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Epidemiologic Profile of Presentations to Albania's Summer Primary Care Points: A National Monitoring Analysis

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Abstract

Background: Tourism-related seasonality can shift primary care demand and amplify pressure on downstream emergency and hospital services.

Aim: To describe the volume and epidemiologic profile of summer primary care demand across Albania's seasonal service points and to quantify key system-relevant outputs (referrals and EMS 127 calls) to inform primary care, EMS, and hospital preparedness.

Methods: Routine monitoring data from summer primary care units/points (health centers/seasonal points) were analyzed descriptively for the summer season (June–September 2025). Outcomes included presentations by nationality (Albanian vs foreign), geography, diagnostic groups, rapid tests performed/positive, referrals to specialist/hospital care, and emergency calls to EMS (127).

Results: Across 36 service points, 83,800 presentations were recorded; 25,332 were foreigners (30.2%). The highest volumes were observed in coastal tourist destinations (e.g., Shëngjin 7,763 and Velipojë 7,291). Overall referral rate was 2.45% and EMS-call rate 2.46%. Viral syndromes (10.3%) and gastroenteritis (14.5%) dominated the diagnostic mix. Rapid test positivity was 12.9%.

Conclusions: Summer primary care units handled substantial seasonal demand, including a sizeable share among foreigners, and managed most presentations locally with low referral and EMS-call rates, supporting their role as a

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pragmatic public-health and health-system buffer in high-tourism settings.

Keywords: seasonal health services; primary care; tourism; emergency department; Albania; health system resilience.

INTRODUCTION

International tourism can generate short-term population surges that temporarily expand the catchment population of coastal and high-visitor areas and may reshape both the volume and the case-mix of health care utilization during peak seasons (1,2). In such settings, even modest shifts in low-acuity demand can propagate through the system, influencing access to timely care and downstream hospital activity.

One widely used health-system response is to strengthen community-based urgent and primary care capacity (e.g., walk-in centres, after-hours access, and co-located primary care models) so that common, low-acuity problems can be managed closer to the point of need and diverted from emergency departments The evidence base suggests that improving primary care access and providing structured urgent-care alternatives can reduce avoidable ED use and modify ED case-mix, although effects depend on local organization, hours of operation and integration with referral pathways (3,4,5,6,7,8).

Emergency department crowding is consistently associated with delays, increased risk of adverse outcomes, and system-wide inefficiency, and is commonly conceptualized as a mismatch between input, throughput and output (9,10). In response, several countries have tested models in which general practitioners work in or alongside EDs and interface with urgent/community care to manage low-acuity presentations (11). Seasonality itself can also influence urgency patterns and outcomes in emergency care, supporting the need to account for temporal dynamics when planning surge capacity (12).

Tourism-related demand is not only quantitative but also epidemiologic: travelers frequently seek care for acute gastrointestinal illness, heat-related conditions, and infections acquired during travel, including intestinal protozoa and travelers' diarrhea (13,14,15,16,17,18). In parallel, the expansion of cross-border health-seeking (including medical tourism) and travel-associated antimicrobial resistance has increased the policy relevance of robust, destination-level surveillance and service planning (19,20).

Albania has implemented seasonal primary care units/points (summer health centers) in tourist areas as a pragmatic surge mechanism. However, national evidence describing the epidemiologic profile of summer primary care demand particularly the balance of foreign versus domestic presentations, the geographic concentration of workload, and the seasonal diagnostic pattern remains limited (21,22,23,24). This study therefore describes the volume and profile of summer primary care demand across Albania's seasonal service points and quantifies key system-relevant outputs (referrals and EMS calls) to inform primary care, EMS and hospital preparedness, also indicators and syndromic diagnosis.

Furthermore, evidence from recent reviews highlights that extreme temperature fluctuations can substantially increase acute care demand, while syndromic surveillance approaches used in mass gatherings offer valuable tools for real-time

monitoring of seasonal surges and for guiding adaptive primary care and emergency preparedness strategies (25,26).

MATERIALS AND METHODS

Study design and setting

This study is a retrospective, descriptive analysis of routinely collected, aggregated monitoring data from summer primary care units/points (summer health centers) operating in tourist areas across the entire territory of the Republic of Albania.

