

## Stroke care in Europe during the COVID-19 pandemic

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In view of finite healthcare resources and the ethical principle of distributive justice, healthcare systems across Europe have been adapted to provide care for patients with coronavirus disease 2019 (COVID-19) while not neglecting other serious medical emergencies. Policies to contain disease spreading and to preserve usual healthcare systems as much as possible differ considerably among countries.

In this issue of the *European Journal of Neurology*, colleagues from Italy, France and Germany provide an overview of policy responses and changes in the provision of stroke care in their countries in the first few months of the COVID-19 outbreak [1].

Although their report does not provide detailed data on case volumes, time metrics or clinical outcomes, this may provide guidance to those who are or will be faced with similar challenges by offering insight into reorganization strategies.

Several common experiences stand out from the report, albeit to somewhat different extents, such as a reduction in the numbers of stroke admissions, increases in the numbers of intensive care unit beds, reduction or suspension of elective interventions and outpatient visits, and institution of screening procedures and other protection measures to prevent the spread of COVID-19 among patients and healthcare providers.

It is also clear, however, that the regions where the outbreak took place first, especially Northern Italy, have faced a much more dramatic situation due to the high volume of patients with COVID-19 requiring hospital care. As a consequence, acute stroke pathways were redrawn, including transportation and triage protocols, and stroke physicians and nurses were redeployed. This change in practice was not restricted to Italy; centralization of acute stroke care to a limited number of hospitals, with the remaining stroke units designated to COVID-19 care, also occurred in France. Importantly, the authors note that these major changes in organization of stroke care have likely reduced the use of reperfusion therapies and caused delays for some of those who received these treatments. This is in line with concerns raised in an earlier survey among stroke care providers in

Europe [2]. Provision of stroke care was less affected in Germany, where no major reorganization of the stroke care system appeared necessary. This may be explained in part by differences in healthcare systems, including the much higher number of intensive care beds in Germany than in Italy or France, and by the fact that the major outbreak occurred later in Germany than in Italy.

In their report, the authors offer an international perspective on the modifications in stroke care during the pandemic and provide insight into differences among countries in policy measures and in challenges faced by stroke care providers. Some of the solutions emerge as potentially successful tools, such as the development of regional stroke care collaborations in highly affected regions, the implementation of public campaigns to encourage patients to continue seeking emergency care when experiencing acute stroke symptoms, and the use of telemedicine to perform routine follow-up visits. Actual data on stroke incidence, hospitalizations, and outcomes are now needed to better understand the impact of the COVID-19 outbreak on stroke and stroke care. Research groups in several countries in Europe and elsewhere are currently working on this, probably leading to valuable insights shortly.

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### References

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