

Registre de Discapacitat  
Barcelona

Grup ICTUS Rehabilitació (GIR)



Hospital Vall d'hebron  
Hospital Clinic  
Hospital de Sant Pau  
Hospital del Mar  
Fundació Ictus  
Societat Catalana de Medicina Física i Rehabilitació





## criteris admissió RHB

### Consell assessor RHB (2013)

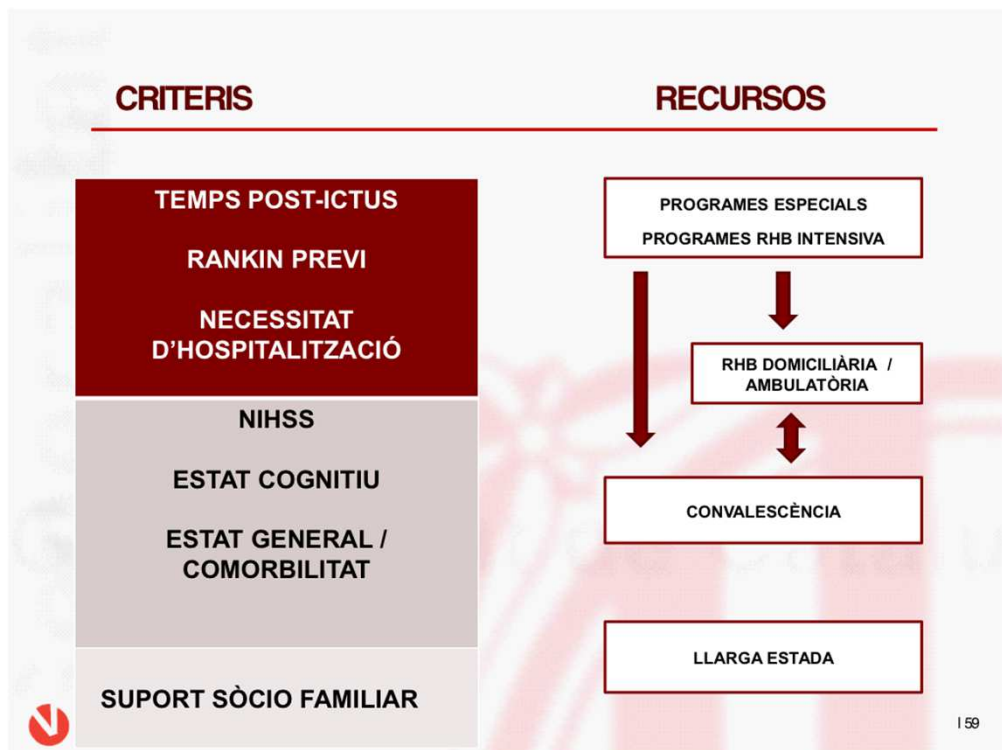
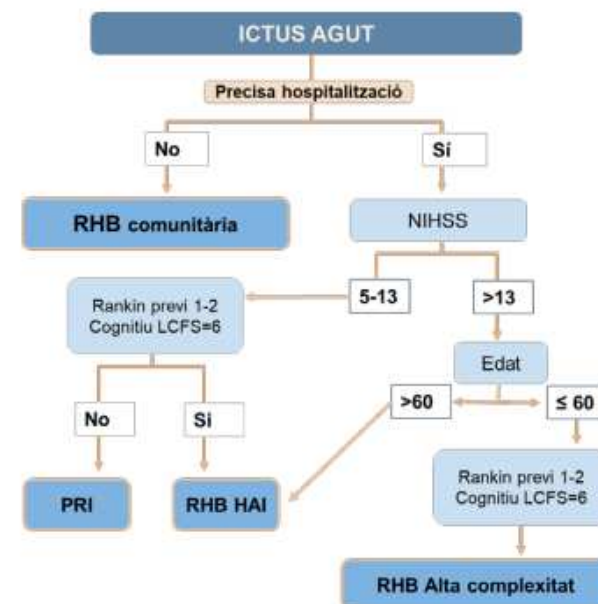


Figura 9. Criteris d'inclusió per als diferents àmbits i programes de rehabilitació en persones amb diagnòstic d'ictus



Font: Pla director de la malaltia vascular cerebral. Grup d'experts en rehabilitació, 2013.

# REHABILITATION - TARGETS FOR 2030

- Guaranteeing that at least 90% of the population have access to early rehabilitation within the stroke unit
- Providing early supported discharge to at least 20% of stroke survivors in all countries.
- Offering physical fitness programmes to all stroke survivors living in the community.
- Providing a documented **plan for community rehabilitation** and self-management support for all stroke patients with residual difficulties on discharge from hospital.
- Ensuring that all stroke patients and carers have a **review of the rehabilitation and other needs** at 3-6 months after stroke and annually thereafter.