Data sources

Data were obtained from two routine sources:

1. National Emergency Medical Center (NEMC)

   The National Emergency Medical Center (NEMC) is the national institution responsible for coordinating and monitoring emergency medical services in Albania. In this study, EMS activity was captured through the "127 emergency calls" metric as recorded and reported within the routine monitoring framework used nationally for seasonal service oversight.

2. National weekly monitoring template for summer primary care units/points

   Activity at summer primary care units/points (HC/seasonal points) is recorded in a standardized national template and reported in aggregated form through regional public health directorates (RPHDs) and local health units (LHUs). The template includes service volume indicators, key clinical activities, escalation outputs (referrals), and grouped diagnoses.

Study period

The analysis covers the monitoring weekly the period June–September 2025.

Units of analysis

The primary unit of analysis was the summer primary care site/point. Results were additionally summarized at the regional level and for the national total.

Measures

The analysis focused on three core domains relevant to seasonal epidemiology and health-system planning:

- Seasonal demand and tourism signal

  Total presentations and presentations by nationality (Albanian vs foreign), used to quantify tourism-linked demand intensity.

- Workload distribution and clinical activity

  Site- and region-level flows, medical consultations/visits, treatments/procedures (minor interventions), and rapid tests performed with rapid test positivity.

- Escalation to higher levels of care and EMS activation

Referrals to specialist/hospital services and EMS 127 calls (as captured through NEMC-linked reporting).

Diagnoses were analyzed using the syndromic groupings available in the monitoring template: viral syndromes, gastroenteritis, cardiovascular conditions, hypertension, respiratory conditions, stings/allergy, otitis, dermatitis, and other diagnoses.

RESULTS

Across the 36-summer primary care service points operating during June–September 2025, national monitoring data captured the overall volume of activity, the nationality mix of presentations, the intensity of clinical work delivered on-site, and the proportion of cases requiring escalation beyond primary care (Table 1). A total of 83,800 presentations were recorded, with foreigners accounting for 30.2% of all presentations. Service delivery was intensive, with 77,811 medical consultations (92.9% of presentations) and 14,150 treatments/procedures (16.9%). Point-of-care testing was used selectively (1,016 rapid tests, 1.2% of presentations) with a 12.9% positivity among those tested. Downstream escalation remained low: 2,052 referrals (2.45%) and 2,061 EMS 127 calls (2.46%) relative to total presentations, indicating that the majority of seasonal demand was managed at the primary care level.

Table 1. National summary indicators across 36 summer service points

Indicator	N	%
Presentations (total)	83,800	100.0
Presentations — Albanians	58,468	69.8
Presentations — Foreigners	25,332	30.2
Medical consultations (visits)	77,811	92.9
Treatments/procedures	14,150	16.9
Rapid tests performed	1,016	1.2
Rapid tests positive	131	12.9*
Referrals to specialist/hospital	2,052	2.45
Emergency calls to EMS 127	2,061	2.46

Note: Percentages are calculated using total presentations (N=83,800) as the denominator, except *rapid test positivity*, which is calculated using rapid tests performed (N=1,016) as the denominator.

Table 2. Regional distribution of demand and system outputs

RPHD	Presentations, N	Albanians, N (%)	Foreigners, N (%)	Referrals, N (%)	EMS 127 calls, N (%)
Vlorë	33,585	27,737 (82.6)	5,848 (17.4)	722 (2.15)	827 (2.46)
Shkodër	27,947	16,486 (59.0)	11,461 (41.0)	496 (1.77)	670 (2.40)
Tiranë	22,268	14,245 (64.0)	8,023 (36.0)	834 (3.75)	564 (2.53)

Regional summaries (Table 2) show that demand was concentrated across three RPHDs with marked differences in tourism intensity and escalation patterns. Vlorë recorded the highest volume (33,585 presentations) but the lowest foreign share (17.4%), while Shkodër had fewer presentations (27,947) but the highest foreign share (41.0%); Tiranë recorded 22,268 presentations with a high foreign share (36.0%). The distribution of foreign vs Albanian presentations differed significantly across RPHDs (χ^2=4510.9, df=2, p<0.001). Referral rates varied substantially, peaking in Tiranë (3.75%) compared with Vlorë (2.15%) and Shkodër (1.77%), and these differences were statistically significant (χ^2=222.4, df=2, p<0.001). In contrast, EMS 127 call rates were similar across RPHDs (2.40–2.53%) with no evidence of regional variation (χ^2=0.95, df=2, p=0.622).

