffless blood-pressure estimates, which current American Heart Association guidance considers insufficiently reliable for diagnosis or treatment decisions.³⁴ Patient-owned devices should complement, not replace, non-digital follow-up for people without compatible technology or digital literacy. Telemedicine would therefore connect local care with specialist support while helping patients participate more actively in recovery.

4.2. Mobile health units

Staffed by trained health professionals, mobile health units are a key part of primary care in remote Greece, covering more than 900 remote, island, and mountain areas from 175 base points.^{35,36} They provide clinical assessment, prescriptions, chronic disease monitoring and point-of-care testing, including cholesterol and blood glucose, improving access for isolated populations.³⁶ In Prespes, they visit about once a month, complementing the local primary care team. Additional support comes from the Mobile Medical Units of Regeneration & Progress, supported by the Stavros Niarchos Foundation, which periodically bring specialist consultations and diagnostic services to remote communities, including Prespes.^{23,37,38}

5. Strategies to improve care

The challenges seen in Prespes are not unique, and neither are the possible responses. Drawing directly on the barriers identified in the preceding sections, the proposed measures are grouped according to the level at which they can be implemented. Some are feasible using existing local resources, others require regional coordination, and a smaller number depend on national policy. The responsible stakeholders, indicative resource needs and suggested implementation indicators are summarised in [Table 2](#).

5.1. Feasible within existing resources

Strategies that are feasible within resources include the following:

- (i) Educate the community on MI symptoms. Patient delay is one of the largest and most preventable gaps in

the chain of care. Education promoting early symptom recognition and immediate activation of emergency services can be delivered by the existing primary care team.

- (ii) Protect the early follow-up. As risk is highest in the first year, the six-week review matters most. Where an in-person visit is impossible, a scheduled telemedicine review within six weeks, supported by clear pre-discharge information, can maintain continuity.
- (iii) Use patient-owned devices deliberately. For patients who own and can use compatible devices, a simple local pathway defining what to record, who reviews the data and when to seek help can turn incidental measurements into usable clinical information and support self-directed lifestyle change. Non-digital alternatives must remain available.
- (iv) Simplify treatment. In Prespes, where a single local pharmacy operates only on weekdays, the cardiovascular polypill may support adherence among patients managing multiple medications.

5.2. Requiring regional coordination

Strategies that require regional coordination include the following:

- (i) Establish a regional STEMI network. A state-coordinated network linking emergency services, rural facilities and PCI centres with a defined pharmacoinvasive pathway for remote patients would address the acute delays that geography imposes and can be built largely from existing resources.
- (ii) Formalise telecardiology. ECG images are already shared informally. A protocol with agreed contacts, response times, documentation and escalation criteria would convert individual practice into a dependable pathway.
- (iii) Bring specialists to patients. Regular cardiology outreach through the mobile units already visiting the region would bring specialist assessment to patients rather than requiring travel.

5.3. Requiring national policies

Strategies that require support of national policies include the following:

- (i) Train rural physicians to defined standards. Rural posts are filled annually by physicians who may never have managed an evolving infarction. Structured induction and periodic simulation-based training to national protocols would support comparable competencies, particularly if a pharmacoinvasive pathway is introduced.
- (ii) Simplify and standardise operational protocols. National guidance should be translated into short,

Table 2. Barriers to post-MI care in remote regions, proposed interventions, lead stakeholders, indicative resource needs and suggested implementation indicators

Barrier	Proposed intervention	Lead stakeholders	Indicative resource needs	Suggested implementation indicator
Feasible within existing resources				
Delayed symptom recognition	Community education on MI symptoms	Primary care team, local authorities	Minimal Staff time	Symptom-to-FMC time
Missed early follow-Up	Telemedicine review within 6 weeks	Rural physician, cardiology services	Minimal Uses installed equipment	6-week follow-up completion
Unstructured patient-generated data	Local pathway for recording, review, escalation	Rural physician, patients, telemedicine services	Minimal Uses patient-owned devices	Reviews with documented patient-generated data
Poor medication adherence	Polypill where appropriate	Rural physician, pharmacy	Low Prescribing change and medicine availability	Medication persistence
Requiring regional coordination				
Delayed reperfusion	Hub-and-spoke STEMI network with pharmacoinvasive strategy	Regional authority, PCI centres, EMS	Moderate Largely existing resources	FMC-to-reperfusion time
Informal ECG sharing	Formal telecardiology protocol	Health centre, receiving hospitals	Minimal Formalises current practice	Suspected STEMI cases with ECG transmitted before transfer
Limited specialist access	Scheduled cardiology outreach	Regional authority, mobile units	Moderate Specialist time and travel	Frequency of outreach visits
Psychological distress, stigma and limited privacy	Confidential remote psychological support and referral	Primary care, regional mental health services	Low to moderate Scheduled professional time	Proportion of eligible patients screened and referred
Requiring national policy				
Variable preparedness of rural physicians	Structured induction and simulation training	Ministry of Health, professional societies	Moderate Training infrastructure	Physicians completing induction before starting post
Complex protocols in single-clinician settings	Condensed algorithms and checklists	Ministry of Health, professional societies	Minimal Document development	Availability and documented use of protocols
Rehabilitation unreachable	Home-based and tele-rehabilitation	Ministry of Health, cardiology centres	Substantial New programmes	Rehabilitation participation
Annual physician rotation	Longer postings and shared clinical records	Ministry of Health, regional authorities	Substantial Workforce policy	Physician retention and continuity