EVALUATION OF OUTCOMES AND QUALITY IMPROVEMENT: The goal of evaluation of stroke outcome and quality assessment is that all countries **aim to establish a system for the routine collection of data** needed to evaluate the quality of stroke management, including patient safety issues.



[https://www.safestroke.eu/wp-content/uploads/2021/07/SAFE-SAPE-ebook-correct-version\\_compressed-FINAL-FINAL-1.pdf](https://www.safestroke.eu/wp-content/uploads/2021/07/SAFE-SAPE-ebook-correct-version_compressed-FINAL-FINAL-1.pdf)



Avaluació en les primeres 24-48 hores per tal de detectar les necessitats de rehabilitació.

En rebre l'alta de la unitat d'atenció aguda s'ha de valorar l'àmbit i programa de rehabilitació adequats per continuar la rehabilitació (tipus de programa i intervencions necessàries)

Cal avaluar sistemàticament els resultats funcionals al cap de sis mesos de l'ictus (cognitius, emocionals, comunicatius, de limitació de l'activitat, participació i qualitat de vida)

## REGISTRES



Sistema de Información de Rehabilitación Cardíaca en Andalucía donde se defina un conjunto mínimo y básico de datos, así como evaluar su utilidad y posibilidades de explotación en pacientes que han finalizado un PRCyPS.

[José Antonio Expósito Tirado](#)

Tesis Doctoral 2016



### PROFITS

A CLINICAL INFRASTRUCTURE FOR STRUCTURAL AND MULTI- NETWORK ASSESSMENT OF DETERMINANTS & MODULATORS OF FUNCTIONAL OUTCOME AFTER STROKE



**The post-stroke rehabilitation outcomes project.** *Jette 2005 Health & Disability*  
Research Institute, Boston University, Boston, MA 02215, USA.

**proyecto ICONA** (Ictus-CONTinuidad Andalucía)  
*Plan Andaluz de Ictus que pretende ordenar y mejorar la experiencia del paciente que ha sufrido un ictus y se encuentra en fases sub-aguda o crónica”*  
**Joan Montaner**

RESEARCH

Open Access



# Inpatient rehabilitation therapy in stroke patients with reperfusion therapy: a national prospective registry study

Shengde Li<sup>1</sup>, Yixiu Lu<sup>1</sup>, Shiyuan Fang<sup>1</sup>, Longde Wang<sup>2\*</sup> and Bin Peng<sup>1\*</sup>

## Abstract

**Background** Little is known about the rate of real-world inpatient rehabilitation therapy (IRT) after stroke. We aimed to determine the rate of inpatient rehabilitation therapy and its associated factors in patients who undergo reperfusion therapy in China.

**Methods** This national prospective registry study included hospitalized ischemic stroke patients aged 14–99 years with reperfusion therapy between January 1, 2019, and June 30, 2020, collecting hospital-level and patient-level demographic and clinical data. IRT included acupuncture or massage, physical therapy, occupational therapy, speech therapy, and others. The primary outcome was the rate of patients receiving IRT.

**Results** We included 209,189 eligible patients from 2191 hospitals. The median age was 66 years, and 64.2% were men. Four in five patients received only thrombolysis, and the rest 19.2% underwent endovascular therapy. The overall rate of IRT was 58.2% (95% CI, 58.0–58.5%). Differences in demographic and clinical variables existed between patients with and without IRT. The rates of acupuncture or massage, physical therapy, occupational therapy, speech therapy, and other rehabilitation interventions were 38.0%, 28.8%, 11.8%, 14.4%, and 22.9%, respectively. The rates of single and multimodal interventions were 28.3% and 30.0%, respectively. A lower likelihood of receiving IRT was associated with being 14–50 or 76–99 years old, female, from Northeast China, from Class-C hospitals, receiving only thrombolysis, having severe stroke or severe deterioration, a short length of stay, Covid-19 pandemic and having intracranial or gastrointestinal hemorrhage.

**Conclusion** Among our patient population, the IRT rate was low with limited use of physical therapy, multimodal interventions, and rehabilitation centers and varied by demographic and clinical features. The implementation of IRT remains a challenge for stroke care, warranting urgent and effective national programs to enhance post-stroke rehabilitation and the adherence to guidelines.