Figure 1 shows the distribution of presentations across the 36-summer primary care service points during June–September, stratified by nationality (Albanians vs foreigners).

The figure shows a strong site-level concentration and heterogeneity in summer primary care demand across Albania. A small number of coastal destinations account for the highest caseloads, led by Shëngjin (N=7,763) and Velipojë (N=7,291), followed by the central coastal cluster (Durrës Beach, Golem, Mali i Robit). The stacked bars show that workload is not only uneven in volume but also in tourism intensity, with foreign presentations comprising a large share in major tourist nodes (e.g., Shëngjin 67.5% foreigners; Velipojë and Durrës Beach ~49–50%), while several sites remain predominantly domestic (e.g., PHC Pogradec 1.8% foreigners). Overall, the pattern indicates that seasonal primary care pressure concentrates in specific destinations where both total demand and the foreign component are high, supporting targeted staffing, triage capacity, and referral/EMS coordination at these high-pressure points. The proportion of foreign versus Albanian presentations varied significantly across service points (χ^2 test, p<0.001).

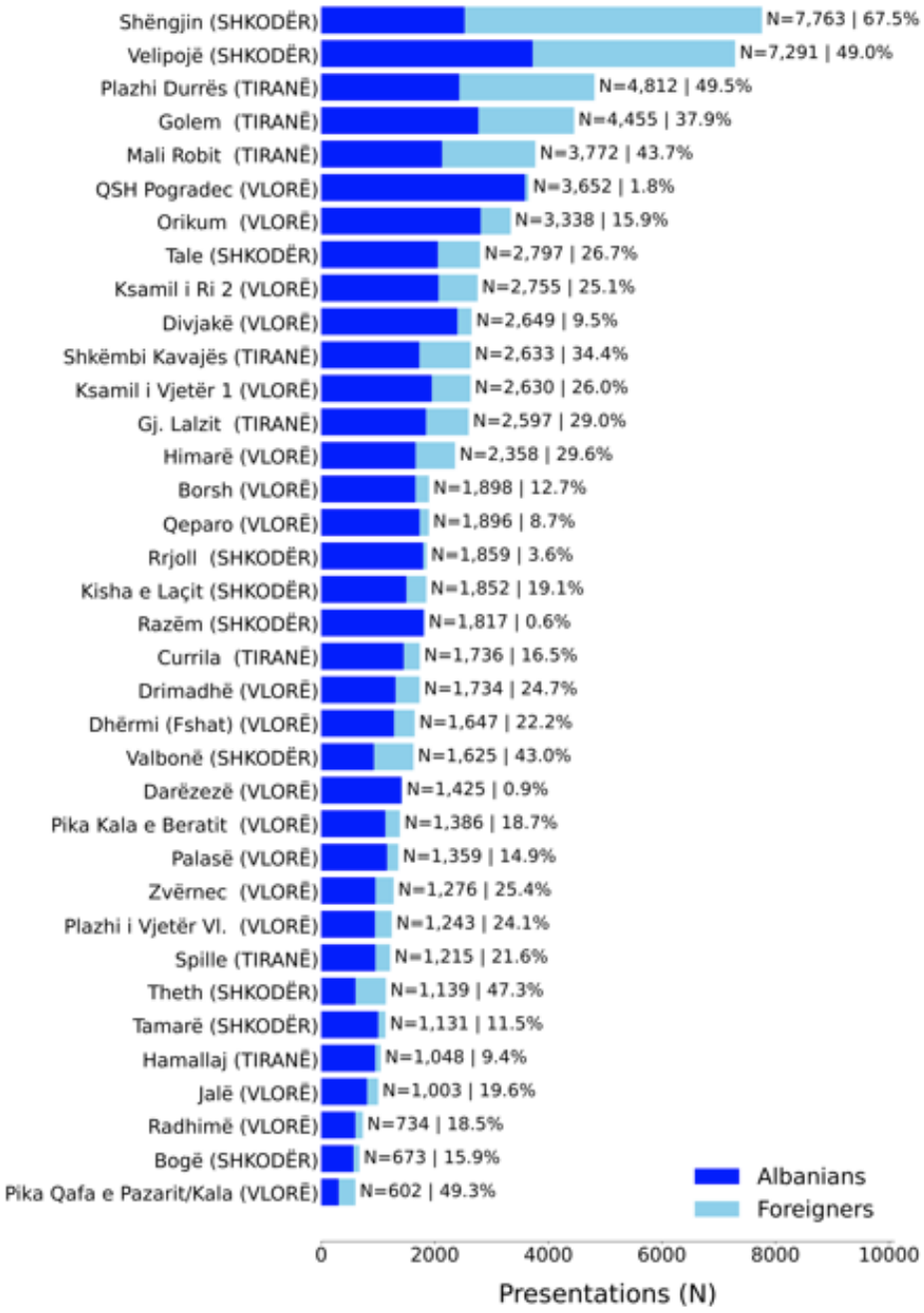

Figure 1. Site-level presentations by nationality across 36 summer primary care service points in Albania

Note: Values shown at the end of each bar are the total presentations (N) at that service point, followed by the percentage of presentations among foreigners.

Table 3 summarizes the aggregated diagnostic profile recorded across all summer primary care points during June–September, providing a syndromic overview of the conditions managed on-site. The distribution shows a predominance of acute seasonal syndromes particularly gastroenteritis and viral syndromes together with a meaningful share of exposure-related presentations (stings/allergy, dermatitis, otitis) and a substantial burden of chronic cardiovascular conditions, most notably hypertension, which has direct implications for staffing, triage protocols, and referral readiness during peak tourism periods.

Table 3. Syndromic diagnostic distribution across all summer service points (June-September)

Diagnosis group	N	%
Viral syndromes	7961	10.3
Gastroenteritis	11237	14.5
Cardiovascular	2566	3.3
Hypertension	9092	11.8
Respiratory	3264	4.2
Stings/Allergy	6935	9.0
Otitis	3246	4.2
Dermatitis	2775	3.6
Other diagnoses	30211	39.1
Total	77287	100.0

Across all summer service points, foreigners accounted for 30.2% of presentations, indicating a substantial tourism-associated workload managed within seasonal primary care during the peak period (1,2,13)

System escalation outputs remained low in proportional terms, with a referral rate of 2.45% and an EMS 127 call rate of 2.46%, consistent with a service model in which the majority of cases are resolved locally at seasonal primary care points rather than transferred to hospital-level care (4,5,6).