Abbreviations: ECG: Electrocardiogram; EMS: Emergency medical services; FMC: First medical contact; MI: Myocardial infarction; PCI: Percutaneous coronary intervention; STEMI: ST-elevation myocardial infarction.

locally adapted algorithms, including a one-page suspected-STEMI pathway, predefined escalation contacts and a standard post-MI follow-up checklist.

- (iii) Improve access to rehabilitation. Where structured programmes are unreachable, home-based and tele-rehabilitation can widen participation while maintaining a link with specialist services.
- (iv) Support continuity of rural physicians. Longer

postings, shared records and a stable coordinating physician would protect continuity despite staff rotation.

These measures are complementary rather than independent; sustained improvement requires coordinated action across primary care, cardiology, emergency systems, and health policy.

6. Conclusion

For patients in remote regions such as Prespes, geography affects every stage of post-MI care, from reperfusion and follow-up to rehabilitation, medication adherence and psychological support. The central aim is not to create a separate standard of care for rural populations, but to organise pathways that can deliver equivalent evidence-based care despite distance. Existing telemedicine infrastructure and mobile health services provide a foundation, but sustained improvement requires coordinated regional STEMI networks, protected early follow-up, accessible rehabilitation and national support for continuity of the rural healthcare workforce. Prespes illustrates a broader challenge shared by remote and mountainous communities across Greece: cardiovascular outcomes should not depend on place of residence.

Acknowledgments

The author is grateful to the staff of the Prespes rural medical center and the local pharmacy for their collaboration and invaluable support. This work reflects a shared commitment to caring for a remote and underserved community.

Funding

None.

Conflict of interest

The author declares no competing interests.

Author contributions

This is a single-authored article.

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Availability of data

Not applicable.

References

1. Main Page ELSTAT - ELSTAT. Accessed June 28, 2026. <https://www.statistics.gr/en/home/>
2. Andrikopoulos G, Pipilis A, Goudevenos J, *et al.* Epidemiological characteristics, management and early outcome of acute myocardial infarction in Greece: the HELlenic Infarction Observation Study. *Hellenic J Cardiol.* 2007;48(6):325-334.
3. Kanakakis J, Ntalianis A, Papaioannou G, Hourdaki S, Parharidis G. Stent for Life Initiative – the Greek experience. *EuroIntervention.* 2012;8(P):P116-P120.
doi: 10.4244/EIJV8SPA20
4. Ibanez B, James S, Agewall S, *et al.* 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation. *Eur Heart J.* 2018;39(2):119-177.
doi: 10.1093/eurheartj/ehx393
5. Byrne RA, Rossello X, Coughlan JJ, *et al.* 2023 ESC Guidelines for the management of acute coronary syndromes: Developed by the task force on the management of acute coronary syndromes of the European Society of Cardiology (ESC). *Eur Heart J.* 2023;44(38):3720-3826.
doi: 10.1093/eurheartj/ehad191
6. Stopyra JP, Snively AC, Ashburn NP, *et al.* Rural EMS STEMI Patients – Why the Delay to PCI? *Prehospital Emerg Care.* 2024;28(7):947-954.
doi: 10.1080/10903127.2024.2305967
7. Dauerman HL, Bates ER, Kontos MC, *et al.* Nationwide Analysis of Patients With ST-Segment–Elevation Myocardial Infarction Transferred for Primary Percutaneous Intervention: Findings From the American Heart Association Mission: Lifeline Program. *Circ Cardiovasc Interv.* 2015;8(5):e002450.
doi: 10.1161/CIRCINTERVENTIONS.114.002450
8. Sigmundsson TS, Arnarson D, Rafnsson A, Magnússon V, Gunnarsson GT, Thorgeirsson G. Flutningstími og gæði meðferðar hjá sjúklingum með ST-hækkunar-hjartadrep á landsbyggðinni – fáir ná í kransæðavíkkun innan 120 mínútna [Transport and treatment of patients with STEMI in rural Iceland--Only a few patients receive PPCI within 120 minutes]. *Laeknabladid.* 2016;102(1):11-17. [In Icelandic]
doi: 10.17992/lbl.2016.01.59
9. Bhatia K, Qamar A, Hendrickson M, Arora S, Gupta MD. Reply. *JACC Asia.* 2023;3(3):535.
doi: 10.1016/j.jacasi.2023.05.006
10. Schoenborn S, Steratore AF, Hoffman A, Marshall TC, Shaver EB, Kiefer CS. Managing STEMIs without a Catheterization Lab: A Simulated Scenario to Improve Emergency Clinician Recognition and Execution of Thrombolysis in the Setting of Rural STEMI Management. *J Educ Teach Emerg Med.* 2024;9(2):S55-S77.
doi: 10.21980/J8K933
11. Candiello A, Alexander T, Delpont R, *et al.* How to set up regional STEMI networks: a “Stent - Save a life!” initiative. *EuroIntervention.* 2022;17(16):1313-1317.
doi: 10.4244/eij-d-21-00694
12. Halvorsen S. STEMI treatment in areas remote from primary PCI centres. *EuroIntervention.* 2012;8(P):P44-P50.