**Keywords** Stroke rehabilitation, Thrombolysis, Endovascular therapy, Real world, Bigdata

national prospective registry study included hospitalized ischemic stroke patients aged 14–99 years with reperfusion therapy between January 1, 2019, and June 30, 2020

primary outcome was the rate of patients receiving IRT

overall rate of IRT was 58.2% (95% CI, 58.0–58.5%)

IRT rate was low with limited use of physical therapy, multimodal interventions, and rehabilitation centers and varied by demographic and clinical features. The implementation of IRT remains a challenge for stroke care, warranting urgent and effective national programs to enhance post-stroke rehabilitation and the adherence to guidelines.



## Design and implementation of a Stroke Rehabilitation Registry for the systematic assessment of processes and outcomes and the development of data-driven prediction models: The STRATEGY study protocol

Marco Chiavilli<sup>1</sup>, Silvia Campagnini<sup>1,2\*</sup>, Teresa Baretta<sup>1</sup>, Chiara Castagnoli<sup>1</sup>, Anita Paperini<sup>1</sup>, Angela Maria Politi<sup>1</sup>, Leonardo Pellicciari<sup>1</sup>, Marco Baccini<sup>1</sup>, Benedetta Basagni<sup>1</sup>, Sara Marignani<sup>1</sup>, Donata Bardi<sup>1</sup>, Alessandro Sodero<sup>1,3</sup>, Gemma Lombardi<sup>1</sup>, Erika Guolo<sup>1</sup>, Jorge Solano Navarro<sup>4</sup>, Silvia Galeri<sup>4</sup>, Angelo Montesano<sup>4</sup>, Lucia Falco<sup>4</sup>, Marco Giuseppe Rovaris<sup>4</sup>, Maria Chiara Carrozza<sup>2</sup>, Claudio Macchi<sup>1,5</sup>, Andrea Mannini<sup>1†</sup> and Francesca Cecchi<sup>1,5†</sup>

\*CORRESPONDENCE Silvia Campagnini, [scampagnini@dongnocchi.it](mailto:scampagnini@dongnocchi.it)



### OPEN ACCESS

EDITED BY  
Nicola Smania,  
University of Verona, Italy

REVIEWED BY  
Laura Mori,  
University of Genoa, Italy  
Luca Sebastianelli,  
Hospital of Vipiteno, Italy

\*CORRESPONDENCE  
Silvia Campagnini  
[scampagnini@dongnocchi.it](mailto:scampagnini@dongnocchi.it)

†These authors have contributed  
equally to this work and share last  
authorship

SPECIALTY SECTION  
This article was submitted to  
Neurorehabilitation,  
a section of the journal  
Frontiers in Neurology

RECEIVED 13 April 2022  
ACCEPTED 09 August 2022  
PUBLISHED 10 October 2022

CITATION  
Chiavilli M, Campagnini S, Baretta T,  
Castagnoli C, Paperini A, Politi AM,  
Pellicciari L, Baccini M, Basagni B,  
Baretta T, Carrozza M, Cecchi F, Guolo E,  
Lombardi G, Montesano A, Navarro JS, Sodero A,  
Smania N, Solano Navarro J, Galeri S, Falco L,  
Rovaris MG, Mannini A and Macchi C (2022) Design and implementation of a Stroke Rehabilitation Registry for the systematic assessment of processes and outcomes and the development of data-driven prediction models: The STRATEGY study protocol. *Front. Neurol.* 13:919353. doi: 10.3389/fneur.2022.919353

- In countries where national registries of the clinical quality of stroke care have been established, the publication and sharing of the collected data have led to an improvement in the quality of care and survival of patients
- Information on RHB processes are often lacking
- Pilot Italian cohort of stroke survivors undergoing post-acute in-patient RHB to provide a systematic assessment of processes and outcomes
- Measurements: admission, discharge, 3m and 6m
- This study will test the feasibility of a stroke RHB registry and provide as systematic assessment of processes and outcomes for quality assessment and benchmarking



## Pla RHB a l'alta d'aguts

- TOTS els pacients a l'alta de la Unitat d'Ictus dels 4 hospitals de III nivell de BCN ciutat que necessitin RHB han de tenir un pla especificat: informació situació funcional i **pla documentat de RHB** subsegüent (T1)

## Avaluació 6m (T2) seguiment telefònic

### Registre:

- Registre Discapacitat post-ictus poblacional
- Visio integral
- Consens variables
- Consens soc científiques
- Idealment vinculat als registres d'aguts
- Cada proveïdor ha d'afegir les dades sobre l'estat funcional del pacient i els recursos en RHB emprats



# Investigator Sponsored Study Portal

Dashboard > ISS External Investigator > General Information (Prospective, interventional, multicentre study ...)