The diagnostic profile was dominated by acute infectious and exposure-related syndromes, particularly gastroenteritis (14.5%) and viral syndromes (10.3%), alongside a non-trivial burden of hypertension (11.8%) and other cardiovascular presentations (3.3%), which remain operationally relevant for staffing, triage, and referral pathways (15,16,17,18).

DISCUSSION

Seasonal primary care service points in Albania absorbed a very high clinical workload within a short early-summer reporting window, and a substantial fraction of this workload was generated by non-residents. The foreign attendance observed nationally (30.2%) and the higher shares in specific coastal hotspots supports the interpretation that tourism functions as a seasonal determinant of primary care utilization. Similar patterns have been reported in other high-tourism destinations, where tourist flows measurably change emergency and hospital activity during peak months (1,2).

Escalation to secondary care was uncommon (referral rate 2.45%; EMS 127 call rate 2.46%), implying that most presentations were managed locally within the seasonal primary care platform.

International evidence indicates that strengthening community-based urgent/primary care pathways walk-in and urgent care centers, improved after-hours access, and GP models operating in or alongside emergency departments can redirect low-acuity demand and protect hospital capacity, although effects vary by context and model design. Reported mechanisms are primarily operational: extended opening hours, structured triage and streaming, on-site availability of basic diagnostics and treatment, and clear referral pathways can reduce avoidable ED attendance by offering a credible alternative for common, time-sensitive conditions (4,5,6,7,8,11,21,24). In settings with predictable seasonal surges, these mechanisms are particularly relevant because they can be deployed temporarily, aligned with tourism peaks, and scaled geographically to the highest-demand destinations (1,2,21).

A key finding in Albania is the pronounced geographic heterogeneity in both volume and the resident/non-resident mix. Activity clustered in a limited number of coastal sites, and the distribution of foreign versus Albanian presentations differed significantly across regions and service points (χ^2, $p<0.001$). This supports a tiered seasonal planning approach in which the highest-throughput destinations receive enhanced staffing, extended operating hours, multilingual triage and patient information, and reinforced referral/transport protocols, while lower-volume sites operate with a basic package proportional to expected demand (9,10,11). Such differentiation is consistent with ED crowding frameworks, where targeted upstream capacity is a plausible strategy to reduce peak-load pressure by attenuating input into hospital EDs and smoothing demand across the care continuum (9,10).