- doi: 10.4244/EIJV8SPA8
13. Hayiroğlu Mİ. Telemedicine: Current Concepts and Future Perceptions. *Anatol J Cardiol*. 2019.
doi: 10.14744/AnatolJCardiol.2019.12525
 14. Hoedemaker NPG, de Winter RJ, Kommer GJ, *et al*. Expansion of off-site percutaneous coronary intervention centres significantly reduces ambulance driving time to primary PCI in the Netherlands. *Neth Heart J*. 2020;28(11):584-594.
doi: 10.1007/s12471-020-01466-2
 15. Shanmugasagaram S, Oh P, Reid RD, McCumber T, Grace SL. Cardiac rehabilitation barriers by rurality and socioeconomic status: a cross-sectional study. *Int J Equity Health*. 2013;12(1):72.
doi: 10.1186/1475-9276-12-72
 16. Anastasiadis F, Antoniadis D, Chountis D, *et al*. Long-term risk, clinical management, and healthcare resource utilization of stable patients with coronary artery disease and post-myocardial infarction in Greece - TIGREECE study. *Hell J Cardiol*. 2023;72:24-33.
doi: 10.1016/j.hjc.2023.01.007
 17. Faridi KF, Peterson ED, McCoy LA, Thomas L, Enriquez J, Wang TY. Timing of First Postdischarge Follow-up and Medication Adherence After Acute Myocardial Infarction. *JAMA Cardiol*. 2016;1(2):147-155.
doi: 10.1001/jamacardio.2016.0001
 18. Smith SC, Benjamin EJ, Bonow RO, *et al*. AHA/ACCF Secondary Prevention and Risk Reduction Therapy for Patients With Coronary and Other Atherosclerotic Vascular Disease: 2011 Update. *JACC*. 2011;58(23):2432-2446.
doi: 10.1016/j.jacc.2011.10.824
 19. Wang H, Zhao T, Wei X, Lu H, Lin X. The prevalence of 30-day readmission after acute myocardial infarction: A systematic review and meta-analysis. *Clin Cardiol*. 2019;42(10):889-898.
doi: 10.1002/clc.23238
 20. Hanssen TA, Nordrehaug JE, Eide GE, Hanestad BR. Improving outcomes after myocardial infarction: a randomized controlled trial evaluating effects of a telephone follow-up intervention. *Eur J Cardiovasc Prev Rehabil*. 2007;14(3):429-437.
doi: 10.1097/HJR.0b013e32801da123
 21. Mathews R, Peterson ED, Honeycutt E, *et al*. Early Medication Nonadherence After Acute Myocardial Infarction: Insights into Actionable Opportunities From the Treatment with ADP receptor iNhibitorS: Longitudinal Assessment of Treatment Patterns and Events after Acute Coronary Syndrome (TRANSLATE-ACS) Study. *Circ Cardiovasc Qual Outcomes*. 2015;8(4):347-356.
doi: 10.1161/CIRCOUTCOMES.114.001223
 22. Gaziano T, Castellano JM, Dymond A, *et al*. Cost-effectiveness of the CV-polypill strategy versus standard care for secondary cardiovascular prevention in Spain: an analysis based on the SECURE trial. *Lancet Reg Health Eur*. 2025;55:101348.
doi: 10.1016/j.lanepe.2025.101348
 23. Peritogiannis V, Samakouri M, Vgontzas A. Mobile Mental Health Units in rural Greece: successful and cost-effective model. *BJPsych Int*. 2025:1-3.
doi: 10.1192/bji.2025.10052
 24. Frederix I, Caiani EG, Dendale P, *et al*. ESC e-Cardiology Working Group Position Paper: Overcoming challenges in digital health implementation in cardiovascular medicine. *Eur J Prev Cardiol*. 2019;26(11):1166-1177.
doi: 10.1177/2047487319832394
 25. Gallegos-Rejas VM, Rawstorn JC, Gallagher R, Mahoney R, Thomas EE. Key features in telehealth-delivered cardiac rehabilitation required to optimize cardiovascular health in coronary heart disease: a systematic review and realist synthesis. *Eur Heart J Digit Health*. 2024;5(3):208-218.
doi: 10.1093/ehjdh/ztd080
 26. Zorina O, Fatkulina N, Saduyeva F, Omarkulov B, Serikova S. Patient Adherence to Therapy After Myocardial Infarction: A Scoping Review. *PPA*. 2022;16:1613-1622.
doi: 10.2147/PPA.S356653
 27. Karanikas H, Tsoukas V, Drakopoulos D, Koukoulas G, Katsapi A, Rizos F. Assessing Greek National Telemedicine Network. In: *eTELEMED 2024 : The Sixteenth International Conference on eHealth, Telemedicine, and Social Medicine*. Barcelona, Spain; 2024. Accessed July 24, 2026. https://personales.upv.es/thinkmind/dl/conferences/etelemed/etelemed_2024/etelemed_2024_1_100_40033.pdf
 28. Şaylık F. Digital Health Interventions in Patient Management Following Acute Coronary Syndrome: A Meta-Analysis of the Literature. *Anatol J Cardiol*. 2023;27(1):2-9.
doi: 10.14744/AnatolJCardiol.2022.2254
 29. Singeap MS, Corneanu LE, Prodaniuc A, Şova IA, Coşovanu EO, Petriş OR. Diagnostic Accuracy of Wearable ECG Devices for Atrial Fibrillation and ST-Segment Changes: A Systematic Review. *Diagnostics*. 2025;15(24):3162.
doi: 10.3390/diagnostics15243162
 30. US Food and Drug Administration. Letter to Samsung Electronics Co., Ltd regarding de novo classification request for sleep apnea feature. DEN230041. 2024. Accessed July 21, 2026. https://www.accessdata.fda.gov/cdrh_docs/pdf23/DEN230041.pdf
 31. Brew B, Faux SG, Blanchard E. Effectiveness of a Smartwatch App in Detecting Induced Falls: Observational Study. *JMIR*

