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CURRENT STATUS OF NEUROLOGY IN CROATIA

Founded in 1991, the Croatian Neurological Society includes more than 200 neurologists working in hospitals and individual practices. The Croatian Neurological Society promotes the synthesis of scientific progress in neurology and its practical clinical implementation as well as continued education.

The society offers several postgraduate training courses and dedicated symposia. A neurohospitalist model is our goal: the process in which inpatient neurology specialists deliver high-quality care to neurology patients leading to improved quality of neurologic education for residents and students. Education of the public is also regarded as a vital objective.

The Croatian Neurological Society has appointed leading neurologists to direct programs focusing on various aspects of neurology, particularly in relation to coordinating relevant services such as interventional and diagnostic neuroradiology, neurorehabilitation, and neuropsychology.

Neurology in Croatia is mostly represented at the hospital level. All major hospitals have neurologic departments with designated beds. There are 25 neurologic departments with 888 hospital beds countrywide. After Croatia declared independence from Yugoslavia in 1990, there have been major improvements in infrastructure, with a network of stroke units set up across the country (14 currently in operation).

However, there are still many problems. More than 100,000 people in Croatia have neurologic conditions and services for these conditions have been consistently underfunded. The major problems relate not to a shortage of neurologists but to a lack of resources for the provision of multidisciplinary care, palliative care, and community services. The quality of life for people with neurologic conditions in our country has been adversely affected by decades of underinvestment in neurology services and the lack of a strategic vision for the management of these conditions within the former Yugoslavia health system.

In the last 20 years, neurology has changed from a largely diagnostic to a therapy-focused discipline. As a result, we are faced with problems. Will we be able to

afford the new treatments for neurologic diseases? Croatia spends about 8% of gross domestic product on health care. The relentless increase in health care costs will likely become unsustainable. Expensive treatments are beginning to be subject to standardized usage guidelines that control payment. The practicing neurologist will also need to avoid unnecessary testing, seek lower cost care systems that prevent—or shorten—expensive in-hospital care, and avoid ineffective but expensive interventions.

The Croatian Neurological Society is only partially involved in Croatian health planning. The difficulty for neurology services is that currently there is no published national plan that can implement an effective framework through which to solve these problems.

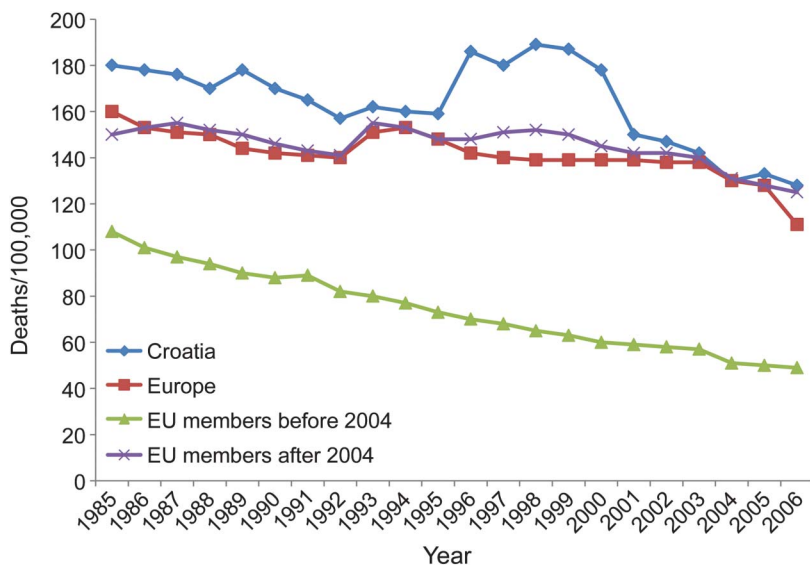
For example, the incidence of stroke in Croatia is too high compared to other EU countries; stroke is the second cause of death and the first cause of permanent disability (figure 1). Stroke kills more people in Croatia than breast, bowel, and lung cancer combined, and a quarter of all strokes affect young people.¹ The risk of dying from cardiovascular diseases is about twice as high for Croatian men and women as the Eur-A average and this difference has not diminished. The largest excess mortality in Croatia, as compared to the Eur-A average—specifically in the middle-aged population—is from cerebrovascular diseases (figure 2).²