The syndromic diagnostic profile was dominated by acute infectious syndromes particularly gastroenteritis and viral-like illness—alongside meaningful shares of respiratory complaints, stings/allergy, otitis, and dermatologic conditions. This profile aligns with travel medicine surveillance, where gastrointestinal and respiratory syndromes are among the most frequent reasons travelers seek care, and exposure-related presentations are also commonly reported. Operationally, these findings support a practical seasonal preparedness package for primary care points: dehydration management (including oral rehydration and IV capability), point-of-care testing when indicated, infection prevention measures, and explicit escalation criteria for severe dehydration, sepsis, respiratory distress, or high-risk comorbidity (13,15,16,17,18). Preparedness also requires reliable supplies (ORS, IV fluids, antiemetics, antipyretics) and basic public health functions such as symptom-based reporting and targeted risk communication in high-volume locations (9,10,13,15). Given that gastroenteritis may represent sporadic travel-associated illness or clustered events, linking seasonal point reporting with local surveillance

can support earlier detection and faster response during high-mobility periods (9,10,13,26).

Hypertension- and cardiovascular-related presentations represented an operationally relevant component of workload. In tourist settings, these may reflect chronic disease exacerbations among older travelers and seasonal triggers such as heat exposure, dehydration, altered routines, and increased exertion (12,14,25). Even within a model oriented to low-acuity care, the volume of cardiovascular presentations justifies minimum cardiovascular readiness: standardized blood pressure management thresholds, structured chest-pain assessment and red-flag screening, basic ECG availability where feasible, and rapid consultation/transfer pathways (9,10,11,12,25).

Beyond service delivery, the seasonal network can contribute to situational awareness for outbreaks and climate-sensitive hazards if case definitions are standardized and reporting is timely. Tourism-related population mixing can accelerate short-lived clusters of gastroenteritis or viral syndromes, and signals may appear first at primary care points before hospital admissions rise. Syndromic monitoring at high-tourism sites can therefore guide targeted risk communication (food safety, hand hygiene, hydration/heat precautions) and support rapid public health response, provided feedback loops between seasonal points, local public health teams, referral hospitals and EMS are functional (9,10,13,26).

Because the analysis relies on aggregated routine monitoring data, interpretation is constrained by the absence of individual-level covariates and by the lack of linkage between seasonal points, EMS, and hospital records. χ^2 comparisons are appropriate for evaluating distributional differences across regions and sites, but with large denominators findings are best interpreted in terms of magnitude and operational relevance rather than statistical significance alone. Future work would be strengthened by linkage across levels of care (seasonal points → EMS → ED/hospital) to quantify downstream diversion and to estimate the incremental impact of seasonal primary care capacity on ED attendances, ambulance conveyance, and admissions using quasi-experimental designs where feasible (e.g., difference-in-differences across higher- versus lower-tourism areas and before/after seasonal deployment).

Overall, the findings are consistent with seasonal primary care points functioning as a pragmatic resilience strategy in settings with pronounced tourism seasonality. Transferability will depend on a clearly defined scope of practice, reliable supply chains, multilingual triage and patient information in high-foreigner-share areas, and strong coordination with referral hospitals and EMS through shared escalation protocols (4,6,11,21,24).

Limitations

The analysis is based on routine aggregate monitoring data with limited clinical detail, potential variation in diagnostic coding across

sites, and does not allow patient-level stratification.

CONCLUSIONS

Seasonal primary care points in Albania handle substantial summer demand, including a sizeable share of presentations among foreigners, and resolve most cases locally with low referral and EMS-call rates. Demand and the resident/non-resident mix were geographically heterogeneous, with clear clustering of high-volume and high-foreigner-share destinations, while the syndromic profile was dominated by acute infectious and exposure-related conditions alongside an operationally relevant burden of hypertension and cardiovascular presentations. These findings support dedicated seasonal primary care planning site-specific staffing, supplies, triage protocols, and escalation pathways as a pragmatic public health and health-system buffer in high-tourism settings.

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Conflict of Interest Statement: The authors declare that they have no conflict of interest.

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