- Form Res.* 2022;6(3):e30121.
doi: 10.2196/30121
32. Hayıroğlu Mİ, Çınar T, Cilli Hayıroğlu S, Şaylık F, Uzun M, Tekkeşin Aİ. The role of smart devices and mobile application on the change in peak VO2 in patients with high cardiovascular risk: a sub-study of the LIGHT randomised clinical trial. *Acta Cardiol.* 2023;78(9):1000-1005.
doi: 10.1080/00015385.2023.2223005
33. Hayıroğlu Mİ, Çinier G, Yüksel G, *et al.* Effect of a mobile application and smart devices on heart rate variability in diabetic patients with high cardiovascular risk: A sub-study of the LIGHT randomized clinical trial. *Pol Heart J.* 2021;79(11):1239-1244.
doi: 10.33963/KP.a2021.0112
34. Cohen JB, Byfield RL, Hardy ST, *et al.* Cuffless Devices for the Measurement of Blood Pressure: A Scientific Statement From the American Heart Association. *Hypertension.* 2026;83(3).
doi: 10.1161/HYP.0000000000000254
35. Hellenic Republic. Mobile Health Units-Primary Health Care. 2025. Accessed June 26, 2026. <https://www.government.gov.gr/>
36. Hellenic National Public Health Organization (EODY). Mobile Health Units. Hellenic National Public Health Organization (EODY). 2025. Accessed May 15, 2026. <https://www.eody.gov.gr/el/en/symvanta-dimosias-ygeias/kinites-omades-ygeias-komy>
37. Mobile Medical Units: Free State-of-the-Art Care for the Rest of Greece - Stavros Niarchos Foundation. Accessed June 26, 2026. <https://www.snf.org/en/news-stories/stories/mobile-medical-units-free-state-of-the-art-care-for-the-rest-of-greece/>
38. Remote Area Medical - SNF Global Health Initiative. Accessed June 26, 2026. <https://www.snfghi.org/en/pillars/training-knowledge-exchange-and-partnerships/remote-area-medical/>