NeuroRehab4EU

Democratizing access to an innovative, evidence-based model of care for neurological disorders in Europe

KEYWORDS

Neurorehabilitation, Digital Therapeutics, Cost efficiency of healthcare system, Evidence-based medicine, Transferability across the European space, Continuum of Care, High-quality, high-dose Rehabilitation

DURATION

36 months

ABSTRACT

More than 20 million of European citizens with a neurological disease (increasing number) require rehabilitation. The current models of care are unable to provide an effective and cost-efficient response, e.g. only 30% of stroke patients receive unit care. The burden for society is estimated at 300 billion euro per year in Europe. Current delivery of neurorehabilitation is implemented on a fractionated and small scale, not even at national level, with big differences among countries, and with opportunities for patients usually linked to the socio-economic level of the country. Disparity in clinical and regulatory policies, available resources, and reimbursement pathways also contribute to unequal citizen access to appropriate treatment, with patients receiving insufficient rehabilitation or suffering long waiting lists before getting access to it. Recent evidence suggests that providing high-dose and personalized rehabilitation along the different phases of the continuum of care improves patients outcomes, thus reducing the frightening number of years of life lost (e.g., 1.3 million in 2013 for traumatic brain injuries alone). However, current models of care are often underdosed, as based on a limited number of 1:1 (patient:therapist) therapy sessions in the clinic, thus providing inadequate quality of care. We propose a sustainable and EU-wide model of neurorehabilitation along the continuum of care. This patient-centered model will specify the clinical, operational and economic needs to treat neurological patients first (including stroke, traumatic brain injury and spinal cord injury), and to neurodegenerative diseases (Parkinsons and multiple sclerosis) in a second stage. In addition, our model will boost access to and intensity of treatments thanks to the integration of validated digital neurotechnologies in clinical routine for a) increasing rehabilitation dose and efficiency, b) enabling group and remote care and monitoring, and c) bridging in-patient, out-patient and home services. The present proposal leverages underlying national efforts. In Switzerland, a consortium led by the main applicant has launched the initiative SwissNeuroRehab, a public-private partnership, working on a new neurorehabilitation model based on shared care plans and digital neurotechnologies. In Italy, the partners are part of Fit4MedRob, a project aimed at validating robotic technologies for rehabilitation. NeuroReahab4EU will bring together key approaches and know-how from these implementation efforts as a basis to address the European health challenge of bringing state-of-the-art brain research to society. To achieve this aim, we will launch a pilot project in three countries (Switzerland, France, and Italy), with one hundred patients with acquired brain injury per country, who will receive a common neurorehabilitation model, from hospital to home, empowered via an innovative digital platform. Clinical outcomes and socio-economic costs will be evaluated. A model of reimbursement will be defined, compatible both with public and insurance-based models of healthcare. A common practice for adoption will be defined and transferred to professionals in different countries. If successful, NeuroRehab4EU will assure the transferability of clinical approaches,

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technologies and policies for care of neurological patients to all European countries. The model will be scalable to other clinical conditions (179 million of Europeans, one out of three, suffer from a brain disorder). These results will democratize access to high-quality care based on digital innovation to all European patients suffering from a brain disorder, with a great positive impact on society.

PARTNERS

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Serino	University Hospital of Lausanne	Switzerland
Bassolino	University of Applied Sciences of western Switzerland (HES-SO, Valais-Wallis), Institute of Health	Switzerland
Bottini	University of Pavia	Italy
Luauté	Centre Hospitalier Universitaire - Hospices Civils de Lyon	France
Mannini	Fondazione Don Carlo Gnocchi Onlus	Italy
Perez-Marcos	MindMaze SA	Switzerland

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