Neurorehabilitation can be initiated during the acute phase of treatment yet there is not a dedicated neurorehabilitation center in Croatia to provide optimal programs for stroke patients. Physiotherapy service is available to inpatients and outpatients, but there is no occupational therapy or speech and language services within the hospitals. There is a huge need for specialized rehabilitation services for some other neurologic conditions including brain injury, Parkinson disease, and multiple sclerosis. A rehabilitation strategy for people with neurologic conditions must be part of an overall national framework for the management of neurologic conditions. This would include a coordinated plan from the acute stage through rehabilitation and long-term

From the Croatian Neurological Society, University Hospital Centre Split, Croatia.

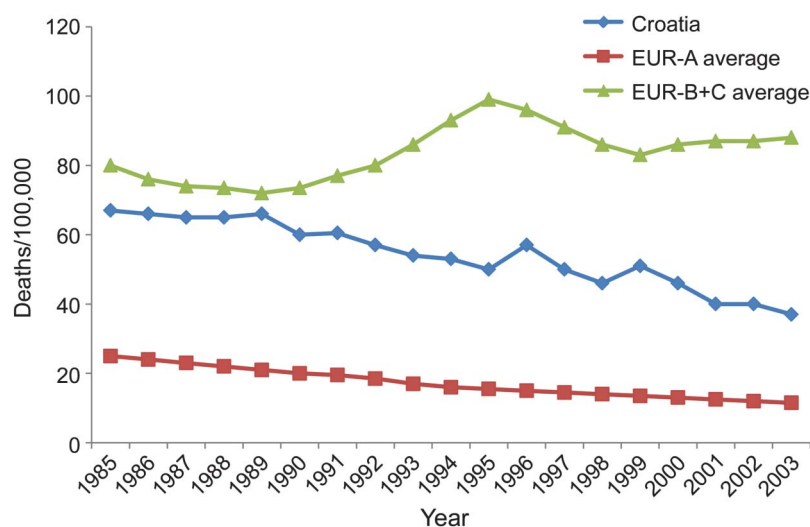
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Figure 1 Stroke mortality rates per 100,000 (1985–2006) in Croatia, Europe, EU members before 2004, and EU members after 2004



Source of data: Croatian National Institute for Public Health, 2010.

Figure 2 Standardized death rate for cerebrovascular diseases in people aged 25–64 years (both sexes) in Croatia, Eur-A averages and Eur-B + C averages, 1985–2003



Eur-A comprises Andorra, Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Germany, Greece, Finland, France, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom. Eur-B comprises Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Georgia, Kyrgyzstan, Poland, Romania, Slovakia, Tajikistan, Macedonia, Serbia, Montenegro, Turkey, Turkmenistan, and Uzbekistan. Eur-C comprises Belarus, Estonia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Russian Federation, and Ukraine. Source of data: WHO Europe, Highlights on health in Croatia, 2005.

management. People who have disabling neurologic diseases should be seen early after admission by an occupational therapist and a speech and language therapist as well as a physiotherapist. In addition, there should be social workers available to see patients and their relatives.

Furthermore, as we learn more about the environmental factors that trigger or accelerate cerebrovascular diseases, we will have the ability to prevent or delay the development of these diseases. Preventing atherosclerosis in patients who have not had a stroke is the responsibility of all physicians, but preventing the progression of vascular disease and recurrent stroke in a patient who has had a stroke is the neurologist's mission.

In general, there is a negative attitude within the political system in Croatia with regard to requesting resources, particularly at a time when there is no new funding available. Health priority needs are largely driven by political concerns. The lack of media attention and political influence has resulted in some neurology services (e.g., epilepsy and dementia) not being funded at the same level as other areas such as breast cancer or diabetes. There is also the perception that particular illnesses are worse than others. Stroke is one of the few urgent conditions in neurology that could conceivably gain any traction in the media, whereas most neurologic diseases are chronic, debilitating, slowly progressive, and do not gain very much attention. People are much less concerned about letting people know about cancer than they are about neurologic illness.

Despite these ongoing issues, the activity of the Croatian Neurological Society will result in improved neurologic care and a better position for the specialty of neurology in the Republic of Croatia.

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The author reports no disclosures relevant to the manuscript. Go to [Neurology.org](http://www.neurology.org) for full disclosures.

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