Clinical Research ISS-52120-0321 | 
 1 of 1 | 
 Requestor: Duarte | 
 Status: Synopsis | 
 Request Date: 22 Feb 2023 | 
 Actions

- Acknowledgement
- General Information**
- Personnel
- Sites
- Study Information
- Proposal
- Scientific Summary
- Requested Funding
- Planned Publications
- Attachments

## General Information

**\*Study Title**  
 Prospective, interventional, multicentre study that evaluates the functional and health status of post-stroke patients at hospital discharge and 6-month follow up, as well as the rehabilitation program implementation, in a pilot cohort in Barcelona city

**\*Short Title / Acronym**  
 BaSfIR

**\*T/A to be Studied**  
 Neurosciences

**\*Indication to be Studied**  
 Adult Spasticity

**\*Product**  
 Other

**Additional Products/Materials**  
 [empty]

**Please Specify Other Indication**  
 [empty]

**\*Other Product**  
 Not applicable due to study type

**\*Project Type**  
 Clinical Research

**\*Type of Support Funding**  
 Funding

**\*On Label?**  
 Yes

**\*Multi-Site Study**  
 Yes

**\*Number of Sites**  
 4

**\*Number of Countries**  
 1

**\*Lead Country**  
 Spain

**Region**  
 Europe

← Acknowledgement

Personnel →

## FASE 1

### • Consens en

- selecció de **mesures de resultat** i moment de aplicar-les
- **avaluació de l'estat funcional** (discapacitat, institucionalització, qualitat de vida) al sisè mes després de l'ictus
- documentar al sisè mes després de l'ictus les **actuacions de RHB seguides**

### • Metodologia

- Cada centre participant l'equip de RHB determinarà les necessitats de RHB a l'alta (Fisioteràpia, teràpia ocupacional, logopèdia i teràpia cognitiva), informació que es farà constar en l'informe d'alta
- Amb el suport de Ipsen es farà un **primer estudi pilot en la ciutat de Barcelona: ENTREVISTA TELEFÒNICA al 6è mes post-ictus:**
  - Estat funcional (discapacitat, institucionalització, qualitat de vida)
  - Programa RHB seguit
- **Registre:** explorar la inclusió de variables relacionades amb la RHB (procés i resultats funcionals als 6 mesos) en la plataforma e-ictus /CICAT



		Study Procedures and Assessments	At hospital discharge (T0)	6-month follow up (T1)
Patient / stroke/ acute phase	Informed consent		X	
	Eligibility criteria		X	
	Demographic data: age and gender		X	
	Significant medical and surgical history		X	
	Date of stroke and date of admission		X	
	Stroke type		X	
	Affected vascular territory		X	
	Treatment received at acute phase		X	
Functional and Health status	NIHSS total score		X	
	NIHSS Motor Arm score		X	
	NIHSS Motor Leg score		X	
	NIHSS Aphasia score		X	
	NIHSS Dysarthria score		X	
	NIHSS Limb Ataxia score		X	
	Charlson Comorbidity Index (CCI)		X	
	Modified Rankin Scale (mRS)		X	X
	Pfeiffer's questionnaire (SPMSQ)		X	X
	Modified Barthel Scale		X	X
	Lawton & Brody Index		X	X
	Functional Ambulation Categories (FAC)		X	X
	Euro-QoL-5D		X	X
	Spasticity		X <sup>a</sup>	X <sup>b</sup>
Dysphagia		X		
Aids	Walking aids		X	X
	Need orthosis for walking		X	X
	Destination at hospital discharge		X	
	Need for a caregiver (formal or informal)			X
	Need to adapt home			X
RHB program	Setting		X	
	Treatments or techniques		X <sup>c</sup>	X <sup>d</sup>
	Patient satisfaction with the rehabilitation program followed			X

- **FASE 2.- 2023: estudi pilot cohort Barcelona**
- **FASE 3.- 2024**
  - **Modelitzar el projecte GIR Barcelona a tot el territori**
    - **Pla de RHB a l'alta** dels hospitals d'aguts
    - **Registre poblacional de discapacitat als sisè mes:** és necessari que aquest procés sigui una rutina assistencial, el que fa necessari que es vehiculitzi en forma de registres. Donat que el pacient pot seguir el seu procés assistencial sota diferents proveïdors, es treballarà en la creació de registres – idealment vinculada als registres d'aguts- que puguin integrar la informació sobre el pacient, i que permetin que cada proveïdor pugui afegir dades sobre l'estat funcional del pacient i dels recursos en rehabilitació emprats
  - **Integració de l'atenció primària** i implementació d'instruments per assegurar la derivació adequada als serveis de RHB (ex. Post-stroke checklist)

- Oportunitat
- Consens
- Cohort pilot: factibilitat?
- Informació sobre mancances en RHB
- Extensió a tot el territori
- Integració en el registre d'aguts

