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Beyond technology: the evolution of allied health professionals in electrophysiology in Southeast Europe

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Over the past five decades, electrophysiology (EP) in Southeast Europe has evolved from activity concentrated in a few pioneering institutions into an increasingly complex regional network. In parallel, the roles of nurses, technicians, biomedical engineers, and other allied heart rhythm professionals have shifted from predominantly supportive functions toward specialized practice requiring advanced clinical and technical competencies.

Based on historical centre data, the European Heart Rhythm Association (EHRA) White Book 2010, and the 2025 ESC-EHRA Atlas on Heart Rhythm Disorders, 28 active EP centres were identified across Croatia, Slovenia, Bosnia and Herzegovina, Serbia, Montenegro, and North Macedonia by 2026. The first programmes were established in Ljubljana in 1975 and Zagreb in 1978. Expansion was initially gradual, while 13 of the 28 centres were established from 2018 onwards, indicating marked acceleration of regional EP capacity.[1,2]

Descriptive comparison of available 2009 and 2023 data suggests that procedural growth exceeded infrastructure expansion. Among countries with data available for both periods, the average total ablation rate increased from approximately 66 to 393 procedures per million inhabitants, representing an approximately five-fold increase. Regional activity rose from approximately 38% to 84% of the average procedural volume in neighbouring countries and from approximately 17% to 38% of that in selected high-performance European countries. AF ablation showed a similar growth pattern, although substantial inter-country differences persisted. Because historical White Book and contemporary Atlas data differ methodologically, these findings should be interpreted as descriptive trends rather than direct longitudinal comparisons. This expansion coincided with increasing procedural complexity, including three-dimensional mapping, complex atrial and ventricular ablation, pulsed field ablation, intracardiac imaging, advanced cardiac implantable electronic device (CIED) therapy, conduction system pacing, remote monitoring, and increasingly demanding peri-procedural care. Allied professionals are therefore increasingly involved in procedural workflow, advanced monitoring, mapping and device technologies, sedation support, digital systems, documentation, quality assurance, education, and longitudinal patient management. However, workforce development has not fully matched technological progress. The 2025 ESC-EHRA Atlas reported a median of 3.5 heart rhythm allied professionals per million inhabitants, decreasing to 1.6 when only dedicated full-time or certified professionals were considered. Shortages were reported by 40 countries, while certification remains heterogeneous.[2]

Future regional EP development therefore requires structured education, competency standards, certification, mentorship, staff exchange, and stronger professional networks. The next major advance in regional electrophysiology may depend less on acquiring new technology and more on developing the people who use it.

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